CROSSLAND HEAVY CONTRACTORS

ADDENDUM NO. 4

Bentonville WRRF Improvements

City of Bentonville

Dated: May 14, 2025

This Addendum shall be a part of the Plans and Contract Documents and Specifications to the same extent as though it were originally included therein, and it shall supersede anything contained in the Plans and Contract Documents and Specifications with which it might conflict.

1. GENERAL CLARIFICATIONS

1. All trap primers are to be removed and not bid.
2. Geotechnical Report
    a. GTS, Inc. has issued a revised Geotechnical Engineering Report, dated May 7, 2025. A brief summary of these revisions is as follows:
        i. Added Soils Boring Logs B-29 and B-30
        ii. Addressed the specification of drilled shaft piers for the Influent Structure
        iii. Addressed any nominal lateral load requirements for micro-piles
        iv. Approved Class 7 aggregate base in compacted lifts as an acceptable alternative to flowable fill above over-excavation to limestone
        v. The revised Geotechnical Report is attached and available on CivCast.
3. On Bid Package 010 Yard Piping, bid item G30 will require two additional 36" valves not shown in the drawings to a 36" tee at the tie-in location on Sheet C-21 (profile 5).

2. SPECIFICATIONS

3. SPECIFICATIONS – SECTION 00010 – TABLE OF CONTENTS, is revised to add the following specification section:
    1. 02361 Drilled Concrete Piers and Shafts
4. SPECIFICATIONS – SECTION 02361 – DRILLED CONCRETE PIERS AND SHAFTS, included with this Addendum is added in its entirety.
5. SPECIFICATIONS – SECTION 11215 – VERTICAL TURBINE PUMPS, paragraph 2.06.A is revised as follows:
    1. Each piece of equipment in the pumping system including pump, support system, column piping, and motor shall be prepared finish painted as specified in Division 9. Components located below grade within the wet well shall be painted in accordance with the requirements of Section 09902-2.02.B.1 and components located above grade shall be painted in accordance with the requirements of Section 09902-2.02.B.3.
6. SPECIFICATIONS – SECTION 11243 – PILE CLOTH MEDIA FILTER, is revised to delete Section 2.07 in its entirety.

7. DRAWINGS

1. The following sheets have been reissued; see attached and replace plan sheets accordingly:
    a. G-2
    b. SA-7
    c. SA-10
    d. SA-11
    e. SA-12
    f. SA-13
    g. SA-16
    h. SA-17
    i. SA-19
    j. SA-20
    k. SA-21
    l. SA-22
    m. SA-23
    n. SA-25
    o. SA-26
    p. SA-27
    q. SA-28
    r. SA-30
    s. SA-33
    t. SB-1
    u. SB-2
    v. SB-5
    w. SB-6
    x. SH-3
    y. SH-5
    z. SH-8
    aa. SH-9
    bb. SH-11
    cc. SH-12
    dd. SH-13
    ee. SI-2
    ff. SZ-1
    gg. MB-4
    hh. H-5
    ii. HA-5
    jj. HA-7
    kk. HA-8
    ll. HJ-2

mm. HJ-3
nn. HM-2
oo. HM-4
pp. HM-6
qq. HZ-3
rr. E-13
ss. E-17
tt. EA-1
uu. IH-1

8. RFP DOCUMENTS

1. Bid Package 000 – Equipment Supply
    a. ADD Bid Item N24 – Phase 1 – Anoxic Basin – Davit Crane & Base Supply
2. Bid Package 002 – Earthwork
    a. The Method of Measurement for bid item C12 has been revised to include the geotextile fabric: TenCate Miragrid 5XT Geogrid.
3. Bid Package 006 – Concrete – Effluent PS, Filtration UV, Clarifiers
    a. ADD Bid item Z15 – Phase 2 – Ter. Treatment, UV, Post Aeration, P Flume – Canopy Drilled Pier and Cap – 4 CY
4. Bid Package 010 – Yard Piping
    a. ADD Bid Item G99 – Phase 1 – 6" Forcemain Relocation from Digester No. 2 – 210 LF
    b. Bid Item quantity changes for G17, G42, G47, G51, G53
5. Bid Package 025 – Electrical
    a. ADD Bid item MM6 – Phase 1 – Site Electrical – Medium Voltage Site Electrical and Duct Banks – 1 LS
6. Bid Package 028 – Plumbing
    a. ADD Bid item C23 – Phase 1 – General Sitework – Supply & Install Site RPZ's and Enclosures

9. QUESTIONS & ANSWERS

Q1. Section 09800 para. 1.08 A. requires the Lining System installed on floors and walls of the biofilters, interior of all manholes, the Wet Well of Lift Station No. 4 and the Alum tank area. The detailed Bid Form for #20 Coatings Item I26 requires "Protective Coatings" on the Influent Channels only (plan notes state just walls) as well as Item V9 has Wet Well Coatings at the RAS PS No. 2 Meter Vault. Where does the system specified in Sect 09800 go and where is the system called out on sht MA-15 general note 4 specified?

A1. The project calls for protective epoxy coatings on the following:

- Shall be included within Bid Package 10 – Yard Piping
    - Large diameter manholes (Sheet C-43),
- Shall be included within Bid Package 20 – Coatings, Bid Item I 26
    - Walls of the Bar Screen Influent Channel (Sheet MA-3), around the location of the Alum Tote (MA-15)
- Shall be included within Bid Package 20 – Coatings, Bid Item L13
    - The walls and ceiling of the Lift Station 4 (MA-25).

  The Biofilter is a FRP tank, and its coating would be covered under Specification Sections 11350 and 11355 and not 09800.

Q2. Section 11215- Vertical Turbine Pumps- Are these pumps to be open or enclosed lineshaft?

A2. Vertical turbine pumps shall be open lineshaft.

Q3. Spec 03300 2.02I calls out C309 Type 1-D "curing compound with fugitive dye." We see this in road jobs, but typically we do not use the dyed product on finished architectural exposed walls. We would like to use Type 1 only. Is this acceptable?

A3. The proposed Type 1 curing compound without fugitive dye is not acceptable. Please refer to Specification Section 03300 Part 3.07 B Curing Methods, Sub-paragraph 1.c for use of Liquid Membrane Curing. As indicated in the referenced Section 03300 Part 3.07 B.1.c, "Curing compound shall not be placed on any concrete surface where additional concrete is to be placed, where surface coatings are to be used, or where the concrete finish requires an integral floor product." Refer to Specification Section 03300 Part 3.07 B.2e for curing method and application at formed surfaces. Exposed walls (vertical concrete) exposed to view not scheduled to receive an additional or applied finish are scheduled to receive a Rubbed Finish as indicated in Specification Section 03350 Part 3.04 B.2. Reference Specification Section 03350 Part 3.01 G for Rubbed Finish.

Q4. Using the bearing capacity of the rock set at 50,000 PSF from the geotechnical report, the ultimate capacity of the 24" Ø drilled shaft is 157 kips. Assuming an FS=2.0, the allowable load is 78.5 kips. Can you verify the loading on the drilled shafts?

A4. The Net Allowable End Bearing Pressure of 50,000 psf provided in Table 8 of the referenced geotechnical report includes a factor of safety of approximately 3 as stated in the "Drilled Pier Design Recommendation" section of the geotechnical report. The allowable end bearing for a 24-inch diameter drilled shaft is 157 kips in accordance with the geotechnical report.

Q5. Referencing Bid Package 10, bid item G21. What appurtenances will be supplied by the contractor at the Fire Department Connections at each end of the 6" NPW DI line?

A5. The bidding contractor shall supply & install all pipe, fittings, valves, and appurtenances for the 6" NPW DI line including the FDC connection.

Q6. Section 11370 Positive Displacement Blowers: C. Design Requirements: with an increase in a. Capacity should the e. Motor Hp max change?

A6. Blower capacity shall be based on the post-aeration system requirements; however, motor size shall not exceed 60 Hp.

Q7. For the AWPs, there is only one solenoid valve per unit specified and shown on the wiring diagrams. Our AWP requires 2 solenoids per unit. And there are two washer units for this project. What can we do at the bid stage to prevent an issue where the contractor is requiring us to pay for the additional wiring on the 2nd washer solenoid valve?

A7. If additional work/scope is needed for a specific equipment manufacturer, please indicate with your bid submission as a clarification.

Q8. Screen height is ~156" (152" + 4" for the 18" frame at 60 deg). Room height is ~158". We do not know the required DH to fit under the inclined screw conveyors. The distance from TOC to discharge point is 4.8 ft. Any higher will result in screen being too tall. Can we confirm the max screen height? The required clearance of the screw conveyors?

A8. The clearance between the finished floor and the roof trusses is approximately 18-feet. The other required clearances are based on specific equipment design.

Q9. Regarding Drawing EA-20: Three drives (screen, conveyor and washer) are shown going to the Bar Screen control panel. We assume that our panel will power and control the conveyor, even though we are not supplying the conveyor, and that there is one panel per system. The conduit markings do not show any additional wiring for motor thermostats or space heaters. Please confirm so that we include costs for required motor features.

A9. Include thermostats; space heaters are not required.

Q10. Regarding Section 11331, 3.20B2: what actual load must be tested (lb force)? How is this to be accomplished in the field? Who pays for the resources necessary to perform this test? If such a test is required, it may be better to perform this in the shop. We can have the panel shipped for shop testing and will have more access to supplies. Please clarify.

A10. The load is based on the equipment design as stated in Section 11331-3.02.B.2. This test may be performed offsite. The purpose of this test is to confirm that the torque overload device will protect the equipment from damage.

Q11. Regarding Section 14552, 2.08: Conveyor will be supplied with motor space heater, zero speed switch, e-stop, Tsubaki shock relay, and must be reversing (requires reversing motor starter). Are we to assume the relay must be mounted in our panel?

A11. All items necessary for control should be mounted in bar screen control panel.

Q12. Concerning 15250 Thermal Insulation for Piping, 2.03 Heat Tracing: The specified SRF Chromalox cable is commercial grade. Is industrial grade SRL acceptable? Is heat trace for freeze protection or do we need to maintain a certain temperature? What is the minimum ambient temperature of the area? Is this a hazardous or non-hazardous area? Will 1" fiberglass insulation be used on all piping?

A12. Industrial grade heat trace cabling is acceptable. Heat tracing is only for freeze protection and the minimum ambient temperature is listed on Sheet G-7. Heat tracing is located in both hazardous and non-hazardous locations but thermostats may be located in non-hazardous areas. Insulation thickness shall be sized based on application.

Q13. Will subcontractor for bid package 23 be responsible for equipment storage if the equipment arrives on-site before it can be installed?

A13. Yes, the bidder awarded bid package 23 is to coordinate with the Construction Manager for appropriate storage location on site and shall coordinate with the equipment vendor for information regarding proper equipment storage maintenance. The awarded vendor shall be responsible for performing long-term storage maintenance if required.

Q14. Plan pages MA-4, MD-2, MH-2 have SS weirs per detail M1001. Who is responsible for providing these (contractor or equipment supplier), and what bid package will it be a part of (misc. metals or equipment install)?

A14. SS Weirs, as depicted per detail M1001, shall be provided and installed as part of Bid Package 13 Misc. Metals.

Q15. Spec 11331,3.01, A: "Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufactures recommendations." Will the grades and quantity of oil and grease be provided in order for installing contractor to provide?

A15. The manufacturer shall provide the required oil and grease as directed within the equipment specifications. Oil and Grease shall be turned over to the installing contractor for installation. Bid Package 23 – Process Equipment Installation.

Q16. What equipment install bid item will the bar screen conveyors be included in?

A16. Installation is to be included in Bid Package 23, Bid Item I31 of the Request for Proposal - Subs.

Q17. Bid item I34 in the Equipment Install package is for the chemical feed system. There are no bid items in package 29 for chemical feed pipe. Note 1 on plan page MA-15 states that "Liquid Chemical Feed System Supplier shall route chemical piping...". Please confirm or clarify all chemical pipe supply and install is by the chemical system supplier.

A17. The chemical feed piping and valves between items of equipment detailed on sheet MA-15 shall be provided and installed as part of Bid Package 29, Bid Item I36. Please reference drawing sheet P-9 and specification section 11727 for scope delineation.

Q18. The specified automatic transfer switches cannot be quoted on this job because Thomson, the specified product, does not meet the Buy American Iron and Steel Act. A different product will be quoted, and the dimensions will be different from the specified Thomson version. Is this acceptable?

A18. Automatic Transfer Switches are not included under the American Iron and Steel requirements per the RLF Supplemental Conditions.

Q19. Will the wood cabinets in the break room, breakroom dining, and bathrooms be stained and the same cabinets as what we are doing in the Lab 101? Those get P-lam tops, so want to make sure those cabinets are wood and not P-Lam as well.

A19. Cabinetry outside of the lab is Specified in Section 06400 Interior Architectural Woodwork.

Q20. Will the fiberglass biotrickling filter vessel arrive from the manufacture with the outer insulation or will that be installed by the contractor?

A20. The insulation is bonded to the vessel shell in the manufacturer’s shop prior to delivery on site.

Q21. Which bid package is to be responsible for the hatch’s PVC drain pipe and stainless supports?

A21. Bid Package 13 Miscellaneous Metals shall be responsible for supply of all hatches. Hatches are to installed by as part of Big Package 5, 6, 7, or 8. PVC Drain piping shall be supplied and installed as part of

Bid Package 10 or 29, depending on location & type of drain. Stainless Steel pipe supports shall be provided and installed as part of Bid Package 29.

Q22. MB-4 shows (9) 12in cores in the wall, SB-6 calls out (9) 24in cores, which is correct. Please confirm this is correct and will take place on interior east wall (there is no section view of that wall). Please also confirm which bid package this will be in.

A22. Nine (9) 24-inch diameter cored wall penetrations at invert elevation 1135.75' as detailed in Section 7/SB-6 are correct along Gridline 5. Since the BNR Basin is symmetrical about Gridline 9, nine (9) 24-inch diameter cored wall penetrations will also have to be installed along Gridline 13 mirroring those to the west. Wall cores are to be bid in Bid Package 5, Bid Item N6.

Q23. Sheet E-17, issued in Addendum #3, shows the location of the south directional bore for the incoming primary electrical service. The length is noted to be 250 LF +/-, but the actual length appears to be closer to 650 LF. Please clarify the length required for this directional bore.

A23. A revised version of Sheet E-17 has been issued as part of this Addendum correcting the bore length.

Q24. For termite control purposes, please provide clarification on what defines a building.

A24. The Administration/Lab Building and the Maintenance Building are the only structures that require termite protection.

Q25. In the coating section 09900, it points to the pump section for "protective coatings" which then points back to the coating section. I can't find an explicit requirement for an epoxy coating for the pump. The closest thing I could find is 2.06.B in the pump section (11215) which just requires a "protective coating", though it doesn't detail what will satisfy this requirement. Will the standard shop enamel suffice or is the engineer looking for an epoxy coating such as a Tnemec or Skotchkote?

A25. Section 11215-2.06.A will be revised as part of this Addendum to clarify that the portion of the pump located inside of the wet well shall be painted in accordance with the requirements of "Ductile Iron Subject to Submergence or Splashing," and the portions of the pump located above grade shall be painted in accordance with the requirements of "Interior Non-Submerged Ferrous Metals".

Q26. Specification 05500 - 2.10 (A) States that "Hatches shall have a 1/4-inch aluminum channel frame with a perimeter anchor flange or strap anchors for concrete embedment around the perimeter" Volume 2 of Plans Sheet SA-12 (Keynote No.1) calls out a S1R3636 by Haliday products. The S1R series does not have a channel frame. Please advise.

A26. Keyed note 1 on Sheet SA-12 will be revised for a hatch with channel frame.

Q27. Specification 05500 - 2.10 (A) States "The doors shall be 1/4-inch aluminum diamond plate with welded stiffeners, as necessary to withstand either AASHTO H-20-wheel loading or a live load of 300 pounds per square-foot as indicated on the drawings." Please advise what Hatches would require H20 loading if any.

A27. Hatches that require the H-20 load are designated on the structural drawings for each structure. Hatch model numbers with a letter designation “H” in the model number indicates the H-20 wheel loading requirement. H-20 rated hatches are located at the following structures:

- Existing RAS Pump Station Flow Meter Vault No. 1 (Sheet SD-7)
- Existing RAS Pump Station Flow Meter Vault No. 2 (Sheet SD-8)
- Wasting Meter Vault (Sheet SG-1)
- Blower Building Valve Vault (Sheet SK-1)
- Digester No. 4 and 5 Valve Vault (Sheet SK-3)
- Digester No. 4 Valve Vault (Sheet SK-4)
- Digester No. 5 Valve Vault (Sheet SK-6)

Q28. Section 2.15 power circuit monitor states where shown on the drawings to provide a power monitor on the incoming main. These are not shown on any of the MCC drawings. Please confirm whether these are required or are not required in these MCCs?

A28. The technical specification has a paragraph for the power circuit monitor for application when used in the MCC. In this project, the power circuit monitors are located in the Switchboards SWBD-INF and SWBD-EFF and not in the MCCs.

Q29. 2.14 TVSS - A. states MCC shall be provided with a TVSS (surge protection device), but these are not shown on the MCC drawings. Please confirm if these are required and if they will be using space in the MCC.

A29. The technical specification has a paragraph for the TVSS for application when used in the MCC. In this project, the TVSS are located in the Switchboards SWBD-INF and SWBD-EFF and not in the MCCs.

Q30. Section 11350 Odor Control Systems, paragraph 2.07D.1 mentions that the motor starters of the odor control fans are to be in the MCC. However, the next paragraph 2.07D.2 mentions that each control panel shall provide electrical control for the fan and motor driven dampers. Can you clarify if we are providing the motor starters for the fan?

A30. Motor starter for the odor control fan shall be in the MCC. This is indicated in DS1 at the end of 11350. There are not motor operated dampers to control.

Q31. Reference specification 2634 HDPE. Paragraph 2.02 does not state pressure class and wall thickness. Is green-striped pipe necessary? This can affect availability and lead time.

A31. HDPE shall be DR9. Green-striped pipe is not required.

Q32. Regarding the compressed air pipe from compressors to BNR basins. Spec section 11631, 2.02, B, 1; requires SS press technology system (Victaulic, Viega, or equal). Spec section 15064, 2.01, B; requires SS sch. 10 welded pipe. Please clarify.

A32. Specification Section 15064-2.01.B is in reference to aeration air piping **not** compressed air piping. Specification Section 15064-2.01, C and E are for the compressed air system. SS press technology systems listed are to be used for the compressed air supply and distribution piping as stated in Spec section 11631.

Q33. Regarding Spec 11243.C.2.a-d: Confirm if the field service requirements are in addition to the service requirements specified in article 2.03A.1.q.7 of this specification.

A33. Section 11243-2.03-A.1.q.7 is inclusive of the requirements of Section 11243-1.05.C.2.

Q34. Regarding Spec 11243, Filter Assembly: can the wafer style butterfly valves be changed to plug valves, per the manufacturer's recommendation?

A34. Plug valves are an acceptable alternative to the specified wafer-style butterfly valves.

Q35. Regarding Spec 11243, Backwash Pumps: Can the spherical solids minimum for the backwash pumps be changed from 1 inch to 2 inches?

A35. A 2-inch minimum solid requirement for the Backwash Pumps is acceptable.

Q36. Regarding Spec 11243: Can the Manufacturing Qualifications in 2.07.A. be changed to mirror the Manufacturing Qualifications in 1.06.B?

A36. Section 2.07 is redundant and will be deleted as part of this Addendum.

Q37. Regarding Spec 11243, 3.06C: Can the performance requirements be changed as follows: "The performance requirements of the filtration process will be met when the system produces average effluent TSS less than or equal to 5 mg/L over the 3-day test at the average design flow condition and an average effluent TSS less than or equal to 5 mg/L over the 2-day test at the peak design flow condition on a continuous basis. If an individual sample appears anomalous, defined as more than 20% above the

average of all other samples, that sample shall be stricken from inclusion in determining the average effluent TSS during that test period. A test report summarizing the data collected during the performance test shall be provided to the Engineer no later than 3 weeks after the final sample for the performance test was collected."

A37. No.

Q38. Regarding Section 11280, 2.02 B & E: 200 lbs effort on handwheel is excessive, AWWA states the design should be for 80lbs. This in conjunction with “The anchor bolts shall be sized to transfer the upward or downward thrust required to ultimately fail the stainless-steel stem” may require very large anchors. Please review.

A38. Per Section 11280-2.02.B, the maximum effort on the handwheel shall be 40 lbs., but the lift mechanism shall be designed to withstand an effort of up to 200 lbs. without damage.

Q39. Our manufacturers are needing clarification regarding the warranty period start date and extended warranty coverage. Based on my understanding of the specifications, most of the mechanical equipment is asking for 24-month warranty following substantial completion. Electrical equipment is 12-24 months following substantial completion, and some products are requiring a 5-year pro-rated warranty following substantial completion. The major concern is we are assuming all the equipment for the project will be ordered as soon as possible to avoid price increases year over year. With a 4-year construction timeline this would mean some of the individual items will not be installed and put into service until the later part of construction in 2027-2028. This leaves us to assume the equipment will be stored between delivery of the equipment and startup. Every manufacturer typically starts the warranty upon ship date or startup, but startup must take place within 6-12 months of shipment. If startup does not take place within that time frame, then the warranty start date reverts back to the ship/delivery date of the equipment. Manufacturers will offer extended warranty options, but the price goes up per year it is extended. Some of these valves will be put in very quickly while others will be stored long term until they are ready to be installed. We don’t want to add Extended warranty cost to all valves (increasing the overall bid price) when the early construction installed valves will meet the warranty under the specs. Please clarify the following:

- Warranty Start Dates of equipment based on individual equipment startup and/or beneficial use.
- Long term storage requirements of individual equipment either onsite by the CMAR or at the manufacturer/equipment supplier.
- If the manufacturer or equipment supplier is expected to provide storage following the order, can the equipment be invoiced as stored material?
- Will equipment all be ordered and released following approved submittals or will they be held and released based on construction schedule.
- If held tariffs and material cost could change the equipment price from bid day.

A39. See bullets below corresponding to your bulleted questions:

- Warranty Start Dates of equipment based on individual equipment startup and/or beneficial use.
    - Warranty will not start for an individual piece of equipment until the following has been completed.
        - Startup/Commissioning has been accepted by the owner and engineer of record.
        - The individual piece of equipment is under beneficial use by the owner.
        - Substantial Completion Request has been submitted by the CMAR and approved by the owner and engineer of record.
- Long term storage requirements of individual equipment either onsite by the CMAR or at the manufacturer/equipment supplier.
    - Storage on site shall be coordinated with the Construction Manager. Storage space is limited. The limitation of storage may require the manufacturer to store at
- If the manufacturer or equipment supplier is expected to provide storage following the order, can the equipment be invoiced as stored material?
    - Yes, as long as the equipment is stored in an insured, bonded facility. Documentation required by the specifications must be provided.
- Will equipment all be ordered and released following approved submittals or will they be held and released based on construction schedule.
    - Equipment will be ordered and released upon approved submittals. Further discussions can be had with the Crossland Heavy field team if certain pieces of equipment need to be released based on construction schedule if there is benefit to the project in doing so.
- If held tariffs and material cost could change the equipment price from bid day.
    - Please bid the project accordingly.

Q40. Section 11350 Odor Control Systems, paragraph 2.07D.3 mentions that the control panel shall be FRP construction and shall be rated NEMA 4X. Can we supply 304SS instead of FRP?

A40. 304 SS is acceptable.

Q41. Section 11355 Odor Control Biotrickling Filter, paragraph 2.06K.4 mentions that the water box enclosure shall have a NEMA rating suitable for the location or shall be NEMA 4X FRP if located in unclassified area. Can we supply 304SS instead of FRP?

A41. 304 SS is acceptable.

Q42. P&ID drawing P-10 does not show a local control panel but there are multiple specification sections and mechanical drawings (MA-17 to MA-20) that show a local control panel. Can we get an updated P&ID that includes the control panel?

A42. The Odor Control System Local Control Panel shall include all required I/O and/or programming to automatically operate the system within the dashed line box shown on Sheet P-10 and as specified in section 11350. The Local Control Panel shall provide dry contacts to the Motor Control Center to call the Odor Control Fan, Nutrient Pump, and Recirculation Pump for operation. The Local Control Panel shall provide dry contacts or PLC Ethernet communication for monitoring of alarm/status of all discrete and analog signals within the system.

Q43. P&ID drawing P-10 shows that the dampers are outside of our scope. Can you confirm if we are to supply these dampers or if they are by others? Also, it is unclear if these dampers will be electrically actuated since there is no control panel shown in P&ID drawing P-10, can we get clarification on this as well?

A43. Everything inside the dashed box on P-10 will be supplied by the odor control system supplier and installed by the contractor. Everything outside the dashed box needs to be supplied and installed by the contractor, which includes all the dampers. None of the dampers will be electrically actuated. They are all manually actuated as indicated in the schedule in section 11357.

Q45. In section 11154-6 the Submersible Horizontal Propeller Pumps, it specifically calls out the Flygt 4660, but then it calls for them to be epoxy coated. Those pumps are stainless steel. Will this be acceptable?

A45. Epoxy coating is only for non-stainless steel parts, if any, as noted in Section 11154-2.07.D.1.

Q46. Is the FRP building for the effluent sampling station install part of bid item Z21?

A46. Yes.

Q47. In the equipment installation bid package, could you please clarify the difference between bid items AA27 and OO12, as they are both for vertical turbine pumps (spec section 11215 and 11216 respectively), but spec 11216 does not appear to be included?

A47. In Addendum 3, bid item OO12 was added to cover sump pump installation: OO12 – Phase 1 – EX RAS Pump Station No. 1 Meter Vault No. 1 and No. 2 – Sump Pump Install – 1 LS.

Q48. Bid items in the equipment supply for sump pump install (example M12, P18, V12) is for the installation of a supplied sump pump. There is no bid item in the process pipe package for the piping of these sump pumps specifically. Will sump pump discharge pipe material and install need to be included in the equipment install bid items, or should it be added to the associated process pipe install bid item?

A48. The piping for sump pumps is part of the process pipe package, same as any other pump. Once it leaves the structure (if it does) it will be part of yard piping.

Geotechnical Engineering Report

Bentonville Water Resource Recovery Facility Improvements

1901 Northeast A Street
Bentonville, Arkansas
GTS Project No. 23-15134***-R3***

February 9, 2024
Revised May 7, 2025

Prepared For:

Hawkins-Weir Engineers, Inc.
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Fayetteville, Arkansas

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February 9, 2024
Revised May 7, 2025

Hawkins-Weir Engineers, Inc.
438 East Millsap Road
Fayetteville, Arkansas 72703

Attention: Mr. Brett D. Peters, P.E.

RE: Geotechnical Engineering Report
Bentonville Water Resource Recovery Facility Improvements
1901 Northeast A Street
Bentonville, Benton County, Arkansas
GTS Project No. 23-15134-***R3***

Mr. Peters:

This report provides the results of the subsurface exploration, laboratory testing, and geotechnical engineering analysis performed for the planned improvements detailed herein. The property evaluated by this report is located at the existing Bentonville Water Resource Recovery Facility located at 1901 Northeast A Street in Bentonville, Arkansas. The approximate boundaries of the project site are shown in Figure 1 within this report.

It should be noted that this report has been revised to provide micropile recommendations for the planned Anoxic Basins, recommendations for the planned building at the adjacent compost facility, provide clarity on allowable backfill materials, and provided drilled pier recommendations for the planned Influent Structure. Any changes or additions to the original report have been bolded and italicized. We appreciate the opportunity to be of assistance to you on this project. We encourage retaining GTS, Inc. to be involved in any pre-bid and pre-construction meetings to allow us to discuss the following findings and recommendations. Please contact us if further explanation or clarification is required for portions of the report.

Sincerely,

GTS, Inc.
Geotechnical & Testing Services

Certificate of Authorization No. 1251, Expires 12/31/2025

Nathan Love

Nathan Love, E.I.
Geotechnical Associate

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PROJECT DESCRIPTION and INFORMATION

Introduction

Our services were performed in accordance with GTS, Inc. (GTS) Proposal No. GTS123061-R1, authorized by Mr. Brett D. Peters, President and CEO of Hawkins-Weir Engineers, Inc. (HWEI), on November 16, 2023. The intent of the authorized scope of services was to explore the subsurface soil/rock conditions at the project site in order to prepare recommendations for designing and constructing the planned building foundations, floor slabs, mass grading, and pavement section alternatives.

The Scope of Work (SOW) provided in this report pertains to the evaluation of 24 new structures, including structure replacements, building additions, and completely new structures. Our currently authorized scope of services included evaluating the subsurface conditions at 26 boring locations, identified as Borings B-1 through B-26, to depths of about 10 to 40 feet below existing grades. It should be noted that each boring was performed in accordance with the request for proposal (RFP) document provided to GTS and referenced below, except for Borings B-7 and B-25. Boring B-7 was cancelled due to access constraints and B-25 was cancelled due to the presence of buried utilities. Both Borings were canceled at the direction of HWEI. A temporary piezometer was installed at both Borings B-5 and B-15 upon completion of those borings.

- **Request for Proposal, titled "Geotechnical Investigation and Report – Bentonville Water Resource Recovery Facility Improvements – HWEI Project No. 2021037", prepared by Hawkins-Weir Engineers, Inc., and dated October 5, 2023.**

Additionally, GTS performed two (2) borings not included in the original SOW (B-27 and B-28). These borings were performed on either side of a planned bridge for the proposed Secondary Access Drive at the north end of the project site. Borings B-27 and B-28 were both extended to 30 feet below existing grades as requested via an email from Mr. Craig Hardin, P.E. (HWEI) on December 21, 2023.

Further, it should be noted that after the issuance of the original version of this report, GTS was authorized to perform two (2) additional borings (B-29 and B-30) to a depth of 30 feet below existing grades or auger refusal, whichever was least via an email from Brett Peters, P.E. (HWEI) on March 18, 2024. The intent of these additional borings was to provide micropile recommendations for the planned Anoxic Basins. Boring B-29 was performed near the northwest corner of the planned Anoxic Basins and Boring B-30 was performed near the northwest corner of the planned new headworks, as shown in the attached Boring Location Diagrams.

Finally, after the issuance of the first revision of this report, GTS was authorized to perform two (2) additional borings (B-31 and B-32) to a depth of 15 feet below existing grades or auger refusal, whichever was least via an email from Josh Durham, P.E. (HWEI)

on October 11, 2024. The intent of these additional borings was to provide foundation and mass grading recommendations for the planned building located at the adjacent Compost Facility, which is located within the boundaries of the property identified in the remainder of the report.

Our currently authorized scope of geotechnical engineering services will be concluded with the issuance of this Geotechnical Engineering Report.

Project Site

The project site is within the existing Bentonville Water Resource Recovery Facility (Bentonville WRRF) located at 1901 Northeast A Street in Bentonville, Arkansas. Improvements to the existing facility are planned throughout the facility and will surround the existing structures on site. These improvements are discussed in more detail below.

The general boundary of the planned structures is shown in yellow in Figure 1 below.

Figure 1 - General Boundary of the Project Site

Background Information

Improvements to the existing Bentonville WRRF have previously been performed in 1960, 1982, 1999, and 2002. We were provided with the drawings, referenced on the following page, that include drawings from the previous improvements. These drawings show that two (2) previously existing lagoons were located on the north end of the project site. The South Lagoon was situated within the facility now occupied by the Final Clarifier No. 1 and 2 structures and extended to the northern extent of the current Aeration Basin No. 1 and No. 2 structures. The North Lagoon extended from the approximate footprint of the existing Anoxic Basins and extended into the field north of the basins. See Figure 2 for the approximate boundaries of the previously existing lagoons (outlined in yellow) and Figure 3 for an excerpt of the 1960 drawings of the existing facility. The lagoons had bottom elevations ranging from 1118 and 1123 feet above Mean Sea Elevation (MSE).

Additionally, GTS was informed that the existing Clarifiers No. 1 and No. 2, Sludge Pump Station, Clarifier Division Box, and Aeration Basins were constructed as part of the 1982 improvements project. As part of the 1999 improvements, the North Lagoon was filled in and the Anoxic Basins were constructed north of the Aeration Basins within the footprint of the North Lagoon. Finally, we understand that the improvements in 2002 included the construction of asphalt pavements in various places within the facility as well as adding or modifying structures to the existing layout of the facility.

- **Sheets 12 and 16 of 25, titled "Sewerage Improvements Treatment Plant and Sewers – Bentonville, Arkansas", dated January 1960, and prepared by L.M. McGoodwin Consulting Engineer.** More specifically, GTS was provided with drawings of the improvements that took place in 1960.
- **Sheet 4 of 66, titled "Wastewater Interceptor and Treatment Facilities – Bentonville, Ark. – Contract Section I", dated January 1982, and prepared by McGoodwin, Williams and Yates, Inc.** More specifically, GTS was provided with drawings of the improvements that took place in 1982.
- **Sheet L19, titled "Upgrading Wastewater Collection, Transport and Treatment Facilities", dated November 1992, and prepared by McGoodwin, Williams and Yates, Inc.** More specifically, GTS was provided with an aerial image of the site from 1992.
- **Sheet C1, titled "Upgrading Wastewater Collection, Transport and Treatment Facilities", dated August 16, 2002, and prepared by McGoodwin, Williams and Yates, Inc.** More specifically, GTS was provided with drawings of the improvements that took place in 1982.
- ***A single document titled "Soils Boring Locations – Bentonville Water Resource Recovery Facility Improvements", dated March 2024 and prepared by HWEI. More specifically, GTS was provided with the boring locations for Boring B-29 and B-30.***
- ***A single page, titled "Soils Boring Locations – Bentonville Water Resource***

Recovery Facility Improvements", dated October 2024, and prepared by HWEI. This document provides the requested boring locations for Borings B-31 and B-32, along with the outline of the proposed Maintenance Building.

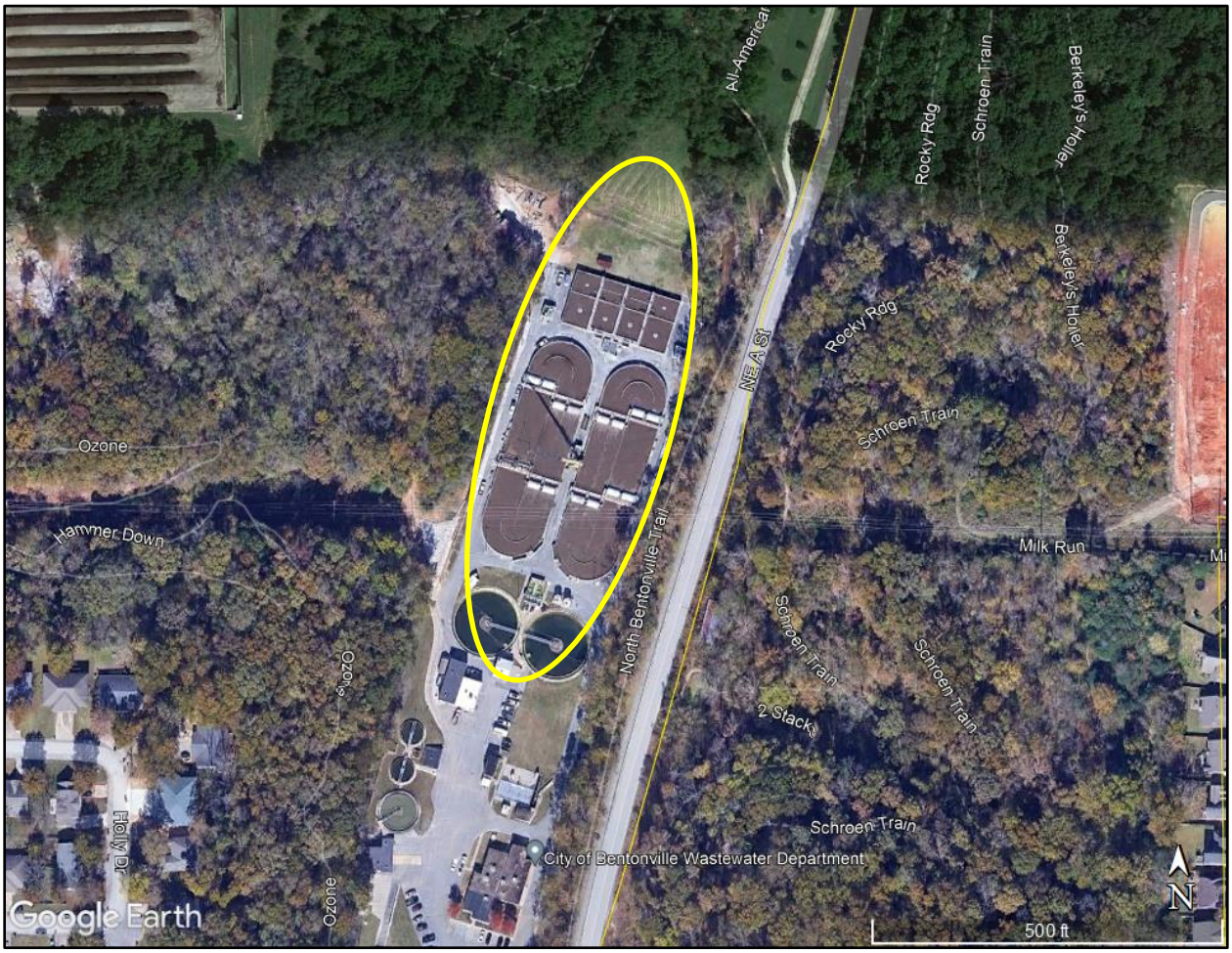


Figure 2 - General Boundary of Previous Lagoons

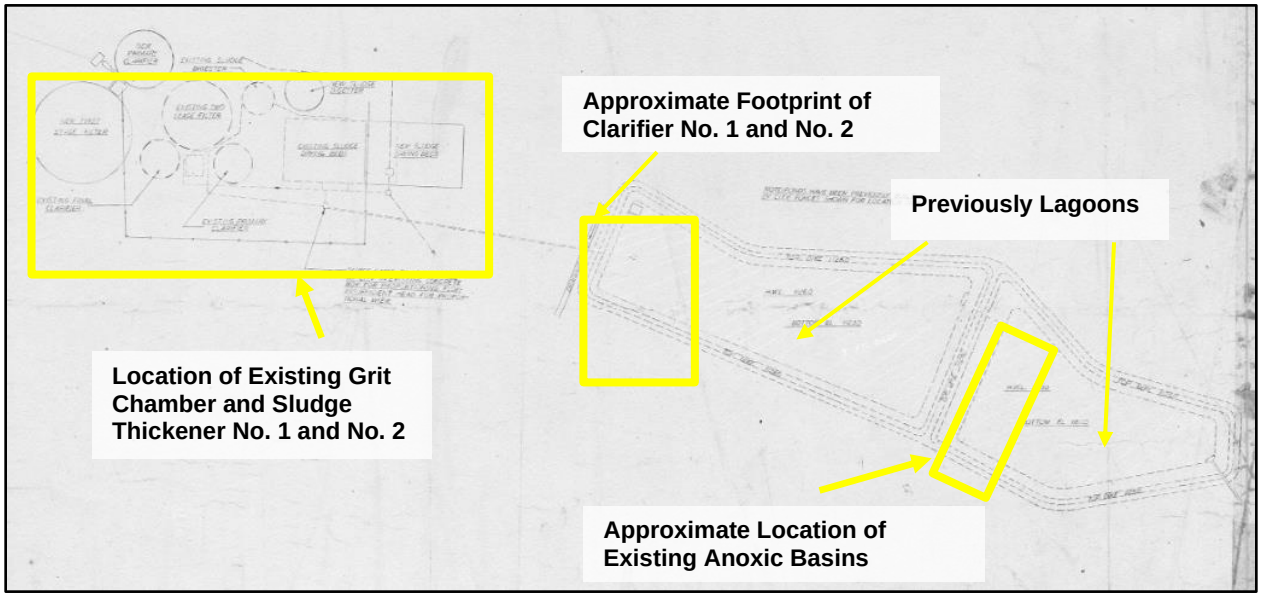


Figure 3 – Excerpt from the referenced plant drawings dated January 1960

Planned Structures

As stated in the introduction, our current understanding of the project is based on the RFP document received from HWEI, dated October 5, 2023, requesting geotechnical engineering services for the planned WRRF improvements as well as the referenced email on December 21, 2023, requesting additional services for the planned bridge on the north end of the project site. The information contained within the RFP as well as further email communication between GTS, Inc. (GTS) and HWEI on December 1, 2021, was used to prepare this report.

Briefly, it is our understanding that the planned improvements will include the improvements/additions of the structures included in Table 1.

Table 1: Summary of Anticipated Planned Improvements

Building(s)	Slab FFE (Feet)	Cut (-)/ Fill (+) Estimates (Feet)	Description
Influent Meter Vault	1127.0	-12 to -11	Below grade, reinforced concrete structure
Headworks	1120.7 and 1138.0	-21.5 to +6	Below grade, reinforced concrete structure with an enclosed building above
Headworks Odor Control	1133.0	-7 to +3	Slab on grade equipment area, with a retaining wall along the west and south perimeter
Headworks Electrical Building	1133.5	+3 to +4	Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade

Building(s)	Slab FFE (Feet)	Cut (-)/ Fill (+) Estimates (Feet)	Description
Lift Station No. 3	1111.0 and 1124.0	-16 to -3	Reinforced concrete wet well and valve vault, below grade
Anoxic Basins	1124.0	-6 to -2	Reinforced concrete structure, partially below grade
Plant Influent Meter Vault	1123.0	-13 to -11	Reinforced concrete structure, below grade
Flow Diversion Structure	1131.0	-5 to -3	Reinforced concrete structure, partially below grade
Wet Weather Meter Vault	1123.0	-13 to -11	Reinforced concrete structure, below grade
Chemical Feed Building and Tank Pad	1133.5	-2.5 to -0.5	Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade
Surface Wasting Pump Station	1119.0 and 1124.0	-14 to -7	Reinforced concrete wet well and valve vault, below grade
Secondary Clarifier Distribution Box	1122.0	-12 to -10	Reinforced concrete structure, below grade; to be constructed following demolition of portion of existing box
Secondary Clarifier No.1 and No. 3	1115.6 and 1119.3	-16.5 to -11	Reinforced concrete structure, below grade, center pier, Clarifier No. 1 to be constructed after demo of existing 90-ft diameter clarifier
RAS Pump Station No. 2	1115.5	-18.5 to -16.5	Reinforced concrete wet well structure, partially below grade
Wasting Meter Vault	1125.5	-9.5 to -7.5	Reinforced concrete structure, below grade
Tertiary Treatment and UV	1117	-17 to -15	Reinforced concrete structure, with steel framed canopy roof, below grade, north half of the structure
Post-Aeration	1108.5	-25.5 to -23.5	Reinforced concrete structure, with steel framed canopy roof, below grade, south half of the structure
Parshall Flume Structure	1114.8	-19 to -17	Reinforced concrete structure, with steel framed canopy roof, below grade, southeast corner of the structure
Post-Aeration Blower Building	1133.5	-0.5 to +1.5	Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade

Building(s)	Slab FFE (Feet)	Cut (-)/ Fill (+) Estimates (Feet)	Description
Effluent Pump Station	1108.0	-26 to -24	Reinforced concrete structure, below grade
Electrical Building	1133.5	-0.5 to +1.5	Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade
Administration/Lab Building Additions	1334	-1 to +1	North side – Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade, matching existing grades West side – Covered patio area
Blower Building Valve Vault	1127.7 and 1136.5	-10.5 to +0.5	Reinforced concrete structure, below grade, valve vault adjacent to existing blower building
Digester No. 4 & No. 5 Valve Vaults	1125.3 and 1129.5	-14 to -7.5	Reinforced concrete structure, below grade, constructed adjacent to existing digesters with top of footing elevation of 1129.5 ft
Vehicle Storage Building and Equipment Storage Buildings	1133.5	-4.5 to -2.5	Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade
Compost Facility Maintenance Building	***Unknown***	***-1 to +1***	***Assumed: Reinforced concrete masonry with brick veneer, continuous foundation, stem wall with interior slab on grade, matching existing grades***

Additionally, we understand that two (2) retaining walls will be constructed for the Headworks Odor Control equipment and the drive that wraps to the west of the planned Tertiary Filter building. Finally, as discussed previously, we understand that a new access drive will be constructed connecting the north end of the WRRF to Northeast A Street and that a new bridge will be constructed that crosses Town Branch Creek.

No structural loading information is currently available for these structures; Once loading information is available, GTS should be provided this information and allowed to amend the recommendations outlined in this report, if necessary.

It is our understanding that total long-term settlement for the new structures should be limited to 1 inch and that allowable differential settlement should be limited to ½ inch across any planned structure footprint.

It should be noted that proposed improvements related to the installation of retaining walls are currently outside our scope of services, other than providing lateral earth pressures for any below-grade walls.

Planned Pavements

Prior to the issuance of this report, GTS has not been provided with any traffic loading design information. Therefore, in lieu of project specific loading, we have necessarily assumed traffic loading to calculate the pavement sections shown in this report. The assumed traffic loading values should be evaluated by the design team prior to use of the pavement sections provided in this report.

Planned Site Grading

Topographically, the project site is relatively flat (approximately 18 feet of topographic relief in 1,700 linear feet), with the site sloping downward from south to north. We understand that final grading is not available prior to the issuance of this report. However, preliminary FFEs were provided in the referenced RFP document. Utilizing the preliminary FFEs as well as 2-foot contours provided by Benton County, we were able to determine the preliminary cut and fill estimates presented in Table 1. Once final grading information is available, GTS should be provided with this information for review and to amend the recommendations outlined in this report, if necessary.

SUMMARY of SUBSURFACE FINDINGS

Geology

Based on the available geologic maps, the project site is located in the geologic unit mapped as the Boone Formation (Mb). The following description of this unit was obtained from the Stratigraphic Summary of Arkansas (Arkansas Geological Commission IC-36, 2004):

> The Boone consists of gray fine to coarse grained fossiliferous limestone interbedded with chert. Some sections may be predominantly limestone or chert. The cherts tend to be dark in color in the lower part of the sequence and light in color in the upper part of the section. The quantity of chert varies considerably both vertically and horizontally. The Boone is well known for dissolutional features such as sinkholes, caves, and enlarged fissures. The thickness of the Boone is 300 to 350 feet in most of northern Arkansas.

Residual soils resulting from weathering of the Boone Formation typically consist of lean clays, lean to fat clays, and fat clay soils with varying amounts of chert gravel. Deeper soils usually classify as clayey gravel soils due to the increased chert content of the soil with depth. The subsurface conditions encountered at the boring locations is consistent with the Boone Formation overburden soils.

The subsurface soil and rock conditions encountered at the boring locations are consistent with the Boone Formation.

Surface

At the time of the field exploration, the boring locations were performed in areas of grass cover, asphalt pavement, and gravel cover. The surface type and thickness of the surface materials are identified on the boring logs provided in Appendix A of this report.

Subsurface Conditions

Existing Fill

Existing/possible fill materials were encountered at 19 of ***30*** performed boring locations. The locations where the fill was encountered, depths to which it extended, and the Standard Penetration Test (SPT) N-values recorded within the fill are summarized in Table 2. The boring locations where Existing/Possible Fill materials were not encountered are omitted from Table 2. Generally, the fill materials consisted of a combination of silt, clay, sand, and gravel soils having low to high (generally moderate) shear strength. SPT N-values ranged from 2 to 60 blows per foot (bpf) where encountered. The fill was identified as such due to discoloration of the material as well as a generally “jumbled” appearance.

Table 2: Existing Fill Material Locations

Boring Number	Depths to/Elevation of Bottom of Existing Fill (feet below existing grade)	Range of SPT N-Value (blows per foot)
B-4	***2 / 1123.59***	31
B-5	***13 ½ / 1116.12***	17 to 60
B-6	***5 ½ / 1121.58***	17 to 24
B-8	***8 ½ / 1125.2***	10 to 26
B-9	***8 ½ / 1123.85***	7 to 14
B-10	***9 ½ / 1122.26***	9 to 16
B-11	***3 ½ / 1128.59***	9 to 12
B-12	***10 / 1128.93***	7 to 32
B-13	***5 / 1127.81***	14 to 20
B-14	***5 / 1127.29***	2 to 11
B-15	***4 / 1128.88***	8 to 10
B-16	***4 ½ / 1128.83***	8 to 17
B-17	***8 ½ / 1124.32***	7 to 15
B-18	***2 / 1130.37***	13
B-19	***2 / 1130.12***	18
B-20	***2 / 1129.66***	22
B-21	***1 ½ / 1132***	No full N-value recorded
B-24	***13 ½ / 1123.36***	2 to 5
B-26	***11 ½ / 1125***	11 to 22

Stratum I – Silts, Clays, Sands, and Gravels

A relatively thin stratum of native, interbedded, fine-grained and coarse-grained soils was typically present beneath the site surface or the existing fill, where encountered. Stratum I materials were not encountered at Borings B-12, B-24, or B-26. These native soils were found to be highly variable in terms of both composition and shear strength. The fine-grained soils included lean clays, fat clays, and silts, all with varying amounts of sand and gravel. The coarse-grained soils included sands and gravels with varying amounts of silt and clay. These soils were derived from the in-place weathering of interbedded chert and limestone associated with the Boone Formation

as well as being deposited by Town Branch Creek that flows south to north on the eastern boundary of the project site.

The native soils extended to approximate depths of 11 to 24 feet below existing grades, at which depths a bedrock stratum was encountered, except for Borings B-1, B-3, B-5, B-21, B-22, ***B-31, and B-32*** where the soils extended to the terminal depths of the borings.

As noted above, the Stratum I soils had variable shear strength during drilling and sampling ranging from very low to moderate, but were generally moderate. N-values ranged from 2 to ***62*** bpf for these soils. Additionally, hard chert seams, layers, and possibly boulders were intermittently encountered within the Stratum I soils having SPT N-values of 50 per 2 to ***5*** inches of penetration.

Stratum II – Limestone

Limestone bedrock was encountered directly underlying the Stratum I soils and possible fill materials at 20 of the ***30*** performed boring locations. The borings were extended into the limestone to termination depths of about 15 to 40 feet below existing grades. The limestone bedrock was intensely to moderately weathered and soft to very hard where encountered.

At 18 of the ***30*** performed boring locations, auger refusal materials were encountered and then continuously sampled for about 2 ½ to 23 feet with an NQ-sized, double-barrel wireline coring assembly and a diamond-impregnated core bit. The auger refusal materials consisted of limestone bedrock. The rock cores had recoveries ranging from 45 to 100 percent. The Rock Quality Designation (RQD) of the rock cores ranged from 0 to 75 percent. No discernable voids were encountered during rock coring.

A laboratory compressive strength test was performed on relatively intact samples approximately every 5 feet of rock core recovered, where possible. The compressive strength of the tested core specimens is reported in Table 3 as well as on the boring logs located in Appendix A of this report.

Table 3: Limestone Bedrock

Boring Number	Depth/Elevation Encountered (feet below existing grade)	Termination Depth/Elevation (feet below existing grade)	Compressive Strength Range (psi)
B-2	***11 / 1117.11***	***26 / 1102.11***	7,950 to 23,670
B-4	***21 ½ / 1104.09***	***31 / 1094.59***	15,210 to 18,950
B-6	***18 ½ / 1109.08***	***23 ½ / 1103.58***	N/A
B-8	***18 / 1115.7***	***19 / 1114.7***	N/A
B-9	***18 ½ / 1113.85***	***35 / 1097.35***	5,080 to 21,150
B-10	***19 / 1112.76***	***37 / 1094.76***	3,910 to 10,090

Boring Number	Depth/Elevation Encountered (feet below existing grade)	Termination Depth/Elevation (feet below existing grade)	Compressive Strength Range (psi)
B-11	***19 / 1113.09***	***36 / 1096.09***	9,430 to 10,630
B-13	***17 ½ / 1115.31***	***40 / 1092.81***	8,440 to 31,880
B-14	***18 ½ / 1113.79***	***40 / 1092.29***	4,580 to 17,800
B-15	***17 ½ / 1115.38***	***40 / 1092.88***	6,702 to 12,288
B-16	***17 ½ / 1115.83***	***40 / 1093.33***	5,995 to 7,334
B-17	***17 / 1115.82***	***40 / 1092.82***	9,120 to 25,370
B-18	***16 / 1116.37***	***35 / 1097.37***	7,780 to 16,050
B-19	***13 ½ / 1118.62***	***36 / 1096.12***	6,505 to 17,420
B-20	***13 ½ / 1118.16***	***36 / 1095.66***	2,040 to 22,410
B-23	***13 ½ / 1122.58***	***20 / 1116.08***	3,888
B-24	***13 ½ / 1123.36***	***20 / 1116.86***	Sample Disturbed
B-26	***13 ½ / 1123***	***15 / 1121.5***	3,507
B-27	***13 ½ / 1105.46***	***30 / 1088.96***	9,153
B-28	***19 / 1100.08***	***30 / 1089.08***	3,350 to 8,476
B-29	***27 / 1099.35***	***27 / 1099.35***	***N/A***
B-30	***22 / 1112.11***	***22 / 1112.11***	***N/A***

Auger Refusal/Hard Drilling Conditions

Hard drilling and auger refusal conditions were generally encountered near the upper extents of the Stratum II bedrock. Additionally, hard drilling conditions were encountered periodically within the existing fill materials and Stratum I soils on hard seams or layers of chert as well as possible boulders. Hard drilling conditions were encountered at depths as shallow as about 1 ½ feet below existing grades. Hard drilling conditions were also encountered at depths as deep as ***27*** feet below existing grades.

Auger refusal material was encountered at most boring locations. Where auger refusal occurred, it occurred at depths of about 6 to 40 feet below existing grade.

The depths to hard drilling conditions and the depths to auger refusal at the performed boring locations are summarized in Table 4.

Table 4: Depths to Hard Drilling Conditions and Auger Refusal Material

Boring Number	Depths/Elevation to Hard Drilling Conditions (feet below existing grade)	Depths/Elevation to Auger Refusal Material (feet below existing grade)
B-1	***14 / 1118***	***Not Encountered Above 20 Feet***
B-2	***4 ½ / 1123.61***	***11 / 1117.1***
B-3	***13 ½ / 1115.34***	***Not Encountered Above15 Feet***
B-4	***18 ½ / 1107.09***	***21 ½ / 1104.09***
B-5	***3 ½ / 1126.12***	***Not Encountered Above 25 Feet***
B-6	***2 / 1125.08***	***Not Encountered Above 25 Feet***
B-8	***18 ½ / 1115.2***	***19 / 1114.7***
B-9	***18 ½ / 1113.85***	***18 ½ / 1113.85***
B-10	***19 / 1112.76***	***19 / 1112.76***
B-11	***19 / 1113.09***	***19 / 1113.09***
B-12	***Not Encountered Above 10 Feet***	***Not Encountered Above 10 Feet***
B-13	***17 ½ / 1115.31***	***17 ½ / 1115.31***
B-14	***18 ½ / 1113.79***	***18 ½ / 1113.79***
B-15	***17 ½ / 1115.38***	***17 ½ / 1115.38***
B-16	***17 ½ / 1115.83***	***17 ½ / 1115.83***
B-17	***17 / 1115.82***	***17 / 1115.82***
B-18	***16 / 1116.37***	***16 / 1116.37***
B-19	***13 ½ / 1118.62***	***15 / 1117.12***
B-20	***5 / 1126.66***	***16 / 1115.66***
B-21	***1 ½ / 1132***	***Not Encountered Above 15 Feet***
B-22	***Not Encountered Above 15 Feet***	***Not Encountered Above 15 Feet***
B-23	***13 ½ / 1122.58***	***15 / 1121.08***
B-24	***13 ½ / 1123.36***	***14 / 1122.86***
B-26	***13 ½ / 1123***	***13 ½ / 1123***
B-27	***13 ½ / 1105.46***	***15 / 1103.96***
B-28	***19 / 1100.08***	***19 / 1100.08***
B-29	***27 / 1099.35***	***27 / 1099.35***
B-30	***22 / 1112.11***	***22 / 1112.11***
B-31	***1 ½ / 1250.1***	***Not Encountered Above 15 Feet***

Boring Number	Depths/Elevation to Hard Drilling Conditions (feet below existing grade)	Depths/Elevation to Auger Refusal Material (feet below existing grade)
32	***2 ½ / 1259.2***	***Not Encountered Above 15 Feet***

Water Measurements

Water observations were made by the drill crew during drilling and immediately after completion of drilling. The observations are shown in Table 5. This information is also displayed at the bottom of each boring log. Free ground water was not encountered during or at the completion of drilling at the boring locations omitted from Table 5. It should be noted that water was injected into the boreholes while coring and that most of the boreholes were dry after completion.

The depths to water are intended as isolated measurements of groundwater levels at the time of drilling. The installation and periodic measurement of monitoring wells would be required to establish seasonal piezometric surfaces below this project site. For this reason, a temporary piezometer was installed at Borings B-5 and B-15, as requested by HWEI; however, GTS is not responsible for taking future water measurements. A description of the piezometer is provided in the Subsurface Exploration and Procedures section of this report.

Table 5: Water Depth Measurements

Boring Number	Water Depth Measurements (feet below existing grades)	
	During Drilling	After Boring Completion
B-2	3	Dry
B-5	14	20
B-6	14	Dry
B-8	13 ½	Dry
B-11	19 ½	Dry
B-14	15	Dry
B-15	13	Dry
B-17	14	Dry
B-21	13 ½	Dry
B-23	12	Dry
B-24	8	Dry
B-27	9	Dry
B-28	9	Dry

B-29	***6***	***6***
B-30	***17***	***17***

GEOTECHNICAL ENGINEERING ANALYSIS

Geotechnical Considerations

Existing Fill

As stated previously, existing/possible fill materials were encountered immediately below the surface materials at 19 of 26 performed boring locations, as shown in Table 2. From this point forward, “possible fill” will be referred to as “existing fill”. Existing fill material extended to depths of about 1 ½ to 13 ½ feet below existing grades, where encountered. GTS assumes that the existing fill materials encountered at the boring locations were placed during construction of the various improvements that the site has undergone.

It is our experience that properties with previously existing structures, especially where mass grading has occurred, have a higher potential for encountering unknown conditions during mass grading and construction. These conditions include backfilled excavations, trash pits (buried debris), concrete foundations as well as underground utilities associated with the previous/existing structures.

Other than our assumptions, GTS has no information regarding the placement and compaction history of the existing fill. Compressible fill and/or deleterious and unsuitable materials might be buried within or by the existing fill. There is a potential risk of unpredictable settlement and performance by supporting foundations, floor slabs-on-grade, and pavements above the existing fill. This risk cannot be eliminated unless the existing fill is removed and replaced full depth with new fill. However, the risk can be mitigated through thorough testing and further investigation during construction. Existing fill materials should be evaluated on a case-by-case basis, and recommendations should be given in the field by GTS regarding whether or not the existing fills are suitable to remain in place.

Low Shear Strength Soils

Low shear strength soils (N-value of 6 or less) were encountered at 10 of the 26 performed boring locations. Table 6 summarizes the locations and depths where low strength soils were encountered:

Table 6: Location and Depth of Low Shear Strength Soils

Boring Number - Location	Depth of Low Shear Strength Soils (feet below existing grade)	N Values
B-4 Lift Station No. 3	2 to 3 ½	6
B-13 Tertiary	13 ½ to 17 ½	3
B-14 Tertiary	2 to 8 ½	2 and 5
B-15 Tertiary	5 to 8 ½	4
B-17 Electrical Building	8 ½ to 13 ½	4
B-20 Secondary Clarifier No.3	3 ½ to 5	5
B-23 Blower Building Vault	0 to 13 ½	5
B-24 Digester No. 5 Valve Vault	0 to 13 ½	2 to 5
B-27 East end of Planned Bridge	0 to 5	6, 5, and 3
B-28 East end of Planned Bridge	0 to 19	2 to 6

These low strength soils are not suitable for directly supporting footing foundations, slabs-on-grade, or new fills in their current condition. We recommend full depth removal and replacement of the low strength soils within the footprint areas of the planned structures. At each of the borings included in Table 6, excluding Borings B-17, we anticipate that the low shear strength soils will be removed during required excavations to achieve finished subgrade elevations. If low shear strength soils are exposed at the completion of required excavations, they should be removed full depth to expose stable native soils or limestone bedrock.

Special testing, observation, and mitigation recommendations are provided in the Mass Grading Recommendations section of this report that addresses this scenario.

Differential Bearing Materials – Shallow Rock

Based on our understanding of planned grades, the variable depth of bedrock across the project site, as well as the settlement criteria assumed in this report, there is a **slight** risk of the structures being partially supported on rock and partially on soil. ***This risk is moderate at the planned Compost Facility maintenance building and is high at the Secondary Clarifiers.*** This scenario would cause significant differential settlement across the planned structure footprints. As such, where both ***bedrock/rock-like material*** and soil are encountered at the planned subgrade elevation for either foundations or grade-supported slabs, the in-situ ***bedrock/rock-like material*** should be overexcavated such that a minimum of 1-foot of soil fill is constructed between the bottom of the planned footing foundations and floor slabs and the intact rock.

If bedrock is encountered across the entire footprint of a structure's foundations or grade-supported slab, there is no need to over-excavate the exposed rock.

Footing/Mat Foundation Recommendations

The subgrade beneath each of the structures should be prepared as recommended in the Mass Grading Recommendations section of this report, including full depth overexcavation and replacement of the existing fill as well as any low strength soils with new select fill.

Based on performing the recommended overexcavation and replacement, we expect that the foundations for these structures will bear within a combination of tested and approved, native soils and tested and approved, new, select fill or entirely on intact limestone bedrock.

Footing and mat foundations may be designed using the information provided in Table 7 ***below***.

Table 7: Footing Foundation Recommendations

Maximum Net Allowable Bearing Pressure (psf)	Bearing Soils Description	Depth to Bearing Soils
2,500 (Isolated, Column Footings)	Tested and Approved, Native Soils and Compacted and Tested, Select Fill Material [1]	Anticipated within 18 inches below Finished Subgrade, provided mass grading recommendations are followed
2,000 (Continuous, Strip Footings/Mat Foundations)		
10,000 (Column and Continuous Footings/Mat Foundations)	Tested and Approved Exposed Limestone Bedrock[2]	Anticipated if excavations extend to the depth/elevation of limestone bedrock provided in Table 3.

1) The recommended bearing soils should be relatively undisturbed, stable, and have moderate shear strength. Foundations may also be supported on flowable fill placed above the recommended bearing material. ***However, flowable fill may not be utilized where differential bearing materials are present.***
2) Bedrock should be exposed the entire structure footprint and should be evaluated by GTS before the construction of planned foundations.

We recommend an ultimate coefficient of sliding friction of 0.32 for the interaction between the foundation base and tested and approved, select fill bearing materials and native soils.

We recommend an ultimate coefficient of sliding friction of 0.45 for the interaction between the foundation base and intact limestone bedrock.

An allowable passive pressure of 750 psf may be used for foundations cast directly against near-vertical sides in tested and approved, native soils and select fill or select fill compacted against the vertical footing face. An allowable passive pressure of 6,000 psf may be used for the

portion of the foundations cast directly against near-vertical limestone. Passive resistance for exterior footings should be neglected in the upper 2 feet of the soil profile unless pavement or sidewalks are constructed directly against the structure exterior.

If a Winkler-type subgrade modulus model is used to model the mat response to load, a vertical modulus of subgrade reaction (k) of 100 pci (soil) or 200 pci (rock) can be used for designing a mat foundation bearing in tested and approved, stable soils or rock. A long-term modulus of subgrade reaction (ks) of 13.0 pci (soil) or 69.0 pci (rock) may be used for the modeling of elastic settlement and long-term consolidation settlement for mats supported on tested and approved soils or rock. The recommended Winkler subgrade modulus values are for a 30-inch round diameter plate and is based on correlation with soil type and consistency. The long-term modulus of subgrade reaction (defined as 'ks' in Foundation Analysis and Design, 5th Edition, page 548, by Bowles) considers both immediate elastic settlement and long-term consolidation settlement.

The mat foundations can provide uplift resistance for those structures subjected to wind or other induced structural loading. The uplift resistance of a mat foundation may be computed using the effective weight of the soil above the foundation along with the weight of the foundation and structure. A soil unit weight of 110 pcf may be assumed for the on-site soils placed above the foundation, provided the fill is properly compacted. If this value is critical to the design, the soil unit weight value should be further defined after the type of fill material is known and moisture-density relationship tests have been performed.

We estimate total long-term and differential settlement of foundations bearing in approved materials, designed and constructed as recommended in this report and per the Mass Grading Recommendations section of this report, should be less than 1 inch and ½ inch in 50 feet, respectively.

The foundations can provide uplift resistance for those structures subjected to wind or other induced structural loading. The uplift resistance of a foundation may be computed using the effective weight of the soil above the foundation along with the weight of the foundation and structure. A soil unit weight of 110 pcf may be assumed for the on-site soils placed above the foundation, provided the fill is properly compacted. If this value is critical to the design, the soil unit weight value can be further refined after the type of fill material is known and moisture-density relationship tests have been performed.

Footing Foundation Construction Recommendations

General Dimensions

Continuous formed and isolated column foundations should have minimum widths of 18 inches and 30 inches, respectively. Footings should be designed with a minimum foundation depth of 18 inches below lowest adjoining grade.

Allowable Backfill Materials

Soil fill material or aggregate base may be used to backfill foundation over-excavations. Additionally, a controlled low strength material (flowable fill) may be used to backfill foundation over-excavations. Specifications regarding these materials are shown in the Geotechnical Report Requirements and Specifications section of this report.

If both bedrock and soil are exposed at bottom of foundation elevations***, where designed to bear on soils,*** and rock is over-excavated a depth of 1 foot as recommended in the Differential Bearing Materials section of this report, ***select*** fill material should be used as backfill material. Aggregate base and flowable fill should not be used as backfill material if rock is over-excavated a depth of 1 foot as recommended in the Differential Bearing Materials section of this report.

Finally, if foundations are designed to bear directly on intact bedrock, flowable fill ***or aggregate base*** should be used to backfill foundation over-excavations. To be clear, ***select/general*** fill material should not be used as backfill material if foundations are designed to bear directly on intact bedrock.

Construction Guidelines

Foundation excavations should be cleaned of loose soils, rock, debris, and water. The bottom of all footing foundation excavations should be tested and evaluated by GTS to evaluate the bearing materials prior to placement of new fill, reinforcing bar, and concrete.

After following the mass grading recommendations provided in this report, the recommended bearing materials are anticipated to be encountered at plan bottom of foundation elevations throughout the building footprints.

If unsuitable bearing materials are encountered at the base of the planned footing excavation, the excavation should be overexcavated to reach suitable bearing materials. The footing could be extended deeper to bear directly on the approved bearing materials or the overexcavation could be backfilled with flowable fill or compacted select soil fill or aggregate base course.

Additionally, as discussed previously, if a combination of ***bedrock/rock-like material*** and native soils is exposed at bottom of foundations elevations, the ***bedrock/rock-like material*** should be

over-excavated to a depth of 1 foot below the design bearing elevation to allow for the placement and compaction of select soil fill materials.

If select soil fill or aggregate base course materials are used to backfill foundation overexcavations for footings designed to bear on soil materials, the overexcavation should extend at least 8 inches beyond the footing perimeter for every 12 inches of depth below the bottom of footing, per Figure 4 on the following page. Select soil fill or aggregate base course materials should be placed and compacted as recommended in the Geotechnical Report Requirements and Specifications of this report. We recommend the select soil fill and aggregate base course, if used to backfill foundation excavations, be field tested for in-place density each lift and again immediately before the placement reinforcing bar and concrete.

If flowable fill is used to backfill foundation excavations, the excavations do not need to be widened as shown in Figure 4 below. The flowable fill should be placed as soon as possible after foundation overexcavations are completed and have been evaluated for bearing suitability. Flowable fill should be field sampled and laboratory tested for strength every day of placement.

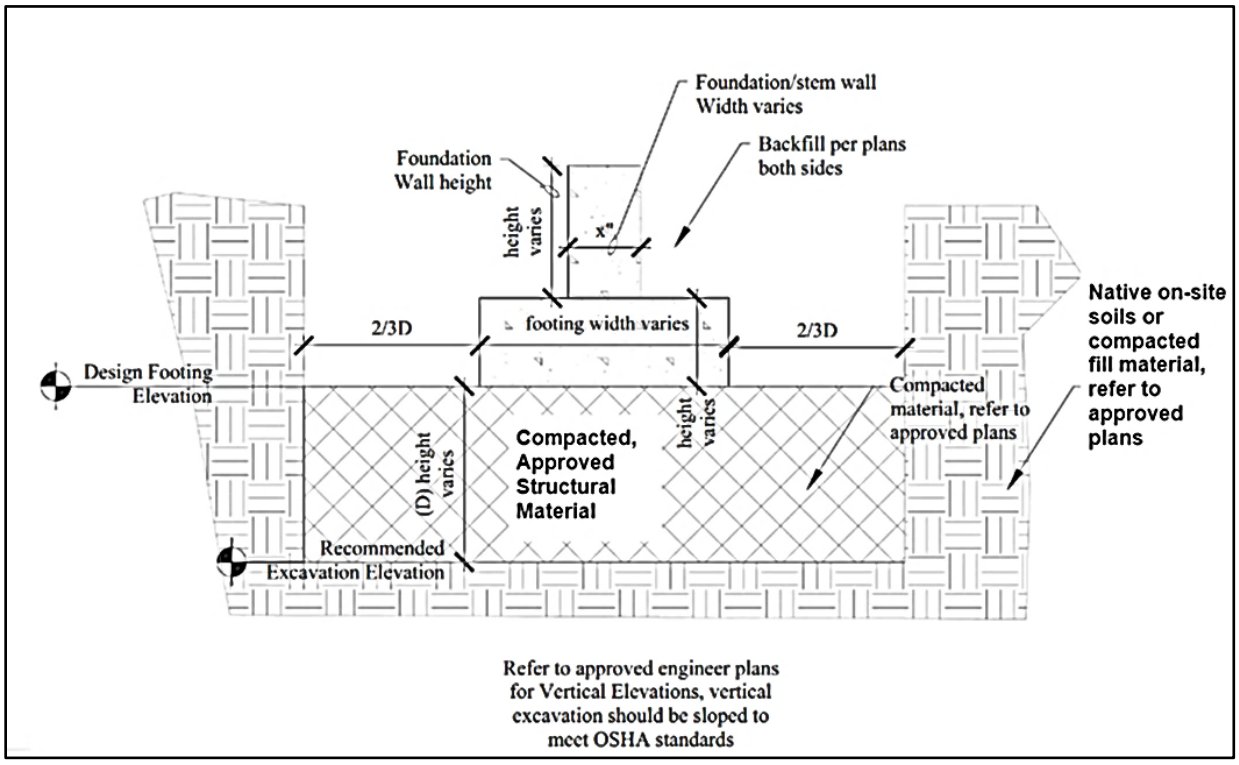


Figure 4: Foundation Trench Backfill Detail for Select Soil or Aggregate Base Course Fill

Stress and Bearing Interactions with Existing Building Foundations

Care should be taken during any excavation adjacent to existing slabs-on-grade or foundations, so as not to disturb any existing slab or foundation bearing materials. Excavations that extend below the level of the existing slabs or foundations should be backfilled the same day they are

excavated. Where this is impractical, shoring or underpinning of existing slabs and foundations may be required.

The contractor is responsible for the means and methods of safe excavations, protection of existing structures and protection of all personnel entering the excavation. However, shoring and bracing should be expected to be required if large excavations are required near the existing building footprint.

If there will be underground piping between a new structure and an existing structure, the piping should be designed with flexible couplings and/or utility knockouts in foundation walls should be oversized, so minor deflections in alignment do not results in distress or breakage.

Drilled Pier Foundation Recommendations

Drilled Pier Design Recommendation

Based on the subsurface conditions encountered at the two (2) bridge borings, we recommend that a deep foundation system consisting of cast-in-place, straight-shaft, concrete drilled piers support the planned bridge structure. ***Additionally, we understand that the Influent Structure has been designed to be supported on drilled piers.*** The recommended limestone bearing material was encountered at depths of about 13 ½ feet and 19 feet, respectively, at Borings B-27 and B-28 ***(Bridge), as well as at depths of about 11 feet and 22 feet below existing grades at Borings B-2 and B-30 (Influent Structure), respectively***. The drilled piers should be designed to bear a minimum of one pier diameter into the competent limestone bedrock as defined by this report. The piers may be designed using the geotechnical parameters shown in Table 8.

The design soil and rock parameters shown in Table 8 were calculated using a factor of safety of approximately 3 for end bearing and 2 for side friction. For the purposes of this project, compressive axial loads on pier foundations should only be resisted by end bearing at the base of the shaft, while uplift loads should be resisted by skin friction along the shaft and by the weight of the shaft. Due to strain compatibility, skin friction in soils should only be used to resist uplift force, not axial compressive loads.

We recommend a minimum shaft diameter of 24 inches. Drilled piers should have a minimum (center-to-center) spacing of 3 pier diameters. The minimum spacing should be maintained to prevent the pile group compression load capacity from being significantly less than the summation of individual pile capacities. Closer spacing may require a reduction in axial load capacity.

Table 8: Drilled Pier Foundation Design Recommendations

Depth Below Existing Ground Surface (ft.)	Soil/Rock Description	LPile Soil Type	Effective Unit Weight γ' (pcf)	Friction Angle φ (°)	Cohesion c' (psf)	Allowable Skin Friction (psf)	Horizontal Modulus of Soil Reaction K_f (pci)	Strain at 50% of Ultimate Compression ε_{50}	Net Allowable End Bearing Pressure q_{all} (psf)
0 to 3	Generally Existing Fill	NA	110	The top 3 feet of soils should be ignored in design					
3 to top of competent limestone bedrock (Varies, See Table 3)	Existing Fill and Native Soils	Stiff Clay without Free Water (Reese)	110	0°	500	125 Uplift Only	13	0.015	NR[A]
11 to 22 (See Table 3)	Competent Limestone Bedrock	Strong Rock	140	0°	500[B]	7,500	---	0.0005	50,000[C]

[A] NR = Not recommended
[B] Uniaxial Compressive Strength (psi)
[C] The drilled piers should be embedded a minimum distance of 1D into the recommended bedrock.

Drilled piers should have a minimum length to diameter ratio (L:D) of 3:1. Drilled shaft lengths of about ***15 to 25*** feet below existing grade (or more) are anticipated to be required, to satisfy the recommended minimum rock penetration assuming a 24-inch diameter pier (2-foot embedment into the underlying competent limestone). ***However, we also understand that portions of the lower level of the Influent Structure may expose bedrock at the top of subgrade elevations; we recommend minimum drilled shaft lengths of 6 feet in these areas (to satisfy the minimum length to diameter ratio).***

A reduction in the lateral resistance of the shadowed shaft in a foundation designed with a shaft group should be considered when the shaft spacing in the direction of loading is less than 6 shaft diameters. Group action can be evaluated by reducing the lateral resistance of the shadowed shafts in the direction of loading as a function of the shaft spacing as follows in Table 9.

Table 9: Drilled Pier Group Action

Pier Spacing (center-to-center, diameters)	3D	4D	5D	≥6D
Lead Row	0.7	0.85	1.0	1.0
2nd Row	0.5	0.65	0.85	1.0
3rd Row and higher	0.35	0.5	0.7	1.0

Total long-term and differential settlement of drilled pier foundations, designed and constructed as recommended in this report, are estimated to be less than ½ inch for total and differential settlement between isolated piers.

Construction Guidelines

All drilled pier excavations should be evaluated for suitable bearing material by GTS prior to placement of reinforcing bar and concrete. Additionally, the drilled pier excavations should be cleaned of loose soil/rock, debris, and water prior to reinforcing bar and concrete placement.

Concrete should be placed directly down the center of the foundation reinforcing. This can be accomplished with a tremie pipe to place the concrete to the bottom of the foundation. This can be accomplished with moderate success by inverting the back chute of the concrete redi-mix truck and directing the concrete discharge into the center of the drilled pier reinforcing. The preferred method, however, is to use a tremie pipe to place the concrete to the bottom of the pier excavation.

Drilling shafts in uncontrolled fill could be problematic if construction debris or other deleterious material is encountered within the fill mass. Additionally, because of the varying depths of low strength soils, the presence of existing fill, and the potential for perched water to be encountered near the soil-rock interface, temporary casing may be required to allow construction of the drilled piers. Temporary casing should be made available to prevent the influx of soil and water into the foundation excavation. The contractor should determine if temporary steel casing is required based on subsurface conditions encountered during construction.

If water is encountered in pier excavations, we anticipate that water can be removed by using suction pumps for pier depths less than 20 feet. If water cannot be removed in the excavations by pumping, the concrete should be tremied completely to the bottom of the excavation with a closed-end tremie.

If temporary casing is used, the concrete used in the foundations should have a slump of 5 to 7 inches to reduce the likelihood of honeycombing within the foundation and to provide a positive pressure against the earth-formed sides of the foundation excavation. Therefore, the concrete mix design used in the foundations should have a demonstrated history of meeting the specified strength when placed at a higher-than-normal slump.

Finally, a heavy-duty drill rig equipped with a coring barrel will be needed to penetrate the limestone bedrock.

GTS should observe all drilled pier excavations to evaluate the suitability of the bearing materials and to confirm that conditions in the drilled pier excavations are consistent with those encountered in the borings.

Micropile Foundations (Anoxic Basins)

Based on the subsurface information obtained at Borings B-5, B-6, and B-29, we recommend that the planned Anoxic Basins be supported upon an integrated system of micro-piles and grade beams. The following table details our grout-to-soil/rock bond strength recommendations that can be used to design the micro-piles for the soils encountered at our performed boring locations.

Table 10: Grout-to-Soil/Rock Bond Strength

Boring	*Stratum*	*Depth to Bottom of Layer from Current Grade (ft)*	*Ultimate Grout-to-Soil/Rock Bond Strength (psi)*
B-5/B-6	*Existing Fill*	*13 ½ / 5 ½*	*5**
B-5	*Silt*	*19 ½*	*5*
B-5/B-6	*Clayey Gravel*	*24 / 18 ½*	*15*
B-5/B-6/B-29	*Weathered Limestone*	*24+ / 18 ½+/ 27+*	*200*

****The top 3 feet of subsurface materials should be neglected.***

Construction Considerations

If the micro-piles extend to the rock stratum, the micro-piles should be embedded a minimum of 5 feet into encountered limestone bedrock. Additionally, it should be noted that due to the slenderness of micropile elements they are typically not used to resist lateral forces. However, the micropiles may be installed with a batter to combat these forces. Alternatively, an allowable capacity of 1 kip per inch of diameter may be used to resist lateral forces.

We recommend pile load testing be conducted on the first production micro-pile (before any additional micro-piles are installed) so that adjustments can be made to the micropile design if the actual test load achieved is less than the theoretical value. The load test should be taken to 133 percent of the design load as recommended in FHWA NHI-05-039 (Micropile Design and Construction). We recommend that target load test displacement during testing be limited to ¼ inch after seating. The load test(s) may be conducted in either compression or tension. Since we do not plan to test the micropile to failure, a production pile may be used as the test micropile. The micropile load test should be conducted by the contractor under the supervision of the Geotechnical Engineer. The untested micropiles should be installed following the same procedures that will be used to install production pile that is load tested.

Conventional Slab-on-Grade Design

The following recommendations are provided for conventional slab-on-grade design. The subgrade should be prepared as recommended in the Mass Grading Recommendations section

of this report, including overexcavating and replacing any low-strength soils and existing fill full depth with new select fill.

Slabs-on-grade supported on tested and approved, native Stratum I soils and/or select fill, prepared as recommended in this report, can be designed using a modulus of subgrade reaction (k) value of 100 pounds per square inch, per inch. We recommend that a minimum of 4 inches of free draining gravel or sand be placed beneath the slab-on-grade to act as a capillary break. This layer is termed a “subbase” layer.

To be effective as a capillary break, the subbase should have a maximum of 5 percent by dry weight passing the No. 200 sieve. The modulus of subgrade reaction value applies to the top of the subbase layer. The top of the subbase should be compacted using a vibratory plate.

If rutting of the subbase layer is a concern for concrete placement, the subbase layer may be topped with an additional 2 to 4 inches of gravel or sand having sufficient fines to allow compaction. The optional topping layer is termed the “base” layer. The base layer, if used, should be compacted to a minimum of 95 percent Modified Proctor maximum dry density (ASTM D1557) at a workable moisture content that allows the density to be achieved. The base layer should have a percent passing the No. 100 sieve ranging from 10 to 30 percent by dry weight. ARDOT Class 7 Aggregate Base Course material is acceptable to use in the base layer.

A vapor barrier having a minimum thickness of 10 mil is recommended immediately below the concrete unless otherwise recommended by the finished flooring manufacturer or other members of the design team.

The general components of a floor slab, inclusive of the optional base course, are shown in Figure 5 below. The shown reinforcing steel location provides general guidance only. The location and composition of reinforcing steel should be determined by a structural engineer.

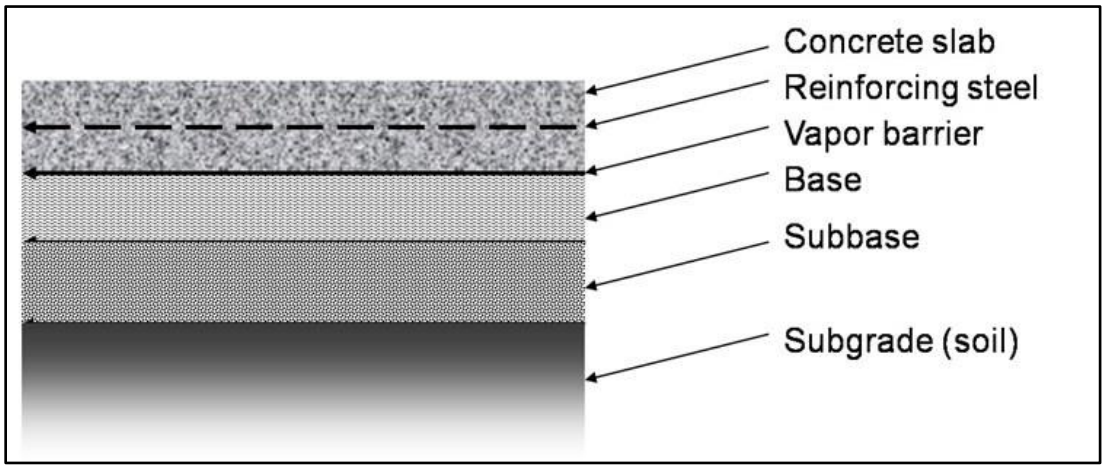


Figure 5: General Floor Slab-on-Grade Section

IBC Site Classification

Based on our knowledge of the regional geology, and the subsurface conditions encountered at the boring location, the subsurface conditions at this project site are consistent with a Site Class C per the International Building Code (IBC), 2021 Edition.

The borings performed at this site were extended to a maximum depth of approximately 40 feet below the existing ground surface. The subsurface conditions below the boring termination depth to 100 feet were estimated based on our knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depths.

The following mapped acceleration parameters may be used in design in accordance with 2021 IBC (ASCE7-16):

- Seismic Site Class: C
- S_s: 0.153 g
- S_1: 0.089 g
- F_a: 1.3
- F_v: 1.5
- S_{DS}: 0.132 g
- S_{D1}: 0.089 g
- PGA_M: 0.094 g

These values were obtained using on-line seismic tools provided by the USGS (https://seismicmaps.org) at the site location coordinates of Latitude: 36.39174917 °, Longitude: -94.20393362 °.

MASS GRADING RECOMMENDATIONS

The following recommendations are provided for preparing the subgrade soils for supporting new pavements and other grade-supported structures.

Stripping of Surface Materials

Mass grading should extend a minimum of 5 feet outside of the structure footprints and 2 feet beyond the back of curb in all directions in pavement areas. Surface organics, gravel, debris, and any surface or subsurface structures from previous site use should be removed from the areas of planned new construction. The topsoil material (if any) may be stockpiled and reused for landscaping, at the discretion of the design team.

Additionally, as previously discussed, we recommend full-depth removal and replacement of the existing fill and any low shear strength soils with new select fill. We recommend budgeting for a minimum undercut depth of 2 feet within the footprints of the planned structures. Furthermore, the existing fill materials were encountered to depths of about 1 ½ to 13 ½ feet below existing grades at 19 of the 26 borings drilled. The locations and depths of the existing fill materials are summarized in Table 2.

Regarding the existing fill, as stated previously, the excavation of the existing fill materials can be evaluated during construction on a case-by-case basis to determine if the existing fill materials need to be excavated or are suitable to remain in place.

General Mass Grading

After stripping surface materials, completing cuts necessary for grading, and completing the recommended undercut to remove any existing fill and low strength soils, and before placing new fill, the exposed soils should be evaluated by GTS.

The exposed soils in the planned structure footprints should be evaluated for stability through proofrolling with a loaded, tandem-axle dump truck weighing at least 25 tons. Provided the subgrade soils are stable, the exposed soils are suitable to directly support the placement and compaction of new approved fill material.

If the excavations for the planned structures will be too steep and inaccessible to proofrolling equipment, GTS should test and evaluate the exposed soils by using hand probes, cone penetrometer tests, and dynamic cone penetrometer tests.

Where unstable soils are identified by proofrolling/testing in the planned structure areas remaining near existing grade, they should be scarified, moisture conditioned, and compacted, or removed and replaced full depth with new select fill.

If the prepared subgrade should become saturated, desiccated, frozen, or otherwise damaged prior to construction of the slabs-on-grade, the affected subgrade material should be scarified,

moisture-conditioned and compacted prior to placing the aggregate base course. Final conditioning of the finished subgrade should be performed immediately prior to placement of the slab-on-grade aggregate base course material.

Weather and Instability Considerations

Soil stability is directly related to the moisture within and below the exposed soils. If the on-site existing fill and native (Stratum I) soils are moist to wet or have undergone freeze-thaw cycles after mass grading and/or placement and compaction, we anticipate that the near-surface soils will likely be unstable.

If the exposed subgrade soils are unstable but otherwise suitable to remain in-place based on their classification or depth below plan finish grades, they may be scarified and allowed to dry to achieve stability if the construction timeframe and prevailing weather conditions allow. Alternatively, the unstable soils could be undercut and replaced full depth with new select fill. For budgeting purposes, an average undercut depth of 2 feet below existing grade is anticipated when the on-site soils are wet.

Other ground improvement methods could be provided during construction based on the actual site conditions at that time. The appropriate method of improvement, if required, would depend on factors such as schedule, weather, the size of area to be improved, and the nature of the instability. Performing site grading operations during extended periods of warm, dry weather would help reduce the amount of subgrade stabilization required.

Fill Placement

Lifts of fill material required to reach plan finished subgrade elevation should be composed of tested and approved fill material and placed per the specifications shown in this report. Fill should be placed in near-horizontal lifts beginning in areas requiring the deepest amount of fill. The fill should be benched into the existing fill and native soils each lift. Fill should not be placed on frozen, saturated, desiccated, or unstable soils.

The requirements to meet for select fill material, aggregate base course material, and flowable fill are provided in the Geotechnical Report Requirements and Specifications section of this report.

Re-Use of On-Site Soils as Fill

Based on the variability of the existing fill and native soils, we recommend importing select fill materials for the planned project. The on-site native soils could be re-used as general fill in non-structural areas. Larger, bulk samples of the on-site soils proposed for use as fill by the contractor should be sampled by GTS during mass grading and laboratory tested to confirm the apparent classification of these soils prior to re-use as fill.

Imported soil fill for use as select fill should be tested and approved prior to use as fill on this site. Imported soil fill containing rock will need to be crushed into pieces no greater than 3 inches in any dimension prior to use.

Utility Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. Utility trenches are a common source of water infiltration and migration. If utility trenches are backfilled with relatively clean granular material, they should be capped with at least 18 inches of cohesive fill to reduce the infiltration and conveyance of surface water through the trench backfill.

Grading and Drainage

During construction, grades should be developed to direct surface water flow away from or around the site. Exposed subgrades should be sloped to provide positive drainage so that saturation of the subgrade is avoided. Surface water should not be permitted to accumulate on the site to reduce the potential for strength loss of the subgrade soils.

Final grades should be sloped away from the structures on all sides to promote effective drainage and prevent water from ponding. Downspouts, if used, should discharge water a minimum of 10 feet beyond the footprint of the building structures. This can be accomplished by using splash-blocks and downspout extensions.

If water develops in excavations, we anticipate that sump pits and suction pumps could be used to alleviate the water seepage. The need for dewatering and dewatering system design should be based on the actual subsurface water conditions encountered at the time of construction.

Difficult Excavation Potential

Based on the subsurface conditions encountered at the boring locations, we expect that the existing fill materials and native soils (Strata I) can be excavated using conventional excavation equipment. Rock excavation means and methods are expected to be required to penetrate seams, layers, and boulders of chert as well as possibly bedrock beginning at the hard drilling depths provided in Table 4.

In general, track hoes and dozers with rock excavation attachments are expected to be required below the depths where we encountered hard drilling. The use of hydraulic or pneumatic hammers, rock breakers, rock saws and controlled blasting could be required near and below the depths where we encountered competent rock and auger refusal. Greater rock excavation effort is expected in limited access excavations, such as for foundations and utility trenches.

Temporary Earth Slopes and Excavations

Temporary earth slopes will be constructed during development of the project site. The recommended maximum temporary slopes for overburden soils are 2 H:1 V (Horizontal:Vertical) and for the deeper, hard limestone is nearly vertical. Alternatively, local construction practices allow for benched excavations (4 feet vertical followed by 4 feet horizontal) with an effective slope of 1H:1V.

The contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of the excavation sides and bottom. All excavations should comply with applicable local, state, and federal safety regulations, including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards.

LATERAL LOADING CONDITIONS

Walls with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to those defined in the below diagram and indicated in the table on the following page. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement/rotation at the top of the wall. The "at-rest" condition assumes the wall is structurally restrained from movement at the top and should be used for basement walls.

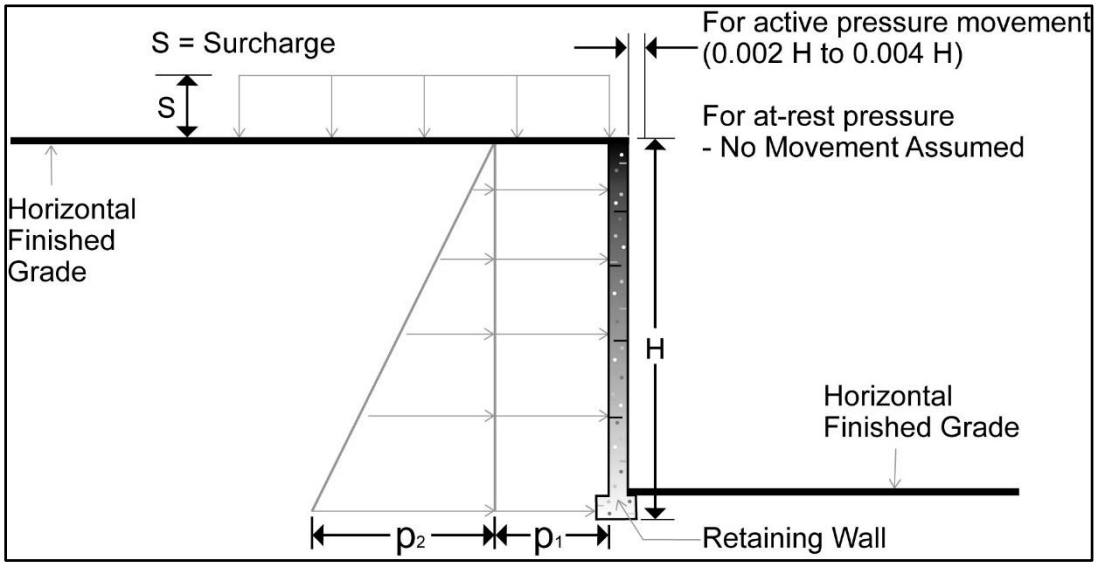


Figure 6: Lateral Earth Pressure Diagram

The recommended design lateral earth pressures shown in Table 10 on the following page do not include a factor of safety and are based on a drained soil condition behind the wall.

Backfill placed against structures should consist of granular soils or low plasticity clay soils. For the granular fill material values to be valid, the granular fill must extend out from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active and passive cases, respectively. To calculate the resistance to sliding, values of 0.32 or 0.45 should be used as the ultimate coefficient of friction between the retaining wall foundation and the underlying tested and approved, select fill/native soils or rock, respectively.

Table 11: Design Lateral Earth Pressure Parameters

Earth Pressure Conditions	Coefficient for Backfill Type	Equivalent Fluid Density (pcf)	Surcharge Pressure, p_1 (psf)	Earth Pressure, p_2 (psf)
Active (Ka)	Granular - 0.33	40	(0.33)S	(40)H
	Clay - 0.42	50	(0.42)S	(50)H
At-Rest (Ko)	Granular - 0.50	60	(0.50)S	(60)H
	Clay - 0.59	70	(0.59)S	(70)H
Passive (Kp)	Granular - 3.0	360	---	---
	Clay - 2.4	288	---	---

The values shown in Table ***11*** require the following:

- For active earth pressure, wall must rotate about base, with top lateral movements of about 0.002 H to 0.004 H, where H is wall height
- For passive earth pressure to develop, wall must move horizontally to mobilize resistance.
- Uniform surcharge, where S is surcharge pressure
- In-situ soil or placed and compacted soil backfill with a maximum weight of 120 pcf
- Backfill placed near horizontal, compacted to a minimum of 95 percent of standard Proctor maximum dry density
- Loading associated with backfill operations and construction not included in the recommended design values
- A drained soil condition exists behind the wall
- No dynamic loading acting above the wall
- No safety factor included in soil parameters
- Ignore passive pressure in frost zone

To reduce hydrostatic pressure behind the wall (i.e., a “drained” soil condition) we recommend that a minimum 12-inch-wide chimney drain be installed continuously on the back side of the retaining structure, with a collection pipe installed at the top of the foundation. The collection pipe should be rigid, perforated pipe and should be designed to discharge to a water collection system, such as a sump pit and pump.

If constructing drainage behind the retaining wall is not feasible (i.e., an “undrained” soil condition), a combined hydrostatic and lateral earth pressures should be calculated for lean clay backfill using an equivalent fluid pressure of 90 and 100 pcf for active and at-rest conditions, respectively. For granular backfill, an equivalent fluid pressure of 85 and 90 pcf should be used for active and at-rest, respectively.

These pressures do not include the influence of surcharge, foundation, equipment, or floor loading which should be added. Heavy equipment should not operate within a distance closer than the exposed height of retaining walls to prevent lateral pressures more than provided.

We anticipate that below-grade walls (if any) could be exposed to seasonal fluctuations in long-term water levels. The below-grade walls should be waterproofed, and keyways and water stops should be provided at all construction joints.

The upper 2 feet of backfill placed adjacent to the walls should consist of a compacted, relatively impermeable, material to limit the downward flow of surface water along the walls. As an alternative, the surface within 5 feet adjacent to the walls could be sealed with pavement or sidewalks. Soil fill should be placed following the recommendations provided in this report. Also, positive surface drainage should be developed and maintained around the walls to prevent the ponding of water and to divert drainage away from the walls.

Dynamic Design Parameters

We recommend that retaining walls be designed for a seismic earth pressure determined using the Mononobe-Okabe method. For seismic loading on retaining walls with level backfill, new research[1] indicates that the seismic load is to be applied at 1/3 H of the wall measured from the base, where H is the height of the wall. We recommend that a Mononobe-Okabe earthquake thrust per linear foot of 2.6 H^2 be applied for Granular backfill, applied at 1/3 H up from the base of the wall, where H is the height of the wall measured in feet, and 3.0*H^2 be applied for Clay backfill.

[1] Lew, M., et al (2010). "Seismic Earth Pressures on Deep Building Basements," SEAOC 2010 Convention Proceedings, Indian Wells, CA.

PAVEMENTS

Pavement Support Recommendations

New pavements should be supported on a minimum of 1 foot of select fill material having a minimum laboratory California Bearing Ratio (CBR) value of 8.0, placed and compacted atop stable onsite soils.

Specific recommendations concerning construction of the pavement subgrade, including the potential need for additional select fill to stabilize unstable subgrade soils, are provided in the Mass Grading Recommendations section of this report.

Pavement Design Recommendations

No pavement loading design guidance has been provided to GTS by the design team. Therefore, the pavement sections provided in this report are based on a low-volume traffic design consisting of light-duty pavement sections for automobile-only traffic areas, medium-duty pavement sections for drive lanes and fire lanes, and heavy-duty pavement sections for delivery/garbage truck traffic and dumpster areas.

A CBR of 4 was used for the design of flexible pavements (average of 1 foot of CBR 8 material and the worst case scenario of onsite soils having a CBR value of 1.0). A modulus of subgrade reaction (k) of 100 pounds per square inch, per inch, was used for the design of the rigid pavements. Pavement design recommendations assume rapid drainage away from the pavement section will be provided during and after construction.

To prevent early depreciation of the new flexible pavements, we recommend that all areas where heavy traffic make frequent starts and stops consist of rigid pavement. The following flexible and rigid pavement sections provided in Tables ***12*** and ***13*** on the following page are recommended.

Table *12:* Flexible Pavement Section Recommendations

Flexible Pavement Section:	Asphalt Course		Class 7 Aggregate Base Course	Design Traffic
	Surface Course (½" [12.5 mm])	Binder Course (1" [25 mm])		
Light-Duty	2 inches	-	8 inches	parking areas for car and passenger truck
Medium-Duty	3 inches	-	9 inches	drive lanes for passenger cars and light trucks and fire lanes
Heavy-Duty	2 inches	2 ½ inches	8 inches	light semi-truck traffic
Specification[1]	*Section 407-1 PG 70-22 75 Gyrations*	*Section 406-1 PG 70-22 75 Gyrations*	*Section 303*	

[1] Standard Specification for Highway Construction, Arkansas State Highway and Transportation Department, Edition of 2014.

Table *13*: Unreinforced Rigid Pavement Section Recommendations

Rigid Pavement Section Alternative:	4,000 psi Portland Cement Concrete Pavement	Base Course (Class 7)	Design Traffic
Light-Duty	5 inches	4 inches	car and passenger truck
Medium-Duty	6 inches	4 inches	drive lanes for passenger cars and light trucks and fire lanes
Heavy-Duty	8 inches	4 inches	light semi-truck traffic and dumpster areas
Specification[1]	*Section 501*	*Section 303*	

[1] Standard Specification for Highway Construction, Arkansas State Highway and Transportation Department, Edition of 2014.

GEOTECHNICAL REPORT REQUIREMENTS and SPECIFICATIONS

Unless otherwise stated in this report, the recommendations contained in this report are based on the compaction specifications and material types noted in Table 14, Table 15, and the paragraphs on the following page.

Table *14*: Compaction Criteria

Type of Material	Moisture-Density Specification	Minimum Dry Density (percentage of Proctor)	Range from Optimum Moisture Content (%)
Select Fill Material – Beneath Planned Structures, Buildings and Pavements	ASTM D698 (Standard Proctor)	95	-1 to +3
General Fill Material – Outside of the Structural Areas	ASTM D698 (Standard Proctor)	92	-1 to +3
ARDOT Class 7 Aggregate Base Course	ASTM D1557 (Modified Proctor)	95	Adequate to Achieve Compaction
Flowable Fill Material	ARDOT Section 206	Not applicable	Flowable Fill Material

Table *15*: Soil Fill Material Requirements

Type of Soil Fill	Location/Use	Maximum LL	Maximum PI	USCS Classifications
Select	All Areas	40	18	CL, SC, GC
General	Non-Structural Areas	45	20	CL, SC, SM, GC, GM,

Fill material should have a maximum nominal aggregate size of 3 inches or less after placement and compaction.

Fill needed for site grading should be placed in loose lifts not exceeding 9 inches in thickness (compacted lift thickness of approximately 6 to 7 inches). We recommend the fill be tested for density every lift during site grading, with a minimum of one test every 2,500 square feet of the structure area and 10,000 square feet in pavement areas. The recommended moisture content and compaction of the fill should be maintained until fills are completed and slabs-on-grade are constructed. Select fill should be tested each lift, at each column location, and every 25 linear feet of continuous foundation. Additionally, we recommend that the new fill material is tested for in-place density immediately before placement of reinforcing bar and concrete.

SUBSURFACE EXPLORATION and PROCEDURES

The subsurface exploration consisted of evaluating and sampling a total of ***30*** sample boring locations, identified as Borings B-1 through B-6, B-8 through B-24, and B-26 through ***B-32***. Each boring was drilled and sampled to the depths required in the provided RFP document.

The boring locations were established in the field by a HWEI survey prior to the commencement of field operations.

The borings were drilled with a buggy-mounted CME-550X drill rig and a truck-mounted Geoprobe 3100 GT drill rig. Disturbed samples and estimates of the in-situ shear strengths of the existing fill, natural soils, and weathered rock were obtained using an automatic-hammer-driven split-barrel sampler in general accordance with the Standard Penetration Test (SPT) at the boring locations. Rock samples were obtained using an NQ-sized double-barrel wireline coring assembly and a diamond-impregnated core bit.

An automatic SPT-hammer was used to advance the split-barrel sampler in the boreholes. A significantly greater efficiency is achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. This higher efficiency has an appreciable effect on the SPT-N value. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

Temporary piezometers were installed to a depth of about 24 feet below existing grade in the borehole at Boring B-5 and a depth of about 17 feet below existing grade in the borehole at Boring B-15. Two-inch diameter, slotted PVC casing was used in the bottom 5 feet, and 2-inch diameter, solid PVC casing was installed above the casing to a height of about 4 feet above the ground surface. The annulus was backfilled with clean filter sand from the bottom of the boring to a depth of about 2 feet above the slotted PVC casing section at both locations. Bentonite chips were placed in the annulus above the sand for the following 2 to 3 feet of depth. The uppermost section of annulus was backfilled with grout (1-foot minimum). PVC caps were used on the top and bottom of the piezometer.

The soil and rock samples obtained in the field were sealed to reduce moisture loss and taken to the GTS soil laboratory for further examination, testing, and classification. The results of laboratory tests on select samples are shown on the boring logs and are attached to this report.

Field logs were prepared during the drilling and sampling of the borings. These logs report sampling methods, sampling intervals, soil, rock, and groundwater conditions, and notes regarding soil, rock, and drilling conditions observed between sample depths. The final boring logs, included in this report, have been prepared based on the field logs and have been modified, where appropriate, based on the results of the laboratory observation.

LABORATORY TESTING and PROCEDURES

The soil samples were examined in the laboratory by an experienced geotechnical engineer and classified based on the soil's texture and plasticity, in accordance with the Unified Soil Classification System. The estimated Unified Soil Classification System group symbols are shown on the boring logs.

The laboratory testing was performed by GTS, Inc. in general accordance with the American Society for Testing and Materials (ASTM) test designations shown in the table below:

Table *16*: Laboratory Test Method Designations

Laboratory Test	Test Designation	Method (if applicable)
Moisture Content of Soil	ASTM D2216-10	Method A
Visual Classification of Soil Types	ASTM D2488	
USCS Classification	ASTM D2487	
Atterberg Limits	ASTM D4318	Method A
Sieve Analysis	ASTM D6913	Method A
Compressive Strength of Rock Cores	ASTM D7012	Method C

The results of the classification tests are presented on the boring logs and in Appendix B.

GEOTECHNICAL REPORT LIMITATIONS

The recommendations contained in this report are based on our interpretation of subsurface conditions encountered at the discrete boring locations. Variations between the subsurface conditions anticipated in this report and actual project site conditions may occur away from the boring locations.

If significant differences between the findings of the borings and site conditions are observed, GTS, Inc. should be contacted to assess the variation and, if necessary, reevaluate the recommendations contained in this report.

ENVIRONMENTAL EXCLUSION

A Geotechnical Engineering Report assesses the engineering properties of soil and rock. No environmental assessment of a project site is performed during a geotechnical exploration. If the owner is concerned about the potential for environmental hazards at the project site, additional studies should be performed by GTS, Inc.

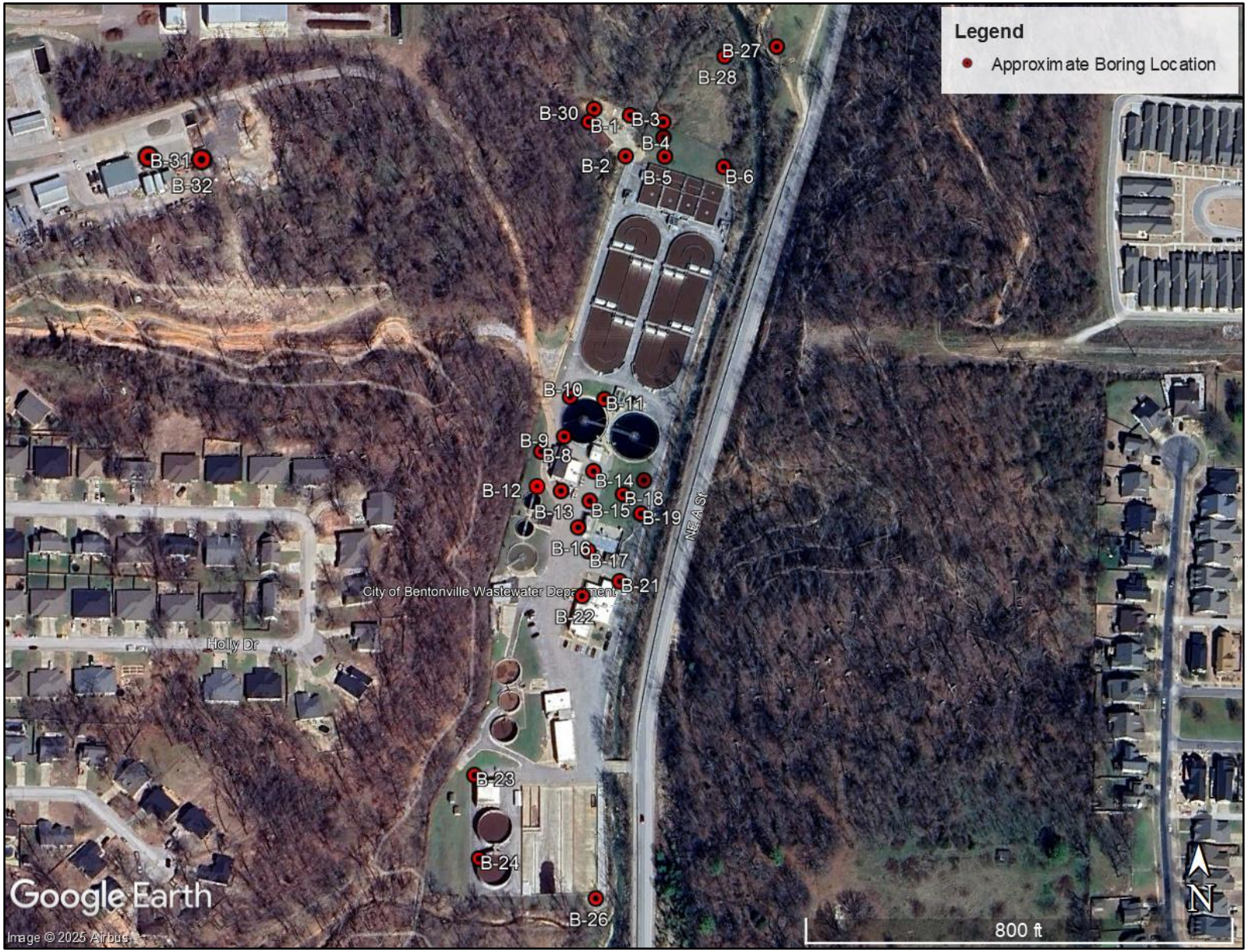
APPENDIX A

Boring Location Diagrams

Boring Logs

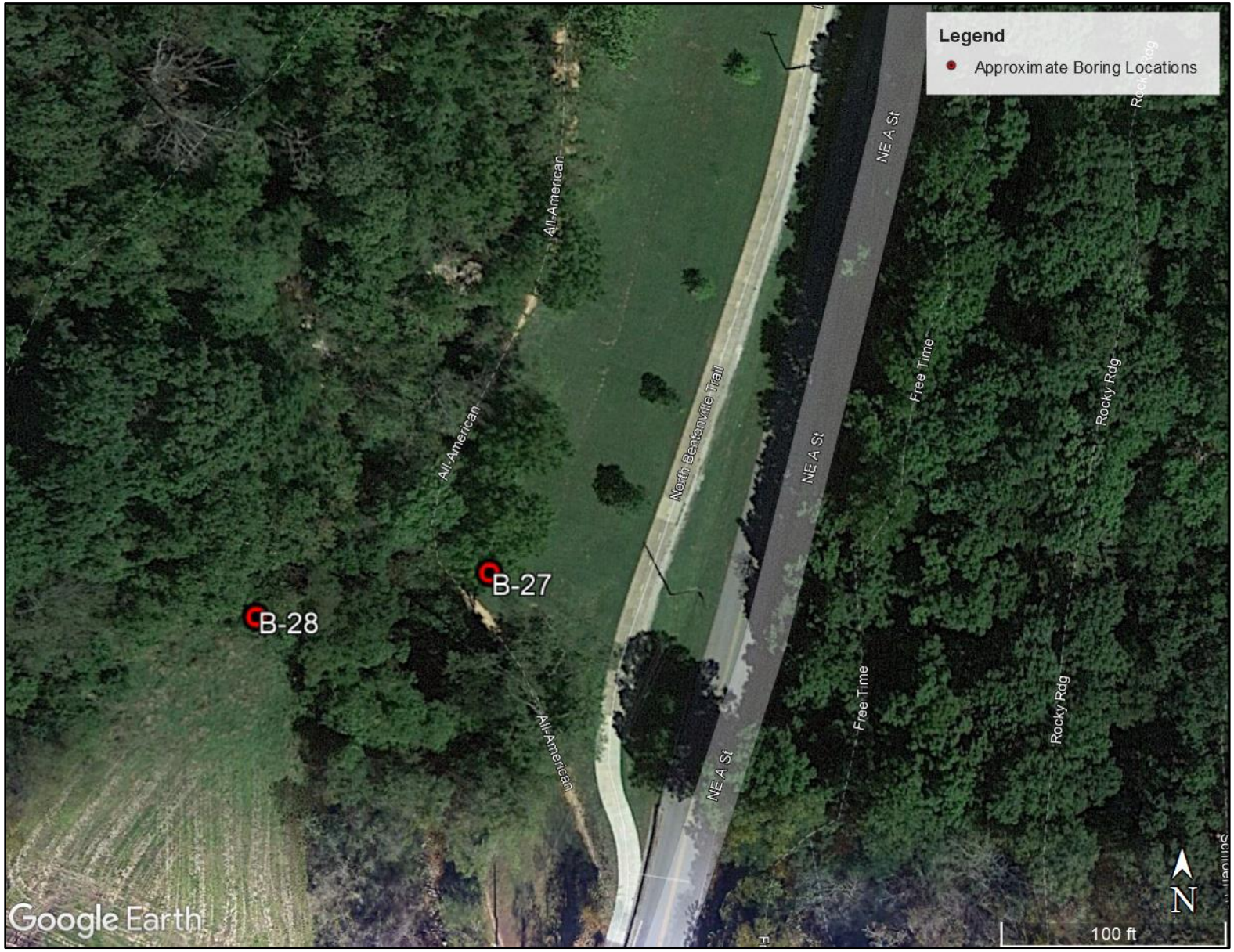
Soil Classification Legend

Rock Classification Legend



Boring Location Diagram 1 - Existing Conditions

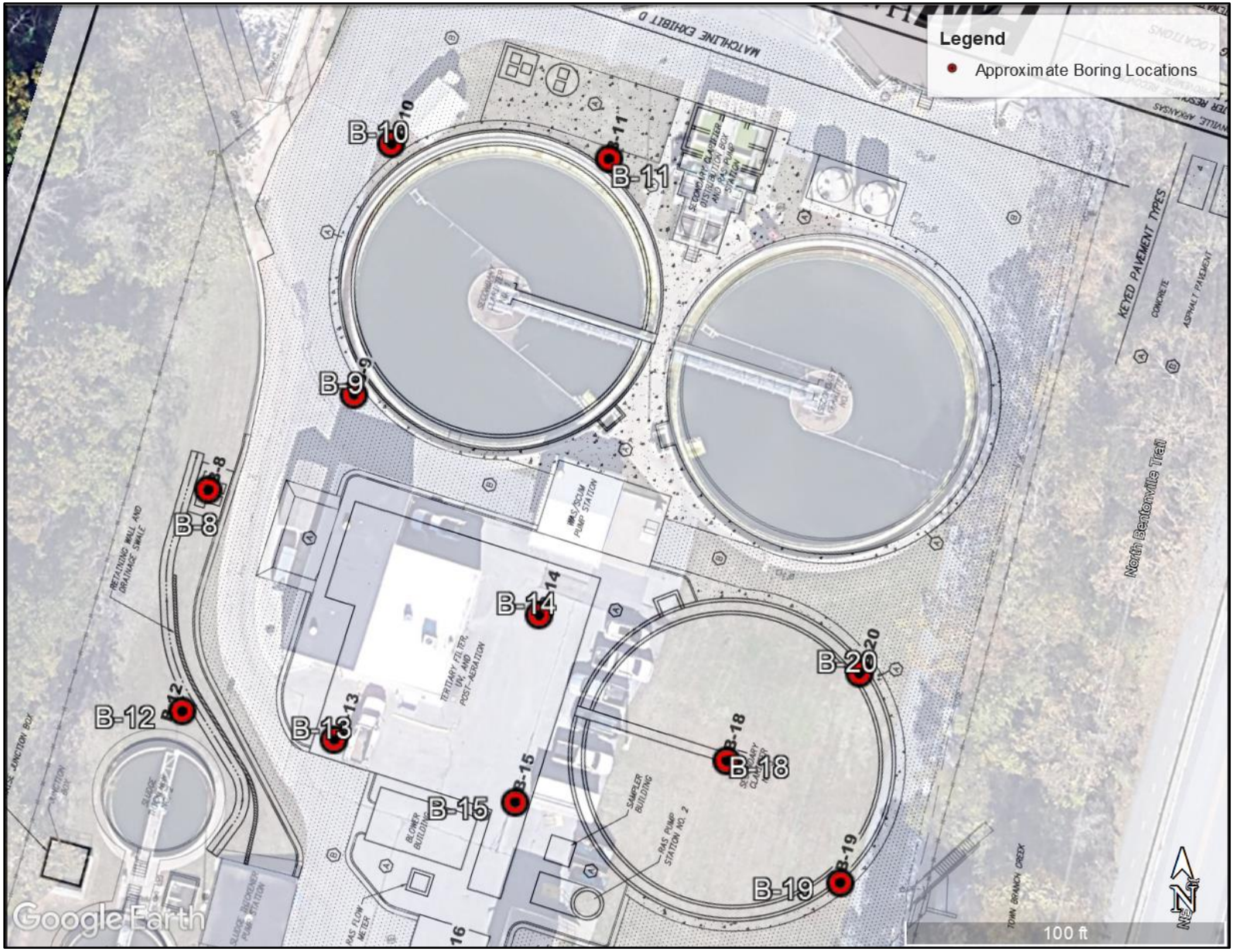
Boring Location Diagram 2 - Site Plan Overlay



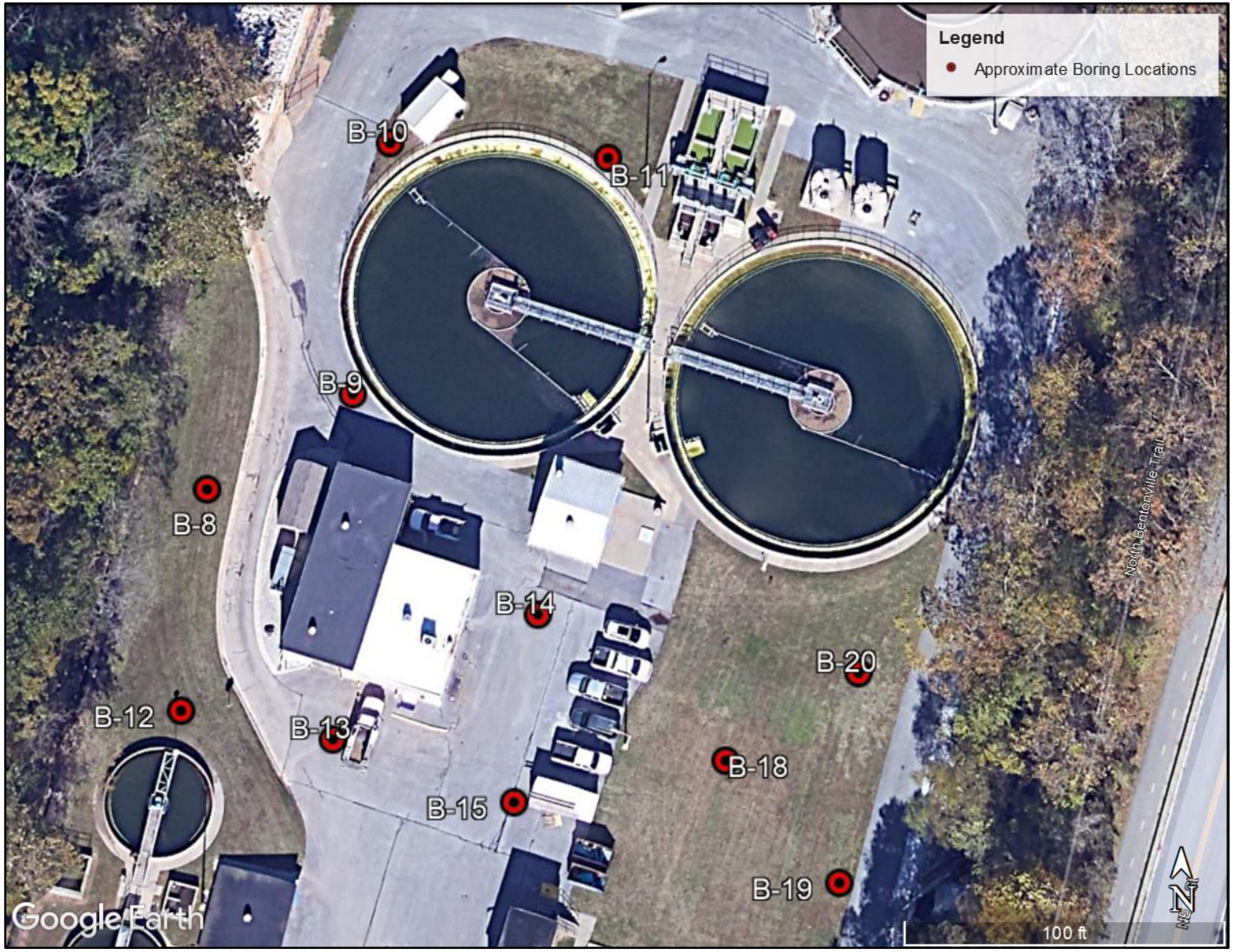
Boring Location Diagram 2 - Existing Conditions

Boring Location Diagram 3 - Site Plan Overlay

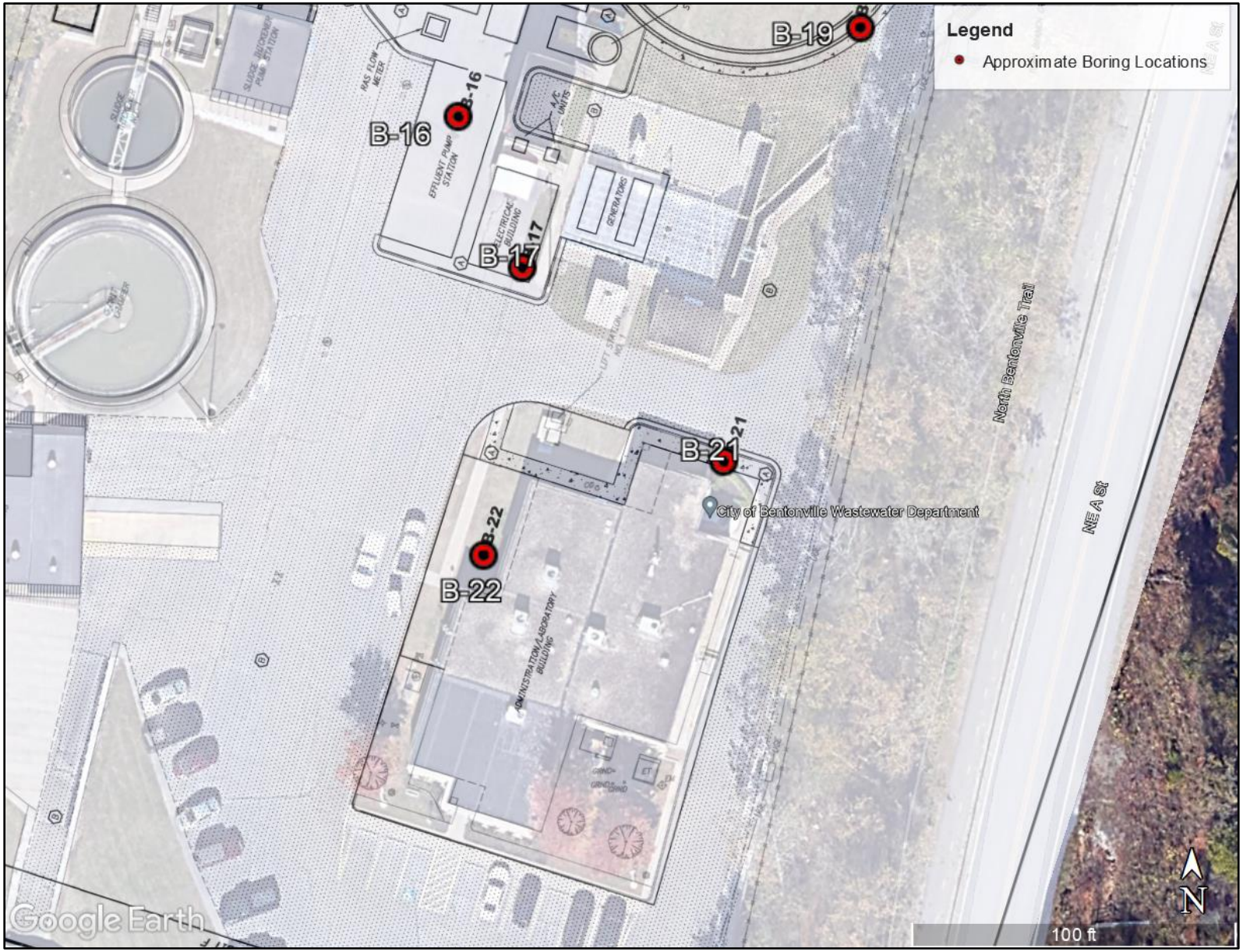
Boring Location Diagram 3 - Existing Conditions



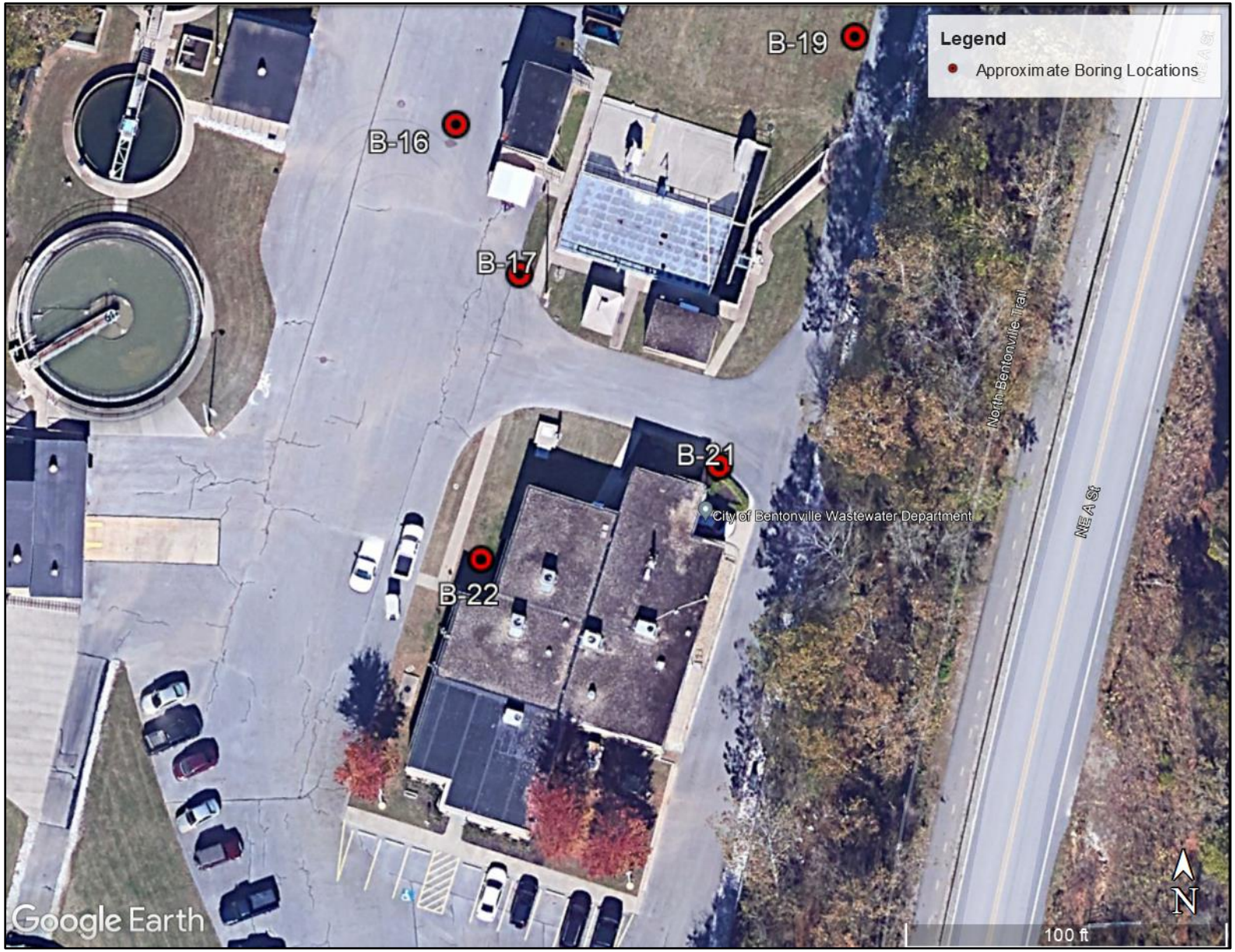
Boring Location Diagram 4 - Site Plan Overlay



Boring Location Diagram 4 - Existing Conditions



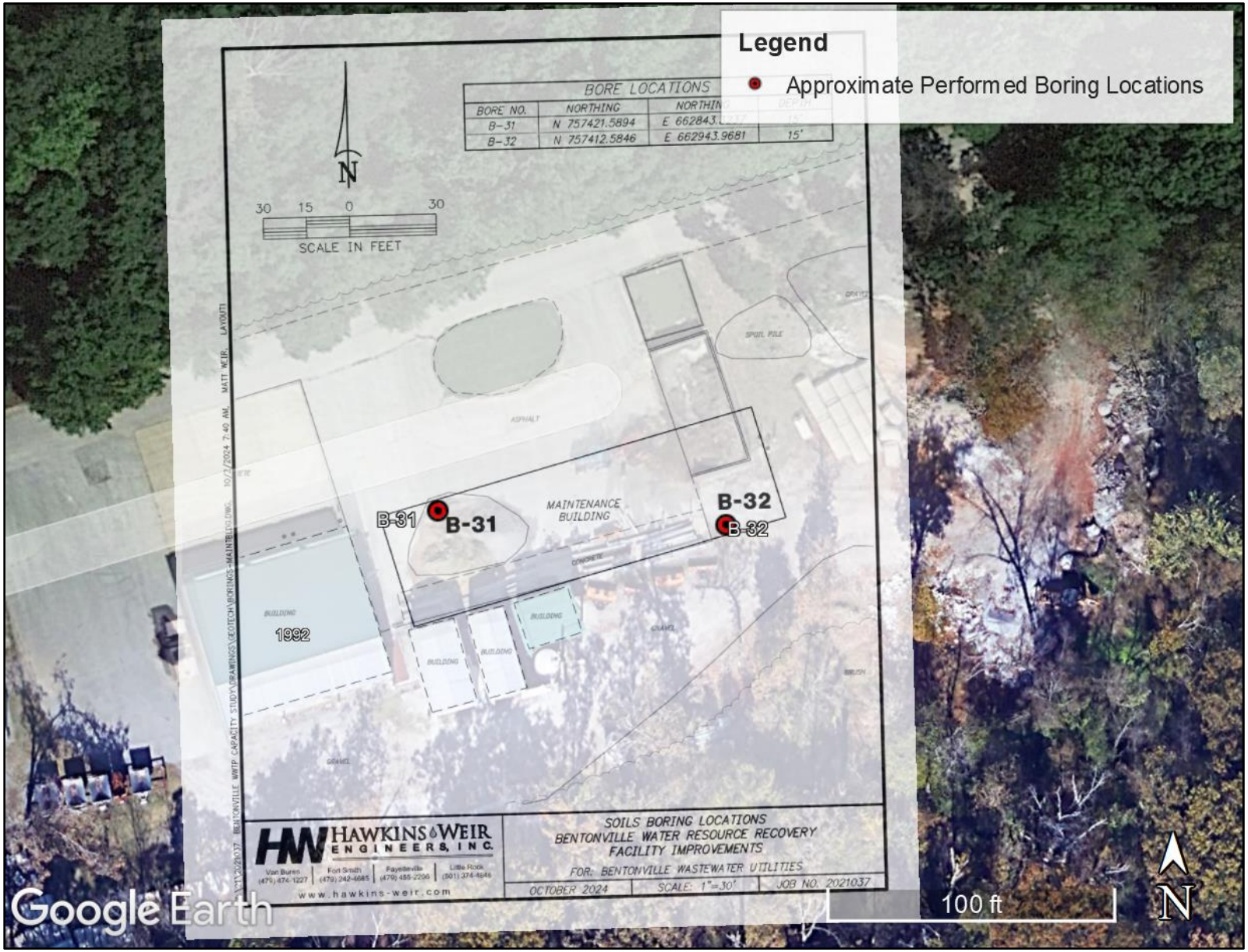
Boring Location Diagram - 5 Site Plan Overlay



Boring Location Diagram 5 - Existing Conditions

Boring Location Diagram 6 - Site Plan Overlay

Boring Location Diagram 6 - Existing Conditions



Boring Location Diagram 7 – Site Plan Overlay

Boring Location Diagram 7 – Existing Conditions (September 2021)

LOG OF BORING NO.B-1

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	BLOWS PER FT
			Surface Description= Crushed Gravel			
0			El.=1132.0			
	1	18	GRAVELLY SILT, with sand dense, brown and red, with lean clay pockets and chert fragments	ML		30
2.5			El.=1130.0			
	2	7	GRAVELLY LEAN CLAY very stiff, brown and red, with chert and limestone fragments	CL		26
			El.=1128.0			
	3	8	SANDY LEAN CLAY, with gravel stiff to very stiff, brown and red, with lean clay pockets, chert and limestone fragments			14
5	4	10			59	9
7.5						
	5	16		CL		13
10						
12.5						
	6	14	El.=1118.0			
15			CLAYEY GRAVEL medium dense to very dense, white and light gray, with chert nodules	GC		28, 50/2"
17.5						

HAND PENETROMETER, TSF ■
LAB. COHESION, TSF ▲
0.4 0.8 1.2 1.6
WATER CONTENT, % •
PL LL
20 40 60 80

COMPLETION DEPTH: 18.83 ft.
DATE: 12-12-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-1

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL (continued)	GC			
		X	7	4					50/4"
					El.=1113.2 BOTTOM OF BORING AT ABOUT 19 FEET				
20									
22.5									
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-2

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description= Gravel Cover = 1 inches				
0					El.=1128.1				
			1	18	SILTY GRAVEL, with sand very stiff, brown and tan, with limestone fragments	GM	26	■ ● —	26
					El.=1126.1				
2.5			2	18	CLAYEY GRAVEL, with sand medium dense, brown, red, and gray, with limestone and chert fragments		30	■ ● — ■	7
			3	16				■ ●	8, 50/4"
5					- very dense below about 4 ½ feet				
			4	1				●	50/3"
7.5						GC			
			5	1					50/3"
10									
					El.=1117.1				
12.5					LIMESTONE moderately weathered, very hard to hard, light gray				
			R1		Recovery = 100% RQD = 39% UCS = 23,670 psi @ 14 ½ feet				
15									
17.5									

COMPLETION DEPTH: 26 ft.
DATE: 12-12-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 3 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-2

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
			R2		LIMESTONE (continued) moderately weathered, hard, light gray Recovery = 91% RQD = 56% UCS = 8,350 psi @ 20 feet	ROCK			
20									
22.5			R3		Recovery = 100% RQD = 30% UCS = 7,950 psi @ 24 feet				
25					El.=1102.1 AUGER REFUSAL AT ABOUT 11 FEET BOTTOM OF BORING AT ABOUT 26 FEET				
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-3

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0			Surface Description= Grass Cover Rootmat = 3 inches El.=1128.8				
	1	18	GRAVELLY LEAN CLAY stiff, red, brown, and dark gray, with silt seams, chert fragments, and limestone fragments	CL			10
2.5			El.=1126.8				
	2	16	CLAYEY GRAVEL, with sand medium dense, brown, with limestone and chert fragments		37		9
	3	16			43		13
5	4	18					29
7.5				GC			
	5	16					15
10							
12.5							
	6	8	- very dense below about 13 ½ feet				50/2"
15			El.=1113.8				
			BOTTOM OF BORING AT ABOUT 15 FEET				
17.5							

COMPLETION DEPTH: 15 ft.
DATE: 12-12-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-4

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 2 inches El.=1125.6				
			1	16	FILL -predominantly 9 inches of brown silt atop brown, dark gray and red gravelly lean clay with limestone and chert fragments	FILL		2.5 ■→	31
2.5					El.=1123.6				
			2	18	SILT, with gravel loose, brown and orange, with lean clay pockets and limestone fragments	ML		●	6
					El.=1122.1				
			3	12	CLAYEY GRAVEL, with sand medium dense to dense, brown and orange, with lean clay pockets and limestone fragments		45	●	22
5			4	6				●	47
7.5									
			5	2				●	30
10									
12.5						GC			
			6	6				●	27
15									
17.5									

COMPLETION DEPTH: 31.5 ft.
DATE: 12-13-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-4

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL, with sand (continued) very dense, brown and orange, with lean clay pockets and limestone fragments	GC			
			7	5					50/3"
20									
					El.=1104.1				
					LIMESTONE moderately to intensely weathered, very hard, light gray				
22.5									
			R1		Recovery = 96% RQD = 32% UCS = 18,950 psi @ 22 ½ feet				
25						ROCK			
27.5									
			R2		Recovery = 100% RQD = 52% UCS = 15,210 psi @ 29 feet				
30									
					El.=1094.1				
32.5					AUGER REFUSAL AT ABOUT 21 ½ FEET BOTTOM OF BORING AT ABOUT 31 ½ FEET				
35									

LOG OF BORING NO.B-5

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description= Grass Cover Rootmat = 1 inches				
0					El.=1129.6				
			1	18	POSSIBLE FILL - predominantly interbedded layers fat clay and clayey gravel, brown and red, with chert and limestone fragments			2.75 ■ →	14
2.5			2	18					43
			3	18					60
5			4	16			46		22
7.5						FILL			
			5	18					17
10									
12.5									
					El.=1116.1				
			6	10	SILT, with gravel medium dense, brown and red, with lean clay pockets				9
15						ML			
17.5									

COMPLETION DEPTH: 24.25 ft.
DATE: 12-13-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 14 ft.
AT COMPLETION: 20 ft.
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-5

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
					SILT, with gravel (continued) dense, brown and red, with lean clay pockets				
			7	16					45
					El.=1110.1 CLAYEY GRAVEL very dense, white and light gray				
20									
						GC			
22.5									
			8	7					50/3"
					El.=1105.4 BOTTOM OF BORING AT ABOUT 24 FEET				
25					TEMPORARY PIEZOMETER INSTALLED AT ABOUT 24 FEET Type: 2-inch, PVC pipe. Screen: slotted from about 25 to 30 feet. Annulus: about 10 feet of sand, backfilled with bentonite grout to the ground surface				
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-6

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	BLOWS PER FT
			Surface Description= Grass Cover Rootmat = 1 inches			HAND PENETROMETER, TSF ■ LAB. COHESION, TSF ▲ 0.4 0.8 1.2 1.6 WATER CONTENT, % ● PL — LL 20 40 60 80
0			El.=1127.1			
	1	18	POSSIBLE FILL - predominantly interbedded layers lean clay and clayey gravel, brown and red, with chert and limestone fragments			17
2.5	2	15		FILL		62
	3	12				24
5			El.=1121.6			
	4	16	CLAYEY GRAVEL, with sand dense, red and brown, with limestone layers		33	32
7.5						
	5	18	- medium dense below about 8 ½ feet			23
10						
				GC		
12.5						
	6	2				15
15						
17.5						

COMPLETION DEPTH: 23.75 ft.
DATE: 12-13-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 14 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-6

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL, with sand (continued)				
			7	3	dense, red and brown, with limestone layers				50/4"
					El.=1108.6				
20					LIMESTONE				
					moderately weathered, soft, light gray	ROCK			
22.5									
			8	3	El.=1103.3				50/3"
					BOTTOM OF BORING AT ABOUT 23 ½ FEET				
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-8

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 1 inches El.=1133.7				
			1	18	POSSIBLE FILL - predominantly 1 foot of brown sandy silt, atop interbedded layers of lean clay and clayey sand containing varying amounts of chert and limestone fragments			3.5	10
2.5			2	14					16
			3	18		FILL		4.0	20
5			4	12					26
7.5					El.=1125.2				
			5	10	CLAYEY SAND, with gravel dense, brown and gray, with chert fragments		47		41
10									
12.5						SC			
			6	16					30
15									
17.5									

COMPLETION DEPTH: 18.75 ft.
DATE: 12-14-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 13.5
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-8

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					El.=1115.7				
					LIMESTONE	ROCK			
			7	3	intensely weathered, soft, light gray			●	50/3"
					El.=1115.0				
					BOTTOM OF BORING AT ABOUT 19 FEET				
20									
22.5									
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-9

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Asphalt Pavement El.=1132.4 ASPHALT = 4 inches El.=1132.1				
			1	14	CRUSHED AGGREGATE = 3 inches El.=1130.4			3.0 ■	9
2.5			2	11	FILL - predominantly fat clay, with gravel, stiff, red, with chert and limestone fragments				14
			3	10	- predominantly medium stiff to stiff, orange, brown, and gray, gravelly lean clay with silt seams, chert fragments, and limestone fragments below 3 feet			2.5 ■	7
5			4	7		FILL			9
7.5					El.=1123.9				
			5	6	CLAYEY GRAVEL, with sand loose, brown				8
10									
12.5									
			6	6	- medium dense below about 13 ½ feet	GC	20		10
15									
17.5									

COMPLETION DEPTH: 35 ft.
DATE: 12-27-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-9

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL, with sand (continued)				
					El.=1113.9				
			R1		LIMESTONE moderately weathered, hard to very hard, light gray Recovery = 48% RQD = 0%				
20									
			R2		Recovery = 93% RQD = 8% UCS = 5,080 psi @ 24 feet				
22.5									
25									
			R3		Recovery = 96% RQD = 25% UCS = 21,150 psi @ 25 ½ feet	ROCK			
27.5									
30									
			R4		Recovery = 93% RQD = 28% UCS = 11,520 psi @ 32 feet				
32.5									
35					El.=1097.4				
					AUGER REFUSAL AT ABOUT 18 ½ FEET BOTTOM OF BORING AT ABOUT 35 FEET				

LOG OF BORING NO.B-10

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	BLOWS PER FT
			Surface Description= Grass Cover Rootmat = 1 inches			
0			El.=1131.8			
	1	18	FILL - predominantly 1 foot of silt atop gravelly fat clay red and brown, with limestone and chert fragments			9
2.5	2	4				15
	3	4		FILL		14
5	4	8	- predominantly medium dense, brown silt, with lean clay pockets below 5 feet			16
7.5						
	5	18				15
			El.=1122.3			
10			CLAYEY GRAVEL, with sand dense, dark brown, with limestone fragments			
12.5						
	6	10		GC	41	38
15						
17.5						

HAND PENETROMETER, TSF ■
LAB. COHESION, TSF ▲
0.4 0.8 1.2 1.6
WATER CONTENT, % ●
PL LL
20 40 60 80

3.5

COMPLETION DEPTH: 37 ft.
DATE: 12-14-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-10

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL, with sand (continued)				
			7	6	El.=1113.0				50/3"
					LIMESTONE moderately weathered, hard to moderately hard, white and light gray				
20			R1		Recovery = 91% RQD = 38%				
22.5			R2		Recovery = 100% RQD = 41% UCS = 10,090 psi @ 26 feet				
25									
27.5			R3		Recovery = 100% RQD = 68% UCS = 3,910 psi @ 28 feet	ROCK			
30									
32.5			R4		Recovery = 100% RQD = 33% UCS = 5,880 psi @ 36 ½ feet				
35									

LOG OF BORING NO.B-10

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
					El.=1094.8				
37.5					AUGER REFUSAL AT ABOUT 19 ½ FEET BOTTOM OF BORING AT ABOUT 37 FEET				
40									
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-11

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 1 inches El.=1132.1				
			1	18	POSSIBLE FILL - predominantly gravelly fat clay and clayey gravel, brown and red, with chert fragments			4.0	12
2.5			2	16					9
			3	16					20
5			4	10					10
7.5						FILL			
			5	10					13
10									
12.5					El.=1118.6				
			6	16	CLAYEY GRAVEL, with sand medium dense, white and light gray, with chert nodules and limestone fragments	GC	35		11
15									
17.5									

COMPLETION DEPTH: 36 ft.
DATE: 12-14-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 19.5 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-11

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % • (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
			7	11	CLAYEY GRAVEL, with sand (continued)				50/5"
					El.=1113.1				
20					LIMESTONE moderately weathered, moderately hard to hard, light gray				
22.5									
25			R1		Recovery = 91% RQD = 53% UCS = 9,430 psi @ 26 feet				
27.5			R2		Recovery = 98% RQD = 75%	ROCK			
30									
32.5			R3		Recovery = 100% RQD = 38% UCS = 10,630 psi @ 33 feet				
35					AUGER REFUSAL AT ABOUT 23 FEET BOTTOM OF BORING AT ABOUT 36 FEET				
					El.=1096.1				

LOG OF BORING NO.B-11

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5					BOTTOM OF BORING AT ABOUT 36 FEET				
40									
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-12

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Grass Cover Rootmat = 1 inches				
0					El.=1138.9				
			1	18	POSSIBLE FILL - predominantly 6 inches of brown sandy silt atop interbedded layers of silt, sand and clay with chert and limestone fragments	FILL	52	●	7
2.5			2	10				●	16
			3	12				●	18
5			4	12				■ 3	21
7.5									
			5	16				●	32
10					El.=1128.9				
					BOTTOM OF BORING AT ABOUT 10 FEET				
12.5									
15									
17.5									

COMPLETION DEPTH: 10 ft.
DATE: 12-14-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-13

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Asphalt Pavement Base = 2 inches El.=1132.8				
					ASPHALT = 4 INCHES El.=1132.5				
			1	15	POSSIBLE FILL - predominantly interbedded layers of brown, gray, and tan, clayey sand, fat clay and gravel, with chert, limestone, and sandstone fragments			■	14
2.5			2	12		FILL		■	12
			3	16				3.0 ■→	20
5					El.=1127.8				
			4	9	GRAVELLY SILT, with sand medium dense to very loose, brown and dark gray, with chert fragments				11
7.5									
			5	7					7
10						ML			
12.5									
			6	1					3
15									
17.5					El.=1115.3				

COMPLETION DEPTH: 40 ft.
DATE: 12-20-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 8 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-13

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
			R1		LIMESTONE moderately weathered, hard to very hard, light gray Recovery = 83% RQD = 24%				
20									
			R2		Recovery = 90% RQD = 35% UCS = 15,440 psi @ 21 ½ feet				
22.5									
25			R3		Recovery = 93% RQD = 52% UCS = 8,440 psi @ 28 ½ feet	ROCK			
27.5									
30			R4		Recovery = 96% RQD = 28% UCS = 31,880 psi @ 33 feet				
32.5									
35									

LOG OF BORING NO.B-13

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5			R5		LIMESTONE (continued) moderately weathered, hard to very hard, light gray Recovery = 96% RQD = 29% UCS = 15,590 psi @ 39 ½ feet				
40					El.=1092.8 AUGER REFUSAL AT ABOUT 17 ½ FEET BOTTOM OF BORING AT ABOUT 40 FEET				
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-14

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0				Surface Description= Asphalt Pavement El.=1132.3				
				ASPHALT = 4 inches El.=1132.0				
		1	13	CRUSHED AGGREGATE = 3 inches El.=1131.3			3.0 ■ →	8
2.5		2	10	FILL - predominantly gravelly lean clay, brown and red, with chert and limestone fragments	FILL		■	2
		3	12					11
5				El.=1127.3				
		4	9	SILT, with gravel loose, dark brown	ML			5
7.5								
				El.=1123.8				
		5	7	CLAYEY GRAVEL, with sand dense to medium dense, brown	GC			37
10								
12.5								
		6	7					12
15								
17.5								

COMPLETION DEPTH: 40 ft.
DATE: 12-18-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 15 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-14

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
					CLAYEY GRAVEL, with sand (continued)				
			7	1				●	50/1"
					El.=1113.8				
					LIMESTONE				
20			R1		moderately weathered, moderately hard to very hard, light gray Recovery = 81% RQD = 36%				
22.5			R2		Recovery = 100% RQD = 60% UCS = 11,680 psi @ 22 ½ feet				
25									
27.5			R3		Recovery = 100% RQD = 46% UCS = 17,800 psi @ 28 ½ feet	ROCK			
30									
32.5			R4		Recovery = 100% RQD = 45% UCS = 4,580 psi @ 33 ½ feet				
35									

LOG OF BORING NO.B-14

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5			R5		LIMESTONE (continued) oderately weathered, moderately hard to very hard, light gray Recovery = 95% RQD = 49% UCS = 11,890 psi @ 38 ½ feet				
40					El.=1092.3 AUGER REFUSAL AT ABOUT 18 ½ FEET BOTTOM OF BORING AT ABOUT 40 FEET				
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-15

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	BLOWS PER FT
			Surface Description= Asphalt Pavement			
0			El.=1132.9			
			ASPHALT = 4 inches			
			El.=1132.6			
	1	18	FILL - predominantly gravelly fat clay, red and dark brown, with silt seams, chert fragments, and limestone fragments	FILL		10
2.5	2	14				8
	3	18	El.=1128.9			10
5			GRAVELLY SILT, with sand medium dense to loose, brown and gray			
	4	18	- lean clay seams between about 5 and 6 ½ feet	ML		4
7.5						
	5	18	El.=1123.6			19
10			CLAYEY GRAVEL, with sand medium dense, tan, orange, and brown, with chert and limestone fragments			
12.5				GC		
	6	12				29
15						
17.5			El.=1115.4			

HAND PENETROMETER, TSF ■
LAB. COHESION, TSF ▲
0.4 0.8 1.2 1.6
WATER CONTENT, % ●
PL LL
20 40 60 80

2.5 ■→ 3.5 ■→

COMPLETION DEPTH: 40 ft.
DATE: 12-19-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 13 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-15

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
			R1		LIMESTONE intensely to moderately weathered, moderately hard to hard, light gray Recovery = 48% RQD= 0%				
20									
			R2		Recovery = 83% RQD = 9% UCS = 6,700 psi @ 22 feet				
22.5									
25			R3		Recovery = 80% RQD = 20% UCS = 9,760 psi @ 26 feet	ROCK			
27.5									
30			R4		Recovery = 90% RQD = 0%				
32.5									
35									

LOG OF BORING NO.B-15

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5			R5		LIMESTONE (continued) Recovery = 100% RQD = 10% UCS = 12,290 psi @ 37 ½ feet				
40					El.=1092.9 AUGER REFUSAL AT ABOUT 17 ½ FEET BOTTOM OF THE BORING AT ABOUT 40 FEET TEMPORARY PIEZOMETER INSTALLED AT ABOUT 17 FEET Type: 2-inch, PVC pipe. Screen: slotted from about 25 to 30 feet. Annulus: about 10 feet of sand, backfilled with bentonite grout to the ground surface				
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-16

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
			Surface Description= Asphalt Pavement				
0			El.=1133.3				
			ASPHALT = 4 inches				
			El.=1133.1				
	1	8	CRUSHED AGGREGATE = 3 inches				17
			El.=1132.3				
2.5	2	12	FILL - predominantly gravelly lean clay, red and brown, with chert and limestone fragments	FILL			8
	3	12				3.0	15
			El.=1128.8				
5	4	12	GRAVELLY SILTY CLAY, with sand very stiff, brown and dark gray, with chert and limestone fragments	CL-ML			12
7.5							
			El.=1124.8				
	5	18	SILT, with sand medium dense, dark brown, with lean clay pockets	ML			11
10							
12.5							
			El.=1119.8				
	6	8	GRAVELLY SILT, with sand loose, brown	ML			7
15							
17.5							

COMPLETION DEPTH: 40 ft.
DATE: 12-21-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-16

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					El.=1115.3				
			R1		LIMESTONE intensely weathered to moderately weathered, moderately hard, light gray Recovery = 73% RQD= 18%				
20									
			R2		Recovery = 61% RQD= 29% UCS = 7,330 psi @ 20 ½ feet				
22.5									
25			R3		Recovery = 84% RQD= 30% UCS = 6,160 psi @ 27 ½ feet	ROCK			
27.5									
30			R4		Recovery = 98% RQD= 30% UCS = 6,920 psi @ 32 ½ feet				
32.5									
35									

LOG OF BORING NO.B-16

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5			R5		LIMESTONE (continued) Recovery = 93% RQD= 43% UCS = 6,000 psi @ 38 feet				
40					El.=1093.3 AUGER REFUSAL AT ABOUT 17 ½ FEET BOTTOM OF BORING AT ABOUT 40 FEET				
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-17

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES: SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
0			Surface Description= Asphalt Pavement El.=1132.8				
			ASPAHLT = 4 INCHES El.=1132.5				
	1	15	CRUSHED AGGREGATE El.=1131.8		35	■	7
2.5	2	8	POSSIBLE FILL, predominantly red and gray clayey gravel, with sand, chert fragments, and limestone fragments			●	10
	3	16		FILL	27	●	10
5	4	9				■	15
7.5			El.=1124.3				
	5	5	SANDY SILT, with gravel loose to medium dense, brown			●	4
10							
12.5				ML			
	6	7	▽			●	11
15							
			El.=1115.8				
17.5							

COMPLETION DEPTH: 40 ft.
DATE: 12-21-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 14 ft ▽
AT COMPLETION: Dry ▽
AT 24 HOURS: Backfilled ▽

LOG OF BORING NO.B-17

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
			R1		LIMESTONE moderately weathered, hard to very hard, light gray Recovery = 92% RQD = 39% UCS = 9,120 psi @ 19 ½ feet				
20									
			R2		Recovery = 90% RQD = 11% UCS = 11,420 psi @ 22 feet				
22.5									
25									
			R3		Recovery = 95% RQD = 29% UCS = 23,680 psi @ 26 ½ feet				
27.5									
30									
			R4		Recovery = 95% RQD = 20% UCS = 25,370 psi @ 33 feet				
32.5									
35									

LOG OF BORING NO.B-17

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5			R5		LIMESTONE (continued) Recovery = 83% RQD = 20% USC = 18,790 psi @ 38 ½ feet				
40					El.=1092.8 AUGER REFUSAL AT ABOUT 17 FEET BOTTOM OF BORING AT ABOUT 40 FEET				
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-18

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 1 inches El.=1132.4				
			1	18	POSSIBLE FILL - predominantly gravelly fat clay, brown, red, and dark gray, with limestone fragments	FILL		■ ●	13
					El.=1130.4				
2.5			2	16	CLAYEY GRAVEL, with sand stiff to very stiff, brown, red, and gray, with silt seams, chert fragments and limestone fragments			●	10
			3	14				●	14
5			4	8				●	8
7.5									
			5	8		GC		●	18
10									
12.5									
			6	16			32.7	●	25
15									
					El.=1116.4				
					LIMESTONE moderately weathered, hard, light gray				
17.5									

COMPLETION DEPTH: 35 ft.
DATE: 12-15-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-18

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
			R1		LIMESTONE (continued) moderately weathered, hard, light gray Recovery = 79% RQD = 64%				
20									
			R2		Recovery = 100% RQD = 60% UCS = 7,780 psi @ 22 feet				
22.5									
25						ROCK			
			R3		Recovery = 100% RQD = 19% UCS = 16,050 psi @ 26 ½ feet				
27.5									
30									
			R4		Recovery = 100% RQD = 43% UCS = 13,200 psi @ 32 feet				
32.5									
35					El.=1097.4 AUGER REFUSAL AT ABOUT 16 FEET BOTTOM OF BORING AT ABOUT 35 FEET				

LOG OF BORING NO.B-19

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description= Grass Cover Rootmat = 1 inches				
0					El.=1132.1				
			1	18	POSSIBLE FILL - predominantly 1 foot of brown silt, with rootlets and gravel atop red gravelly fat clay	FILL		■ 3	18
					El.=1130.1				
2.5			2	7	CLAYEY GRAVEL, with sand loose to medium dense, brown, red, and dark gray, with lean clay pockets, with limestone and chert fragments				14
			3	10			55		8
5			4	4					25
7.5						GC			
			5	8					17
10									
12.5									
			6	3	El.=1118.6				50/3"
15					LIMESTONE moderately weathered, moderately hard to very hard, light gray and gray				
			R1		Recovery = 83% RQD = 40%				
17.5									

COMPLETION DEPTH: 36 ft.
DATE: 12-15-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-19

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
			R2		LIMESTONE (continued) moderately weathered, hard to very hard, light gray and gray Recovery = 92% RQD = 38% UCS = 6,510 psi @ 17 ½ feet				
20									
			R3		Recovery = 100% RQD = 56% UCS = 15,350 psi @ 24 feet				
22.5									
25						ROCK			
			R4		Recovery = 99% RQD = 42% UCS = 7,680 psi @ 27 ½ feet				
27.5									
30									
			R5		Recovery = 100% RQD = 46% UCS = 17,420 psi @ 35 ½ feet				
32.5									
35					AUGER REFUSAL AT ABOUT 15 FEET BOTTOM OF BORING AT ABOUT 36 FEET				
					El.=1096.1				

LOG OF BORING NO.B-19

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5					BOTTOM OF BORING AT ABOUT 36 FEET				
40									
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-20

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0			Surface Description= Grass Cover Rootmat = 1 inches El.=1131.7				
	1	14	POSSIBLE FILL - predominantly gravelly lean clay, brown and red, with chert and limestone fragments, with rootlets and organics	FILL		●	22
			El.=1129.7				
2.5	2	1	SANDY SILT medium dense to loose, brown, red, and dark gray, with lean clay pockets, chert fragments, and limestone fragments				16
	3	6				●	5
5	4	1	- very dense chert seam or boulder at about 5 feet	ML		●	50/2"
7.5	5	18				●	12
			El.=1122.2				
10			GRAVELLY LEAN CLAY stiff, brown and red, with limestone fragments	CL			
12.5							
			El.=1118.2				
	6	5	LIMESTONE moderately weathered, moderately hard to very hard, light gray and tan			●	50/5"
15							
17.5							

COMPLETION DEPTH: 36 ft.
DATE: 12-15-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-20

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
			R1		LIMESTONE (continued) moderately weathered, moderately hard to very hard, light gray and tan Recovery = 99% RQD = 52% UCS = 22,410 psi @ 18 ½ feet				
20									
22.5			R2		Recovery = 100% RQD = 53% UCS = 19,440 psi @ 23 ½ feet	ROCK			
25									
27.5			R3		Recovery = 100% RQD = 39% UCS = 2,040 psi @ 26 feet				
30									
32.5			R4		Recovery = 100% RQD = 33% UCS = 9,630 psi @ 31 ½ feet				
35					AUGER REFUSAL AT ABOUT 16 FEET BOTTOM OF BORING AT ABOUT 36 FEET				
					El.=1095.7-				

LOG OF BORING NO.B-20

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
37.5					BOTTOM OF BORING AT ABOUT 36 FEET				
40									
42.5									
45									
47.5									
50									
52.5									
55									

LOG OF BORING NO.B-21

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description= Mulch Cover Cover = 2 inches				
0					El.=1133.5				
			1	18	POSSIBLE FILL - predominantly gray sandy gravel	FILL		2.5	72
					El.=1132.0				
2.5			2	18	LEAN CLAY, with sand very stiff to hard, red and brown, with limestone fragments		71	3.5	21
			3	18	- silt seams starting below about 3 ½ feet			3.0	30
5						CL			
			4	14					17
7.5									
					El.=1125.0				
			5	12	SILT, with gravel medium dense, dark brown, with lean clay pockets				24
10									
						ML			
12.5									
			6	10					23
15					El.=1118.5				
					BOTTOM OF BORING AT ABOUT 15 FEET				
17.5									

COMPLETION DEPTH: 15 ft.
DATE: 12-18-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 13.5 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-22

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0			Surface Description= Grass Cover Rootmat = 1 inches El.=1134.2				
	1	18	GRAVELLY LEAN CLAY very stiff, red and brown, with silt seams, limestone fragments and chert fragments	CL		■ 2.5	14
2.5			El.=1132.2				
	2	14	CLAYEY GRAVEL, with sand medium dense, dark brown, red, and tan, with lean clay pockets, with limestone and chert fragments	GC	28	●	22
			El.=1130.7				
	3	14	CLAYEY SAND, with gravel medium stiff, brown, red, and gray, with chert and limestone fragments	SC	35	●	13
5			El.=1129.2				
	4	10	GRAVELLY SILT, with sand medium dense to dense, brown, red and tan, with lean clay pockets, limestone fragments, and chert fragments	ML		●	11
7.5							
	5	8				●	31
10							
12.5							
	6	8				●	24
15			El.=1119.2				
			BOTTOM OF BORING AT ABOUT 15 FEET				
17.5							

COMPLETION DEPTH: 15 ft.
DATE: 12-18-2023
RIG: CME-550X, Buggy-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-23

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 2 inches El.=1136.1 CLAYEY GRAVEL, with sand - hand auger techniques utilized in the top 5 feet to ensure no buried utilities at boring location				
2.5									
5					- medium stiff and brown below about 5 feet				
			4			GC			
7.5									
			5	6					5
10									
12.5									
			6	5	El.=1122.6 LIMESTONE intensely weathered, moderately hard, light gray				50/1"
15					Recovery = 96% RQD = 17% UCS = 3,888 psi @ 19 ½ feet	ROCK			
17.5			R1						

COMPLETION DEPTH: 20 ft.
DATE: 1-4-2024
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 12 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-23

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
					LIMESTONE (continued) intensely weathered, moderately hard, light gray	ROCK			
20					El.=1116.1 AUGER REFUASL AT ABOUT 15 FEET BOTTOM OF BORING AT ABOUT 20 FEET				
22.5									
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-24

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0				Surface Description= Asphalt Pavement El.=1136.9 ASPHALT = 4 inches El.=1136.5 CRUSHED AGGREGATE = 2 inches El.=1135.9 POSSIBLE FILL - predominantly brown gravelly silt, with sand, with chert, sandstone, and limestone fragments				
		1	9					5
2.5		2	6					2
		3	6					4
5		4	5					2
7.5		5	7		FILL			3
10								
12.5								
		6	2	El.=1123.4 LIMESTONE moderately to intensely weathered, moderately hard, light gray Recovery = 100% RQD = 0%				50/2"
15		R1			ROCK			
17.5		R2						

COMPLETION DEPTH: 20 ft.
DATE: 12-28-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 8 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-24

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
					LIMESTONE (continued) Recovery = 45% RQD = 0%				
20					El.=1116.9 AUGER REFUSAL AT ABOUT 14 FEET BOTTOM OF BORING AT ABOUT 20 FEET				
22.5									
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-26

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Crushed Gravel = 3 inches El.=1136.5 POSSIBLE FILL - predominantly brown, dark gray, and light tan, silty sandy gravel, with chert and limestone fragments				
			1	18					20
2.5			2	11	- predominantly brown silt, with sand and gravel, with chert and sandstone fragments				18
			3	8					11
5			4	8	- predominantly brown clayey gravel, with sandstone and chert fragments	FILL			13
7.5									
			5	7	- predominantly dark brown, light gray, and orange clayey gravel gravel, with limestone and sandstone fragments		19		22
10									
					El.=1125.0 LIMESTONE moderately weathered, moderately hard, light gray and gray				
12.5			R1		Recovery = 76% RQD = 13% UCS = 3,507 psi @ 13 feet	ROCK			
15					El.=1121.5 AUGER REFUSAL AT ABOUT 11 ½ FEET BOTTOM OF BORING AT ABOUT 15 FEET				
17.5									

COMPLETION DEPTH: 15 ft.
DATE: 12-29-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-27

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description= Grass Cover Rootmat = 2 inches				
0					El.=1119.0 ALLUVIAL DEPOSITS interbedded layers of silt, sand and clay, with sandstone and chert fragments, very loose to medium dense, brown, orange and dark gray				
			1	12					6
2.5			2	7					5
			3	13					3
5			4	12					8
						ML			
7.5									
			5	10					8
10									
12.5									
			6	2	El.=1105.5 LIMESTONE moderately weathered, hard, light gray				50/2"
15			R1		Recovery = 100% RQD = 0%				
17.5									

COMPLETION DEPTH: 30 ft.
DATE: 1-02-2023
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 9 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-27

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
			R2		LIMESTONE (continued) moderately weathered, hard, light gray Recovery = 100% RQD = 26% UCS = 9,153 psi @ 18 feet				
20									
						ROCK			
22.5			R3		Recovery = 100% RQD = 0%				
25									
27.5			R4		Recovery = 100% RQD = 0%				
30					El.=1089.0 AUGER REFUSAL AT ABOUT 15 FEET BOTTOM OF BORING AT ABOUT 30 FEET				
32.5									
35									

LOG OF BORING NO.B-28

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SAMPLES No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
0			Surface Description= Grass Cover Rootmat = 3 inches El.=1119.1 ALLUVIAL DEPOSITS interbedded layers of silt, sand and clay, with sandstone and chert fragments, very loose to medium dense, brown, orange and dark gray				
	1	12					2
2.5	2	8					11
	3	6					4
5	4	9					3
7.5							
	5	8		ML			3
10							
12.5							
	6	6					6
15							
17.5							

COMPLETION DEPTH: 30 ft.
DATE: 1-03-2024
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 9 ft.
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-28

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
					ALLUVIAL DEPOSITS (continued) interbedded layers of silt, sand and clay, with sandstone and chert fragments, very loose to medium dense, brown, orange and dark gray				
20			R1		El.=1100.1 LIMESTONE moderately weathered, hard to soft, light gray Recovery = 85% RQD = 29%	ROCK			
22.5			R2		Recovery = 98% RQD = 31% UCS = 8,476 psi @ 23 ½ feet				
25									
27.5			R3		Recovery = 99% RQD = 18% UCS = 3,350 psi @ 28 feet				
30					El.=1089.1 AUGER REFUSAL AT ABOUT 19 FEET BOTTOM OF BORING AT ABOUT 30 FEET				
32.5									
35									

LOG OF BORING NO.B-29

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Grass Cover Rootmat = 3 inches El.=1126.4 OVERBURDEN - predominantly a combination of variable strength clay and gravel soils				
2.5									
5									
7.5									
10									
12.5						GC			
15									
17.5									

COMPLETION DEPTH: 27 ft.
DATE: 3-21-2024
RIG: Diedrich D50, Track-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 6 ft.
AT COMPLETION: 6 ft.
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-29

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
20									
22.5									
25									
					El.=1099.4				50/1"
27.5					APPARENT LIMESTONE				
					El.=1099.4				
					AUGER REFUSAL AT ABOUT 27 FEET				
30									
32.5									
35									

LOG OF BORING NO.B-30

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Bare Ground El.=1134.1 OVERBURDEN - predominantly a combination of variable strength clay and gravel soils				
2.5									
5									
7.5									
10						GC			
12.5									
15									
17.5									

COMPLETION DEPTH: 22 ft.
DATE: 3-21-2024
RIG: Diedrich D50, Track-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 17 ft.
AT COMPLETION: 17 ft.
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-30

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● PL — LL (20, 40, 60, 80)	BLOWS PER FT
20									
					El.=1112.2				50/1"
22.5					APPARENT LIMESTONE				
					El.=1112.1				
					AUGER REFUSAL AT ABOUT 22 FEET				
25									
27.5									
30									
32.5									
35									

LOG OF BORING NO.B-31

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Asphalt Pavement Thickness = 6 in El.=1251.6				
					ASPHALT = 6 inches El.=1251.1				
			1	14	CLAYEY GRAVEL very to medium dense, red, and tan, with chert fragments				34, 50/5"
2.5			2	10					53
			3	15					33
5			4	18					58
7.5						GC			
			5	10					19
10									
12.5									
			6	6					10
15					El.=1236.6 BOTTOM OF BORING AT ABOUT 15 FEET				
17.5									

COMPLETION DEPTH: 15 ft.
DATE: 10/24/24
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS:

LOG OF BORING NO.B-32

Bentonville Water Resource Recovery Facility Improvements
Bentonville, Benton County, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 23-15134-R2 Location: Shown on Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL, LL; 20, 40, 60, 80)	BLOWS PER FT
0					Surface Description= Gravel Thickness = 4 in El.=1251.7				
					GRAVEL = 4 inches El.=1251.3				
			1	18	CLAYEY GRAVEL very to medium dense, red, and tan, with chert fragments				34
2.5			2	11					62
			3	11					49
5			4	12					49
7.5						GC			
			5	15					21
10									
12.5									
			6	17					18
15					El.=1236.7 BOTTOM OF BORING AT ABOUT 15 FEET				
17.5									

COMPLETION DEPTH: 15 ft.
DATE: 10/24/24
RIG: Geoprobe 3100GT, Truck-Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS:

SOIL CLASSIFICATION LEGEND

APPARENT CONSISTENCY OF COHESIVE SOILS (PECK, HANSON & THORNBURN 1974, AASHTO 1988)				
Descriptor	**SPT N_{60} (blows/foot)***	**Pocket Penetrometer, Qp (tsf)**	**Torvane (tsf)**	**Field Approximation**
Very Soft	< 2	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	2 – 4	0.25 – 0.50	0.12 – 0.25	Easily penetrated several inches by thumb
Medium Stiff	5 – 7	0.50 – 1.0	0.25 – 0.50	Penetrated several inches by thumb w/moderate effort
Stiff	8 – 12	1.0 – 2.0	0.50 – 1.0	Readily indented by thumbnail
Very Stiff	12 – 30	2.0 – 4.0	1.0 – 2.0	Indented by thumb but penetrated only with great effort
Hard	> 30	> 4.0	> 2.0	Indented by thumbnail with difficulty

* Using SPT N_{60} is considered a crude approximation for cohesive soils.

APPARENT DENSITY OF COHESIONLESS SOILS (AASHTO 1988)	
Descriptor	**SPT N_{60} Value (blows/foot)**
Very Loose	0 – 3
Loose	4 – 8
Medium Dense	9 – 29
Dense	30 – 49
Very Dense	$\geq$ 50

MOISTURE (ASTM D2488-06)	
Descriptor	**Criteria**
Dry	Absence of moisture, dusty, dry to the touch, well below optimum moisture content (per ASTM D698 or D1557)
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table, well above optimum moisture content (per ASTM D698 or D1557)

PERCENT OR PROPORTION OF SOILS (ASTM D2488-06)	
Descriptor	**Criteria**
Trace	Particles are present but estimated < 5%
Few	5 – 10%
Little	15 – 25%
Some	30 – 45%
Mostly	50 – 100%
Percentages are estimated to nearest 5% in the field. Use "about" unless percentages are based on laboratory testing.	

SOIL PARTICLE SIZE (ASTM D2488-06)	
Descriptor	**Size**
Boulder	> 12 inches
Cobble	3 to 12 inches
Gravel - Coarse Fine	¾ inch to 3 inches No. 4 sieve to ¾ inch
Sand - Coarse Medium Fine	No. 10 to No. 4 sieve (4.75mm) No. 40 to No. 10 sieve (2mm) No. 200 to No. 40 sieve (.425mm)
Silt and Clay ("fines")	Passing No. 200 sieve (0.075mm)

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2488)				
Major Division			**Group Symbol**	**Description**
Coarse Grained Soils (more than 50% retained on #200 sieve)	**Gravel** (50% or more retained on No. 4 sieve)	Clean Gravel	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		Gravel with fines	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	Sand (> 50% passing No. 4 sieve)	Clean sand	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sand with fines	SM	Silty sands and sand-silt mixtures
			SC	Clayey sands and sand-clay mixtures
Fine Grained Soils (50% or more passing #200 sieve)	**Silt and Clay** (liquid limit < 50)		ML	Inorganic silts, rock flour and clayey silts
			CL	Inorganic clays of low-medium plasticity, gravelly, sandy & lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silt and Clay (liquid limit > 50)		MH	Inorganic silts and clayey silts
			CH	Inorganic clays or high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat, muck and other highly organic soils

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GRAPHIC SYMBOL LEGEND		
SPT		Standard Penetration Test (2" OD), ASTM D1586
GRAB		Grab Sample
ST		Shelby Tube, ASTM D1587 (pushed)
AUGER		Boring Advanced Through Drilling
CORE		Rock coring

ROCK CLASSIFICATION LEGEND

WEATHERING DESCRIPTORS FOR INTACT ROCK (USBR, 2001)						
Descriptor	**Chemical Weathering-Discoloration-Oxidation**		**Mechanical Weathering and Grain Boundary Conditions**	**Texture and Solutioning**		**General Characteristics**
	Body of Rock	**Fracture Surfaces**		**Texture**	**Solutioning**	
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No solutioning	Hammer rings when crystalline rocks are struck
Slightly Weathered	Discoloration or oxidation limited to surface or short distance from fractures; some feldspar crystals are dull	Minor or complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals may be noted	Hammer rings when crystalline rocks are struck; body of rock not weakened
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck; body of rock is slightly weakened
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent or chemical alteration produces in-situ disaggregation	All fracture surfaces are discolored or oxidized; surfaces are friable	Partial separation; rock is friable; granitics are disaggregated in semi-arid conditions	Altered by chemical disaggregation such as via hydration or argillation	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow; rock is significantly weakened
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregation)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand; resistant minerals such as quartz may be present as "stringers" or "dikes"

RELATIVE STRENGTH OF INTACT ROCK	
Descriptor	**Uniaxial Compressive Strength (psi)**
Extremely Hard	> 30,000
Very Hard	14,500 – 30,000
Hard	7,000 – 14,500
Moderately Hard	3,500 – 7,000
Soft	700 – 3,500
Very Soft	150 – 700
Extremely Soft	< 150

BEDDING SPACING (modified USBR, 2001)	
Descriptor	**Thickness or Spacing**
Massive	> 10 feet
Very thickly bedded	3 to 10 feet
Thickly bedded	1 to 3 feet
Moderately bedded	3-5/8 inches to 1 foot
Thinly Bedded	1-1/4 inches to 3-5/8 inches
Very thinly bedded	3/8 inch to 1-1/4 inches
Laminated	< 3/8 inch

CORE RECOVERY CALCULATION (%)

$$= \frac{\text{length of recovered core pieces}}{\text{total length of core run}} \times 100\%$$

RQD CALCULATION (%)

$$= \frac{\text{length of intact core pieces} > 4 \text{ in}}{\text{total length of core run (inches)}} \times 100\%$$

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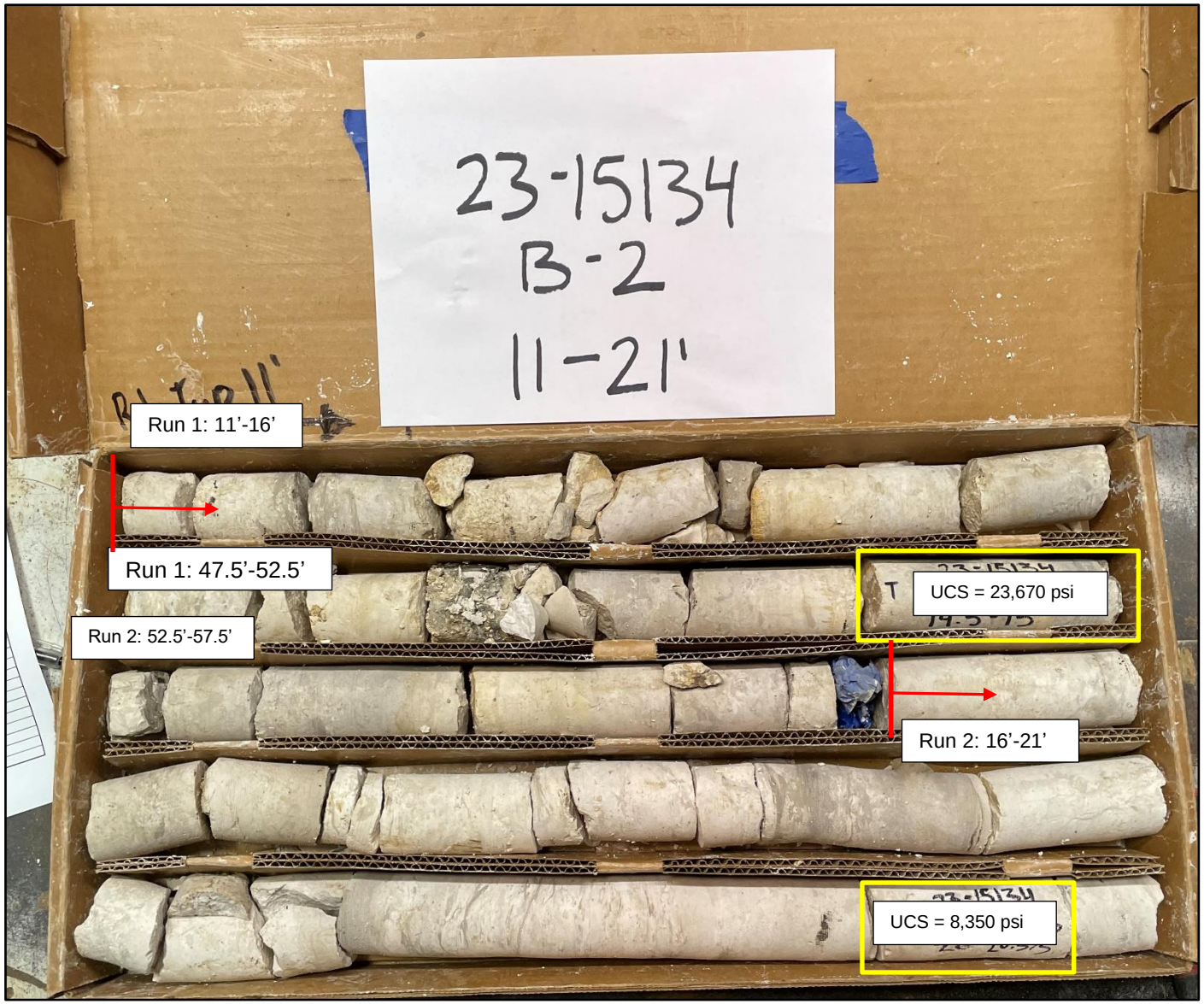
ROCK HARDNESS (modified USBR, 2001)	
Descriptor	**Criteria**
Extremely hard	Cannot be scratched with pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows
Very hard	Cannot be scratched with pocket knife or sharp pick; breaks with repeated heavy hammer blows
Hard	Can be scratched with pocket knife or sharp pick with heavy pressure, heavy hammer blows required to break specimen
Moderately hard	Can be scratched with pocket knife or sharp pick with light or moderate pressure; breaks with moderate hammer blows
Moderately soft	Can be grooved 1/16 inch with pocket knife or sharp pick with moderate or heavy pressure; breaks with light hammer blow or heavy hand pressure
Soft	Can be grooved or gouged with pocket knife or sharp pick with light pressure; breaks with light to moderate hand pressure
Very soft	Can be readily indented, grooved, or gouged with fingernail, or carved with pocket knife; breaks with light hand pressure

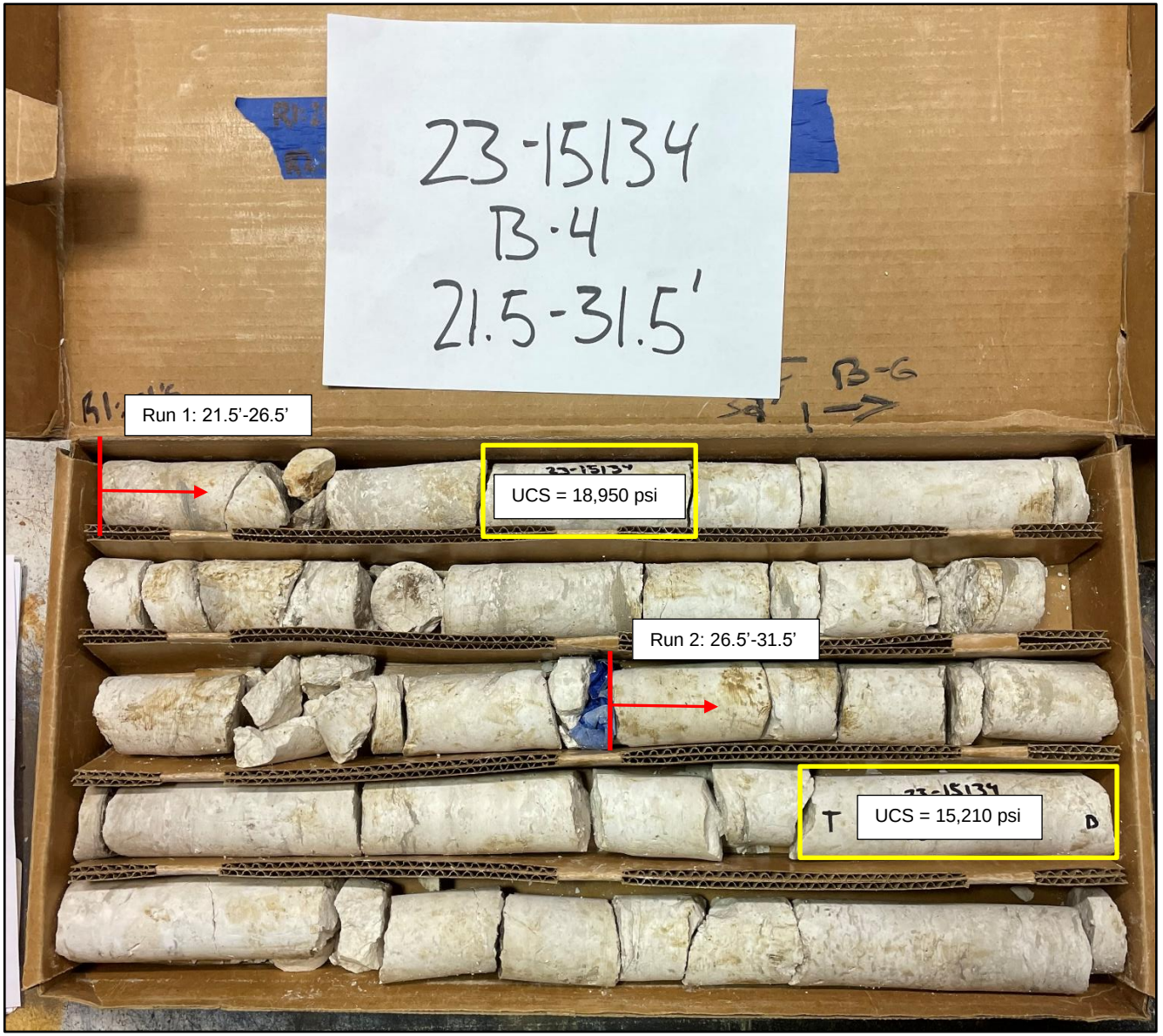
APPENDIX B

Rock Core Photo Logs



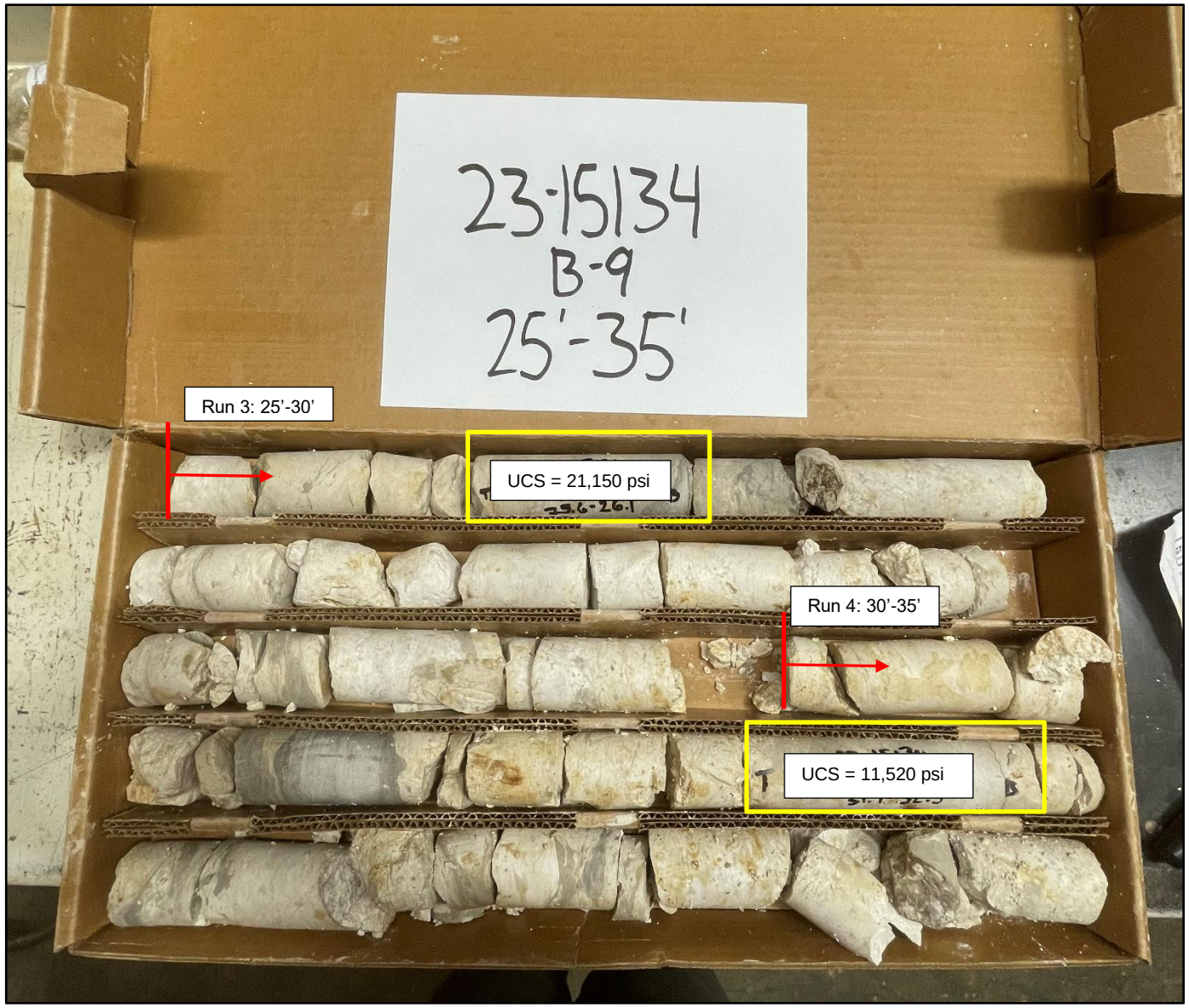
Boring B-2
Run 1: 11 to 16 feet: REC = 100%, RQD = 39%
Run 2: 16 to 21 feet: REC = 91%, RQD = 56%

Boring B-2
Run 1: 21 to 26 feet: REC = 100%, RQD = 30%

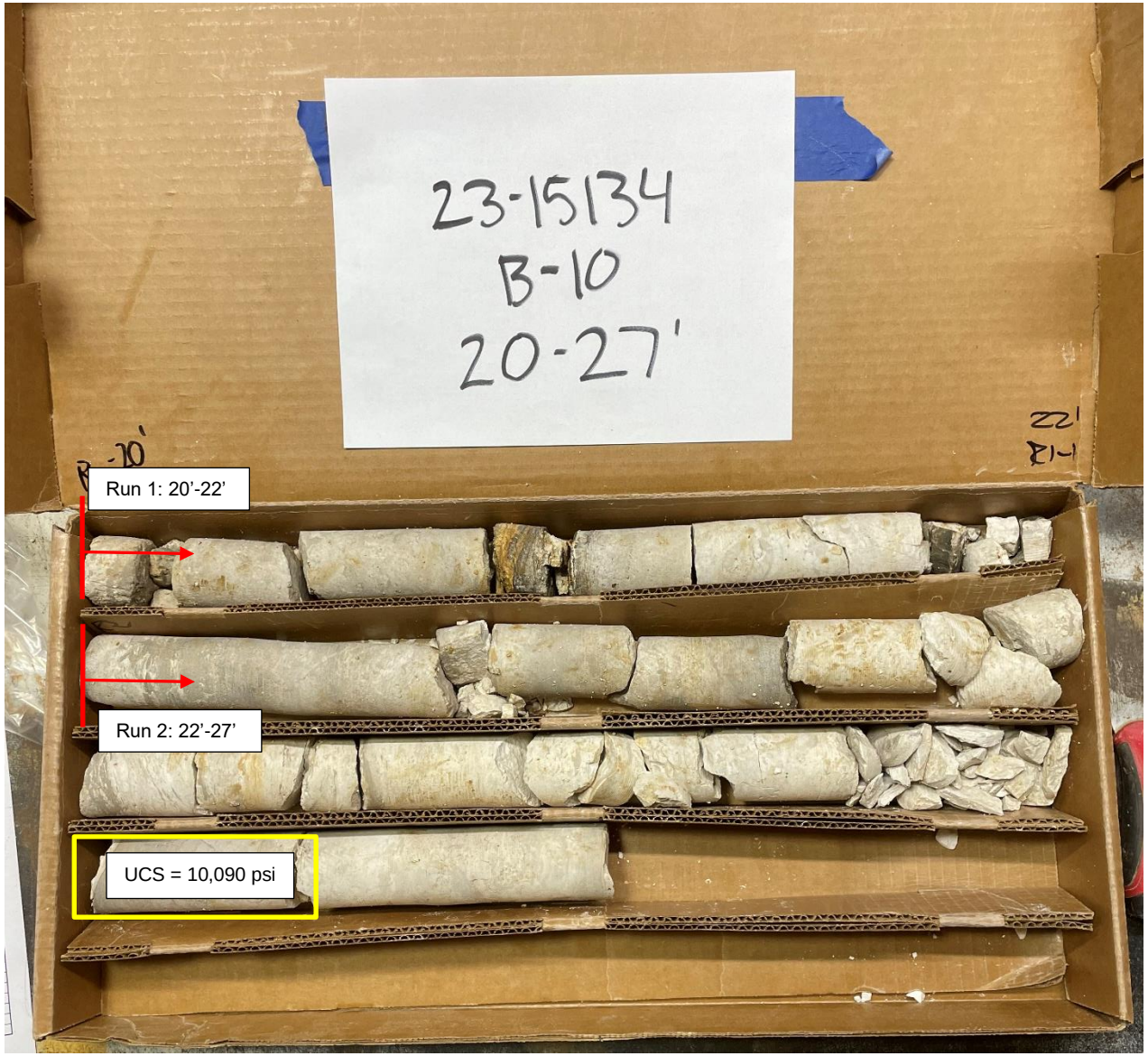


Boring B-4
Run 1: 21.5 to 26.5 feet: REC = 96%, RQD = 32%
Run 2: 26.5 to 31.5 feet: REC = 100%, RQD = 52%

Boring B-9
Run 1: 18.5 to 20 feet: REC = 48%, RQD = 0%
Run 2: 20 to 25 feet: REC = 93%, RQD = 8%



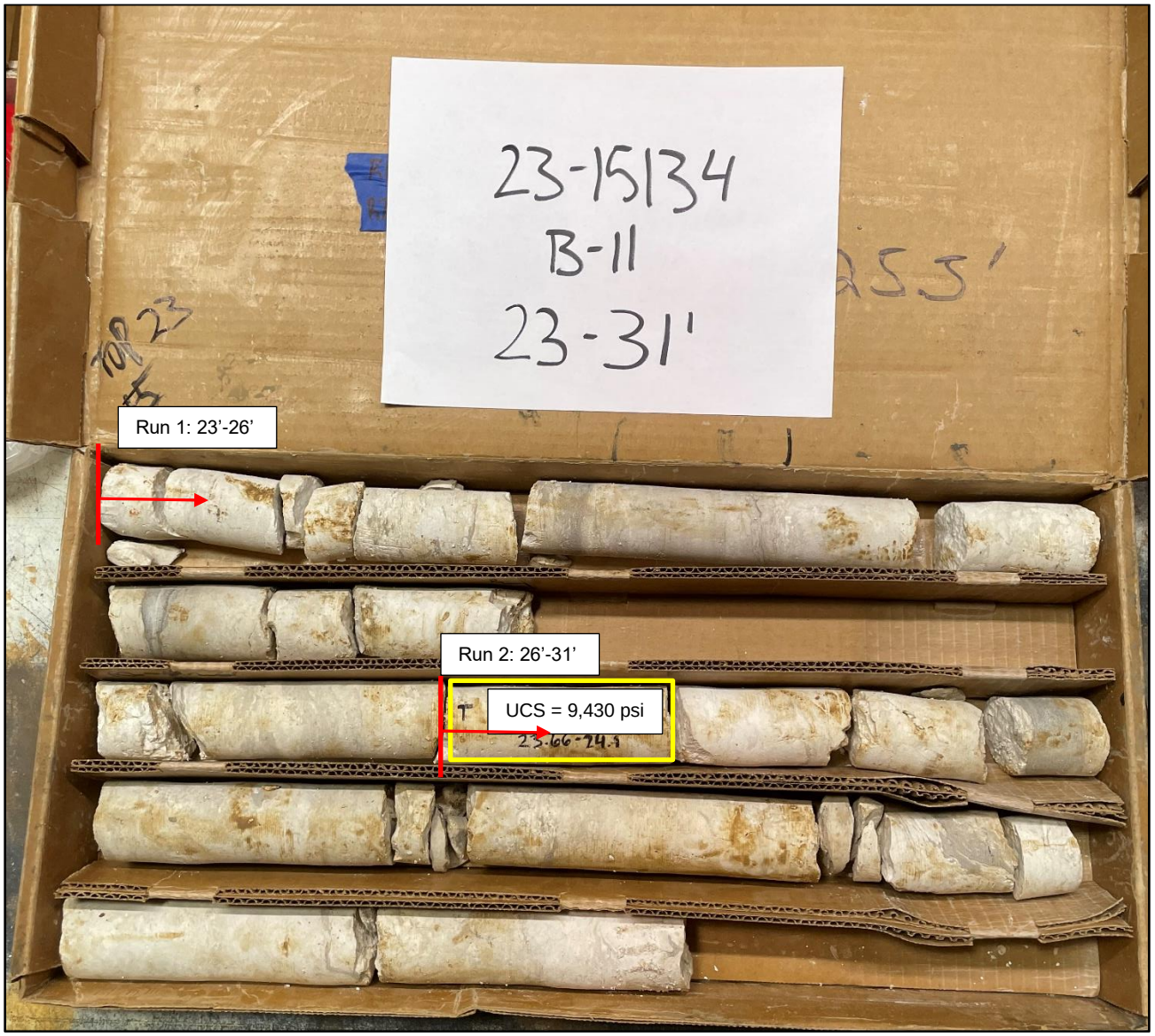
Boring B-9
Run 3: 25 to 30 feet: REC = 96%, RQD = 25%
Run 4: 30 to 35 feet: REC = 93%, RQD = 28%



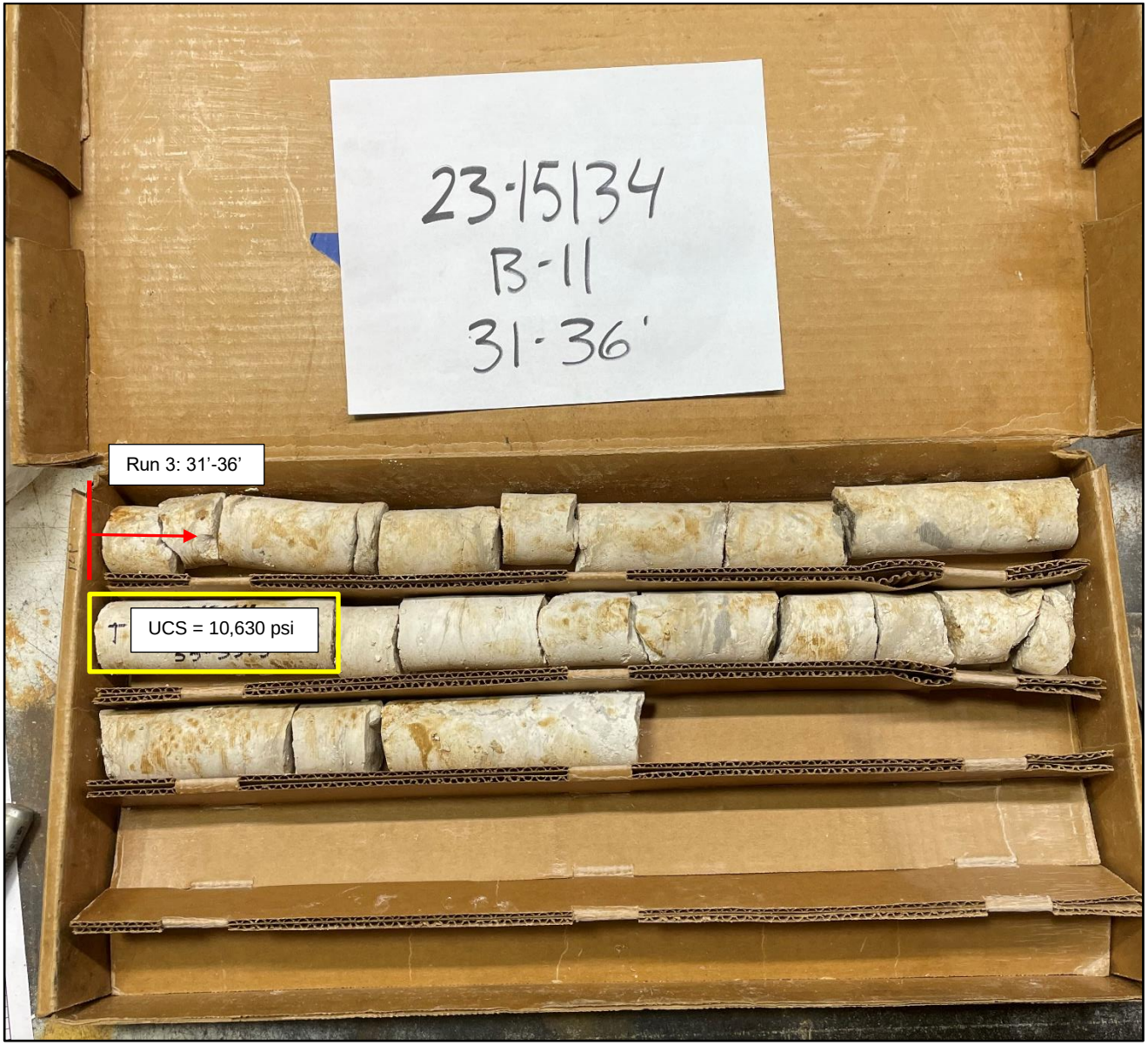
Boring B-10
Run 1: 20 to 22 feet: REC = 91%, RQD = 38%
Run 2: 22 to 27 feet: REC = 100%, RQD = 41%

C

Boring B-10
Run 3: 27 to 32 feet: REC = 100%, RQD = 68%
Run 4: 32 to 37 feet: REC = 100%, RQD = 33%



Boring B-11
Run 1: 23 to 26 feet: REC = 91%, RQD = 53%
Run 2: 26 to 31 feet: REC = 98%, RQD = 75%



Boring B-11
Run 3: 31 to 36 feet: REC = 100%, RQD = 38%

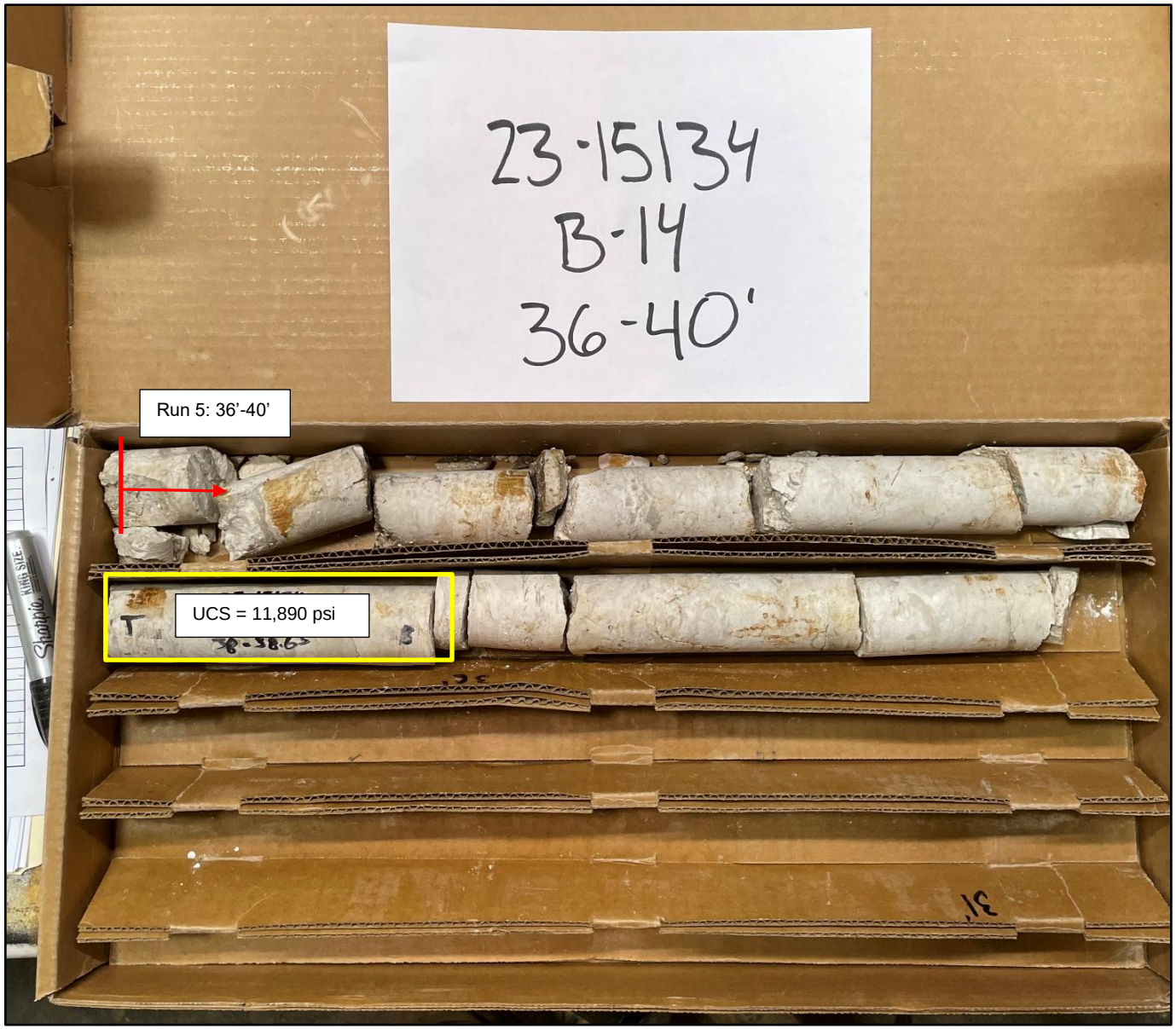
Boring B-13
Run 1: 17.5 to 20 feet: REC = 83%, RQD = 24%
Run 2: 20 to 25 feet: REC = 90%, RQD = 35%

Boring B-13
Run 3: 25 to 30 feet: REC = 93%, RQD = 52%
Run 4: 30 to 35 feet: REC = 96%, RQD = 28%

Boring B-13
Run 5: 35 to 40 feet: REC = 96%, RQD = 29%

Boring B-14
Run 1: 19 to 21 feet: REC = 81%, RQD = 36%
Run 2: 21 to 26 feet: REC = 100%, RQD = 60%

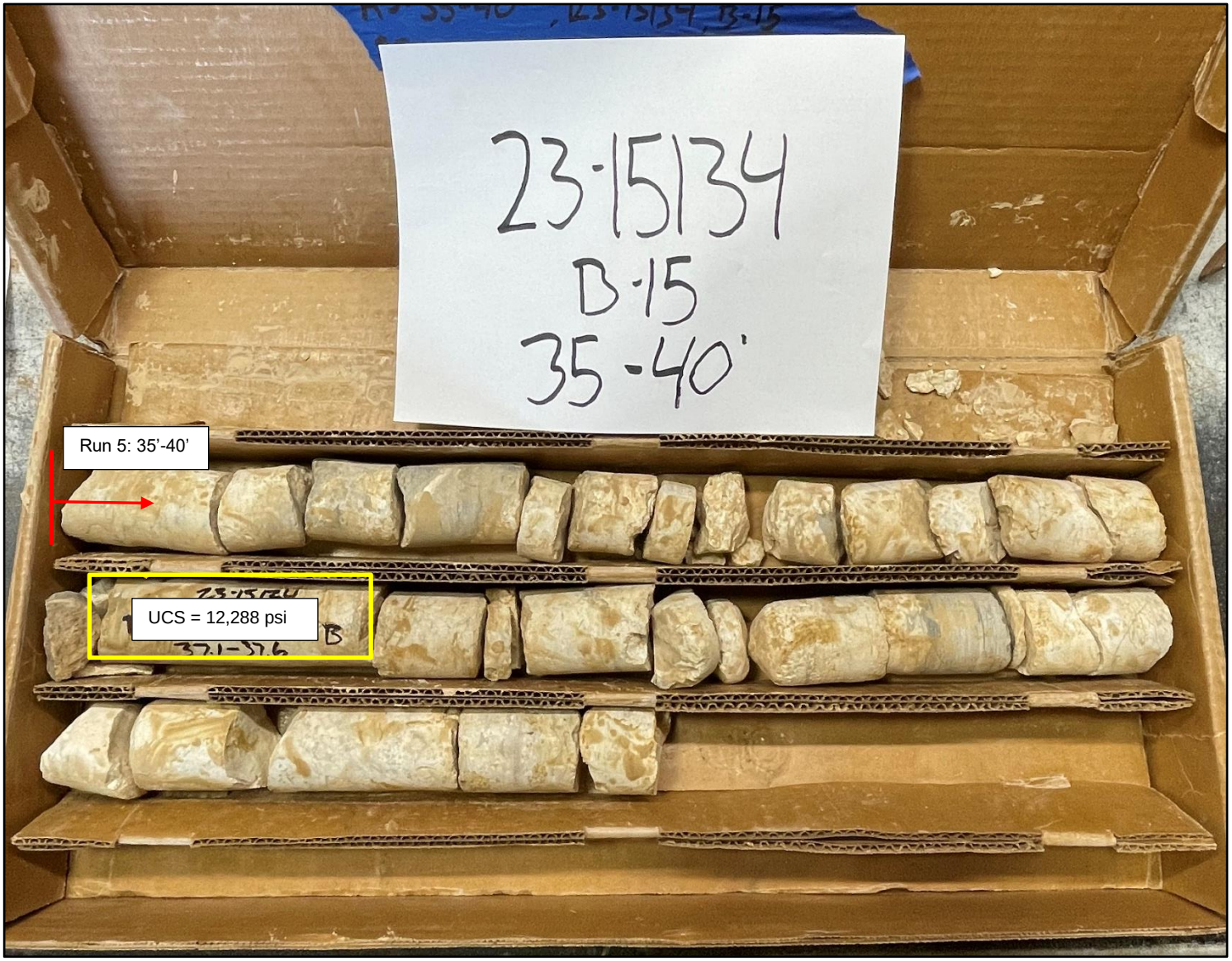
Boring B-14
Run 3: 26 to 31 feet: REC = 100%, RQD = 46%
Run 4: 31 to 36 feet: REC = 100%, RQD = 45%



Boring B-14
Run 5: 36 to 40 feet: REC = 95%, RQD = 49%

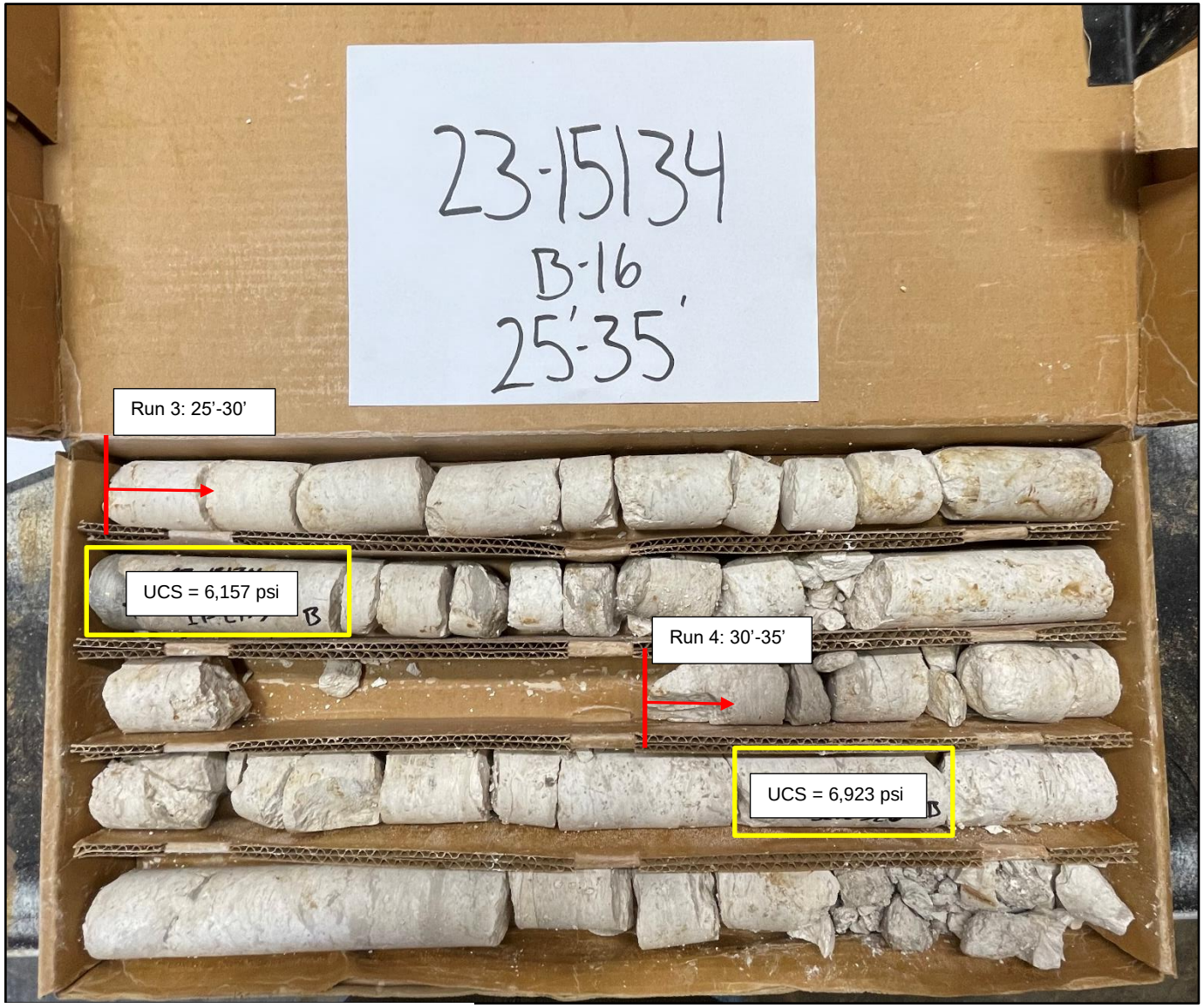
Boring B-15
Run 1: 17.5 to 20 feet: REC = 48%, RQD = 0%
Run 2: 20 to 25 feet: REC = 83%, RQD = 9%

Boring B-15
Run 3: 25 to 30 feet: REC = 80%, RQD = 20%
Run 4: 30 to 35 feet: REC = 90%, RQD = 0%

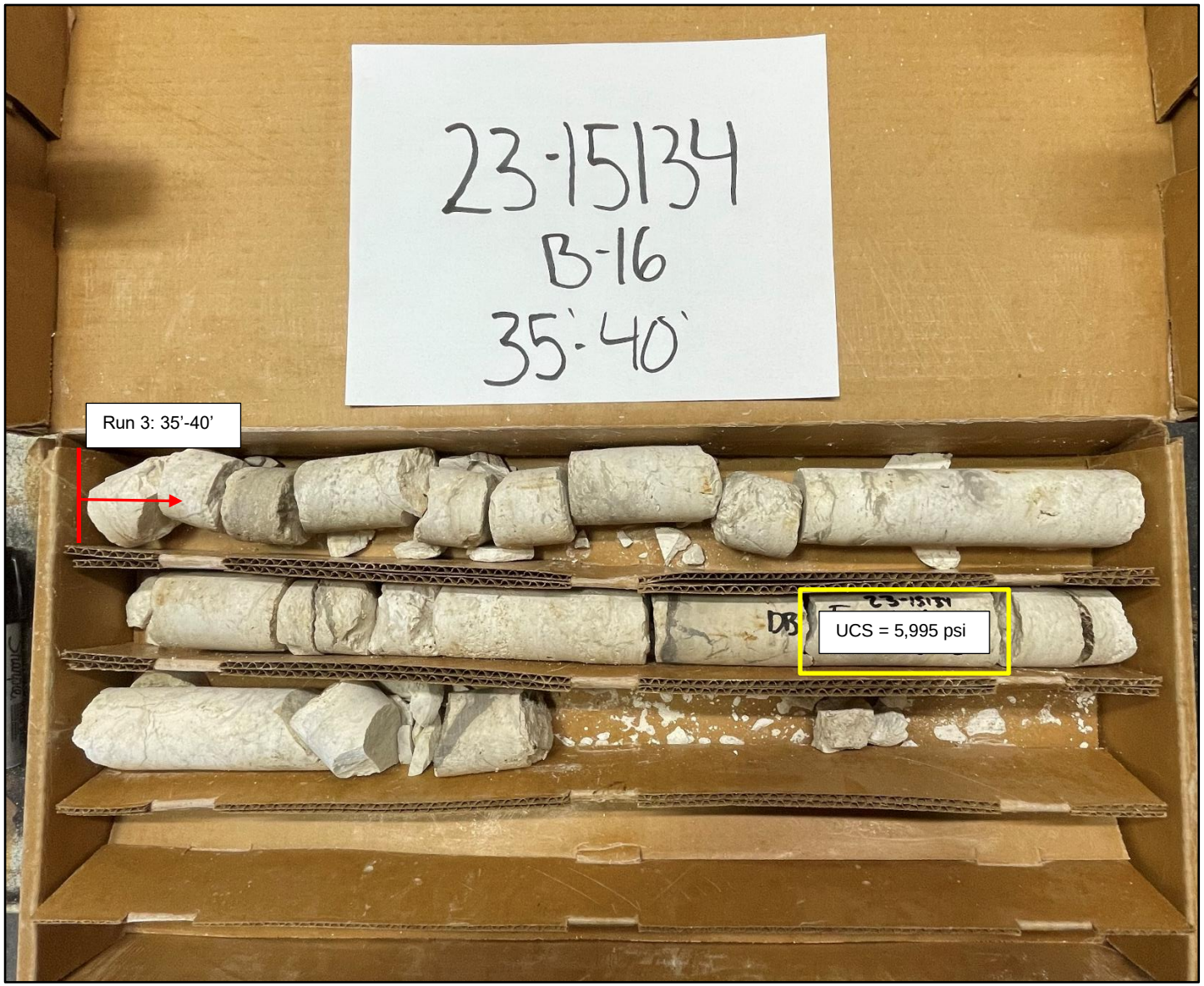


Boring B-15
Run 5: 35 to 40 feet: REC = 100%, RQD = 10%

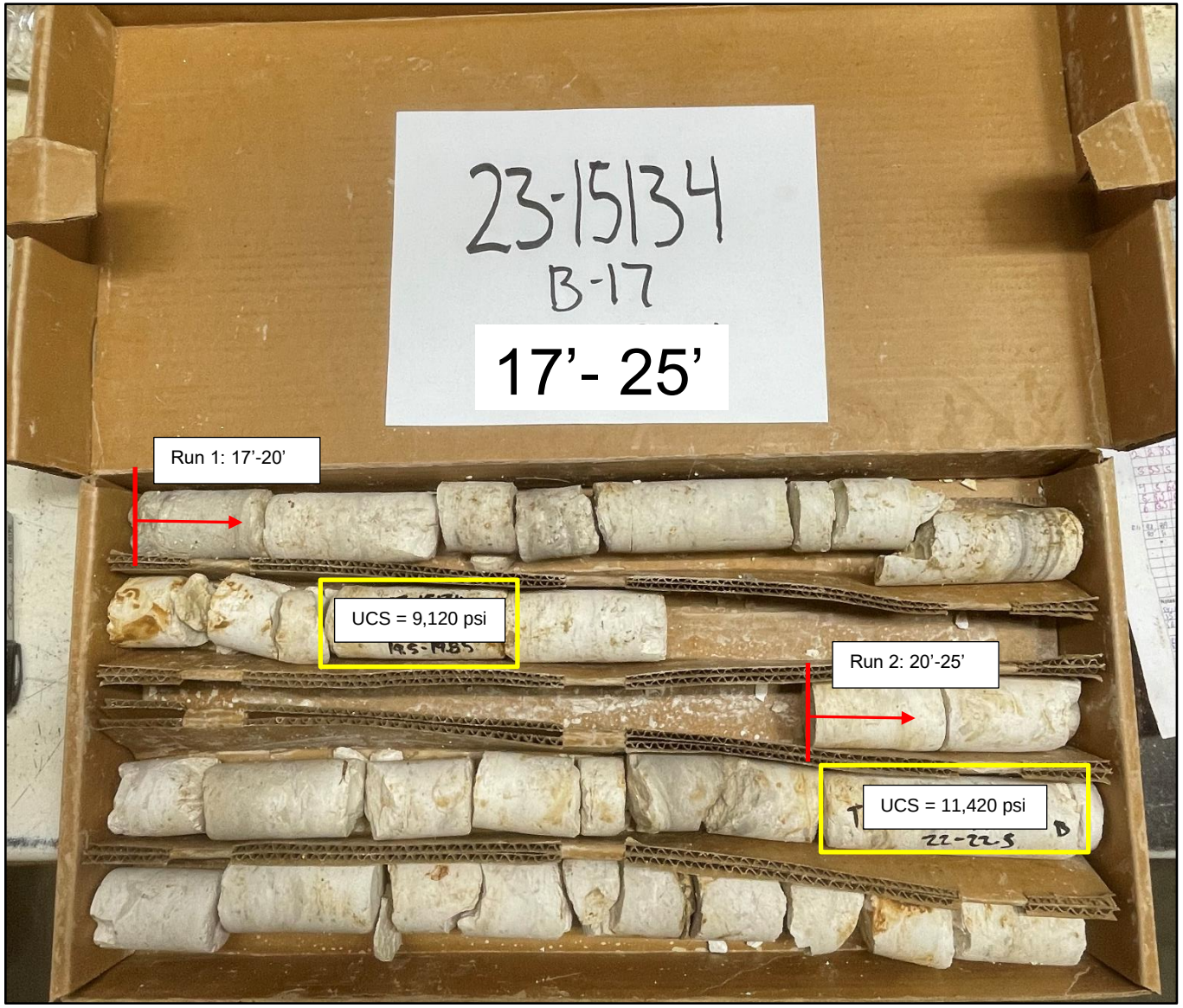
Boring B-16
Run 1: 17.5 to 20 feet: REC = 73%, RQD = 18%
Run 2: 20 to 25 feet: REC = 61%, RQD = 29%



Boring B-16
Run 3: 25 to 30 feet: REC = 84%, RQD = 30%
Run 4: 30 to 35 feet: REC = 98%, RQD = 30%

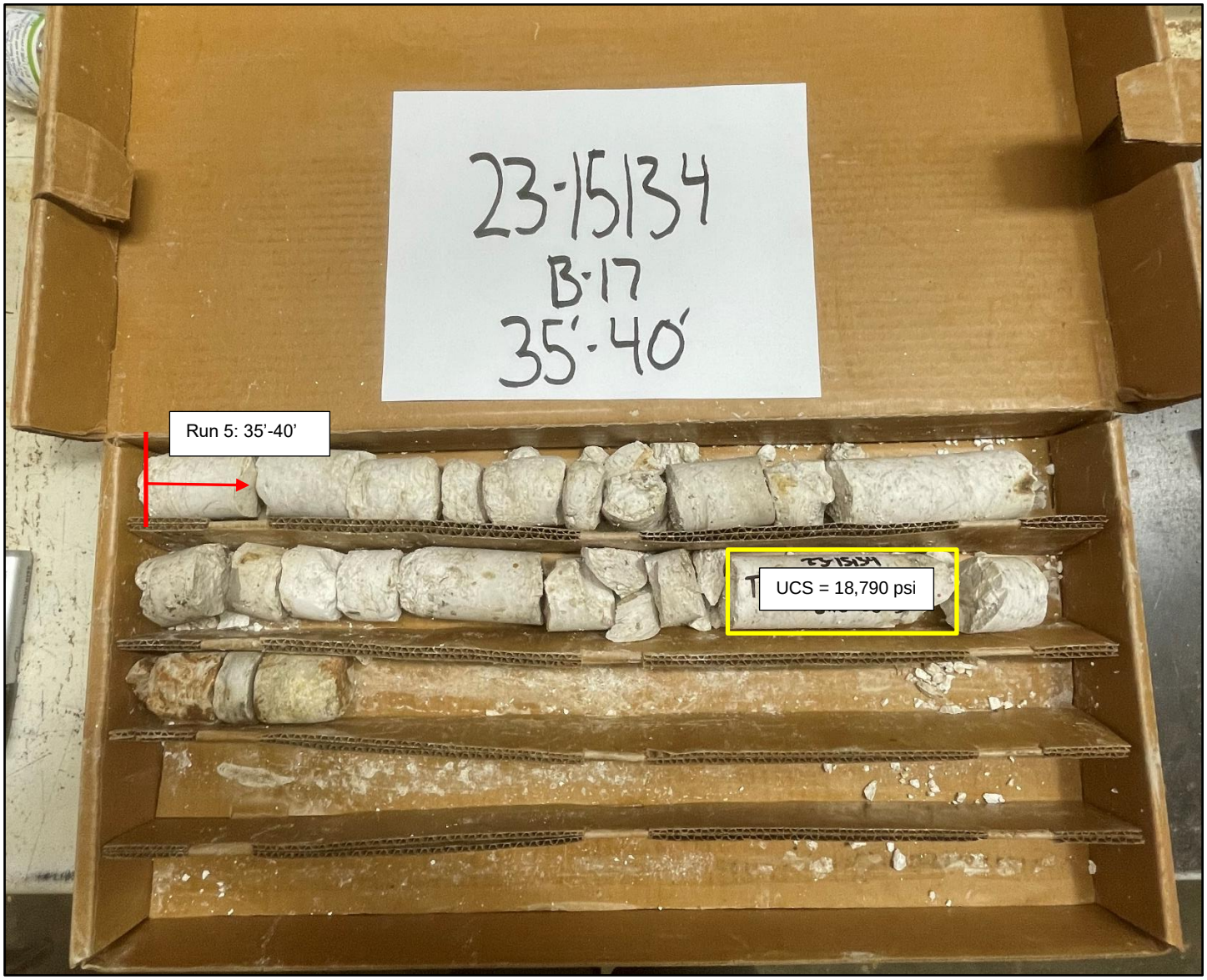


Boring B-16
Run 5: 35 to 40 feet: REC = 93%, RQD = 43%

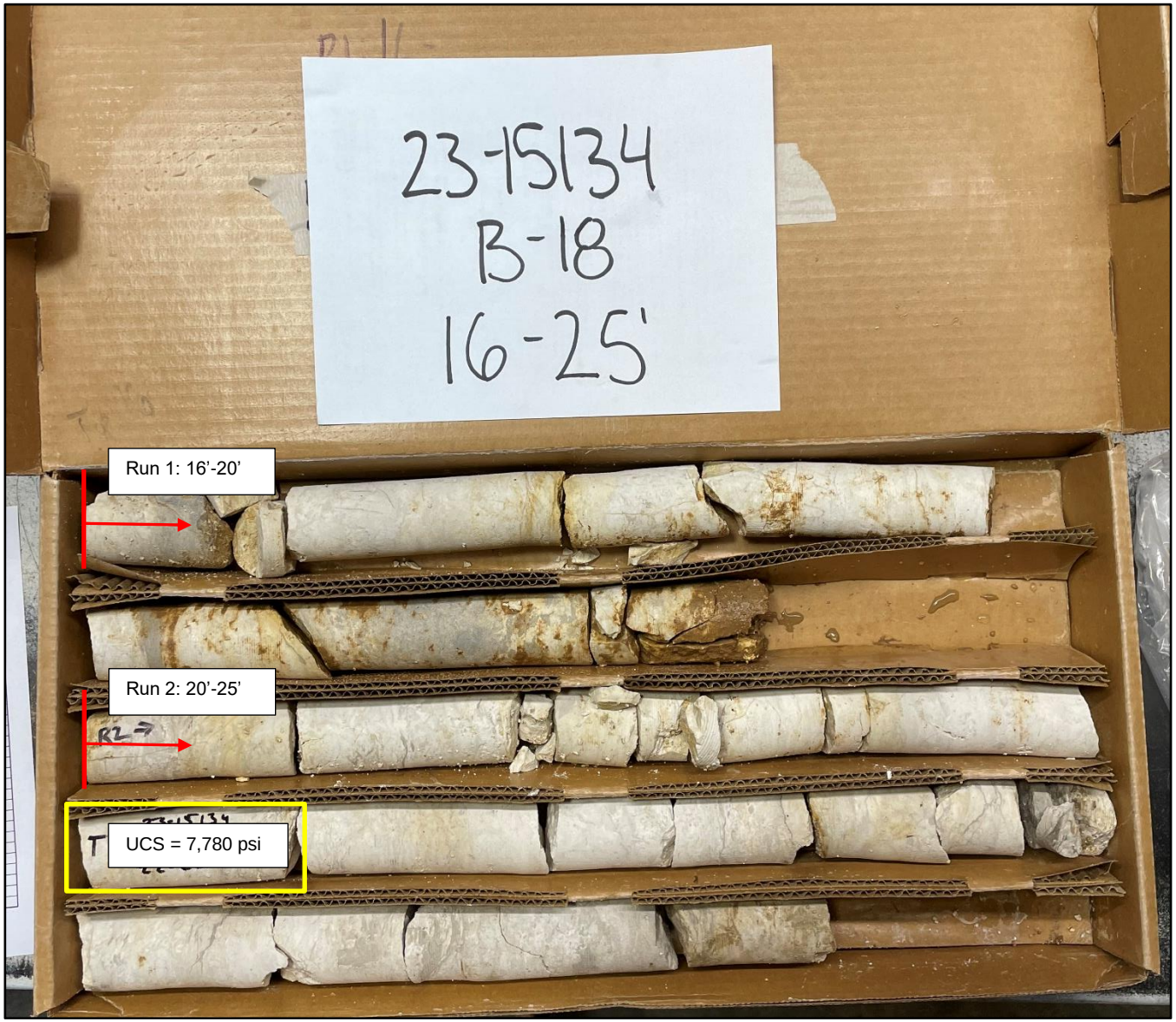


Boring B-17
Run 1: 17 to 20 feet: REC = 92%, RQD = 39%
Run 2: 20 to 25 feet: REC = 90%, RQD = 11%

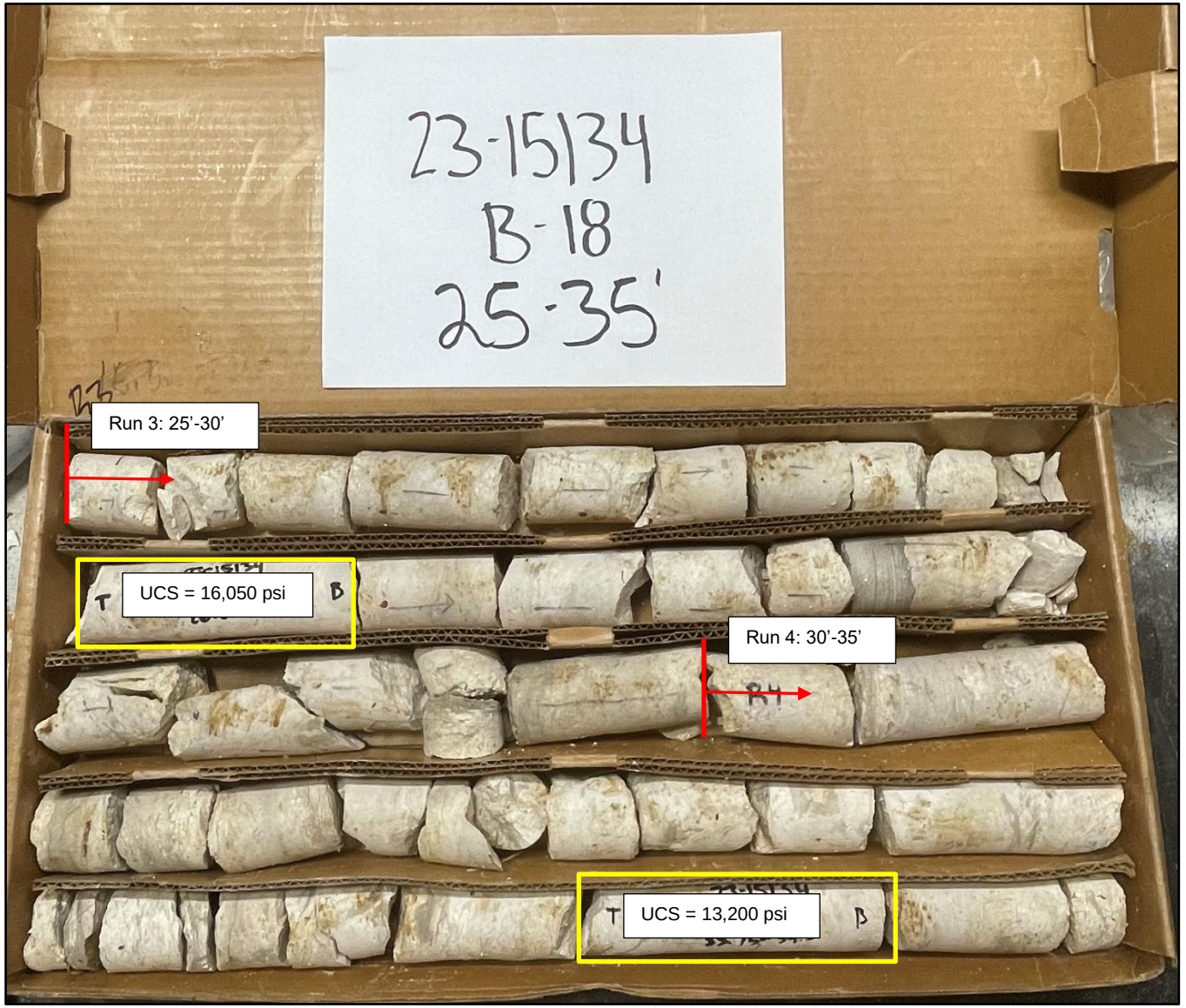
Boring B-17
Run 3: 25 to 30 feet: REC = 95%, RQD = 29%
Run 4: 30 to 35 feet: REC = 95%, RQD = 20%



Boring B-17
Run 5: 35 to 40 feet: REC = 83%, RQD = 20%

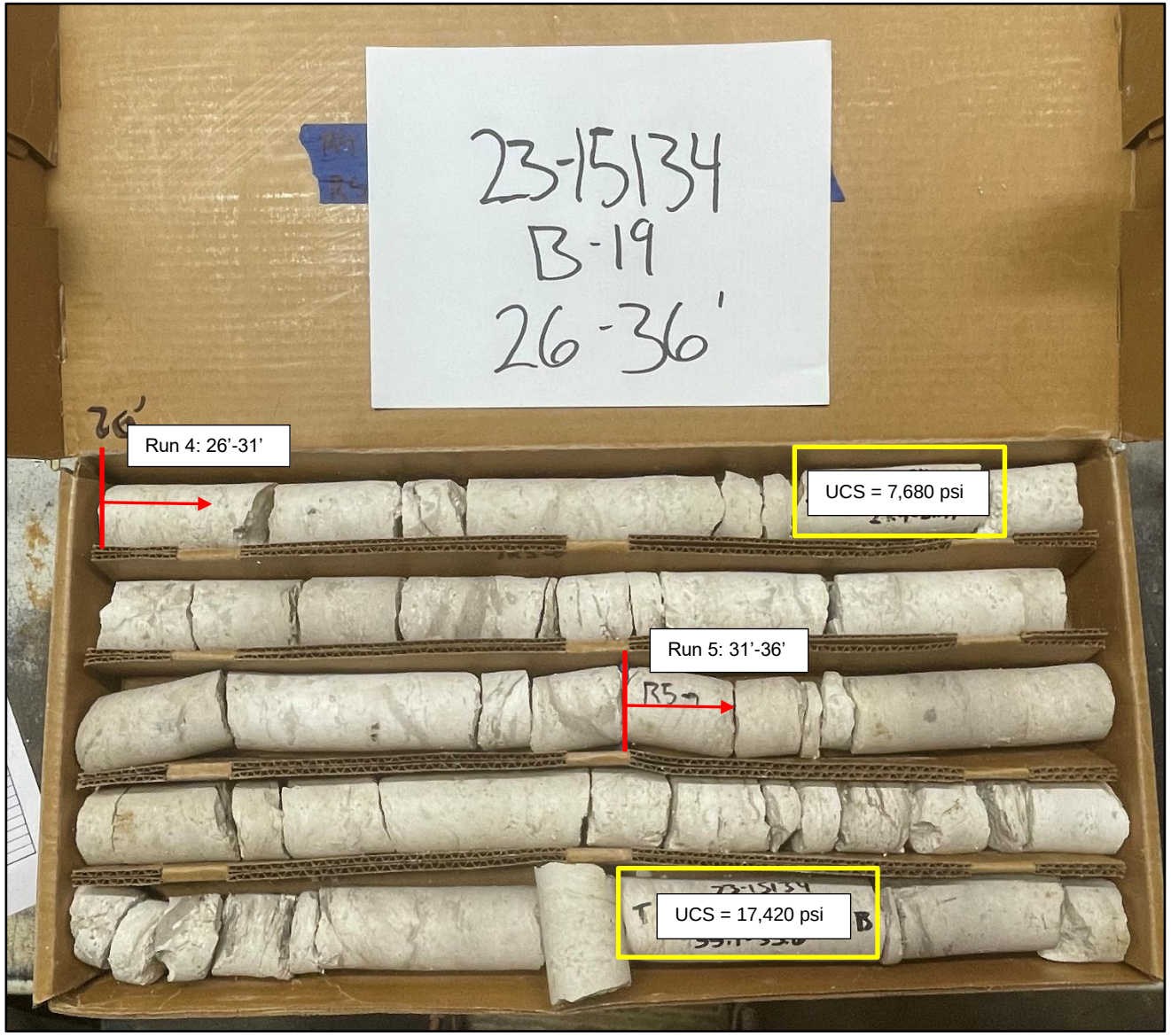


Boring B-18
Run 1: 16 to 20 feet: REC = 79%, RQD = 64%
Run 2: 20 to 25 feet: REC = 100%, RQD = 60%

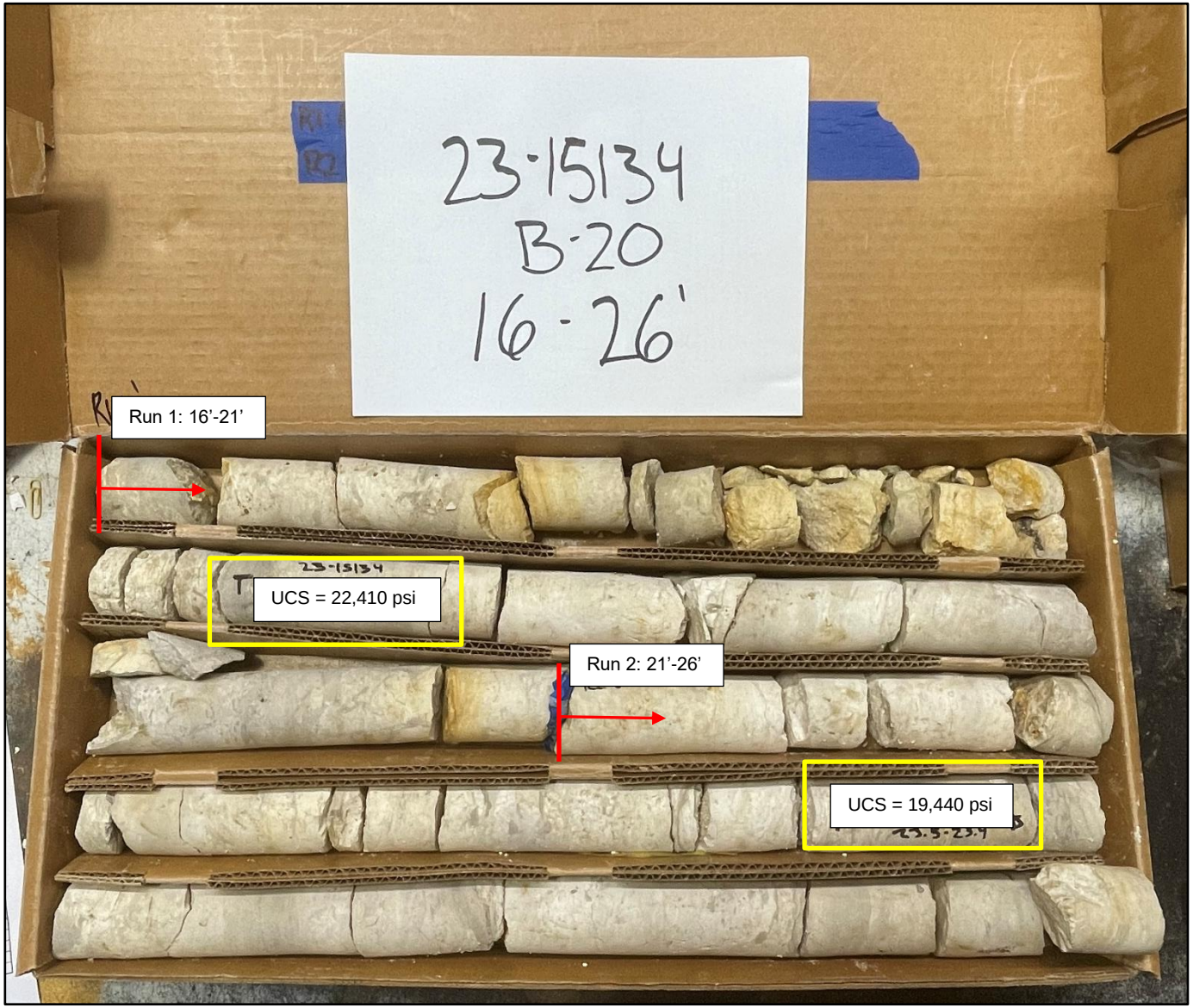


Boring B-18
Run 3: 25 to 30 feet: REC = 100%, RQD = 19%
Run 4: 30 to 35 feet: REC = 100%, RQD = 43%

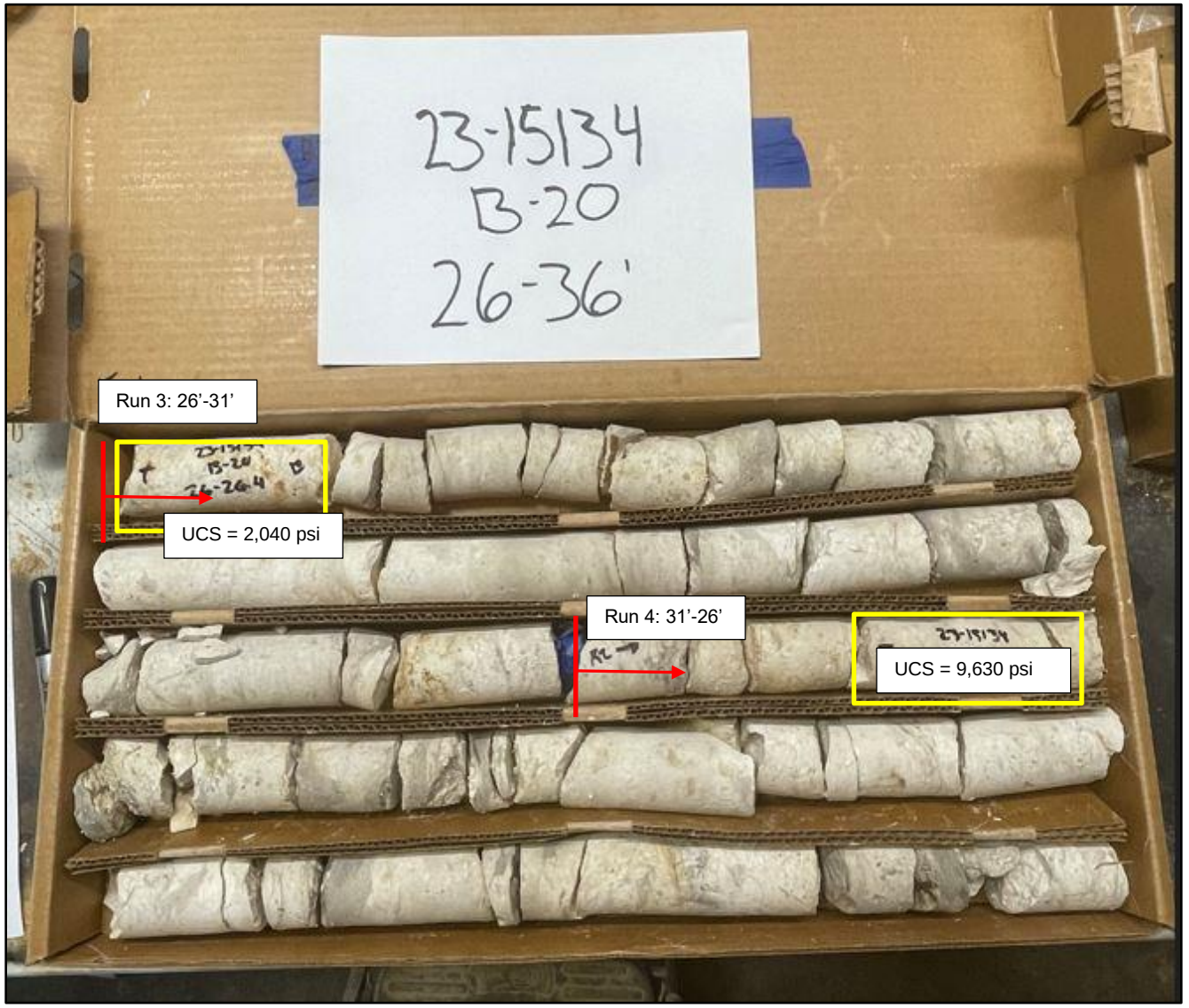
Boring B-19
Run 1: 15 to 16 feet: REC = 83%, RQD = 40%
Run 2: 16 to 21 feet: REC = 92%, RQD = 38%
Run 3: 21 to 26 feet: REC = 100%, RQD = 56%



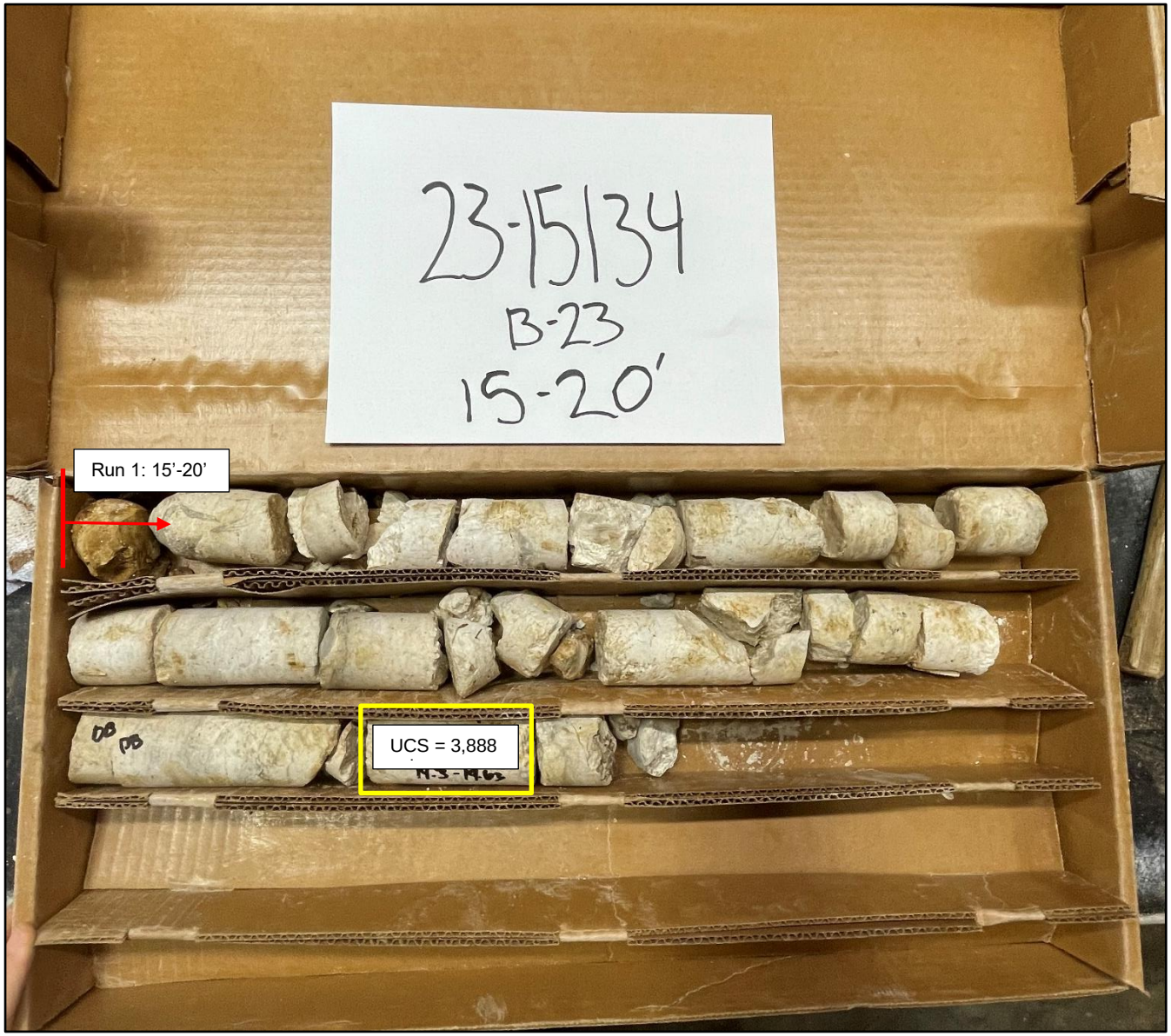
Boring B-19
Run 4: 26 to 31 feet: REC = 99%, RQD = 42%
Run 5: 31 to 36 feet: REC = 100%, RQD = 46%



Boring B-20
Run 1: 16 to 21 feet: REC = 99%, RQD = 52%
Run 2: 21 to 26 feet: REC = 100%, RQD = 53%

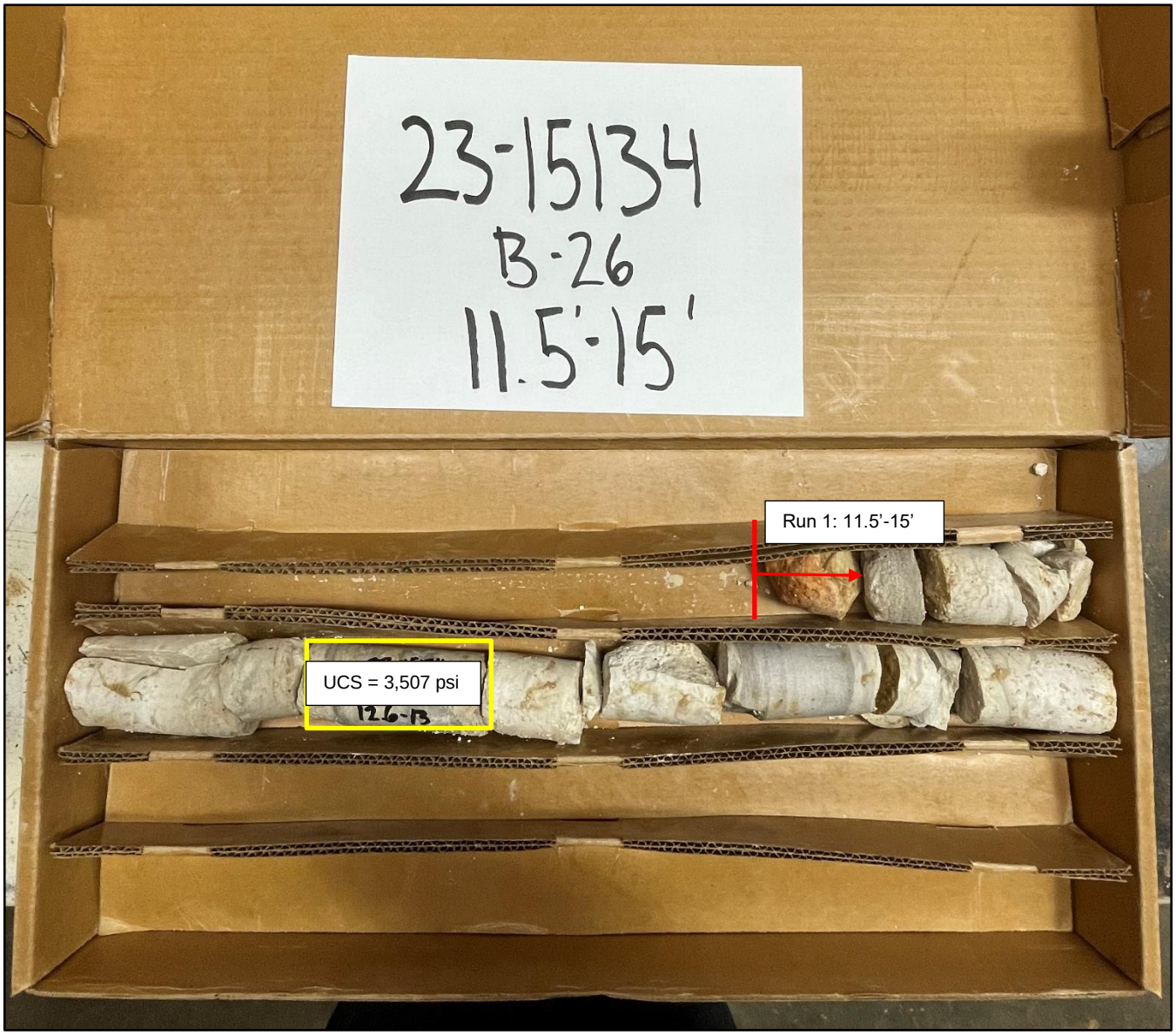


Boring B-20
Run 3: 26 to 31 feet: REC = 100%, RQD = 39%
Run 4: 31 to 36 feet: REC = 100%, RQD = 33%



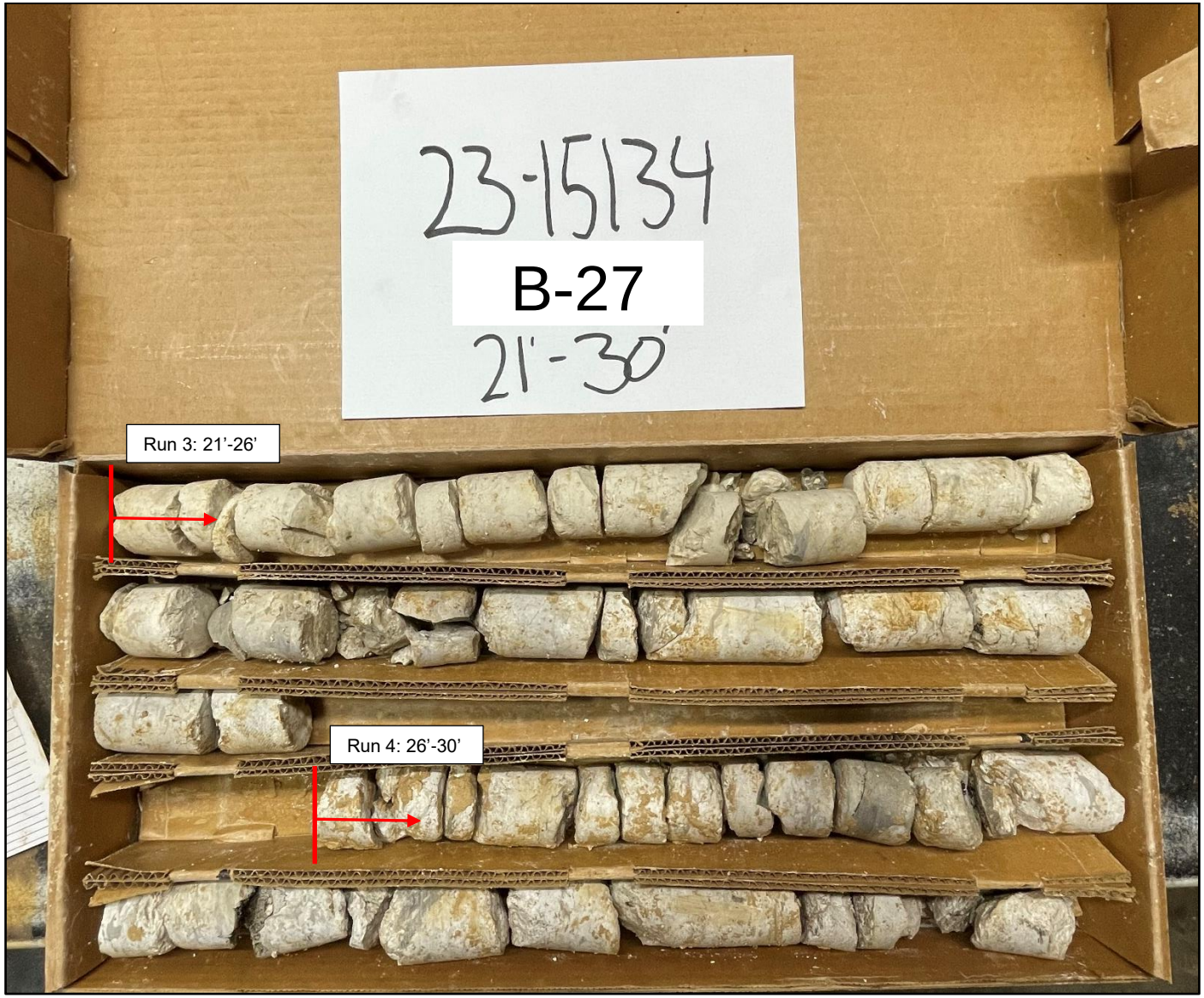
Boring B-23
Run 1: 15 to 20 feet: REC = 96%, RQD = 17%

Boring B-24
Run 1: 14 to 15 feet: REC = 100%, RQD = 0%
Run 2: 15 to 20 feet: REC = 45%, RQD = 0%



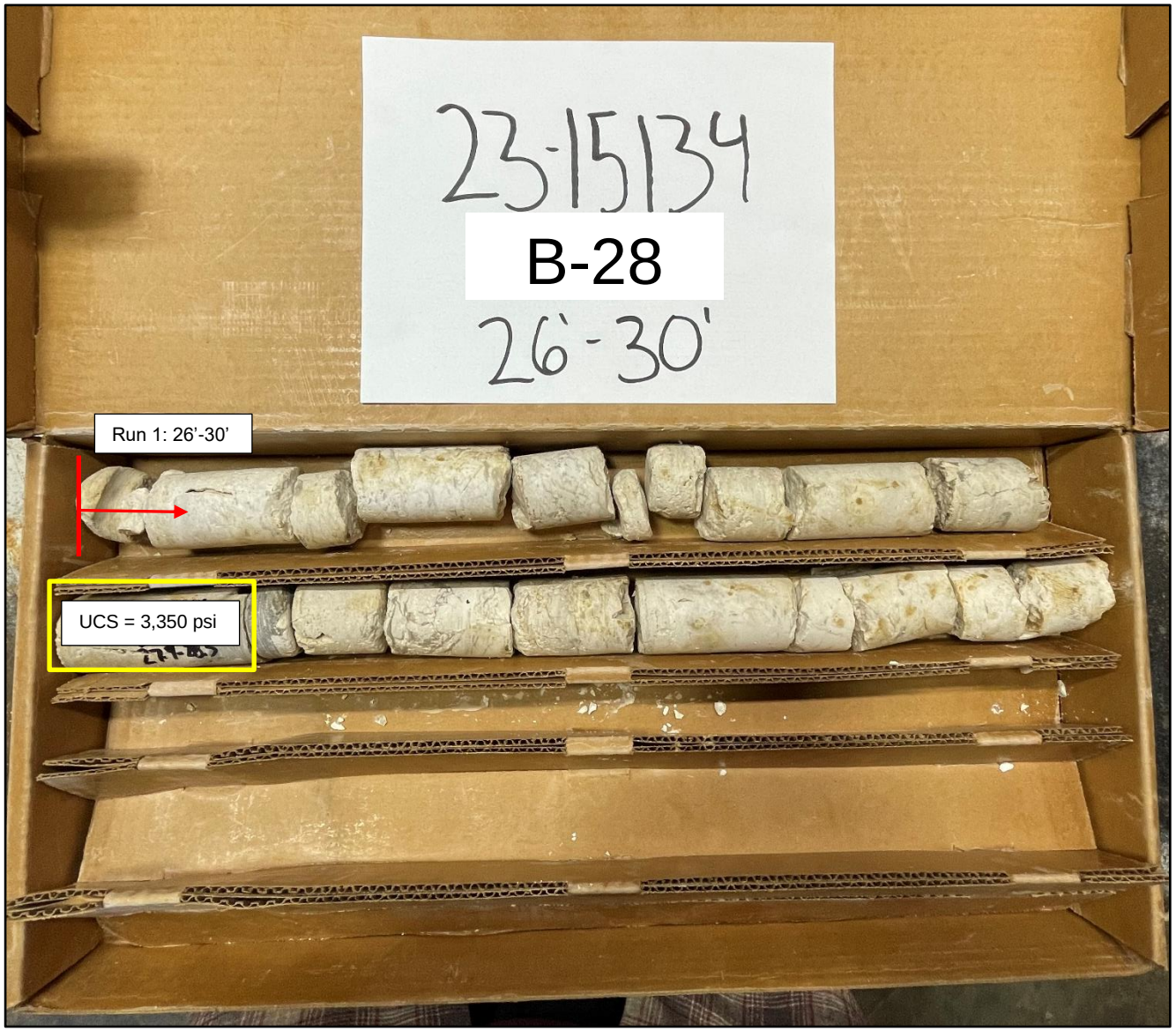
Boring B-26
Run 1: 11.5 to 15 feet: REC = 76%, RQD = 13%

Boring B-27
Run 1: 15 to 16 feet: REC = 100%, RQD = 0%
Run 2: 16 to 21 feet: REC = 100%, RQD = 26%



Boring B-27
Run 3: 21 to 26 feet: REC = 100%, RQD = 0%
Run 4: 26 to 30 feet: REC = 100%, RQD = 0%

Boring B-*28*
Run 1: 19 to 21 feet: REC = 85%, RQD = 29%
Run 2: 21 to 26 feet: REC = 98%, RQD = 31%



Boring B-*28*
Run 1: 26 to 30 feet: REC = 99%, RQD = 18%

APPENDIX C

Laboratory Testing Results

GTS, Inc.
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Tulsa, Oklahoma
Dallas, Texas

PROJECT: Bentonville Water Resources Recovery Facility Improvements

DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-1
SAMPLE NO.	S-4
DEPTH (FT)	5-6.5
PLASTIC LIMIT	19
LIQUID LIMIT	46
PLASTICITY INDEX	27

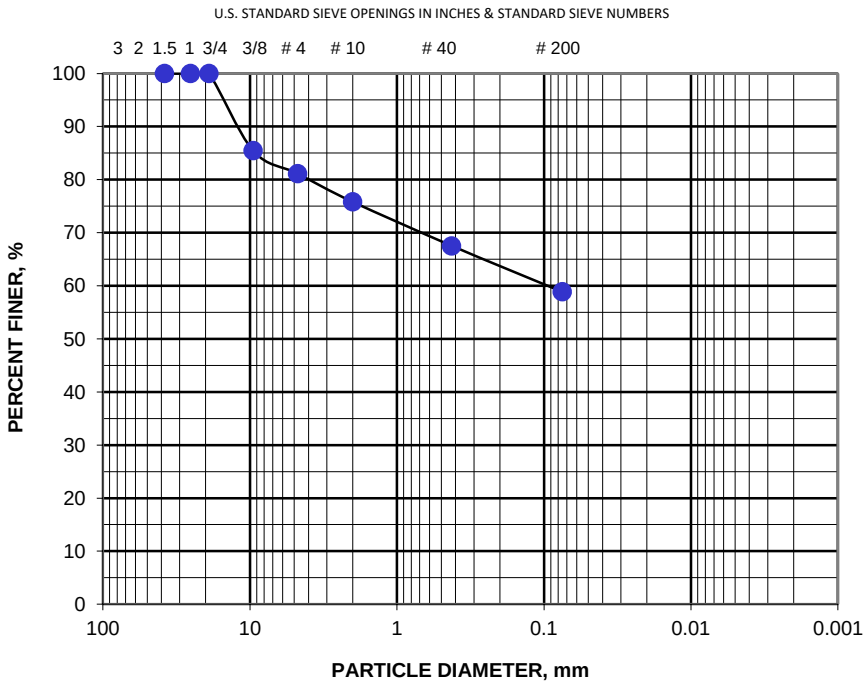
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	85.5%
No. 4	81.1%
No. 10	75.8%
No. 40	67.5%
No. 200	58.9%

MOISTURE CONTENT (%) 24.0

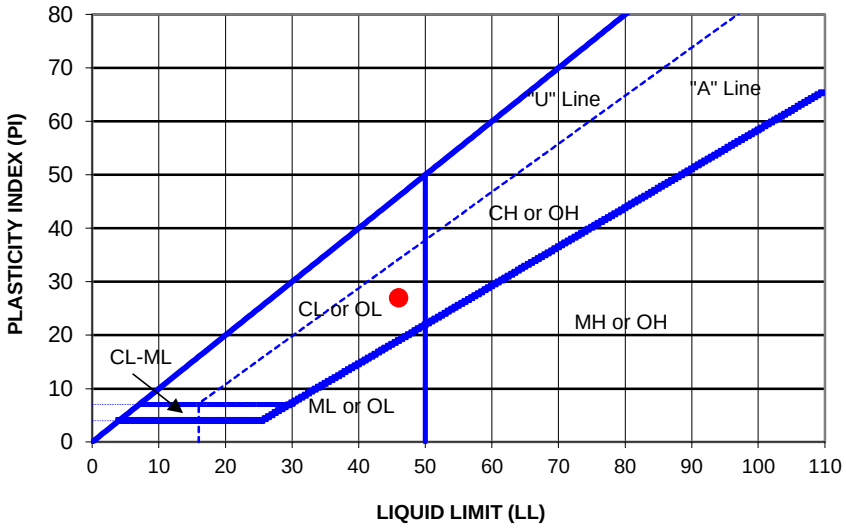
VISUAL DESCRIPTION	brown and red

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Sandy Lean Clay with Gravel, CL	**A-7-6**	**13**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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JOB NO: 23-15134

BORING NO.	B-2
SAMPLE NO.	S-1
DEPTH (FT)	0.5-2
PLASTIC LIMIT	24
LIQUID LIMIT	32
PLASTICITY INDEX	8

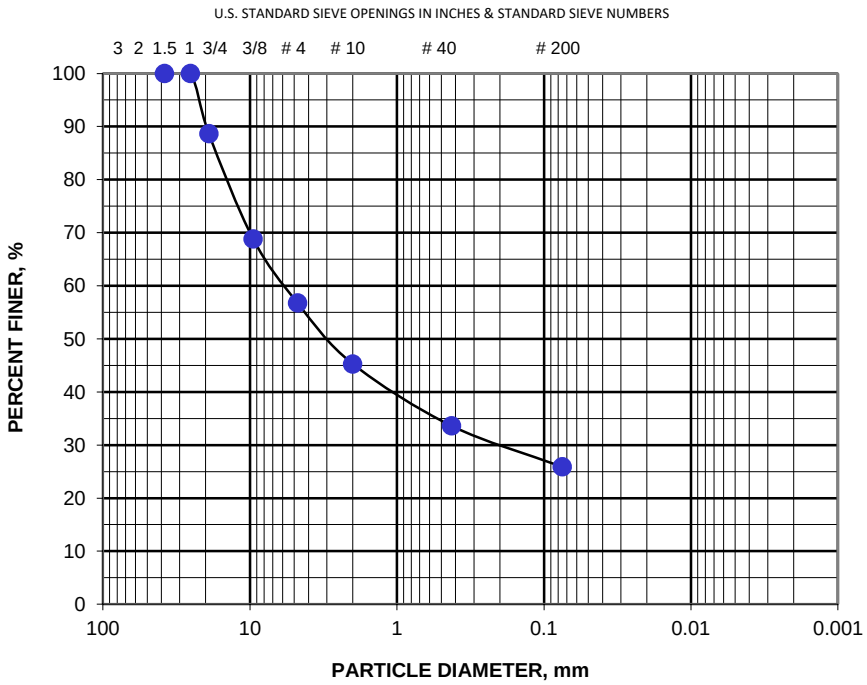
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	88.7%
3/8"	68.8%
No. 4	56.8%
No. 10	45.3%
No. 40	33.6%
No. 200	25.9%

MOISTURE CONTENT (%) 20.2

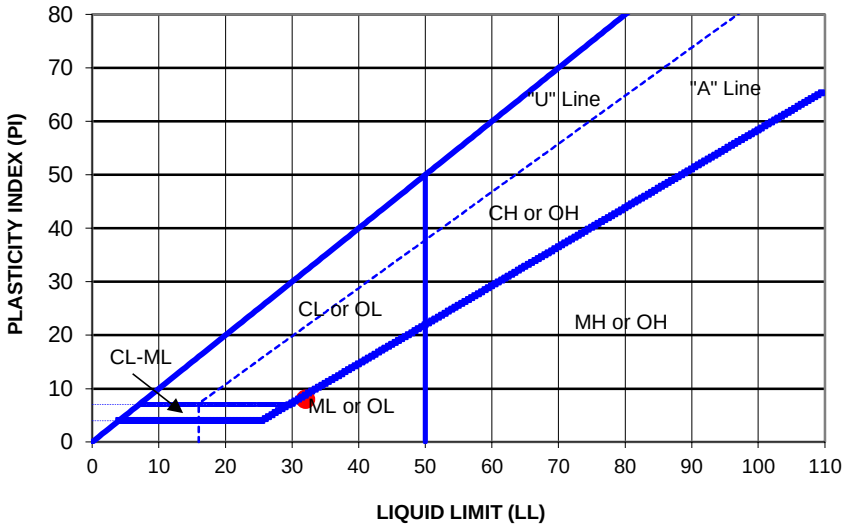
VISUAL DESCRIPTION	brown and tan

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Silty Gravel with Sand, GM	**A-2-4**	**0**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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BORING NO.	B-2
SAMPLE NO.	S-2
DEPTH (FT)	2-3.5
PLASTIC LIMIT	20
LIQUID LIMIT	31
PLASTICITY INDEX	11

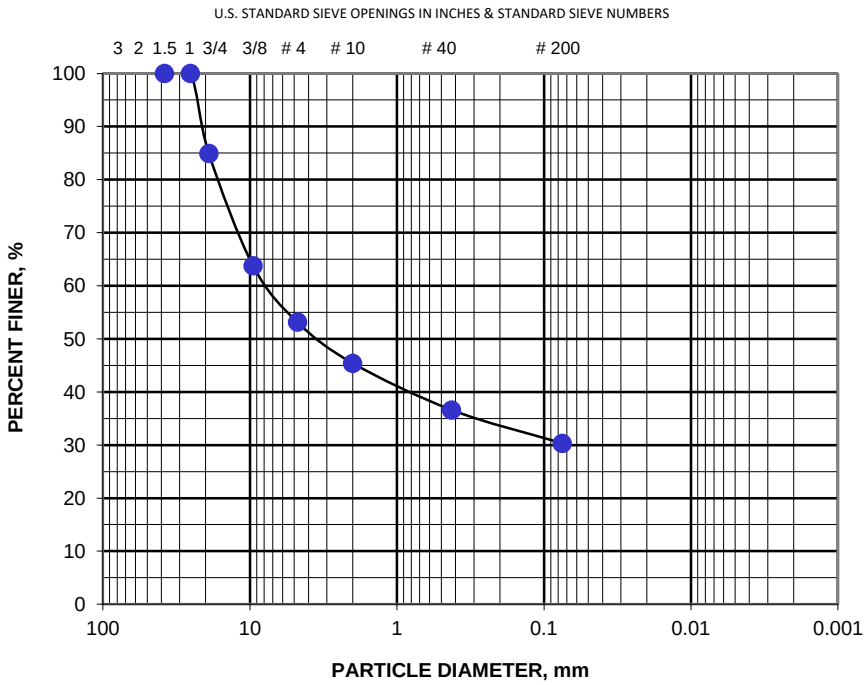
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	85.0%
3/8"	63.8%
No. 4	53.2%
No. 10	45.4%
No. 40	36.6%
No. 200	30.3%

MOISTURE CONTENT (%) 18.5

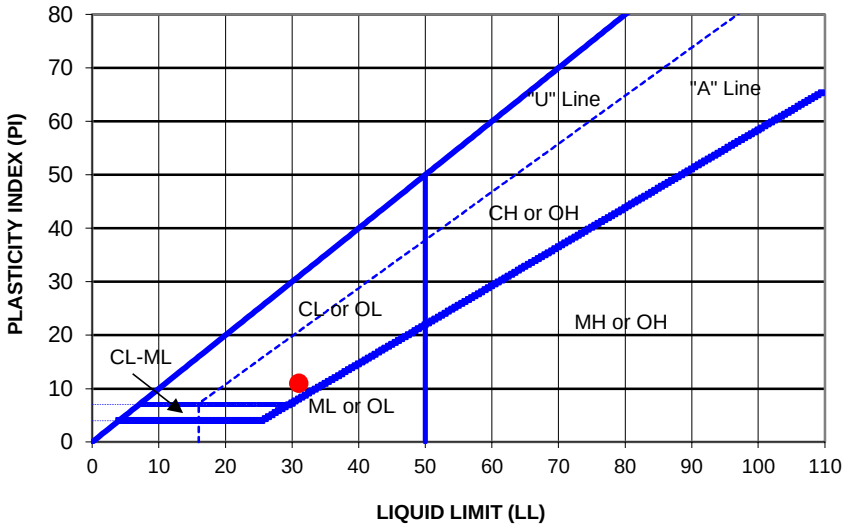
VISUAL DESCRIPTION	brown, red and gray

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-2-6**	**0**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-3
SAMPLE NO.	S-2
DEPTH (FT)	2-3.5
PLASTIC LIMIT	20
LIQUID LIMIT	46
PLASTICITY INDEX	26

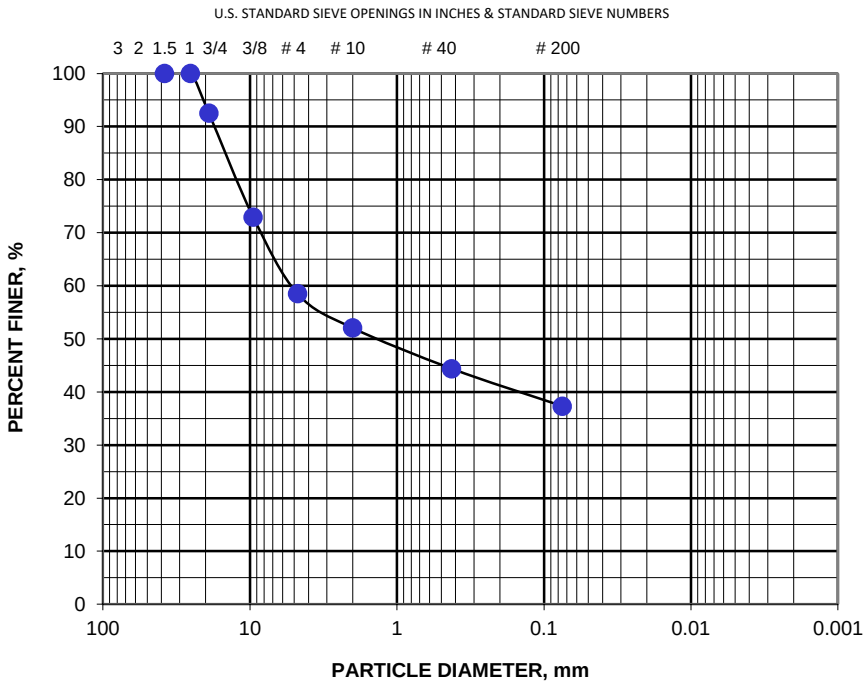
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	92.6%
3/8"	73.0%
No. 4	58.6%
No. 10	52.1%
No. 40	44.4%
No. 200	37.3%

MOISTURE CONTENT (%) 19.6

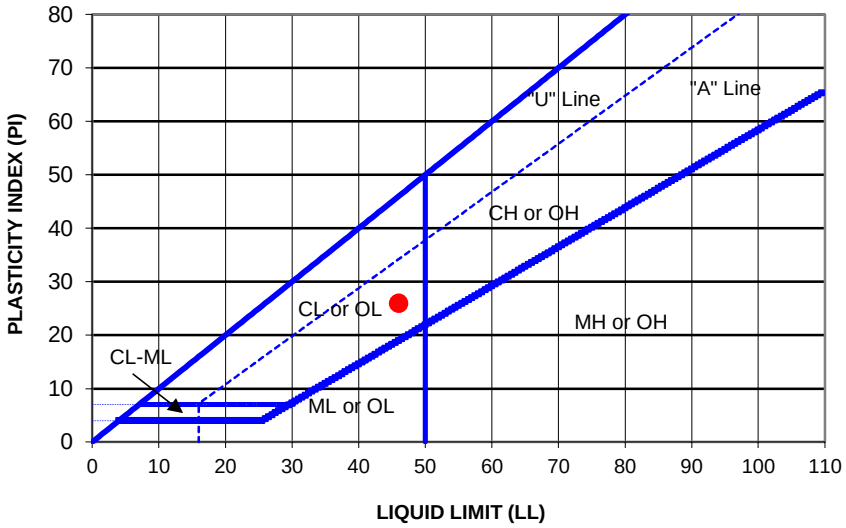
VISUAL DESCRIPTION	brown

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-7-6**	**4**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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JOB NO: 23-15134

BORING NO.	B-3
SAMPLE NO.	S-3
DEPTH (FT)	3.5-5
PLASTIC LIMIT	19
LIQUID LIMIT	42
PLASTICITY INDEX	23

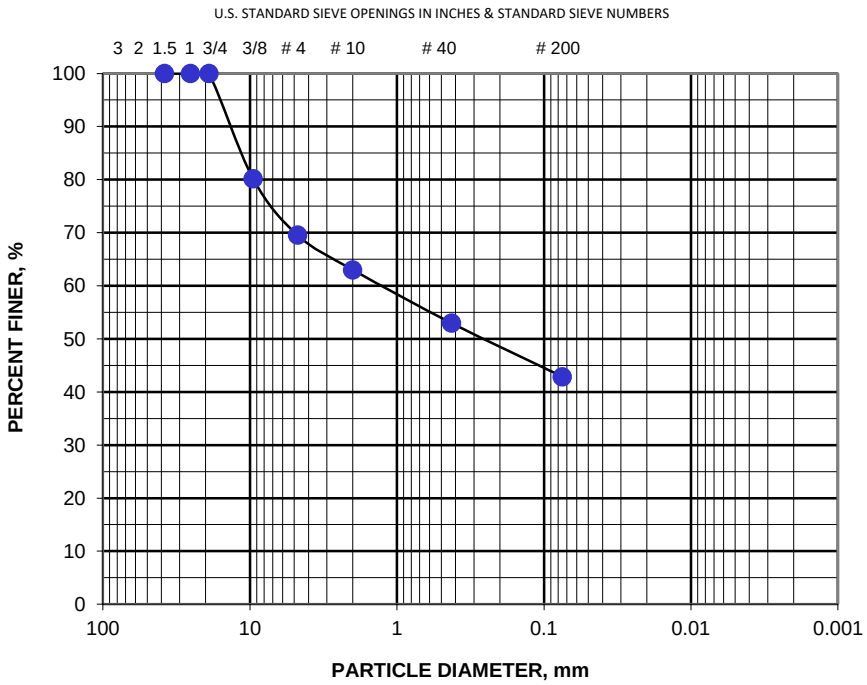
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	80.2%
No. 4	69.6%
No. 10	63.0%
No. 40	53.0%
No. 200	42.9%

MOISTURE CONTENT (%) 21.9

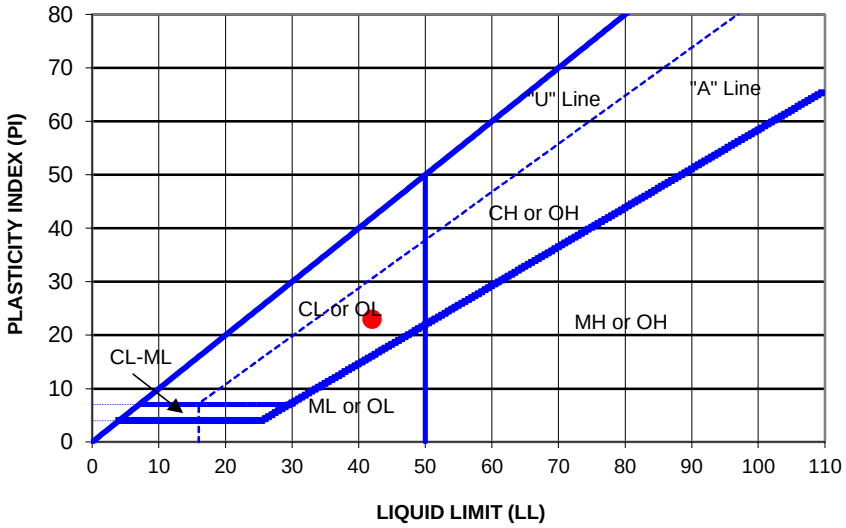
VISUAL DESCRIPTION	brown

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-7-6**	**5**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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JOB NO: 23-15134

BORING NO.	B-5
SAMPLE NO.	S-5
DEPTH (FT)	8.5-10
PLASTIC LIMIT	23
LIQUID LIMIT	44
PLASTICITY INDEX	21

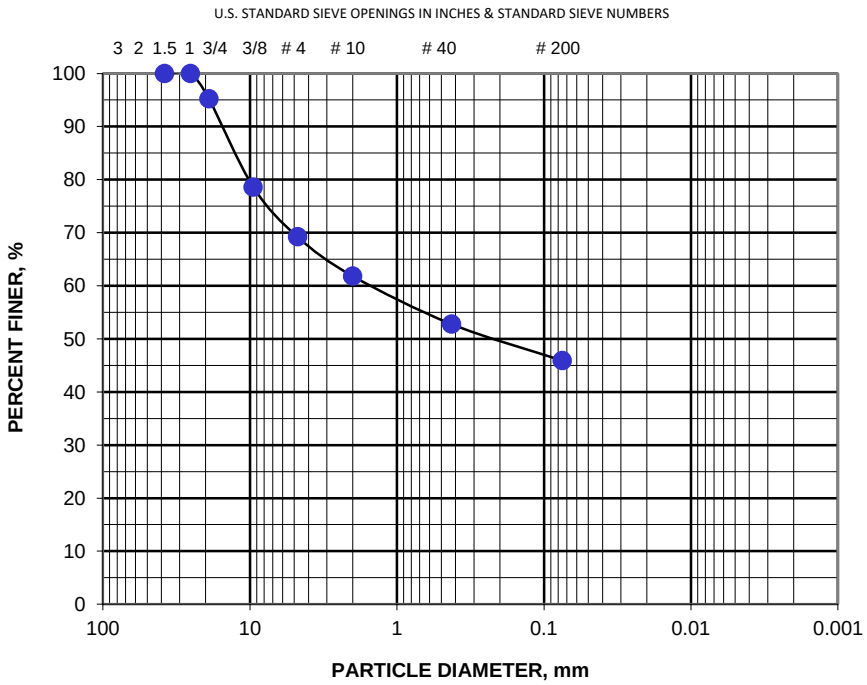
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	95.3%
3/8"	78.6%
No. 4	69.3%
No. 10	61.8%
No. 40	52.8%
No. 200	45.9%

MOISTURE CONTENT (%) 26.0

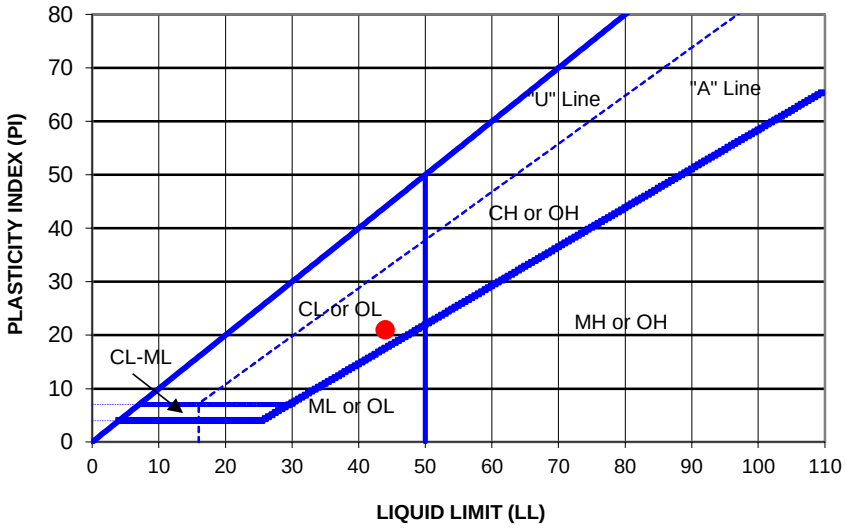
VISUAL DESCRIPTION	red and brown

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-7-6**	**6**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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JOB NO: 23-15134

BORING NO.	B-6
SAMPLE NO.	S-4
DEPTH (FT)	5-6.5
PLASTIC LIMIT	27
LIQUID LIMIT	36
PLASTICITY INDEX	9

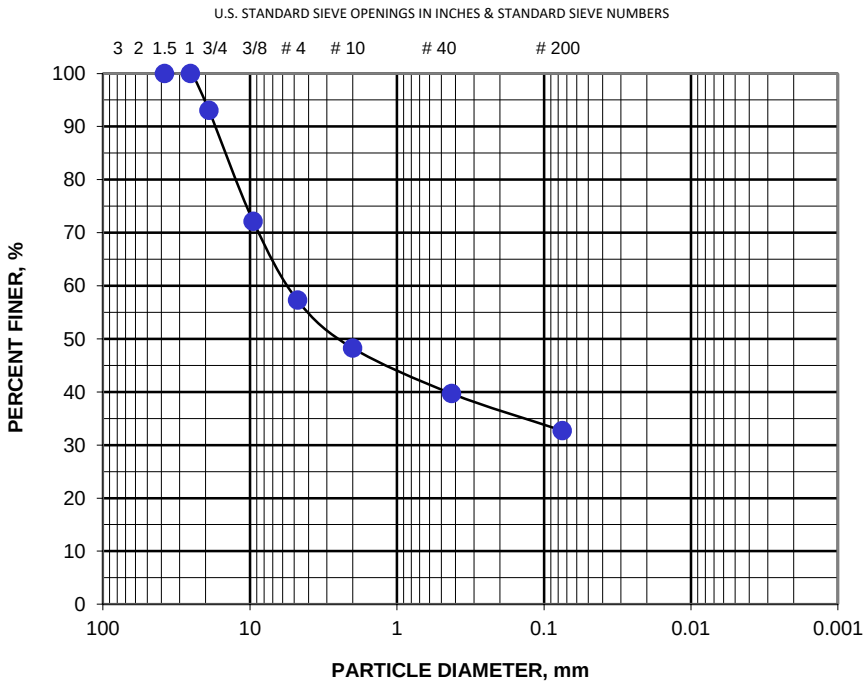
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	93.1%
3/8"	72.2%
No. 4	57.3%
No. 10	48.3%
No. 40	39.7%
No. 200	32.7%

MOISTURE CONTENT (%)	30.9

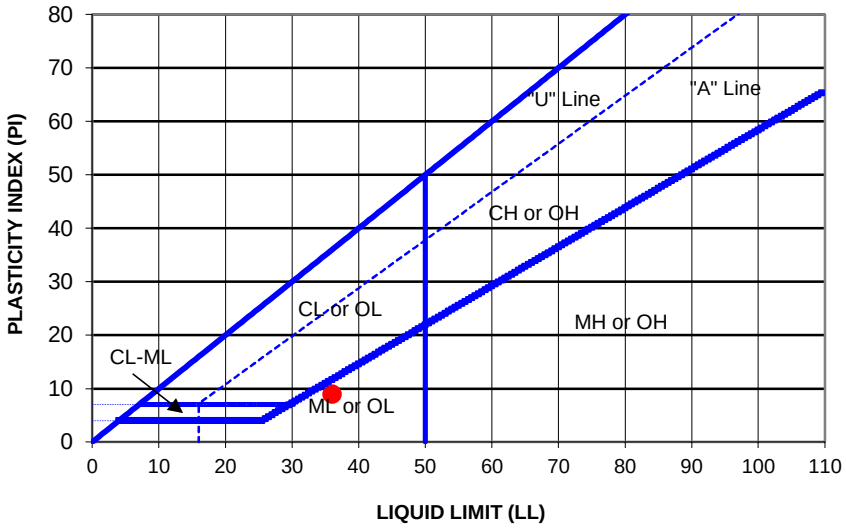
VISUAL DESCRIPTION	red and brown

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Silty Gravel with Sand, GM	**A-2-4**	**0**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



GTS, Inc.
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Little Rock, Arkansas
Fort Smith, Arkansas
Tulsa, Oklahoma
Dallas, Texas

PROJECT: Bentonville Water Resources Recovery Facility Improvements

DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-17
SAMPLE NO.	S-1
DEPTH (FT)	0.5-2
PLASTIC LIMIT	19
LIQUID LIMIT	31
PLASTICITY INDEX	12

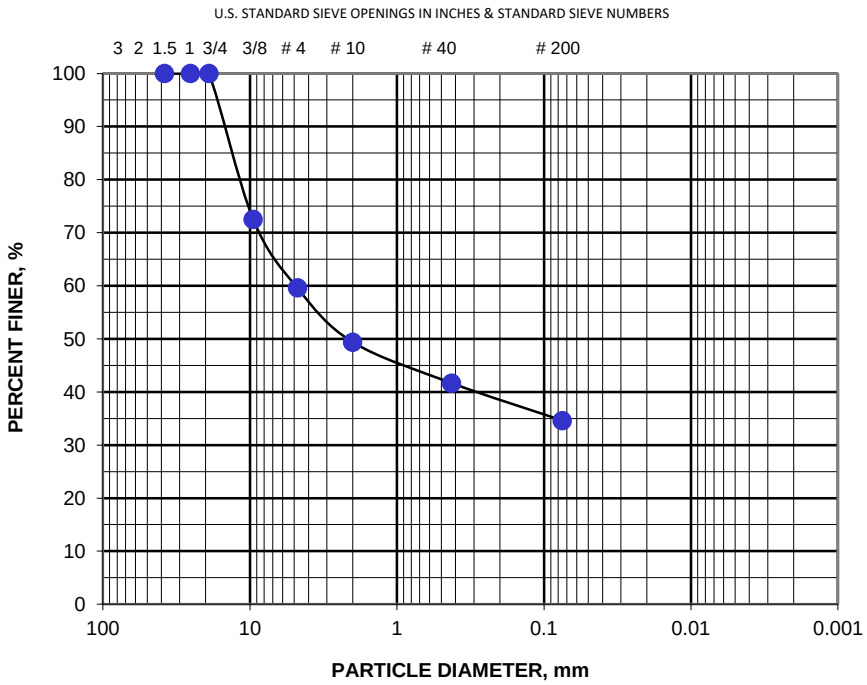
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	72.5%
No. 4	59.6%
No. 10	49.4%
No. 40	41.7%
No. 200	34.6%

MOISTURE CONTENT (%) 18.0

VISUAL DESCRIPTION	red and gray

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-2-6**	**0**

GRAIN SIZE DISTRIBUTION CURVE



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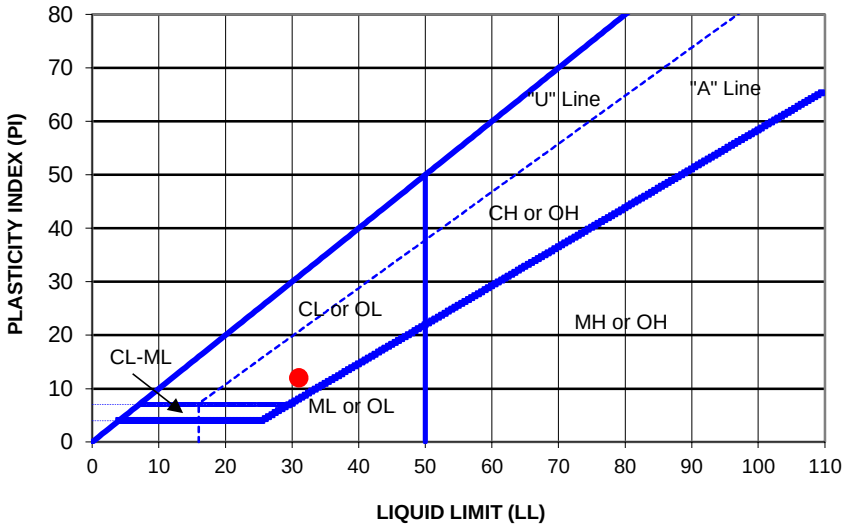

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DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-17
SAMPLE NO.	S-3
DEPTH (FT)	3.5-5
PLASTIC LIMIT	17
LIQUID LIMIT	37
PLASTICITY INDEX	20

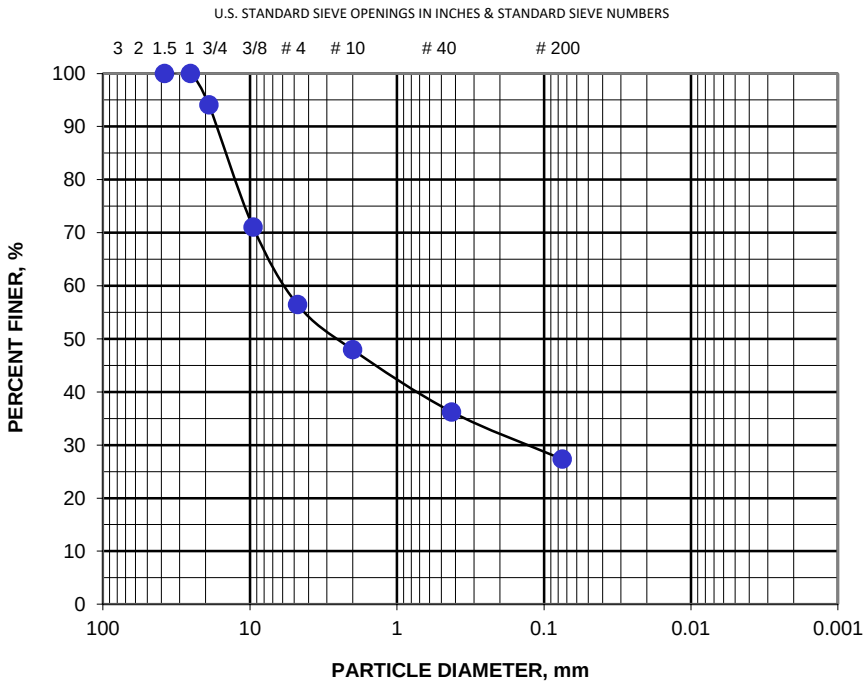
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	94.1%
3/8"	71.1%
No. 4	56.5%
No. 10	48.0%
No. 40	36.2%
No. 200	27.3%

MOISTURE CONTENT (%)	15.0

VISUAL DESCRIPTION	red and gray

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-2-6**	**1**

GRAIN SIZE DISTRIBUTION CURVE



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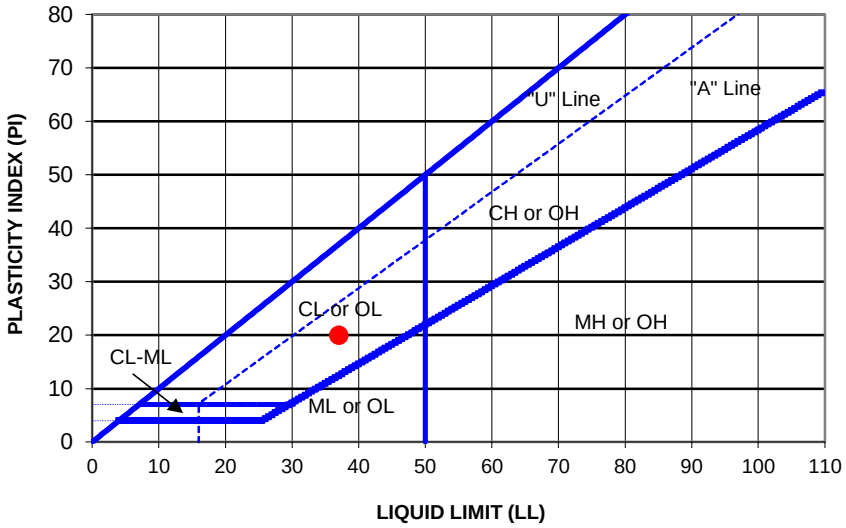

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JOB NO: 23-15134

BORING NO.	B-21
SAMPLE NO.	S-2
DEPTH (FT)	2-3.5
PLASTIC LIMIT	19
LIQUID LIMIT	44
PLASTICITY INDEX	25

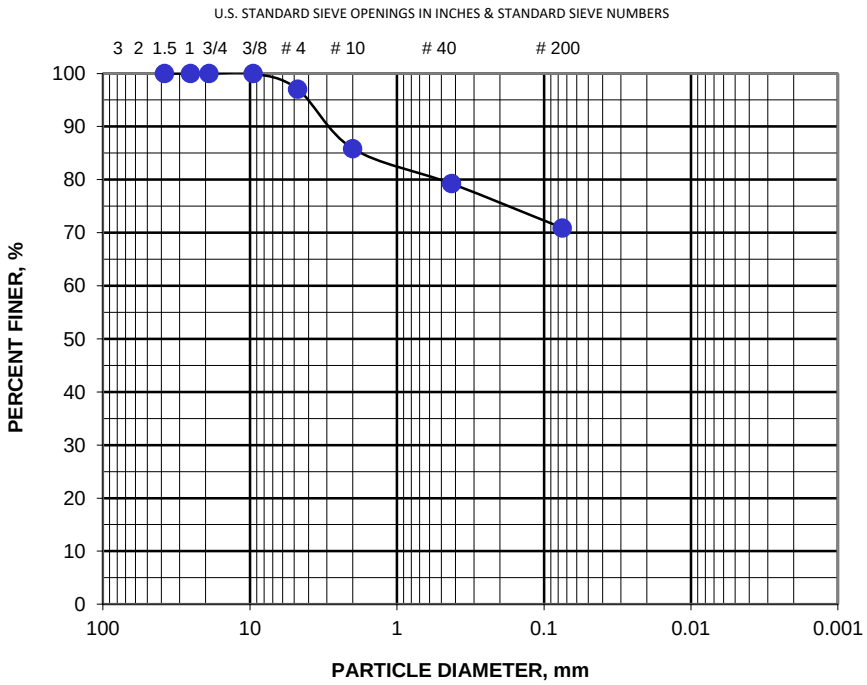
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	97.1%
No. 10	85.9%
No. 40	79.3%
No. 200	70.9%

MOISTURE CONTENT (%) 19.6

VISUAL DESCRIPTION	red and brown

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	**A-7-6**	**16**

GRAIN SIZE DISTRIBUTION CURVE



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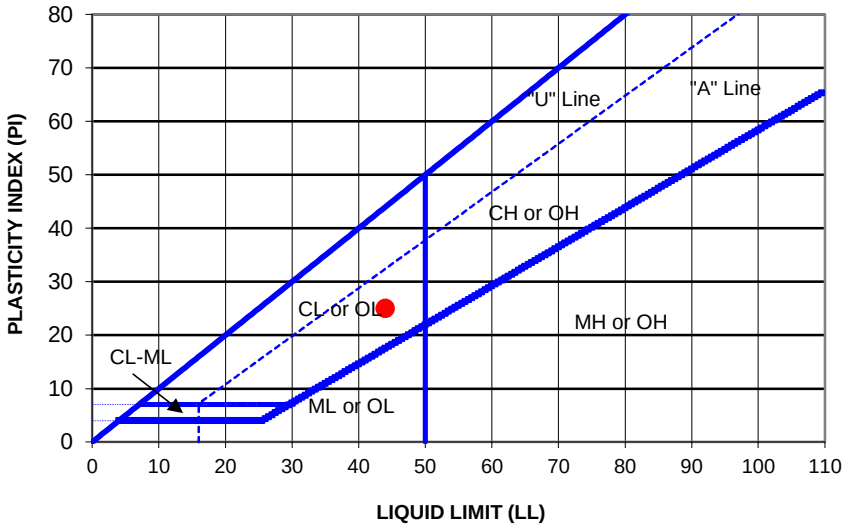

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DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-26
SAMPLE NO.	S-5
DEPTH (FT)	8.5-10
PLASTIC LIMIT	18
LIQUID LIMIT	42
PLASTICITY INDEX	24

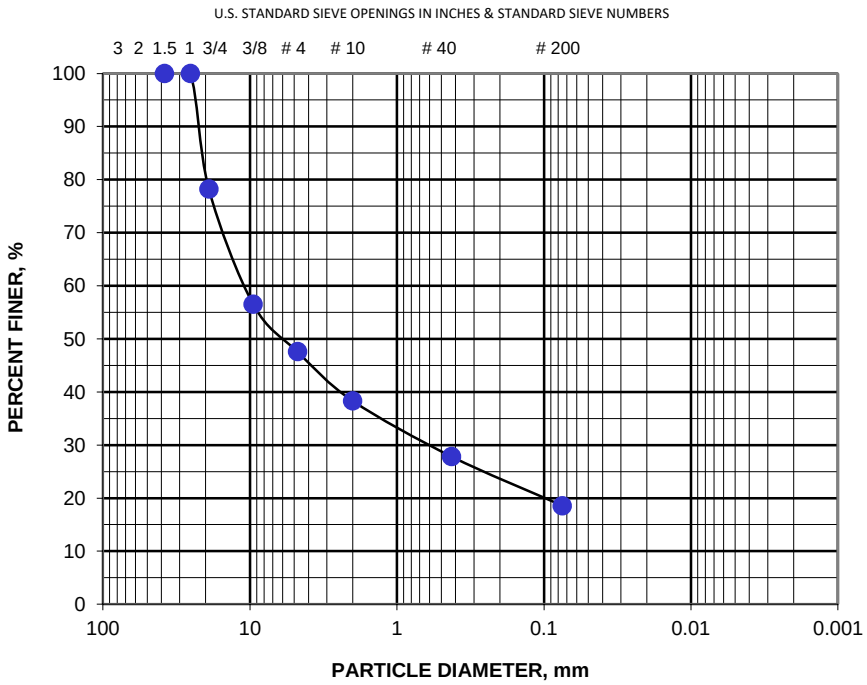
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	78.3%
3/8"	56.5%
No. 4	47.6%
No. 10	38.3%
No. 40	27.8%
No. 200	18.6%

MOISTURE CONTENT (%)	12.5

VISUAL DESCRIPTION	gray, brown, and red

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Gravel with Sand, GC	**A-2-7**	**1**

GRAIN SIZE DISTRIBUTION CURVE



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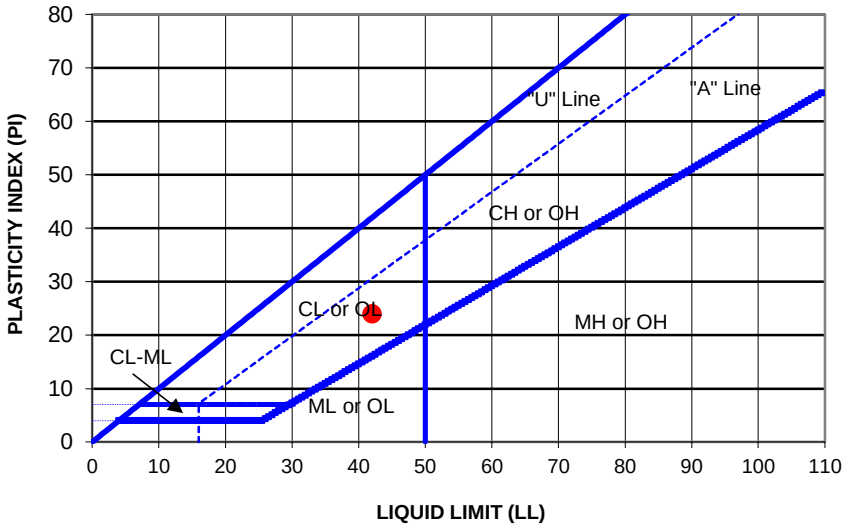

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DATE: 1/31/2024

JOB NO: 23-15134

BORING NO.	B-22
SAMPLE NO.	S-3
DEPTH (FT)	3.5-5
PLASTIC LIMIT	18
LIQUID LIMIT	35
PLASTICITY INDEX	17

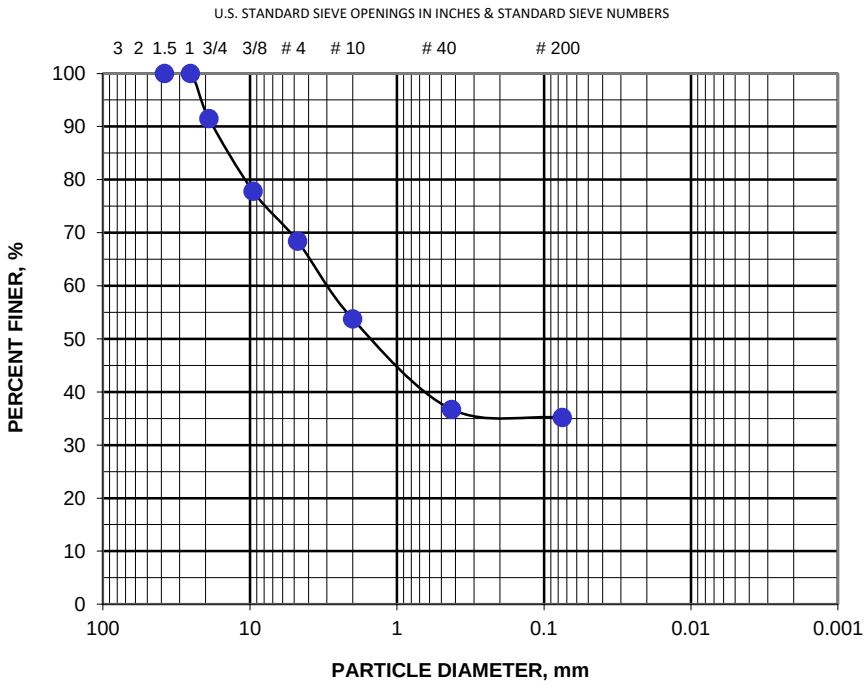
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	91.5%
3/8"	77.8%
No. 4	68.4%
No. 10	53.8%
No. 40	36.7%
No. 200	35.2%

MOISTURE CONTENT (%)	20.8

VISUAL DESCRIPTION	red and gray

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Clayey Sand with Gravel, SC	**A-6**	**1**

GRAIN SIZE DISTRIBUTION CURVE



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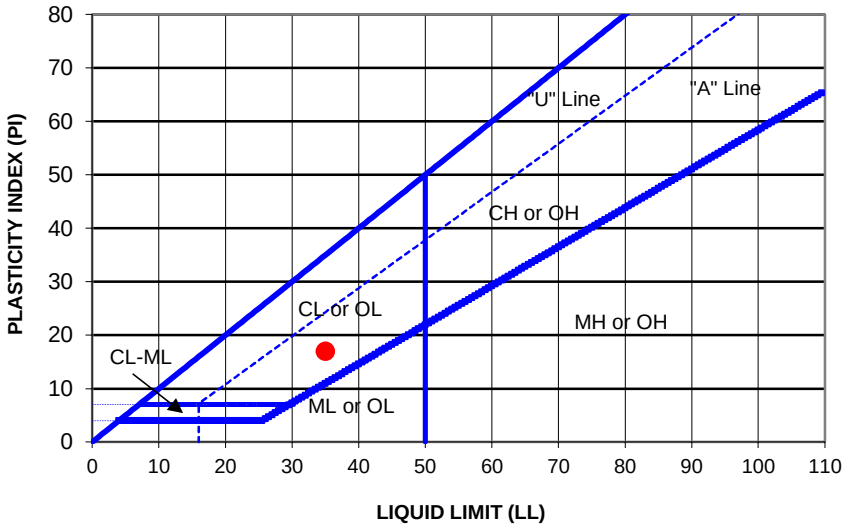

SECTION 02361

DRILLED CONCRETE PIERS AND SHAFTS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment, temporary casings, dewatering, and incidentals required and install drilled piers, complete as shown on the Drawings and as specified herein.

B. Furnish all surveys including layout, inspection, and record-keeping incident to drilled piers and as specified herein.

1.02 MATERIALS COMPLIANCE WITH AIS

A. P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an “American Iron and Steel (AIS)” requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works. This Project meets the definition of such work, and the Environment Protection Agency (EPA) implementation requirements for this AIS requirement are outlined within the DWSRF memorandum titled “Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014” included as part of the RLF Supplemental General Conditions.

B. All parties are required to comply with these requirements and to ensure that all qualifying iron and steel products used in this project must be produced in the United States. See RLF Supplemental General Conditions

1.03 RELATED SECTIONS

A. Section 02200 – Earthwork

B. Section 02140 – Dewatering and Drainage

C. Section 03200 – Concrete Reinforcement

D. Section 03300 – Cast-In-Place Concrete

1.04 SUBMITTALS

A. Shop drawings and product data, in accordance with Section 01300, Submittals, showing materials of construction and details of installation for:

1. Pier numbering drawing, proposed pier installation method and sequence, and procedures

2. Concrete mix design

3. Steel Casings

4. Slurry design if needed

5. Reinforcing steel drawings

B. Statement of Qualifications

1. Submit qualifications of the drilled pier subcontractor

C. Project Record Documents

1. Drilling Records: The Contractor and Geotechnical Engineer shall each submit signed type written copies of the drilling record for each pier to the Engineer immediately after drilling. The reports shall include the project name and number, name of Contractor, foundation sub-contractor, and foundations sub-contractor's drilling superintendent. For each pier installed, the report shall indicate the following information:

   a. Pier designation number, location, and shaft diameter
   b. Bottom(tip) elevation, Cut-off elevation, Pier Length
   c. Drilling start time and finish time including date
   d. Construction method (casing method or slurry method)
   e. Depth of pier penetration into rock
   f. Pier casing length installed
   g. Length and elevation of top of any casing left in place
   h. Description of temporary or permanent casing (including purpose, diameter, wall thickness and length)
   i. Groundwater conditions (rate of water infiltration, depth of water in hole prior to concreting for dry piers, water elevation in hole for wet piers)
   j. Description of pier bottom including amount and extent of loose material
   k. Reinforcing steel size and depth actually placed
   l. Method of concrete placement and actual volume of concrete placed
   m. Concrete placement start time and completion time including date
   n. Any difficulties encountered during drilling or concreting operations
   o. Variation from specified tolerances including survey location and plumbness
   p. Any deviations from specifications

2. Post Construction Survey: After completion of pier placement, provide an as-built survey record of each pier installed, and furnish signed, typewritten copies. The records shall show the actual pier location and include the pier designation number, pier diameter, pier casing length installed, date and time of installation, time delays during installation, cut-off and tip elevations, depth of pier penetration into rock, length of casing left in place, time and type of concrete placement, deviations from drawing location and from plumb, and any other applicable data.

1.05 REFERENCE STANDARDS

A. ASTM International (ASTM), latest edition:

1. ASTM C31 Standard Practice for Making and Curing Concrete Test Specimens in the Field

B. American Welding Society (AWS), latest edition:

1. AWS D1.1 Structural Welding Code – Steel

C. American Concrete Institute (ACI), latest edition:

1. ACI 318 Building Code Requirements for Structural Concrete

2. ACI 336.1 Specification for Construction of Drilled Piers

1.06 QUALITY ASSURANCE

A. Drilled piers shall conform to the requirements of ACI 336.1 except as modified by this Specification.

B. The foundation sub-contractor shall have experience in the installation of drilled piers of the type specified herein, including experience with similar subsurface materials, water conditions, pier sizes, and special techniques required.

C. Employ a surveyor licensed in the State of Arkansas who shall perform all surveys, layouts and measurements for drilled pier work. The surveyor shall conduct the layout work for each drilled pier to the lines and levels required prior to beginning excavation. The surveyor shall determine and certify the actual location of each pier as installed and shall submit certified lists and drawings of the pier locations with pier designation numbers, tip and cutoff elevations as installed, and deviations from plumb.

D. The foundation sub-contractor shall cooperate with all testing and inspection personnel employed to perform field quality control tests and inspections.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Casings shall be stored off the ground and protected to maintain the casing roundness within 2 percent (2%) of the casing diameter. Handling of the casing shall minimize damage and maintain its roundness.

1.08 PROJECT/SITE REQUIREMENTS

A. A Geotechnical Report and boring logs for the project are made available for the Contractor. The boring logs indicate the soils and conditions at the boring location only and soils and conditions can change away from the actual boring location. The boring logs and Geotechnical report are made available to the Contractor for his/her information to be used at his/her own risk. The Contractor is responsible for any conclusions to be

drawn from the borings including the character of the materials to be encountered and the degree of difficulty to be expected in the performance of the work. The Contractor is encouraged to perform his/her own subsurface investigation.

B. It should not be assumed that materials other than those disclosed by the borings will not be encountered, nor that the proportions and character of the various materials will not vary from those indicated in the boring logs.

C. No claim for extra compensation or extension of time will be considered because of any variation in site conditions, soil, or water conditions from those indicated to those actually encountered.

PART 2 PRODUCTS

2.01 MATERIALS

A. Piers shall have a diameter as shown on the Drawings.

B. The steel casing shall meet the requirements of ACI 336.1.

C. Welding shall meet the requirements of AWS D1.1.

D. Reinforcing steel shall conform to the requirements of Section 03200, Concrete Reinforcement.

E. Concrete shall conform to Class C Concrete in Section 03300, Cast-In-Place Concrete.

PART 3 EXECUTION

3.01 GENERAL

A. When piers are located in an area where site grading is required, the piers shall not be installed until the grading has been performed.

B. Drilled piers shall be installed to the elevations shown on the plans. Pier shafts shall be reinforced concrete. Piers shall not have belled bottoms. Steel casings shall be used during the excavation of all pier shafts.

C. The inside diameter of the casing shall not be less than the specified size of the shaft. Oversized casings may be used if approved beforehand by the Engineer and if they are not detrimental to the structure. No extra compensation shall be made for oversized casings or for the additional concrete and reinforcing steel that may be required in oversized casings or for any other additional work or materials due to the substitution.

3.02 EXCAVATION

A. Maintain the stability of shaft sidewalls during drilling operations by installing steel casing.

B. When the bottom of the excavation is a sloping rock surface, excavate to a level plane or a step with a maximum height less than one-quarter the width or diameter of the bearing area.

C. Obstructions shall be removed or cleared by excavation, drilling, chipping, or other approved means. Blasting or jetting will not be allowed.

D. If satisfactory material is not encountered at the specified elevation or depth, the bottom of any drilled hole may be lowered, with written approval of the Engineer.

E. If the elevation of the top of the shaft is below ground level at the time of concrete placement, an oversize casing from ground elevation to a point below the top of the shaft will be required to control caving of any material into the freshly placed concrete. The Contractor will be permitted to backfill around the upper portions of the casing with pea gravel or other granular material, but space shall be provided to allow for escape of muck, slurry, or water displaced by the concrete.

F. After completion of the drilled shaft excavation and prior to the placement of the reinforcing steel cage and concrete, all slough and other loose material shall be machine cleaned from the shaft. A flight auger or other equipment, approved by the Engineer, shall be used for cleaning dry excavations where slurry or groundwater is not present. Where slurry or groundwater is present, the excavation shall be cleaned with an air lift, bucket auger, or similar type of equipment, as approved by the Engineer.

G. Open excavations that are or deemed by the Engineer to be potentially hazardous shall be covered when work on them is not underway. All open excavations shall be covered at the end of each shift.

3.03 SLURRY

A. When slurry is used to maintain an excavation, provide for a specialist, experienced in slurry drilling, to design and monitor the slurry. The Contractor shall remain responsible for the slurry design and control as well as the resulting drilled shaft foundation produced by this method. The slurry shall consist of a stable suspension of commercial bentonite in water. During the drilling operations, monitor the properties of the slurry for conformance to the submitted design criteria. The density of the slurry shall be the minimum required to maintain the excavation.

B. The slurry shall be mixed in an approved mixer before being placed into the excavation. No dry material will be allowed to be placed in the excavation and mixed with water by the drilling auger. Slurry ejected during concrete placement may be reused provided that it is screened to remove gravel chips or other granular materials.

C. Slurry shall be fed into the excavation as the drilling progresses, keeping the holes filled to the top or maintained within any casing.

D. Just prior to placement of the reinforcing steel, conduct tests on the slurry, including samples obtained from the bottom of the excavation, to establish conformance with the submitted criteria. The consistency of the slurry shall be adjusted as required to maintain the excavation and to provide a suitable environment for the concreting operation.

Unless otherwise specified on the project plans, at the time of concrete placement, the density and viscosity of the slurry shall conform to the requirements of ACI 336.1.

3.04 SHAFT INSPECTION

A. Provide suitable equipment and facilities so that the Geotechnical Engineer and Engineer may inspect completed drilled shaft excavations and check for alignment and dimensions.

B. Provide suitable access and lighting for proper inspection of the completed drilled pier shaft prior to concrete placement.

C. Reinforcing steel and concrete shall not be placed in the drilled shaft excavation until the Engineer has made his/her inspection and given his/her approval.

3.05 REINFORCING STEEL

A. The cage of reinforcing steel, consisting of longitudinal bars and spiral reinforcement or lateral ties, shall be completely assembled, tied, and placed as a unit immediately prior to placing the concrete.

B. If the shaft requiring full depth reinforcement is lengthened, the bars may be lap spliced, spliced by butt welding, or connected by other approved procedures. Splices shall be positioned in the lower portion of the shaft.

C. The reinforcing cage shall be adequately tied, supported, and anchored to prevent movement from the required location during the concrete placement. Approved plastic spacers shall be positioned along the cage (or shaft) to ensure concentric spacing of the reinforcement. The position of spacers and ties shall allow clearance for concrete placement and tremie pipes.

D. Concrete reinforcement shall be doweled to the structure above as indicated on the Drawings.

3.06 CONCRETE

A. Concrete shall be placed as soon as practical after the pier excavation is complete, and the reinforcing steel is in place. Concrete placement, or concrete less than 48 hours old, shall not be within 20 feet of any pier drilling operation in progress.

B. Concrete placement in the shaft shall be continuous to the construction joint indicated on the Drawings. The concrete shall be workable, requiring only minimal vibrating or rodding. Special care shall be exercised during placement to prevent honeycombs and air pockets from forming in the concrete.

C. Placement of concrete in dry excavations and placement of concrete under slurry or water shall be in accordance with the respective applicable parts of Section 03300, Cast-In-Place Concrete. Pumped placement of the concrete is preferred.

D. Stop the concrete placement above the final cut-off elevation shown after all fluids, waste, and laitance have been discharged from the shaft.

E. Concrete strength will be checked by taking concrete test cylinders made in conformance with ASTM C31. Five test cylinders shall be cast per pier but no more than one set per truckload and tested in accordance with Section 03300, Cast-In-Place Concrete.

3.07 CASING REMOVAL

A. The elapsed time from the beginning of concrete placement in the cased portion of the shaft, until extraction of the casing is begun, shall not exceed one (1) hour.

B. During removal of any casing, a head of not less than 5 feet of fluid concrete shall be maintained above the bottom of the casing except at the top of the shaft. All contaminated concrete shall be removed from the shaft. If any upward movement of the concrete and/or reinforcing steel occurs at any time during the pulling operation, the following criteria shall govern:

1. If the upward movement is 1 inch or less, the casing may continue to be pulled provided no further movement occurs and provided vibrating or rodding is used to reconsolidate the concrete. Vibration or rodding shall not be used in an attempt to break the casing loose for extraction.

2. If the upward movement is greater than 1 inch, the casing shall be left in place as a permanent sleeve at the Contractor’s expense.

3.08 CUT-OFFS

A. The piers shall be cut off at the required elevation on a clean and true horizontal plane unless otherwise shown on the Drawings. The concrete shall continue to be chipped back until the resulting surface is sound, uncontaminated concrete.

3.09 TOLERANCES

A. Piers shall be installed as close as practicable to the design location. The maximum lateral deviation permitted from the design location at cut-off elevation will be 3 inches. The maximum deviation permitted from design cut-off elevation will be plus or minus 3 inches.

B. No vertical pier shall be out of plumb by more than 2 percent (2%).

3.10 ACCEPTANCE OF PIERS

A. Only piers meeting the requirements of this Specification shall be accepted for payment.

B. When piers are installed with dimensions outside of the specified tolerances, with concrete not meeting the specified strength, or with any other non-conforming condition, the Engineer will make a determination regarding the proper corrective measures to be taken. Corrective measures may include the removal and replacement of the defective

piers, the installation of additional piers at nearby locations, the modification of the foundation over the pier, or other measures the Engineer deems appropriate. A load test may be required by the Engineer to determine the adequacy and acceptability of the drilled shaft.

C. All corrective measures ordered by the Engineer due to Contractor's error shall be done at no additional cost to the Owner. In addition, the Contractor shall pay for all required testing and additional engineering costs including the engineering costs for the evaluation and redesign.

3.11 CLEANUP

A. Remove from the site all shaft wastewater, cuttings, slurry, and waste material resulting from pier installation.

END OF SECTION

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G-5 LEGENDS AND ABBREVIATIONS II
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G-7 BASIS OF DESIGN
G-8 HYDRAULIC PROFILE I
G-9 HYDRAULIC PROFILE II
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CIVIL

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C-3 EXISTING SITE PLAN I
C-4 EXISTING SITE PLAN II
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1"
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

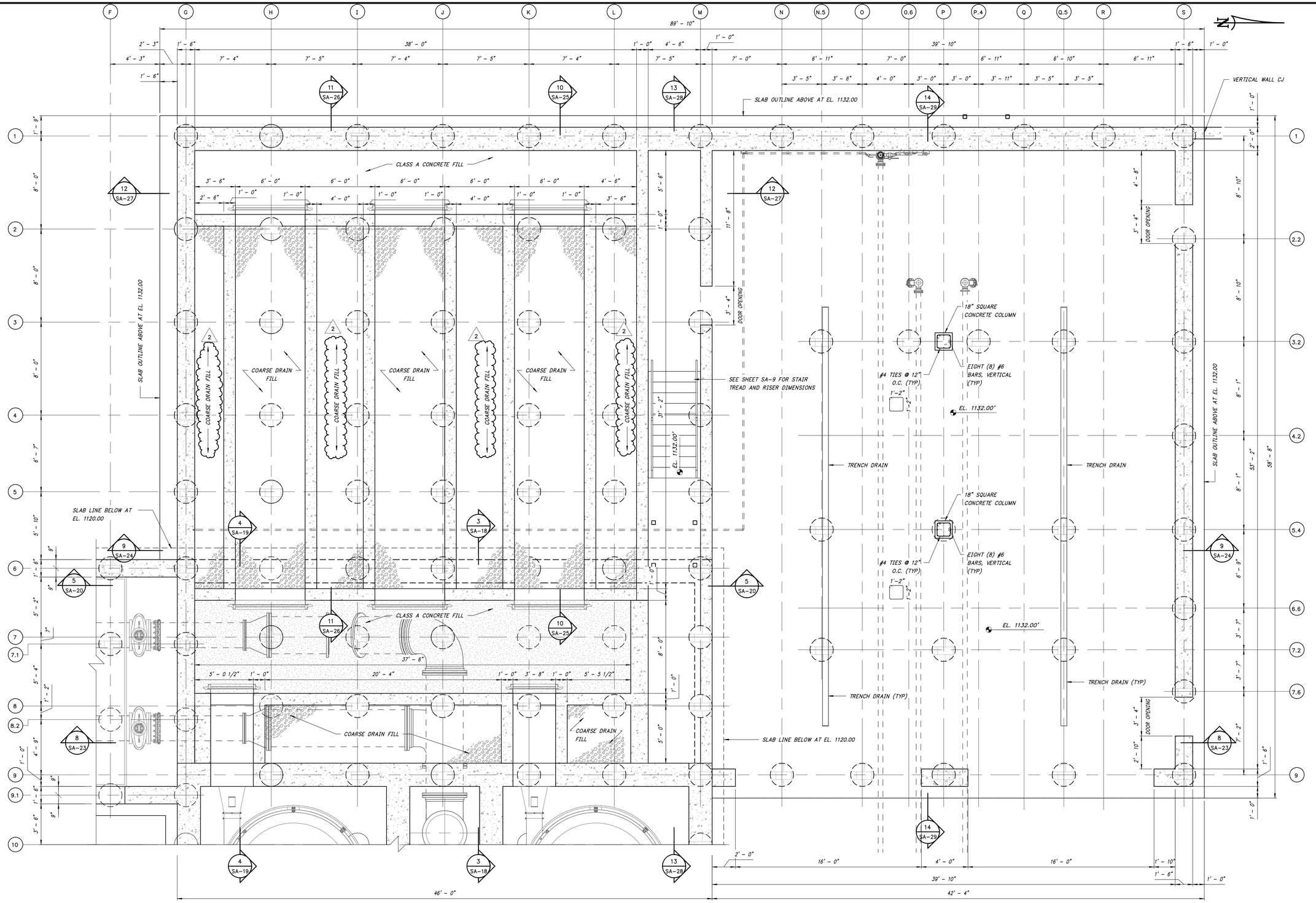
INDEX I

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: N.T.S
DESIGNED BY: JSD
DRAWN BY: MAW
HWEI NO.: 2021037
FILENAME: G-02 INDEX

SHEET NO.
G-2

\\HWE-VB.HAWKINS-WEIR.LOCAL\PROJECTS\21\2021037 BENTONVILLE WWTP CAPACITY STUDY\DRAWINGS\CONST PLANS\G-02 INDEX.DWG, 5/13/2025 1:50 PM, ALICIA FITTIN, LAYOUT1



PLAN AT EL. 1134.50'

DETAIL G
1/4" = 1'-0"

BID DRAWINGS
MARCH 21, 2025

ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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LARRY C. HAYDEN
NO. 13205
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

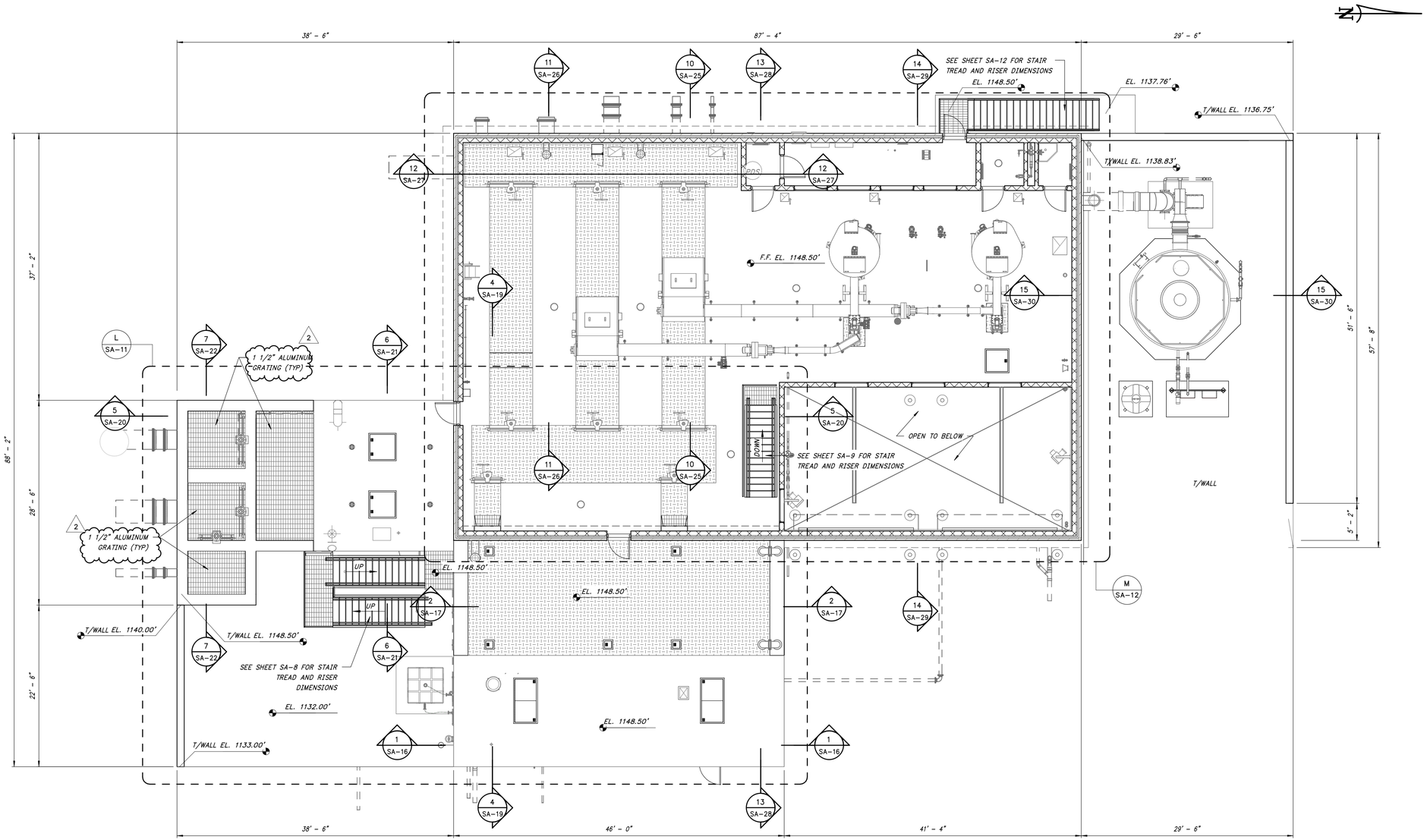
INFLUENT BUILDING PARTIAL BOTTOM PLAN AT EL. 1134.50

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO. SA-7

Autodesk Docs://4101144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 1:40:44 PM / CES / INFLUENT BUILDING PARTIAL BOTTOM PLAN



OVERALL PAN AT EL. 1149.50

DETAIL K
1/8" = 1'-0"

1"
ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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LARRY C. HAWKINS
NO. 13205
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING OVERALL PLAN AT EL. 1149.50

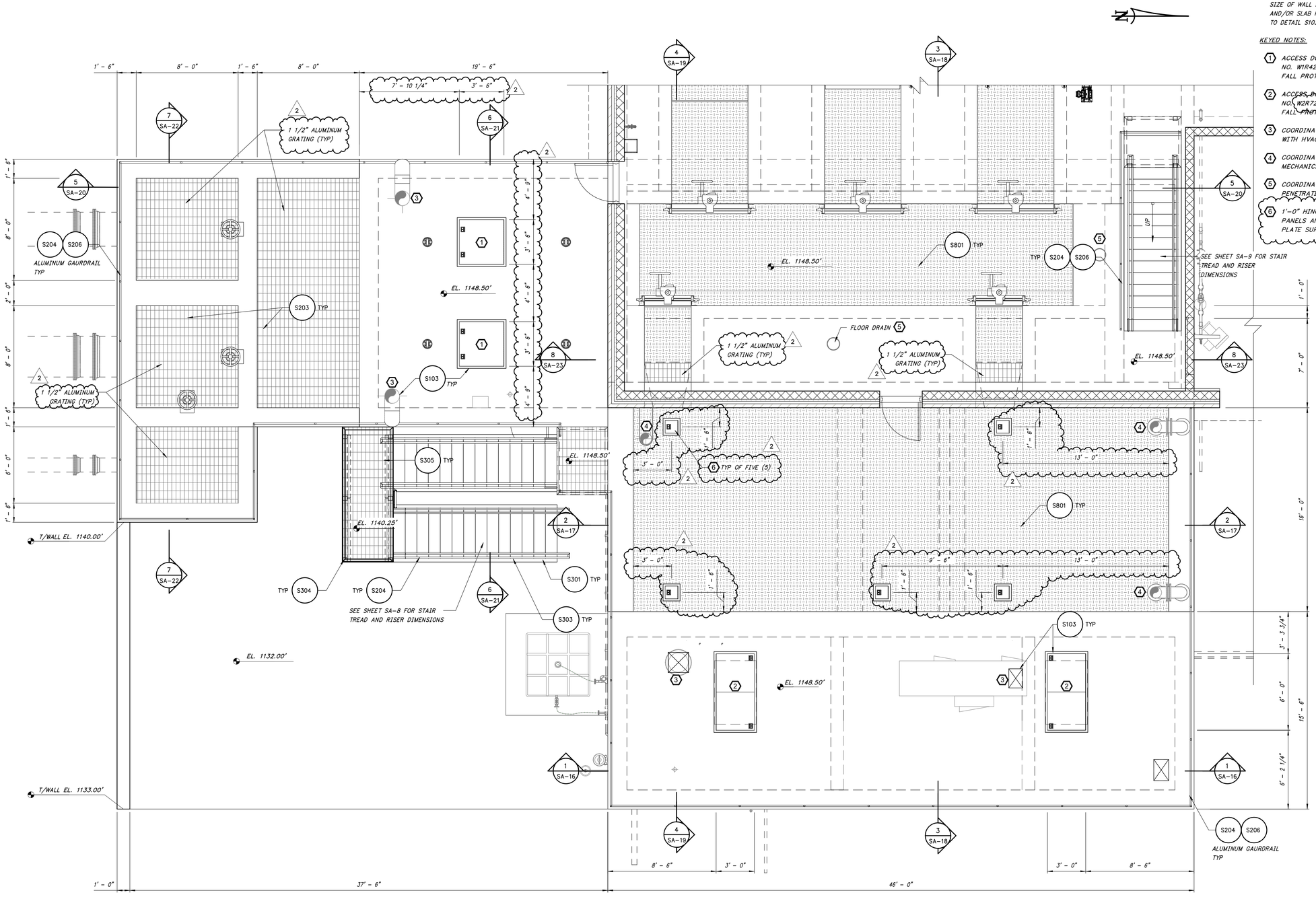
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/8" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
1 SA-10

BID DRAWINGS
MARCH 21, 2025

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 1:40:50 PM / CES / INFLUENT BUILDING OVERALL PLAN



PLAN AT EL. 1149.50'

DETAIL L
1/4" = 1'–0" –

NOTES:

1. *COORDINATE STRUCTURAL DRAWEINGS WITH OTHER DISCIPLINE DRAWINGS.*
2. *REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10–INCHES, REFER TO DETAIL S103.*

KEYED NOTES:

1. *ACCESS DOOR SHALL BE HALLIDAY PRODUCTS NO. W1R4242, OR EQUAL AND SHALL INCLUDE OPTIONAL FALL PROTECTION GRATING.*
2. *ACCESS DOOR SHALL BE HALLIDAY PRODUCTS NO. W2R7236, OR EQUAL AND SHALL INCLUDE OPTIONAL FALL PROTECTION GRATING.*
3. *COORDINATE SIZE AND LOCATION OF HVAC PENETRATION WITH HVAC DRAWINGS TYPICAL.*
4. *COORDINATE SIZE AND LOCATION OF PENETRATION WITH MECHANICAL DRAWINGS TYPICAL.*
5. *COORDINATE SIZE AND LOCATION OF PLUMBING PENETRATION WITH PLUMBING DRAWINGS TYPICAL.*
6. *1'–0" HINGED ALUMINUM ACCESS PANELS. ACCESS PANELS AND HINGES SHALL BE FLUSH WITH COVER PLATE SURFACE.*

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
2 REVISED PER ADDENDUM NO. 2	04/22/2025
3 REVISED PER ADDENDUM NO. 3	05/15/2025

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LARRY C. HADDOX
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

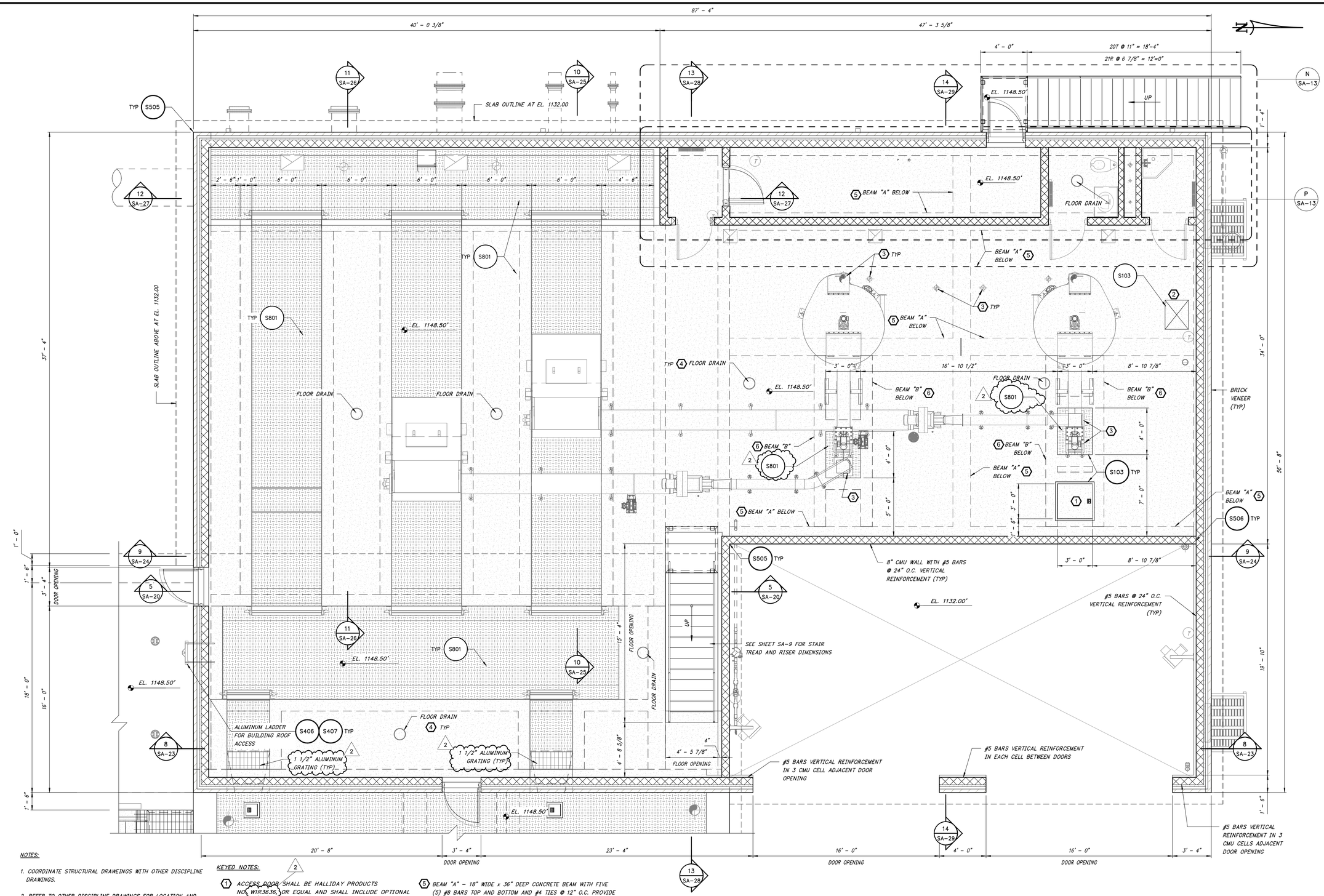
INFLUENT BUILDING PARTIAL PLAN AT EL. 1149.50

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'–0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037–ST

SHEET NO.
SA–11

Autodesk Docs://410144 – Bentonville Water Resource Recovery Facility Improvements/WWRF21037–ST.rvt 5/13/2025 1:40:57 PM / CES / INFLUENT BUILDING PARTIAL PLAN



PLAN AT EL. 1149.50'

DETAIL M
1/4" = 1'-0" –

NOTES:

1. COORDINATE STRUCTURAL DRAWEINGS WITH OTHER DISCIPLINE DRAWINGS.
2. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
3. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET S2-5 FOR CMU REINFORCEMENT.
4. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ANY MASONERY CONTROL JOINTS.

KEYED NOTES:

1. ACCESS DOOR SHALL BE HALLIDAY PRODUCTS NO. WIR3636, OR EQUAL AND SHALL INCLUDE OPTIONAL FALL PROTECTION GRATING.
2. COORDINATE SIZE AND LOCATION OF HVAC PENETRATION WITH HVAC DRAWINGS TYPICAL.
3. COORDINATE SIZE AND LOCATION OF PENETRATION WITH MECHANICAL DRAWINGS TYPICAL.
4. COORDINATE SIZE AND LOCATION OF PLUMBING PENETRATION WITH PLUMBING DRAWINGS TYPICAL.
5. BEAM "A" – 18" WIDE x 36" DEEP CONCRETE BEAM WITH FIVE (5) #8 BARS TOP AND BOTTOM AND #4 TIES @ 12" O.C. PROVIDE TWO (2) #5 BARS HORIZONTAL EQUALLY SPACED VERTICALLY EACH SIDE FACE OF BEAM. PROVIDE #8 AND #5 L-SHAPED BARS EACH END OF BEAM TYPICAL. REFER TO SECTION 14 SHEET SA-29 FOR SIMILAR BEAM "A" PROFILE.
6. BEAM "B" – 12" WIDE x 12" DEEP CONCRETE BEAM WITH THREE (3) #5 BARS TOP AND BOTTOM AND #4 TIES @ 4" O.C. FOR THE FIRST 3'-0" AT EACH END.

1" ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13205 LARRY C. HAYES 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING PARTIAL PLAN AT EL. 1149.50

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-12

BID DRAWINGS
MARCH 21, 2025

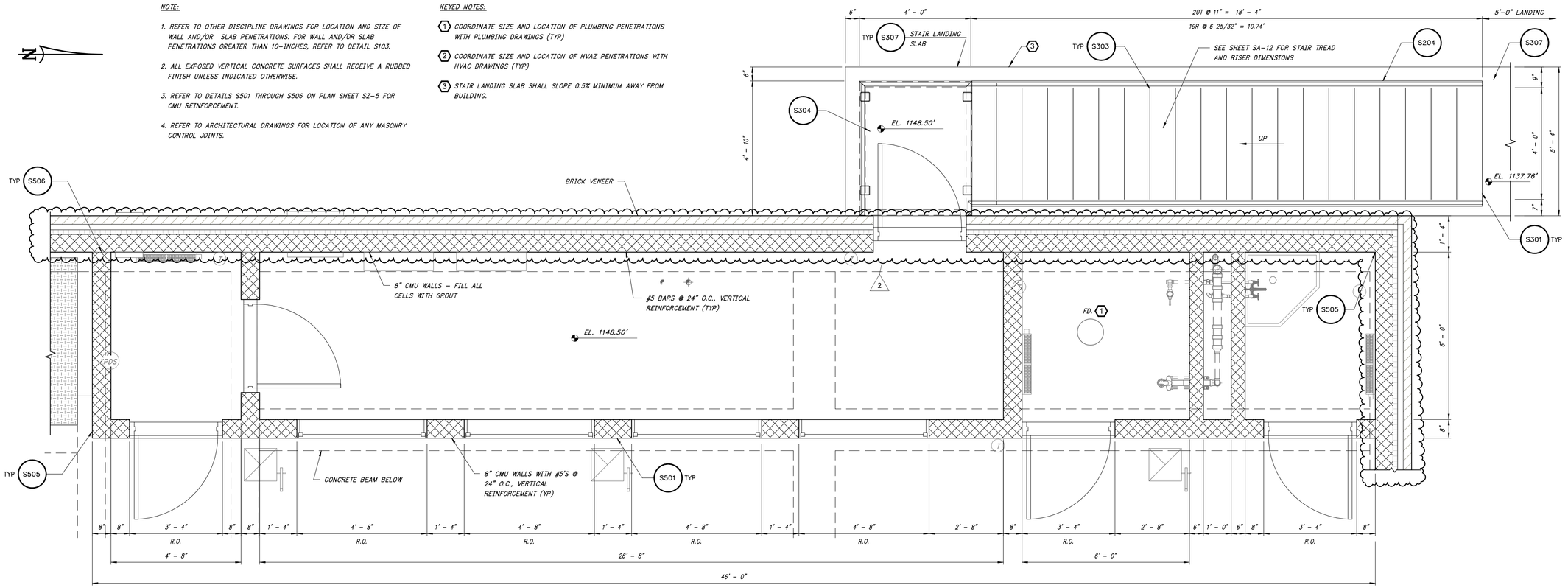
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 1:41:04 PM / CES / INFLUENT BUILDING PARTIAL PLAN

NOTE:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH UNLESS INDICATED OTHERWISE.
3. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET SZ-5 FOR CMU REINFORCEMENT.
4. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ANY MASONRY CONTROL JOINTS.

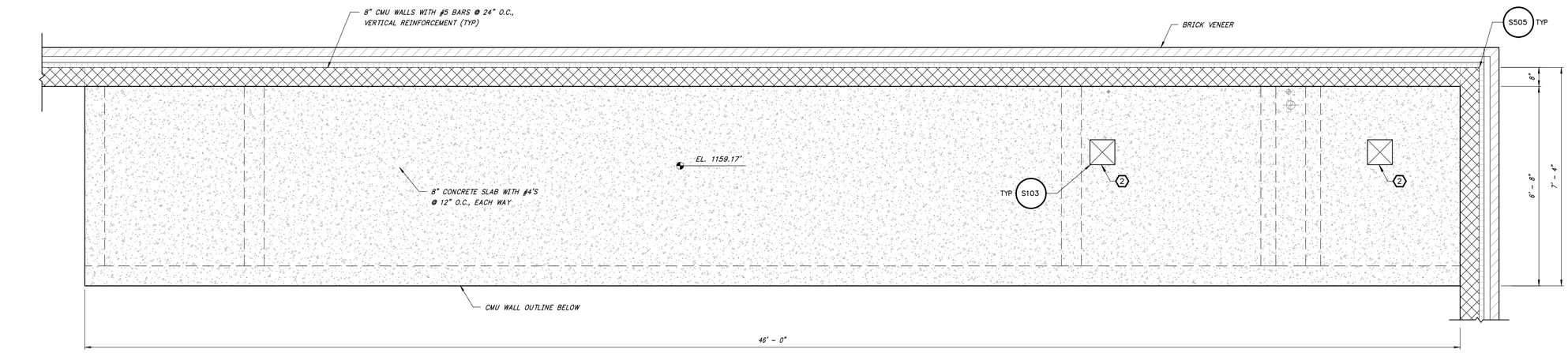
KEYED NOTES:

1. COORDINATE SIZE AND LOCATION OF PLUMBING PENETRATIONS WITH PLUMBING DRAWINGS (TYP)
2. COORDINATE SIZE AND LOCATION OF HVAZ PENETRATIONS WITH HVAC DRAWINGS (TYP)
3. STAIR LANDING SLAB SHALL SLOPE 0.5% MINIMUM AWAY FROM BUILDING.



PLAN AT EL. 1152.50'

DETAIL N 1/2" = 1'-0" SA-12



PLAN AT EL. 1159.17'

DETAIL P 1/2" = 1'-0" SA-12

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER LARRY C. HAWKINS NO. 13205 05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING PARTIAL PLANS

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/2" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO. 1 SA-13

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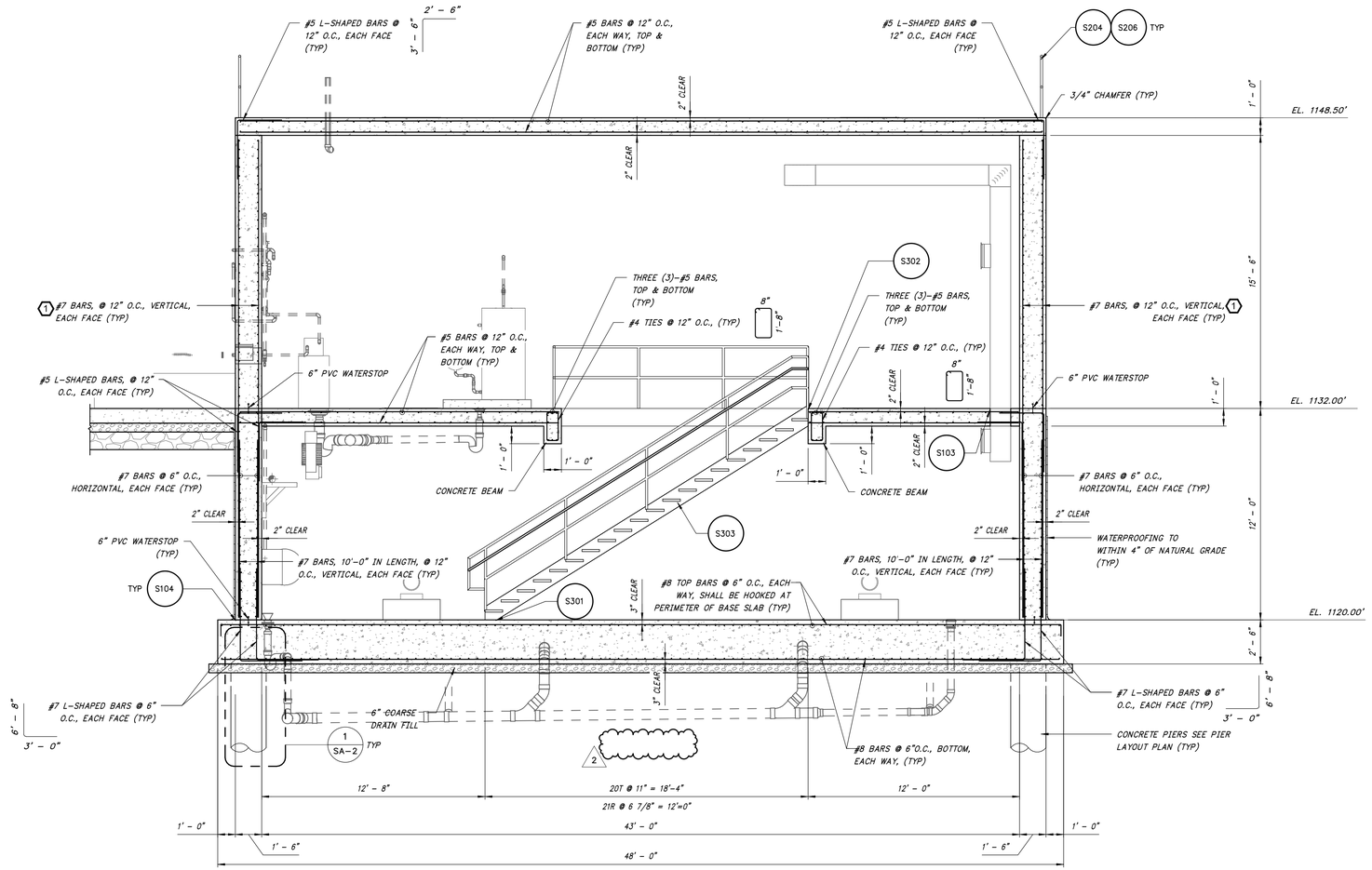

SECTION 1 / SA-3
1/4" = 1'-0"

NOTES:

1. *REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.*
2. *COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].*
3. *ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.*

KEYED NOTES:

1. *VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING*

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
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STATE OF ARKANSAS
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LARRY C. HARDIN
NO. 12205
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-16

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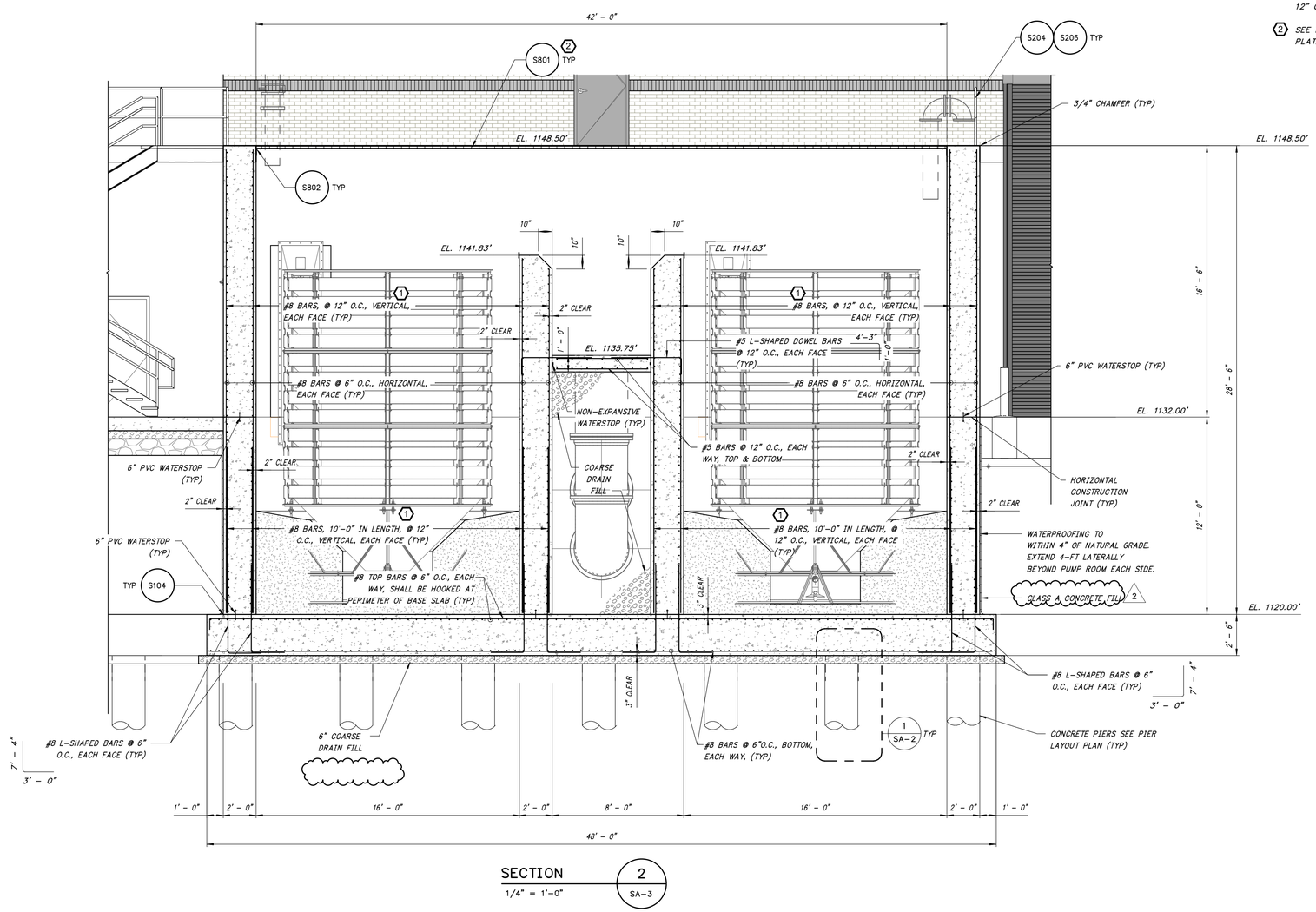

SECTION 2 / SA-3
1/4" = 1'-0"

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET SZ-8 FOR ODOR CONTROL COVER PLATE.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
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LARRY C. HADDOX
NO. 13205
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-17

BID DRAWINGS
MARCH 21, 2025

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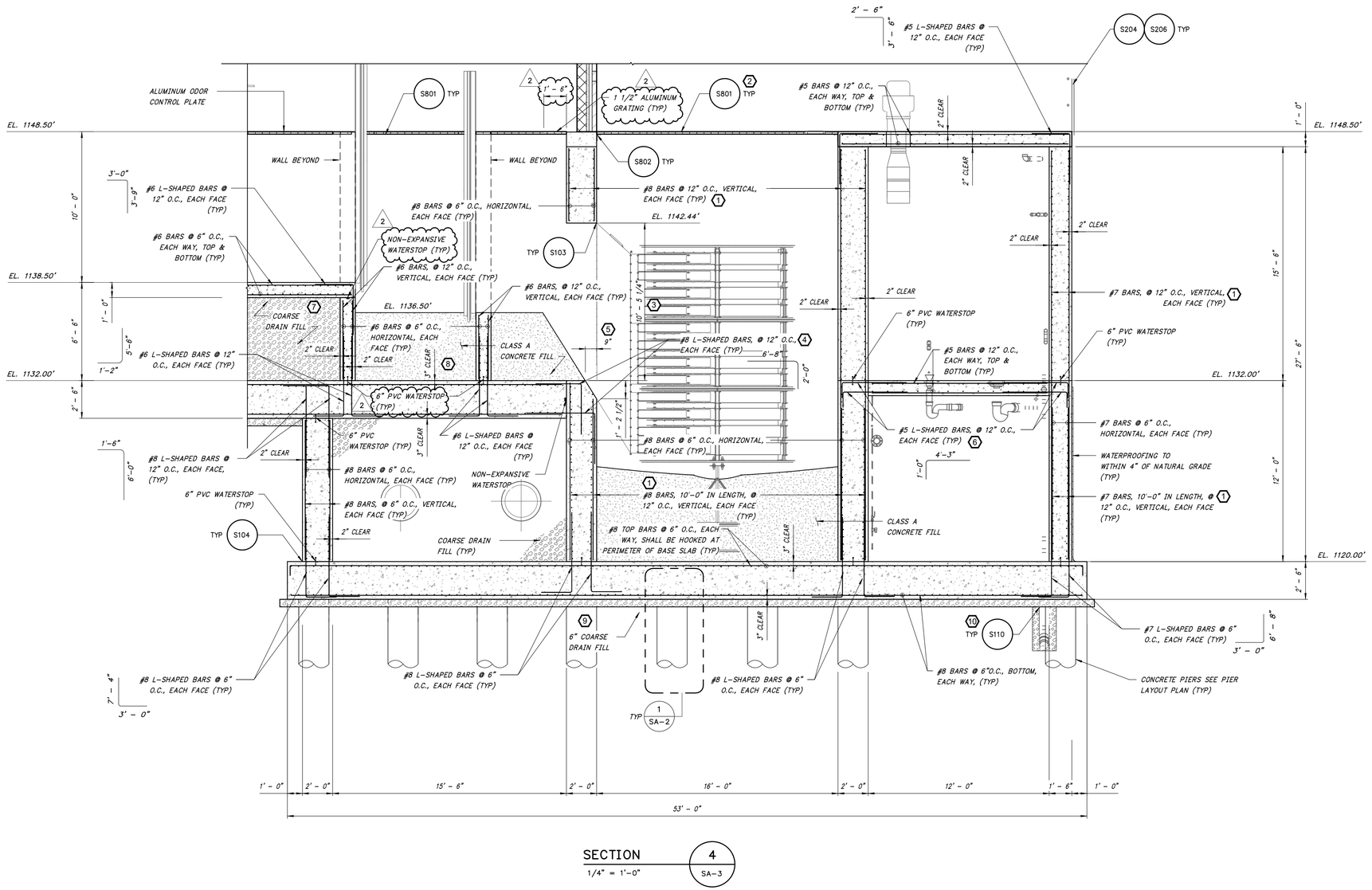

SECTION 4
1/4" = 1'-0" SA-3

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET S2-8 FOR ODOR CONTROL COVER PLATE.
3. COORDINATE EXACT OPENING DIMENSIONS WITH EQUIPMENT TO BE PROVIDED.
4. LOCALLY SHIFT TOP L-SHAPED BAR AT WALL OPENING CHAMFER.
5. COORDINATE EXACT WALL CHAMFER DIMENSIONS WITH EQUIPMENT TO BE PROVIDED.
6. PROVIDE 3 INCHES OF CONCRETE CLEAR COVER OVER TOP DOWEL TO ALLOW INSTALLATION OF PVC WATERSTOP.
7. EPS GEOFOAM MAY BE USED AS AN ALTERNATIVE FOR COARSE DRAIN FILL. EPS GEOFOAM FILL SHALL BE EPS 19 ASTM D6817.
8. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE TOP OF THE EPS GEOFOAM.
9. REFER TO NOTE NO. 2.
10. ENCASE ALL UNDER SLAB PIPING AND ELECTRICAL CONDUIT IN ACCORDANCE WITH DETAIL S110.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13205 LARRY C. HANDLEY 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-19

BID DRAWINGS
MARCH 21, 2025

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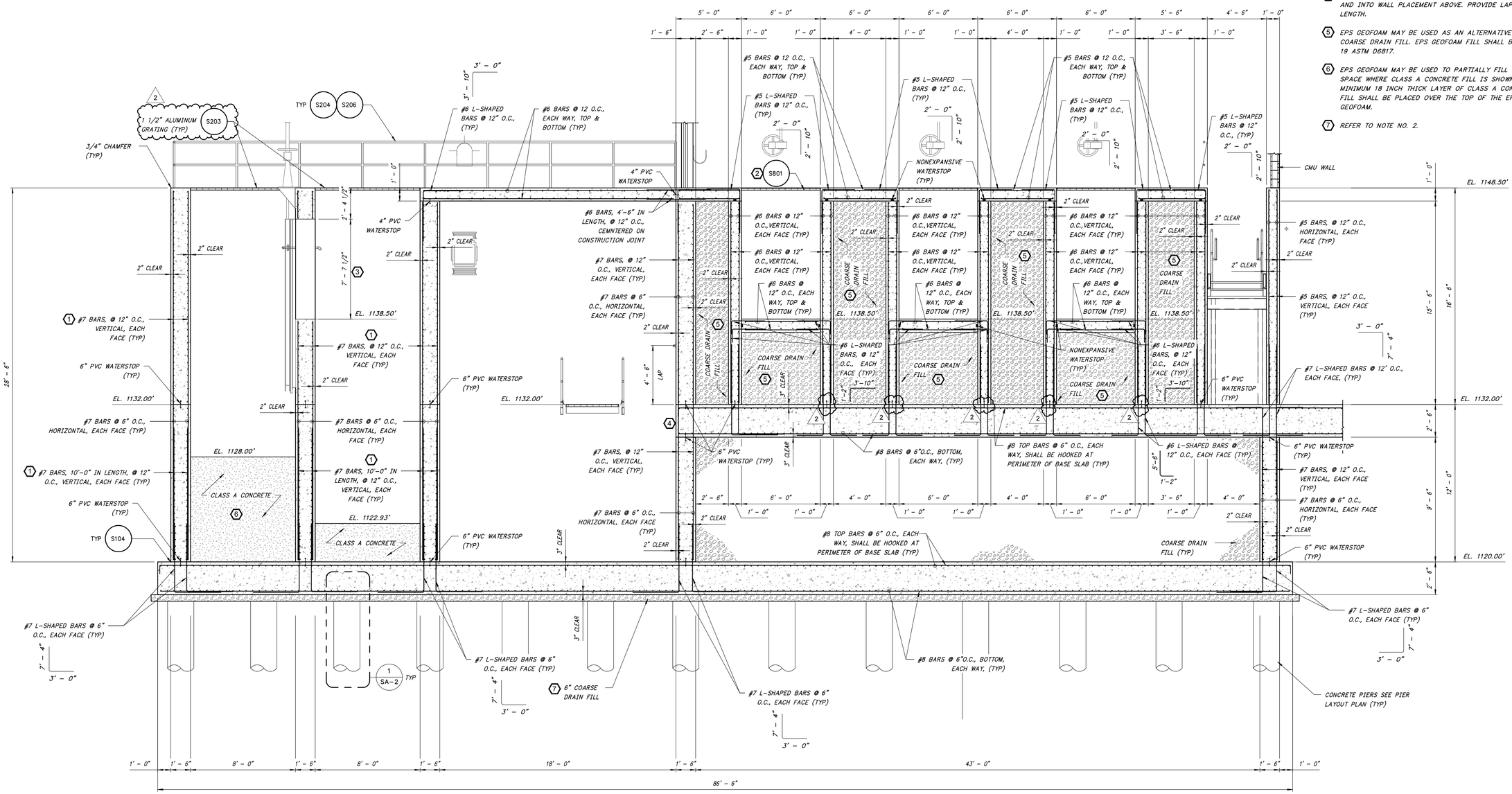
NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET S2-8 FOR ODOR CONTROL COVER PLATE.
3. COORDINATE EXACT OPENING DIMENSIONS WITH EQUIPMENT TO BE PROVIDED.
4. EXTEND VERTICAL WALL REINFORCING THROUGH SLAB AND INTO WALL PLACEMENT ABOVE. PROVIDE LAP LENGTH.
5. EPS GEOFOAM MAY BE USED AS AN ALTERNATIVE FOR COARSE DRAIN FILL. EPS GEOFOAM FILL SHALL BE EPS 19 ASTM D6817.
6. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE TOP OF THE EPS GEOFOAM.
7. REFER TO NOTE NO. 2.



SECTION 5 / SA-3
1/4" = 1'-0"

BID DRAWINGS
MARCH 21, 2025

ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13205 LARRY C. HAWKINS 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS
INFLUENT BUILDING SECTION
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
1 SA-20

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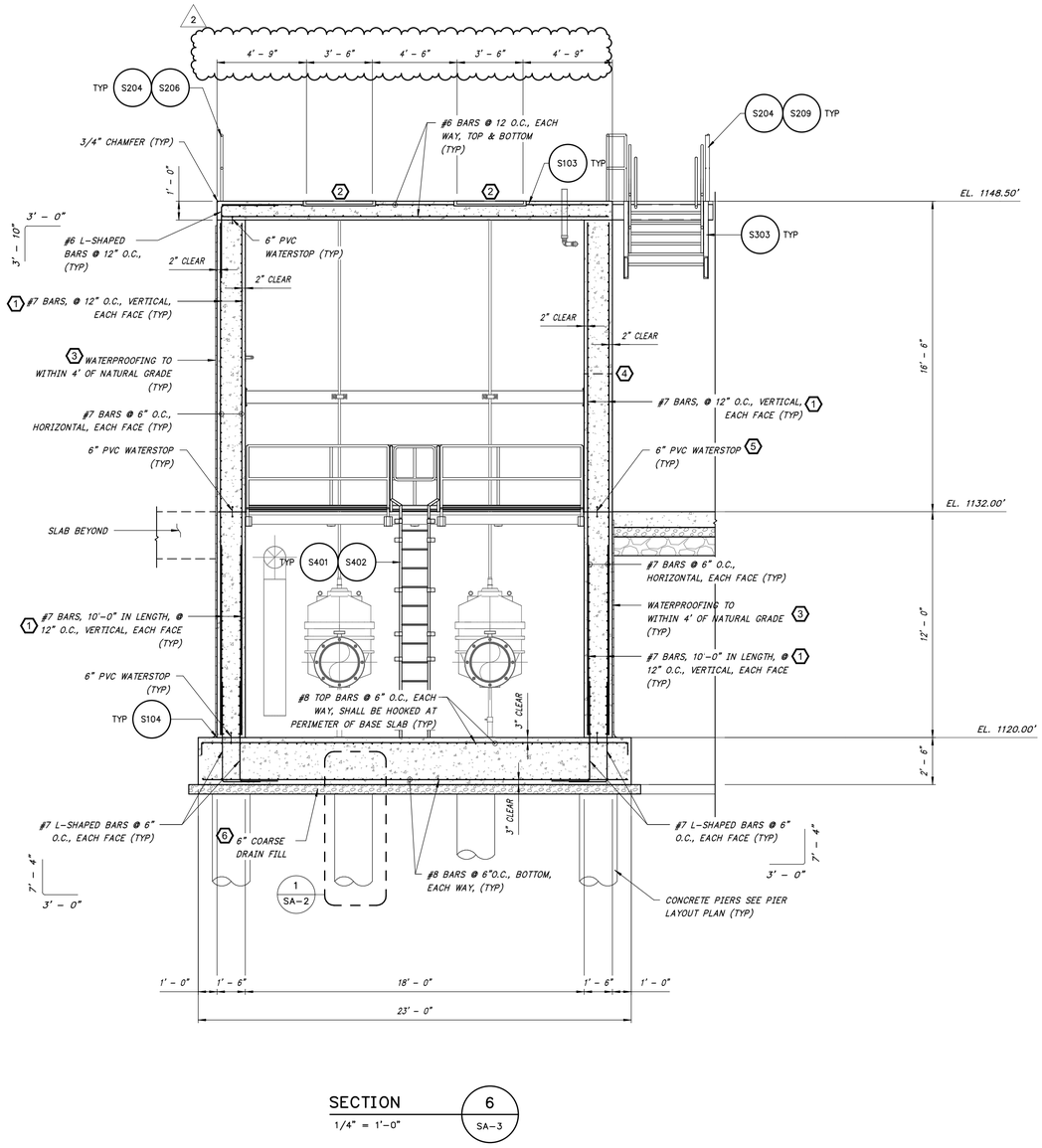

SECTION 6 / SA-3
1/4" = 1'-0"

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. ACCESS DOOR SHALL BE HALLIDAY NO. WIR4242 OR EQUAL AND SHALL INCLUDE OPTIONAL FALL PROTECTION GRATING. CLEAR OPENING DIMENSIONS SHALL BE 42-INCHES x 42-INCHES MINIMUM.
3. EXTEND WATERPROOFING LATERALLY ALONG LENGTH OF WALL A MINIMUM OF 4-FEET BEYOND INTERIOR DIMENSIONS OF THE METER VAULT.
4. DOOR OPENING IN WALL BEYOND, SEE PLAN SHEET SA-6 FOR LOCATION. COORDINATE DOOR OPENING DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
5. OMIT WATERSTOPS AT DOOR OPENINGS.
6. REFER TO NOTE NO. 2.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
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LARRY C. HANDLEY
NO. 13205
05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
1 SA-21

BID DRAWINGS
MARCH 21, 2025

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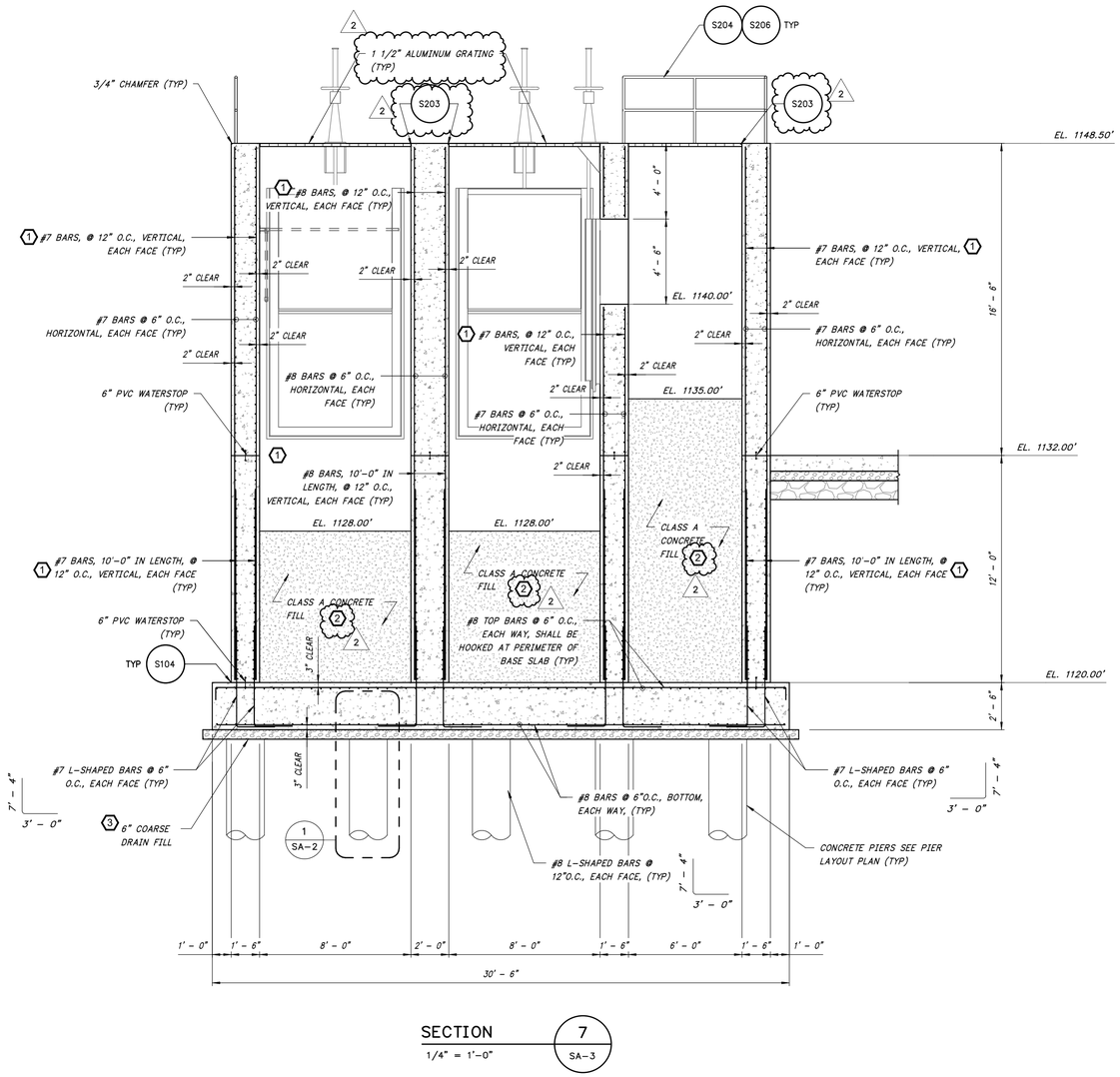

SECTION 7
1/4" = 1'-0" SA-3

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM OF 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE EPS GEOFOAM. EPS GEOFOAM SHALL BE EPS 19 ASTM D6817.
3. REFER TO NOTE NO. 2.

1"
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER LARRY C. HADDOX NO. 13205 05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-22

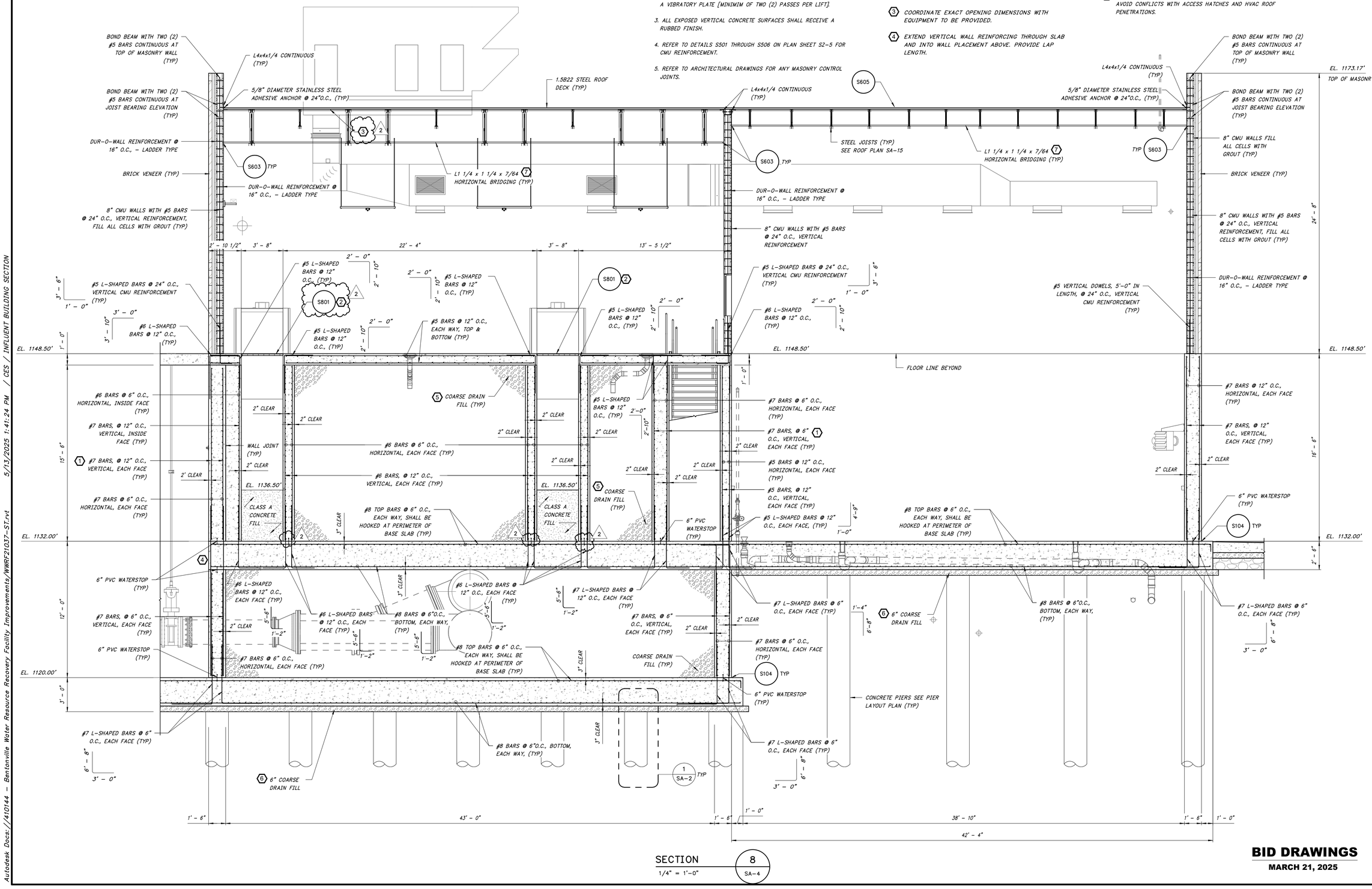
BID DRAWINGS
MARCH 21, 2025

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET S2-5 FOR CMU REINFORCEMENT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ANY MASONRY CONTROL JOINTS.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET S2-8 FOR ODOR CONTROL COVER PLATE.
3. COORDINATE EXACT OPENING DIMENSIONS WITH EQUIPMENT TO BE PROVIDED.
4. EXTEND VERTICAL WALL REINFORCING THROUGH SLAB AND INTO WALL PLACEMENT ABOVE. PROVIDE LAP LENGTH.
5. EPS GEOFOAM MAY BE USED AS AN ALTERNATIVE FOR COARSE DRAIN FILL. EPS GEOFOAM FILL SHALL BE EPS 19 ASTM D6817.
6. REFER TO NOTE NO. 2.
7. COORDINATE LOCATION OF ALL STEEL JOIST BRIDGING TO AVOID CONFLICTS WITH ACCESS HATCHES AND HVAC ROOF PENETRATIONS.



SECTION 8 / SA-4
1/4" = 1'-0"

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
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CITY OF BENTONVILLE ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO. 1 SA-23

BID DRAWINGS
MARCH 21, 2025

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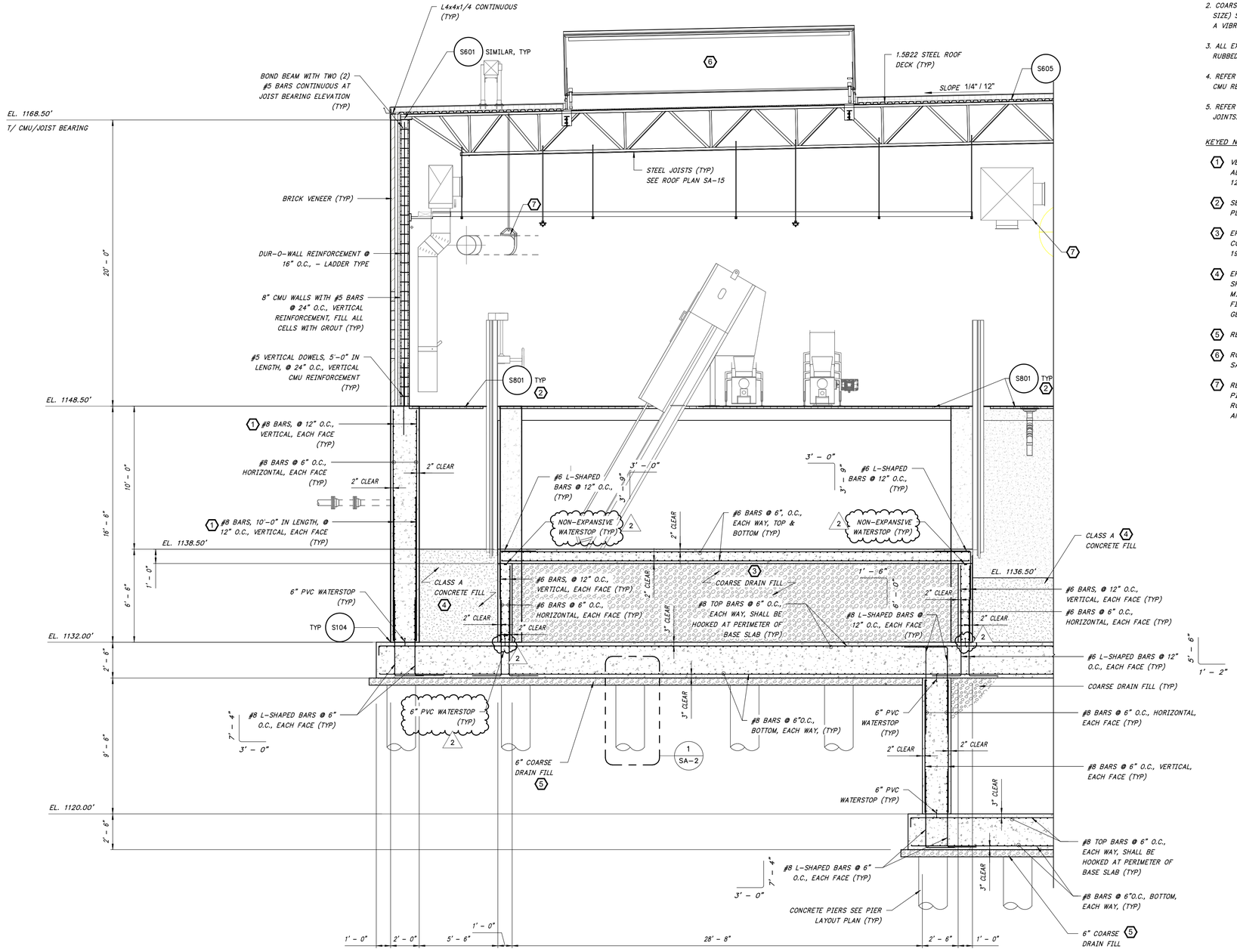

SECTION 10
1/4" = 1'-0" SA-4

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET SZ-5 FOR CMU REINFORCEMENT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ANY MASONRY CONTROL JOINTS.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET SZ-8 FOR ODOR CONTROL COVER PLATE.
3. EPS GEOFOAM MAY BE USED AS AN ALTERNATIVE FOR COARSE DRAIN FILL. EPS GEOFOAM FILL SHALL BE EPS 19 ASTM D6817.
4. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE TOP OF THE EPS GEOFOAM.
5. REFER TO NOTE NO. 2.
6. ROOF ACCESS HATCH. REFER TO ROOF PLAN SHEET SA-15.
7. REFER TO MECHANICAL AND HVAC DRAWINGS FOR PIPING AND DUCT WORK SUPPORTED BY ROOF JOISTS. ROOF JOISTS SHALL BE DESIGNED FOR PIPING, DUCT, AND OTHER ROOF SUPPORTED EQUIPMENT.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 13205
LARRY C. HANDLEY
05/13/2025

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
1 SA-25

BID DRAWINGS
MARCH 21, 2025

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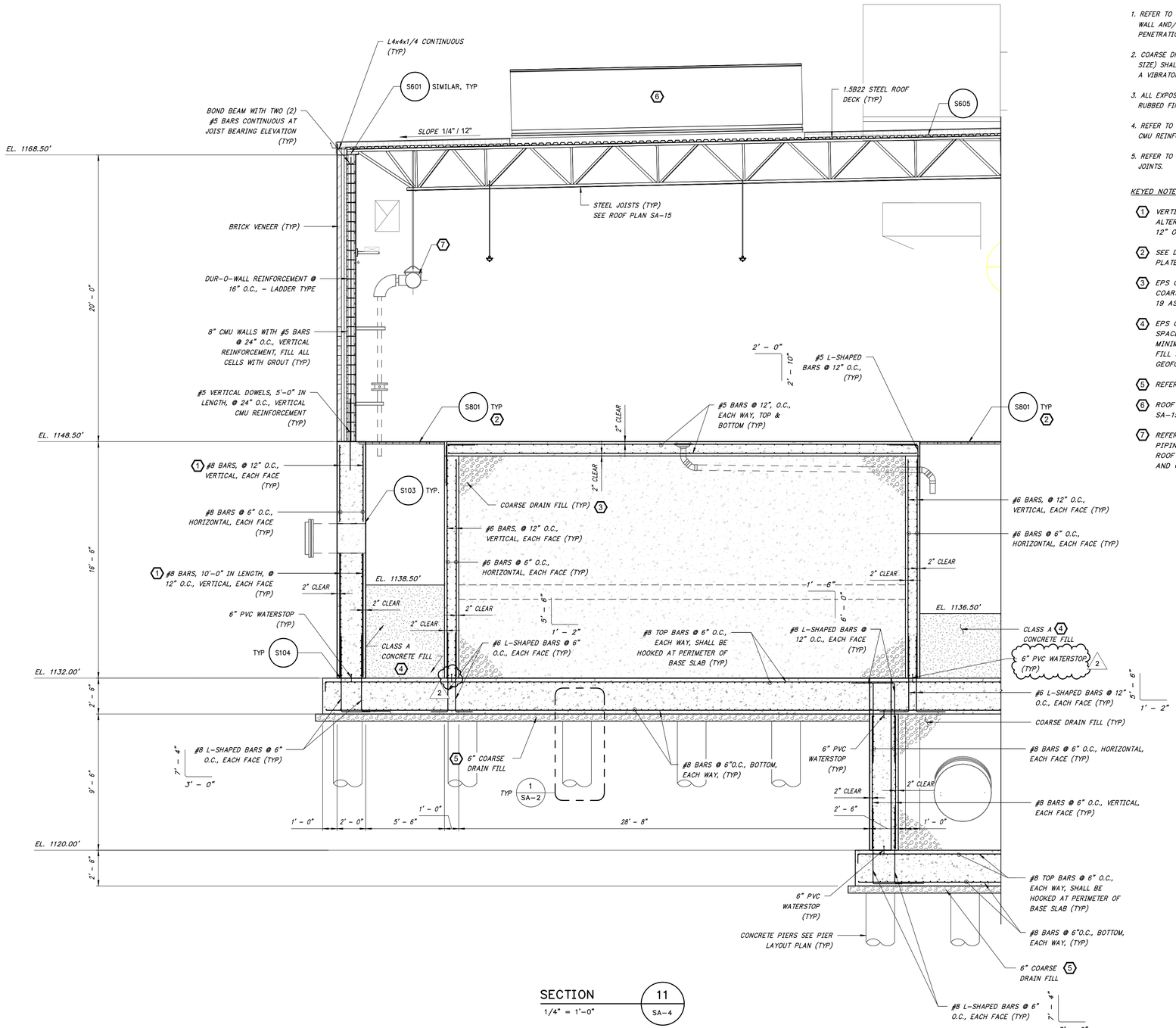

SECTION 11 / SA-4
1/4" = 1'-0"

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET S2-5 FOR CMU REINFORCEMENT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ANY MASONRY CONTROL JOINTS.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET S2-8 FOR ODOR CONTROL COVER PLATE.
3. EPS GEOFOAM MAY BE USED AS AN ALTERNATIVE FOR COARSE DRAIN FILL. EPS GEOFOAM FILL SHALL BE EPS 19 ASTM D6817.
4. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE TOP OF THE EPS GEOFOAM.
5. REFER TO NOTE NO. 2.
6. ROOF ACCESS HATCH. REFER TO ROOF PLAN SHEET SA-15.
7. REFER TO MECHANICAL AND HVAC DRAWINGS FOR PIPING AND DUCT WORK SUPPORTED BY ROOF JOISTS. ROOF JOISTS SHALL BE DESIGNED FOR PIPING, DUCT, AND OTHER ROOF SUPPORTED EQUIPMENT.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 13205
LARRY C. HAWKINS
05/13/2025

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-26

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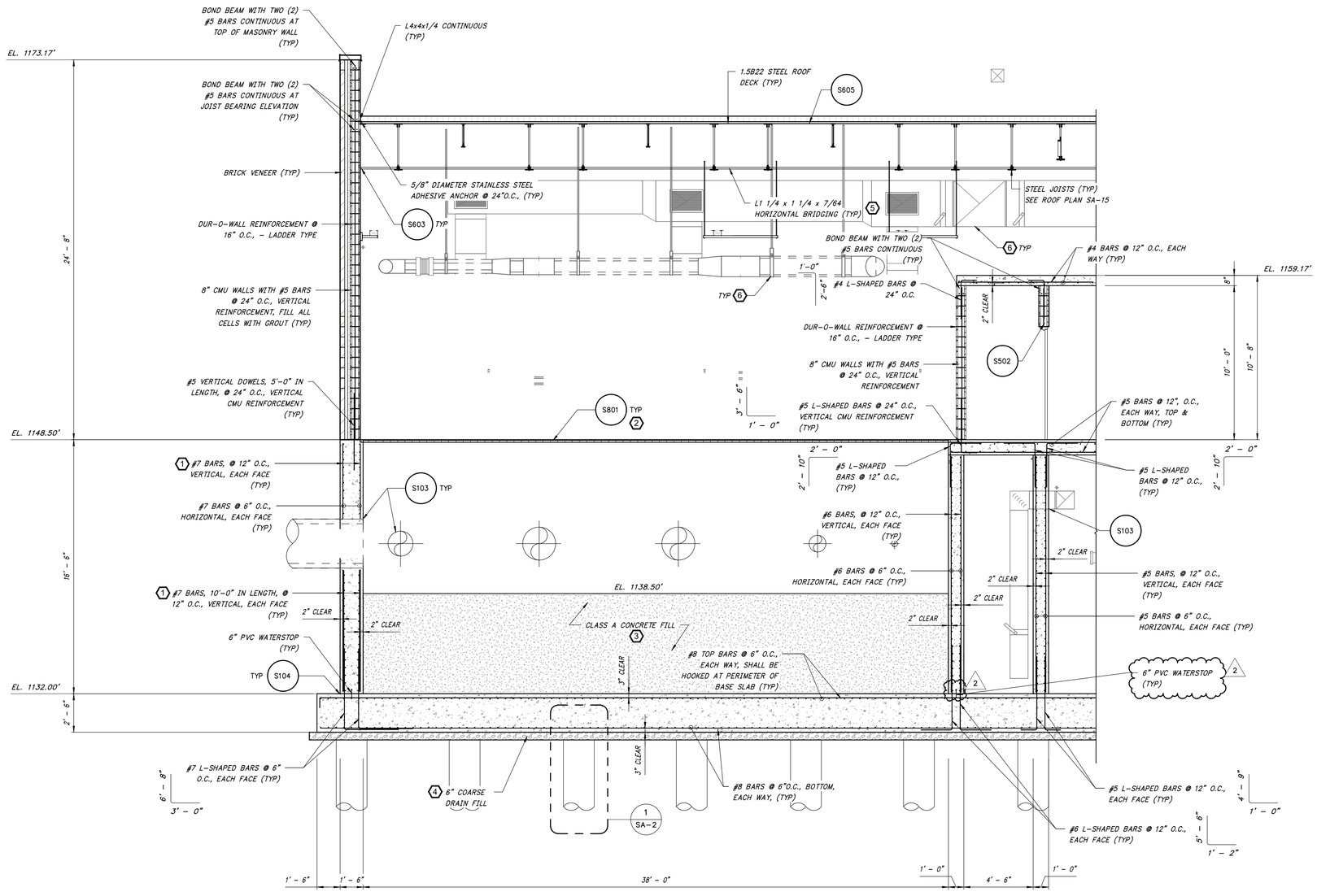

SECTION 12
1/4" = 1'-0" SA-4

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET S2-5 FOR CMU REINFORCEMENT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ANY MASONRY CONTROL JOINTS.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET S2-8 FOR ODOR CONTROL COVER PLATE.
3. EPS GEOFOAM MAY BE USED TO PARTIALLY FILL THE SPACE WHERE CLASS A CONCRETE FILL IS SHOWN. A MINIMUM 18 INCH THICK LAYER OF CLASS A CONCRETE FILL SHALL BE PLACED OVER THE TOP OF THE EPS GEOFOAM.
4. REFER TO NOTE NO. 2.
5. COORDINATE LOCATION OF ALL STEEL JOIST BRIDGING TO AVOID CONFLICTS WITH ACCESS HATCHES AND HVAC ROOF PENETRATIONS.
6. REFER TO MECHANICAL AND HVAC DRAWINGS FOR PIPING AND DUCT WORK SUPPORTED BY ROOF JOISTS. ROOF JOISTS SHALL BE DESIGNED FOR PIPING, DUCT, AND OTHER ROOF SUPPORTED EQUIPMENT.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13205 LARRY C. HAWKINS 05/13/2025

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BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO. 1 SA-27

BID DRAWINGS
MARCH 21, 2025

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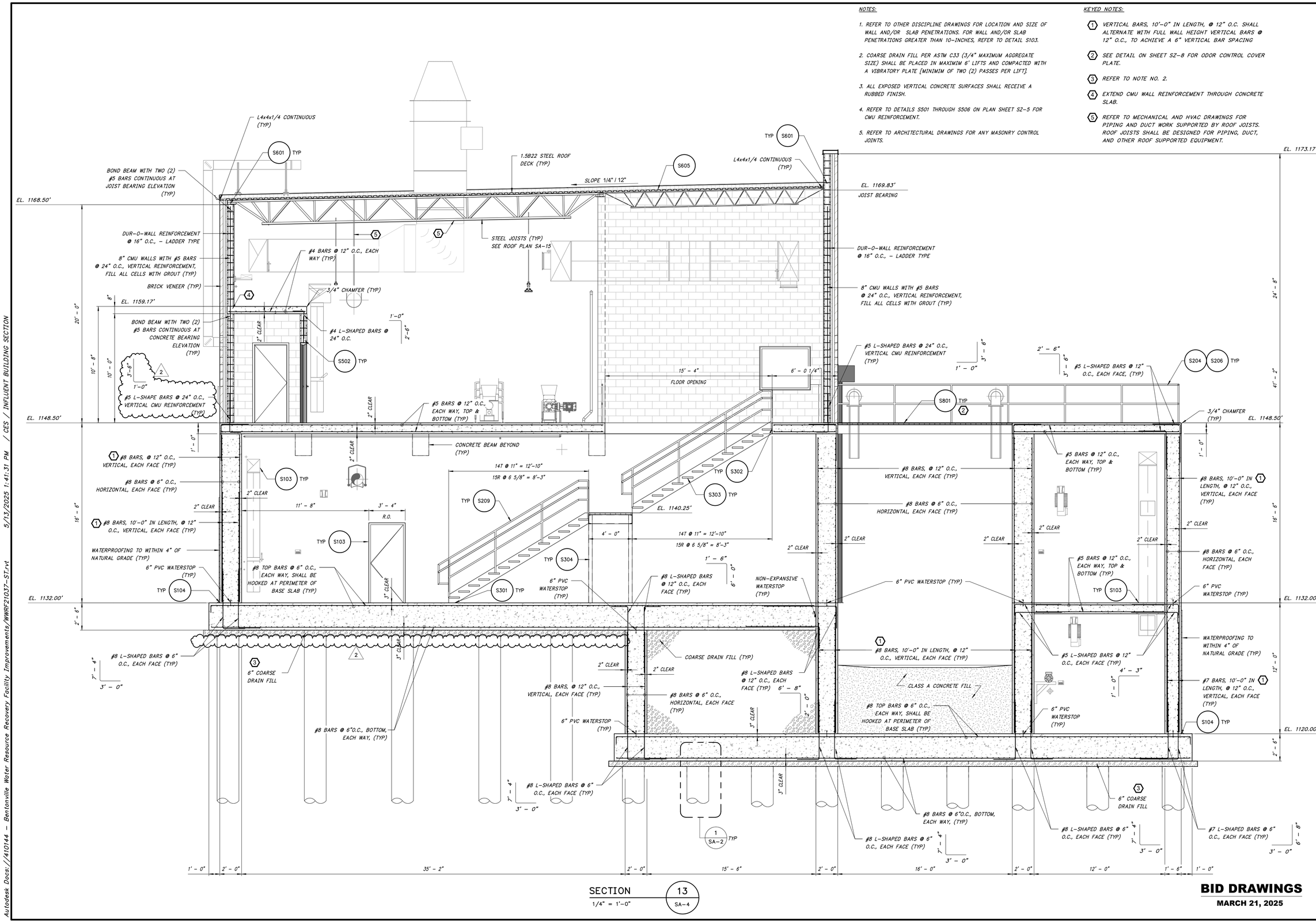
NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 8' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO DETAILS S501 THROUGH S506 ON PLAN SHEET SZ-5 FOR CMU REINFORCEMENT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ANY MASONRY CONTROL JOINTS.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. SEE DETAIL ON SHEET SZ-8 FOR ODOR CONTROL COVER PLATE.
3. REFER TO NOTE NO. 2.
4. EXTEND CMU WALL REINFORCEMENT THROUGH CONCRETE SLAB.
5. REFER TO MECHANICAL AND HVAC DRAWINGS FOR PIPING AND DUCT WORK SUPPORTED BY ROOF JOISTS. ROOF JOISTS SHALL BE DESIGNED FOR PIPING, DUCT, AND OTHER ROOF SUPPORTED EQUIPMENT.



SECTION 13 / 1/4" = 1'-0" / SA-4

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

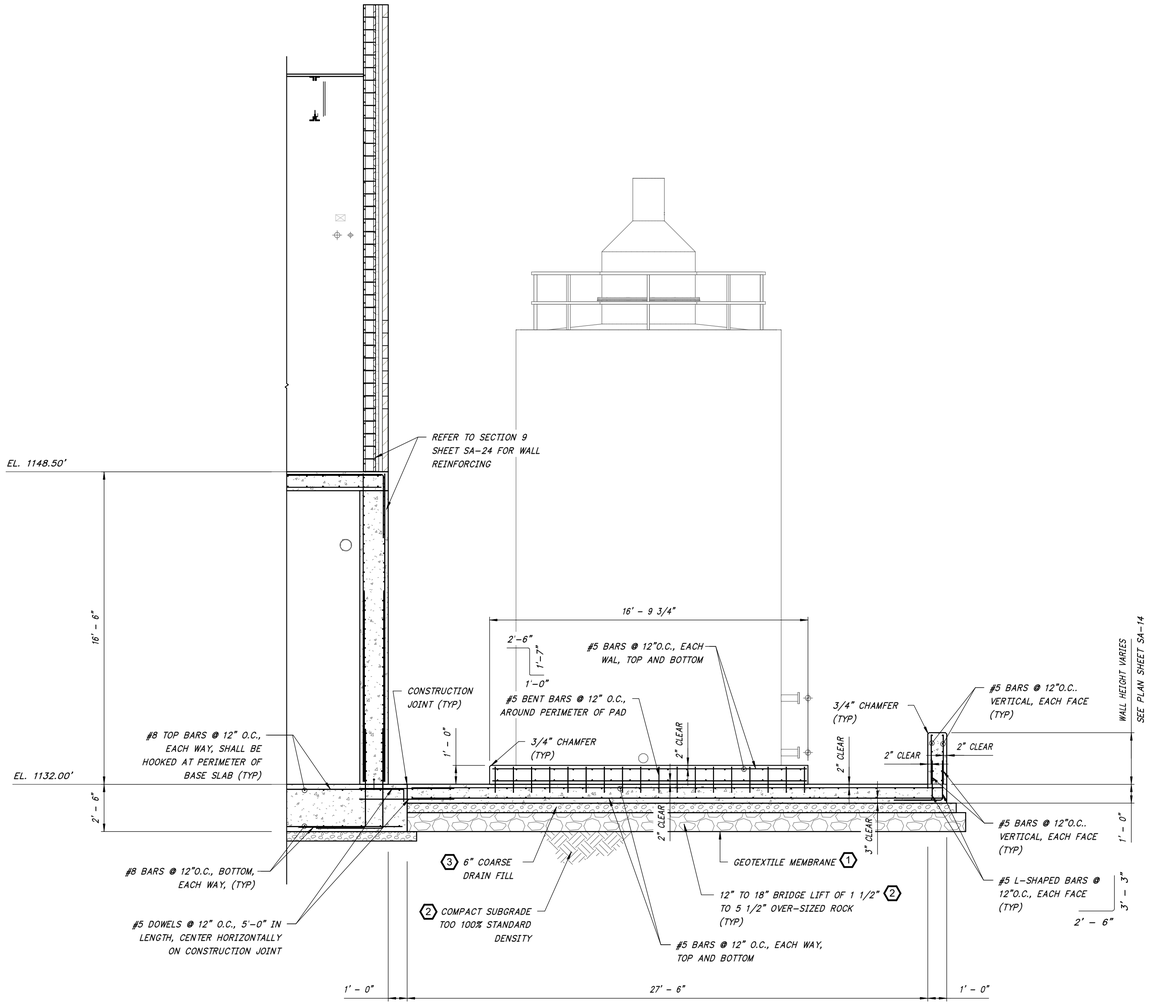
CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTION

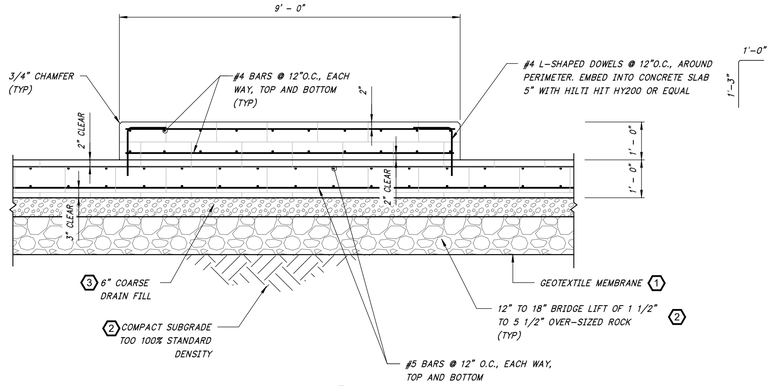
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

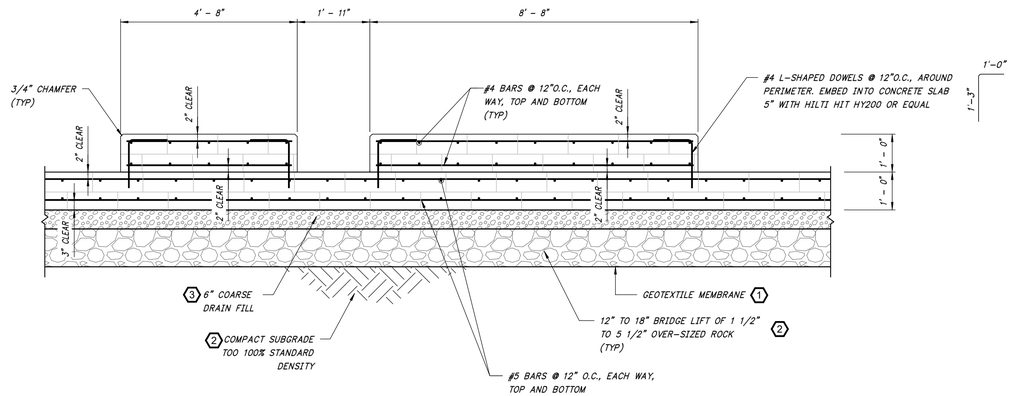
SHEET NO. 1 SA-28



SECTION 15
1/4" = 1'-0"
SA-5



SECTION 16
1/2" = 1'-0"
SA-14



SECTION 17
1/2" = 1'-0"
SA-14

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH UNLESS INDICATED OTHERWISE.
3. CONTRACTOR SHALL COORDINATE THE EQUIPMENT PAD PLAN DIMENSIONS, TOP OF PAD ELEVETIONS, AND LOCATION WITH MECHANCIAL DRAWINGS AND EQUIPMENT PROVIDED FOR THE PROJECT PRIOR TO INSTALLATION OF CONCRETE AND REINFORCEMENT.
2 4. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].

KEYED NOTES:

1 GEOTEXTILE MEMBRANE SHALL BE MIRAFI HP270, OR APPROVED EQUAL, AND SHALL ENCAPSULATE THE BOTTOM AND SIDES OF THE BRIDGE LIFT.

2 18" TO 24" BRIDGE LIFT MAY BE OMITTED IF THE SPECIFIED COMPACTION OF THE SUBGRADE CAN BE ACHIEVED AND WITH THE APPROVAL OF THE GEOTECHNICAL ENGINEER OF RECORD.

3 REFER TO NOTE NO. 4.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
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2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER LARRY C. HAWKINS NO. 13205 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT BUILDING SECTIONS

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

1 SHEET NO. SA-30

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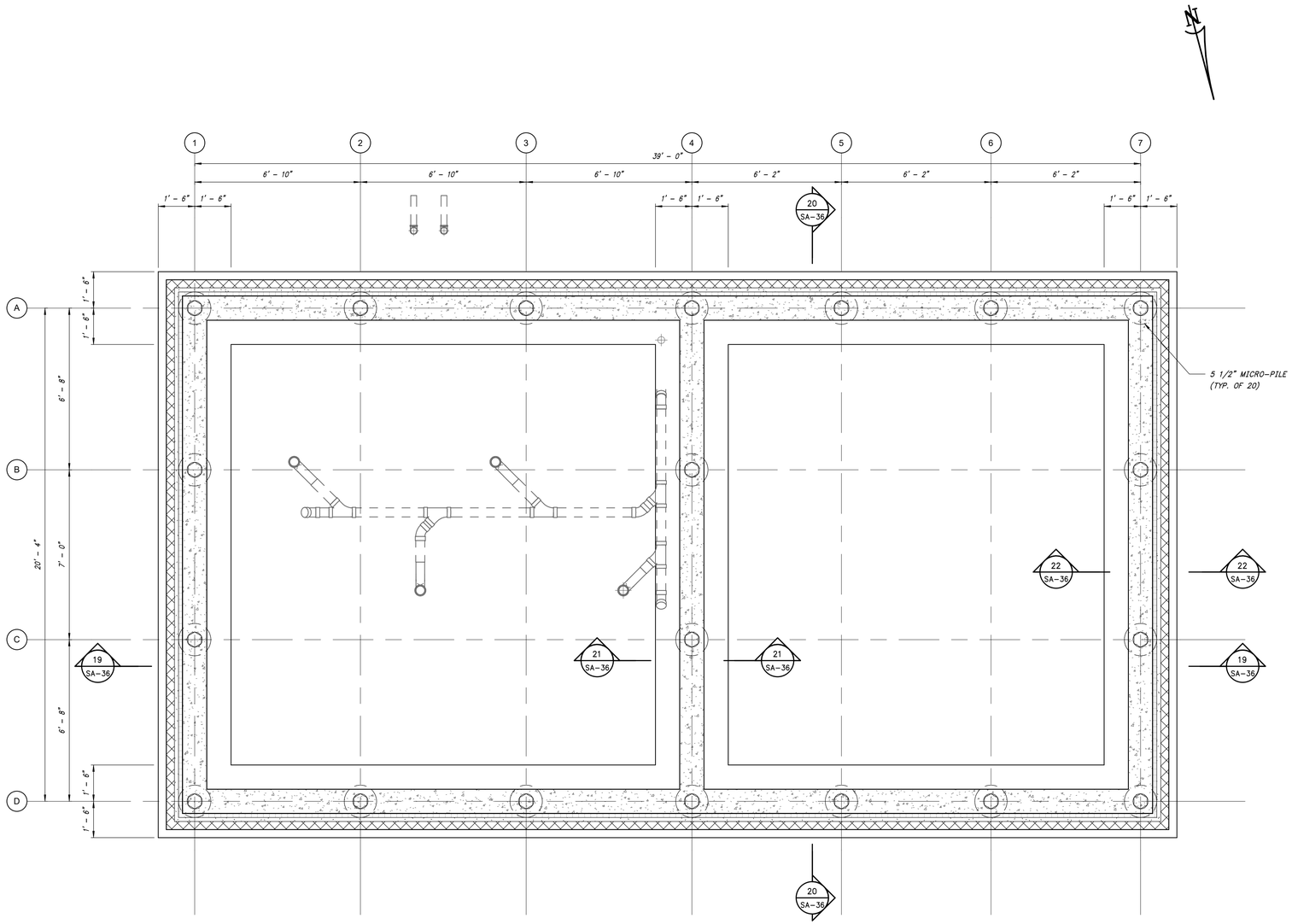

INFLUENT ELECTRICAL BUILDING
FOUNDATION PLAN

DETAIL V
3/8" = 1'-0" –

MICRO-PILE NOTES:

1. THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.
2. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL DESIGN THE MICRO-PILE TYPE, SIZE, INSTALLATION MEANS AND METHODS, ESTIMATE THE GROUND-GROUT BOND VALUE AND DETERMINE THE REQUIRED BOND LENGTH AND FINAL MICRO-PILE DIAMETER BASED ON THE REQUIRED LOAD CAPACITIES INDICATED ON THE PLANS. THE MICRO-PILE LOAD CAPACITIES SHALL BE VERIFIED BY PROOF LOAD TESTING AS SPECIFIED IN SECTION 02469.
3. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE EXPERIENCED IN THE CONSTRUCTION AND LOAD TESTING OF MICRO-PILES IN SOIL/ROCK SIMILAR TO PROJECT CONDITIONS IDENTIFIED IN GTS' GEOTECHNICAL REPORT DATED NOVEMBER 25, 2024.
4. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING A PROFESSIONAL ENGINEER, LICENSED IN ARKANSAS, WITH EXPERIENCE IN THE DESIGN OF MICRO-PILES AND BE RESPONSIBLE FOR ANY DESIGN RELATED EXPENSES.
5. THE MICRO-PILES SHALL BE DESIGNED TO MEET THE SPECIFIED LOADING CONDITIONS, AS IDENTIFIED IN THE PLANS, USING THE PROCEDURES OUTLINED IN THE FHWA "MICRO-PILE DESIGN AND CONSTRUCTION", REPORT NO. FHWA NHI-05-039. REFER TO SECTION 02469 FOR ANY ADDITIONAL DESIGN AND SUBMITTAL REQUIREMENTS.
6. PILES SHALL BE 5 1/2" MICRO-PILES WITH A MINIMUM 50 KIP COMPRESSION LOAD CAPACITY, A MINIMUM 5 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY.

NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ANY MASONRY CONTROL JOINTS.
2. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 13205
LARRY C. HAWKINS
05/13/2025

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

INFLUENT ELECTRICAL BUILDING
FOUNDATION PLAN
DETAIL
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: ADF
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SA-33

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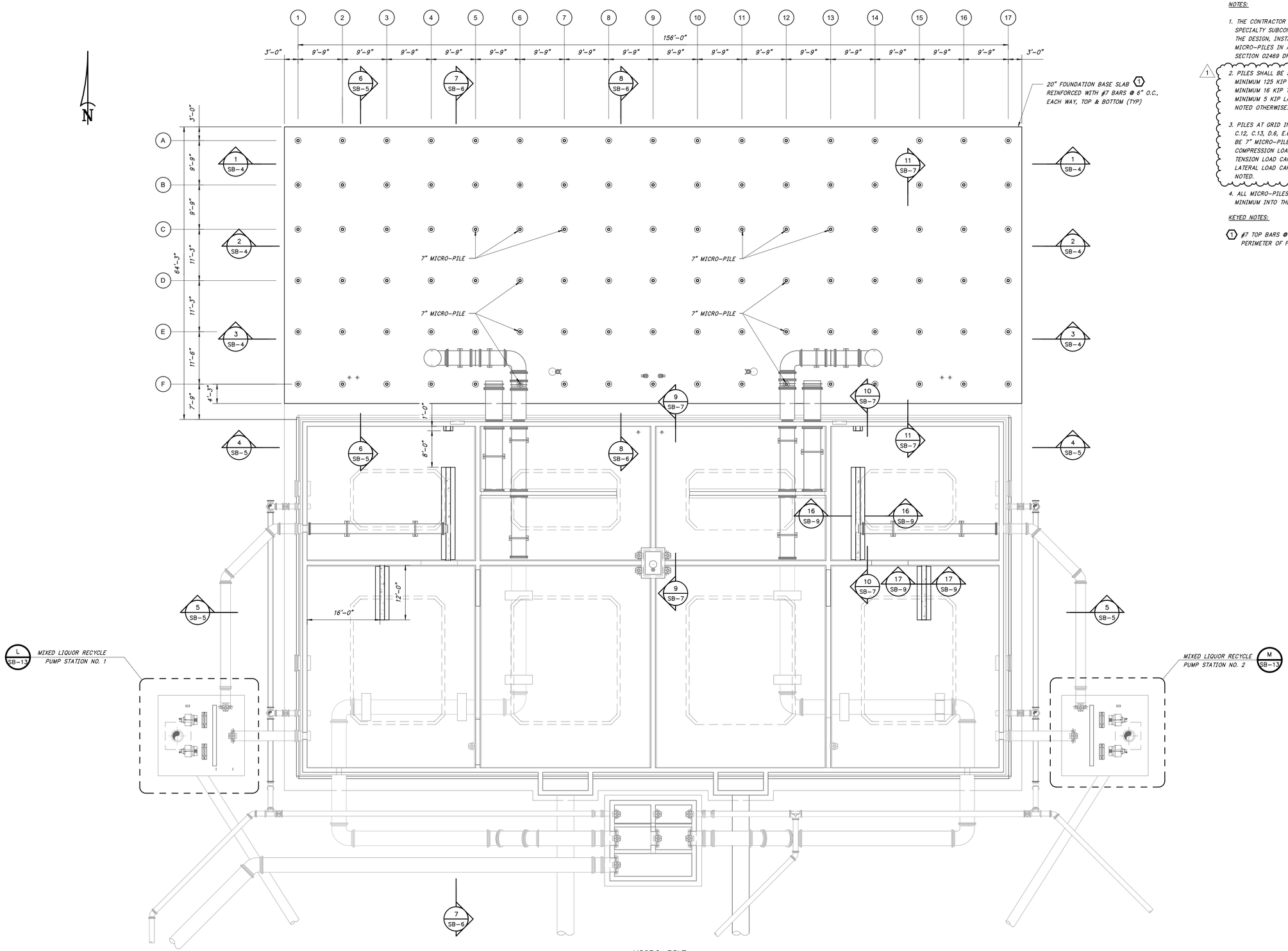

MICRO-PILE FOUNDATION PLAN

DETAIL A
3/32" = 1'-0"

NOTES:

1. THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.
2. PILES SHALL BE 5 1/2" MICRO-PILES WITH MINIMUM 125 KIP COMPESSION LOAD CAPACITY, A MINIMUM 16 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY UNLESS NOTED OTHERWISE.
3. PILES AT GRID INTERSECTIONS C.5, C.6, C.7, C.11, C.12, C.13, D.6, E.6, F.6, D.12, E.12, AND F.12 SHALL BE 7" MICRO-PILES WITH A MINIMUM 175 KIP COMPRESSION LOAD CAPACITY, A MINIMUM 16 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY UNLESS OTHERWISE NOTED.
4. ALL MICRO-PILES SHALL BE EMBEDDED 6" MINIMUM INTO THE FOUNDATION BASE SLAB.

KEYED NOTES:

1 #7 TOP BARS @ 6" O.C., SHALL BE HOOKED AT PERIMETER OF FOUNDATION BASE SLAB.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BRETT D. PEEVEY No. 8596

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE ARKANSAS
BENTONVILLE WWTP CAPACITY STUDY
ANOXIC BASIN STRUCTURAL PLAN

BNR BASINS
DETAIL

FOR: BENTONVILLE WATER UTILITIES

DATE: MARCH 2025
SCALE: 3/32" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: S-ANOXIC

SHEET NO.
SB-1

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/S-ANOXIC.rvt 5/13/2025 2:05:08 PM / DKS / BNR BASINS

MICRO-PILE COMPRESSION LOAD TABLE (1)

EAST-WEST GRIDLINES	NORTH-SOUTH GRIDLINES																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	54 k	64 k	67.5 k	72.5 k	74 k	72.5 k	70 k	59.5 k	73 k	74 k	76 k	79 k	79 k	77 k	71.5 k	77 k	52.5 k
B	79.5 k	108.5 k	93 k	68.5 k	88.5 k	92 k	96.5 k	102 k	97 k	109.5 k	88 k	87 k	83 k	83.5 k	88 k	83.5 k	71 k
C	82 k	104 k	124.5 k	110 k	131.5 k	110 k	121 k	87 k	87 k	117 k	128 k	135 k	134 k	111.5 k	127 k	105.5 k	74 k
D	87 k	127 k	121.5 k	108 k	109 k	149.5 k	121.5 k	97.5 k	115.5 k	125 k	103 k	150 k	109 k	108 k	121 k	128.5 k	80 k
E	89 k	123 k	110 k	90 k	103.5 k	145 k	113.5 k	99 k	120.5 k	125 k	107 k	146 k	103.5 k	90 k	110 k	124.5 k	82 k
F	99.5 k	121.5 k	100 k	111 k	105.5 k	128.5 k	106.5 k	103 k	104.5 k	118 k	111 k	132 k	105 k	111.5 k	99.5 k	123 k	86 k

FOOTNOTES:
(1) BASED ON THE GRIDLINES ESTABLISHED ON DRAWING SB-1, THESE ARE THE ANTICIPATED COMPRESSION LOADS IN KIPS FOR EACH PROPOSED MICRO-PILE.

MICRO-PILE TENSION LOAD TABLE (1)

EAST-WEST GRIDLINES	NORTH-SOUTH GRIDLINES																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k
B	0 k	11 k	13.5 k	15 k	15.5 k	14.5 k	11.5 k	6.5 k	5 k	6.5 k	11.5 k	14.5 k	15.5 k	15 k	13.5 k	15 k	0 k
C	0 k	7 k	2.5 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	2.5 k	7 k	0 k
D	0 k	5.5 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	5.5 k	0 k
E	0 k	7 k	2.5 k	0 k	0.5 k	0 k	0.5 k	0.5 k	0.5 k	0.5 k	0.5 k	1 k	1 k	0.5 k	0 k	7 k	0 k
F	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k	0 k

FOOTNOTES:
(1) BASED ON THE GRIDLINES ESTABLISHED ON DRAWING SB-1, THESE ARE THE ANTICIPATED TENSION LOADS IN KIPS FOR EACH PROPOSED MICRO-PILE.

MICRO-PILE NOTES:

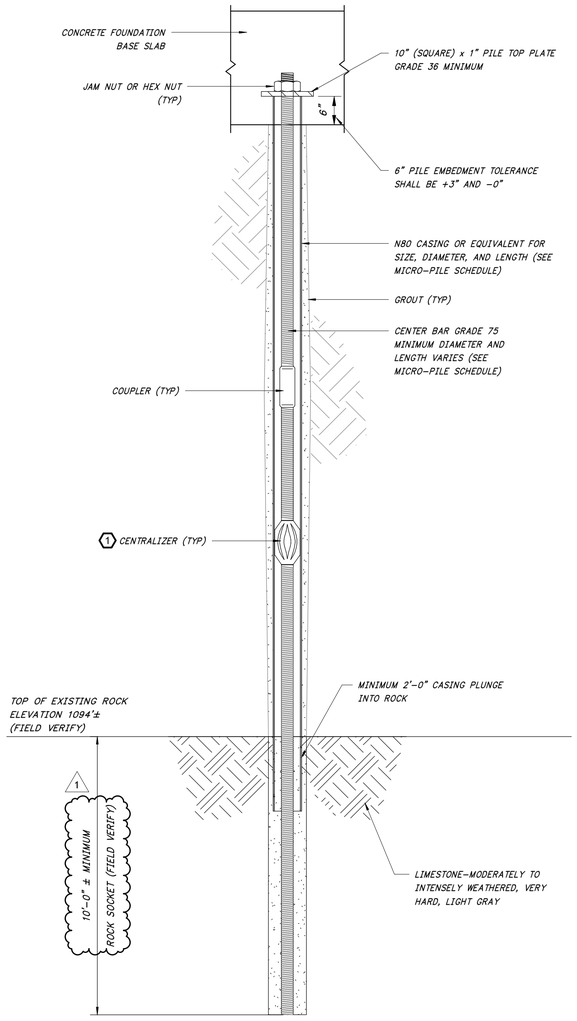
1. THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.
2. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL DESIGN THE MICRO-PILE TYPE, SIZE, INSTALLATION MEANS AND METHODS, ESTIMATE THE GROUND-GROUT BOND VALUE AND DETERMINE THE REQUIRED BOND LENGTH AND FINAL MICRO-PILE DIAMETER BASED ON THE REQUIRED LOAD CAPACITIES INDICATED ON THE PLANS. THE MICRO-PILE LOAD CAPACITIES SHALL BE VERIFIED BY PROOF LOAD TESTING AS SPECIFIED IN SECTION 02469.
3. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE EXPERIENCED IN THE CONSTRUCTION AND LOAD TESTING OF MICRO-PILES IN SOIL/ROCK SIMILAR TO PROJECT CONDITIONS IDENTIFIED IN GTS' GEOTECHNICAL REPORT DATED NOVEMBER 25, 2024.
4. THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING A PROFESSIONAL ENGINEER, LICENSED IN ARKANSAS, WITH EXPERIENCE IN THE DESIGN OF MICRO-PILES AND BE RESPONSIBLE FOR ANY DESIGN RELATED EXPENSES.
5. THE MICRO-PILES SHALL BE DESIGNED TO MEET THE SPECIFIED LOADING CONDITIONS, AS IDENTIFIED IN THE PLANS, USING THE PROCEDURES OUTLINED IN THE FHWA "MICRO-PILE DESIGN AND CONSTRUCTION", REPORT NO. FHWA NHI-05-039. REFER TO SECTION 02469 FOR ANY ADDITIONAL DESIGN AND SUBMITTAL REQUIREMENTS.
6. PILES SHALL BE 5 1/2" MICRO-PILES WITH MINIMUM 125 KIP COMPESSION LOAD CAPACITY, A MINIMUM 16 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY UNLESS NOTED OTHERWISE.
7. PILES AT GRID INTERSECTIONS C.5, C.6, C.7, C.11, C.12, C.13, D.6, E.6, F.6, D.12, E.12, AND F.12 SHALL BE 7" MICRO-PILES WITH A MINIMUM 175 KIP COMPRESSION LOAD CAPACITY, A MINIMUM 16 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY UNLESS OTHERWISE NOTED.
8. ALL MICRO-PILES SHALL BE EMBEDDED 6" MINIMUM INTO THE FOUNDATION BASE SLAB.

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE DESIGN OF THE MICRO-PILES WITH A SPECIALTY GEOTECHNICAL SUB-CONTRACTOR EXPERIENCED IN BOTH THE DESIGN AND INSTALLATION OF MICRO-PILES. THE DESIGN SUBMITTAL SHALL INCLUDE A P.E. SEAL FROM AN ENGINEER LICENSED IN THE STATE OF ARKANSAS.

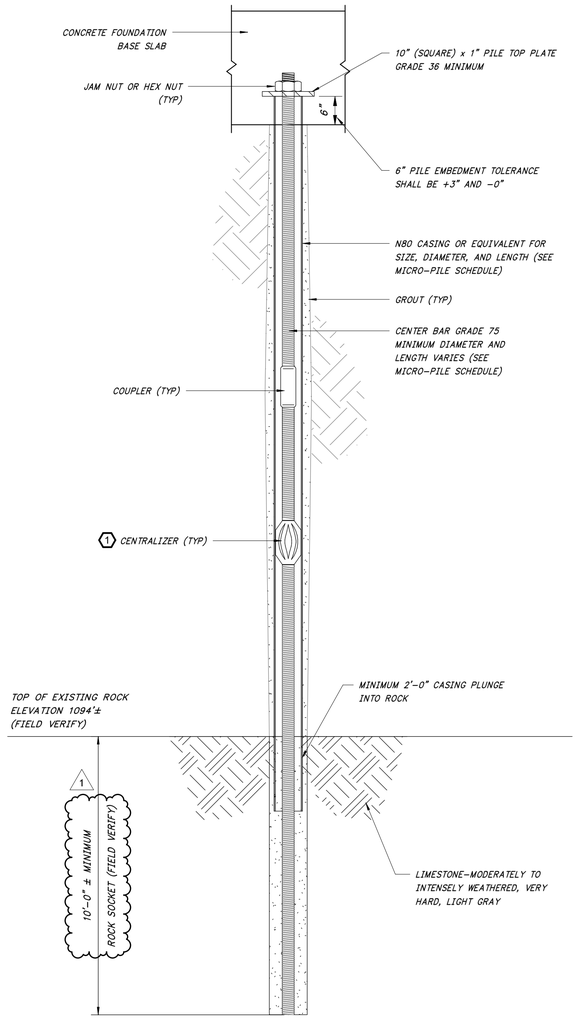
KEYED NOTES:

(1) BAR CENTRALIZER AT 10-FOOT MAXIMUM INTERVALS ALONG VERTICAL LENGTH OF MICRO-PILE. LOWEST BAR CENTRALIZER IN ELEVATION SHALL BE WITHIN 5-FEET OF THE BOTTOM OF THE HOLE. HIGHEST BAR CENTRALIZER IN ELEVATION SHALL BE WITHIN 2-FOOT MAXIMUM FROM TOP OF MICRO-PILE.



TYPICAL 5 1/2" MICRO-PILE

DETAIL B
3/4" = 1'-0"



TYPICAL 7" MICRO-PILE

DETAIL C
3/4" = 1'-0"

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISIONS PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS — 2021037 — REGISTERED PROFESSIONAL ENGINEER — No. 8396 — BRENT D. FREY — 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WWTP CAPACITY STUDY
ANOXIC BASIN STRUCTURAL PLAN

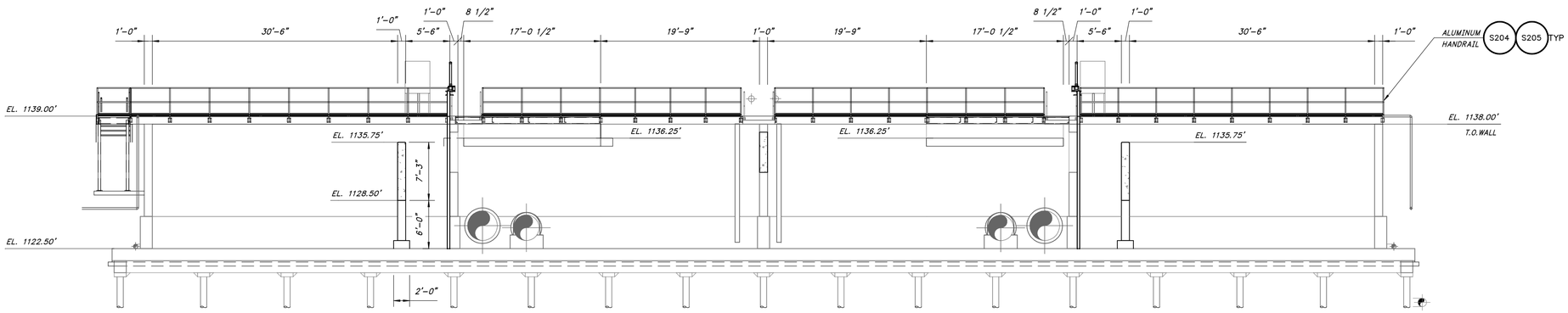
BNR BASINS DETAILS AND MICRO-PILE LOAD TABLES

FOR: BENTONVILLE WATER UTILITIES

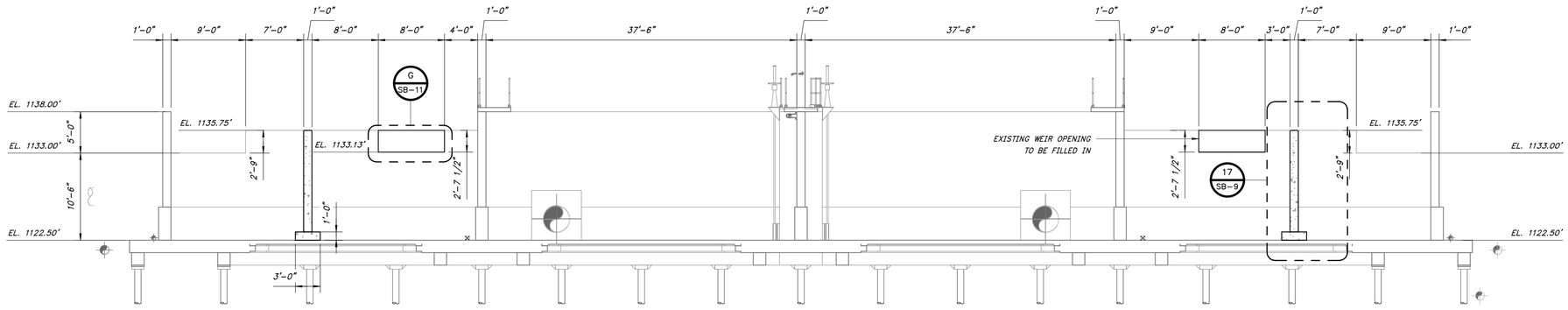
DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: BDP
DRAWN BY: ADF
HWEI NO.: 2021037
FILENAME: S-ANOXIC

SHEET NO.
SB-2

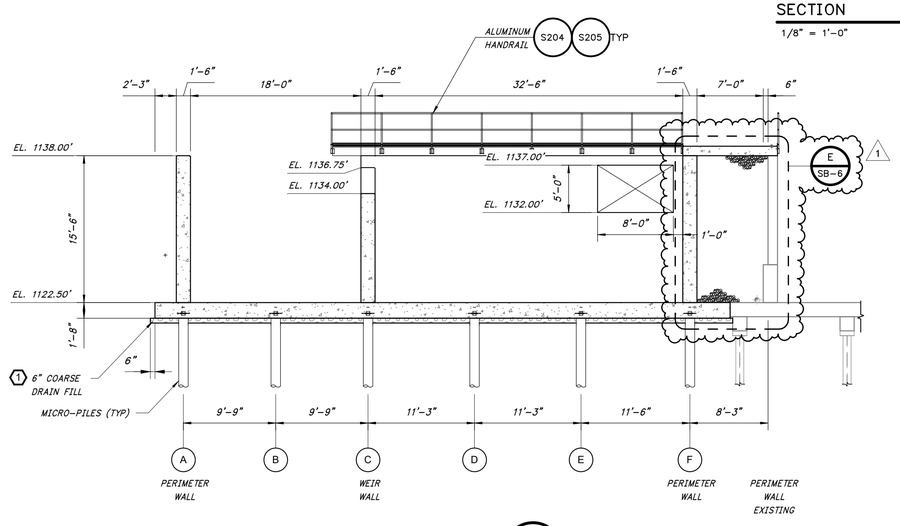
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/S-ANOXIC.rvt 5/13/2025 2:05:08 PM / ADF / BNR BASINS DETAILS AND



SECTION 4 / SB-1
1/8" = 1'-0"



SECTION 5 / SB-1
1/8" = 1'-0"



SECTION 6 / SB-1
1/8" = 1'-0"

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMIM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMIM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.

KEYED NOTES:

1 REFER TO NOTE NO. 2.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISIONS PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS
BRETT D. KESTERSON
REGISTERED PROFESSIONAL ENGINEER
No. 8596
05/13/25

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BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WWTP CAPACITY STUDY
ANOXIC BASIN STRUCTURAL PLAN

BNR BASINS
SECTIONS

FOR: BENTONVILLE WATER UTILITIES

DATE: MARCH 2025
SCALE: 1/8" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: S-ANOXIC

SHEET NO.
SB-5

BID DRAWINGS
MARCH 21, 2025

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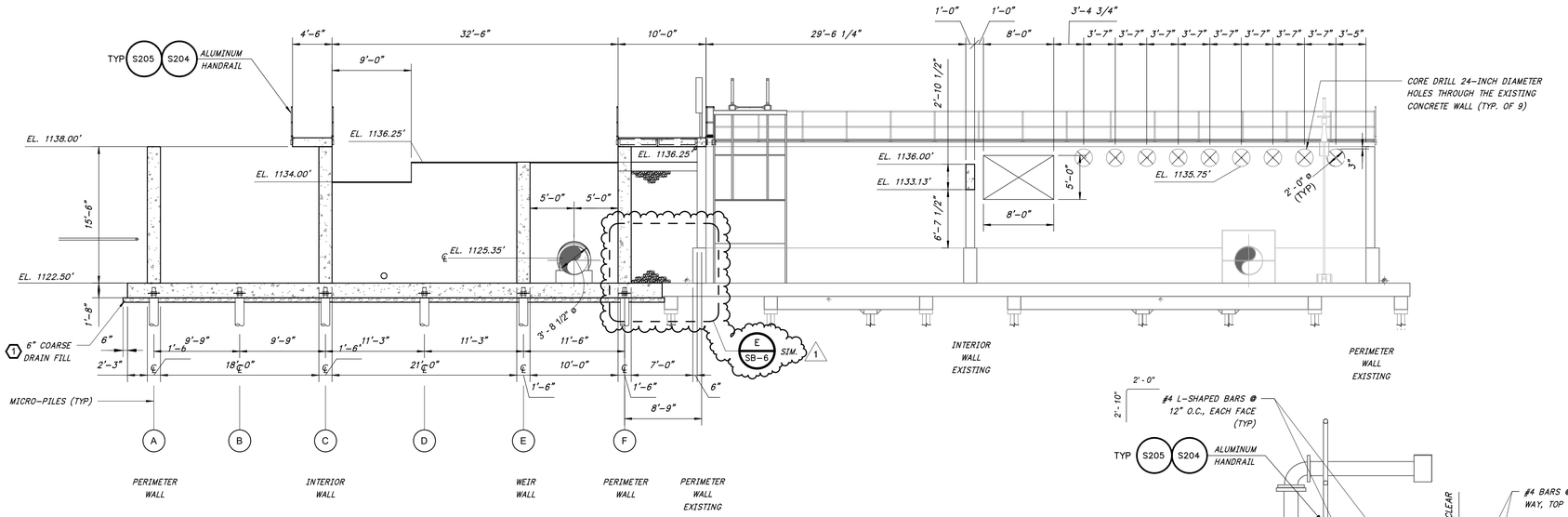
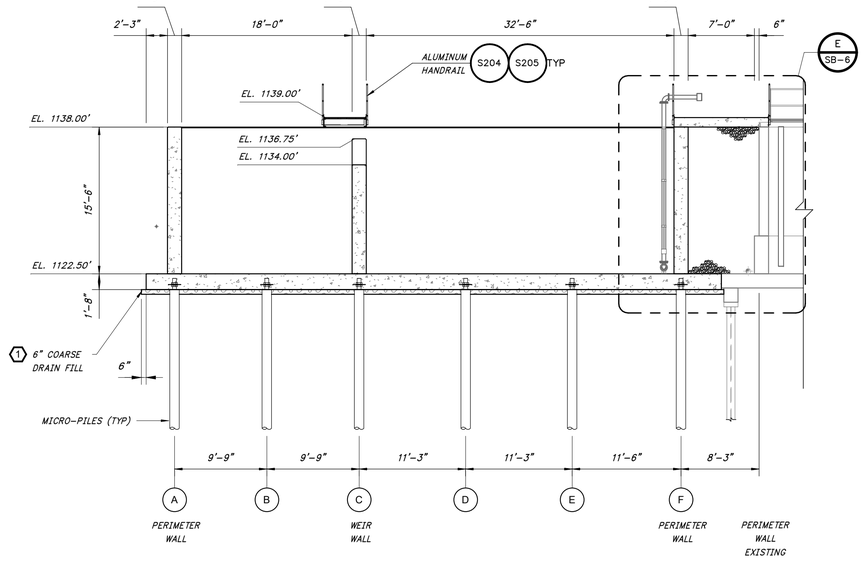
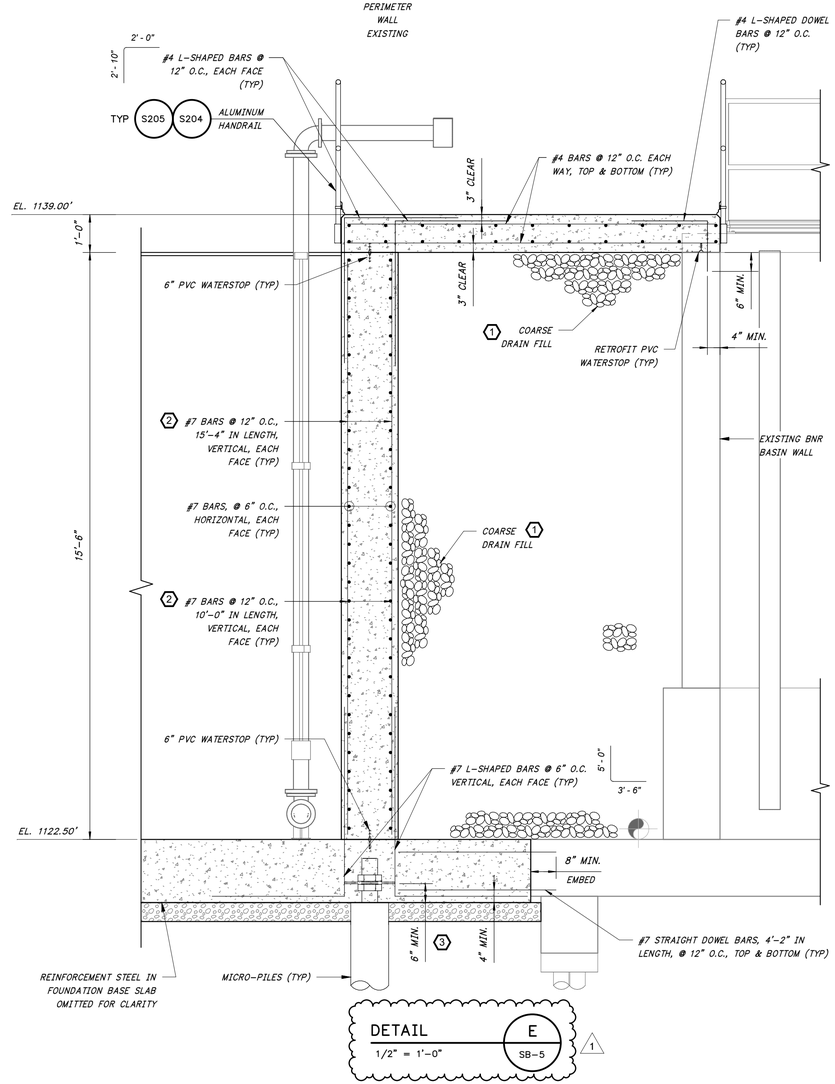


SECTION 7 (SB-1)
1/8" = 1'-0"



SECTION 8 (SB-1)
1/8" = 1'-0"



DETAIL E (SB-5) 1
1/2" = 1'-0"

NOTES:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO DETAIL S103.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMM 6' LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMM OF TWO (2) PASSES PER LIFT].
3. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
4. THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.

KEYED NOTES:

1. REFER TO NOTE NO. 2.
2. #7 VERTICAL BARS, 10-FEET IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT #7 VERTICAL BARS @ 12" O.C. TO ACHIEVE A 6-INCH VERTICAL SPACING.
3. MICRO-PILES SHALL EXTEND VERTICALLY 6-INCHES MINIMUM INTO FOUNDATION BASE SLAB.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISIONS PER ADDENDUM NO. 3	05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WWTP CAPACITY STUDY
ANOXIC BASIN STRUCTURAL PLAN

BNR BASINS
SECTIONS

FOR: BENTONVILLE WATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: S-ANOXIC

SHEET NO.
SB-6

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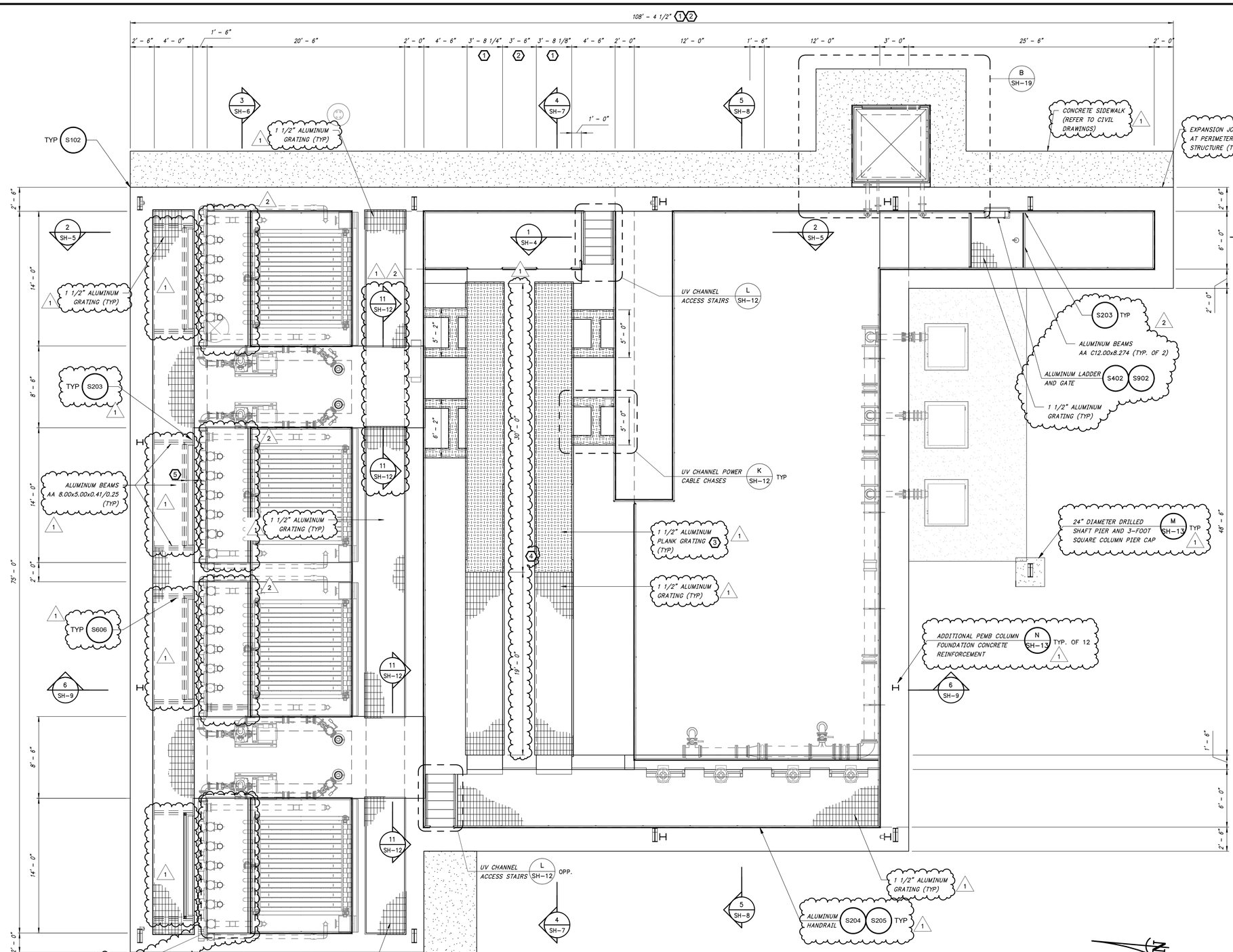

TERTIARY TREATMENT, UV DISINFECTION,
POST AERATION AND PARSHALL FLUME TOP PLAN

DETAIL C
3/16" = 1'–0"

NOTE:

1. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10–INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
2. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
3. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.
4. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].

KEYED NOTES:

1. CONTRACTOR SHALL COORDINATE UV CHANNEL WIDTH WITH THE UV MANUFACTURER, AND ACKNOWLEDGE THAT THE UV CHANNEL WIDTH MAY VARY BY UV MANUFACTURER.
2. THIS CONCRETE WALL THICKNESS MAY DECREASE IF THE UV MANUFACTURER REQUIRES A UV CHANNEL WIDTH WIDER THAN 3'–8 1/4". CONTRACTOR SHALL COORDINATE ANY SUCH WALL THICKNESS DEVIATION WITH THE ENGINEER THROUGH THE RFI PROCESS.
3. 1 1/2" ALUMINUM PLANK GRATING SHALL BE SIMILAR AND EQUAL TO THAT MANUFACTURED BY MCNICHOLS, OR EQUAL. ALUMINUM PLANK GRATING SHALL BE EXTRUDED INTER–LOCKING PLANK, DIAMONDBACK ®, ADA, ALLOY 6061–T6 EXTRUSION, SOLID (12" WIDTH), 1 1/2" CHANNEL DEPTH, DIAMOND – SERRATED SURFACE, 0% OPEN AREA EXCEPT AT ANY REQUIRED SLIDE GATE OPENINGS. ALL ALUMINUM PLANK GRATING OPENINGS SHALL BE BANDED.
4. GRATING EAST OF THIS DIMENSION LINE (30'–0") SHALL BE 1 1/2" ALUMINUM PLANK GRATING. GRATING WEST OF THIS DIMENSION LINE (19'–0") SHALL BE 1 1/2" ALUMINUM GRATING.
5. THE CONTRACTOR SHALL COORDINATE THIS DIMENSION WITH THE SELF–CONTAINED SLIDE GATE MANUFACTURER. THE DISTANCE BETWEEN THE BEAM AND WALL SHALL BE WIDE ENOUGH TO FACILITATE THE OPERATION, INSTALLATION, OR THE REMOVAL OF THE SELF–CONTAINED SLIDE GATE.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BRETT D. PEARCY No. 8596 2025.05.15

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME TOP PLAN

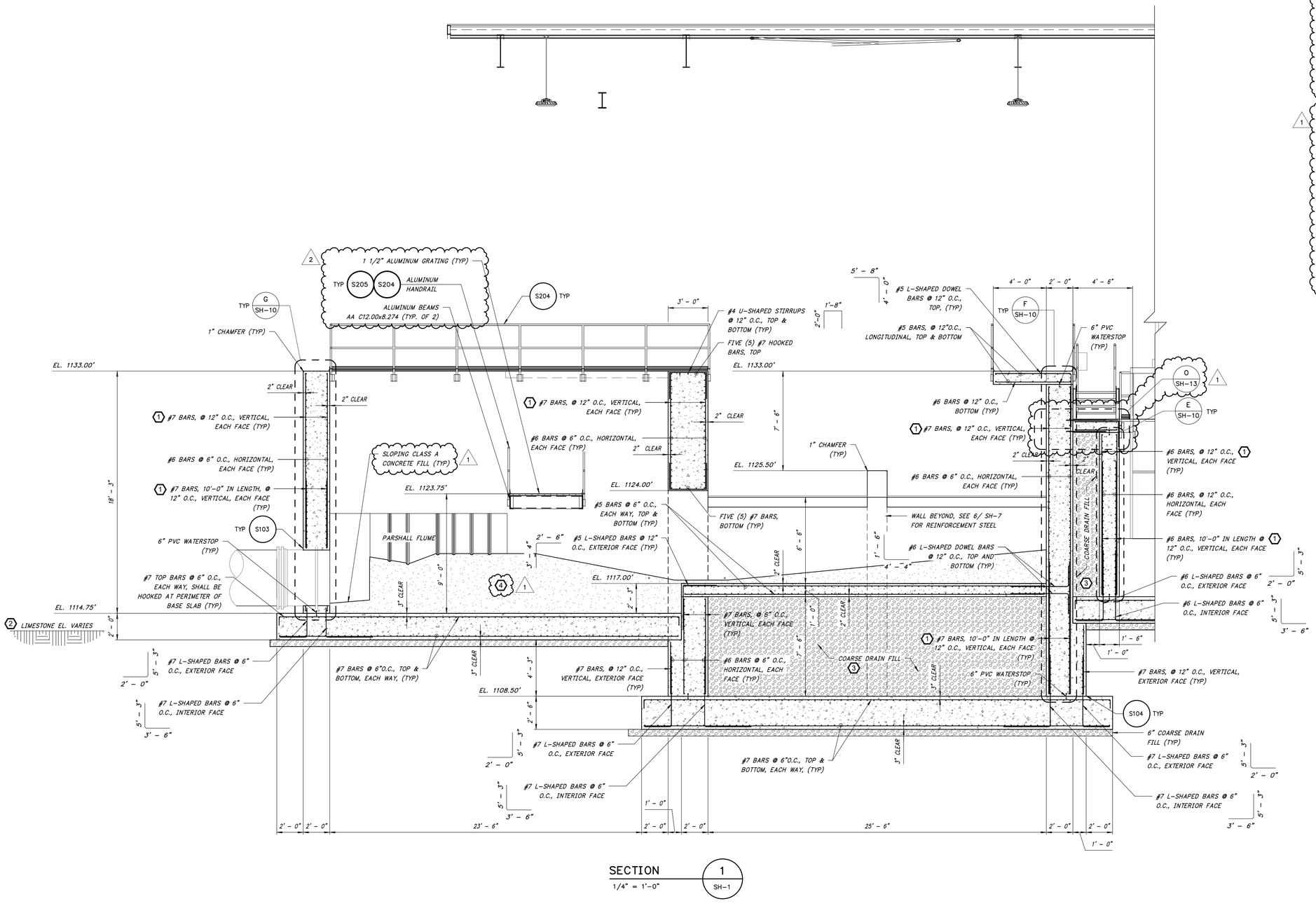
FOR: BENTONVILLE WASTEWATER UTILITIES

BID DRAWINGS
MARCH 21, 2025

DATE:	MARCH 2025
SCALE:	3/16" = 1'–0"
DESIGNED BY:	BDP
DRAWN BY:	DKS
HWEI NO.:	2021037
FILENAME:	WWRF21037–ST

SHEET NO.
SH–3

Autodesk Docs://410144 – Bentonville Water Resource Recovery Facility Improvements/WWRF21037–ST.rvt 5/13/2025 2:47:14 PM / DKS / TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME TOP PLAN



SECTION 1 / SH-1
1/4" = 1'-0"

NOTE:

1. VERTICAL AND HORIZONTAL WALL REINFORCEMENT STEEL FOR 18" WALLS SHALL BE IDENTICAL FOR ALL 18" WALLS IN THE TERTIARY STRUCTURE. L-SHAPED BAR DIMENSIONS VARY, SEE SECTIONS FOR L-SHAPED BAR DIMENSIONS.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZES) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
4. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
5. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING.
2. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B-13 THROUGH B-15.
3. REFER TO NOTE NO. 2.
4. CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION METHODS CONSISTING OF REINFORCED CONCRETE WALLS AND/OR SLABS IN LIEU OF CLASS A CONCRETE FILL, OR SOME COMBINATION THEROF, TO SUPPORT PARSHALL FLUME.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 8596 BRETT D. FEST

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME SECTION

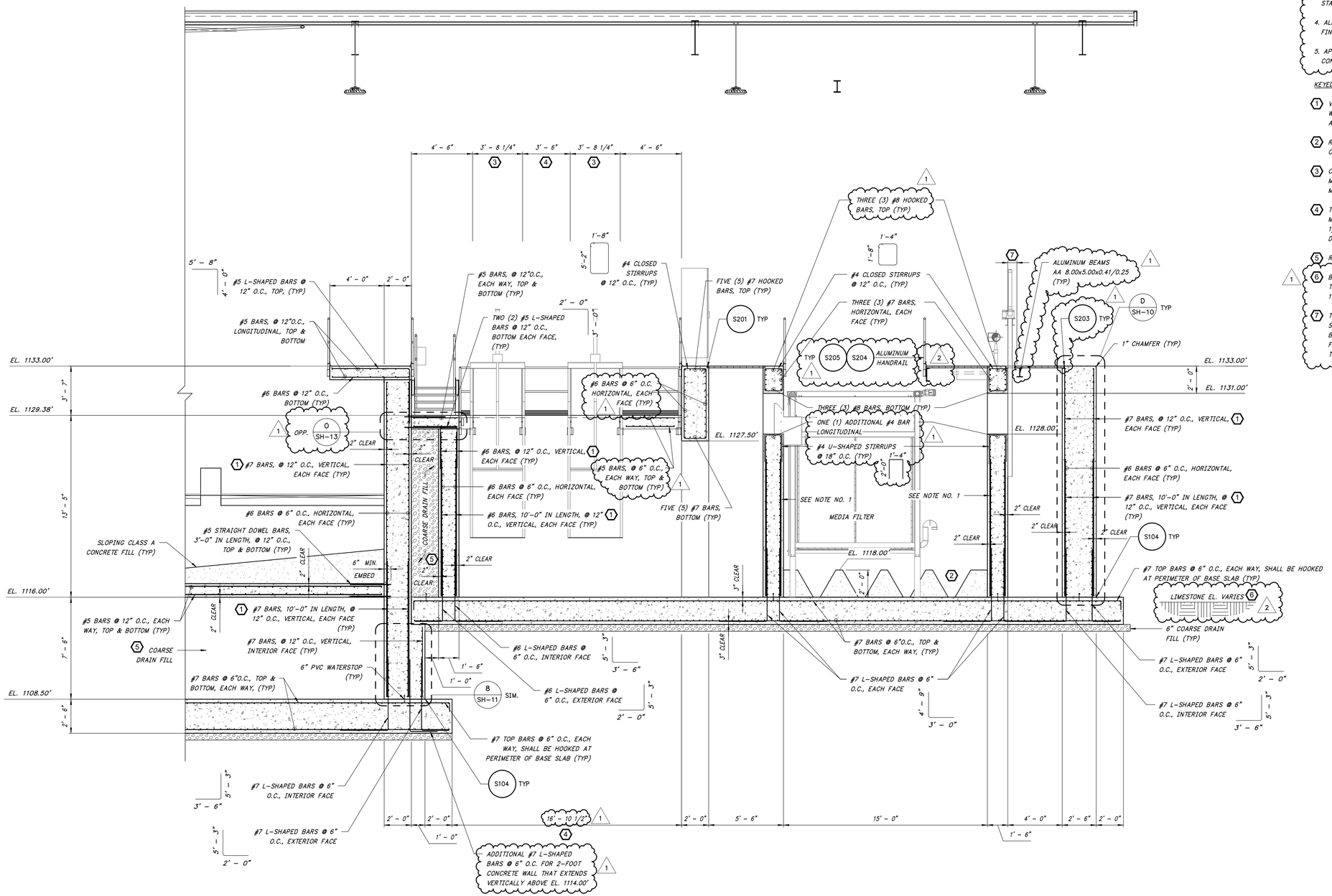
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

BID DRAWINGS
MARCH 21, 2025

SHEET NO.
SH-4

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 2:47:16 PM / DKS / TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME



SECTION 2 / SH–1
1/4" = 1'–0"

BID DRAWINGS
MARCH 21, 2025

NOTES:

1. VERTICAL AND HORIZONTAL WALL REINFORCEMENT STEEL FOR 18" WALLS SHALL BE IDENTICAL FOR ALL 18" WALLS IN THE TERTIARY STRUCTURE. L-SHAPED BAR DIMENSIONS VARY, SEE SECTIONS FOR L-SHAPED BAR DIMENSIONS.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZES) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10–INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
4. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
5. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

KEYED NOTES:

1. VERTICAL BARS, 10'–0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING.
2. REFER TO PROCESS MECHANICAL DRAWINGS FOR CLASS A CONCRETE FILL AT THE BOTTOM OF THE FILTERS.
3. CONTRACTOR SHALL COORDINATE UV CHANNEL WIDTH WITH THE UV MANUFACTURER, AND ACKNOWLEDGE THAT THE UV CHANNEL WIDTH MAY VARY BY UV MANUFACTURER.
4. THIS CONCRETE WALL THICKNESS MAY DECREASE IF THE UV MANUFACTURER REQUIRES A UV CHANNEL WIDTH WIDER THAN 3'–8 1/4". CONTRACTOR SHALL COORDINATE ANY SUCH WALL THICKNESS DEVIATION WITH THE ENGINEER THROUGH THE RFI PROCESS.
5. REFER TO NOTE NO. 2.
6. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B–13 THROUGH B–15.
7. THE CONTRACTOR SHALL COORDINATE THIS DIMENSION WITH THE SELF–CONTAINED SLIDE GATE MANUFACTURER. THE DISTANCE BETWEEN THE BEAM AND WALL SHALL BE WIDE ENOUGH TO FACILITATE THE OPERATION, INSTALLATION, OR THE REMOVAL OF THE SELF– CONTAINED SLIDE GATE.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
BRETT D. PEAVEY
REGISTERED PROFESSIONAL ENGINEER
No. 8396
05/15/25

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME
SECTION

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'–0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: WWRF21037–ST

SHEET NO.
SH–5

Autodesk Docs://410144 – Bentonville Water Resource Recovery Facility Improvements/WWRF21037–ST.rvt 5/13/2025 2:47:20 PM / DKS / TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME

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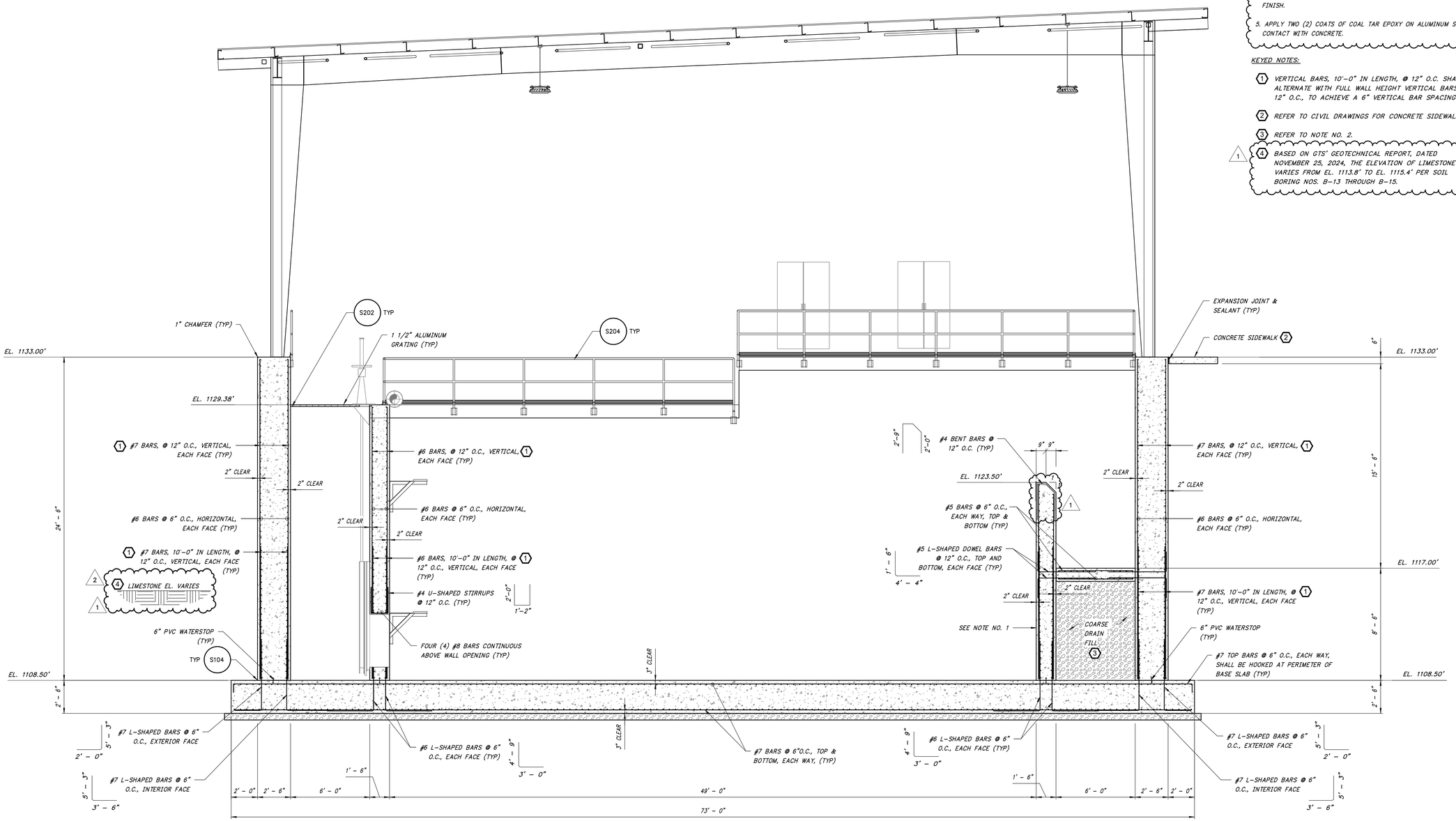

SECTION 5
1/4" = 1'-0" SH-1

NOTES:

1. VERTICAL AND HORIZONTAL WALL REINFORCEMENT STEEL FOR 18" WALLS SHALL BE IDENTICAL FOR ALL 18" WALLS IN THE TERTIARY STRUCTURE. L-SHAPED BAR DIMENSIONS VARY, SEE SECTIONS FOR L-SHAPED BAR DIMENSIONS.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE (MINIMUM OF TWO (2) PASSES PER LIFT).
1. 3. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
4. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
5. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. REFER TO CIVIL DRAWINGS FOR CONCRETE SIDEWALK.
3. REFER TO NOTE NO. 2.
1. 4. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B-13 THROUGH B-15.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BRETT D. DAVIS No. 8396 05/15/25

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME
SECTION
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SH-8

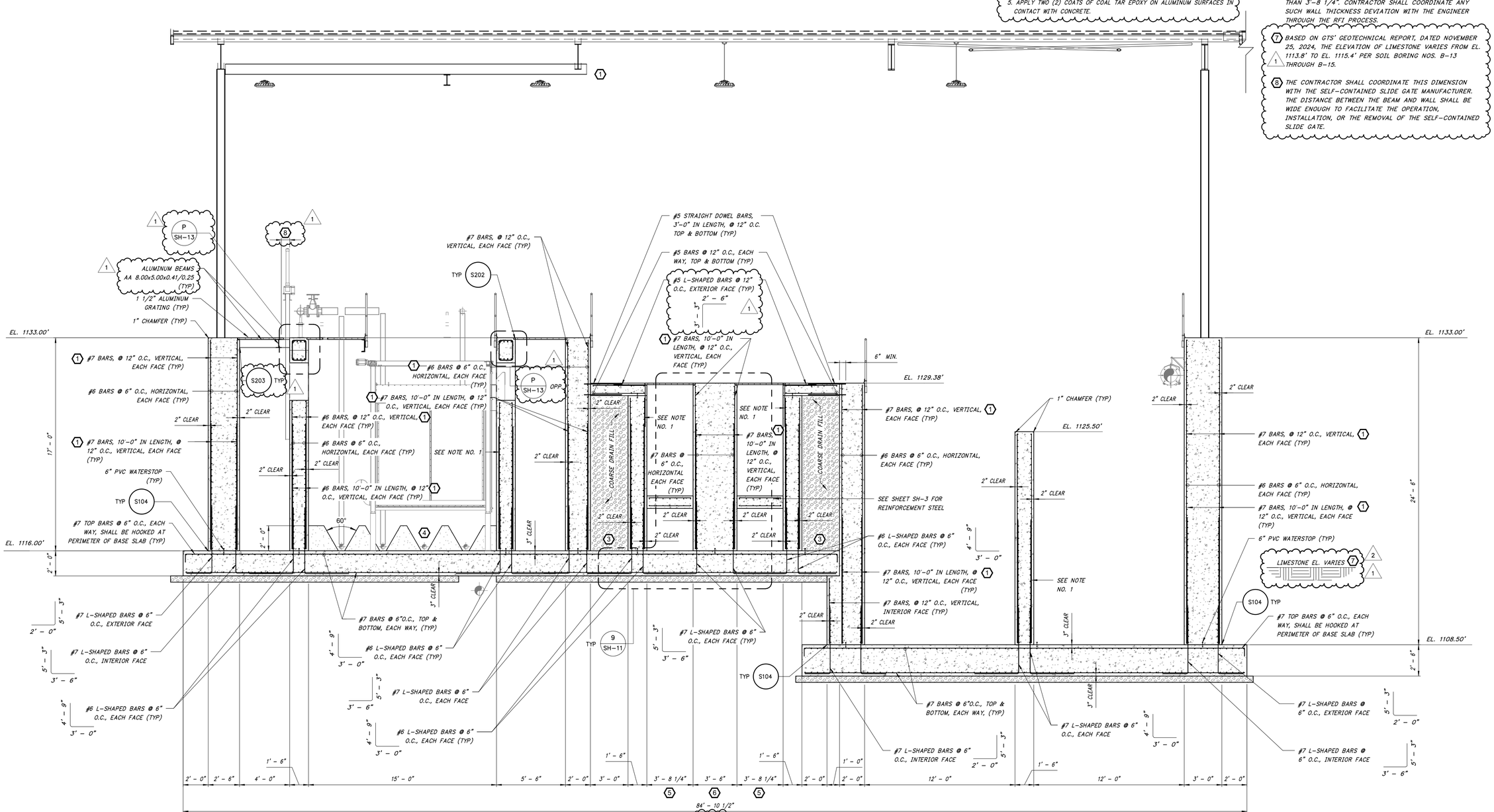
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 2:47:26 PM / DKS / TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME

NOTES:

1. VERTICAL AND HORIZONTAL WALL REINFORCEMENT STEEL FOR 18" WALLS SHALL BE IDENTICAL FOR ALL 18" WALLS IN THE TERTIARY STRUCTURE. L-SHAPED BAR DIMENSIONS VARY, SEE SECTIONS FOR L-SHAPED BAR DIMENSIONS.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
4. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
5. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

KEYED NOTES:

1. VERTICAL BARS, 10'-0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. REFER TO CIVIL DRAWINGS FOR CONCRETE SIDEWALK.
3. REFER TO NOTE NO. 2.
4. REFER TO PROCESS MECHANICAL DRAWINGS FOR CLASS A CONCRETE AT THE BOTTOM OF THE FILTERS.
5. CONTRACTOR SHALL COORDINATE UV CHANNEL WIDTH WITH THE UV MANUFACTURER, AND ACKNOWLEDGE THAT THE UV CHANNEL WIDTH MAY VARY BY UV MANUFACTURER.
6. THIS CONCRETE WALL THICKNESS MAY DECREASE IF THE UV MANUFACTURER REQUIRES A UV CHANNEL WIDTH WIDER THAN 3'-8 1/4". CONTRACTOR SHALL COORDINATE ANY SUCH WALL THICKNESS DEVIATION WITH THE ENGINEER THROUGH THE RFI PROCESS.
7. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B-13 THROUGH B-15.
8. THE CONTRACTOR SHALL COORDINATE THIS DIMENSION WITH THE SELF-CONTAINED SLIDE GATE MANUFACTURER. THE DISTANCE BETWEEN THE BEAM AND WALL SHALL BE WIDE ENOUGH TO FACILITATE THE OPERATION, INSTALLATION, OR THE REMOVAL OF THE SELF-CONTAINED SLIDE GATE.



SECTION 6 / SH-1
1/4" = 1'-0"

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BRETT D. KEY No. 8596

HAWKINS WEIR ENGINEERS, INC.
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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT, UV DISINFECTION, POST AERATION, AND PARSHALL FLUME
SECTION

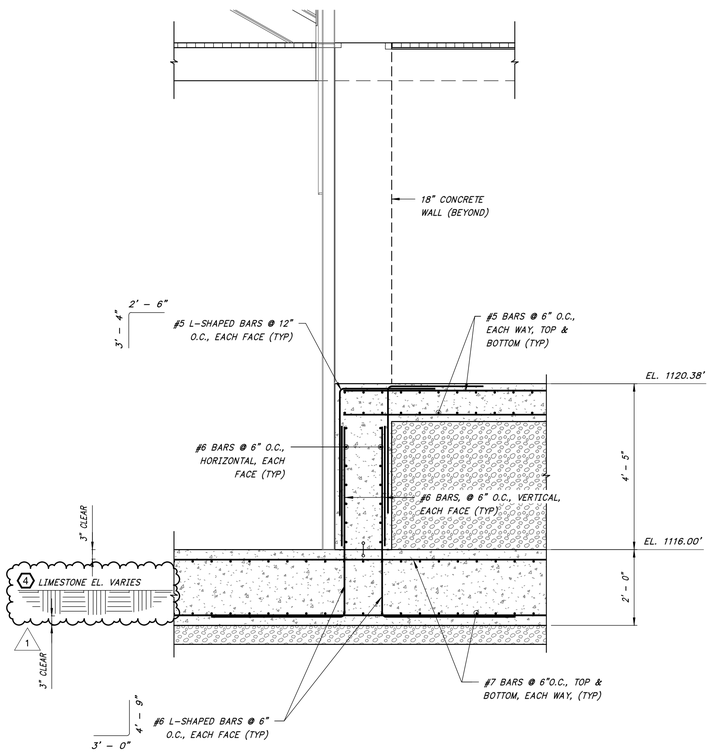
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: DKS
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SH-9

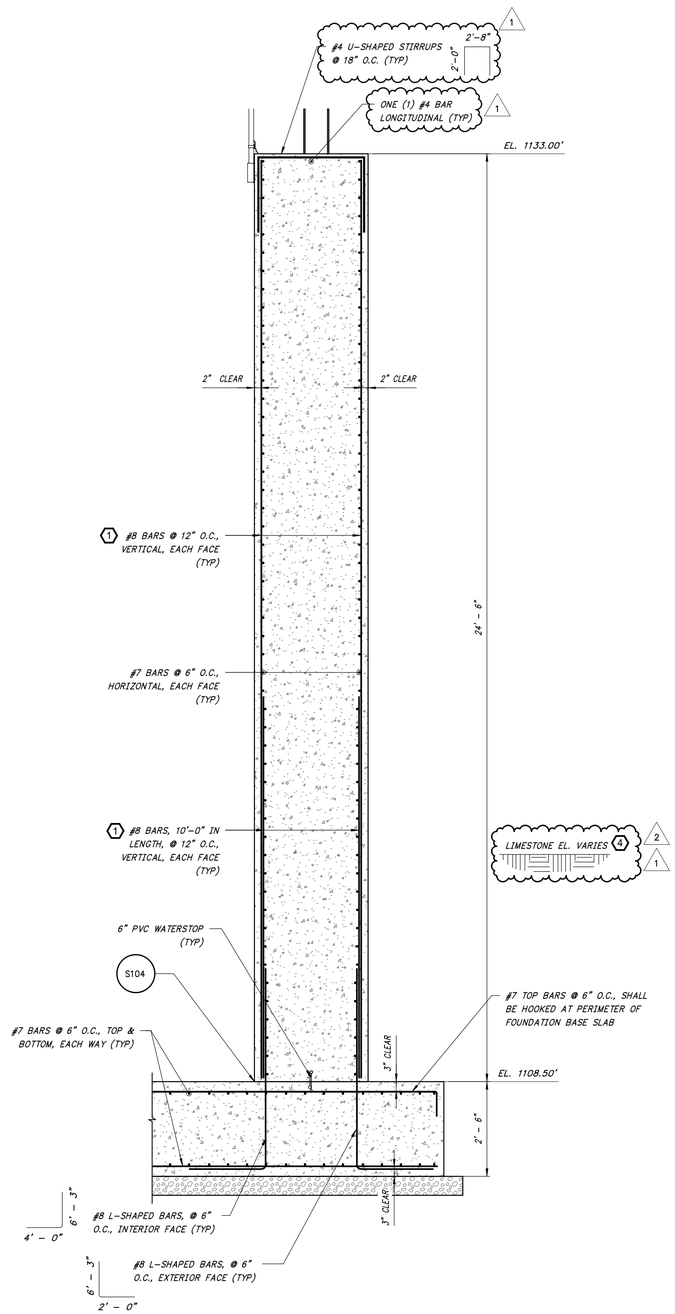
BID DRAWINGS
MARCH 21, 2025

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 2:47:29 PM / DKS / TERTIARY TREATMENT WALL REINFORCEMENT



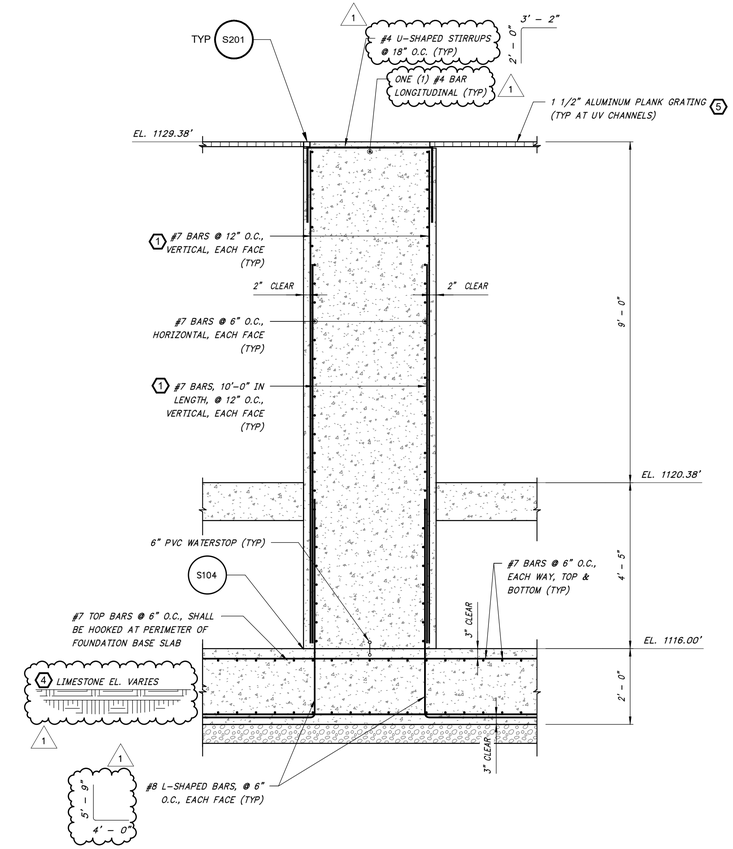
1'–6" CONCRETE WALL AT UV CHANNEL

SECTION 1/2" = 1'–0" — 7 / SH–7 — 2



3'–0" CONCRETE WALL

SECTION 1/2" = 1'–0" — 8 / SH–5 — 2



3'–6" CONCRETE WALL

SECTION 1/2" = 1'–0" — 9 / SH–9 — 2

NOTES:

1. VERTICAL AND HORIZONTAL WALL REINFORCEMENT STEEL FOR 18" WALLS SHALL BE IDENTICAL FOR ALL 18" WALLS IN THE TERTIARY STRUCTURE. L-SHAPED BAR DIMENSIONS VARY, SEE SECTIONS FOR L-SHAPED BAR DIMENSIONS.
2. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
3. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS, FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.
4. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
5. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

KEYED NOTES:

1. VERTICAL BARS, 10'–0" IN LENGTH, @ 12" O.C. SHALL ALTERNATE WITH FULL WALL HEIGHT VERTICAL BARS @ 12" O.C., TO ACHIEVE A 6" VERTICAL BAR SPACING
2. REFER TO CIVIL DRAWINGS FOR CONCRETE SIDEWALK.
3. REFER TO NOTE NO. 2.
4. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B–13 THROUGH B–15.
5. 1 1/2" ALUMINUM PLANK GRATING SHALL BE SIMILAR AND EQUAL TO THAT MANUFACTURED BY MCNICHOLS, OR EQUAL ALUMINUM PLANK GRATING SHALL BE EXTRUDED INTERLOCKING PLANK, DIAMONDBACK ®, ADA, ALLOY 6061–T6 EXTRUSION, SOLID (12" WIDTH), 1 1/2" CHANNEL DEPTH, DIAMOND–SERRATED SURFACE, 0% OPEN AREA EXCEPT AT REQUIRED SLIDE GATE OPENINGS. ALL ALUMINUM PLANK GRATING OPENINGS SHALL BE BANDED.
6. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

BID DRAWINGS
MARCH 21, 2025

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
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2 REVISED PER ADDENDUM NO. 3	05/15/2025

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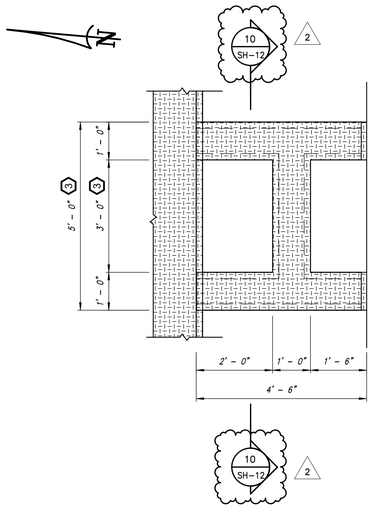
STATE OF ARKANSAS — BRETT D. FEATHERSTON — REGISTERED PROFESSIONAL ENGINEER — No. 8596 — 05/15/25

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS
TERTIARY TREATMENT WALL REINFORCEMENT SECTIONS
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE:	MARCH 2025
SCALE:	1/2" = 1'–0"
DESIGNED BY:	BDP
DRAWN BY:	DKS
HWEI NO.:	2021037
FILENAME:	WWRF21037–ST

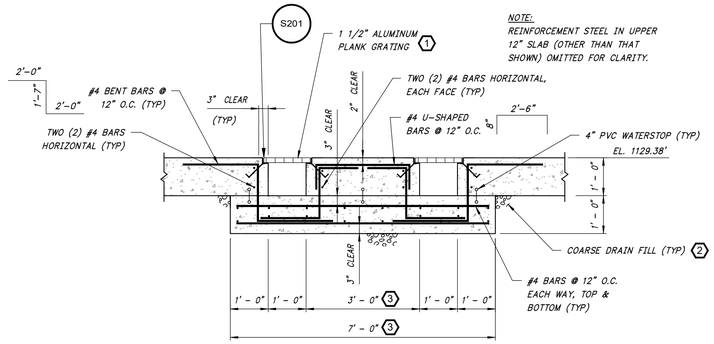
SHEET NO.
SH–11



UV CHANNEL POWER CABLE CHASES

DETAIL K / SH-3

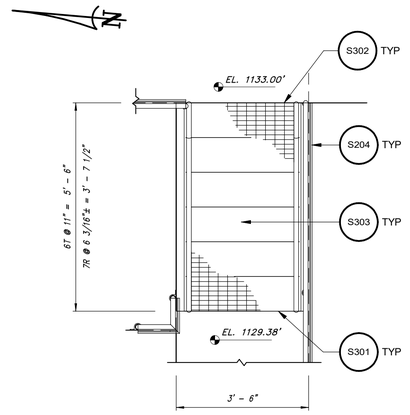
1/2" = 1'-0"



UV CHANNEL POWER CABLE CHASES

SECTION 10 / SH-12 (2)

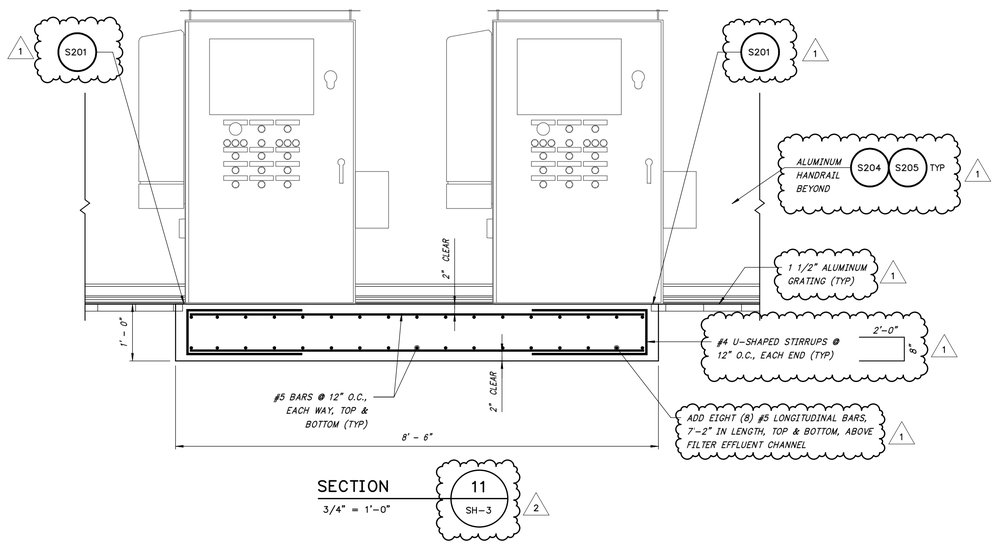
1/2" = 1'-0"



UV CHANNEL ACCESS STAIRS

DETAIL L / SH-3

1/2" = 1'-0"



SECTION 11 / SH-3 (2)

3/4" = 1'-0"

NOTES:

1. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].
2. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE. (1)
3. ALL EXPOSED CONCRETE VERTICAL SURFACES SHALL RECEIVE A RUBBED FINISH.
4. REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STRUCTURAL STANDARD DETAIL S103.

KEYED NOTES:

1. 1 1/2" ALUMINUM PLANK GRATING SHALL BE SIMILAR AND EQUAL TO THAT MANUFACTURED BY MCNICHOLS, OR EQUAL ALUMINUM PLANK GRATING SHALL BE EXTRUDED INTERLOCKING PLANK, DIAMONDBACK ®, ADA, ALLOY 6061-T6 EXTRUSION, SOLID (12" WIDTH), 1 1/2" CHANNEL DEPTH, DIAMOND-SERRATED SURFACE, 0% OPEN AREA EXCEPT AT ANY REQUIRED SLIDE GATE OPENINGS. ALL ALUMINUM PLANK GRATING OPENINGS SHALL BE BANDED.
2. REFER TO NOTE NO. 1.
3. DIMENSIONS SHOWN ARE FOR THE SOUTH UV CHANNEL POWER CABLE CHASES. OVERALL DIMENSION FOR THE NORTHEAST UV CHANNEL POWER CABLE CHASES SHALL BE 7'-2", AND THE OVERALL DIMENSION FOR THE NORTHWEST UV CHANNEL POWER CABLE CHASES SHALL BE 8'-2".

BID DRAWINGS

MARCH 21, 2025

1"

ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS — BRETT D. FOX — REGISTERED PROFESSIONAL ENGINEER — No. 8396 — 05/13/25

HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT
DETAILS AND SECTIONS

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: BDP
DRAWN BY: ADF
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SH-12

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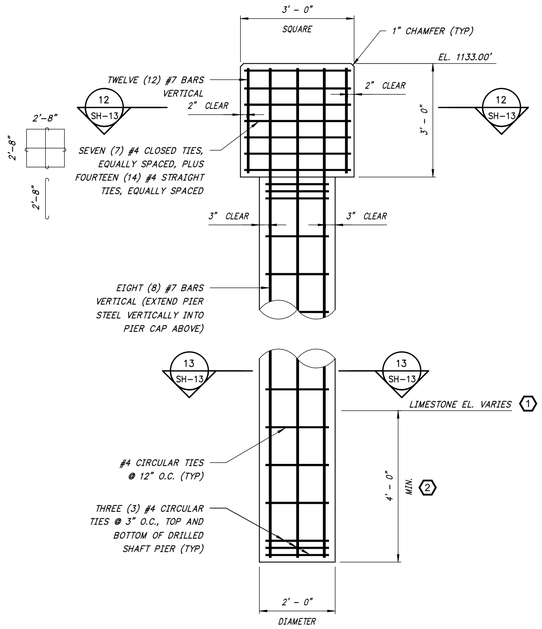
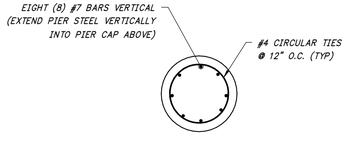
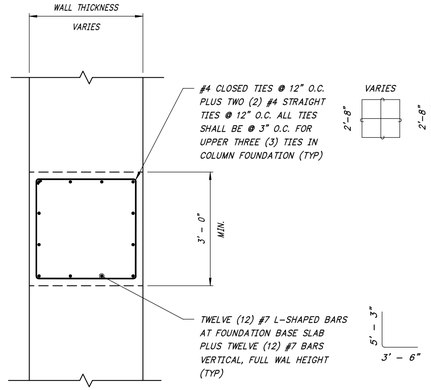


DETAIL M
1/2" = 1'–0"
SH–1

SECTION 12
1/2" = 1'–0"
SH–13
2

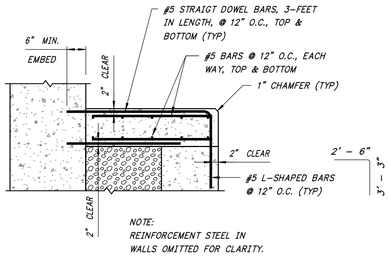


SECTION 13
1/2" = 1'–0"
SH–13
2

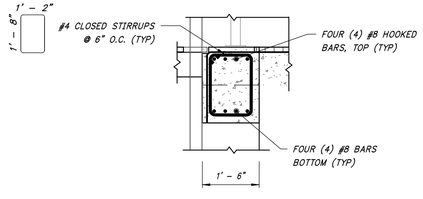


PEMB COLUMN
FOUNDATION (TYP. OF 12)

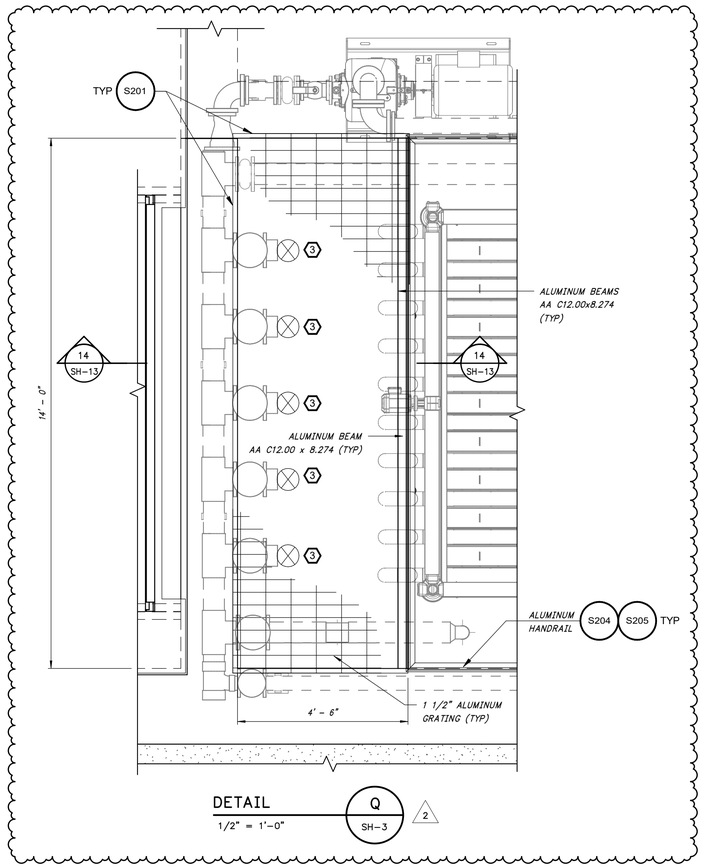
DETAIL N
1/2" = 1'–0"
SH–3



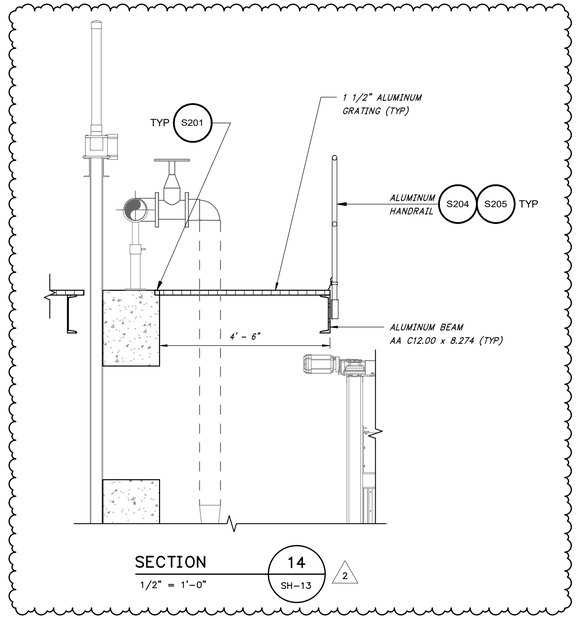
DETAIL O
1/2" = 1'–0"
SH–4



DETAIL P
1/2" = 1'–0"
SH–9



DETAIL Q
1/2" = 1'–0"
SH–3
2



SECTION 14
1/2" = 1'–0"
SH–13
2

NOTE:

1. ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.
2. APPLY TWO (2) COATS OF COAL TAR EPOXY ON ALUMINUM SURFACES IN CONTACT WITH CONCRETE.
3. COARSE DRAIN FILL PER ASTM C33 (3/4" MAXIMUM AGGREGATE SIZE) SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED WITH A VIBRATORY PLATE [MINIMUM OF TWO (2) PASSES PER LIFT].

KEYED NOTES:

1. BASED ON GTS' GEOTECHNICAL REPORT, DATED NOVEMBER 25, 2024, THE ELEVATION OF LIMESTONE VARIES FROM EL. 1113.8' TO EL. 1115.4' PER SOIL BORING NOS. B–13 THROUGH B–15.
2. SOCKET 24–INCH DIAMETER DRILLED SHAFT PIER, 4–FOOT MINIMUM, INTO LIMESTONE
3. 1 1/2" ALUMINUM GRATING SHALL BE FABRICATED IN PANELS THAT WILL FACILITATE REMOVAL AROUND PIPE PENETRATIONS. ALL GRATING OPENINGS SHALL BE BANDED.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 2	04/22/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS
BRETT D. PEARCY
REGISTERED PROFESSIONAL ENGINEER
No. 8396
05/15/25

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

TERTIARY TREATMENT DETAILS AND SECTIONS

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: BDP
DRAWN BY: ADF
HWEI NO.: 2021037
FILENAME: WWRF21037–ST

SHEET NO.
SH–13
1

BID DRAWINGS
MARCH 21, 2025

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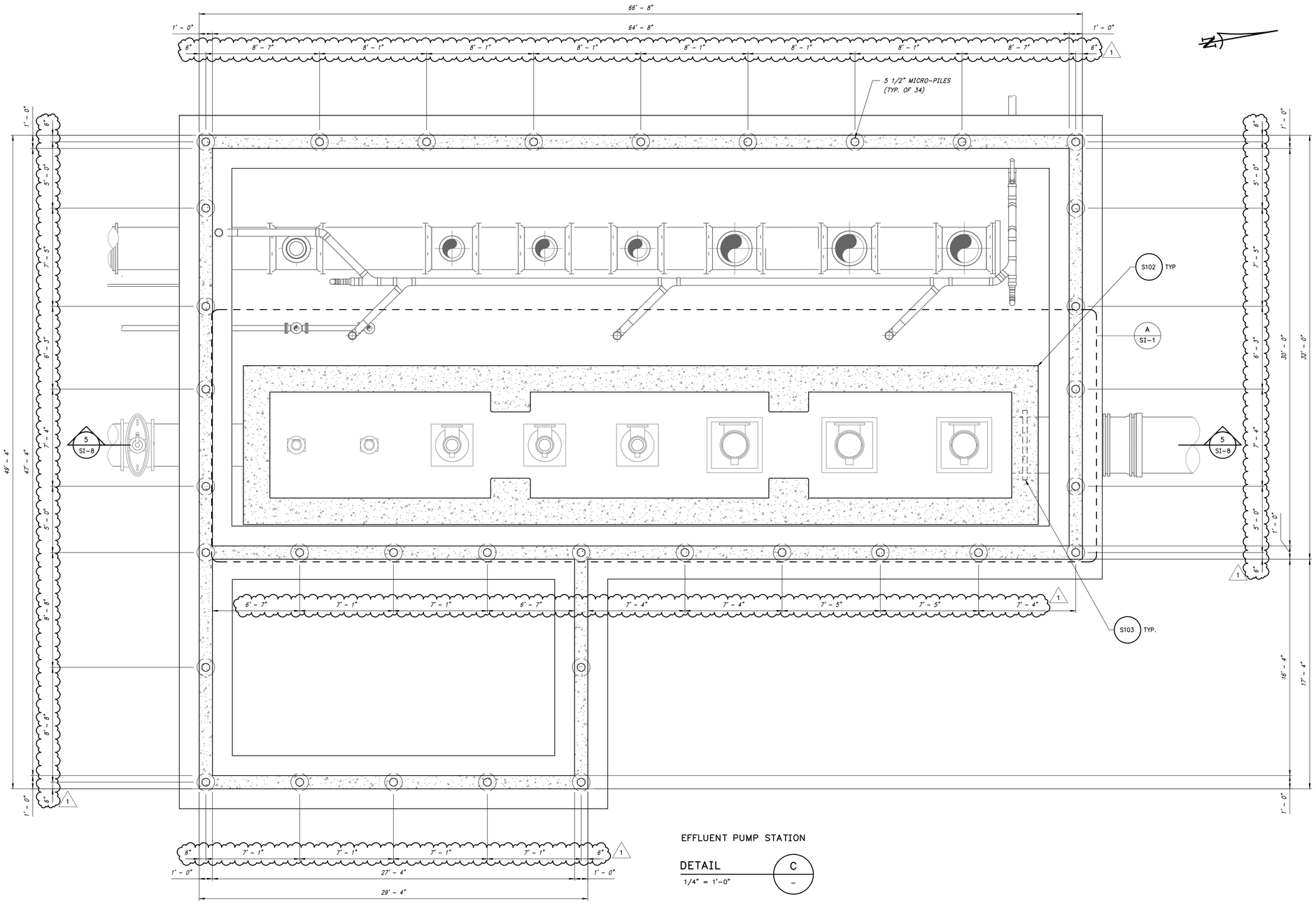

EFFLUENT PUMP STATION

DETAIL C

1/4" = 1'-0"

MICRO-PILE NOTES:

1. *THE CONTRACTOR AND/OR THEIR MICROPILE SPECIALTY SUBCONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TESTING OF MICRO-PILES IN ACCORDANCE WITH SPECIFICATION SECTION 02469 DRILLED MICRO-PILES.*
2. *THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL DESIGN THE MICRO-PILE TYPE, SIZE, INSTALLATION MEANS AND METHODS, ESTIMATE THE GROUND-GROUT BOND VALUE AND DETERMINE THE REQUIRED BOND LENGTH AND FINAL MICRO-PILE DIAMETER BASED ON THE REQUIRED LOAD CAPACITIES INDICATED ON THE PLANS. THE MICRO-PILE LOAD CAPACITIES SHALL BE VERIFIED BY PROOF LOAD TESTING AS SPECIFIED IN SECTION 02469.*
3. *THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE EXPERIENCED IN THE CONSTRUCTION AND LOAD TESTING OF MICRO-PILES IN SOIL/ROCK SIMILAR TO PROJECT CONDITIONS IDENTIFIED IN GTS' GEOTECHNICAL REPORT DATED NOVEMBER 25, 2024.*
4. *THE MICRO-PILE SPECIALTY SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING A PROFESSIONAL ENGINEER, LICENSED IN ARKANSAS, WITH EXPERIENCE IN THE DESIGN OF MICRO-PILES AND BE RESPONSIBLE FOR ANY DESIGN RELATED EXPENSES.*
5. *THE MICRO-PILES SHALL BE DESIGNED TO MEET THE SPECIFIED LOADING CONDITIONS, AS IDENTIFIED IN THE PLANS, USING THE PROCEDURES OUTLINED IN THE FHWA "MICRO-PILE DESIGN AND CONSTRUCTION", REPORT NO. FHWA NHI-05-039. REFER TO SECTION 02469 FOR ANY ADDITIONAL DESIGN AND SUBMITTAL REQUIREMENTS.*
6. *PILES SHALL BE 5 1/2" MICRO-PILES WITH A MINIMUM 65 KIP COMPRESSION LOAD CAPACITY, A MINIMUM 5 KIP TENSION LOAD CAPACITY, AND A MINIMUM 5 KIP LATERAL LOAD CAPACITY.* (1)

NOTES:

1. *REFER TO OTHER DISCIPLINE DRAWINGS FOR LOCATION AND SIZE OF WALL AND/OR SLAB PENETRATIONS. FOR ALL WALL AND/OR SLAB PENETRATIONS GREATER THAN 10-INCHES, REFER TO STANDARD DETAIL S103.*
2. *ALL EXPOSED VERTICAL CONCRETE SURFACES SHALL RECEIVE A RUBBED FINISH.*
3. *REFER TO SPECIFICATION SECTION 02140 FOR DEWATERING AND DRAINAGE. ALSO, REFER TO THE GEOTECHNICAL REPORT PREPARED BY GTS, INC., REVISED NOVEMBER 25, 2024.*
4. *REFER TO SPECIFICATION SECTION 02250 FOR EXCAVATION SUPPORT AND PROTECTION.*

BID DRAWINGS

MARCH 21, 2025

1"

ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS
BRETT D. PERKINS
REGISTERED PROFESSIONAL ENGINEER
No. 8396
05/13/25

HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

EFFLUENT PUMP STATION
FOUNDATION PLAN

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1/4" = 1'-0"
DESIGNED BY: BDP
DRAWN BY: CES
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SI-2

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/14/2025 8:57:33 AM / CES / EFFLUENT PUMP STATION

GENERAL NOTES

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE OTHER PROJECT DRAWINGS AND SPECIFICATIONS.

SEE OTHER DISCIPLINE DRAWINGS FOR ANCHORS, PIPE SLEEVES, SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED IN OR PASS THROUGH THE CONCRETE. IN GENERAL, EMBEDMENTS AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS.

WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED SIZES.

DESIGN CRITERIA 2021 ARKANSAS FIRE PREVENTION CODE (2021 IBC)
BUILDING CODES: ASCE 7-22

CAST-IN-PLACE CONCRETE NOTES

REINFORCED CONCRETE SHALL CONFORM TO ACI 318, LATEST REVISION.

MINIMUM CONCRETE STRENGTH AT 28 DAYS:

CLASS A: CONCRETE FILL & PIPE ENCASEMENT f'c = 2500 psi
CLASS B: CONCRETE SIDEWALKS & PAVEMENTS f'c = 3500 psi
CLASS C: STRUCTURAL CONCRETE f'c = 4500 psi (1)

REINFORCING STEEL SHALL BE BILLET STEEL CONFORMING TO THE LATEST EDITION OF ASTM A615, GRADE 60.

REINFORCING STEEL FABRICATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI MANUAL OF STANDARD PRACTICE.

REINFORCING STEEL SHALL HAVE THE FOLLOWING MINIMUM CLEAR CONCRETE COVER

1. CONCRETE CAST AGAINST EARTH (i.e. BOTTOM OF SLABS, FOOTINGS, DRILLED PIERS, ETC.) – 3 INCHES
2. ALL OTHER CONCRETE SURFACES – 2 INCHES

MINIMUM TENSION LAP SPLICE LENGTHS FOR GRADE 60 REINFORCING BARS IN WALLS AND SLABS SHALL BE IN ACCORDANCE WITH DETAIL S101 THIS SHEET. UNLESS OTHERWISE NOTED ON THE DRAWINGS. LAP SPLICES NOT COVERED BY DETAIL S101 SHALL BE AS SHOWN ON THE DRAWINGS OR SHALL BE REFERRED TO THE ENGINEER FOR DETERMINATION OF REQUIRED LENGTH.

CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE 1" CHAMFER, UNLESS OTHERWISE NOTED.

BLOCKOUTS IN THE CONCRETE FORMWORK SHALL NOT BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

MODIFICATION AND REPAIR TO CONCRETE NOTES

SEE SPECIFICATION SECTION 03740 FOR EXPLANATION OF CONCRETE REMOVAL METHODS, CONNECTION METHODS AND MATERIALS USED.

CONNECTION METHODS ARE SPECIFIED IN DETAIL IN SPECIFICATION SECTION 03740.
METHOD A – CEMENT SLURRY BONDING
METHOD B – BONDING USING BONDING ADHESIVE
METHOD C – DRILLED DOWELS OR BOLTS USING DOWELING ADHESIVE
METHOD D – COMBINATION OF METHODS B AND C

CONCRETE JOINT NOTES

UNLESS OTHERWISE NOTED, PROVIDE SEALANT IN JOINTS AS SHOWN ON THE DRAWINGS AND AS FOLLOWS:

1. EXPANSION JOINTS SHALL HAVE SEALANT APPLIED TO BOTH SIDES OF THE JOINT, EXCEPT FOR THE SOIL SIDE OF A BASE SLAB JOINT.
2. CONTROL JOINTS AND CONSTRUCTION JOINTS WILL NOT REQUIRE SEALANT, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

UNLESS OTHERWISE NOTED, PROVIDE WATERSTOPS IN JOINTS AS SHOWN ON THE DRAWINGS AND AS FOLLOWS:

1. IN ALL EXTERIOR BELOW GRADE WALLS AND SLABS.

WATERSTOPS AT BOTH HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHALL BE CONTINUOUS. WATERSTOPS AT THE INTERSECTION OF HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHALL BE FABRICATED BY THE MANUFACTURER. ALTERNATIVELY, WATERSTOPS MAY BE FIELD WELDED TO ACHIEVE SUCH CONTINUITY.

PROCEDURES FOR ROUGHENED JOINTS ARE DESCRIBED IN SPECIFICATION SECTION 03250.

STEEL NOTES

STRUCTURAL SHAPES SHALL CONFORM TO ASTM A992.

PLATES AND BARS SHALL CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED.

ALL STRUCTURAL STEEL SHALL BE FABRICATED, ERECTED, AND CONNECTED IN COMPLIANCE WITH THE LATEST AISC SPECIFICATIONS. MINIMUM THICKNESS OF CLIP ANGLES OR CONNECTOR PLATES SHALL BE 1/4".

STRUCTURAL STEEL FOR BUILDING CONSTRUCTION (I.E. COLUMNS, BEAMS, JOISTS, DECK, ETC.) SHALL BE SHOP PRIMED AND FIELD PAINTED AS SPECIFIED (UNLESS NOTED OTHERWISE). STRUCTURAL STEEL FOR ACCESS PLATFORMS, EQUIPMENT PLATFORMS, AND STAIRS SHALL BE HOT-DIP GALVANIZED.

BOLTED CONNECTIONS SHALL BE MADE USING TYPE 316 STAINLESS STEEL HIGH-STRENGTH BOLTS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED. ALL BOLTS SHALL BE 3/4" DIAMETER IN 13/16" DIAMETER HOLES UNLESS OTHERWISE SPECIFIED. PROVIDE A MINIMUM OF TWO (2) BOLTS PER CONNECTION.

ALL HARDWARE FOR ACCESS PLATFORMS AND STAIRS THAT ARE COMPOSED OF HOT-DIP GALVANIZED STRUCTURAL MEMBERS, ALUMINUM GRATING, AND ALUMINUM HANDRAIL SHALL BE TYPE 316 STAINLESS STEEL.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH LATEST EDITION OF THE STRUCTURAL WELDING CODE AWS D1.1. WELD FILLER METAL SHALL BE E70XX ELECTRODES, UNLESS OTHERWISE SPECIFIED. MINIMUM WELD SIZE SHALL BE 3/16 INCH FILLET WELD, UNLESS OTHERWISE NOTED. ALL WELDS SHALL BE FIELD PAINTED AS SPECIFIED, OR COATED WITH A MINIMUM OF TWO (2) COATS OF COLD GALVANIZING FOR GALVANIZED STEEL MEMBERS.

HOT-DIP GALVANIZING, SHOP PAINTING, AND FIELD PAINTING, AS REQUIRED, SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.

FOUNDATION NOTES

IN PREPARATION OF DRAWINGS AND SPECIFICATIONS, THE ENGINEER HAS RELIED UPON THE GEOTECHNICAL DESIGN REPORT PREPARED BY GEOTECHNICAL REPORT PREPARED BY GTS, INC., DATED REVISED MAY 7, 2025. (2) THIS REPORT IS PART OF THE CONTRACT DOCUMENTS.

ALL FOUNDATION BEARING SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.

STRUCTURAL EXCAVATION, BACKFILLING, AND GRADING

SEE SPECIFICATION SECTION 02316 FOR EXPLANATION OF STRUCTURAL EXCAVATION, BACKFILLING, AND GRADING PROCEDURES AND ACCEPTABLE MATERIALS.

CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING TEMPORARY EXCAVATION SUPPORT SYSTEMS, INCLUDING SHEETING, SHORING AND BRACING, TO INSURE THE SAFETY OF PERSONNEL AND PROTECT ADJACENT STRUCTURES, PIPING, ETC. (NEW OR EXISTING) IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND REQUIREMENTS.

ALUMINUM GRATING AND COVER PLATE NOTES

(2) GRATING SHALL BE ALUMINUM OR FIBERGLASS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. ALUMINUM GRATING SHALL BE ALUMINUM ALLOY 6063-T6. GRATING SUPPORTS SHALL BE ALUMINUM UNLESS INDICATED OTHERWISE. WHERE GRATING SUPPORTS ARE INDICATED TO BE GALVANIZED STEEL APPLY ONE (1) COAT OF COAL TAR EPOXY BETWEEN GRATING AND SUPPORTS TO PROVIDE DIELECTRIC SEPARATION.

COVER PLATES AND SUPPORTS SHALL BE ALL ALUMINUM CONSTRUCTION UNLESS OTHERWISE NOTED. COVER PLATES SHALL BE ALUMINUM ALLOY 6061-T6.

FASTENERS, ANCHORS, BOLTS, NUTS, AND WASHERS FOR ALUMINUM GRATING, COVER PLATES, AND SUPPORTS SHALL BE TYPE 316 STAINLESS STEEL.

BAND ALL GRATING ALONG EDGES AND AROUND OPENINGS WITH CONTINUOUS BAR EQUAL TO BEARING BARS.

ALL ANGLE FRAMES FOR GRATING ARE TO BE MITERED AND WELDED AT CORNERS.

ALL GRATING SHALL BE SECURELY FASTENED TO SUPPORTS WITH STAINLESS STEEL GRATING CLIPS AND ANCHORS, UNLESS OTHERWISE NOTED.

GRATING PANEL LAYOUT SHALL PROVIDE FOR THE REMOVAL OF GRATING AROUND PIPE AND OTHER GRATING PENETRATIONS. MAXIMUM GRATING PANEL WEIGHT SHALL BE 40-POUNDS.

ALL COVER PLATES SHALL BE SECURELY FASTENED TO SUPPORTS WITH 1/4" STAINLESS STEEL FLAT-HEAD MACHINE SCREWS AT 2'-0" ON CENTER, UNLESS OTHERWISE NOTED.

GRATING SIZE SHALL MEET THE FOLLOWING CRITERIA UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWING:

STEEL GRATING SPAN	RECTANGULAR BEARING BAR SIZE
TO 4'-6"	USE 1 1/2" x 3/16" MIN

FIELD VERIFY GRATING SUPPORT LOCATIONS BEFORE FABRICATING GRATING. PLACE SUPPORTS WITH EXTREME CARE TO PROVIDE TOLERANCES SHOWN OR SPECIFIED.

MASONRY NOTES

HOLLOW, LOAD-BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE I, LIGHTWEIGHT UNITS, AND INSTALLED IN RUNNING BOND PATTERN, UNLESS OTHERWISE NOTED.

MORTAR FOR REINFORCED MASONRY SHALL CONFORM TO ASTM C270, TYPE S, UNLESS OTHERWISE NOTED. GROUT SHALL CONFORM TO ASTM C476.

REFER TO PLANS AND SPECIFICATIONS FOR MASONRY REINFORCEMENT REQUIREMENTS, INCLUDING HORIZONTAL JOINT REINFORCEMENT. DEFORMED REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.

MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS, f'm = 1500 psi.

ALUMINUM HANDRAIL NOTES

ALUMINUM HANDRAIL SHALL BE MODULAR CONSTRUCTION AND SHALL BE SIMILAR AND EQUAL TO PEAK TO PEAK RAILINGS, WHEAT RIDGE, COLORADO; GOLDEN RAILING, BROOMFIELD, COLORADO; OR APPROVED EQUAL. FABRICATED HANDRAIL WILL NOT BE PERMITTED.

SYMBOLS

(E) INDICATES EQUIPMENT PAD. PER DETAIL S-03-107 THIS SHEET. COORDINATE SIZE WITH EQUIPMENT REQUIREMENTS.

(H) INDICATES HOUSEKEEPING PAD. PER DETAIL S-03-108 THIS SHEET. COORDINATE SIZE WITH EQUIPMENT REQUIREMENTS.

STANDARD DETAILS SHOWN ON THESE DRAWINGS SHALL BE USED AT ALL APLICABLE LOCATIONS, UNLESS NOTED OTHERWISE ON DRAWINGS.

LAP SPLICE LENGTHS IN WALLS AND SLABS (INCHES)

BAR SIZE	2" COVER
3	18 (2)
4	24
5	30
6	36
7	51 (2)
8	59 (2)

(2)

NOTES:

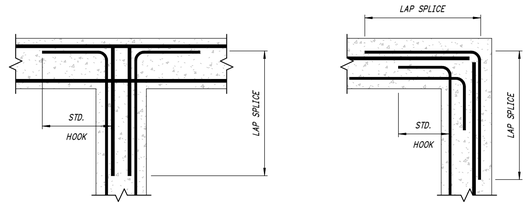
1. TABLE IS BASED ON ACI 318R-19 & f'c = 4500 PSI. BARS ARE UNCOATED.
2. MINIMUM BAR SPACING = 6" O.C.
3. LENGTHS FOR BEAMS AND COLUMNS SHALL BE AS SHOWN ON THE DRAWINGS.
4. LAP SPLICE LENGTHS SHALL BE INCREASED FOR LOWER CONCRETE COMPRESSIVE STRENGTH AS FOLLOWS:

f'c	MULTIPLIER
3000 PSI	1.22
3500 PSI	1.14
4000 PSI	1.06

(2)

LAP SPLICE LENGTHS

DETAIL S101 — N.T.S



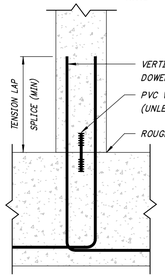
NOTES:

DENOTES TYPICAL WALL REINFORCEMENT

1. SPLICE BARS TO BE SAME SIZE AND SPACING AS LARGER OF BARS BEING SPLICED. SPLICE BARS SHALL BE LAPPED WITH TYPICAL WALL REINFORCEMENT.
2. EXTEND BAR HOOKED ENDS TO FAR FACE OF WALL.
3. REINFORCING STEEL LAYOUT FOR WALLS WITH SINGLE MAT OF REINFORCEMENT SIMILAR TO ABOVE PATTERN FOR EXTERIOR MAT OF REINFORCEMENT.

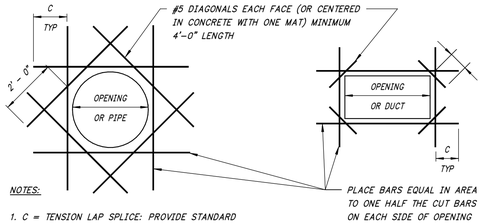
CORNER REINFORCEMENT PLANS

DETAIL S102 — N.T.S



WALL CONSTRUCTION JOINT AT SLAB

DETAIL S104 — N.T.S



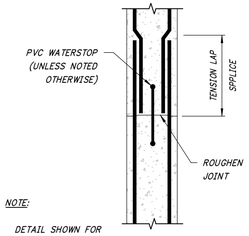
NOTES:

1. C = TENSION LAP SPLICE: PROVIDE STANDARD HOOK IF FULL DEVELOPMENT LENGTH IS NOT POSSIBLE.
2. REINFORCING STEEL IS TO BE CARRIED ACROSS ALL CONSTRUCTION JOINTS.
3. DETAIL IS TYPICAL FOR ALL OPENINGS GREATER THAN 10 INCHES IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE NOTED.
4. EXTRA BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.

PLACE BARS EQUAL IN AREA TO ONE HALF THE CUT BARS ON EACH SIDE OF OPENING UNLESS OTHERWISE DETAILED ON THE DRAWINGS

EXTRA REINFORCEMENT AT OPENINGS

DETAIL S103 — N.T.S

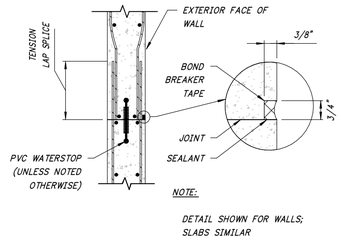


NOTE:

DETAIL SHOWN FOR WALLS; SLABS SIMILAR

CONSTRUCTION JOINT

DETAIL S105 — N.T.S

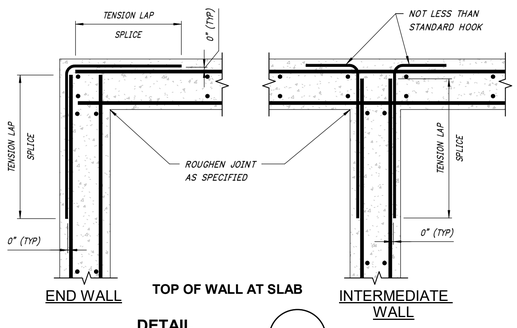


NOTE:

DETAIL SHOWN FOR WALLS; SLABS SIMILAR

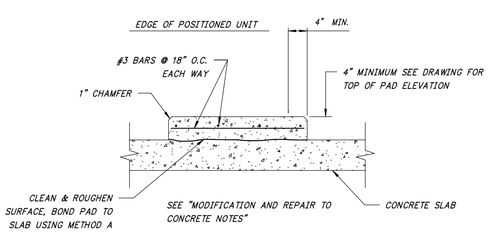
CONSTRUCTION JOINT AND SEALANT

DETAIL S106 — N.T.S



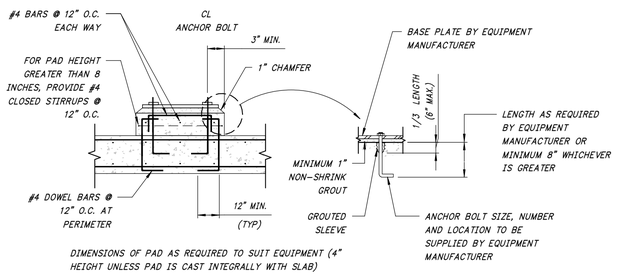
END WALL — TOP OF WALL AT SLAB — INTERMEDIATE WALL

DETAIL S107 — N.T.S



HOUSEKEEPING PAD

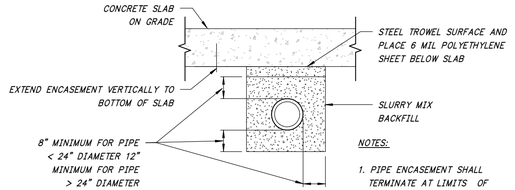
DETAIL S109 — N.T.S



DIMENSIONS OF PAD AS REQUIRED TO SUIT EQUIPMENT (4" HEIGHT UNLESS PAD IS CAST INTEGRALLY WITH SLAB)

EQUIPMENT PAD

DETAIL S108 — N.T.S



NOTES:

1. PIPE ENCASEMENT SHALL TERMINATE AT LIMITS OF STRUCTURAL FOUNDATON.

SLURRY MIX PIPE ENCASEMENT

DETAIL S110 — N.T.S

BID DRAWINGS
MARCH 21, 2025

1" ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 1	04/10/2025
2 REVISED PER ADDENDUM NO. 3	05/15/2025

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 15205 LARRY C. HADDOX 05/13/2025

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS
STRUCTURAL DETAILS I
FOR: BENTONVILLE WASTEWATER UTILITIES

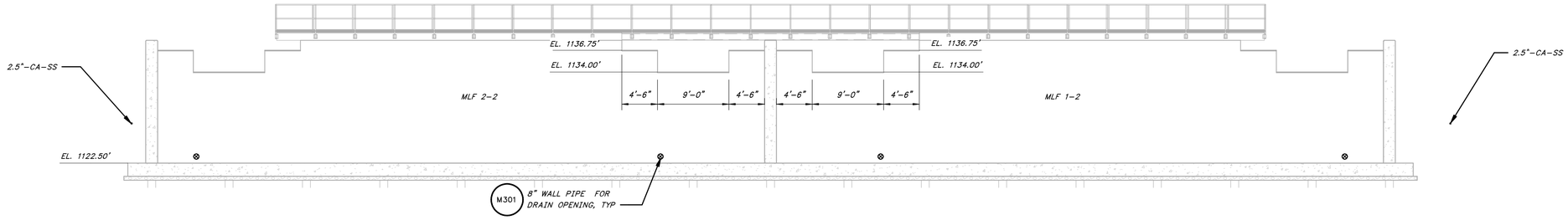
DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: ADF
HWEI NO.: 2021037
FILENAME: WWRF21037-ST

SHEET NO.
SZ-1

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/WWRF21037-ST.rvt 5/13/2025 1:41:35 PM / ADF / STRUCTURAL DETAILS I

KEYED NOTES:

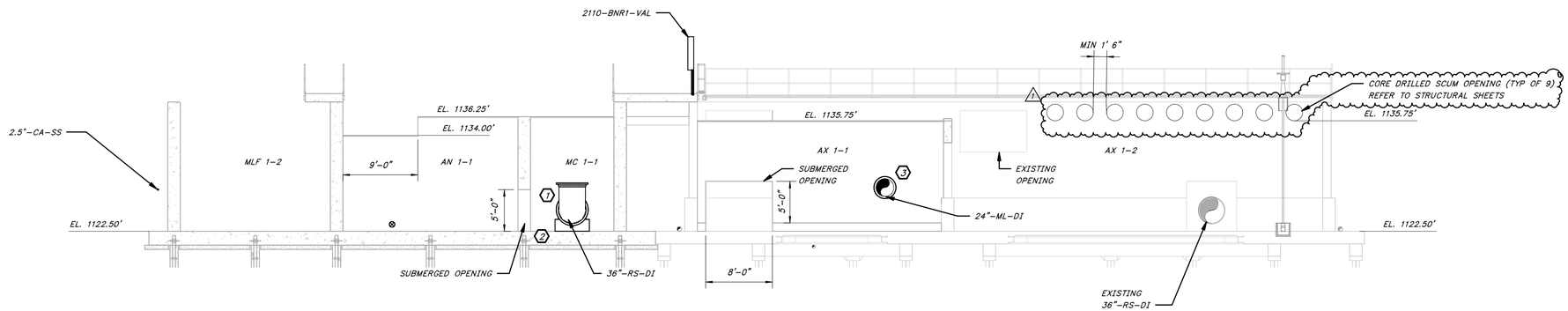
1. INSTALL 36" 90 DEGREE BEND
2. INSTALL PIPE SUPPORT. MAXIMUM SPACING 15-FEET. M203
3. INSTALL 24" F X PE WALL SLEEVE. M303



BNR BASINS

SECTION 1 / MB-1

1/8" = 1'-0"



BNR BASINS

SECTION 2 / MB-1

1/8" = 1'-0"

1"

ONE
AT FULL
IF NOT ONE
SCALE

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/013/2025

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THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED ON MARCH 21, 2025 BY AMANDA K. JOHNSON. A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ARKANSAS, E-22360.

HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

BNR BASIN SECTION

BENTONVILLE, ARKANSAS

DATE: FEBRUARY 2025
SCALE: 1/8" = 1'-0"
DESIGNED BY: BGM
DRAWN BY: MD
HWEI NO.: 2021037
FILENAME: M-BNR-BASIN

SHEET
MB-4

5/13/2025 12:48:37 PM / MD / BNR BASIN SECTION
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/M-BNR Basin.rvt

BACKFLOW PREVENTER SCHEDULE

UNIT NUMBER	LOCATION	MANUFACTURER	MODEL	SERVICE	BODY SIZE (IN)	MAXIMUM FLOW (GPM)	MAXIMUM PRESSURE DIFFERENTIAL (PSI)	NOTES
BFP-A01	INFLUENT STRUCTURE BUILDING	ZURN	975XL3	POTABLE WATER	1 1/4	33	14	1
BFP-A02	INFLUENT STRUCTURE BUILDING	ZURN	975XL3	POTABLE WATER	1 1/2	42	14	1
BFP-A03	INFLUENT STRUCTURE BUILDING	ZURN	975XL3	NON POTABLE WATER	1	12	12	1
BFP-J01	EFFLUENT PUMP STATION BUILDING	ZURN	975XL3	POTABLE WATER	1 1/4"	20	12	1
BFP-L01	ADMINISTRATION / LABORATORY BUILDING	ZURN	375 DA	POTABLE WATER	2 1/2	69	15	1
BFP-L02	ADMINISTRATION / LABORATORY BUILDING	ZURN	975XL3	NON POTABLE WATER	3/4"	8	12	1
BFP-M01	MAINTENANCE BUILDING	ZURN	375 DA	POTABLE WATER	2 1/2	62	15	1

PIPING ACCESSORIES SCHEDULE

UNIT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	NOTES
FCO-1	SMITH	4111 SERIES	HEAVY DUTY FLOOR CLEANOUT, SECURED ROUND ADJUSTABLE NICKEL BRONZE TOP.	---
FCO-2	SMITH	4240 SERIES	HEAVY DUTY FLOOR CLEANOUT WITH ADJUSTABLE TRACTOR COVER.	---
FD-1	SMITH	2141 SERIES	HEAVY DUTY CAST IRON FLOOR DRAIN, 12" DIAMETER TRACTOR GRATE.	---
FD-2	SMITH	2005-A SERIES	MEDIUM DUTY CAST IRON FLOOR DRAIN, ADJUSTABLE TOP, NICKEL BRONZE ROUND GRATE.	---
FD-3	SMITH	2141 SERIES	HEAVY DUTY CAST IRON FLOOR DRAIN, 12" DIAMETER TRACTOR GRATE WITH TRAP BARRIER.	---
FR-1	SMITH	3800 SERIES	MEDIUM DUTY CAST IRON FUNNEL RECEPTOR, WATERSTOP FLANGE, THREADED OR NO-HUB CONNECTION.	---
FR-2	SMITH	3510 SERIES	DUCO CAST IRON BODY AND FLASHING COLLAR WITH ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE AND FUNNEL ATTACHED TO THE GRATE.	---
FS-1	SMITH	3040 SERIES	SQUARE FLOOR SINK, CAST IRON BODY, WHITE ACID RESISTING PROCELAIN ENAMEL INTERIOR AND TOP, ANTI-SPLASH INTERIOR BOTTOM DOME STRAINER, NICKEL BRONZE FRAME AND FULL GRATE.	---
GCO-1	SMITH	4240 SERIES	HEAVY DUTY FLOOR CLEANOUT WITH ADJUSTABLE TRACTOR COVER.	---
MV-1	SYMMONS	MAXLINE 7-225-CK	THERMOSTATIC MIXING VALVE, 1/2" BODY, 0.5 GPM MINIMUM FLOW, 7.5 GPM FLOW AT 20 PSI MAXIMUM DIFFERENTIAL PRESSURE, INITIAL SETPOINT 110 F.	---
TD-1	ACO	POWER DRAIN/K-200 SERIES	EXTRA HEAVY DUTY TRENCH DRAIN, POLYMER CONCRETE, PRESLOPED, HEAVY DUTY CAST IRON GRATE, 4" BOTTOM OUTLET, S200K, SECTION LENGTH 36" 0". WITH LOAD CLASS F - 200,000 LB	---
TD-2	ACO	POWER DRAIN/K-200 SERIES	EXTRA HEAVY DUTY TRENCH DRAIN, POLYMER CONCRETE, PRESLOPED, HEAVY DUTY CAST IRON GRATE, 4" BOTTOM OUTLET, S200K, SECTION LENGTH 12' 0" WITH LOAD CLASS F - 200,000 LB	---
TD-3	ACO	POWER DRAIN/K-200 SERIES	EXTRA HEAVY DUTY TRENCH DRAIN, POLYMER CONCRETE, PRESLOPED, HEAVY DUTY CAST IRON GRATE, 4" BOTTOM OUTLET, S200K, SECTION LENGTH 50' 0" WITH LOAD CLASS F - 200,000 LB	---

PLUMBING EQUIPMENT SCHEDULE

UNIT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	APPROX WEIGHT (LBS)	NOTES
CP -L01	BELL & GOSSETT	NBF-22	IN-LINE HOT WATER CIRCULATING PUMP, 1 GPM, 7 FEET HEAD, 120 VOLT, 1 PHASE, 60 HZ.	---	---
CP-M01	BELL & GOSSETT	NBF-22	IN-LINE HOT WATER CIRCULATING PUMP, 1 GPM, 7 FEET HEAD, 120 VOLT, 1 PHASE, 60 HZ.	---	---
ET -L01	AMTROL THERM-X-TROL	ST-C SERIES	EXPANSION TANK, PIPELINE MOUNTED, 8.96 GALLON, PRECHARGE TO 55 PSIG.	---	---
ET-A01	AMTROL THERM-X-TROL	ST-C SERIES	EXPANSION TANK, PIPELINE MOUNTED, 14 GALLON, PRECHARGE TO 80 PSIG.	---	---
ET-M01	AMTROL THERM-X-TROL	ST-C SERIES	EXPANSION TANK, PIPELINE MOUNTED, 6.4 GALLON, PRECHARGE TO 55 PSIG.	---	---
EWH -L01	STATE	CSB SERIES	ELECTRIC WATER HEATER, COMMERCIAL GRADE, 119 GALLONS STORAGE, 277 GPH RECOVERY AT 100 F RISE, 54 KW, 480 VOLT, 3 PHASE, 60 HZ.	390	---
EWH-A01	STATE	CSB SERIES	ELECTRIC WATER HEATER, COMMERCIAL GRADE, 119 GALLONS STORAGE, 123 GPH RECOVERY AT 100 F RISE, 24 KW, 480 VOLT, 3 PHASE, 60 HZ.	390	---
EWH-A02	HUBBELL	ER10-2 SSA	ELECTRIC WATER HEATER, EXPLOSION RESISTANCE, 10 GALLONS OF STORAGE,STAINLESS STEEL VESSEL, 2 KW, 120 VOLT, 1 PHASE, 60 HZ.	---	1
EWH-M01	STATE	CSB SERIES	ELECTRIC WATER HEATER, COMMERCIAL GRADE, 50 GALLONS STORAGE, 123 GPH RECOVERY AT 100 F RISE, 24 KW, 480 VOLT, 3 PHASE, 60 HZ.	120	---
HR-1	HANNAY	3528-25-26	HOSE REEL WITH 1 1/2" SWIVEL WATER SUPPLY AND 100 FEET TYPE 1 HOSE.	---	---
HR-2	HANNAY	3024-25-26	HOSE REEL WITH 3/4" SWIVEL WATER SUPPLY AND 100 FEET TYPE 2 HOSE.	---	---
HR-3	REELCRAFT	SERIES 80000	ULTIMATE DUTY DUAL PEDESTAL HOSE REEL WITH 3/4" COMPRESSOR AIR SUPPLY AND 60 FEET TYPE 2 HOSE.	---	---
NT-L01	ORION	STYLE 9	NEUTRALIZATION TANK, 5 GALLON, 2" INLET AND OUTLET, 1 1/2" VENT CONNECTION.	---	---
OI-M01	HDPI/ SEDIMENT INTERCEPTORS	BIG-1150-O	HDPE OIL / SEDIMENT INTERCEPTORS, MULTI-STAGE BASIN TYPE, 300 GALLONS, 2 STAGE, 6" INLET AND OUTLET, 3" VENT., DEEP SEAL TRAP COVERED BY LOAD CLASS "C" DUCTILE IRONTOP INLET GRATES, SEDIMENT BUCKET (3/8" DIA HOLES, 1/2" APART) WITHIN ADJUSTABLE TOP ASSEMBLY SYSTEM, INTERNAL AIR RELIEF BY-PASS AND SAMPLE PORT ACCESS.	---	---

PLUMBING FIXTURE SCHEDULE

UNIT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	WATER (IN) HOT	WATER (IN) COLD	SANITARY (IN) WASTE	SANITARY (IN) VENT	APPROX WEIGHT (LBS)	NOTES
WC-1	AMERICAN STANDARD	BOWL: 2234.001 MADERNA VALVE: 6047.161	WATER CLOSET, FLOOR MOUNT, FLUSH VALVE, 1.6 GALLON/FLUSH MAX, C/W/ HEAVY-DUTY COMMERCIAL ELONGATED SEAT.	---	1"	4"	2"	---	1
WC-2	AMERICAN STANDARD	BOWL: 3461.001 MADERNA VALVE: 6047.161	WATER CLOSET, FLOOR MOUNT, FLUSH VALVE, 1.6 GALLON/FLUSH MAX, C/W/ HEAVY-DUTY COMMERCIAL ELONGATED SEAT.	---	1"	4"	2"	---	1
UR-1	AMERICAN STANDARD	CHINA: 6590.001 WASHBROOK VALVE: 6045.051	URINAL, WALL MOUNT, FLUSH VALVE, 0.5 GALLON/FLUSH MAX.	---	3/4"	2"	1 1/2"	---	1
L-1	AMERICAN STANDARD	LAV: 0476.028 AQUALYN FAUCET: 7358.003 RELIANT 3	LAVATORY, COUNTERTOP 20"x17", OVAL, 4" CENTER, WITH 0.5 GPM AERATED FAUCET AND GRID DRAIN.	1/2"	1/2"	1 1/2"	1 1/2"	---	---
LS	---	---	LAB SINK SEE LAB SPEC SECTION FOR DETAIL	---	1/2"	1 1/2"	1 1/2"	---	---
KS-1	SINK: ELKAY FAUCET: AMERICAN STANDARD	SINK: PSR3321 FAUCET: 6409.170 MONTERREY	KITCHEN SINK, 21"x33", DOUBLE BOWL, 7 1/2" DEEP, 20 GAUGE STAINLESS STEEL, THREE HOLE PUNCHED, LEVER HANDLES, SWIVEL FAUCET.	1/2"	1/2"	2"	1 1/2"	---	---
SS-1	SINK: ELKAY FAUCET: AMERICAN STANDARD	SINK: ELKAY WNSF8124 DRAIN: ELKAY LK25 RT FAUCET: LK940HA08L2S	SAMPLE SINK, 24"x24", FREE STANDING, 14" DEEP, 14 GAUGE STAINLESS STEEL, 2" DRAIN, 24" RIGHT & LEFT DRAIN BOARD, STAINLESS STEEL LEGS. 8" CENTERSET WALL MOUNT FAUCET WITH 8" HIGH ARC SPOUT 2" LEVER HANDLES 1/2" OFFSET INLETS + STOP.	1/2"	1/2"	2"	1 1/2"	---	---
MS-1	SINK: STERN-WILLIAMS FAUCET: AMERICAN STANDARD	SINK: HL-1810-BP3 FAUCET: 8354.112	MOP SINK, 32"x32", 12" DEEP, FLOOR MOUNTED, DIAGONAL FRONT, TWO SPLASH PANELS.	1/2"	1/2"	3"	2"	---	---
SH-1	FAUCET: SYMMONS	FAUCET: S-96-300-B30- V-X-T36	SHOWER VALVE, WALL/HAND SHOWER HEAD WITH VACUUM BREAKER, SLIDE BAR, AND ACCESSORIES.	---	---	---	---	---	---
CS	---	---	CUP SINK, SEE LAB SPEC SECTION FOR DETAILS.	---	1/2"	1 1/2"	1 1/2"	---	---
GD-1	IN-SINK-ERATOR	EVOLUTION ESSENTIAL	FOOD WASTE DISPOSER, 3/4 HP, 120 VOLT, 1 PHASE.	---	---	---	---	---	---
EWC-1	ELKAY	LZS8WSSP / EZH20	ELECTRIC WATER COOLER, WALL MOUNTED, 8 GPH, 120 VOLT, 1 PHASE, 60 HZ, WATER FOUNTAIN WITH BUILT IN FILTER. BOTTLE FILLING STATION.	---	1/2"	1 1/2"	1 1/2"	---	---
ES/EEW-1	HAWS	8300-8309	EMERGENCY SHOWER/EYE/FACE WASH COMBINATION, PEDESTAL MOUNTED, 1 1/4" IPS SUPPLY.	---	1 1/4"	---	---	---	2,3
ES/EEW-2	HAWS	8336	EMERGENCY SHOWER/EYE WASH COMBINATION, PEDESTAL MOUNTED, CORROSION RESISTANT, 1 1/4" IPS SUPPLY, 120 VOLT.	---	1 1/4"	---	---	---	2,3
ES-1	HAWS	8111FP	EMERGENCY SHOWER, WALL MOUNTED, FROST-PROOF, REMOTE ACTUATED BALL VALVE, 1" IPS SUPPLY.	---	1 1/4"	---	---	---	2,4
EEW-1	HAWS	7433FP	EMERGENCY EYE WASH, WALL MOUNTED, FROST-PROOF, REMOTE ACTUATED BALL VALVE, 1/2" IPS SUPPLY.	---	1 1/4"	---	---	---	2,4
EEW-2	HAWS	7361-7461	EMERGENCY EYE/FACE WASH, PEDESTAL MOUNTED, DUST COVER, 1/2" IPS SUPPLY.	---	---	---	---	---	2,3

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

SCHEDULE NOTES

BACKFLOW PREVENTER SCHEDULE:
NOTES:
1. PROVIDE AIR GAP FITTINGS.

PIPING ACCESSORIES SCHEDULE:
NONE

PLUMBING EQUIPMENT SCHEDULE:
NOTES:
1. WATER HEATER SHALL BE EXPLOSION PROOF: CLASS 1, DIVISION 1, GROUPS C&D.

PLUMBING FIXTURE SCHEDULE:
NOTES:
1. FIXTURE AND INSTALLATION SHALL BE ADA COMPLIANT.
2. TEMPERED WATER SUPPLY.
3. LOCAL AND REMOTE ALARM SYSTEM.
4. COMMON FLOW SWITCH SERVES BOTH EEW-1 AND ES-1.

1"
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 1	04/10/2025
2 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING SCHEDULES

CITY OF BENTONVILLE, ARKANSAS

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: SAM
DRAWN BY: YBM
HWEI NO.: 2021037
FILENAME: H-GENERAL

SHEET NO.
H-5

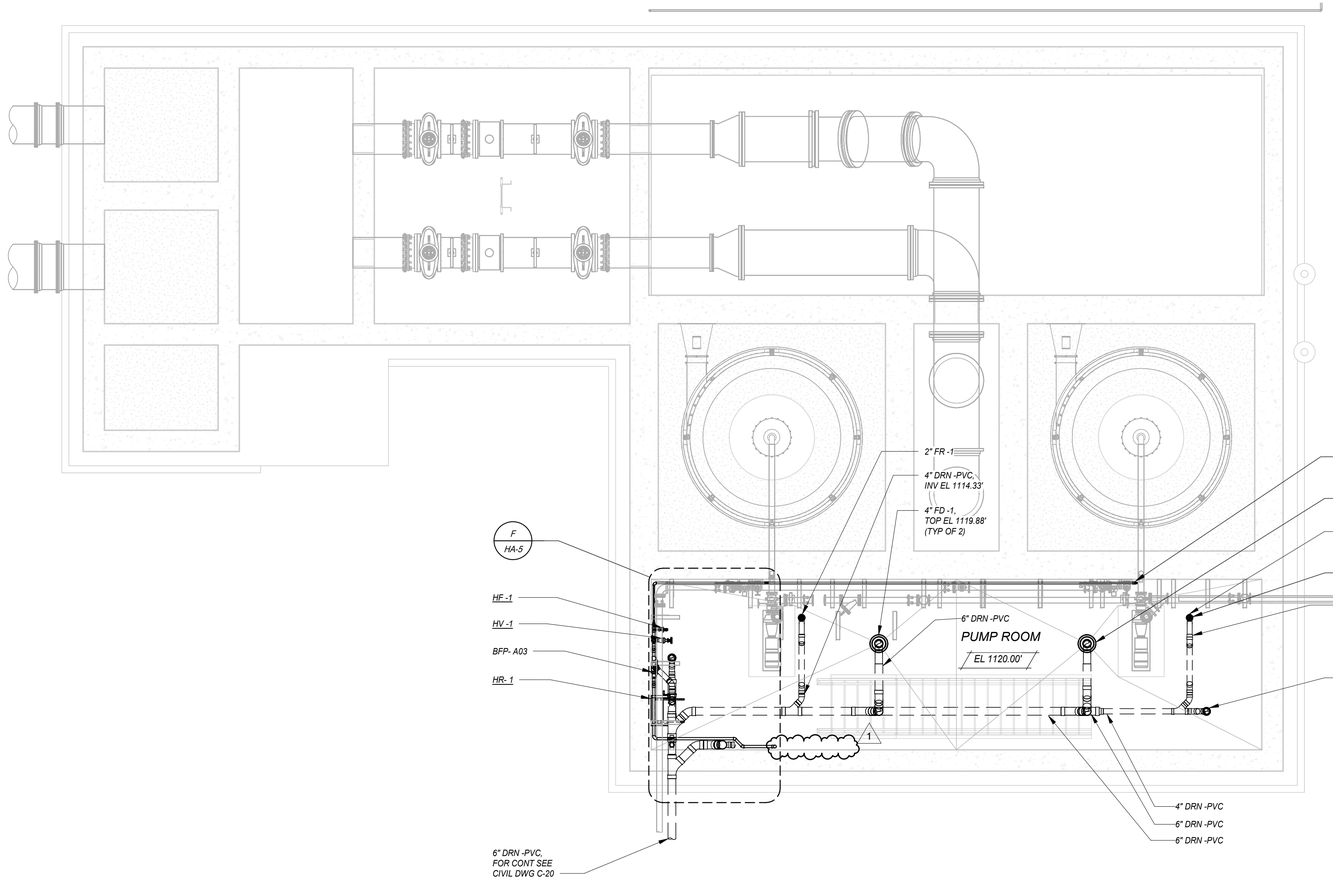
5/9/2025 11:07:14 PM / YBM / PLUMBING
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-GENERAL.rvt

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

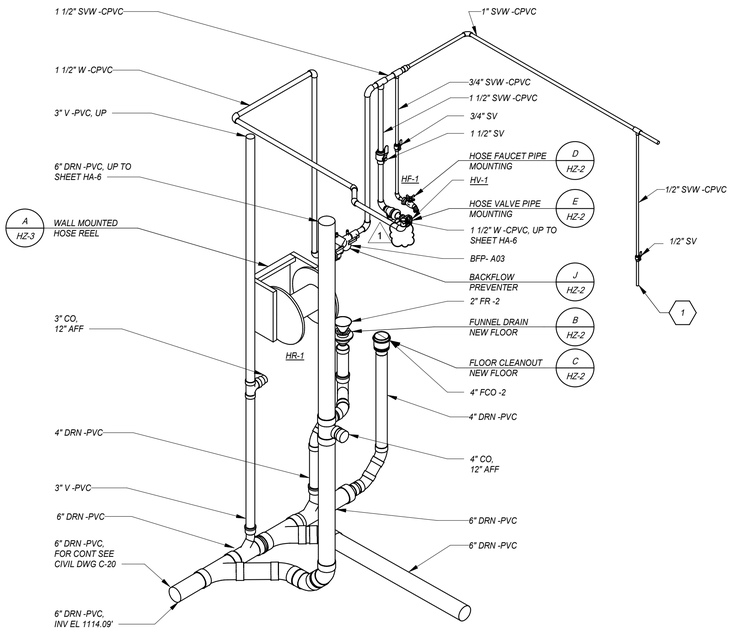
SHEET KEYNOTES

1. 1/2" SVW FOR SEAL WATER TO GRIT PUMPS, SV IN DROP.



INFLUENT STRUCTURE LOWER LEVEL

DETAIL E
3/16" = 1'-0"



DETAIL - F

DETAIL F
N.T.S.

6' 4' 2' 0' 5' 10'
3/16" = 1'-0"

1"
ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
INFLUENT STRUCTURE LOWER LEVEL PLAN

BENTONVILLE, ARKANSAS

DATE:	MARCH 2025
SCALE:	AS SHOWN
DESIGNED BY:	SAM
DRAWN BY:	YBM
HWEI NO.:	2021037
FILENAME:	H-HEADWOKS

SHEET NO.
HA-5

5/10/2025 12:27:13 AM / YBM / PLUMBING

Autodesk Docs://#10144 - Bentonville Water Resource Recovery Facility Improvements/H-HEADWORKS BLDG-PR.rvt

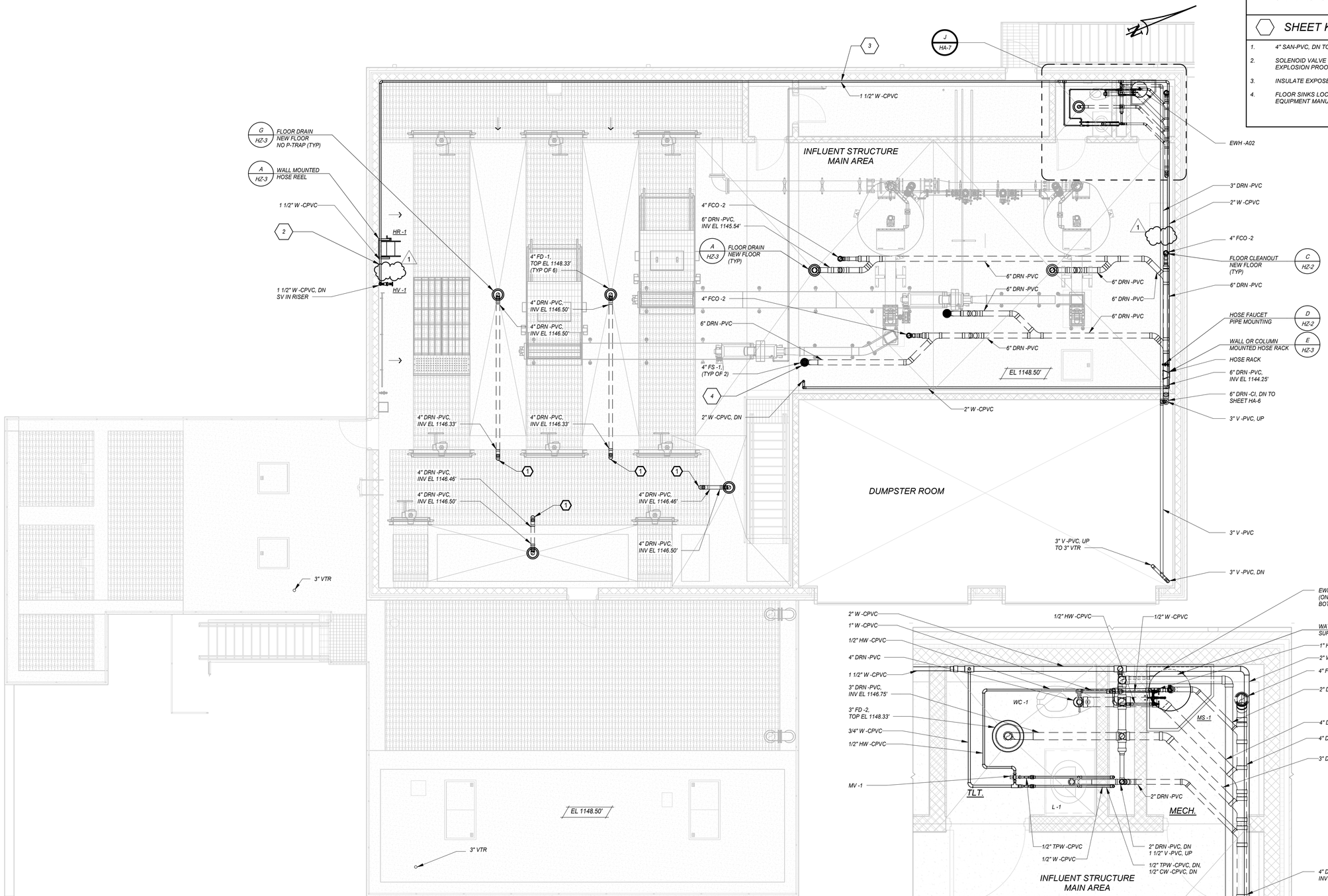
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-HEADWORKS BLDG-PR.rvt
5/10/2025 12:09:55 AM / YBM / PLUMBING

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

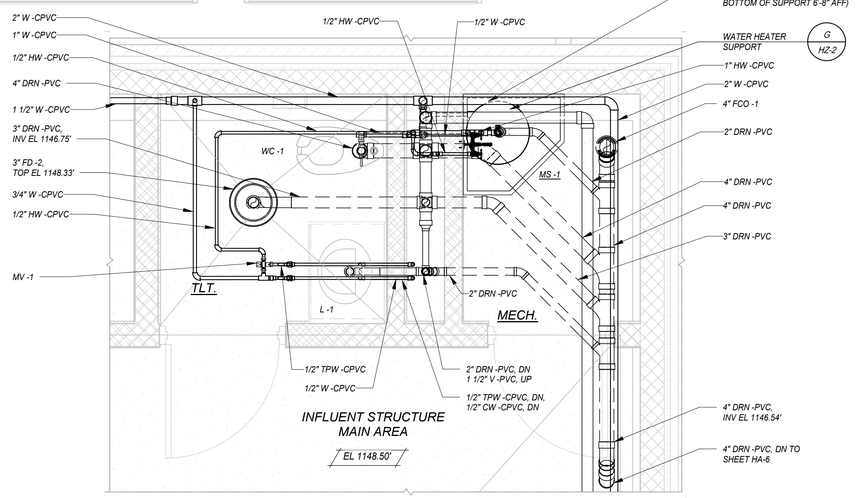
SHEET KEYNOTES

1. 4" SAN-PVC, DN TO CHANNEL BELOW.
2. SOLENOID VALVE OF ELECTRONIC TRAP PRIMER SHALL BE EXPLOSION PROOF: CLASS 1, DIVISION 2, GROUPS C&D.
3. INSULATE EXPOSED LINE.
4. FLOOR SINKS LOCATION SHALL BE COORDINATED WITH THE EQUIPMENT MANUFACTURER.



INFLUENT STRUCTURE UPPER LEVEL

DETAIL I — 3/16" = 1'-0"



DETAIL - J

DETAIL J — 1/2" = 1'-0"

1/2" = 1'-0"

3/16" = 1'-0"

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
INFLUENT STRUCTURE UPPER LEVEL PLAN
BENTONVILLE, ARKANSAS

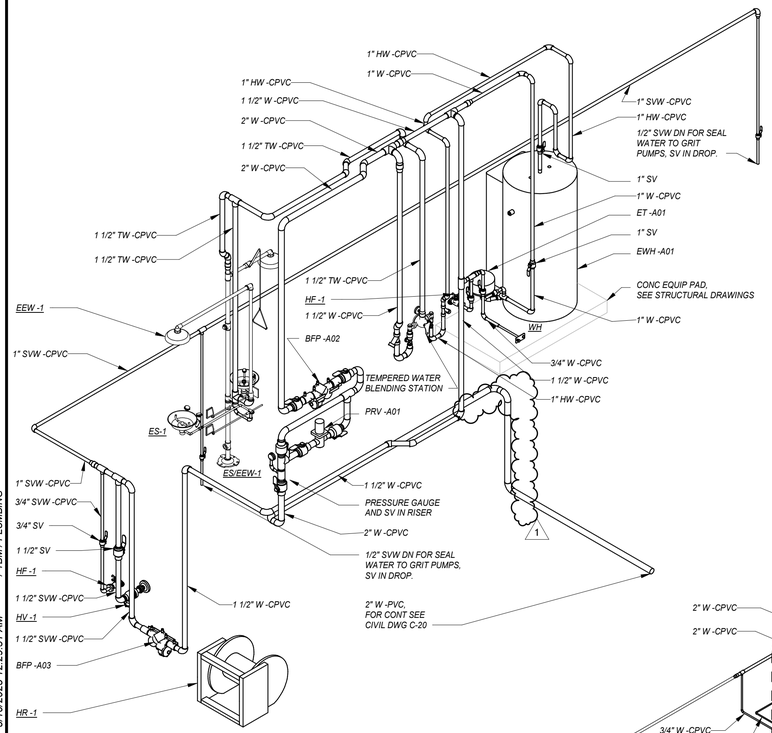
DATE:	MARCH 2025
SCALE:	AS SHOWN
DESIGNED BY:	SAM
DRAWN BY:	YBM
HWEI NO.:	2021037
FILENAME:	H-HEADWOKS

SHEET NO. **HA-7**

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-HEADWORKS BLDG-PR.rvt
5/10/2025 12:29:31 AM
/ YBM / PLUMBING

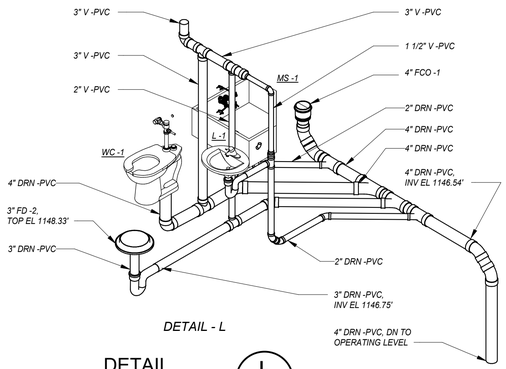
GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.



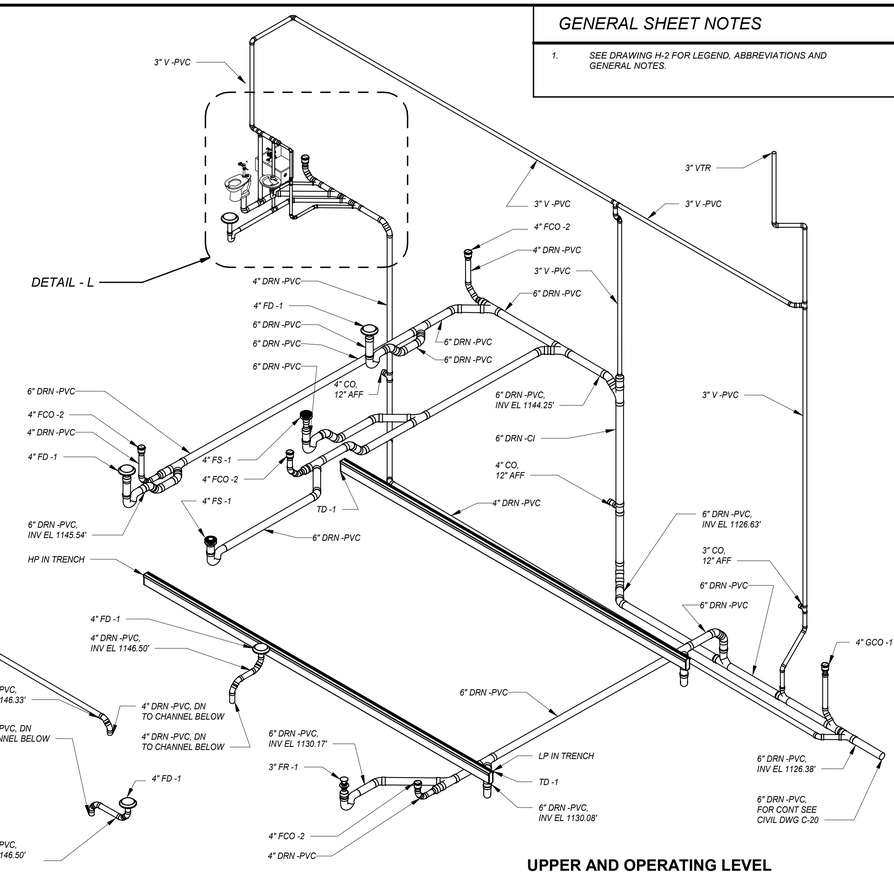
OPERATING LEVEL WATER SUPPLY ISOMETRIC

N.T.S.



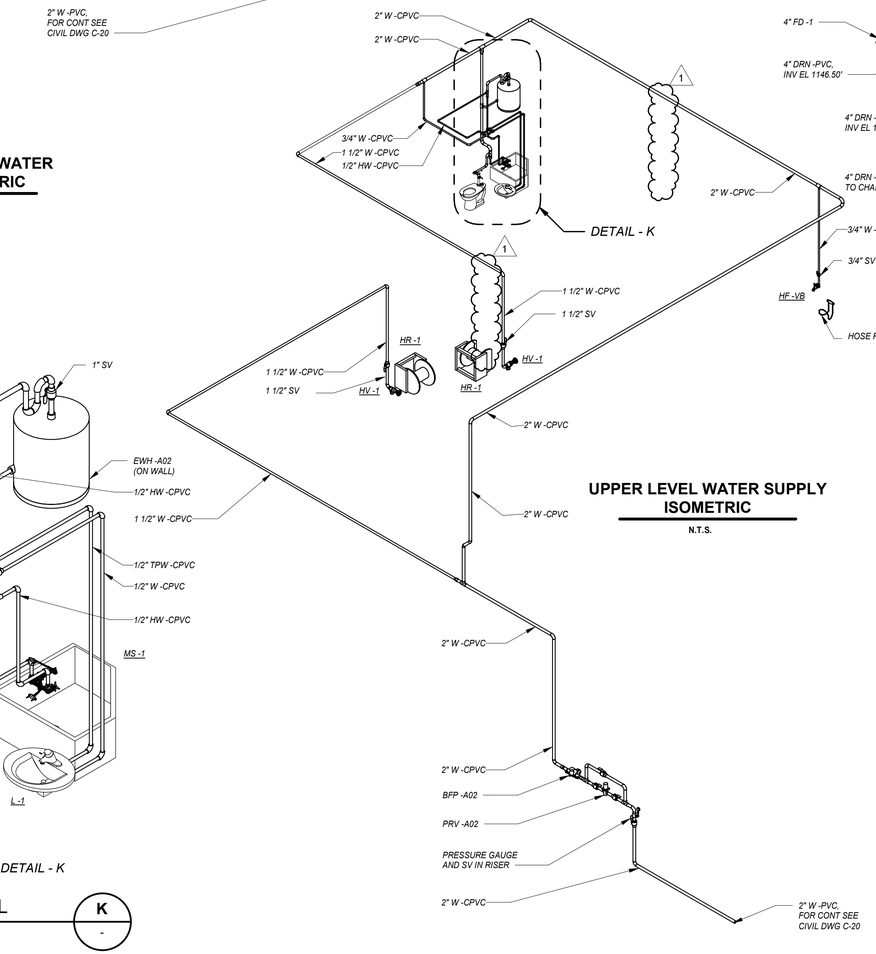
DETAIL - L

DETAIL L
N.T.S.



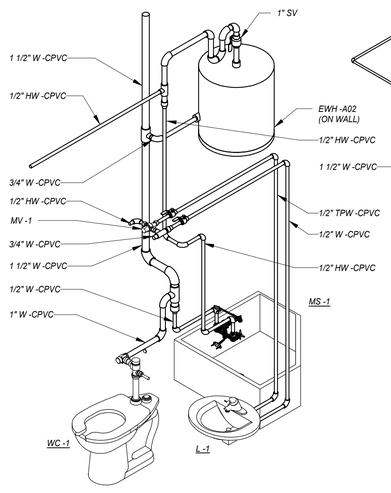
UPPER AND OPERATING LEVEL SANITARY ISOMETRIC

N.T.S.



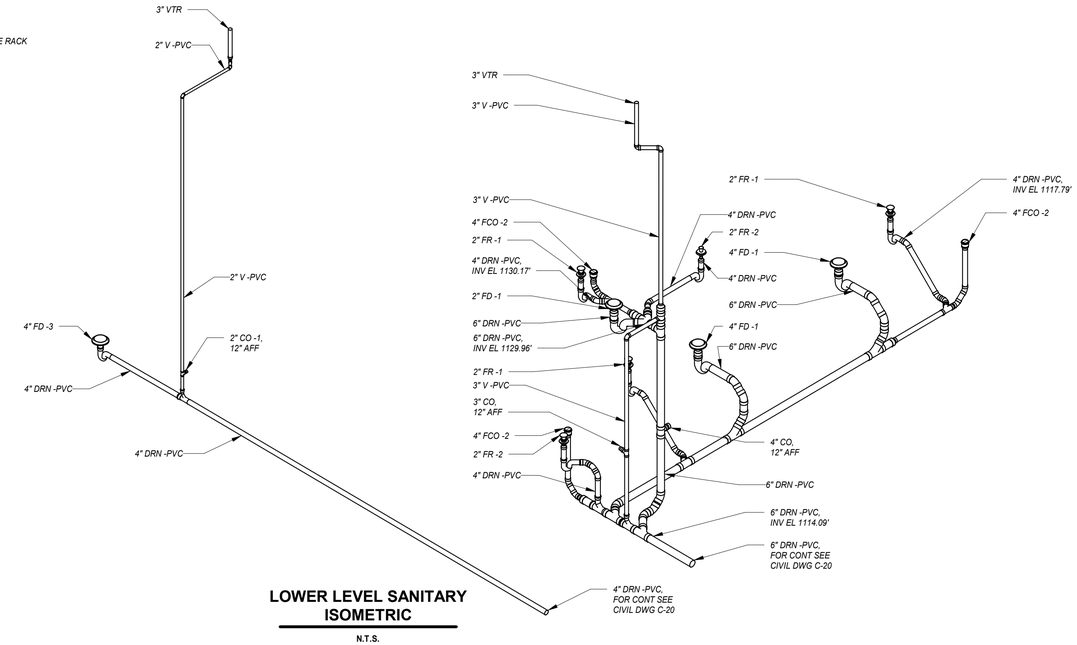
UPPER LEVEL WATER SUPPLY ISOMETRIC

N.T.S.



DETAIL - K

DETAIL K
N.T.S.



LOWER LEVEL SANITARY ISOMETRIC

N.T.S.

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
INFLUENT STRUCTURE ISOMETRICS
BENTONVILLE, ARKANSAS

DATE:	MARCH 2025
SCALE:	AS SHOWN
DESIGNED BY:	SAM
DRAWN BY:	YBM
HWEI NO.:	2021037
FILENAME:	H-HEADWOKS

SHEET NO.
HA-8

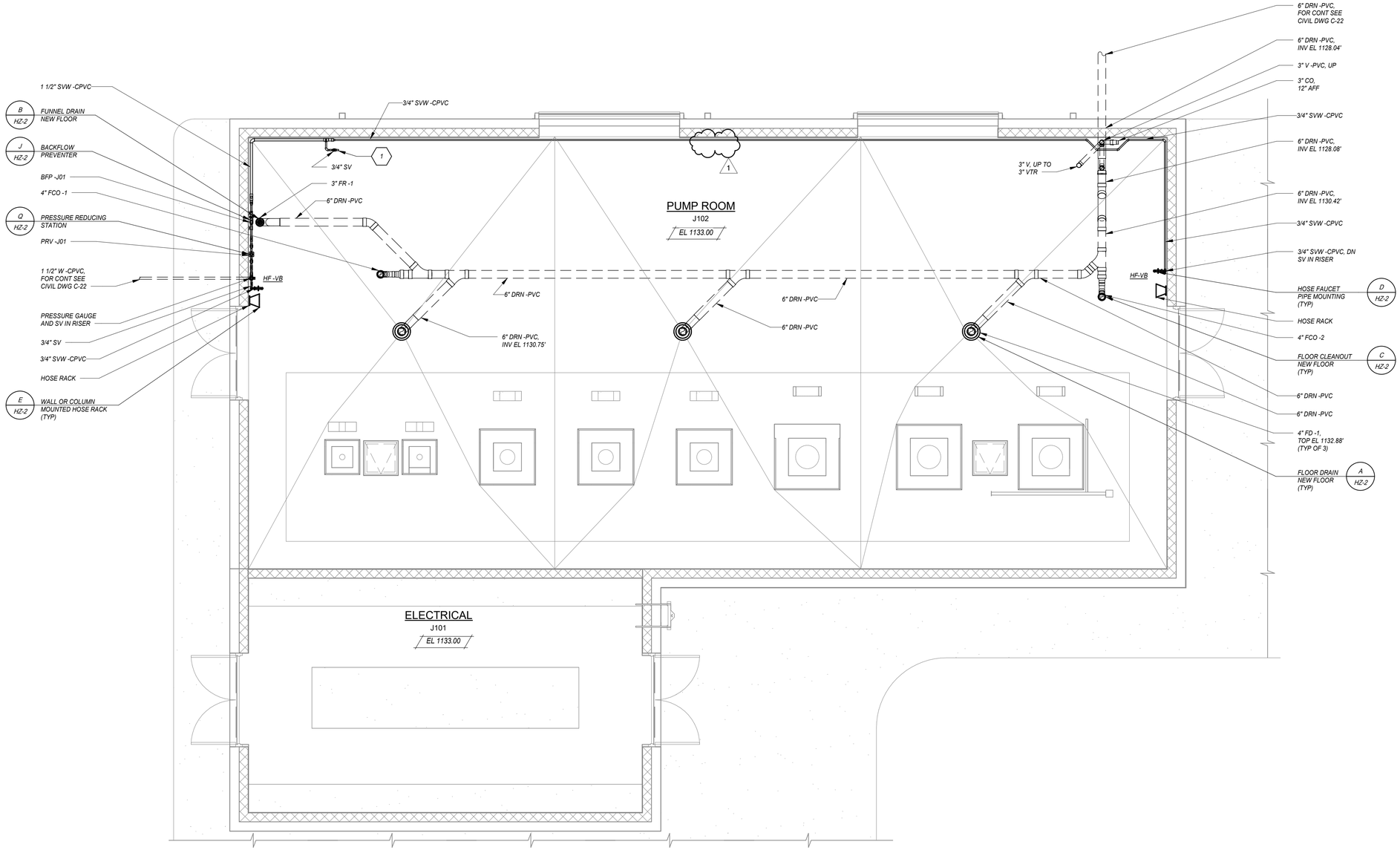
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-ELEC BLDG-PR.rvt
5/9/2025 10:48:23 PM
/ YBM / PLUMBING

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. 3/4" SVW DN FOR SEAL WATER.



EFFLUENT PUMP STATION

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

4' 2' 0' 4' 8'
1/4" = 1'-0"

ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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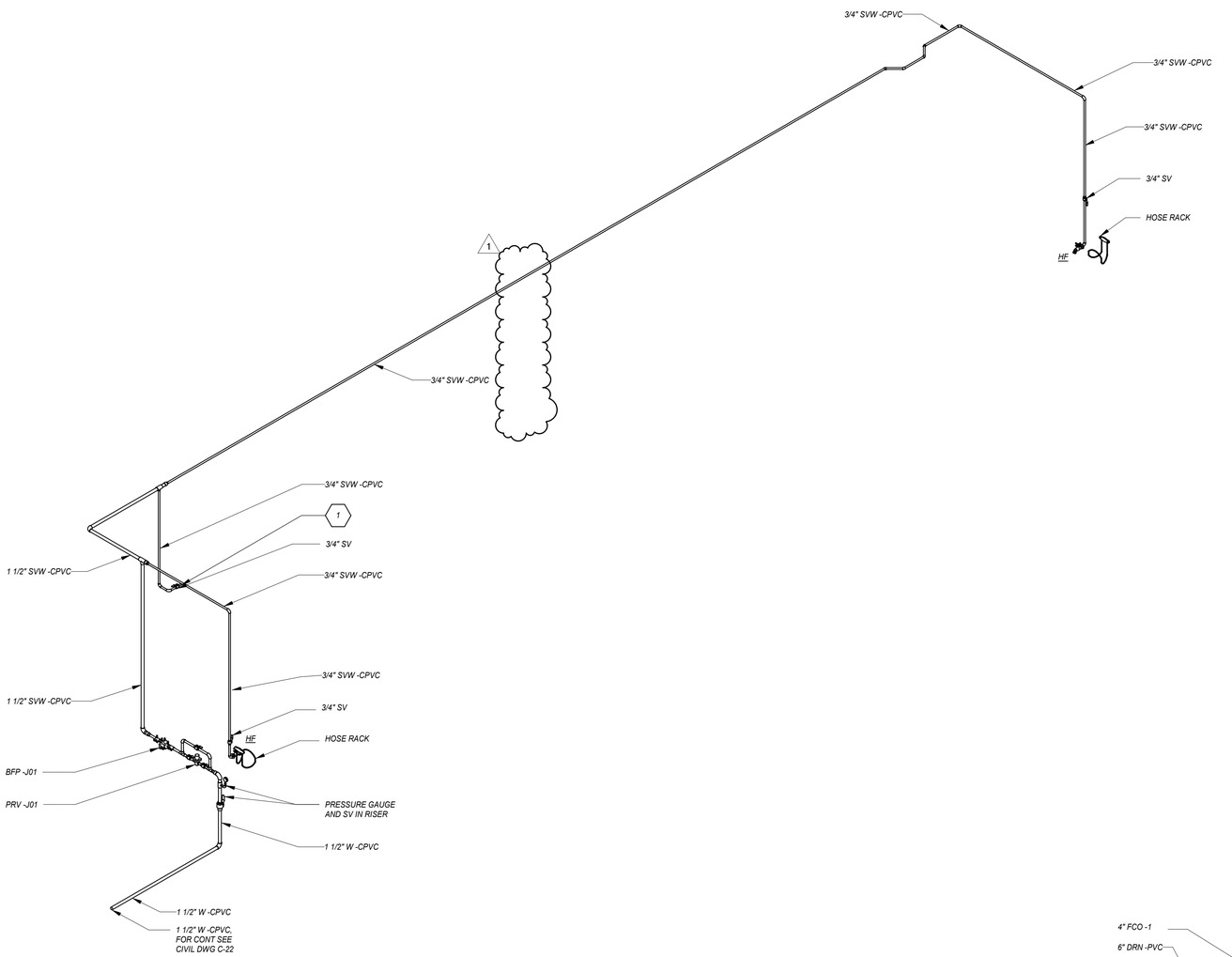
CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
EFFLUENT PUMP STATION
FLOOR PLAN
CITY OF BENTONVILLE, ARKANSAS

DATE:	FEBRUARY 2025
SCALE:	1/4" = 1'-0"
DESIGNED BY:	SAM
DRAWN BY:	YBM
HWEI NO.:	2021037
FILENAME:	H-ELEC

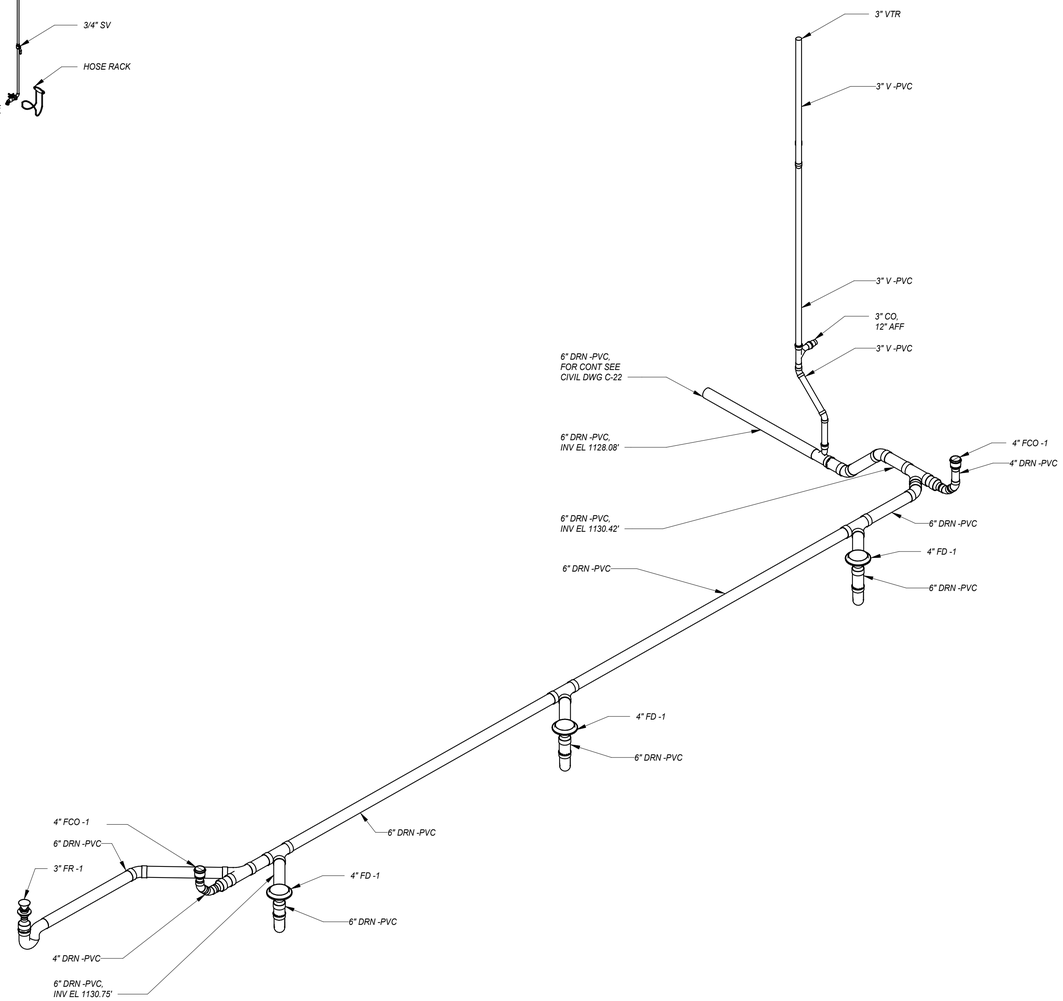
SHEET NO.
HJ-2

5/9/2025 10:49:04 PM / YBM / PLUMBING
Autodesk Docs://#10144 - Bentonville Water Resource Recovery Facility Improvements/H-ELEC BLDG-PR.rvt



WATER SUPPLY RISER DIAGRAM

N.T.S.



SANITARY RISER DIAGRAM

N.T.S.

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. 3/4" SVW DN FOR SEAL WATER STATION.

1" ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS-WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
EFFLUENT PUMP STATION
ISOMETRICS

CITY OF BENTONVILLE, ARKANSAS

DATE:	FEBRUARY 2025
SCALE:	AS SHOWN
DESIGNED BY:	SAM
DRAWN BY:	YBM
HWEI NO.:	2021037
FILENAME:	H-ELEC

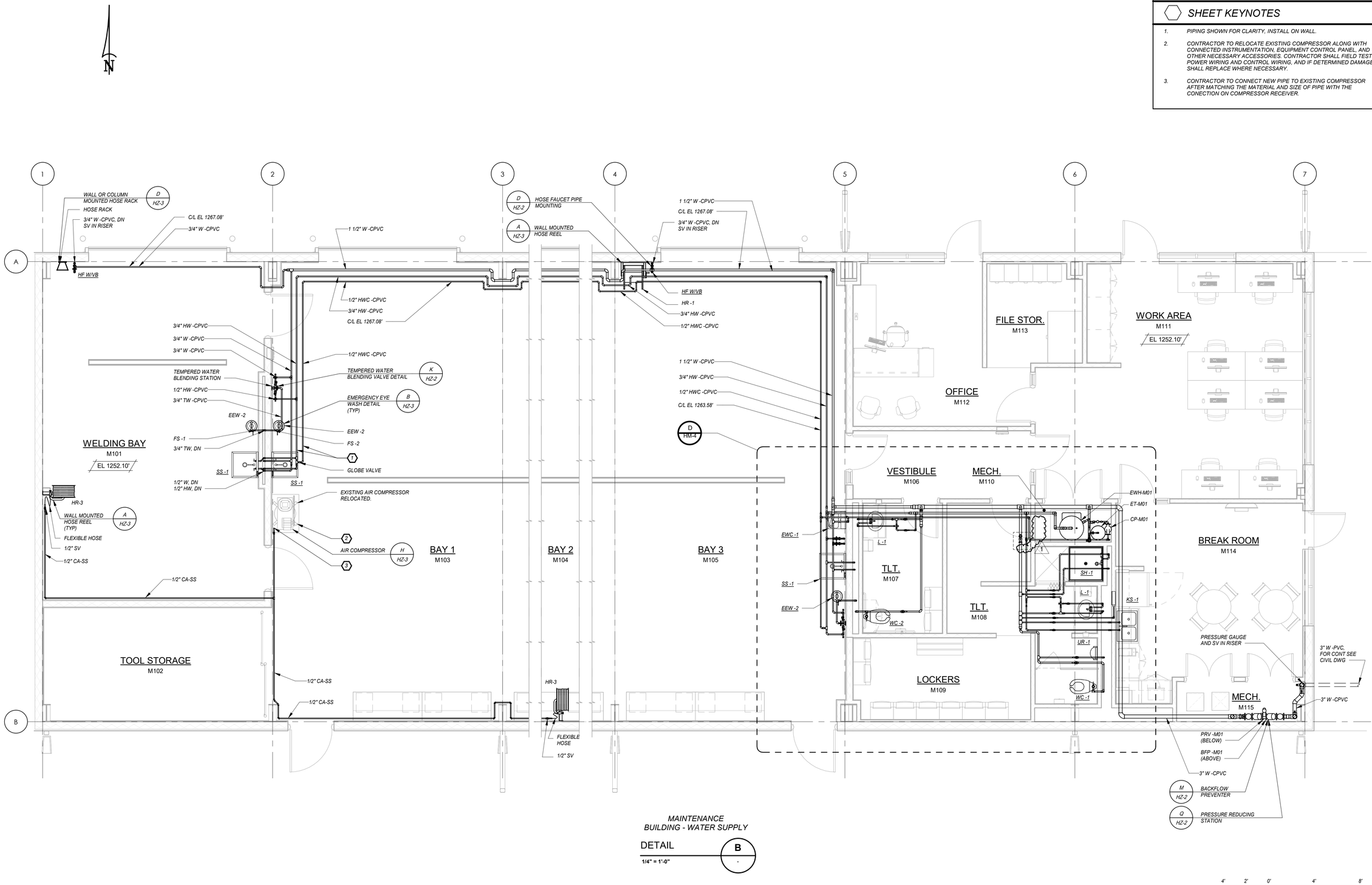
SHEET NO.
HJ-3

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. PIPING SHOWN FOR CLARITY, INSTALL ON WALL.
2. CONTRACTOR TO RELOCATE EXISTING COMPRESSOR ALONG WITH CONNECTED INSTRUMENTATION, EQUIPMENT CONTROL PANEL, AND OTHER NECESSARY ACCESSORIES. CONTRACTOR SHALL FIELD TEST POWER WIRING AND CONTROL WIRING, AND IF DETERMINED DAMAGED SHALL REPLACE WHERE NECESSARY.
3. CONTRACTOR TO CONNECT NEW PIPE TO EXISTING COMPRESSOR AFTER MATCHING THE MATERIAL AND SIZE OF PIPE WITH THE CONECTION ON COMPRESSOR RECEIVER.



MAINTENANCE BUILDING - WATER SUPPLY

DETAIL B — 1/4" = 1'-0"

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS-WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING
MAINTENANCE BUILDING
WATER SUPPLY FLOOR PLAN
CITY OF BENTONVILLE, ARKANSAS

DATE:	MARCH 2025
SCALE:	1/4" = 1'-0"
DESIGNED BY:	SAM
DRAWN BY:	AJP
HWEI NO.:	2021037
FILENAME:	H-MAIN

SHEET NO. **HM-2**

5/10/2025 12:35:49 AM / AJP / PLUMBING

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-NEW MAINTENANCE BLDG.rvt

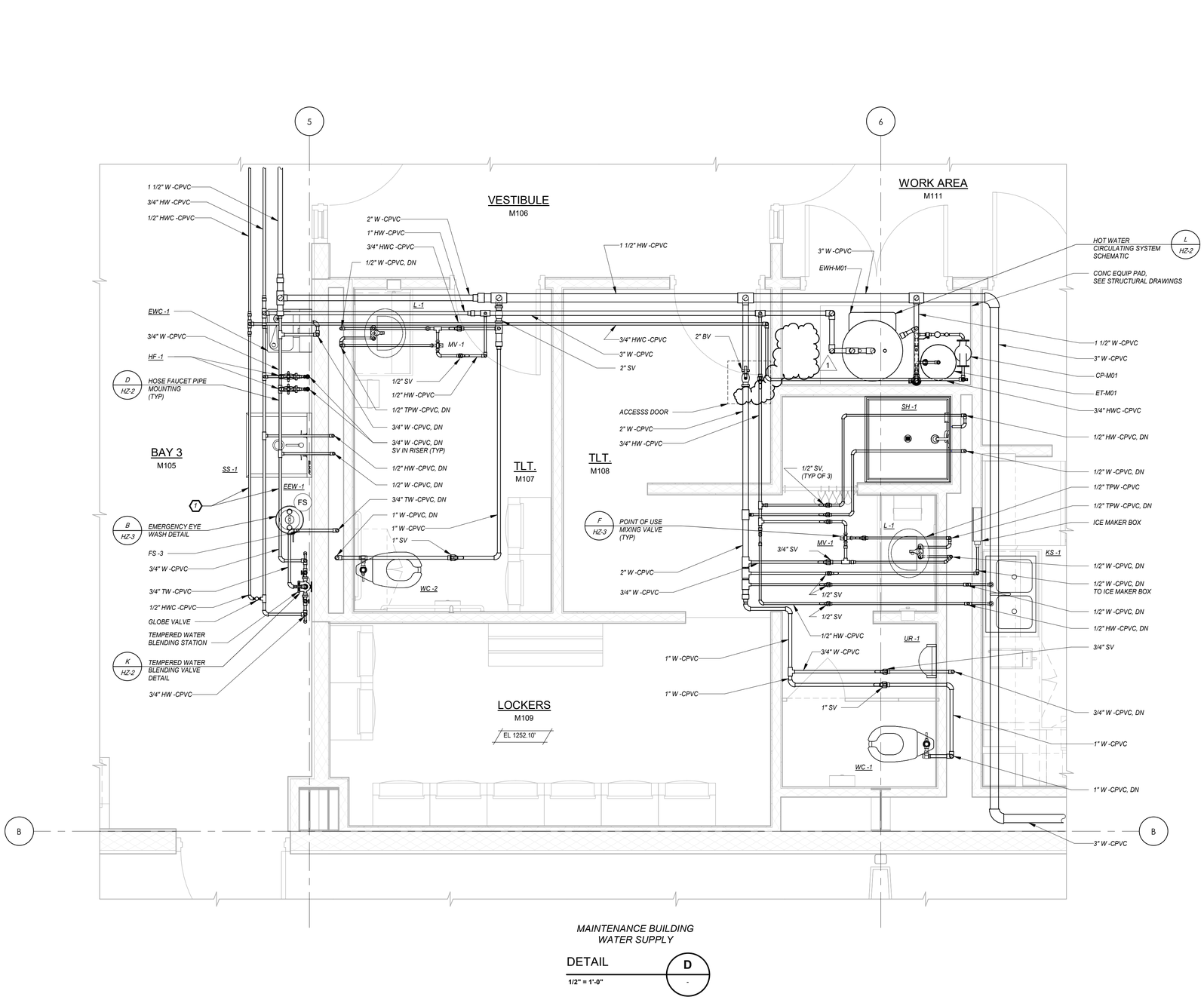
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-NEW MAINTENANCE BLDG.rvt
5/9/2025 8:21:06 PM / AJP / PLUMBING

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. PIPING SHOWN FOR CLARITY, INSTALL ON WALL.



MAINTENANCE BUILDING
WATER SUPPLY

DETAIL D
1/2" = 1'-0"

1/2" = 1'-0"

ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED ON MARCH 21, 2025 BY MICHELE FRANCOM ROTH, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ARKANSAS, E-17959

HAWKINS-WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

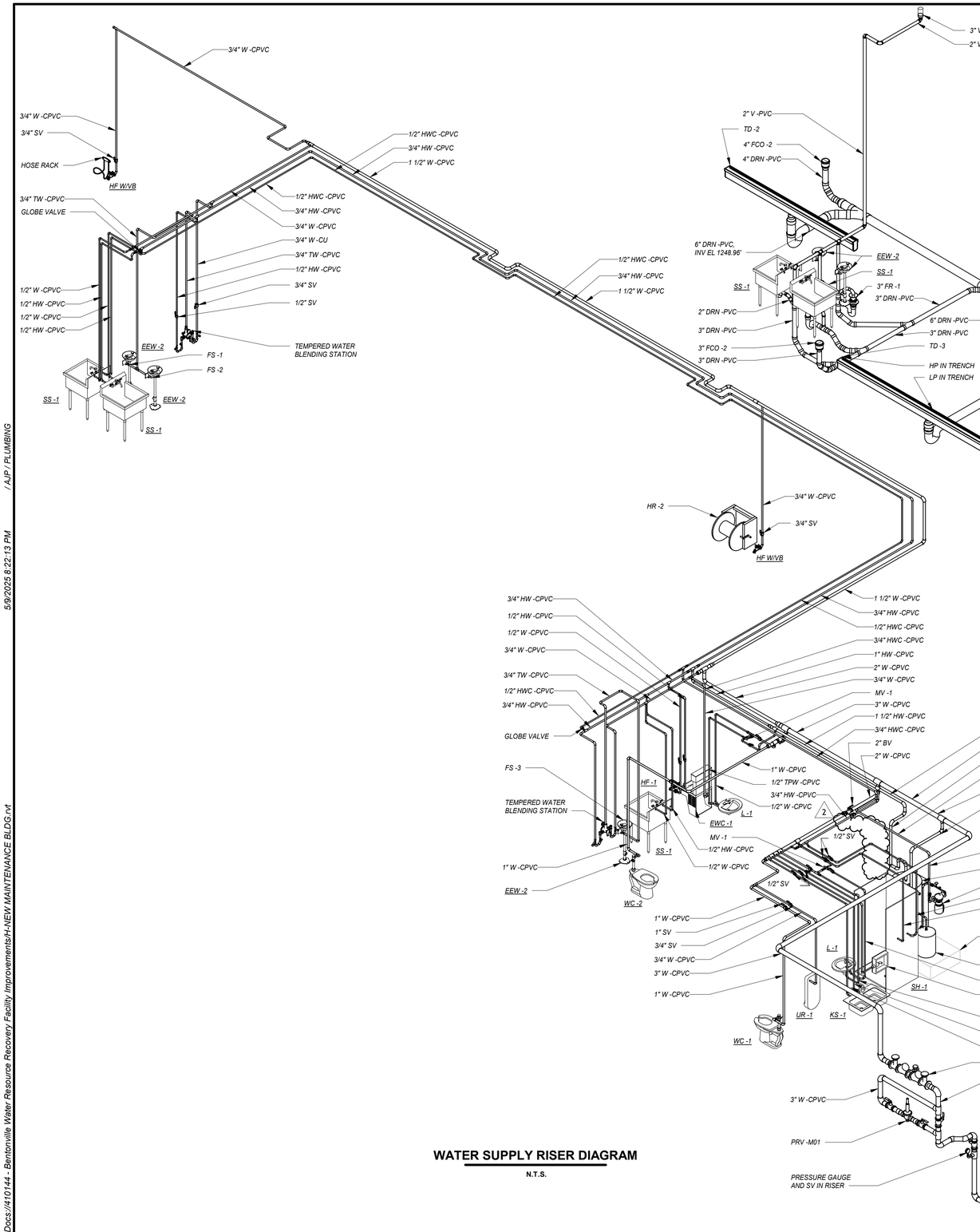
PLUMBING
MAINTENANCE BUILDING
WATER SUPPLY ENLARGED PLAN
CITY OF BENTONVILLE, ARKANSAS

DATE:	MARCH 2025
SCALE:	1/2" = 1'-0"
DESIGNED BY:	SAM
DRAWN BY:	AJP
HWEI NO.:	2021037
FILENAME:	H-MAIN

SHEET NO.
HM-4

GENERAL SHEET NOTES

1. SEE DRAWING H-2 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.



WATER SUPPLY RISER DIAGRAM

N.T.S.

SANITARY RISER DIAGRAM

N.T.S.

1"

ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 1	04/10/2025
2 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

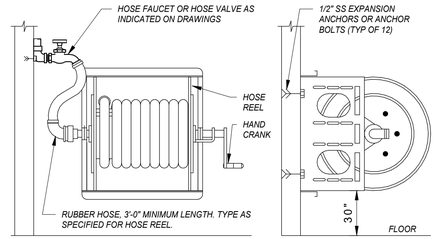
PLUMBING
MAINTENANCE BUILDING
ISOMETRICS

CITY OF BENTONVILLE, ARKANSAS

DATE:	MARCH 2025
SCALE:	AS SHOWN
DESIGNED BY:	SAM
DRAWN BY:	AJP
HWEI NO.:	2021037
FILENAME:	H-MAIN

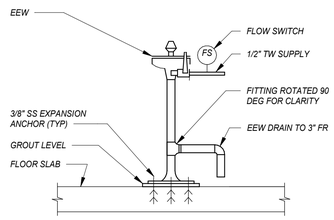
SHEET NO.
HM-6

5/9/2025 8:22:13 PM / AJP / PLUMBING
Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-NEW MAINTENANCE BLDG.rvt



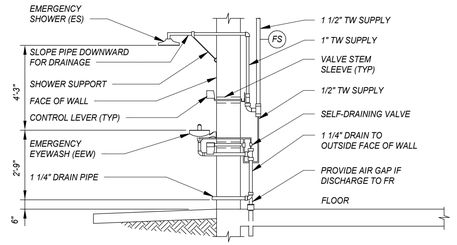
NOTE:
THE EXACT ORIENTATION OF WATER SUPPLY PIPE AND HOSE VALVE SHOULD BE AS REQUIRED TO SUIT THE SPECIFIC INSTALLATION.

WALL MOUNTED HOSE REEL — A
N.T.S.



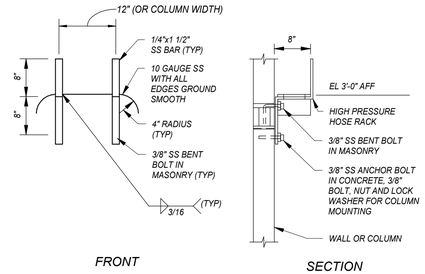
EMERGENCY EYE WASH DETAIL — B
N.T.S.

1

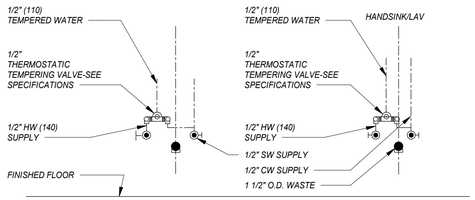


NOTES:
1. ES CONTROL LEVER SHALL BE LOCATED 1'-0" TO THE RIGHT OF ES CENTERLINE, MAX OF 5'-6" ABOVE GRADE. EEW CONTROL LEVER AND WATER SUPPLY SUPPLY LINE SHALL BE LOCATED 4 3/4" TO THE RIGHT OF EEW CENTERLINE. EEW CONTROL LEVER CONTROL LEVER SHALL BE LOCATED 5 5/8" BELOW WATER SUPPLY LINE. SUPPLY PIPING SHALL NOT INTERFERE WITH CONTROL LEVER OPERATION.
2. ANNULAR SPACE IN VALVE STEM SLEEVES SHALL BE LOOSELY PACKED WITH OAKUM TO REDUCE AIR INFILTRATION, BUT SHALL NOT HINDER VALVE OPERATION.

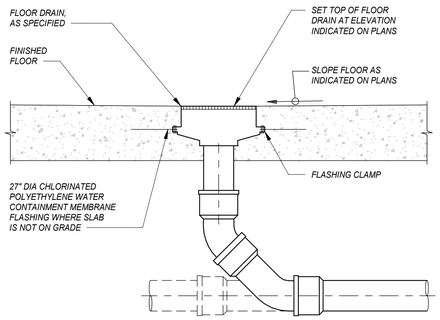
OUTDOOR EMERGENCY SHOWER AND EYE WASH — D
N.T.S.



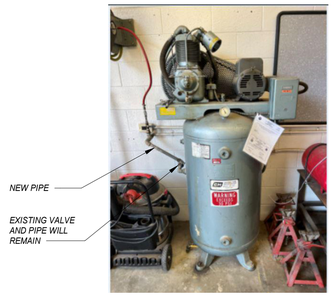
WALL OR COLUMN MOUNTED HOSE RACK — E
N.T.S.



POINT OF USE MIXING VALVE — F
N.T.S.



FLOOR DRAIN - NEW FLOOR NO P-TRAP — G
N.T.S.



AIR COMPRESSOR — H
N.T.S.

ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

CITY OF BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

PLUMBING DETAILS

CITY OF BENTONVILLE, ARKANSAS

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: SAM
DRAWN BY: YBM
HWEI NO.: 2021037
FILENAME: H-GENERAL

SHEET NO.
HZ-3

5/10/2025 12:35:00 AM / YBM / PLUMBING

Autodesk Docs://410144 - Bentonville Water Resource Recovery Facility Improvements/H-GENERAL.rvt

60 30 0 60

SCALE IN FEET

COORDINATION RESPONSIBILITIES:

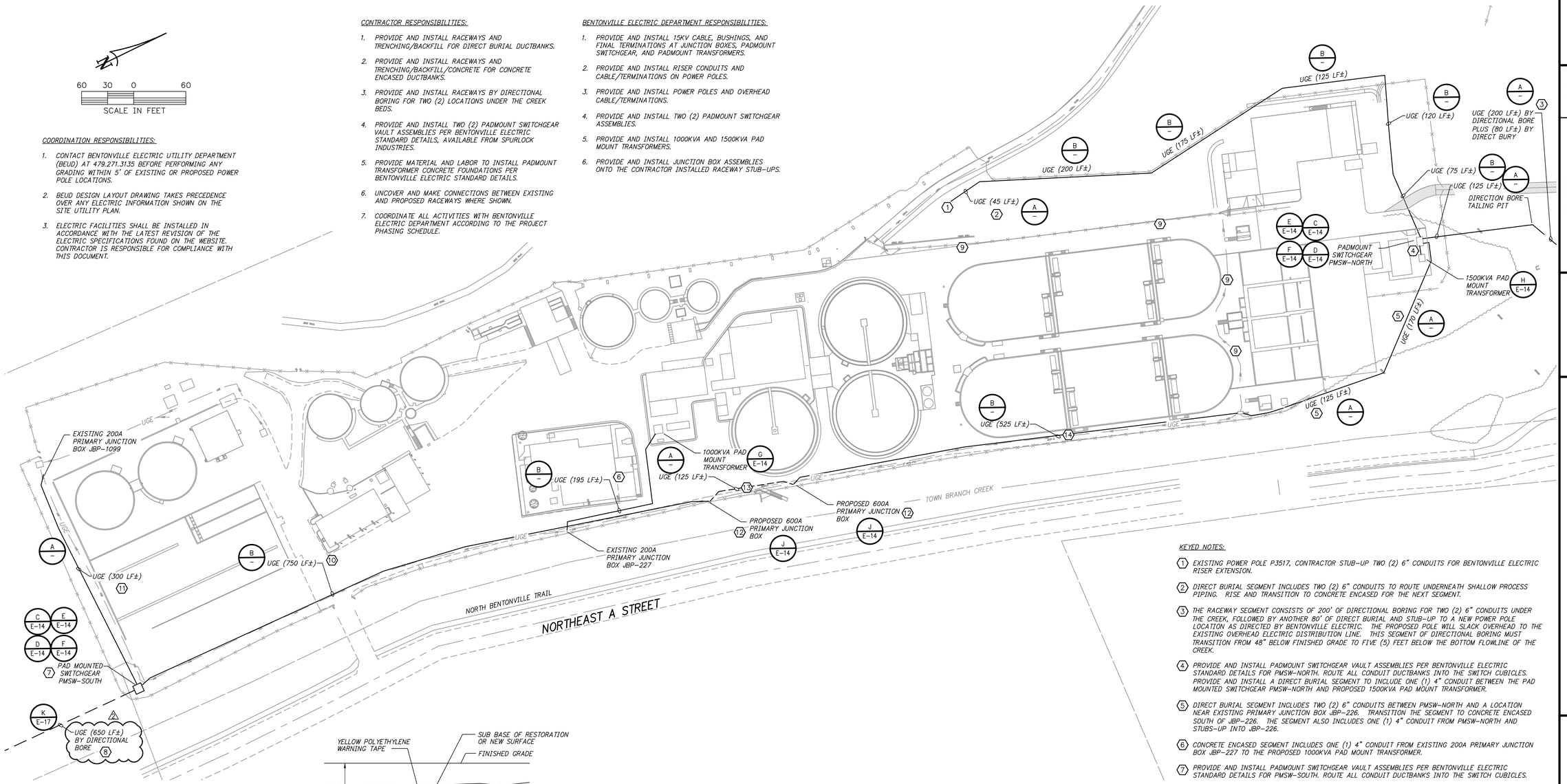
1. CONTACT BENTONVILLE ELECTRIC UTILITY DEPARTMENT (BEUD) AT 479.271.3135 BEFORE PERFORMING ANY GRADING WITHIN 5' OF EXISTING OR PROPOSED POWER POLE LOCATIONS.
2. BEUD DESIGN LAYOUT DRAWING TAKES PRECEDENCE OVER ANY ELECTRIC INFORMATION SHOWN ON THE SITE UTILITY PLAN.
3. ELECTRIC FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE ELECTRIC SPECIFICATIONS FOUND ON THE WEBSITE. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THIS DOCUMENT.

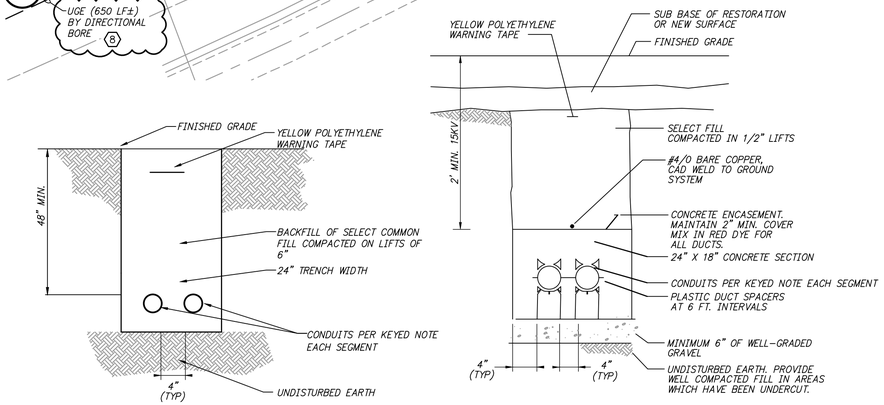
CONTRACTOR RESPONSIBILITIES:

1. PROVIDE AND INSTALL RACEWAYS AND TRENCHING/BACKFILL FOR DIRECT BURIAL DUCTBANKS.
2. PROVIDE AND INSTALL RACEWAYS AND TRENCHING/BACKFILL/CONCRETE FOR CONCRETE ENCASED DUCTBANKS.
3. PROVIDE AND INSTALL RACEWAYS BY DIRECTIONAL BORING FOR TWO (2) LOCATIONS UNDER THE CREEK BEDS.
4. PROVIDE AND INSTALL TWO (2) PADMOUNT SWITCHGEAR VAULT ASSEMBLIES PER BENTONVILLE ELECTRIC STANDARD DETAILS, AVAILABLE FROM SPURLOCK INDUSTRIES.
5. PROVIDE MATERIAL AND LABOR TO INSTALL PADMOUNT TRANSFORMER CONCRETE FOUNDATIONS PER BENTONVILLE ELECTRIC STANDARD DETAILS.
6. UNCOVER AND MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED RACEWAYS WHERE SHOWN.
7. COORDINATE ALL ACTIVITIES WITH BENTONVILLE ELECTRIC DEPARTMENT ACCORDING TO THE PROJECT PHASING SCHEDULE.

BENTONVILLE ELECTRIC DEPARTMENT RESPONSIBILITIES:

1. PROVIDE AND INSTALL 15KV CABLE, BUSHINGS, AND FINAL TERMINATIONS AT JUNCTION BOXES, PADMOUNT SWITCHGEAR, AND PADMOUNT TRANSFORMERS.
2. PROVIDE AND INSTALL RISER CONDUITS AND CABLE/TERMINATIONS ON POWER POLES.
3. PROVIDE AND INSTALL POWER POLES AND OVERHEAD CABLE/TERMINATIONS.
4. PROVIDE AND INSTALL TWO (2) PADMOUNT SWITCHGEAR ASSEMBLIES.
5. PROVIDE AND INSTALL 1000KVA AND 1500KVA PAD MOUNT TRANSFORMERS.
6. PROVIDE AND INSTALL JUNCTION BOX ASSEMBLIES ONTO THE CONTRACTOR INSTALLED RACEWAY STUB-UPS.





PRIMARY DIRECT BURIAL DUCTBANK

DETAIL A – NTS

PRIMARY CONCRETE ENCASED DUCTBANK

DETAIL B – NTS

KEYED NOTES:

1. EXISTING POWER POLE P3517, CONTRACTOR STUB-UP TWO (2) 6" CONDUITS FOR BENTONVILLE ELECTRIC RISER EXTENSION.
2. DIRECT BURIAL SEGMENT INCLUDES TWO (2) 6" CONDUITS TO ROUTE UNDERNEATH SHALLOW PROCESS PIPING. RISE AND TRANSITION TO CONCRETE ENCASED FOR THE NEXT SEGMENT.
3. THE RACEWAY SEGMENT CONSISTS OF 200' OF DIRECTIONAL BORING FOR TWO (2) 6" CONDUITS UNDER THE CREEK, FOLLOWED BY ANOTHER 80' OF DIRECT BURIAL AND STUB-UP TO A NEW POWER POLE LOCATION AS DIRECTED BY BENTONVILLE ELECTRIC. THE PROPOSED POLE WILL SLACK OVERHEAD TO THE EXISTING OVERHEAD ELECTRIC DISTRIBUTION LINE. THIS SEGMENT OF DIRECTIONAL BORING MUST TRANSITION FROM 48" BELOW FINISHED GRADE TO FIVE (5) FEET BELOW THE BOTTOM FLOWLINE OF THE CREEK.
4. PROVIDE AND INSTALL PADMOUNT SWITCHGEAR VAULT ASSEMBLIES PER BENTONVILLE ELECTRIC STANDARD DETAILS FOR PMSW-NORTH. ROUTE ALL CONDUIT DUCTBANKS INTO THE SWITCH CUBICLES. PROVIDE AND INSTALL A DIRECT BURIAL SEGMENT TO INCLUDE ONE (1) 4" CONDUIT BETWEEN THE PAD MOUNTED SWITCHGEAR PMSW-NORTH AND PROPOSED 1500KVA PAD MOUNT TRANSFORMER.
5. DIRECT BURIAL SEGMENT INCLUDES TWO (2) 6" CONDUITS BETWEEN PMSW-NORTH AND A LOCATION NEAR EXISTING PRIMARY JUNCTION BOX JBP-226. TRANSITION THE SEGMENT TO CONCRETE ENCASED SOUTH OF JBP-226. THE SEGMENT ALSO INCLUDES ONE (1) 4" CONDUIT FROM PMSW-NORTH AND STUBS-UP INTO JBP-226.
6. CONCRETE ENCASED SEGMENT INCLUDES ONE (1) 4" CONDUIT FROM EXISTING 200A PRIMARY JUNCTION BOX JBP-227 TO THE PROPOSED 1000KVA PAD MOUNT TRANSFORMER.
7. PROVIDE AND INSTALL PADMOUNT SWITCHGEAR VAULT ASSEMBLIES PER BENTONVILLE ELECTRIC STANDARD DETAILS FOR PMSW-SOUTH. ROUTE ALL CONDUIT DUCTBANKS INTO THE SWITCH CUBICLES.
8. PROVIDE DIRECTIONAL BORING FOR THE DUCTBANK SECTION BETWEEN JBP 228 AND THE PROPOSED PAD MOUNTED SWITCH PMSW SOUTH ON THE WRRF PROPERTY. THIS SEGMENT OF DIRECTIONAL BORING MUST TRANSITION FROM 48" BELOW FINISHED GRADE TO FIVE (5) FEET BELOW THE BOTTOM FLOWLINE OF THE CREEK. SEE SHEET E-17 FOR CONTINUATION.
9. MAINTAIN THE EXISTING OVERHEAD ELECTRIC ALONG WITH WEST SIDE OF THE WRRF, AND THE UNDERGROUND FEED FROM WEST TO EAST WHILE THE PROPOSED PRIMARY IS BEING INSTALLED. COORDINATE WITH BENTONVILLE ELECTRIC TO REMOVE THESE PRIMARY FEEDS ONCE DE-ENERGIZED.
10. CONCRETE ENCASED SEGMENT INCLUDES TWO (2) 6" CONDUITS BETWEEN PMSW-SOUTH AND THE PROPOSED 600A JBP, AND ONE (1) 4" CONDUIT BETWEEN PMSW-SOUTH AND EXISTING JBP-227. MAINTAIN THE EXISTING 4" CONDUIT SEGMENT BETWEEN JBP-227 AND JBP-226.
11. DIRECT BURIAL SEGMENT INCLUDES ONE (1) 4" CONDUIT BETWEEN PMSW-SOUTH AND THE EXISTING 200A JBP-1099.
12. INSTALL TWO (2) 600A PRIMARY JUNCTION BOXES PROVIDED BY BENTONVILLE ELECTRIC. THESE JUNCTION BOXES WILL BE USED TO TRANSITION FROM CONCRETE ENCASED DUCTBANKS TO A DIRECTIONAL BORED SEGMENT REQUIRED TO ROUTE UNDER THE EXISTING 10' DEEP EFFLUENT CHANNEL. ROUTE THE CONDUITS 3' BENEATH THE BOTTOM OF THE EFFLUENT CHANNEL.
13. PROVIDE DIRECTIONAL BORING FOR CONDUIT SEGMENT BETWEEN THE JUNCTION BOXES. THE SEGMENT INCLUDES TWO (2) 6" CONDUITS AND ONE (1) 4" CONDUIT. THE 4" CONDUIT SHALL BE SPARE, TO BE USED ONLY IF THE EXISTING 4" CONDUIT AND CIRCUIT BETWEEN JBP-226 AND JBP-227 IS DAMAGED.
14. CONCRETE ENCASED SEGMENT INCLUDES TWO (2) 6" CONDUITS BETWEEN THE TRANSITION POINT FROM DIRECT BURIAL SOUTH OF JBP-226 AND THE PROPOSED 600A JUNCTION BOX. THE SEGMENT ALSO INCLUDES A 4" CONDUIT WHICH WILL BE SPARE, TO BE USED ONLY IF THE EXISTING 4" CONDUIT AND CIRCUIT BETWEEN JBP-226 AND JBP-227 IS DAMAGED.

1"

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
2 REVISED PER ADDENDUM NO. 2	04/22/2025
3 REVISED PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS MATTHEW A. WEIR PROFESSIONAL ENGINEER No. 9885 5/13/2025

HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

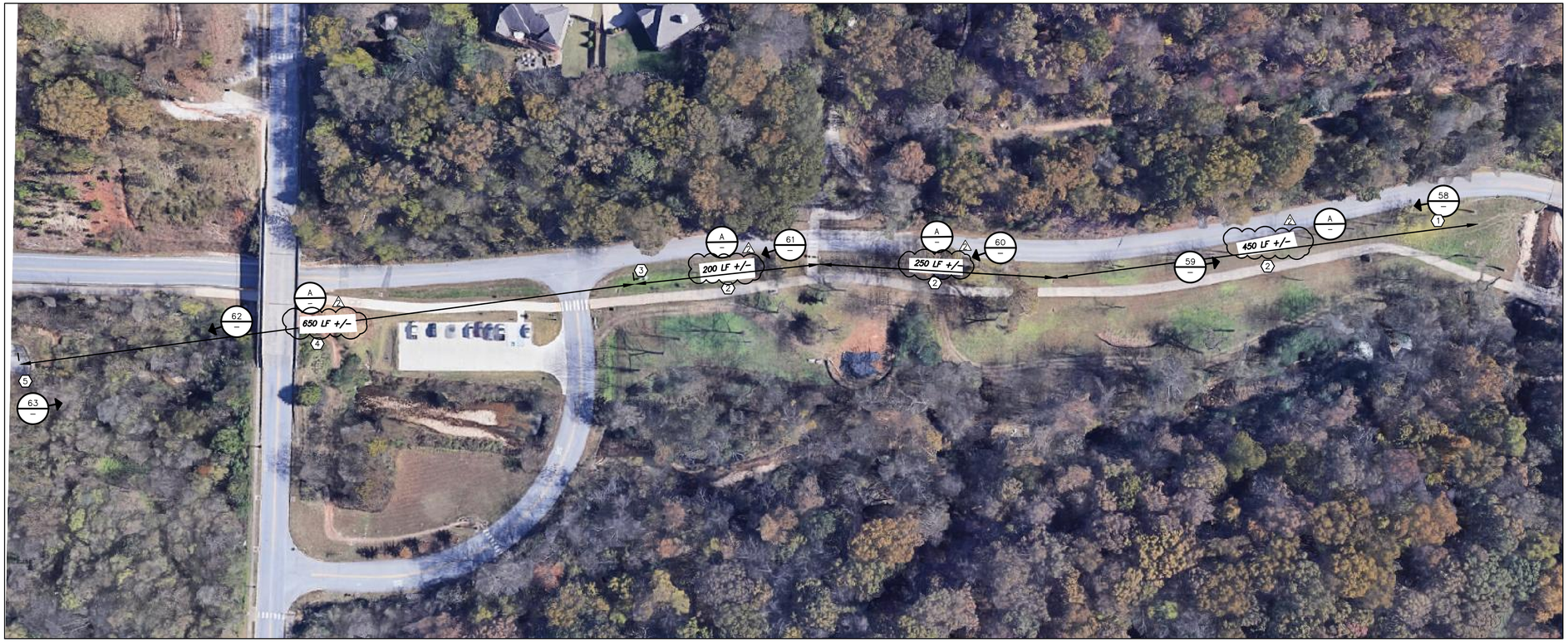
BENTONVILLE ELECTRIC UTILITY PRIMARY ELECTRIC ROUTING AND COORDINATION ELECTRICAL PLAN

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: 1"=60'
DESIGNED BY: LSM
DRAWN BY: MAW
HWEI NO.: 2021037
FILENAME: E-13

SHEET NO. E-13

Z:\21\2021037 BENTONVILLE WWTP CAPACITY STUDY\DRAWINGS\CONST PLANS\E-13.DWG, 5/13/2025 10:46 AM, MATT WEIR, LAYOUT1



WRRF SOUTH CIRCUIT UPGRADE PLAN

DETAIL K / NTS E-13

KEYED NOTES:

1. EXISTING PAD MOUNTED SWITCH PMSW186, SERVING AS THE SOURCE OF THE SOUTH CIRCUIT TO THE WRRF.
2. PROVIDE AND INSTALL TRENCHING, RACEWAYS, AND BACKFILL FOR DIRECT BURIAL DUCTBANK. CONTRACTOR SHALL COORDINATE WITH BENTONVILLE ELECTRIC DEPARTMENT FOR MINOR ROUTE ADJUSTMENTS DUE TO INTERFERENCE WITH FRANCHISE UTILITIES OR OBSTRUCTIONS..
3. EXISTING 200A PRIMARY JUNCTION BOX (JBP 228) TO BE UPGRADED BY BENTONVILLE ELECTRIC TO 600A. THE CONTRACTOR SHALL INSTALL THE JUNCTION BOX AND RISER CONDUITS PER DETAIL.
4. PROVIDE DIRECTIONAL BORING FOR THE DUCTBANK SECTION BETWEEN JBP 228 AND THE PROPOSED PAD MOUNTED SWITCH PMSW SOUTH ON THE WRRF PROPERTY. THIS SEGMENT OF DIRECTIONAL BORING MUST TRANSITION FROM 48" BELOW FINISHED GRADE TO FIVE (5) FEET BELOW THE BOTTOM FLOWLINE OF THE CREEK.
5. SEE SHEET E-13 FOR CONTINUATION AND LOCATION OF THE PAD MOUNTED SWITCH PMSW-SOUTH FOR FINAL DUCTBANK TERMINATION OF THE SOUTH CIRCUIT.

CONTRACTOR RESPONSIBILITIES:

1. PROVIDE AND INSTALL RACEWAYS AND TRENCHING/BACKFILL FOR DIRECT BURIAL DUCTBANKS.
2. PROVIDE AND INSTALL RACEWAYS BY DIRECTIONAL BORING FOR ONE (1) LOCATION UNDER THE CREEK BED, ROADWAY, GREENWAY, AND PARKING LOT.
3. COORDINATE ALL ACTIVITIES WITH BENTONVILLE ELECTRIC DEPARTMENT ACCORDING TO THE PROJECT PHASING SCHEDULE.

BENTONVILLE ELECTRIC DEPARTMENT RESPONSIBILITIES:

1. PROVIDE AND INSTALL 15KV CABLE, BUSHINGS, AND FINAL TERMINATIONS AT JUNCTION BOXES AND PADMOUNT SWITCHGEAR.
2. DEMO EXISTING OVERHEAD LINES, POWER POLES, AND SWITCH ASSEMBLIES.
3. PROVIDE AND INSTALL JUNCTION BOX ASSEMBLIES ONTO THE CONTRACTOR INSTALLED RACEWAY STUB-UPS.

COORDINATION RESPONSIBILITIES:

1. CONTACT BENTONVILLE ELECTRIC UTILITY DEPARTMENT (BEUD) AT 479.271.3135 BEFORE PERFORMING ANY GRADING WITHIN 5' OF EXISTING OR PROPOSED POWER POLE LOCATIONS.
2. BEUD DESIGN LAYOUT DRAWING TAKES PRECEDENCE OVER ANY ELECTRIC INFORMATION SHOWN ON THE SITE UTILITY PLAN.
3. ELECTRIC FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE ELECTRIC SPECIFICATIONS FOUND ON THE WEBSITE. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THIS DOCUMENT.

PMSW186 LOOKING NORTH

PHOTO 58 / -

LOOKING SOUTH TO PMSW186

PHOTO 59 / -

LOOKING NORTH TO PEDESTRIAN XING

PHOTO 60 / -

LOOKING NORTH TO JBP228

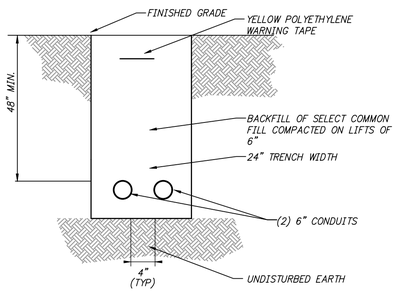
PHOTO 61 / -

LOOKING NORTH TO WRRF

PHOTO 62 / -

LOOKING SOUTH FROM WRRF

PHOTO 63 / -



PRIMARY DIRECT BURIAL DUCTBANK

DETAIL A / NTS -

1"

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

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1 REVISED PER ADDENDUM NO. 2	04/22/2025
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STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9888 SCOTT L. SMITH

HAWKINS WEIR ENGINEERS, INC.

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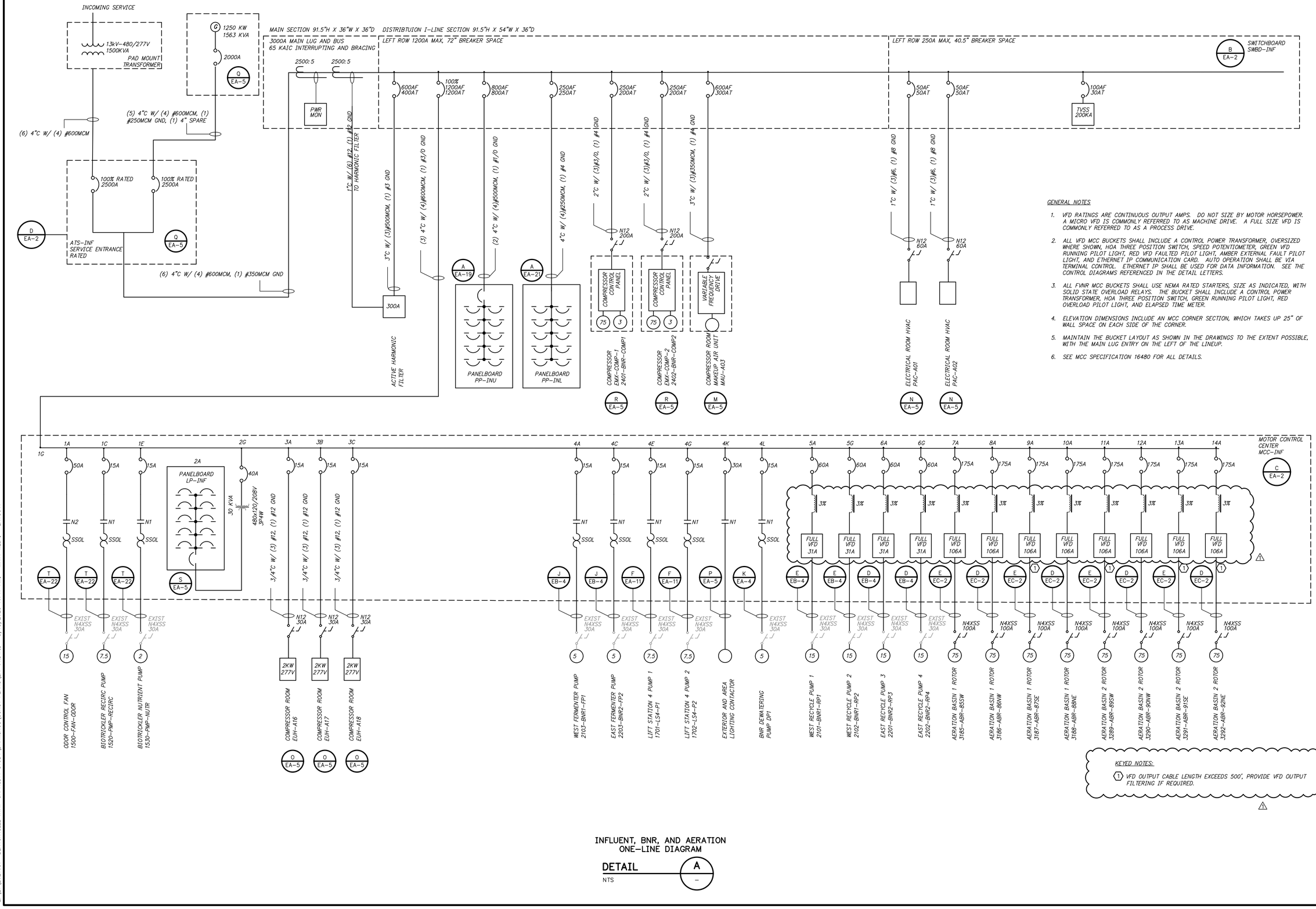
BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

BENTONVILLE ELECTRIC UTILITY
PRIMARY ELECTRIC ROUTING AND COORDINATION
WRRF SOUTH CIRCUIT UPGRADE PLAN
FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LSM
DRAWN BY: LSM
HWEI NO.: 2021037
FILENAME: E-17

SHEET NO. E-17 1

Z:\21\2021037 BENTONVILLE WWTP CAPACITY STUDY\DRAWINGS\CONST PLANS\E-17.DWG, 5/13/2025 10:46 AM, MATT WEIR, LAYOUT1



INFLUENT, BNR, AND AERATION
ONE-LINE DIAGRAM

DETAIL A
NTS –

1"
ONE INCH AT FULL SIZE
IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE
1 REVISED PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9885 SCOTT A. SMITH

HAWKINS WEIR ENGINEERS, INC.

BLACK & VEATCH

BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

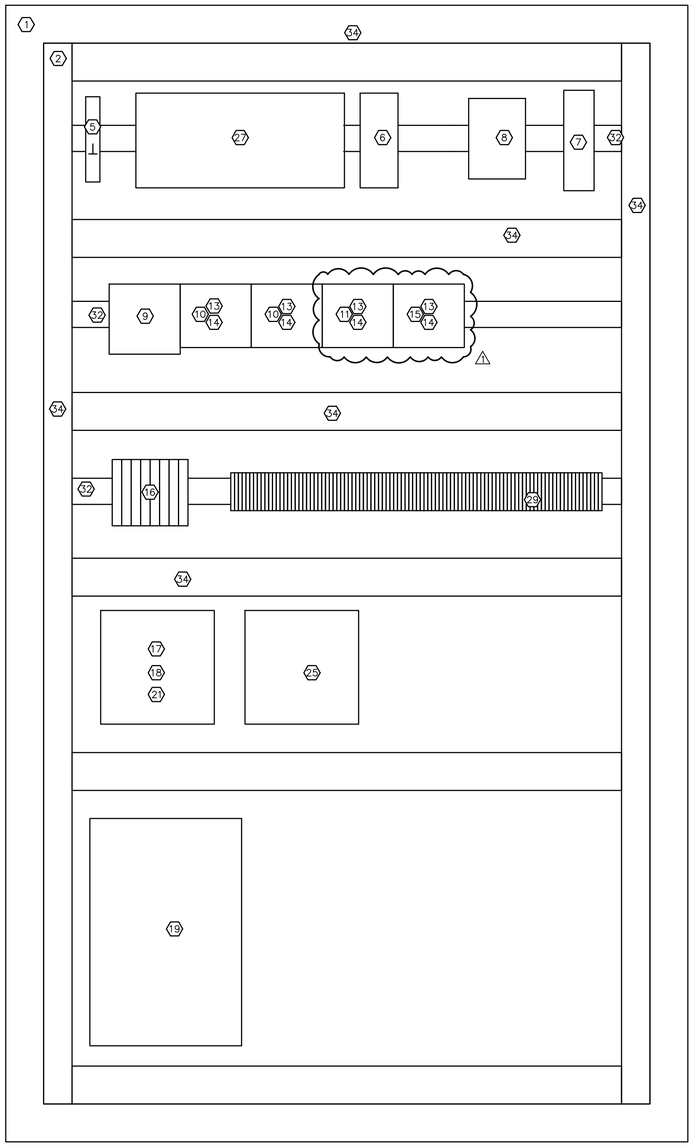
INFLUENT ELECTRICAL BUILDING SWBD-INF AND MCC-INF ONE-LINE DIAGRAM

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LSM
DRAWN BY: LSM
HWEI NO.: 2021037
FILENAME: EA-01

SHEET NO.
EA-1

Z:\21\2021037 BENTONVILLE WWTP CAPACITY STUDY\DRAWINGS\CONST PLANS\EA-01.DWG, 5/13/2025 10:47 AM, MATT WEIR, LAYOUT1



RIO–SAMP REMOTE I/O AND INSTRUMENTATION CONTROL STATION
CONTROL STATION LAYOUT

DETAIL A
N.T.S. EH–6

KEY	QTY	ITEM	CAT. #	MANUFACTURER	EQUAL
1	1	ENCLOSURE, NEMA4X ALUM 60X36X12	ECL1509030	HOFFMAN	YES
2	1	ENCLOSURE SUBPANEL	EP15090AL	HOFFMAN	YES
3	0	SWING–OUT SUBPANEL	–	–	YES
4	0	SOLAR SHIELD TOP	ESSH9030	HOFFMAN	–
5	4	CB 10A 1P D CURVE	FAZ–D10–1–SP	AUTOMATION DIRECT	YES
6	1	DC POWER SUPPLY 24V 10A	SDN10–24–100C	SOLA HEVI–DUTY	NO
7	1	FIBER PATCH PANEL, 12ST DIN RAIL	PWS2–A–06–06000010	RLH INDUSTRIES	YES
8	1	ETHERNET SWITCH 6TX2FX	308FX2–ST	RED LION/NTRON	YES
9	1	FLEX 5000 ETHERNET MODULE	5094–AENTR	ALLEN–BRADLEY	NO
10	2	FLEX 5000 MODULE MOUNTING BASE	5094–MB	ALLEN–BRADLEY	NO
11	1	FLEX 5000 DI MODULE	5094–IB32	ALLEN–BRADLEY	NO
12	0	FLEX 5000 DO RELAY MODULE	5094–OW81	ALLEN–BRADLEY	NO
13	2	FLEX 5000 AI MODULE	5094–IF8	ALLEN–BRADLEY	NO
14	2	FLEX 5000 REMOVABLE TERMINAL BLOCK	5094–RTB3	ALLEN–BRADLEY	NO
15	1	FLEX 5000 AO MODULE	5094–OF8	ALLEN–BRADLEY	NO
16	0	CB 2A 1P B CURVE	FAZ–B2–1–SP	AUTOMATION DIRECT	YES
17	1	INSTRUMENT MODULAR POWER SUPPLY	MIQ/PS	YSI	NO
18	1	INSTRUMENT CONTROLLER	2020 3G 8 OUTPUTS	YSI	NO
19	1	FLOW CONVERTER	SEE 13421	KROHNE	NO
20	1	PH/TEMP SENSOR PROBE	SEE 13330	YSI–FIELD MOUNT	NO
21	4	INSTRUMENT MODULAR CONNECTION	MIQ/MC3/MOD	YSI	NO
22	1	AMMONIA/NITRATE PROBE	SEE 13330	YSI–FIELD MOUNT	NO
23	2	DO PROBE	SEE 13330	YSI–FIELD MOUNT	NO
24	1	TSS PROBE	SEE 13330	YSI–FIELD MOUNT	NO
25	1	FINAL EFFLUENT FLOW SENSOR/CONTROLLER	SEE 13330	PULSAR	YES
26	1	ONLINE PO4P ANALYZER	SEE 13330	YSI	NO
27	1	UPS 850VA 120V	SDU850B	SOLA	YES
28	8	4–20 mA SURGE SUPPRESSOR	DLA–24D3	CITEL	NO
29	60	TERMINAL BLOCK	DN–T12A	AUTOMATION DIRECT	YES
30	4	TERMINAL BLOCK END COVER	DN–EB35	AUTOMATION DIRECT	YES
31	4	GROUND TERMINAL BLOCK	KN–G12SP–10	AUTOMATION DIRECT	YES
32	8'	35MM DIN RAIL SLOTTED STEEL	DN–R35S1	AUTOMATION DIRECT	YES
33	6	ANGLED DIN RAIL SUPPORT BRACKET	DN–ASB1	AUTOMATION DIRECT	YES
34	18'	1.5"X4" WHITE DUCT AND COVER	T1–1540W–1	AUTOMATION DIRECT	YES
35					

THE CONTRACTOR SHALL PROVIDE ALL OTHER REQUIRED MISCELLANEOUS PARTS, INCLUDING MTW AND SHIELDED CABLE, WIRE LABELS, TERMINAL LABELS, TERMINAL JUMPERS, PATCH CABLES

REMOTE I/O PANEL RIO–ABR (TOTAL OF 2 PANELS)
BILL OF MATERIAL

DETAIL B
N.T.S. –

I/O CARD 1	DESCRIPTION
0	EFFLUENT PH
1	EFFLUENT TEMP
2	EFFLUENT AMMONIA/NITRATE
3	EFFLUENT DO1
4	EFFLUENT DO2
5	EFFLUENT TSS
6	EFFLUENT FLOW
7	EFFLUENT PO4P

I/O CARD 2	DESCRIPTION
0	RAS2 FLOW
1	–
2	–
3	–
4	–
5	–
6	–
7	–

RIO–SAMP ANALOG INPUTS

DETAIL C
N.T.S. –

I/O CARD 3	DESCRIPTION
0	SAMPLER PACING FLOW SIGNAL
1	–
2	–
3	–
4	–
5	–
6	–
7	–

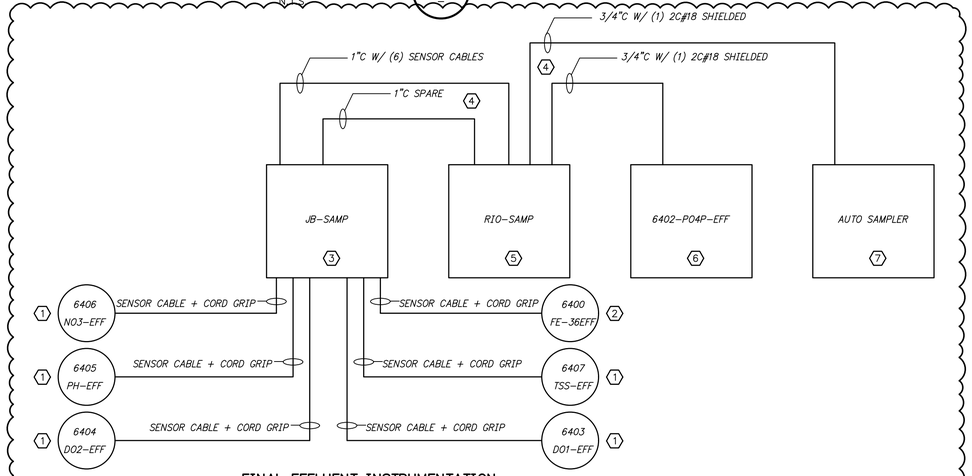
RIO–SAMP ANALOG OUTPUTS

DETAIL D
N.T.S. –

I/O CARD 2	DESCRIPTION
0	UPS ON BATTERY
1	UPS BATTERY LOW
2	EFFLUENT FLOW PULSE TOTAL
3	–
4	–
5	–
6	–
7	–
8	–
9	–
10	–
11	–
12	–
13	–
14	–
15	–
16	–
17	–
18	–
19	–
20	–
21	–
22	–
23	–
24	–
25	–
26	–
27	–
28	–
29	–
30	–
31	–

RIO–SAMP DISCRETE INPUTS

DETAIL E
N.T.S. –



FINAL EFFLUENT INSTRUMENTATION
RISER DIAGRAM

DETAIL F
N.T.S. –

KEYED NOTES:

1. PROVIDE AND INSTALL ALL OEM SENSOR MOUNTING KITS AND HARDWRE FOR HANDRAIL SUPPORTED INSTALLATION.
2. PROVIDE AND INSTALL STAINLESS STEEL UNISTRUT TO SPAN THE PARSCHALL FLUME FOR SENSOR SUPPORT.
3. PROVIDE AND INSTALL A 12"X12"X6" STAINLESS STEEL JUNCTION BOX, WITH UNISTRUT SUPPORT TO THE HANDRAIL, FOR SENSOR CABLES. PROVIDE AND INSTALL A CORD GRIP FOR EACH SENSOR CABLE ENTRY INTO THE JUNCTION BOX.
4. COORDINATE WITH DIVISION 16 FOR ALL CONDUIT INSTALLATION FROM THE JUNCTION BOX INTO THE SAMPLER BUILDING. COORDINATE WITH DIVISION 16 FOR CONDUIT INSTALLATION INSIDE THE SAMPLER BUILDING BETWEEN RIO–SAMP AND THE ONLINE PO4P INSTRUMENT AND THE AUTO SAMPLER.
5. COORDINATE INSTALLATION OF RIO–SAMP AND ITS 120VAC POWER SUPPLY WITH DIVISION 16. TERMINATE SENSOR CABLES TO THE YSI SENSOR SYSTEM INSTALLED INSIDE RIO–SAMP AND THE FINAL EFFLUENT FLOW TRANSMITTER.
6. COORDINATE INSTALLATION OF THE PO4P ONLINE ANALYZER INSIDE THE SAMPLER BUILDING AND ITS 120VAC POWER SUPPLY. PROVIDE ALL TERMINATIONS TO RIO–SAMP.
7. COORDINATE INSTALLATION OF THE AUTO SAMPLER AND ITS 120VAC POWER SUPPLY WITH DIVISION 16. PROVIDE ALL TERMINATIONS TO RIO–SAMP.

1"
ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE
3 REVISED PER ADDENDUM NO. 3	05/13/2025

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STATE OF ARKANSAS
MATTHEW S. WEIR
PROFESSIONAL ENGINEER
No. 9888
SCOTT ASHLEY

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

BENTONVILLE, ARKANSAS
BENTONVILLE WATER RESOURCE RECOVERY FACILITY IMPROVEMENTS

SAMPLER BUILDING
REMOTE I/O AND INSTRUMENTATION
BOM AND LAYOUT

FOR: BENTONVILLE WASTEWATER UTILITIES

DATE: MARCH 2025
SCALE: AS SHOWN
DESIGNED BY: LSM
DRAWN BY: LSM
HWEI NO.: 2021037
FILENAME: IH–01

SHEET NO.
IH–1

Z:\21\2021037 BENTONVILLE WWTP CAPACITY STUDY\DRAWINGS\CONST PLANS\IH–01.DWG, 5/13/2025 10:47 AM, MATT WEIR, LAYOUT1

Exhibit A.1 Detailed Price Bid Form(s):

0 Equipment Supply

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
I32	PHASE 1 - INFLUENT STR. - GRIT REMOVAL EQUIPMENT SUPPLY 11322	1	LS		
I34	PHASE 1 - INFLUENT STR. - COURSE SCREENING SYSTEM SUPPLY 11331/11333/14552	1	LS		
I36	PHASE 1 - INFLUENT STR. - SLIDE/WEIR GATES SUPPLY 11280/11282	1	LS		
I36.1	PHASE 1 - INFLUENT STR. - SLIDE/WEIR GATES SUPPLY - FRP	1	LS		
I38	PHASE 1 - INFLUENT STR. - ODOR CONTROL BIOTRICKLING FILTER EQUIP SUPPLY 11350/11355/11356/11357	1	LS		
I38.5	PHASE 1 - INFLUENT STR. - ODOR CONTROL SERVICE PLAN 11350	1	LS		
I40	PHASE 1 - INFLUENT STR. - CHEMICAL FEED SUPPLY 11727	1	LS		
I42	PHASE 1 - INFLUENT STR. - CHEMICAL FEED TOTE & DRUM SUPPLY 11727	1	LS		
L14	PHASE 1 - LIFT STATION NO.4 - SUBMERSIBLE PUMPS SUPPLY 11310	1	LS		
N9	PHASE 1 - ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SUPPLY 11631	1	LS		
N9.5	PHASE 1 - ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SERVICE PLAN 11631	1	LS		
N11	PHASE 1 - ANOXIC BASINS - MIXED LIQUOR FERMENTER DEWATERING PUMPS SUPPLY 11310.4.06	1	LS		
N13	PHASE 1 - ANOXIC BASINS - FERMENTER FEED PUMP SUPPLY 11310	1	LS		
N15	PHASE 1 - RECYCLE PS - RECYCLE PUMP SUPPLY 11154	1	LS		
N19	PHASE 1 - ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282	1	LS		
N19.1	PHASE 1 - ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY - FRP	1	LS		
N23	PHASE 1 - WAS PUMP - SPARE PUMP SUPPLY 11313	1	LS		

N24	PHASE 1 - ANOXIC BASIN - DAVIT CRANE & BASE SUPPLY	1	LS		
O8	PHASE 1 - AERATION BASINS - ~~ROTATING~~ SCUM BAFFLE SUPPLY 11366	1	LS		
O10	PHASE 1 - AERATION BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282	1	LS		
O10.1	PHASE 1 - AERATION BASINS - SLIDE/WEIR GATE SUPPLY - FRP	1	LS		
O13	PHASE 1 - AERATION BASINS - 75 HP AERATOR MOTOR SUPPLY	9	EA		
P14	PHASE 1 - SURFACE WASTING PS - SUBMERSIBLE PUMPS SUPPLY 11310	1	LS		
Q12	PHASE 1 - SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY 11280/11282	1	LS		
Q12.1	PHASE 1 - SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY - FRP	1	LS		
R14	PHASE 2 - SEC CLAR NO.1 - CLARIFIER EQUIPMENT SUPPLY 11225/11226	1	LS		
R14.1	PHASE 2 - SEC CLAR NO.1 - CLARIFIER FRP COVERS	1	LS		
S3	PHASE 1 - SEC CLAR NO.2 - CLARIFIER EQUIPMENT SUPPLY 11225/11226	1	LS		
S3.1	PHASE 1 - SEC CLAR NO.2 - CLARIFIER FRP COVERS	1	LS		
T14	PHASE 1 - SEC CLAR NO.3 - CLARIFIER EQUIPMENT SUPPLY 11225/11226	1	LS		
T14.1	PHASE 1 - SEC CLAR NO.3 - CLARIFIER FRP COVERS	1	LS		
U11	PHASE 1 - RAS PS NO.2 - SUBMERSIBLE PUMPS SUPPLY 11310	1	LS		
Z9	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - PEMB CANOPY STRUCTURE SUPPLY 05120	1	LS		
Z14	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - CLOTH MEDIA FILTER SUPPLY 11243	1	LS		
Z16	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT & ASSOCIATED GATE SUPPLY 11260/11280/11282	1	LS		
Z16.5	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT - SERVICE PLAN 11260	1	LS		
Z18	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - PARSHALL FLUME EQUIPMENT SUPPLY 11207	1	LS		
Z20	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - BLOWER EQUIPMENT SUPPLY 11370	1	LS		
Z22	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - COARSE BUBBLE DIFFUSED AERATION SUPPLY 11377	1	LS		

Z24	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY 11280/11282	1	**LS**		
Z24.1	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY - FRP	1	**LS**		
Z26	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SAMPLING EQUIPMENT SUPPLY 13121	1	**LS**		
AA26	PHASE 2 - EFF PS & ELEC BLDG. - VERTICAL TURBINE PUMPS EQUIPMENT SUPPLY 11215	1	**LS**		
II14	PHASE 2 - ADMIN - PEMB CANOPY SUPPLY 05120	1	**LS**		
FF28	PHASE 2 - MAINT. BLDG - PEMB SUPPLY 01520	1	**LS**		
RR1	PHASE 1 - SUMP PUMP SUPPLY 11315	1	**LS**		
YY1	ALL PHASES - ALL EQUIPMENT - MATERIAL SUPPLY BOND	1	**LS**		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

Material Cost Escalation
Material cost escalation shall not be accepted without proof of root cause from the source of manufacturer in writing. The source shall be defined as the individual component as the root cause of the escalation. Escalation in total shall be capped at 1 ½ percent of the total bid item value.

Add for material escalation cost beyond proposal validity duration of 90 calendar days (LS): $_____

Submittal and Fabrication Delays
Impacts to the critical path of the project due to submittal and fabrication delays are subject to damages as defined in the Material Contract.

Schedule of Values & Payment Terms
The schedule of values shall follow the below terms of payment for billing purposes:

Submittal Approval: 5% of Total Value
Delivery of Equipment: 85% of Total Value
Commissioning Acceptance & Final Approval of O&M's: 10% of Total Value

Submittal Duration - Equipment
The submittal duration shall be defined as the amount of calendar days from issuance of the material contract agreement to the submission of submittal for approval by the engineer of record. **A range of calendar days will not be accepted.**

Fabrication Duration - Equipment
The fabrication duration shall be defined as the amount of calendar days from the submittal approval by the engineer of record and/or release for fabrication to arrival of material at the jobsite. **A range of calendar days will not be accepted.**

CROSSLAND
HEAVY CONTRACTORS

Equipment	Submittal Duration (Calendar Days)	Fabrication Duration (Calendar Days)	Manufacturer
INFLUENT STR. - GRIT REMOVAL EQUIPMENT SUPPLY 11322			
INFLUENT STR. - COURSE SCREENING SYSTEM SUPPLY 11331/11333 /14552			
INFLUENT STR. - SLIDE/WEIR GATES SUPPLY 11280/11282			
INFLUENT STR. - SLIDE/WEIR GATES SUPPLY - FRP			
INFLUENT STR. - ODOR CONTROL BIOTRICKLING FILTER EQUIP SUPPLY 11350/11355/11356/11357			
INFLUENT STR. - ODOR CONTROL SERVICE PLAN 11350			
INFLUENT STR. - CHEMICAL FEED SUPPLY 11727			
INFLUENT STR. - CHEMICAL FEED TOTE & DRUM SUPPLY 11727			
LIFT STATION NO.4 - SUBMERSIBLE PUMPS SUPPLY 11310			
ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SUPPLY 11631			
ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SERVICE PLAN 11631			
ANOXIC BASINS - MIXED LIQUOR FERMENTER DEWATERING PUMPS SUPPLY 11310.4.06			
ANOXIC BASINS - FERMENTER FEED PUMP SUPPLY 11310			
RECYCLE PS - RECYCLE PUMP SUPPLY 11154			
ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282			
ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY - FRP			
WAS PUMP - SPARE PUMP SUPPLY 11313			
ANOXIC BASIN - DAVIT CRANE & BASE SUPPLY			
AERATION BASINS - SCUM BAFFLE SUPPLY 11366			
AERATION BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282			

AERATION BASINS - SLIDE/WEIR GATE SUPPLY - FRP			
AERATION BASINS - 75 HP AERATOR MOTOR SUPPLY			
SURFACE WASTING PS - SUBMERSIBLE PUMPS SUPPLY 11310			
SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY 11280/11282			
SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY - FRP			
SEC CLAR NO.1 - CLARIFIER EQUIPMENT SUPPLY 11225/11226			
SEC CLAR NO.1 - CLARIFIER FRP COVERS			
SEC CLAR NO.2 - CLARIFIER EQUIPMENT SUPPLY 11225/11226			
SEC CLAR NO.2 - CLARIFIER FRP COVERS			
SEC CLAR NO.3 - CLARIFIER EQUIPMENT SUPPLY 11225/11226			
SEC CLAR NO.3 - CLARIFIER FRP COVERS			
RAS PS NO.2 - SUBMERSIBLE PUMPS SUPPLY 11310			
TER. TRTMNT, UV, POST AERATION, P FLUME - PEMB CANOPY STRUCTURE SUPPLY 05120			
TER. TRTMNT, UV, POST AERATION, P FLUME - CLOTH MEDIA FILTER SUPPLY 11243			
TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT & ASSOCIATED GATE SUPPLY 11260/11280/11282			
TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT - SERVICE PLAN 11260			
TER. TRTMNT, UV, POST AERATION, P FLUME - PARSHALL FLUME EQUIPMENT SUPPLY 11207			
TER. TRTMNT, UV, POST AERATION, P FLUME - BLOWER EQUIPMENT SUPPLY 11370			
TER. TRTMNT, UV, POST AERATION, P FLUME - COARSE BUBBLE DIFFUSED AERATION SUPPLY 11377			
TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY 11280/11282			
TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY - FRP			
TER. TRTMNT, UV, POST AERATION, P FLUME - SAMPLING EQUIPMENT SUPPLY 13121			

EFF PS & ELEC BLDG. - VERTICAL TURBINE PUMPS EQUIPMENT SUPPLY 11215			
ADMIN - PEMB CANOPY SUPPLY 05120			
MAINT. BLDG - PEMB SUPPLY 01520			
SUMP PUMP SUPPLY 11315			

Methods of Measurement

Bid Package 0 - Equipment Supply

I32 PHASE 1 - INFLUENT STR. - GRIT REMOVAL EQUIPMENT SUPPLY 11322

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I34 PHASE 1 - INFLUENT STR. - COURSE SCREENING SYSTEM SUPPLY 11331/11333/14552

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I36 PHASE 1 - INFLUENT STR. - SLIDE/WEIR GATES SUPPLY 11280/11282

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I36.1 PHASE 1 - INFLUENT STR. - SLIDE/WEIR GATES SUPPLY - FRP

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I38 PHASE 1 - INFLUENT STR. - ODOR CONTROL BIOTRICKLING FILTER EQUIP SUPPLY 11350/11355/11356/11357

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I38.5 PHASE 1 - INFLUENT STR. - ODOR CONTROL SERVICE PLAN 11350

The price bid shall include full compensation for the specified service plan as defined in the contract documents as part of the equipment supply scope. The scope shall include all associated materials, travel expenses, coordination, profit and overhead, or other items required by the specifications. The service plan bid item shall be selected and purchased at the Owner's option.

Compensation Type 1

I40 PHASE 1 - INFLUENT STR. - CHEMICAL FEED SUPPLY 11727

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

I42 PHASE 1 - INFLUENT STR. - CHEMICAL FEED TOTE & DRUM SUPPLY 11727

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

L14 PHASE 1 - LIFT STATION NO.4 - SUBMERSIBLE PUMPS SUPPLY 11310

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier’s labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N9 PHASE 1 - ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SUPPLY 11631

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier’s labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N9.5 PHASE 1 - ANOXIC BASINS - COMPRESSED AIR MIXING SYSTEM SERVICE PLAN 11631

The price bid shall include full compensation for the specified service plan as defined in the contract documents as part of the equipment supply scope. The scope shall include all associated materials, travel expenses, coordination, profit and overhead, or other items required by the specifications. The service plan bid item shall be selected and purchased at the Owner's option.

Compensation Type 1

N11 PHASE 1 - ANOXIC BASINS - MIXED LIQUOR FERMENTER DEWATERING PUMPS SUPPLY 11310.4.06

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier’s labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N13 PHASE 1 - ANOXIC BASINS - FERMENTER FEED PUMP SUPPLY 11310

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier’s labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N15 PHASE 1 - RECYCLE PS - RECYCLE PUMP SUPPLY 11154

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N19 PHASE 1 - ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N19.1 PHASE 1 - ANOXIC BASINS - SLIDE/WEIR GATE SUPPLY - FRP

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N23 PHASE 1 - WAS PUMP - SPARE PUMP SUPPLY 11313

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

N24 PHASE 1 - ANOXIC BASIN - DAVIT CRANE & BASE SUPPLY

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

O8 PHASE 1 - AERATION BASINS - SCUM BAFFLE SUPPLY 11366

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

O10 PHASE 1 - AERATION BASINS - SLIDE/WEIR GATE SUPPLY 11280/11282

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

O10.1 PHASE 1 - AERATION BASINS - SLIDE/WEIR GATE SUPPLY - FRP

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

O13 PHASE 1 - AERATION BASINS - 75 HP AERATOR MOTOR SUPPLY

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

P14 PHASE 1 - SURFACE WASTING PS - SUBMERSIBLE PUMPS SUPPLY 11310

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Q12 PHASE 1 - SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY 11280/11282

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Q12.1 PHASE 1 - SEC CLAR DIST & RAS PS - SLIDE/WEIR GATE SUPPLY - FRP

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

R14 PHASE 2 - SEC CLAR NO.1 - CLARIFIER EQUIPMENT SUPPLY 11225/11226

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

R14.1 PHASE 2 - SEC CLAR NO.1 - CLARIFIER FRP COVERS

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

S3 PHASE 1 - SEC CLAR NO.2 - CLARIFIER EQUIPMENT SUPPLY 11225/11226

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

S3.1 PHASE 1 - SEC CLAR NO.2 - CLARIFIER FRP COVERS

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

T14 PHASE 1 - SEC CLAR NO.3 - CLARIFIER EQUIPMENT SUPPLY 11225/11226

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

T14.1 PHASE 1 - SEC CLAR NO.3 - CLARIFIER FRP COVERS

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

U11 PHASE 1 - RAS PS NO.2 - SUBMERSIBLE PUMPS SUPPLY 11310

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z9 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - PEMB CANOPY STRUCTURE SUPPLY 05120

The price bid shall include full compensation for the Pre-Engineered Metal Buidling supply as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated materials to complete the system. This includes, but is not limited to, anchor bolts, fasteners, trim, gutters & downspouts, touch-up paint, structural reinforcing for openings, detailed shop and assembly drawings. PEMB supplier shall coordinate with other trades to accomodate piping, fixtures, panels, or any other wall/roof mounted fixtures with all necessary bracing or supports. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, coordination meetings, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z14 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - CLOTH MEDIA FILTER SUPPLY 11243

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z16 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT & ASSOCIATED GATE SUPPLY 11260/11280/

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z16.5 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - UV EQUIPMENT - SERVICE PLAN 11260

The price bid shall include full compensation for the specified service plan as defined in the contract documents as part of the equipment supply scope. The scope shall include all associated materials, travel expenses, coordination, profit and overhead, or other items required by the specifications. The service plan bid item shall be selected and purchased at the Owner's option.

Compensation Type 1

Z18 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - PARSHALL FLUME EQUIPMENT SUPPLY 11207

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z20 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - BLOWER EQUIPMENT SUPPLY 11370

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z22 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - COARSE BUBBLE DIFFUSED AERATION SUPPLY 11377

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z24 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY 11280/11282

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z24.1 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SLIDE/WEIR GATES SUPPLY - FRP

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

Z26 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - SAMPLING EQUIPMENT SUPPLY 13121

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

AA26 PHASE 2 - EFF PS & ELEC BLDG. - VERTICAL TURBINE PUMPS EQUIPMENT SUPPLY 11215

The price bid shall include full compensation for the supply of the above listed equipment as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated equipment to complete the system. This includes, but is not limited to, anchors, lubricants, fasteners, engineering costs, coordination with other trades, startup, testing, commissioning, and warranty as described in the contract documents. Additional service plans (if applicable) beyond the warranty period desribed in the specifications shall be bid seperately. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

II14 PHASE 2 - ADMIN - PEMB CANOPY SUPPLY 05120

The price bid shall include full compensation for the Pre-Engineered Metal Buidling supply as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated materials to complete the system. This includes, but is not limited to, anchor bolts, fasteners, trim, gutters & downspouts, touch-up paint, structural reinforcing for openings, detailed shop and assembly drawings. PEMB supplier shall coordinate with other trades to accomodate piping, fixtures, panels, or any other wall/roof mounted fixtures with all necessary bracing or supports. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, coordination meetings, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

FF28 PHASE 2 - MAINT. BLDG - PEMB SUPPLY 01520

The price bid shall include full compensation for the Pre-Engineered Metal Buidling supply as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated materials to complete the system. This includes, but is not limited to, anchor bolts, fasteners, trim, gutters & downspouts, touch-up paint, structural reinforcing for openings, detailed shop and assembly drawings. PEMB supplier shall coordinate with other trades to accomodate piping, fixtures, panels, or any other wall/roof mounted fixtures with all necessary bracing or supports. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, coordination meetings, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

RR1 PHASE 1 - SUMP PUMP SUPPLY 11315

The price bid shall include full compensation for the Pre-Engineered Metal Buidling supply as defined in the contract documents as part of the equipment supply scope. The scope of supply shall include all associated materials to complete the system. This includes, but is not limited to, anchor bolts, fasteners, trim, gutters & downspouts, touch-up paint, structural reinforcing for openings, detailed shop and assembly drawings. PEMB supplier shall coordinate with other trades to accomodate piping, fixtures, panels, or any other wall/roof mounted fixtures with all necessary bracing or supports. Cost shall include, but is not limited to, the supplier's labor, engineering costs, freight, coordination meetings, overhead and profit as defined to complete the scope of supply.

Compensation Type 1

YY1 ALL PHASES - ALL EQUIPMENT - MATERIAL SUPPLY BOND

The price shall cover the cost for separate Material Supply Bonds valued at 100% of the Bid Package Total.

Compensation Type 1

Exhibit A.1 Detailed Price Bid Form(s):

2 Earthwork

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
B1	PHASE 1 - EROSION CONTROL - CONSTRUCTION ENTRANCE	2	EA		
B2	PHASE 1 - EROSION CONTROL - CONCRETE WASHOUT	2	EA		
B3	PHASE 1 - EROSION CONTROL - CONCRETE WASHOUT MAINTENANCE - ALLOWANCE	1	LS	$ 20,000	
B9	PHASE 1 - EROSION CONTROL - DITCH CHECK	9	EA		
C1	PHASE 1 - GENERAL SITEWORK - CLEAR & GRUB (NO BURING ONSITE)	1	LS		
C2	PHASE 1 - GENERAL SITEWORK - STRIP TOPSOIL	26,932	SY		
C3	PHASE 1 - GENERAL SITEWORK - EARTHWORK CUT/FILL	1,230	CY		
C5	PHASE 1 - GENERAL SITEWORK - WEST ACCESS DRIVE EARTHWORK	1	LS		
C6	PHASE 1 - GENERAL SITEWORK - WEST ACCESS DRIVE ASPHALT DEMO EXISTING	1	LS		
C10	PHASE 1 - GENERAL SITEWORK - MISC EXCAVATION & AGG BASE INSTALL	1	LS		
C11	PHASE 1 - GENERAL SITEWORK - REMOVE ASPHALT PAVING	16,969	SY		
C12	PHASE 1 - GENERAL SITEWORK - LAYDOWN & STORAGE	151,280	SF		
C14	PHASE 1 - GENERAL SITEWORK - HAUL OFF EXTRA SPOILS (OFFSITE)	2,875	CY		
C23	PHASE 1 - GENERAL SITEWORK - UNDERCUT & BACKFILL FOR ASPHALT PAVEMENT	4,441	CY		
I1	PHASE 1 - INFLUENT STR. - EARTHWORK	1	LS		
J1	PHASE 1 - INFLUENT ELEC. BLDG - EARTHWORK	1	LS		
K1	PHASE 1 - PUMPED INFLUENT METER VAULT - EARTHWORK	1	LS		

L1	PHASE 1 - LIFT STATION NO.4 VLV VAULT & WETWELL - EARTHWORK	1	LS		
M1	PHASE 2 - WET WEATHER METER VAULT - EARTHWORK	1	LS		
N1	PHASE 1 - ANOXIC BASINS - EARTHWORK	1	LS		
O1	PHASE 1 - AERATION BASINS - EARTHWORK	1	LS		
P1	PHASE 1 - SURFACE WASTING PS - EARTHWORK	1	LS		
Q1	PHASE 1 - SEC CLAR DIST & RAS PS - EARTHWORK	1	LS		
R1	PHASE 2 - SEC CLAR NO.1- EARTHWORK	1	LS		
T1	PHASE 1 - SEC CLAR NO.3- EARTHWORK	1	LS		
U1	PHASE 1 - RAS PS NO.2 - EARTHWORK	1	LS		
V1	PHASE 1 - RAS PS NO.2 METER VAULT - EARTHWORK	1	LS		
W1	PHASE 1 - WASTING METER VAULT - EARTHWORK	1	LS		
Z1	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - EARTHWORK	1	LS		
AA1	PHASE 2 - EFF PS & ELEC BLDG. - EARTHWORK	1	LS		
BB1	PHASE 2 - BLWR BLDG VALVE VAULT - EARTHWORK	1	LS		
CC1	PHASE 2 - DIGESTER NO. 4 & 5 VALVE VAULT - EARTHWORK	1	LS		
DD1	PHASE 2 - DIGESTER NO. 4 VALVE VAULT - EARTHWORK	1	LS		
EE1	PHASE 2 - DIGESTER NO. 5 VALVE VAULT - EARTHWORK	1	LS		
FF31	PHASE 1 - MAINTENANCE BLDG - EARTHWORK	1	LS		
FF32	PHASE 1 - MAINTENANCE BLDG - GRAVEL PAVING	723	SY		
II3	PHASE 2 - OPERATIONS BLDG - EARTHWORK	1	LS		
JJ1	PHASE 2 - SOUTH GENERATOR - EARTHWORK	1	LS		
KK1	PHASE 1 - NORTH GENERATOR - EARTHWORK	1	LS		

LL1	PHASE 1 - TEMP NORTH ACCESS DR - EARTHWORK	1	**LS**		
LL5	PHASE 1 - TEMP NORTH ACCESS DR - B STONE	1	**LS**		
LL8	PHASE 1 - TEMP NORTH ACCESS DR - CONSTRUCTION ENTRANCE	1	**EA**		
OO1	PHASE 1 - EXISTING RAS PS NO.1 METER VAULT NO.1 & NO.2 - EARTHWORK	1	**LS**		
PP1	PHASE 1 - 8" METER VAULT & RPZ - EARTHWORK	1	**LS**		
ZZ3	BP 02 - EARTHWORK SUB MOBILIZATION	1	**LS**		
ZZ4	BP 02 - EARTHWORK SUB BONDING	1	**LS**		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

General Clarifications

There will be no ability to store spoils on-site. A remote spoils site may be necessary for storage of material to be utilized for fill and

The construction manager will provide a centralized dewatering point when water is present within each excavation. The earthwork contractor will be responsible for the excavation of a sump consisting of an area no larger than 6'x6' at a depth of 5'. Until the centralized dewatering system is in place it will be the responsibility of the earthwork contractor to de-water while excavating.

It is the responsibility of the bidding contractor to review the milestone schedule, and site logistics plan to incorporate mobilization costs. Additional mobilizations post bid will not be allowed.

Methods of Measurement

Bid Package 2 - Earthwork

B1 PHASE 1 - EROSION CONTROL - CONSTRUCTION ENTRANCE

The price bid shall include full compensation for labor, equipment, and material for the installation and routine maintenance of the stabilized construction entrance for the duration of earthwork package as part of the overall scope of the earthwork. Construction of the said item shall be per the plans and specifications. Maintenance of the said item shall be directed by the Construction Manager. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

B2 PHASE 1 - EROSION CONTROL - CONCRETE WASHOUT

This price bid shall include full compensation for the labor, equipment, and material to construct the concrete washout as shown in the contract documents. Location for the concrete washout shall be determined by construction manager. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

B3 PHASE 1 - EROSION CONTROL - CONCRETE WASHOUT MAINTENANCE - ALLOWANCE

The price bid shall include full compensation for the labor, equipment, and material for maintenance of the concrete washout as shown on the plans. Items to be hauled off-site are part of the overall scope of the sitework and or earthwork. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 4

B9 PHASE 1 - EROSION CONTROL - DITCH CHECK

The price bid shall include full compensation for the labor, equipment, and material to install ditch check(s) as shown in the contract documents. Items to be hauled off-site are part of the overall scope of the sitework. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C1 PHASE 1 - GENERAL SITEWORK - CLEAR & GRUB (NO BURING ONSITE)

The price bid shall include full compensation for labor, equipment, and material to clear and grub as part of the overall scope of the earthwork as defined in the contract documents. BURNING ONSITE WILL NOT BE ALLOWED. Clearing shall consist of: cutting, removing, and disposing of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth; removal and disposal of existing fences, drainage structures, abandoned pipelines or utilities, paving, curbs and gutters, rubbish and trash, and other objectionable material(s). Clearing shall also include the preservation of trees, shrubs, and vegetative growth, which are not designated for removal. Grubbing shall consist of the removal and disposal of wood or root matter below the ground surface remaining after clearing and shall include stumps, trunks, roots, or root systems greater than 2 inches in diameter to a depth of two feet below the natural ground surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C2 PHASE 1 - GENERAL SITEWORK - STRIP TOPSOIL

The price bid shall include full compensation for labor, equipment, and material for stripping of topsoil within a tolerance of +/- .10' as part of the overall scope of the earthwork. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C3 PHASE 1 - GENERAL SITEWORK - EARTHWORK CUT/FILL

The price bid shall include full compensation for labor, equipment, and material for cut and fill to grade as part of the overall scope of the earthwork. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C5 PHASE 1 - GENERAL SITEWORK - WEST ACCESS DRIVE EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for cut and fill of the west access drive per contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C6 PHASE 1 - GENERAL SITEWORK - WEST ACCESS DRIVE ASPHALT DEMO EXISTING

The price bid shall include full compensation for the removal and haul-off of asphalt pavement as defined in the contract documents. Cost shall include the contractor's labor, material, equipment and overhead and profit as defined to complete the work.

Compensation Type 1

C10 PHASE 1 - GENERAL SITEWORK - MISC EXCAVATION & AGG BASE INSTALL

The price bid shall include full compensation for the labor, equipment, and material for the excavations and the placement of aggregate base below slabs as shown on the plans. This item includes, but not limited to site generator pads, HVAC pads, transformer pads, etc. as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C11 PHASE 1 - GENERAL SITEWORK - REMOVE ASPHALT PAVING

The price bid shall include full compensation for the removal and haul-off of asphalt pavement as defined in the contract documents. Cost shall include the contractor's labor, material, equipment and overhead and profit as defined to complete the work.

Compensation Type 1

C12 PHASE 1 - GENERAL SITEWORK - LAYDOWN & STORAGE

The price bid shall include full compensation for the labor, equipment, and material to construct and remove temporary laydown and storage to include placement of 4" aggregate base over nonwoven geotextile fabric TenCate Miragrid 5XT Geogrid or equivalent for laydown and storage areas for materials, temporary parking, and jobsite trailers etc. as part of the overall scope of the earthwork. Removal of the temporary laydown shall be coordinated with the construction manager. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C14 PHASE 1 - GENERAL SITEWORK - HAUL OFF EXTRA SPOILS (OFFSITE)

The price bid shall include full compensation for the labor, equipment, and material for haul-off of extra spoils off site as part of the overall scope of the earthwork. Haul off and stockpile off site location(s) shall be the responsibility of the bidder. This haul-off bid item is for general site work cut-fill operation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

C23 PHASE 1 - GENERAL SITEWORK - UNDERCUT & BACKFILL FOR ASPHALT PAVEMENT

The price bid shall include full compensation for labor, equipment, and material to perform undercut and backfill of the asphalt pavement as part of the overall scope of the earthwork. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

I1 PHASE 1 - INFLUENT STR. - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. Slopes shall be constructed on a 1.5:1. An entry/exit ramp shall be constructed at a 5:1 slope. Location of the ramp shall be coordinated with the Construction Manager prior to commencement of the work. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. The slopes of the excavation shall be protected by 10 mill (minimum) impermeable polyethylene sheeting fastened at the top of the slope with a 24”x24” anchor trench backfilled holding the sheeting in place. The sheeting shall be held to the slope with sandbags or other means necessary. Anchor methods shall not penetrate the sheeting. Sheeting sections shall have a 24” overlap. Removal and disposal of sheeting shall be included in this bid item. Where anchor trenches are not feasable the sheeting shall be fastened to the top of slope with 2x4's and nail stakes. Nail Stakes shall be on 4'-0" centers. Excavation of all concrete footings and foundations shall be included within this bid package. Bidder is responsible for providing and maintaining all slopes. Drilled Pier and or Micro Pile spoils removal shall be included within this scope. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

J1 PHASE 1 - INFLUENT ELEC. BLDG - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

K1 PHASE 1 - PUMPED INFLUENT METER VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Slide rail shoring shoring installation shall be included within this scope of work and shall be done concurrently with the excavation. The slide rail system for this structure shall be provided by the Construction Manager. The dimensions of the system are 26' long x 18' wide at a 11'-6"' depth. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

L1 PHASE 1 - LIFT STATION NO.4 VLV VAULT & WETWELL - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Slide rail shoring shoring installation shall be included within this scope of work and shall be done concurrently with the excavation. The slide rail system for this structure shall be provided by the Construction Manager. The dimensions of the system are 28' long x 19' wide at a 25' depth. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

M1 PHASE 2 - WET WEATHER METER VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

N1 PHASE 1 - ANOXIC BASINS - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. Slopes shall be constructed on a 1.5:1. An entry/exit ramp shall be constructed at a 5:1 slope. Location of the ramp shall be coordinated with the Construction Manager prior to commencement of the work. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. The slopes of the excavation shall be protected by 10 mill (minimum) impermeable polyethylene sheeting fastened at the top of the slope with a 24"x24" anchor trench backfilled holding the sheeting in place. The sheeting shall be held to the slope with sandbags or other means necessary. Anchor methods shall not penetrate the sheeting. Sheeting sections shall have a 24" overlap. Removal and disposal of sheeting shall be included in this bid item. Where anchor trenches are not feasable the sheeting shall be fastened to the top of slope with 2x4's and nail stakes. Nail Stakes shall be on 4'-0" centers. Excavation of all concrete footings and foundations shall be included within this bid package. Bidder is responsible for providing and maintaining all slopes. Drilled Pier and or Micro Pile spoils removal shall be included within this scope. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

O1 PHASE 1 - AERATION BASINS - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P1 PHASE 1 - SURFACE WASTING PS - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Slide rail shoring shoring installation shall be included within this scope of work and shall be done concurrently with the excavation. The slide rail system for this structure shall be provided by the Construction Manager. The dimensions of the system are 32' long x 21' wide at a 18' depth. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Q1 PHASE 1 - SEC CLAR DIST & RAS PS - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. Slopes shall be constructed on a 1.5:1. An entry/exit ramp shall be constructed at a 5:1 slope. Location of the ramp shall be coordinated with the Construction Manager prior to commencement of the work. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. The slopes of the excavation shall be protected by 10 mill (minimum) impermeable polyethylene sheeting fastened at the top of the slope with a 24”x24” anchor trench backfilled holding the sheeting in place. The sheeting shall be held to the slope with sandbags or other means necessary. Anchor methods shall not penetrate the sheeting. Sheeting sections shall have a 24” overlap. Removal and disposal of sheeting shall be included in this bid item. Where anchor trenches are not feasable the sheeting shall be fastened to the top of slope with 2x4's and nail stakes. Nail Stakes shall be on 4'-0" centers. Excavation of all concrete footings and foundations shall be included within this bid package. Bidder is responsible for providing and maintaining all slopes. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R1 PHASE 2 - SEC CLAR NO.1- EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T1 PHASE 1 - SEC CLAR NO.3- EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U1 PHASE 1 - RAS PS NO.2 - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Slide rail shoring shoring installation shall be included within this scope of work and shall be done concurrently with the excavation. The slide rail system for this structure shall be provided by the Construction Manager. The dimensions of the system are 21' long x 21' wide at a 26'-6" depth. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

V1 PHASE 1 - RAS PS NO.2 METER VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor’s labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

W1 PHASE 1 - WASTING METER VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z1 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA1 PHASE 2 - EFF PS & ELEC BLDG. - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

BB1 PHASE 2 - BLWR BLDG VALVE VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

CC1 PHASE 2 - DIGESTER NO. 4 & 5 VALVE VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

DD1 PHASE 2 - DIGESTER NO. 4 VALVE VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

EE1 PHASE 2 - DIGESTER NO. 5 VALVE VAULT - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

FF31 PHASE 1 - MAINTENANCE BLDG - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. Slopes shall be constructed on a 1.5:1. An entry/exit ramp shall be constructed at a 5:1 slope. Location of the ramp shall be coordinated with the Construction Manager prior to commencement of the work. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. The slopes of the excavation shall be protected by 10 mill (minimum) impermeable polyethylene sheeting fastened at the top of the slope with a 24"x24" anchor trench backfilled holding the sheeting in place. The sheeting shall be held to the slope with sandbags or other means necessary. Anchor methods shall not penetrate the sheeting. Sheeting sections shall have a 24" overlap. Removal and disposal of sheeting shall be included in this bid item. Where anchor trenches are not feasable the sheeting shall be fastened to the top of slope with 2x4's and nail stakes. Nail Stakes shall be on 4'-0" centers. Excavation of all concrete footings and foundations shall be included within this bid package. Bidder is responsible for providing and maintaining all slopes. Drilled Pier and or Micro Pile spoils removal shall be included within this scope. The bidders shall reference the preliminary shoring design. Where shoring is present excavations shall be done concurrently with the shoring installation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

FF32 PHASE 1 - MAINTENANCE BLDG - GRAVEL PAVING

The price bid shall include full compensation for fabric, placement, and fine-grading of gravel paving within a tolerance of +/- .10' as part of the overall scope of the earthwork. Gravel Paving work shall be done in accordance with design documents and Geotechnical Report. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

II3 PHASE 2 - OPERATIONS BLDG - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

JJ1 PHASE 2 - SOUTH GENERATOR - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

KK1 PHASE 1 - NORTH GENERATOR - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

LL1 PHASE 1 - TEMP NORTH ACCESS DR - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for cut and fill of the specified area per contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

LL5 PHASE 1 - TEMP NORTH ACCESS DR - B STONE

The price bid shall include full compensation for the labor, equipment, and material to construct and place of 12" B-Stone within a tolerance of +/- one tenth of a foot for the temporary north access drive as part of the overall scope of the earthwork. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

LL8 PHASE 1 - TEMP NORTH ACCESS DR - CONSTRUCTION ENTRANCE

The price bid shall include full compensation for labor, equipment, and material for the installation and routine maintenance of the stabilized construction entrance for the duration of earthwork package as part of the overall scope of the earthwork. Construction of the said item shall be per the plans and specifications. Maintenance of the said item shall be directed by the Construction Manager. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

OO1 PHASE 1 - EXISTING RAS PS NO.1 METER VAULT NO.1 & NO.2 - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

PP1 PHASE 1 - 8" METER VAULT & RPZ - EARTHWORK

The price bid shall include full compensation for the labor, equipment, and material for excavation and backfill of the structure including aggregate subgrade installation below foundation slabs per contract documents. Bottom of excavations shall be a 3' offset from foundation slabs. The aggregate base shall cover the 3' offset areas (bottom of slope/excavation) to allow for a clean working surface. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

ZZ3 BP 02 - EARTHWORK SUB MOBILIZATION

Mobilization shall be included within the bid items as seen fit by the bidding subcontractor. Additional mobilizations shall be included as seen fit to perform the work unless specifically stated within the individual bid package's methods of measurement. The price bid shall include full compensation for mobilization as part of the overall scope of the bid package. Mobilization shall not exceed 5% of the total bid package. No more than 75% of the total mobilization cost shall be billed with the first pay application. The remaining 25% of the total mobilization cost shall be billed at 90% completion of the work to compensate for the demobilization of equipment.

Compensation Type 1

ZZ4 BP 02 - EARTHWORK SUB BONDING

The price shall cover the cost for separate Performance and Payment Bonds valued at 100% of the Bid Package Total.

Compensation Type 1

Exhibit A.1 Detailed Price Bid Form(s):

6 Concrete - Effluent PS, Filtration UV, Clarifiers

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
O3	PHASE 1 - AERATION BASINS - CIP FOUNDATIONS/FOOTINGS	6	CY		
O4	PHASE 1 - AERATION BASINS - CIP WALLS	22	CY		
O5	PHASE 1 - AERATION BASINS - CIP GROUTED INVERT	3	CY		
P3	PHASE 1 - SURFACE WASTING PS - CIP FOUNDATIONS/FOOTINGS (VLV VAULT)	6	CY		
P4	PHASE 1 - SURFACE WASTING PS - CIP WALLS (VLV VAULT)	12	CY		
P5	PHASE 1 - SURFACE WASTING PS - GROUTED INVERT (VLV VAULT)	4	CY		
P6	PHASE 1 - SURFACE WASTING PS - CIP SUSPENDED SLAB (VLV VAULT)	6	CY		
P7	PHASE 1 - SURFACE WASTING PS - CIP FOUNDATIONS/FOOTINGS (WETWELL)	21	CY		
P8	PHASE 1 - SURFACE WASTING PS - CIP WALLS (WETWELL)	47	CY		
P9	PHASE 1 - SURFACE WASTING PS - CIP GROUTED INVERT (WETWELL)	7	CY		
P10	PHASE 1 - SURFACE WASTING PS - CIP SUSPENDED SLAB (WETWELL)	7	CY		
Q3	PHASE 1 - SEC CLAR DIST & RAS PS - CIP FOUNDATIONS/FOOTINGS	28	CY		
Q4	PHASE 1 - SEC CLAR DIST & RAS PS - CIP WALLS	119	CY		
Q5	PHASE 1 - SEC CLAR DIST & RAS PS - CIP CONCRETE INFILL	33	CY		
R3	PHASE 2 - SEC CLAR NO.1- CIP FOUNDATIONS/FOOTINGS	305	CY		
R4	PHASE 2 - SEC CLAR NO.1- CIP WALLS	149	CY		

R5	PHASE 2 - SEC CLAR NO.1- CIP SUSPENDED SLAB LAUNDER & GROUTED INVERT	47	CY		
R6	PHASE 2 - SEC CLAR NO.1- CIP LAUNDER WALLS	26	CY		
R7	PHASE 2 - SEC CLAR NO.1- CIP LAUNDER GROUTED INVERT	14	CY		
R8	PHASE 2 - SEC CLAR NO.1- CIP GROUTED TOPPING SLAB	41	CY		
R9	PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX SLAB	2	CY		
R10	PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX WALLS	6	CY		
R11	PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX GROUTED INVERT	4	CY		
R12	PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX SLAB	1	CY		
R13	PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX WALLS	1	CY		
R14	PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX GROUTED INVERT	1	CY		
T3	PHASE 1 - SEC CLAR NO.3- CIP FOUNDATIONS/FOOTINGS	305	CY		
T4	PHASE 1 - SEC CLAR NO 3- CIP WALLS	149	CY		
T5	PHASE 1 - SEC CLAR NO.3- CIP SUSPENDED SLAB LAUNDER & GROUTED INVERT	47	CY		
T6	PHASE 1 - SEC CLAR NO.3- CIP LAUNDER WALLS	26	CY		
T7	PHASE 1 - SEC CLAR NO.3- CIP LAUNDER GROUTED INVERT	14	CY		
T8	PHASE 1 - SEC CLAR NO.3- CIP GROUTED TOPPING SLAB	41	CY		
T9	PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX SLAB	2	CY		
T10	PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX WALLS	6	CY		
T11	PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX GROUTED INVERT	4	CY		
T12	PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX SLAB	1	CY		
T13	PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX WALLS	1	CY		
T14	PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX GROUTED INVERT	1	CY		

U3	PHASE 1 - RAS PS NO.2 - CIP FOUNDATIONS/FOOTINGS	21	CY		
U4	PHASE 1 - RAS PS NO.2 - CIP WALLS	58	CY		
U5	PHASE 1 - RAS PS NO.2 - CIP SUSPENDED SLAB	6	CY		
U6	PHASE 1 - RAS PS NO.2 - CIP GROUTED INVERT	9	CY		
U7	PHASE 1 - RAS PS NO.2 - CIP UPPER SLAB	11	CY		
V3	PHASE 1 - RAS PS NO.2 METER VAULT- CIP FOUNDATIONS/FOOTINGS	4	CY		
V4	PHASE 1 - RAS PS NO.2 METER VAULT- CIP WALLS	9	CY		
V6	PHASE 1 - RAS PS NO.2 METER VAULT- CIP GROUTED INVERT	1	CY		
Z4	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP FOUNDATIONS/FOOTINGS (SLAB EL. 1108.50, 1114.75, 1116.00)	580	CY		
Z5	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP WALLS	1327	CY		
Z6	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP SLABS ON GRAVEL FILL (UV, FILTERS, FLUME AREAS)	61	CY		
Z7	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- GRAVEL FILL IN STRUCTURE (UV, FILTERS, FLUME AREAS)	320	CY		
Z8	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP ELEVATED/DECK SLABS (BY UV EQUIPMENT)	7	CY		
Z9	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP GROUT (UNDER FILTERS/FUME)	65	CY		
Z10	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP SAMPLING BUILDING SLAB	3.5	CY		
Z15	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CANOPY DRILLED PIER AND CAP	4	CY		
AA3	PHASE 2 - EFF PS & ELEC BLDG. - CIP LOWER SLAB	64	CY		
AA4	PHASE 2 - EFF PS & ELEC BLDG. - CIP WALLS	263	CY		
AA6	PHASE 2 - EFF PS & ELEC BLDG. - CIP SUSPENDED SLAB	40	CY		
AA7	PHASE 2 - EFF PS & ELEC BLDG. - CIP EXTERIOR FOOTINGS	50	CY		
AA8	PHASE 2 - EFF PS & ELEC BLDG. - CIP EXTERIOR STEM WALLS	19	CY		
AA9	PHASE 2 - EFF PS & ELEC BLDG. - CIP INTERIOR UPPER SLAB	45	CY		

AA10	PHASE 2 - EFF PS & ELEC BLDG. - CIP CLASS A INVERTS	10	**CY**		
AA11	PHASE 2 - EFF PS & ELEC BLDG. - CIP PUMP STANDS	8	**CY**		
AA12	PHASE 2 - EFF PS & ELEC BLDG. - CIP ELECTRICAL PADS	4	**CY**		
ZZ11	BP 06 - EFFLUENT PS, FILTRATION UV, CLARIFIERS CONCRETE SUB MOBILIZATION	1	**LS**		
ZZ12	BP 06 - EFFLUENT PS, FILTRATION UV, CLARIFIERS CONCRETE SUB BONDING	1	**LS**		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

General Requirements:

- **Cold and Hot weather protection shall be included within the individual bid items.**
- **Surrounding areas shall be protected from concrete splatters as necessary. Cleaning of concrete splatter shall be at the expense of the bidding contractors.**
- **Installation of all concrete embedded items including, but not limited to, embeds, sleeves, pipe, anchors, etc. shall be included within this bid package.**
- **Bidders shall read, understand, and utilize the preliminary shoring design documents provided prior to submitting all bids. The preliminary shoring design documents have been provided in Exhibit form and can be found on CivCast along with all other available design documents.**
- **Water tightness testing shall be provided by the construction manager. Bidder shall be responsible for costs associated with repair and remedy of a failed water tightness test.**
- **Cast in-Place concrete pour plans shall be submitted for review by the construction and design team within 14 calendar days of placement or as identified by the contract documents.**

Methods of Measurement

Bid Package 6 - Concrete - Effluent PS, Filtration UV, Clarifiers

O3 PHASE 1 - AERATION BASINS - CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

O4 PHASE 1 - AERATION BASINS - CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

O5 PHASE 1 - AERATION BASINS - CIP GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P3 PHASE 1 - SURFACE WASTING PS - CIP FOUNDATIONS/FOOTINGS (VLV VAULT)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P4 PHASE 1 - SURFACE WASTING PS - CIP WALLS (VLV VAULT)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P5 PHASE 1 - SURFACE WASTING PS - GROUTED INVERT (VLV VAULT)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P6 PHASE 1 - SURFACE WASTING PS - CIP SUSPENDED SLAB (VLV VAULT)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P7 PHASE 1 - SURFACE WASTING PS - CIP FOUNDATIONS/FOOTINGS (WETWELL)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P8 PHASE 1 - SURFACE WASTING PS - CIP WALLS (WETWELL)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P9 PHASE 1 - SURFACE WASTING PS - CIP GROUTED INVERT (WETWELL)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P10 PHASE 1 - SURFACE WASTING PS - CIP SUSPENDED SLAB (WETWELL)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Q3 PHASE 1 - SEC CLAR DIST & RAS PS - CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Q4 PHASE 1 - SEC CLAR DIST & RAS PS - CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Q5 PHASE 1 - SEC CLAR DIST & RAS PS - CIP CONCRETE INFILL

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, reinforcement, concrete placement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R3 PHASE 2 - SEC CLAR NO.1- CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R4 PHASE 2 - SEC CLAR NO.1- CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R5 PHASE 2 - SEC CLAR NO.1- CIP SUSPENDED SLAB LAUNDER & GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R6 PHASE 2 - SEC CLAR NO.1- CIP LAUNDER WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R7 PHASE 2 - SEC CLAR NO.1- CIP LAUNDER GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R8 PHASE 2 - SEC CLAR NO.1- CIP GROUTED TOPPING SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the grouted topping slab per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, saw cutting, expansion/isolation joint treatment, honeycomb/defect repair, finishing and curing methods as well as protection of surrounding equipment/metals/facilities. The bidder shall bear the entire cost of mechanical material placement. Use of the clarifier mechanism shall be available to the bidder during grout placement. Damage to the clarifier mechanisms shall be at the expense of the bidder. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R9 PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R10 PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R11 PHASE 2 - SEC CLAR NO.1- CIP SCUM BOX GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R12 PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R13 PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R14 PHASE 2 - SEC CLAR NO.1- CIP EFFLUENT BOX GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T3 PHASE 1 - SEC CLAR NO.3- CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T4 PHASE 1 - SEC CLAR NO 3- CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T5 PHASE 1 - SEC CLAR NO.3- CIP SUSPENDED SLAB LAUNDER & GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

T6 PHASE 1 - SEC CLAR NO.3- CIP LAUNDER WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T7 PHASE 1 - SEC CLAR NO.3- CIP LAUNDER GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T8 PHASE 1 - SEC CLAR NO.3- CIP GROUTED TOPPING SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the grouted topping slab per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, saw cutting, expansion/isolation joint treatment, honeycomb/defect repair, finishing and curing methods as well as protection of surrounding equipment/metals/facilities. The bidder shall bear the entire cost of mechanical material placement. Use of the clarifier mechanism shall be available to the bidder during grout placement. Damage to the clarifier mechanisms shall be at the expense of the bidder. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T9 PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T10 PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T11 PHASE 1 - SEC CLAR NO.3- CIP SCUM BOX GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T12 PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T13 PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T14 PHASE 1 - SEC CLAR NO.3- CIP EFFLUENT BOX GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U3 PHASE 1 - RAS PS NO.2 - CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U4 PHASE 1 - RAS PS NO.2 - CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U5 PHASE 1 - RAS PS NO.2 - CIP SUSPENDED SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U6 PHASE 1 - RAS PS NO.2 - CIP GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U7 PHASE 1 - RAS PS NO.2 - CIP UPPER SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

V3 PHASE 1 - RAS PS NO.2 METER VAULT- CIP FOUNDATIONS/FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

V4 PHASE 1 - RAS PS NO.2 METER VAULT- CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

V6 PHASE 1 - RAS PS NO.2 METER VAULT- CIP GROUTED INVERT

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z4 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP FOUNDATIONS/FOOTINGS (SLAB EL. 1108.50, 1114.75, 1116.00)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z5 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z6 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP SLABS ON GRAVEL FILL (UV, FILTERS, FLUME AREAS)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z7 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- GRAVEL FILL IN STRUCTURE (UV, FILTERS, FLUME AREAS)

The price bid shall include full compensation for the labor, equipment, and material to completely install the interior fill material per the contract documents. This bid item shall be all-inclusive of but not limited to placement, compaction, grading, protection of utilities, etc. Access to fill locations may be limited, bidders shall be responsible for all costs associated with mechanical placement if necessary. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z8 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP ELEVATED/DECK SLABS (BY UV EQUIPMENT)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z9 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP GROUT (UNDER FILTERS/FUME)

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z10 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CIP SAMPLING BUILDING SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z15 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME- CANOPY DRILLED PIER AND CAP

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading of aggregate base course, concrete placement (footings, stem walls, slabs, thickened edges, etc), cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA3 PHASE 2 - EFF PS & ELEC BLDG. - CIP LOWER SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA4 PHASE 2 - EFF PS & ELEC BLDG. - CIP WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, concrete placement, reinforcement, saw cutting, expansion/isolation joint treatment, block outs, pipe penetrations (supplied by others), point & patching, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA6 PHASE 2 - EFF PS & ELEC BLDG. - CIP SUSPENDED SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to concrete placement, cold weather protection, reinforcement, integrated concrete beams, shoring and shoring design, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA7 PHASE 2 - EFF PS & ELEC BLDG. - CIP EXTERIOR FOOTINGS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, concrete placement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA8 PHASE 2 - EFF PS & ELEC BLDG. - CIP EXTERIOR STEM WALLS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, concrete placement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA9 PHASE 2 - EFF PS & ELEC BLDG. - CIP INTERIOR UPPER SLAB

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds or pipe penetrations supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA10 PHASE 2 - EFF PS & ELEC BLDG. - CIP CLASS A INVERTS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, and curing methods as well as installing any required embeds supplied by others. The bid item includes protection of surrounding equipment and other work items. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA11 PHASE 2 - EFF PS & ELEC BLDG. - CIP PUMP STANDS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to cold weather protection, reinforcement, concrete placement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Bidder shall coordinate with the Construction Manager for size & orientation of pump anchors prior to commencement of work. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA12 PHASE 2 - EFF PS & ELEC BLDG. - CIP ELECTRICAL PADS

The price bid shall include full compensation for the labor, equipment, and material to completely construct the cast in-place concrete per the contract documents. This bid item shall be all-inclusive of but not limited to fine grading, concrete placement, cold weather protection, reinforcement, saw cutting, expansion/isolation joint treatment, honeycomb repair, rub finish, and curing methods as well as installing any required embeds supplied by others. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

ZZ11 BP 06 - EFFLUENT PS, FILTRATION UV, CLARIFIERS CONCRETE SUB MOBILIZATION

Mobilization shall be included within the bid items as seen fit by the bidding subcontractor. Additional mobilizations shall be included as seen fit to perform the work unless specifically stated within the individual bid package's methods of measurement. The price bid shall include full compensation for mobilization as part of the overall scope of the bid package. Mobilization shall not exceed 5% of the total bid package. No more than 75% of the total mobilization cost shall be billed with the first pay application. The remaining 25% of the total mobilization cost shall be billed at 90% completion of the work to compensate for the demobilization of equipment.

Compensation Type 1

ZZ12 BP 06 - EFFLUENT PS, FILTRATION UV, CLARIFIERS CONCRETE SUB BONDING

The price shall cover the cost for separate Performance and Payment Bonds valued at 100% of the Bid Package Total.

Compensation Type 1

Exhibit A.1 Detailed Price Bid Form(s):

10 Yard Piping

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
G1	PHASE 1 - 4", 6", & 8" DRAINS W/MH'S PROFILES (34-36)	327	**LF**		
G2	PHASE 1 - 8" DRAIN PROFILE (8) W/MH'S	39	**LF**		
G3	PHASE 1 - 6" DRAIN PROFILE W/MH'S PROFILES (33)	96	**LF**		
G4	PHASE 1 - 6" DRAIN PROFILES (23-24)	58	**LF**		
G5	PHASE 2 - 6" & 8" DRAINS W/ MH'S PROFILES (38)	488	**LF**		
G6	PHASE 2 - 8" DRAIN AT LS NO. 2 (NO PROFILE)	16	**LF**		
G7	PHASE 2 - 4" DRAINS @ EXISTING DIGESTERS #4 & #5 (NO PROFILES)	118	**LF**		
G8	PHASE 2 - 4" & 6" DRAINS FROM PS NO.1 TO OPERATIONS BLDG (NO PROFILES)	67	**LF**		
G9	PHASE 2 - 4" & 6" DRAINS FROM PUMPED INFLUENT METER VAULT TO LS #4 & INFLUENT BUILDING TO LS #4 (NO PROFILES)	40	**LF**		
G10	PHASE 1 - 1" WATER LINE FROM INFLUENT STRUCTURE TO 4" TIE-IN	134	**LF**		
G11	PHASE 1 - 2" & 3" WATER LINE FROM EXT. 6" WATER LINE TO MAINTENANCE BUILDING AND YARD HYDRANTS	220	**LF**		
G12	PHASE 2 - 2", 3", & 6" WATER LINE @ OPERATIONS BUILDING TO RPZ @ SEC CLAR #3 TO SLUDGE THICKENER PS	497	**LF**		
G13	PHASE 2 - 1" WATER LINE FROM OPERATIONS BLDG TO EXISTING HW	107	**LF**		
G14	PHASE 2 - FIRE HYDRANT ASSEMBLIES ON EXISTING 6" WATER @ MAINTENANCE BUILDING	1	**EA**		
G15	PHASE 2 - FIRE HYDRANT ASSEMBLIES ON EXISTING 8" WATER	1	**EA**		
G16	PHASE 1 - 8" WATER AND METER VAULT PIPING AT EXISTING DIGESTERS	80	**LF**		
G17	PHASE 2 - 4", 2", 1" PW FROM INFLUENT BUILDING TO EXISTING DIGESTERS #4 & #5	2,200	**LF**		
G18	PHASE 1 - 2" & 1" PW FROM 4" TIE-IN TO SECONDARY CLARIFIERS	270	**LF**		

G19	PHASE 1 - 4",3",2",1" NPW FROM RPZ @ INFLUENT STRUCTURE TO SEC CLAR DISTR BOX	1,508	**LF**		
G20	PHASE 1 - 2" & 1" NPW FROM RPZ @ OPS BLDG TO WAS/SCUM PS	190	**LF**		
G21	PHASE 1 - 6" NPW FROM FDC @ OPS BUILDING TO FDC@ INFLUENT STRUCTURE	1,097	**LF**		
G22	PHASE 1 - 4" DI FM FROM INFLUENT STR. TO LS NO.4 (PROFILE 4)	173	**LF**		
G23	PHASE 1 - 4" DI FM FROM FROM TIE-IN @ EXISTING 4" FM TO JB (PROFILE 41)	39	**LF**		
G24	PHASE 2 - 2" PVC FM FROM DIGESTER 4 TO MH STR 63 & BLOWER BDLG VLV VAULT TO STR. 63	181	**LF**		
G25	PHASE 2 - 2" PVC FM FROM WET WEATHER METER VAULT TO WASTE METER VAULT TO MH33-3 (NO PROFILE)	219	**LF**		
G25.5	PHASE 2 - RAS PS FLOW METER VAULTS 1 & 2 SUMP PUMP PIPING	1	**LS**		
G26	PHASE 1 - 24" DI RS FROM INFLUENT BLDG TO MCKISSIC LS FM TIE-IN (PROFILE 2)	228	**LF**		
G27	PHASE 1 - 24" DI RS TEMP. REROUTE MCKISSIC LS FM (NO PROFILE)	182	**LF**		
G28	PHASE 1 - 12" DI RS FROM INFLUENT BLDG TO NORTH LS FM TIE-IN (PROFILE 3)	557	**LF**		
G29	PHASE 1 - 42" DI RS FROM MH 1-9 TO INFLUENT BLDG (PROFILE 1)	1,005	**LF**		
G30	PHASE 1 - 36" DI RS FROM INFLUENT STRUCTURE TO TIE-IN @ EXISTING 36" (PROFILE 5)	93	**LF**		
G31	PHASE 1 - 12" DI RS FROM NEW 36" RS TO NORTH LS FM 30" TIE-IN EXISTING (PROFILE 6)	467	**LF**		
G32	PHASE 2 - 30" DI WW FROM PLANT INFL METER VLT TO FILTRATION STR. (PROFILE 7)	588	**LF**		
G33	PHASE 1 - 12" DI RAS FROM RAS PS NO.2 TO INFLUENT BLDG. (PROFILE 28)	772	**LF**		
G34	PHASE 1 - 12" DI RAS FROM RAS PS TO TIE-IN @ EXISTING RS LINE (PROFILE 31)	36	**LF**		
G35	PHASE 1 - 12" DI RAS FROM RAS PS TO TIE-IN @ EXISTING RAS LINE (PROFILE 32)	69	**LF**		
G36	PHASE 1 - 18" DI RAS FROM SECONDARY CLARIFIER NO.3 TO RAS PS NO.2 (PROFILE 27)	63	**LF**		
G37	PHASE 1 - REPLACE 18" DI RAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)	75	**LF**		
G38	PHASE 1 - 8" DI WAS FROM SLUDGE THICKENER TO WAS SCUM PS (PROFILE 26)	226	**LF**		
G39	PHASE 1 - 6" DI WAS FROM SECONDARY CLARIFIER NO.3 TO WAS/SCUM PS (PROFILE 22)	77	**LF**		
G40	PHASE 1 - REPLACE 6" DI WAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)	54	**LF**		

G41	PHASE 1 - 36" DI ML FROM SEC. CLAR. DISTRIBUTION BOX TO EXISTING 36" TIE-IN (2EA) (PROFILE 9 & 10)	118	**LF**		
G42	PHASE 2 - 6" & 8" DI FW FROM FILTERS TO EXIST SLUDGE THICKENER DIVERSION BOX (PROFILE 29 & 30)	667	**LF**		
G43	PHASE 1 - 30" & 36" DI SCE FROM FILTERS TO SEC. CLAR. #2 (PROFILES 17 & 19)	61	**LF**		
G44	PHASE 1 - 30" DI SCE FROM SEC. CLAR. #3 TO SEC. CLAR. #2 (PROFILE 18)	20	**LF**		
G45	PHASE 1 - 30" DI SCE FROM SEC. CLAR. NO1 TO FILTERS (PROFILE 16)	28	**LF**		
G46	PHASE 1 - 48" DI FE FROM FILTERS TO EFFLUENT PS (PROFILE 20)	9	**LF**		
G47	PHASE 1 - 36" DI FE FROM EFFLUENT PS TO OUTFALL STRUCTURE (PROFILE 21)	263	**LF**		
G48	PHASE 1 - 6" DI SWAS FROM SLUDGE THICKENER DISTR. BOX TO SURFACE WASTING PS (PROFILE 15)	305	**LF**		
G49	PHASE 1 - 12" DI SWAS FROM EXISTING AERATION BASIN TO SURFACE WASTING PS (PROFILE 14)	151	**LF**		
G50	PHASE 1 - 2.5" ST CA FROM INFLUENT ELEC BLDG TO ANOXIC BASINS	347	**LF**		
G51	PHASE 1 - 30" DI SCI FROM SEC. CLAR. DISTR. BOX TO SEC. CLAR. NO. 3 (PROFILE 13)	328	**LF**		
G52	PHASE 1 - 30" DI SCI FROM SEC. CLAR. DISTRIBUTION BOX TO SEC. CLAR. DISTRIBUTION BOX (2EA) (PROFILE 11 & 12)	100	**LF**		
G53	PHASE 1 - REPLACE 30" DI SCI @ SECONDARY CLARIFIER NO.1 (NO PROFILE)	65	**LF**		
G54	PHASE 1 - 6" DI SSC FROM SEC. CLAR. NO 2 TO SEC. CLAR. NO 3 (PROFILE 25)	61	**LF**		
G55	PHASE 1 - 4" PE OC FROM LIFT STATION NO.4 TO ODOR CONTROL UNIT	103	**LF**		
G56	PHASE 1 - 6" DI DS/TS @ BLOWER BLDG VLV VAULT	76	**LF**		
G57	PHASE 1 - 4" DI GLASS LINED @ INFLUENT STRUCTURE	162	**LF**		
G58	PHASE 1 - 2" GI NPW BETWEEN FLTR BLDG & SEC. CLAR. NO. 1	1	**EA**		
G59	PHASE 1 - 2" W OPERATIONS AND LAB BUILDING	2	**EA**		
G60	PHASE 1 - 2" NPW BETWEEN AERATION BASIN 1&2	1	**EA**		
G61	PHASE 1 - 2" PVC NPW @ RECYCLE PS NO. 1	3	**EA**		
G62	PHASE 1 - 3" PVC PW @ NORTH SIDE OF OPS BLDG	4	**EA**		
G63	PHASE 1 - 4" DI DL @ EXISTING EFFLUENT PS	2	**EA**		

G64	PHASE 1 - 4" DI FM @ EXISTING HEADWORKS (PROFILE 41 LOCATION)	4	**EA**		
G65	PHASE 1 - REPLACE 6" DI WAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)	2	**EA**		
G66	PHASE 1 - 6" WATER LINE @ MAINTENANCE BUILDING	1	**EA**		
G67	PHASE 1 - 6" DL @ NORTH SIDE OF OPERATIONS BUILDING	2	**EA**		
G68	PHASE 1 - 6" DI DL @ RAS PS NO. 2	1	**EA**		
G69	PHASE 1 - 6" DI DL @ EXISTING MH 33-1 (PROFILE 33 LOCATION)	1	**EA**		
G70	PHASE 1 - 8" DI DL @ EXISTING COMPOSTING FACILITY DRIVE (PROFILE 8 LOCATION)	2	**EA**		
G71	PHASE 1 - 8" DI WAS @ EXISTING SLUDGE THICKENER NO. 2 (PROFILE 26 LOCATION)	4	**EA**		
G72	PHASE 1 - 12" RAS @ RAS FM VAULT #2 (PROFILE 32 LOCATION)	2	**EA**		
G73	PHASE 1 - 12" RS FUTURE CONNECTION @ INFLUENT BLDG.	1	**EA**		
G74	PHASE 1 - 12" DI RS @ NORTH LIFT STATION TIE-IN (PROFILE NO. 3 LOCATION)	2	**EA**		
G75	PHASE 1 - REPLACE 18" DI RAS @ SECONDARY CLARIFIER NO.1	1	**EA**		
G76	PHASE 1 - 24" DI RS FUTURE CONNECTION @ INFLUENT BLDG.	1	**EA**		
G77	PHASE 1 - 24" DI RS @ MCKISSIC LS TIE-IN (PROFILE 3 LOCATION)	4	**EA**		
G78	PHASE 1 - 30" DI RS NORTH WEST OF SECONDARY CLAR. NO.1	1	**EA**		
G79	PHASE 1 - REPLACE 30" DI SCI @ SECONDARY CLARIFIER NO.1 (NO PROFILE)	1	**EA**		
G80	PHASE 1 - REPLACE 30" DI SCE @ SECONDARY CLARIFIER NO.1 (PROFILE 16 LOCATION)	1	**EA**		
G81	PHASE 1 - 36" DI SCE SOUTH EAST OF CLAR. NO. 3	1	**EA**		
G82	PHASE 1 - 36" DI ML @ SEC. CLAR. DISTR. BOX **SHOWN AS 30"**	8	**EA**		
G83	PHASE 1 - 36" RS @ NW CORNER OF AERATION BASIN #1	2	**EA**		
G84	PHASE 1 - 36" DI ML LINE STOP @ AERATION BASIN NO.1 W/ CAP	1	**EA**		
G85	PHASE 1 - 36" DI ML LINE STOP @ AERATION BASIN NO.2 W/ CAP	1	**EA**		
G86	PHASE 1 - 18" DI RAS LINE STOP @ SEC. CLAR. NO .1 W/CAP	1	**EA**		

G87	PHASE 1 - 15" & 18" DL REMOVAL	156	**LF**		
G88	PHASE 1 - 12" RAS LINES	52	**LF**		
G89	PHASE 1 - REMOVE YARD HYDRANT/FLUSHING HYDRANTS	9	**EA**		
G90	PHASE 1 - FIRE HYDRANT @ MAINTENANCE BUILDING	1	**EA**		
G91	PHASE 1 - 30" & 36" SCE REMOVAL	294	**LF**		
G92	PHASE 1 - 30" & 36" RS REMOVAL	557	**LF**		
G93	PHASE 1 - 30" OR 36" ML REMOVAL	163	**LF**		
G94	PHASE 1 - NORTH LIFT STATION TIE-IN	1	**LS**		
G95	PHASE 1 - 42" HEADWORKS TIE-IN	1	**LS**		
G96	PHASE 1 - SECONDARY CLARIFIER SPLITTER BOX	1	**LS**		
G97	PHASE 1 - 36" RS TIE-IN	1	**LS**		
G98	PHASE 1 - TEMPORARY 36" SCE	1	**LS**		
G99	PHASE 1 - 6" FORCEMAIN RELOCATION FROM DIGESTER NO. 2	210	**LF**		
H1	PHASE 1 - 36" RCP	188	**LF**		
H2	PHASE 1 - 24" DOUBLE RCP W/RIPRAP @ WEST ENTRANCE	70	**LF**		
H3	PHASE 1 - 18" DOUBLE RCP @ WEST ENTRANCE	120	**LF**		
H4	PHASE 1 - 42" RCP	66	**LF**		
H5	PHASE 1 - 45"X29" RCPE PIPE	110	**LF**		
H6	PHASE 1 - TRIPLE BARREL 10'X6' RCB @ TOWN BRANCH CREEK CROSSING	90	**LF**		
H7	PHASE 1 - HEAD WALL/SINGLE PIPE	2	**EA**		
H8	PHASE 1 - HEAD WALL/DOUBLE PIPE	4	**EA**		
H9	PHASE 1 - 6'X6' AREA INLET	2	**EA**		
H10	PHASE 1 - 6'X6' JUNCTION BOX	1	**EA**		

LL10	TEMP NORTH ACCESS DR - TRIPLE BARREL BOX CULVERT SUPPLY & INSTALL	1	**LS**		
ZZ21	BP 10 - YARD PIPING MOBILIZATION	1	**LS**		
ZZ22	BP 10 - YARD PIPING BONDING	1	**LS**		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

Methods of Measurement

Bid Package 10 - Yard Piping

G1 PHASE 1 - 4", 6", & 8" DRAINS W/MH'S PROFILES (34-36)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G2 PHASE 1 - 8" DRAIN PROFILE (8) W/MH'S

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G3 PHASE 1 - 6" DRAIN PROFILE W/MH'S PROFILES (33)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G4 PHASE 1 - 6" DRAIN PROFILES (23-24)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G5 PHASE 2 - 6" & 8" DRAINS W/ MH'S PROFILES (38)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G6 PHASE 2 - 8" DRAIN AT LS NO. 2 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G7 PHASE 2 - 4" DRAINS @ EXISTING DIGESTERS #4 & #5 (NO PROFILES)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G8 PHASE 2 - 4" & 6" DRAINS FROM PS NO.1 TO OPERATIONS BLDG (NO PROFILES)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G9 PHASE 2 - 4" & 6" DRAINS FROM PUMPED INFLUENT METER VAULT TO LS #4 & INFLUENT BUILDING TO LS #4 (NO PROFILES)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G10 PHASE 1 - 1" WATER LINE FROM INFLUENT STRUCTURE TO 4" TIE-IN

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G11 PHASE 1 - 2" & 3" WATER LINE FROM EXT. 6" WATER LINE TO MAINTENANCE BUILDING AND YARD HYDRANTS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G12 PHASE 2 - 2", 3", & 6" WATER LINE @ OPERATIONS BUILDING TO RPZ @ SEC CLAR #3 TO SLUDGE THICKENER PS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G13 PHASE 2 - 1" WATER LINE FROM OPERATIONS BLDG TO EXISTING HW

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G14 PHASE 2 - FIRE HYDRANT ASSEMBLIES ON EXISTING 6" WATER @ MAINTENANCE BUILDING

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material,

Compensation Type 1

G15 PHASE 2 - FIRE HYDRANT ASSEMBLIES ON EXISTING 8" WATER

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G16 PHASE 1 - 8" WATER AND METER VAULT PIPING AT EXISTING DIGESTERS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G17 PHASE 2 - 4", 2", 1" PW FROM INFLUENT BUILDING TO EXISTING DIGESTERS #4 & #5

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G18 PHASE 1 - 2" & 1" PW FROM 4" TIE-IN TO SECONDARY CLARIFIERS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G19 PHASE 1 - 4",3",2",1" NPW FROM RPZ @ INFLUENT STRUCTURE TO SEC CLAR DISTR BOX

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G20 PHASE 1 - 2" & 1" NPW FROM RPZ @ OPS BLDG TO WAS/SCUM PS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G21 PHASE 1 - 6" NPW FROM FDC @ OPS BUILDING TO FDC@ INFLUENT STRUCTURE

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G22 PHASE 1 - 4" FM FROM INFLUENT STR. TO LS NO.4 (PROFILE 4)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G23 PHASE 1 - 4"FM FROM FROM TIE-IN @ EXISTING 4" FM TO JB (PROFILE 41)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G24 PHASE 2 - 2" FM FROM DIGESTER 4 TO MH STR 63 & BLOWER BDLG VLV VAULT TO STR. 63

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G25 PHASE 2 - 2" FM FROM WET WEATHER METER VAULT TO WASTE METER VAULT TO MH33-3 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G25.5 PHASE 2 - RAS PS FLOW METER VAULTS 1 & 2 SUMP PUMP PIPING

The price bid shall include full compensation for the labor, equipment, and material to install sump pump piping (see specification 11315 for pipe routing) as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G26 PHASE 1 - 24" RS FROM INFLUENT BLDG TO MCKISSIC LS FM TIE-IN (PROFILE 2)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G27 PHASE 1 - 24" RS TEMP. REROUTE MCKISSIC LS FM (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G28 PHASE 1 - 12" RS FROM INFLUENT BLDG TO NORTH LS FM TIE-IN (PROFILE 3)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G29 PHASE 1 - 42" RS FROM MH 1-9 TO INFLUENT BLDG (PROFILE 1)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G30 PHASE 1 - 36" RS FROM INFLUENT STRUCTURE TO TIE-IN @ EXISTING 36" (PROFILE 5)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G31 PHASE 1 - 12" RS FROM NEW 36" RS TO NORTH LS FM 30" TIE-IN EXISTING (PROFILE 6)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G32 PHASE 2 - 30" WW FROM PLANT INFL METER VLT TO FILTRATION STR. (PROFILE 7)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G33 PHASE 1 - 12" RAS FROM RAS PS NO.2 TO INFLUENT BLDG. (PROFILE 28)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G34 PHASE 1 - 12" RAS FROM RAS PS TO TIE-IN @ EXISTING RS LINE (PROFILE 31)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G35 PHASE 1 - 12" RAS FROM RAS PS TO TIE-IN @ EXISTING RAS LINE (PROFILE 32)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G36 PHASE 1 - 18" RAS FROM SECONDARY CLARIFIER NO.3 TO RAS PS NO.2 (PROFILE 27)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G37 PHASE 1 - REPLACE 18" RAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G38 PHASE 1 - 8" WAS FROM SLUDGE THICKENER TO WAS SCUM PS (PROFILE 26)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G39 PHASE 1 - 6" WAS FROM SECONDARY CLARIFIER NO.3 TO WAS/SCUM PS (PROFILE 22)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G40 PHASE 1 - REPLACE 6" WAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G41 PHASE 1 - 36" ML FROM SEC. CLAR. DISTRIBUTION BOX TO EXISTING 36" TIE-IN (2EA) (PROFILE 9 & 10)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G42 PHASE 2 - 6" & 8" FW FROM FILTERS TO EXIST SLUDGE THICKENER DIVERSION BOX (PROFILE 29 & 30)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G43 PHASE 1 - 30" & 36" SCE FROM FILTERS TO SEC. CLAR. #2 (PROFILES 17 & 19)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G44 PHASE 1 - 30" SCE FROM SEC. CLAR. #3 TO SEC. CLAR. #2 (PROFILE 18)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G45 PHASE 1 - 30" SCE FROM SEC. CLAR. NO1 TO FILTERS (PROFILE 16)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G46 PHASE 1 - 48" FE FROM FILTERS TO EFFLUENT PS (PROFILE 20)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G47 PHASE 1 - 36" FE FROM EFFLUENT PS TO OUTFALL STRUCTURE (PROFILE 21)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G48 PHASE 1 - 6" SWAS FROM SLUDGE THICKENER DISTR. BOX TO SURFACE WASTING PS (PROFILE 15)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G49 PHASE 1 - 12" SWAS FROM EXISTING AERATION BASIN TO SURFACE WASTING PS (PROFILE 14)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G50 PHASE 1 - 2.5" CA FROM INFLUENT ELEC BLDG TO ANOXIC BASINS

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G51 PHASE 1 - 30" SCI FROM SEC. CLAR. DISTR. BOX TO SEC. CLAR. NO. 3 (PROFILE 13)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G52 PHASE 1 - 30" SCI FROM SEC. CLAR. DISTRIBUTION BOX TO SEC. CLAR. DISTRIBUTION BOX (2EA) (PROFILE 11 & 12)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G53 PHASE 1 - REPLACE 30" SCI @ SECONDARY CLARIFIER NO.1 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G54 PHASE 1 - 6" SSC FROM SEC. CLAR. NO 2 TO SEC. CLAR. NO 3 (PROFILE 25)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G55 PHASE 1 - 4" OC FROM LIFT STATION NO.4 TO ODOR CONTROL UNIT

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G56 PHASE 1 - 6" DS/TS @ BLOWER BLDG VLV VAULT

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G57 PHASE 1 - 4" GLASS LINED @ INFLUENT STRUCTURE

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G58 PHASE 1 - 2" NPW BETWEEN FLTR BLDG & SEC. CLAR. NO. 1

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G59 PHASE 1 - 2" W OPERATIONS AND LAB BUILDING

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G60 PHASE 1 - 2" NPW BETWEEN AERATION BASIN 1&2

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G61 PHASE 1 - 2" NPW @ RECYCLE PS NO. 1

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G62 PHASE 1 - 3" PW @ NORTH SIDE OF OPS BLDG

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G63 PHASE 1 - 4" DL @ EXISTING EFFLUENT PS

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G64 PHASE 1 - 4" FM @ EXISTING HEADWORKS (PROFILE 41 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G65 PHASE 1 - REPLACE 6" WAS @ SECONDARY CLARIFIER NO.1 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G66 PHASE 1 - 6" WATER LINE @ MAINTENANCE BUILDING

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G67 PHASE 1 - 6" DL @ NORTH SIDE OF OPERATIONS BUILDING

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G68 PHASE 1 - 6" DL @ RAS PS NO. 2

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G69 PHASE 1 - 6" DL @ EXISTING MH 33-1 (PROFILE 33 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G70 PHASE 1 - 8" DL @ EXISTING COMPOSTING FACILITY DRIVE (PROFILE 8 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G71 PHASE 1 - 8" WAS @ EXISTING SLUDGE THICKENER NO. 2 (PROFILE 26 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G72 PHASE 1 - 12" RAS @ RAS FM VAULT #2 (PROFILE 32 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G73 PHASE 1 - 12" RS FUTURE CONNECTION @ INFLUENT BLDG.

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G74 PHASE 1 - 12" RS @ NORTH LIFT STATION TIE-IN (PROFILE NO. 3 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G75 PHASE 1 - REPLACE 18" RAS @ SECONDARY CLARIFIER NO.1

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G76 PHASE 1 - 24" RS FUTURE CONNECTION @ INFLUENT BLDG.

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G77 PHASE 1 - 24" RS @ MCKISSIC LS TIE-IN (PROFILE 3 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G78 PHASE 1 - 30" RS NORTH WEST OF SECONDARY CLAR. NO.1

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G79 PHASE 1 - REPLACE 30" SCI @ SECONDARY CLARIFIER NO.1 (NO PROFILE)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G80 PHASE 1 - REPLACE 30" SCE @ SECONDARY CLARIFIER NO.1 (PROFILE 16 LOCATION)

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G81 PHASE 1 - 36" SCE SOUTH EAST OF CLAR. NO. 3

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G82 PHASE 1 - 36" ML @ SEC. CLAR. DISTR. BOX **SHOWN AS 30"**

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G83 PHASE 1 - 36" RS @ NW CORNER OF AERATION BASIN #1

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G84 PHASE 1 - 36" ML LINE STOP @ AERATION BASIN NO.1 W/ CAP

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G85 PHASE 1 - 36" ML LINE STOP @ AERATION BASIN NO.2 W/ CAP

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G86 PHASE 1 - 18" RAS LINE STOP @ SEC. CLAR. NO .1 W/CAP

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G87 PHASE 1 - 15" & 18" DL REMOVAL

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G88 PHASE 1 - 12" RAS LINES

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G89 PHASE 1 - REMOVE YARD HYDRANT/FLUSHING HYDRANTS

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G90 PHASE 1 - FIRE HYDRANT @ MAINTENANCE BUILDING

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G91 PHASE 1 - 30" & 36" SCE REMOVAL

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G92 PHASE 1 - 30" & 36" RS REMOVAL

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G93 PHASE 1 - 36" ML REMOVAL

The price bid shall include full compensation for the labor, equipment, and material to remove and dispose of existing below grade piping. All demolished/removed items shall be hauled off site unless otherwise indicated. This includes but is not limited to potholing of existing utilities, protection of existing structures, utilities, equipment, personnel, coordination with plant staff. Haul off, traffic control, and cleanup as defined in the contract documents is to be included in this bid item. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G94 PHASE 1 - NORTH LIFT STATION TIE-IN

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and operation of necessary bypass pumping as needed for installation of the Site Pipe/Utilities scope. Bypass pumping shall be sized and engineered per the site requirements. Cost shall include the contractor's labor, materials, equipment, and overhead & profit as defined to complete the work.

Compensation Type 1

G95 PHASE 1 - 42" HEADWORKS TIE-IN

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and operation of necessary bypass pumping as needed for installation of the Site Pipe/Utilities scope. Bypass pumping shall be sized and engineered per the site requirements. Cost shall include the contractor's labor, materials, equipment, and overhead & profit as defined to complete the work.

Compensation Type 1

G96 PHASE 1 - SECONDARY CLARIFIER SPLITTER BOX

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and operation of necessary bypass pumping as needed for installation of the Site Pipe/Utilities scope. Bypass pumping shall be sized and engineered per the site requirements. Cost shall include the contractor's labor, materials, equipment, and overhead & profit as defined to complete the work.

Compensation Type 1

G97 PHASE 1 - 36" RS TIE-IN

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and operation of necessary bypass pumping as needed for installation of the Site Pipe/Utilities scope. Bypass pumping shall be sized and engineered per the site requirements. Cost shall include the contractor's labor, materials, equipment, and overhead & profit as defined to complete the work.

Compensation Type 1

G98 PHASE 1 - TEMPORARY 36" SCE

The price bid shall include full compensation for the labor, equipment, and material to install proposed temporary piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, manholes, casing, full depth backfill, concrete encasement under structures/slabs/footings/etc., blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

G99 PHASE 1 - 6" FORCEMAIN RELOCATION FROM DIGESTER NO. 2

The price bid shall include full compensation for the labor, equipment, and material to relocate proposed piping as defined in the contract documents. This includes but is not limited to potholing of existing utilities, pipe anchors, trench cutoffs, manholes, casing, full depth backfill, blocking, encasement under structures/slabs/footings/etc., haul off, and testing/chlorination of the proposed piping as defined in the contract documents. This bid item shall also include costs associated with connections to existing piping as defined in the contract documents. Results of testing/disinfection shall be documented as directed by the construction manager. Bid item includes coordination with trades which include, but is not limited to, pipe penetration location/orientation, temporary pipe supporting, piping layout, etc. Bid item includes all trenching & excavation safety. Remedy due to failed testing shall be at the expense of the bidding contractor. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H1 PHASE 1 - 36" RCP

The price bid shall include full compensation for the labor, equipment, and material to install proposed RCP as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H2 PHASE 1 - 24" DOUBLE RCP W/RIPRAP @ WEST ENTRANCE

The price bid shall include full compensation for the labor, equipment, and material to install proposed piping, rip rap, toe walls, and end sections as defined in the contract documents. This includes but is not limited to potholing of existing utilities, manholes/boxes, casing, full depth backfill, blocking, haul off, traffic control and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H3 PHASE 1 - 18" DOUBLE RCP @ WEST ENTRANCE

The price bid shall include full compensation for the labor, equipment, and material to install proposed double RCP as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H4 PHASE 1 - 42" RCP

The price bid shall include full compensation for the labor, equipment, and material to install proposed RCP as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H5 PHASE 1 - 45"X29" RCPE PIPE

The price bid shall include full compensation for the labor, equipment, and material to install proposed RCP as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H6 PHASE 1 - TRIPLE BARREL 10'X6' RCB @ TOWN BRANCH CREEK CROSSING

The price bid shall include full compensation for the labor, equipment, and material to install proposed reinforced concrete box culvert as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H7 PHASE 1 - HEAD WALL/SINGLE PIPE

The price bid shall include full compensation for the labor, equipment, and material to install proposed headwall as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing/disinfection of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H8 PHASE 1 - HEAD WALL/DOUBLE PIPE

The price bid shall include full compensation for the labor, equipment, and material to install proposed headwall as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing/disinfection of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H9 PHASE 1 - 6'X6' AREA INLET

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of area inlets as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

H10 PHASE 1 - 6'X6' JUNCTION BOX

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of junction boxes as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

LL10 TEMP NORTH ACCESS DR - TRIPLE BARREL BOX CULVERT SUPPLY & INSTALL

The price bid shall include full compensation for the labor, equipment, and material to install proposed reinforced concrete box culvert as defined in the contract documents. This includes but is not limited to potholing of existing utilities, full depth backfill, blocking, haul off, and testing of the proposed piping as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

ZZ21 BP 10 - YARD PIPING MOBILIZATION

Mobilization shall be included within the bid items as seen fit by the bidding subcontractor. Additional mobilizations shall be included as seen fit to perform the work unless specifically stated within the individual bid package's methods of measurement. The price bid shall include full compensation for mobilization as part of the overall scope of the bid package. Mobilization shall not exceed 5% of the total bid package. No more than 75% of the total mobilization cost shall be billed with the first pay application. The remaining 25% of the total mobilization cost shall be billed at 90% completion of the work to compensate for the demobilization of equipment.

Compensation Type 1

ZZ22 BP 10 - YARD PIPING BONDING

The price shall cover the cost for separate Performance and Payment Bonds valued at 100% of the Bid Package Total.

Compensation Type 1

Exhibit A.1 Detailed Price Bid Form(s):

25 Electrical

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
C22	PHASE 1 - GENERAL SITEWORK - SITE ELECTRICAL & DUCTBANK	1	LS		
I40	PHASE 1 - INFLUENT STR. - ELECTRICAL	1	LS		
J32	PHASE 1 - INFLUENT ELEC. BLDG - ELECTRICAL	1	LS		
K11	PHASE 1 - PUMPED INFLUENT METER VAULT - ELECTRICAL	1	LS		
L17	PHASE 1 - LIFT STATION NO.4 VLV VAULT & WETWELL - ELECTRICAL	1	LS		
MM6	PHASE 1 - SITE ELECTRICAL – MEDIUM VOLTAGE SITE ELECTRICAL & DUCTBANKS	1	LS		
M11	PHASE 2 - WET WEATHER METER VAULT - ELECTRICAL	1	LS		
N18	PHASE 1 - ANOXIC BASINS & INTERNAL RECYCLE PS - ELECTRICAL	1	LS		
O14	PHASE 1 - AERATION BASINS - ELECTRICAL	1	LS		
P17	PHASE 1 - SURFACE WASTING PS - ELECTRICAL	1	LS		
Q15	PHASE 1 - SEC CLAR DIST & RAS PS - ELECTRICAL	1	LS		
R20	PHASE 2 - SEC CLAR NO.1- ELECTRICAL	1	LS		
S7	PHASE 1 - SEC CLAR NO.2 - ELECTRICAL	1	LS		
T19	PHASE 1 - SEC CLAR NO.3- ELECTRICAL	1	LS		
U14	PHASE 1 - RAS PS NO.2 - ELECTRICAL	1	LS		
V11	PHASE 1 - RAS PS NO.2 METER VAULT- ELECTRICAL	1	LS		
W11	PHASE 1 - WASTING METER VAULT- ELECTRICAL	1	LS		

Y3	PHASE 1 - EX WAS PS - ELECTRICAL	1	LS		
Z24	PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - ELECTRICAL	1	LS		
AA31	PHASE 2 - EFF PS & ELEC BLDG. - ELECTRICAL	1	LS		
BB11	PHASE 2 - BLWR BLDG VALVE VAULT - ELECTRICAL	1	LS		
DD11	PHASE 2 - DIG. NO. 4 VALVE VAULT - ELECTRICAL	1	LS		
FF22	PHASE 2 - MAINT. BLDG - ELECTRICAL	1	LS		
II7	PHASE 2 - OPERATIONS BUILDING - ELECTRICAL DEMO	1	LS		
II40	PHASE 2 - OPERATIONS BUILDING - ELECTRICAL	1	LS		
JJ4	PHASE 2 - SOUTH GENERATOR - GENERATOR SUPPLY & INSTALL	1	LS		
KK4	PHASE 1 - NORTH GENERATOR - GENERATOR SUPPLY & INSTALL	1	LS		
MM2	PHASE 1 - ELECTRICAL - ELECTRICAL GEAR (MATERIAL ONLY)	1	LS		
MM3	PHASE 1 - ELECTRICAL - SITE SECURITY	1	LS		
MM4	PHASE 1 - ELECTRICAL - TEMPORARY FOR CONSTRUCTION PHASING	1	LS		
MM5	PHASE 1 - SITE ELECTRICAL DEMO	1	LS		
OO11	PHASE 1 - EX. RAS PS NO. 1 METER VAULT NO.1 & NO.2 - ELECTRICAL	1	LS		
PP9	PHASE 1 - 8" METER VAULT & RPZ - ELECTRICAL	1	LS		
ZZ51	BP 25 - ELECTRICAL SUB MOBILIZATION	1	LS		
ZZ52	BP 25 - ELECTRICAL SUB BONDING	1	LS		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

Submittal Duration - Electrical Gear

The submittal duration shall be defined as the amount of calendar days from issuance of the material contract agreement to the submission of submittal for approval by the engineer of record. A range of calendar days will not be accepted.

Fabrication Duration - Electrical Gear

The fabrication duration shall be defined as the amount of calendar days from the submittal approval by the engineer of record and/or release for fabrication to arrival of material at the jobsite. A range of calendar days will not be accepted.

Experience Requirements

The bidding electrical contractor must show previous experience and reference of (5) projects of similar size and bid value. The projects of reference must be water and wastewater experience. The subcontractor must provide at least one supervisor-level individual with a journeyman electrical license, licensed in the state of Arkansas at all times. Please attach to your bid documents for submission.

General Requirements

The electrical subcontractor shall have at least one individual capable of assisting and troubleshooting during the startup of facilities and process equipment. The electrical subcontractor will be given a 48-hour notice of scheduled commissioning activities. The electrical subcontractor shall provide temporary lighting for all structure/building contstruction. Subcontractor shall coordinate with the Construction Manager prior to installation of temporary lighting.

Equipment	Submittal Duration (Calendar Days)	Fabrication Duration (Calendar Days)	Manufacturer
EMERGENCY STANDBY GENERATOR			
AUTOMATIC TRANSFER SWITCH			
ACTIVE HARMONIC FILTER			
TRANSFORMERS			
PANELBOARDS			
SWITCHBOARDS			
MOTOR CONTROL CENTER			
PROCESS VARIBALE FREQUENCY DRIVES			

Methods of Measurement

Bid Package 25 - Electrical

C22 PHASE 1 - GENERAL SITEWORK - SITE ELECTRICAL & DUCTBANK

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of site electrical components such as raceways, duct banks, cabeling and systems as defined in the contract documents. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

I40 PHASE 1 - INFLUENT STR. - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

J32 PHASE 1 - INFLUENT ELEC. BLDG - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

K11 PHASE 1 - PUMPED INFLUENT METER VAULT - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

L17 PHASE 1 - LIFT STATION NO.4 VLV VAULT & WETWELL - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

MM6 PHASE 1 - SITE ELECTRICAL – MEDIUM VOLTAGE SITE ELECTRICAL & DUCTBANKS

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of site electrical components such as raceways, direct burial ductbanks, concrete encased ductbanks, directionally bored ductbanks, supply/installation of pad mount switchgear precast vaults, installation of primary junction box sleeves, and all other systems as detailed in the specifications and on drawings E-13, E-14, and E-17. All medium voltage cabling and its installation/termination are the responsibility of Bentonville Electric. Supply and installation of the pad mount transformers, pad mount switchgear, and cabling terminations are the responsibility of Bentonville Electric. The cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

M11 PHASE 2 - WET WEATHER METER VAULT - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

N18 PHASE 1 - ANOXIC BASINS & INTERNAL RECYCLE PS - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

O14 PHASE 1 - AERATION BASINS - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

P17 PHASE 1 - SURFACE WASTING PS - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Q15 PHASE 1 - SEC CLAR DIST & RAS PS - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

R20 PHASE 2 - SEC CLAR NO.1- ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

S7 PHASE 1 - SEC CLAR NO.2 - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

T19 PHASE 1 - SEC CLAR NO.3- ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

U14 PHASE 1 - RAS PS NO.2 - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

V11 PHASE 1 - RAS PS NO.2 METER VAULT- ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

W11 PHASE 1 - WASTING METER VAULT- ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Y3 PHASE 1 - EX WAS PS - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

Z24 PHASE 2 - TER. TRTMNT, UV, POST AERATION, P FLUME - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA31 PHASE 2 - EFF PS & ELEC BLDG. - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

BB11 PHASE 2 - BLWR BLDG VALVE VAULT - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

DD11 PHASE 2 - DIG. NO. 4 VALVE VAULT - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

FF22 PHASE 2 - MAINT. BLDG - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

II7 PHASE 2 - OPERATIONS BUILDING - ELECTRICAL DEMO

The price bid shall include full compensation for the labor, equipment, and material to demolish and or remove existing electrical services, equipment, and accessories, as defined in the contract documents. This includes, but is not limited to, protection of existing structures, utilities, equipment, personnel, coordination with plant staff, lock-out tag-out. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

II40 PHASE 2 - OPERATIONS BUILDING - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

JJ4 PHASE 2 - SOUTH GENERATOR - GENERATOR SUPPLY & INSTALL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components and systems as defined in the contract documents. The electrical subcontractor shall include the necessary means for connection to temporary load banks during startup and testing. Fuel for the generators shall be included in this scope as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

KK4 PHASE 1 - NORTH GENERATOR - GENERATOR SUPPLY & INSTALL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components and systems as defined in the contract documents. The electrical subcontractor shall include the necessary means for connection to temporary load banks during startup and testing. Fuel for the generators shall be included in this scope as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

MM2 PHASE 1 - ELECTRICAL - ELECTRICAL GEAR (MATERIAL ONLY)

The price bid shall include full compensation for the material for the furnishing of electrical gear as defined in the contract documents. Installation of the gear shall be included in the other, associated bid items. Cost shall include the material, and overhead and profit as defined to complete the work.

Compensation Type 1

MM3 PHASE 1 - ELECTRICAL - SITE SECURITY

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components as part of the site security scope as defined in the contract documents. Contractor shall coordinate with other trades. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

MM4 PHASE 1 - ELECTRICAL - TEMPORARY FOR CONSTRUCTION PHASING

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of temporary electrical components and systems to provide temporary electrical power for construction as defined in the contract documents. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Subcontractor shall coordinate temporary power logistics with the Construction Manager prior to mobilization. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

MM5 PHASE 1 - SITE ELECTRICAL DEMO

The price bid shall include full compensation for the labor, equipment, and material to demolish and or remove existing electrical services, equipment, and accessories, as defined in the contract documents. This includes, but is not limited to, protection of existing structures, utilities, equipment, personnel, coordination with plant staff, lock-out tag-out. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

OO11 PHASE 1 - EX. RAS PS NO. 1 METER VAULT NO.1 & NO.2 - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

PP9 PHASE 1 - 8" METER VAULT & RPZ - ELECTRICAL

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of electrical components such as raceways, cable trays, encasement, duct banks, fixtures, lighting components, and systems as defined in the contract documents. Bidder shall be responsible for all coring or penetrations into existing structures. Work installed that is intended for future use by the Owner, shall be installed with watertight caps, tracing wire or tape, & pull string for future identification and use. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

ZZ51 BP 25 - ELECTRICAL SUB MOBILIZATION

Mobilization shall be included within the bid items as seen fit by the bidding subcontractor. Additional mobilizations shall be included as seen fit to perform the work unless specifically stated within the individual bid package's methods of measurement. The price bid shall include full compensation for mobilization as part of the overall scope of the bid package. Mobilization shall not exceed 5% of the total bid package. No more than 75% of the total mobilization cost shall be billed with the first pay application. The remaining 25% of the total mobilization cost shall be billed at 90% completion of the work to compensate for the demobilization of equipment.

Compensation Type 1

ZZ52 BP 25 - ELECTRICAL SUB BONDING

The price shall cover the cost for separate Performance and Payment Bonds valued at 100% of the Bid Package Total.

Compensation Type 1

Exhibit A.1 Detailed Price Bid Form(s):

28 Plumbing

** Provided quantities are for reference only. Unit Price and Extended Price shall reflect bidder's generated quantities.**

Bid Item No.	Bid Package Description	Quantity	UOM	Unit Price	Extended Price
C23	PHASE 1 - GENERAL SITEWORK - SUPPLY & INSTALL SITE RPZ'S AND ENCLOSURES	1	LS		
I37	PHASE 1 - INFLUENT STR. - PLUMBING	1	LS		
AA29	PHASE 2 - EFF PS & ELEC BLDG. - PLUMBING	1	LS		
FF20	PHASE 2 - MAINT. BLDG - PLUMBING	1	LS		
II6	PHASE 2 - OPERATIONS BUILDING - PLUMBING DEMO	1	LS		
II38	PHASE 2 - OPERATIONS BUILDING - PLUMBING	1	LS		
ZZ57	BP 28 - PLUMBING SUB MOBILIZATION	1	LS		
ZZ58	BP 28 - PLUMBING SUB BONDING	1	LS		
				Bid Package Total:	

The Total Firm Lump Sum Price stated above includes the cost of all the Work which is required or implied by the RFP documents, or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work of its kind. Further, any and all alterations, modifications, and adjustments to the Work, which are reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the kind required by the resultant Subcontract, will be performed without additional compensation.

Performance and Payment Bond

Insert Cost for Separate Performance and Payment Bonds valued at 100% of the Bid Package Total Above: $ _____

Methods of Measurement

Bid Package 28 - Plumbing

C23 PHASE 1 - GENERAL SITEWORK - SUPPLY & INSTALL SITE RPZ'S AND ENCLOSURES

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of plumbing as defined in the contract documents. Plumber shall install sanitary drains to include all piping on the exterior of the building including the cleanout. Concrete encasement of under slab piping shall be included within this scope of work as directed by the contract documents. Bidder shall supply all plumbing fixtures, equipment, fittings, piping, etc. to complete the scope as described in the contract documents. Bidders shall provide all necessar AIS documentation, testing documentation, and system design documentation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

I37 PHASE 1 - INFLUENT STR. - PLUMBING

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of plumbing as defined in the contract documents. Plumber shall install sanitary drains to include all piping on the exterior of the building including the cleanout. Concrete encasement of under slab piping shall be included within this scope of work as directed by the contract documents. Bidder shall supply all plumbing fixtures, equipment, fittings, piping, etc. to complete the scope as described in the contract documents. Bidders shall provide all necessar AIS documentation, testing documentation, and system design documentation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

AA29 PHASE 2 - EFF PS & ELEC BLDG. - PLUMBING

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of plumbing as defined in the contract documents. Plumber shall install sanitary drains to include all piping on the exterior of the building including the cleanout. Concrete encasement of under slab piping shall be included within this scope of work as directed by the contract documents. Bidder shall supply all plumbing fixtures, equipment, fittings, piping, etc. to complete the scope as described in the contract documents. Bidders shall provide all necessar AIS documentation, testing documentation, and system design documentation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

FF20 PHASE 2 - MAINT. BLDG - PLUMBING

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of plumbing as defined in the contract documents. Plumber shall install sanitary drains to include all piping on the exterior of the building including the cleanout. Concrete encasement of under slab piping shall be included within this scope of work as directed by the contract documents. Bidder shall supply all plumbing fixtures, equipment, fittings, piping, etc. to complete the scope as described in the contract documents. Bidders shall provide all necessar AIS documentation, testing documentation, and system design documentation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

II6 PHASE 2 - OPERATIONS BUILDING - PLUMBING DEMO

The price bid shall include full compensation for the labor, equipment, and material for the demolition of plumbing as defined in the contract documents. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

II38 PHASE 2 - OPERATIONS BUILDING - PLUMBING

The price bid shall include full compensation for the labor, equipment, and material for the furnishing and installation of plumbing as defined in the contract documents. Plumber shall install sanitary drains to include all piping on the exterior of the building including the cleanout. Concrete encasement of under slab piping shall be included within this scope of work as directed by the contract documents. Bidder shall supply all plumbing fixtures, equipment, fittings, piping, etc. to complete the scope as described in the contract documents. Bidders shall provide all necessar AIS documentation, testing documentation, and system design documentation. Cost shall include the contractor's labor, material, equipment, and overhead and profit as defined to complete the work.

Compensation Type 1

ZZ57 BP 28 - PLUMBING SUB MOBILIZATION

Mobilization shall be included within the bid items as seen fit by the bidding subcontractor. Additional mobilizations shall be included as seen fit to perform the work unless specifically stated within the individual bid package's methods of measurement. The price bid shall include full compensation for mobilization as part of the overall scope of the bid package. Mobilization shall not exceed 5% of the total bid package. No more than 75% of the total mobilization cost shall be billed with the first pay application. The remaining 25% of the total mobilization cost shall be billed at 90% completion of the work to compensate for the demobilization of equipment.

Compensation Type 1

ZZ58 BP 28 - PLUMBING SUB BONDING

The price shall cover the cost for separate Performance and Payment Bonds valued at 100% of the Bid Package Total.

Compensation Type 1