Addendum No. 1

Four Rivers Sanitation Authority

Aerobic Granular Sludge-Phase I
Capital Project No. 2207
IEPA Project No. L17-6127

This Addendum Number 1, dated January 18, 2023, for the above referenced project, supersedes all contrary and conflicting information in the specifications and contract documents, which are hereby supplemented or revised as follows:

I. **General Information:**

1. The minutes from the mandatory Pre-Bid Meeting held on January 11, 2023 are attached. Questions, comments, discussion, information, and clarifications included in the minutes are hereby considered part of the Contract Documents.

II. **The following are revisions to the Specifications:**

1. The following revisions shall be made to the Table of Contents in Volume 1 of 2:
   a. Division 08 Openings, remove the following "08 12 00 Flush Aluminum Doors and Frames .....4."
2. The following revisions shall be made to the Table of Contents in Volume 2 of 2:
   a. Division 08 Openings, remove the following "08 12 00 Flush Aluminum Doors and Frames .....4."
3. The following revisions shall be made to Section 01 50 00 Temporary Facilities and Controls:
   a. Remove paragraph 1.5.A.2.b in its entirety and replace with the following paragraph "b. Owner supplied 480-volt power is not available."
   b. Delete paragraph 1.5.A.2.c in its entirety.
4. The following revisions shall be made to Section 07 11 00 Dampproofing:
   a. Delete paragraph 2.2.A.1 in its entirety.
   b. Delete paragraph 2.2.A.3 in its entirety.
   c. Re-number paragraph 2.2.A subparagraphs.
5. The following revisions shall be made to Section 08 12 00 Flush Aluminum Doors and Frames:
   a. Delete this section in its entirety.
6. The following revisions shall be made to Section 31 23 11 Excavation and Fill for Structures:

a. Remove paragraph 2.1.H and replace with the following:

   i. "H. Controlled Low Strength Material (CLSM)

      1. CLSM shall consist of a mixture of Portland cement, fly ash, sand, and water and shall be placed at locations indicated on the Drawings or as directed by Engineer.

      2. CLSM shall meet the requirements of IDOT Standard Specifications for Road and Bridge Construction, Section 1019 Controlled Low-Strength Material, Mix 2 or Mix 3.

      3. Contractor shall design and test the CLSM. The mix design shall be such as to ensure that the CLSM hardens sufficiently to support the weight of an average person in one to four hours after placement and support equipment weight in 24 hours. The mixture shall be designed such that when tested in the field with the Kelly Ball apparatus per ASTM D6024, the maximum depression diameter shall be 3 inches. CLSM shall be self-leveling and shall have an average patty diameter from 8 to 12 inches when the flow is measured in accordance with ASTM D6103.

      4. The batch proportions accepted by Engineer apply only for materials from the same source and having the same characteristics as the materials used in the mix design. Materials from any other source shall be used only with the acceptance of Engineer.

      5. If a change in sources of materials is proposed, a new mix design shall be developed and tested by Contractor before the new material is used. When unsatisfactory results or other conditions make it necessary, Contractor shall develop a new mix design to get the desired results.

      6. During the progress of the work, no change shall be made in the batch proportions of the ingredients without the acceptance of Engineer."

b. Paragraph 3.2.G.7, delete "if Contractor requires more than Owner's supply available as specified in Section 01 50 00 Temporary Facilities and Controls."

c. Remove paragraph 3.4.F and replace with the following:

   i. "F. Controlled Low Strength Material (CLSM) Fill

      1. CLSM shall not be placed on frozen ground. Batching, mixing, and placing of CLSM may be started when weather conditions are favorable and when the temperature is at least 34 degrees Fahrenheit and rising. At time of placement of CLSM, the temperature shall be at least 40 degrees Fahrenheit. Mixing and placing shall stop when the temperature is 38 degrees

Fahrenheit and falling. Each filling stage shall be as continuous an operation as is practicable.

2. CLSM shall be discharged from the mixer by an acceptable procedure into the area to be filled. CLSM shall be placed to limits indicated on the Drawings. Mixing CLSM with in-situ soil shall be avoided.
3. When CLSM is placed as backfill against structures, the fill shall be placed in lifts of 2 to 3 feet and the next lift shall not be placed until the previous lift can support the weight of workers without indenting the surface and at least 16 hours have elapsed from the end of placement. Lift thickness shall be reduced as necessary to prevent floatation of the structure.
4. When CLSM is placed over culvert or pipelines, they shall be anchored to prevent floatation during the placement of CLSM. Unless otherwise required, CLSM shall be placed to one foot below the finished grade elevation if the finished grade elevation is not more than 5 feet over the top of the culvert or pipe. If the finished grade is more than 5 feet over the top of the culvert or pipe, CLSM shall be placed to an elevation 2 feet over the top of the culvert or pipe, and the remainder shall be backfilled with the specified backfill or as indicated on the Drawings."

7. The following revisions shall be made to Section 31 23 33 Trenching and Backfilling:
   a. Paragraph 3.2.H.7, delete "if Contractor requires more than Owner's supply available as specified in Section 01 50 00 Temporary Facilities and Controls."
8. The following revisions shall be made to Section 40 05 19 S01 Ductile Iron Pipe Schedule:
   a. Add the following pipe services to the schedule:
      i. All - Drain (DRN) – Buried; In Plant – 250 – Cement Mortar
      ii. All – Plant Water (W4 or NPW) – Buried; In Plant – 250 – Cement Mortar
9. The following revisions shall be made to Schedule 40 05 64.22-S02 Industrial Butterfly Valves Electric Actuators:
   a. Revise the size of BFVI-1103, BFVI-1203, BFVI-1303, and BFVI-1403 from 8" to 10."
10. The following revisions shall be made to Schedule 40 05 68-S01 Check Valves Schedule:
    a. Revise the size of CV-1515, CV-1525, and CV-1535 from 16" to 10."

III. **The following are revisions to the Drawings:**

1. Drawing 00-C-101, Sheet 31 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-101.
2. Drawing 00-C-102, Sheet 32 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-102.
3. Drawing 00-C-107, Sheet 37 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-107.
4. Drawing 00-C-109, Sheet 39 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-109.
5. Drawing 00-C-110, Sheet 40 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-110.
6. Drawing 00-C-111, Sheet 41 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-111.
7. Drawing 00-C-112, Sheet 42 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-112.
8. Drawing 00-C-114, Sheet 44 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-114.
9. Drawing 00-C-115, Sheet 45 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-115.
10. Drawing 00-C-116, Sheet 46 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-116.
11. Drawing 00-C-301, Sheet 47 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-301.
12. Drawing 00-C-302, Sheet 48 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-C-302.

13. Drawing 00-E-101, Sheet 49 of 163:
    a. Remove the entire drawing and replace with the attached drawing 00-E-101.
14. Drawing 01-S-101, Sheet 56 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-S-101.
15. Drawing 01-S-102, Sheet 57 of 163:
    a. At the Effluent Vault, change "TOC EL 693.50"" to "TOC EL 690.0.""
    b. Change "Effluent Vault" to "Effluent Box."
16. Drawing 01-S-103, Sheet 58 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-S-103.
17. Drawing 01-S-301, Sheet 60 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-S-301.
18. Drawing 01-S-302, Sheet 61 of 163:
    a. Section 2, change "2'-4" x 4'-6" SINGLE LEAF ALUM ACCESS HATCH (TYP OF 3)" to "2'-6" x 4'-6" SINGLE LEAF 316 STAINLESS STEEL ACCESS HATCH (TYP OF 3)."
19. Drawing 01-S-304, Sheet 63 of 163:
    a. Section 1, change "2'-4" x 4'-6" SINGLE LEAF ALUM ACCESS HATCH (TYP OF 3)" to "2'-6" x 4'-6" SINGLE LEAF 316 STAINLESS STEEL ACCESS HATCH (TYP OF 3)."
20. Drawing 01-M-101, Sheet 66 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-M-101.
21. Drawing 01-M-301, Sheet 68 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-M-301.
22. Drawing 01-M-401, Sheet 71 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-M-401.
23. Drawing 01-M-901, Sheet 76 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-M-901

24. Drawing 01-H-101, Sheet 77 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-H-101.
25. Drawing 01-H-401, Sheet 79 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-H-401.
26. Drawing 01-P-402, Sheet 85 of 163:
    a. Remove the entire drawing and replace with the attached drawing 01-P-402.
27. Drawing 02-M-101, Sheet 98 of 163:
    a. At the outside piping support leader "PS-9 (TYP)", add a reference to Detail D on Drawing 99-S-515.
28. Drawing 02-P-101, Sheet 103 of 163:
    a. Remove the entire drawing and replace with the attached drawing 02-P-101.
29. Drawing 02-E-101, Sheet 105 of 163:
    a. Remove the entire drawing and replace with the attached drawing 02-E-101.
30. Drawing 98-M-101, Sheet 116 of 163:
    a. Remove the entire drawing and replace with the attached drawing 98-M-101.
31. Drawing 98-M-102, Sheet 117 of 163:
    a. Remove the entire drawing and replace with the attached drawing 98-M-102.
32. Drawing 98-E-101, Sheet 120 of 163:
    a. Remove the entire drawing and replace with the attached drawing 98-E-101.
33. Drawing 99-S-502, Sheet 132 of 163:
    a. Remove the entire drawing and replace with the attached drawing 99-S-502.
34. Drawing 99-S-514, Sheet 144 of 163:
    a. Remove the entire drawing and replace with the attached drawing 99-S-514.
35. Drawing 99-P-901, Sheet 155 of 163:
    a. Remove the entire drawing and replace with the attached drawing 99-P-901.

This information shall be taken into consideration when preparing your bid. Bidders shall acknowledge all project addenda. This addendum will be emailed to all plan holders as well as posted to FRSA's website at fourrivers.illinois.gov.

End of Addendum No. 1

Issued January 18, 2023

Four Rivers Sanitation Authority

Christopher T. Baer, PE
Director of Engineering

AEROBIC GRANULAR SLUDGE – PHASE 1
CAPITAL PROJECT NUMBER 2207
PRE-BID MEETING – JANUARY 11, 2023

BIDDING INFORMATION:

Sign-in sheet is attached for this mandatory meeting; notes will be issued in an Addendum.

Sealed bids are due by 10:00 A.M. Friday, February 10, 2023 at the Four Rivers Sanitation Authority (FRSA) office, at which time bids will be opened and read aloud. Conditional bids will not be read. State revolving loan funds are being used for this project, IEPA Project No. L17-6127. A Notice of Intent to Award based on the lowest, responsive, responsible bid is expected to be approved at the February 27, 2023 FRSA Board meeting. After bid approval by IEPA, a Notice of Award can be issued.

Bid packages are to include a complete proposal on FRSA bid form with all addenda acknowledged, bid security on FRSA form (5% of bid amount), completed Fair Employment Practices Affidavit on FRSA form, and Contractor's statement of qualifications. IEPA loan funding is anticipated for this work; Bidders shall make themselves aware of the specific subcontractor bidding requirements associated with IEPA loan funded projects as identified in the specifications. The apparent low bidder shall submit a Schedule of Values, with subcontracted work identified, before 2:00 pm on Monday February 13, 2023.

This is a lump sum contract; bids shall include all work associated with the project to provide a complete functional system.

Pay request retention is 10% of each pay application. Certified payroll and waivers of lien are required with each application for payment.

Bids shall not include City of Rockford building permit fees or inspections. FRSA has obtained the IEPA Permit to Construct and Own for the completion of this Aerobic Granular Sludge project (Permit 2022-AB-67818, issued November 18, 2022).

The overall project warranty is 1 year from acceptance of the installed and tested system. Individual components may have longer warranty periods in accordance with manufacturer standards. Refer to the Contract Documents.

Written questions must be submitted to FRSA no later than February 6, 2023 to allow time to address by addendum.

BID FORM OR PROPOSAL:

The total lump sum bid amount shall be entered on the bid schedule. In addition, the subcontractor listing, the Base Bid Type I Material and Equipment Schedule, the Base Bid Type III Material And Equipment Schedule, and the Adjustment Unit Price Work And Extended Warranties shall all be submitted with and be included in the lump sum bid amount as indicated.

- The Type I form lists equal suppliers; the bidder shall circle the one they are including in the lump sum price. If bidder is also proposing a substitute supplier, they shall enter the substitute name and amount of credit to Owner if the substitute is allowed; the circled supplier price shall be entered in the lump sum bid, not the substitute.

- The Type III form shall include the supplier's price and the installed cost for each (A) item and this shall be included in the lump sum bid amount.

- Substitutes shall be by request and considered only after Contract award. Per SC-7.04.E-F, substitute submittals shall be provided for review within 2 days of the Effective Date of the Agreement. Approved substitutes will be made by change order.

- FRSA is tax exempt (Federal Excise tax and Illinois Retailer's Occupational Tax) for materials incorporated into the work. Text in the documents, regarding sales tax, is referring to taxes on other items (construction equipment, consumables, etcetera).

PROJECT SCHEDULE:

One milestone is included in the project. The Overflow Structure can be out of service for no longer than 28 days for completion of the work shown on the drawings ($1,000/day LDs). This structure has a 60" pipe connection to our Aeration Basin influent flow, with no means of isolating the flow. FRSA can shut down the system for approximately 3 hours during dry low flow conditions. Contractor will need to pump down the system and install temporary plug(s) on the 60" pipe(s) on north side of the structure in order to perform the structure modifications. On January 5, FRSA shut down and ran two 6" self-priming diesel driven trash pumps (1 Godwin + 1 Gorman Rupp, combined flow estimated at 2,300 gpm) for 2.5 hours and only dropped the water level to approximately the top of the 60" pipes in the chamber upstream of the Aeration Basin's Splitter Box and in the Overflow Structure.

Work on the Distribution Chamber (installing new 8" WAGS/WLC pipe with slide gate) shall be planned and performed so the structure is off-line for no more than 72 hours. Again, a plant shutdown will be necessary to allow installation of a temporary plug in the 60" pipe on north side of the structure so Primary Settling Tanks 5 – 10 can remain in service while the Distribution Chamber work is performed. PST 1-2 and Primary Filters 1-2 will need to remain off line until the Distribution Chamber work is complete.

Inlet sewer manhole work shall be completed while the manhole remains in service.

Work on the Filter Effluent Pumping Station can best be performed after the Overflow Structure work is completed. FRSA will be re-routing the River Station roof drains and drain sump piping that currently flow to the Filter Effluent Pumping Station.

The project shall be substantially complete within 548 consecutive calendar days of notice to proceed. Liquidated damages shall be $2,000 per calendar day following the 548 calendar day deadline, until substantial completion is achieved. See General Condition 15.03 Substantial Completion and the Supplementary Conditions for definition of substantial completion.

The project shall be fully complete, including completion of punch list items, within 609 consecutive calendar days of notice to proceed. Liquidated damages shall be $1,000 per calendar day for completion following the 609 calendar day completion deadline. See General Conditions 15.05 Final Inspection and 15.06 Final Payment, along with associated Supplementary Conditions, for requirements of final completion and payment.

Sequencing is critical to maintain operation of the treatment systems throughout the construction phase of the project. Any existing system outages necessary to complete the work shall be requested at least 7 days in advance of the planned outage. The request shall include a detailed schedule and sequence of activities; the request shall verify that all associated materials are on site. Additional FRSA preparation time may be necessary in order to take a process off-line, such as for reducing sludge inventories or transfer of electrical feeds.

Shop drawings shall be submitted and approved early in the project. Assume two weeks FRSA review time for each submittal and each resubmittal.

Project status meetings shall be conducted by the Contractor on-site every other week, adjusted throughout project as needed based on work activities. Minutes of the meetings shall be prepared by Contractor and submitted to all attendees.

PROJECT DETAILS:

Aerobic Granular Sludge-Phase I, Capital Project No. 2207, IEPA Project No. L17-6217, is comprised of all labor, materials, equipment, and supervision required to construct a complete project generally consisting of the following items:

A. AGS Reactors which consists of:
   a. Four AGS Reactors containing Aerobic Granular Sludge Equipment.
   b. Pipe Gallery with two stair towers, piping, valving, metering, HVAC, and plumbing.
   c. WAGS/WLC Wetwell with three submersible pumps.
   d. All civil, structural, architectural, electrical, mechanical/HVAC, instrumentation and controls, and piping and valves for a complete, operable Aerobic Granular Sludge system.

B. AGS Support Facilities which consists of:
   a. Blowers containing three high speed gearless turbo blowers, air piping, and appurtenances.
   b. Provide and install all MCCs, VFDs, panels, and controls along with associated conduit and wiring.
   c. All civil, structural, architectural, electrical, mechanical/HVAC, instrumentation and controls, and piping and valves for a complete, operable AGS Support Facilities.

C. Modifications and connections to existing yard structures, which consists of:
   a. Distribution Chamber.
   b. Primary Filter Effluent Diversion Structure.
   c. Filter Effluent Pumping Station.
   d. Overflow Structure.
   e. Inlet Sewer Manhole.

D. Site and Structure Demolition, which consists of:
   a. Trickling Filter Nos. 2 and 4.
   b. Drainage Pump Station.
   c. Meter Vault.
   d. Bypass Chamber.
   e. Pavements, yard piping, and electrical duct bank.

f. Temporary power to support existing facilities while electrical feeds are out of service during replacement.

E. Provide site work, yard piping, and electrical improvements.

F. Provide, install, and start-up, new Contractor supplied facilities and equipment.

G. Provide O&M manuals, record drawings, and other close out documents as indicated.

H. Most of the reinforced concrete tank and structure walls require textured surfaces on above grade portions, using form liners as indicated and specified; stain colors for the finished surfaces are also indicated. Renderings on the Board Room walls are for the Primary Filtration Phase 1 Project, but they provide a visual of the architectural concept. An approved mock-up using the proposed form liner, stain, masonry, and finished metal materials is required prior to start of the associated work.

I. Painting is required as indicated on the architectural schedule and Section 09 96 00. All exposed project piping shall be painted ANSI gray and labeled with plastic wrap labels per specifications.

J. All control wiring shall be installed and labeled by Contractor. Terminations in existing FRSA plant control system PLC cabinets will be performed by FRSA. Wiring to and from, along with all terminations in the new vendor panels, shall be performed by Contractor.

ADDITIONAL CONSIDERATIONS:

The Primary Filtration Project – Phase 1 work is currently under contract, with a final completion date of November 24, 2023. Portions of the AGS project overlap the Primary Filtration Project site areas. The stabilized entrance area and the concrete washout area both are shown in areas already assigned for use in the Primary Filtration Project. The Primary Filtration Project materials storage area is partially located on the AGS site; coordination and cooperation between projects is necessary.

Contractor parking and staging areas are shown on the drawings. Contractor toilet and wash facilities shall be located within these designated areas. Electric power (110-volt) will be available on a limited basis for the Contractor's use, unless abuse occurs at which time Contractor will need to supply their own source. Contractor will be responsible for conveyance of 110-volt power from identified sources to the locations needed by Contractor.

Dewatering for construction of the AGS Reactors and associated facilities shall be designed, permitted, provided, and maintained by the Contractor. Power for dewatering systems shall be provided by Contractor. Submittals are required for SWPPP and for earth retention systems per Division 31 specifications.

The Final Geotechnical Engineering Report dated October 27, 2022 by Geocon Professional Services, LLC is available by request as technical data but is not part of the Contract documents. Email your request to sstrassburg@fourrivers.illinois.gov

PRE-BID MEETING QUESTIONS AND ANSWERS

1) What is the Engineer's estimate for this project?
    a. $44,411,000.
2) Does the Geotechnical Report contain historical groundwater information in addition to data for the past year dry conditions?
    a. The Geocon AGS Final Geotechnical Engineering Report includes limited data besides that obtained in 2022. Historical Rock River data is readily available from other sources. The proximity of the Rock River to the proposed site, along with the underlying soil strata provide sufficient evidence regarding the ground water relationship to the river elevation.
3) Are any other geotechnical reports available from previous projects at the site?
    a. The report mentioned above is the only one for the AGS site with pertinent groundwater and soil information.
4) Will this project be constructed if IEPA loan funding is not available?
    a. The project is on IEPA's intended funding list and assigned IEPA WPCLP project number L17-6127. Historically, FRSA has received loan funding whenever a project is on the intended funding list. There is always a chance that a project will not be approved for funding.
5) Does the schedule consider the current material delivery issues in the construction industry?
    a. After evaluation of the current industry conditions prior to advertising, the project completion date was extended to the current 609 consecutive calendar days.
6) Does this project need to follow BABA requirements?
    a. Based on timing of this project, BABA does not apply.
7) Is there a time of the day that is best to perform system outages?
    a. Plant flows are usually lowest in the early morning hours. FRSA can generally accommodate work outside of regular hours for special events.
8) Does FRSA perform their own system integration or is a control system integrator required for the AGS project?
    a. See specification Section 40 61 11 for requirements. Contractor and AGS System Supplier are responsible for the new hardware, software, and programming required for the new AGS system and related components as indicated and specified. The Owner is responsible for programming updates to the existing aspects of the Plant Control System.
9) Where can dewatering system water be discharged?
    a. The water should be discharged to the Rock River. However, traffic on the main plant road between the AGS site and the Rock River can not be obstructed.
    b. The Diversion Chamber south of the River Station (Building 14) has a 72" pipe to the Rock River (FRSA's Outfall #17).
    c. With proper water extraction permit and water discharge permit, this outfall is available for the Contractor's use. All water discharge permit requirements must be satisfied.
    d. One driveway to the River Station shall be available for FRSA maintenance truck access at all times.

Aerobic Granular Sludge-Phase I, Capital Project No. 2207
IEPA Project No. L17-6127
Mandatory Pre-Bid Meeting

Date and Time: Wednesday, January 11, 2023 at 1:00 p.m.

Name	Company	Mailing Address	Phone Number	Email Address
Chris Baer	FRSA	3501 Kishwaukee Street, Rockford, IL 61109	815-387-7660	cbaer@fourrivers.illinois.gov
Scot Strassburg	FRSA	3501 Kishwaukee Street, Rockford, IL 61109	815-387-7657	sstrassburg@fourrivers.illinois.gov
Angie Good	FRSA	3501 Kishwaukee Street, Rockford, IL 61109	815-387-7662	agood@fourrivers.illinois.gov
Warren Adam	FRSA	3501 Kishwaukee Street, Rockford, IL 61109	815-871-0787	wadam@fourrivers.illinois.gov
Dave Koch	Black & Veatch	180 N. Wacker, Suite 550, Chicago, IL 60606	312-683-7829	KochDS@bv.com
Ryan Blackburn	Sjostrom & Sons, Inc.	1129 Harrison Avenue, Rockford, IL 61104	815-243-2212	rblackburn@sjostromconstruction.com
Colin Williams	Williams Brothers Construction	1200 E. Kelly Avenue, Peoria Heights, IL 61616	309-688-0416	estimating@wbci.us
Verlyn Swanson	Morse Electric	500 W. South Street, Freeport, IL 61032	608-425-9444	vswanson@themorsegroup.com
Nate Mullen	Williams Brothers Construction	1200 E. Kelly Avenue, Peoria Heights, IL 61616	309-688-0416	estimating@wbci.us
Dusty Bonnell	Tri-R Systems Inc.	1804 E. Lincoln Highway, Dekalb, IL 60115	815-440-5129	dbonnell@tri-rsystems.com
Steve Stanish	Aqua-Aerobic Systems Inc.	6306 N. Alpine Road, Loves Park, IL 61111	815-654-2501	sstanish@aqua-aerobic.com
Jeff Bockhop	Stenstrom Construction	2420 20th Street, Rockford, IL 61104	815-398-2420	jeffb@rstenstrom.com
Bob Johnson	Helm	2279 US 20 East, Freeport, IL 61032	815-297-6062	bjohnson@helmgroup.com
Anthony Bronge	Sjostrom & Sons, Inc.	1129 Harrison Avenue, Rockford, IL 61104	815-566-1989	abronge@sjostromconstruction.com
Darin Baughman	Helm	2279 US 20 East, Freeport, IL 61032	815-297-8540	dbaughman@helmgroup.com
George Argiris	Drydon Equipment	2445 Westfield Drive, Suite 100, Elgin, IL 60124	630-814-9150	gargiris@drydon.com
Mitch Hameister	Drydon Equipment	34168 N. Tangueray Drive, Grayslake, IL 60030	847-204-7406	mhameister@drydon.com
Pat Wood	IHC	385 Airport Road, Elgin, IL 60123	847-742-1516	estimating@ihcconstruction.com
Mike Mulcahy	Drydon Equipment	2110 Viewside Drive, New Lenox, IL 60451	630-200-2874	mmulcahy@drydon.com
Joe Tardio	Aqua-Aerobic Systems Inc.	6306 N. Alpine Road, Loves Park, IL 61111	815-636-4451	jtardio@aqua-aerobic.com

EXISTING PROPERTY ROW

LIMITS OF CONSTRUCTION

EXISTING PROPERTY ROW

00-D-101
00-C-102
00-C-107
00-C-112
00-E-101

CONTACT TANK

CHLORINE BUILDING AND STORAGE

OVERFLOW STRUCTURE

AASI R&T CENTER

SOIL BORE # 4

00-C-103
00-C-108
00-C-113

00-C-104
00-C-109
00-C-114

TRICKLING FILTER NO. 3

TRICKLING FILTER NO. 1

SWITCHGEAR 3/6

CP#26

INFLUENT SEWER MANHOLE

SOIL BORE # 2

OUTFALL CHAMBER

TRICKLING FILTER PUMPING STATION (DEMO)

JUNCTION CHAMBER NO. 1

METER VAULT

CP#1

DISTRIBUTION CHAMBER

MH-02

MH-01

SOIL BORE # 3

PLANT DRIVE

PIPE GALLERY

WAGS/WLC WETWELL

AGS SUPPORT FACILITIES

MAIN PUMP II

ADMINISTRATION BUILDING I

AGS REACTOR NO. 1

AGS REACTOR NO. 2

AGS REACTOR NO. 3

AGS REACTOR NO. 4

FILTER EFFLUENT PUMPING STATION

TRICKLING FILTER NO. 4 (DEMO)

TRICKLING FILTER NO. 2 (DEMO)

PARSHALL FLUME

FORMER PRIMARY TANK BYPASS STRUCTURE

BM#341

BM#340

DRAINAGE PUMP STATION (DEMO)

PRIMARY FILTER EFFLUENT DIVERSION STRUCTURE (BY OTHERS)

BYPASS CHAMBER (DEMO)

SOIL BORE # 1

PRIMARY FILTRATION FACILITY 1 (BY OTHERS)

PRIMARY SLUDGE MANHOLE

PRIMARY SETTLING TANKS 1 AND 2

00-C-105
00-C-110
00-C-115

RIVER STATION TANK NO.3

RIVER STATION TANK NO. 1

00-C-106
00-C-111
00-C-116

BM#342

CP#9

CP#10

CP#20

RIVER STATION

DIGESTER NO. 1

RIVER STATION TANK NO.4

RIVER STATION TANK NO.2

DIGESTER CONTROL BUILDING

CONTROL STRUCTURE

DIVERSION CHAMBER, SEE IMAGE THIS DWG

8" DIA

DIVERSION CHAMBER, SEE NOTE 5

72" DIA

15" DIA

OUTFALL NO. 17

IMAGE: DIVERSION CHAMBER AND OUTFALL NO. 17

40' 20' 0 40' 80'

1"=40'

NOTES:

1. SEE DWG 00-C-001 FOR LEGEND AND GENERAL NOTES AND PROJECT BENCHMARK INFORMATION.
2. CONTRACTOR SHALL ESTABLISH ADDITIONAL CONTROL POINTS AND BENCHMARKS AS REQUIRED TO MAINTAIN ADEQUATE CONTROL. SOME ESTABLISHED CONTROL POINTS AND BENCHMARKS MAY BE DISTURBED OR DESTROYED BY CONSTRUCTION.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING FACILITIES TO REMAIN DURING CONSTRUCTION FOR DELIVERIES.
4. FOR INTERFACE POINTS, CONTRACTOR SHALL UNDERTAKE CONSTRUCTION WORK IN COORDINATION WITH PRIMARY FILTRATION PROJECT PHASE 1.
5. CONTRACTOR MAY UTILIZE THE SOUTH CHAMBER OF THE EXISTING DIVERSION CHAMBER FOR DISCHARGE OF DEWATERING WATER FOR RELEASE TO THE ROCK RIVER THROUH AN EXISTING 72" OUTFALL PIPE AND EXISTING STORMWATER OUTFALL NO. 17. CONTRACTOR SHALL OBTAIN APPLICABLE PERMITS FOR THE DEWATERING ACTIVITY AND DISCHARGE. CONTRACTOR MUST COORDINATE ROUTING AND LOCATION OF DEWATERING PIPING WITH OWNER TO ENSURE MAINTENANCE TRUCK ACCESS TO THE EXISTING RIVER STATION FACILITY IS MAINTAINED, ONLY ONE OF THE DRIVES TO THE EXISTING RIVER STATION MAY BE BLOCKED WITH PIPING .

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

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GENERAL

CIVIL

KEY AND FACILITY ARRANGEMENT PLAN

00-C-101

31 OF 163

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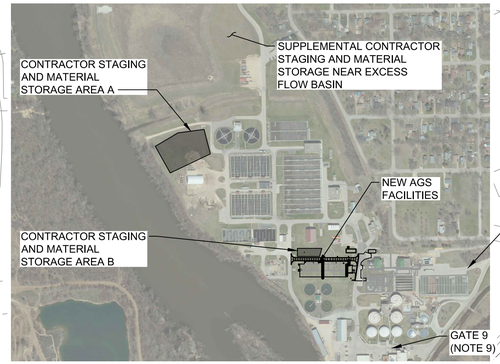

CONTRACTOR STAGING AND MATERIAL STORAGE AREAS

NOTES:

1. SEE DWG 00-C-001 FOR GENERAL NOTES, DRAWING 99-C-501 FOR SWPPP PLAN, AND SECTION 31 25 00 EROSION AND SEDIMENTATION CONTROLS FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE TEMPORARY EROSION CONTROL DEVICES IN ACCORDANCE WITH ILLINOIS URBAN MANUAL, LATEST EDITION, AND IDOT STANDARD 280001-07. IDOT STANDARD 28001-07 INCLUDED ON DWG 99-C-501.
3. THE CONTRACTOR SHALL MAINTAIN INSTALLED EROSION CONTROL DEVICES IN A MANNER THAT PRESERVES THEIR EFFECTIVENESS FOR PREVENTING SEDIMENT FROM LEAVING THE SITE OR ENTERING A SENSITIVE AREA SUCH AS A NATURAL STREAM CORRIDOR, THE RIVER, AREAS OF THE SITE INTENDED TO BE LEFT UNDISTURBED, A STORM SEWER, OR AN ON-SITE DRAINAGE CHANNEL.
4. THE CONTRACTOR SHALL PROVIDE FOR CONTROL OF SURFACE EROSION AND SEDIMENT DEPOSITION DURING ALL PHASES OF CONSTRUCTION AND UNTIL THE DISTRICT ACCEPTS THE WORK AS COMPLETE. FOLLOWING WORK, EROSION CONTROL DEVICES MEASURES SHALL BE REMOVED ONCE 85 PERCENT OF THE PERMANENT COVER IS ESTABLISHED OVER 100 PERCENT OF THE PROJECT AREA.
5. CONTRACTOR MUST INSTALL AND MAINTAIN THE EROSION CONTROL DEVICES SHOWN AND IMPLIED ON THIS PLAN. IF THE DISTRICT OR DISTRICT'S REPRESENTATIVE DETERMINES THAT THE INSTALLATION OR THE MAINTENANCE IS INADEQUATE, THE CONTRACTOR MUST IMMEDIATELY CORRECT AT HIS/HER EXPENSE. IF IT IS DETERMINED THAT ADDITIONAL EROSION CONTROL MEASURES ARE NEEDED THE CONTRACTOR SHALL INSTALL AND MAINTAIN THOSE MEASURES.
6. THE CONTRACTOR SHALL REMOVE SEDIMENT FROM THE FLOW AREAS AND MAKE ALL NECESARY REPAIRS TO MAINTAIN THE INTEGRITY OF THE EROSION SEDIMENT AND CONTROL MEASURES.
7. FOLLOWING THE FINAL REMOVAL OF ALL EROSION, SEDIMENT AND CONTROL MEASURES THE CONTRACTOR SHALL RE-GRADE AND RE-SEED ALL AREAS THAT WERE DISTURBED BY THE REMOVAL.
8. THE PRIMARY FILTRATION FACILITY SHOWN HERE IS UNDER CONSTRUCTION AND IS EXPECTED TO BE COMPLETED BY THE END OF 2023 UNDER PHASE I OF THE PRIMARY FILTRATION PROJECT.
9. GATE NO. 5, 9 AND 16 MAY BE USED FOR CONSTRUCTION TRAFFIC. GATE 16 (NOT SHOWN ON THIS DRAWING) IS LOCATED AT THE NORTH END OF THE PLANT SITE AT THE INTERSECTION OF CHAPMAN ROAD AND BROOKE ROAD.

LEGEND:

- STAGING \ LAYDOWN AREA
- INLET PROTECTION
- SILT FENCE

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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EROSION AND SEDIMENT CONTROL PLAN

00-C-102

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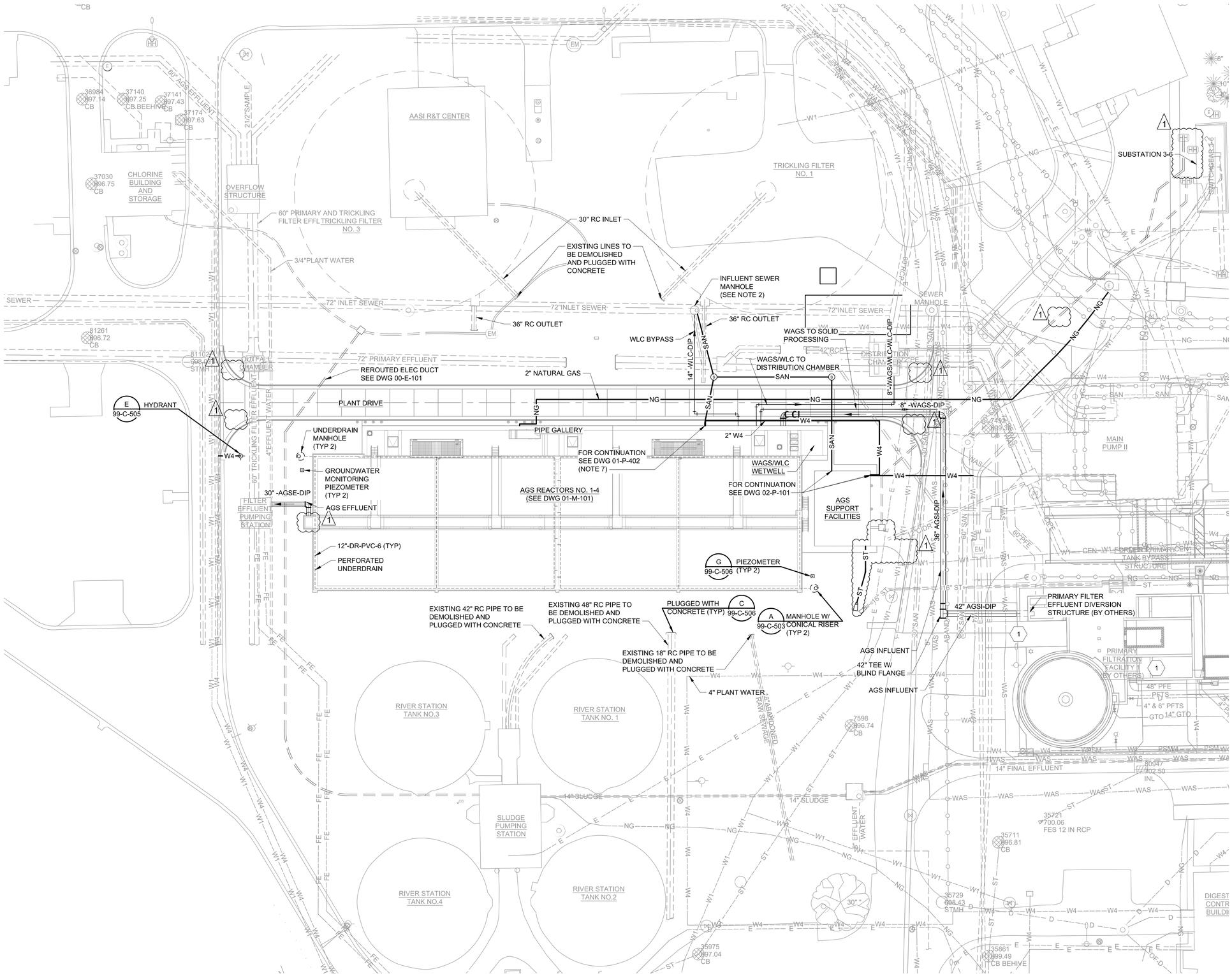

30' 15' 0 30' 60'

1"=30'

NOTES:

1. SEE DWG 00-C-001 FOR LEGENDS AND GENERAL NOTES.
2. PORTION OF EXISTING INFLUENT SEWER MANHOLE SHALL BE REHABILITATED AND REBUILT TO MAKE NEW 12" WLC BYPASS AND 4" SANITARY SEWER CONNECTION. REFER TO DWG 98-M-104 FOR THE EXTENT OF MANHOLE REHABILITATION.
3. ALL EXISTING PIPING AND BURIED UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION AT CROSSINGS AND CONNECTION LOCATIONS.
4. UNLESS OTHERWISE INDICATED, ALL EXISTING YARD PIPING AND STRUCTURES, DUCT BANKS, UTILITIES, ETC. BENEATH NEW CONCRETE PAVEMENT SHALL BE PROTECTED WITH SHEETING, SHORING, OR OTHER MEANS NECESSARY TO PROTECT THEM FROM DAMAGE.
5. TRACER WIRE IS REQUIRED ON ALL NEW BURIED PIPING AND DUCT BANKS. PROVIDE TRACER WIRE AND ACCESS POINTS IN ACCORDANCE WITH FRSA TREATMENT PLANT TRACER WIRE AND ACCESS POINTS DETAIL ON DWG 99-C-504.
6. PIPING SHALL BE INSTALLED ON A CONTINUOUS GRADE WITHOUT SAGS OR HUMPS BETWEEN ELEVATIONS INDICATED. COORDINATE WITH THE ENGINEER FOR GUIDANCE WHERE THIS IS NOT POSSIBLE.
7. 2" PUMP DISCHARGE (PD) LINE ON DWG 01-P-402 CONTINUES AS 2" SANITARY LINE TO THE MANHOLE.

SHEET NOTES:

1. REFER TO "PRIMARY FILTRATION PROJECT PHASE I (CAPITAL PROJECT NO. 2022)" DRAWINGS PREPARED BY DONOHUE FOR PRIMARY FILTRATION FACILITIES. AT TIME OF BIDDING PRIMARY FILTRATION FACILITIES ARE UNDER CONSTRUCTION. LOCATIONS SHOWN ARE APPROXIMATE AND BASED ON PRIMARY FILTRATION BIDDING DOCUMENTS. CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF FACILITIES AND PIPES PROVIDED BY OTHERS.

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

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GENERAL

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OVERALL PIPING PLAN

00-C-107

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FOR CONTINUATION, SEE DRAWING 00-C-108

TRICKLING FILTER NO. 1

INFLUENT SEWER MANHOLE TO BE REHABILITATED. REFER TO DWG 98-M-104 FOR EXTENT OF REHABILITATION

EXISTING 30" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

N 2025967.27
E 2586966.33

80238
202.74
MH

N 2025967.88
E 2586968.11

1+72

72"INLET SEWER

CONNECT WLC TO REHABILITATED INFLUENT SEWER MANHOLE SEE DWG 98-M-104

WLC BYPASS SEE DWG 00-C-302 FOR PROFILE

EXISTING 42" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

METER VAULT

HH

CUT AND PLUGGED EXISTING PIPE WITH CONCRETE (TYP)

EXISTING 72" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

NG FILTER
S STATION
EMOLISHED)

JUNCTION CHAMBER NO. 1

STA 0+23.02
8" 45° BEND
N 2025911.61
E 2587014.50

STA 0+10.18
8" 90° BEND
N 2025908.61
E 2587007.42

STA 0+18.27
8" 45° BEND
N 2025908.61
E 2587015.50

WAGS/WLC TO DISTRIBUTION CHAMBER SEE DWG 00-C-302 FOR PROFILE

WAGS TO SOLID PROCESSING SEE DWG 00-C-302 FOR PROFILE

DISTRIBUTION CHAMBER

CONNECT WAGS/WLC TO DISTRIBUTION CHAMBER SEE DWG 98-M-101

N 2025928.64
E 2587051.49

PLUGGED WITH CONCRETE (TYP) C 99-C-506

4" SAN-PVC

1+00

SAN

STA 0+13.18
8" 90° BEND
N 2025911.61
E 2587004.67

14" -WL-C-DIP

0+50

2" SAN-PVC

N 2025928.64
E 2586978.34

EXISTING 36" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

NG

STA 0+34.34
14" 90° BEND
N 2025905.74
E 2586966.32

STA 0+07.31
14" 90° BEND
N 2025905.74
E 2586993.35

0+50

1+00

8" -WAGS/WLC-DIP

1+18

THRUST BLOCK (TYP) F 99-G-506

NEW DUCT BANK SEE DWG 00-E-101

1+26.88

CONNECT WAGS TO EXISTING WAS

36" -AGSI-DIP

STA 0+98.68
8" 90° BEND
N 2025911.62
E 2587090.17

STA 1+69.23
36" 90° BEND
N 2025905.44
E 2587120.62

AGS INFLUENT SEE DWG 00-C-301 FOR PROFILE

STA 2+68.47
36" 90° BEND
N 2025905.44
E 2587021.38

STA 2+62.82
36" 45° BEND
N 2025905.44
E 2587027.02

FOR CONTINUATION SEE DWG 01-P-402 (NOTE 2)

FOR CONTINUATION SEE DWG 01-M-405

UNDERDRAIN TO BE CENTERED BENEATH WALL IN ALIGNMENT WITH VERTICAL IN-WALL BASIN DRAIN VALVE PIPING, (TYP SEE S DWGS)

SEE DETAIL A/01-S-501 FOR UNDERDRAIN PIPE EMBEDMENT DETAILING (TYP)

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

4" -SAN-PVC

2" W4

SEWER MANHOLE

30"SAN

66" SAN

72"PE

AEAND

FOR CONTINUATION, SEE DRAWING 00-C-111

10' 0 10' 20'
1"=10'

KEY PLAN

NOTES:

1. SEE DWG 00-C-107 FOR YARD PIPING GENERAL NOTES.
2. 2" PUMP DISCHARGE (PD) LINE ON DWG 01-P-402 CONTINUES AS 2" SANITARY LINE TO THE MANHOLE.

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

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PROJECT NO.:	411752

GENERAL

CIVIL

PIPING PLAN 2 OF 4

00-C-109

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FOR CONTINUATION, SEE DRAWING 00-C-108

REFER TO PIEZOMETER DETAIL G/99-C-506

N 2025870.92
E 2586722.62

AGS REACTOR NO. 1

AGS REACTOR NO. 2

CONNECT 30" AGS EFFLUENT TO NORTHERN CHAMBER OF FILTER EFFLUENT PUMPING STATION. SEE DWG 98-M-102

30"-AGSE-DIP

0+30

0+00

FILTER EFFLUENT PUMPING STATION

AGS EFFLUENT SEE DWG 00-C-301 FOR PROFILE

1

UNDERDRAIN TO BE CENTERED BENEATH WALL IN ALIGNMENT WITH VERTICAL IN-WALL BASIN DRAIN VALVE PIPING EXCEPT BENEATH THE WALL SEPARATING AGS REACTOR NO. 2 AND NO. 3 (TYP SEE S DWGS)

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

3'-00"

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

SEE DETAIL A/01-S-501 FOR UNDERDRAIN PIPE EMBEDMENT DETAILING (TYP)

PLUGGED WITH CONCRETE (TYP) C 99-C-506

EXISTING 42" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

42" RC FILTER EFFLUENT

NEW DUCT BANK SEE DWG 00-E-101

RIVER STATION TANK NO.3

RIVER STATION TANK NO. 1

1

FOR CONTINUATION, SEE DRAWING 00-C-111

10' 0 10' 20'
1"=10'

5' 0 5' 10'
1"=5'

KEY PLAN

NOTES:

1. SEE DWG 00-C-107 FOR YARD PIPING GENERAL NOTES.

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

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GENERAL

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PIPING PLAN 3 OF 4

00-C-110

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FOR CONTINUATION, SEE DRAWING 00-C-109

AGS REACTOR NO. 3

AGS REACTOR NO. 4

SEE DETAIL A/01-S-501 FOR UNDERDRAIN PIPE EMBEDMENT DETAILING (TYP)

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

UNDERDRAIN TO BE CENTERED BENEATH WALL IN ALIGNMENT WITH VERTICAL IN-WALL BASIN DRAIN VALVE PIPING, (TYP SEE S DWGS)

12"-DR-PVC-6 PERFORATED UNDERDRAIN IE 674.75 (TYP)

REFER TO PIEZOMETER DETAIL G/99-C-506

N 2025804.93
E 2587039.62

6" -PE-5 CORRUGATED ST

N 2025797.42
E 2587040.62

REFER TO DETAIL A/99-C-503 MANHOLE W/ CONICAL RISER 5'-0" PRECAST CONC MH W/ RESILIENT CONNECTOR FOR 12" UNDERDRAIN IE 674.75 BOTTOM SLAB EL 671.75

C 99-C-506 PLUGGED WITH CONCRETE (TYP)

EXISTING 48" RC PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

48" RC RECIRCULATION

EXISTING 18" ABABNDOED RAW SEWAGE PIPE TO BE DEMOLISHED AND PLUGGED WITH CONCRETE

REFER TO DETAIL B ON DWG 99-C-503 FOR IDOT PRECAST HEADWALL FOR PIPE UNDERDRAINS
N - 2025791.61
E - 2587069.31
IE 696.90
THE COORDINATES PROVIDED ARE APPROXIMATE. STORM PIPE AND HEADWALL LOCATION TO BE PLACED IN ORDER TO REUSE EXISTING RIPRAP

PROTECT-IN-PLACE STORMWATER FLARED END SECTION AND RIPRAP

0+00

4" SANITARY SEWER

FOR CONTINUATION SEE 02-P-101

AGS SUPPORT FACILITIES

2" W4

NEW DUCTBANK SEE DWG 00-E-101

THRUST BLOCK (TYP) F 99-C-506

IE 697.1

ELECTRICAL MANHOLE

12"CIDR

1+00

36" -AGSI-DIP

AGS INFLUENT SEE DWG 00-C-301 FOR PROFILE

16" ST

0+50

STA 0+50.41
42" X 36" REDUCER
N 2025786.61
E 2587120.62

AGS INFLUENT

42" -AGSI-DIP

0+00

PROVIDE HARNESSED MECHANICAL COUPLING TO CONNECT AGS INFLUENT AT 42" STUB OUT

STA 0+45.49
42" TEE
N 2025781.70
E 2587120.62

PRIMARY FILTER EFFLUENT STRUCTURE

PLANT DRIVE TO PRIMARY FILTER EFFLUENT DIVERSION STRUCTURE

60" SAN

30" SAN

ABAND

8" WAS

RIVER STATION TANK NO. 1

18" ABANDONED RAW SEWAGE

7598
696.74
CB

7632
X 697.31
SNL - ABANDON WASTE LINE

7633
X 697.13
SNL - ABANDON WASTE LINE

14" FINAL EFFLUENT

10' 0 10' 20'
1"=10'

KEY PLAN

NOTES:

1. SEE DWG 00-C-107 FOR YARD PIPING GENERAL NOTES.

NOTES:

1. SEE DWG 00-C-107 FOR YARD PIPING GENERAL NOTES.

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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PIPING PLAN 4 OF 4

00-C-111

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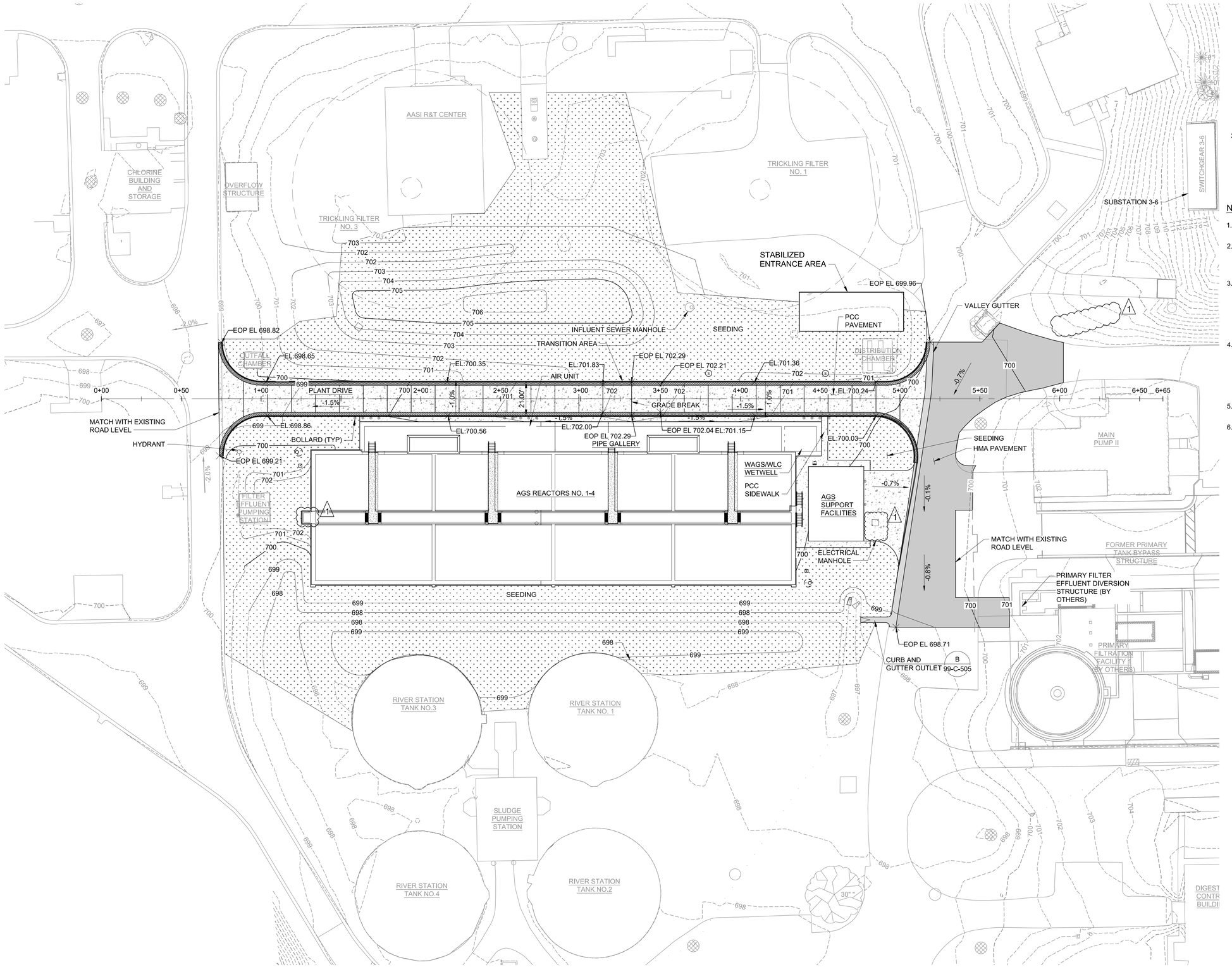

NOTES:

1. SEE DWG 00-C-001 FOR LEGENDS AND GENERAL NOTES.
2. TRENCH, PAVEMENT, AND SITE RESTORATION SHALL MATCH ADJACENT EXISTING GRADE UNLESS OTHERWISE NOTED.
3. ALL EXISTING MANHOLES, CATCH BASINS, AND INLETS WITHIN THE LIMITS OF CONSTRUCTION TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION AND, IF REQUIRED DUE TO NEW CONSTRUCTION, ADJUSTED TO FINAL GRADE AND/OR TO ACCEPT DRAINAGE.
4. PROVIDE PCC PAVEMENT JOINTING PER IDOT STANDARD 420001-09 AND 420101-07. PROVIDE JOINTING AND TIE BARS FOR PCC CURB AND GUTTER PER IDOT STANDARD 606001-07. PROVIDE PCC PAVEMENT ROUNDOUTS AT CASTING PER IDOT STANDARD 420111-04.
5. TYPICAL PCC PAVEMENT TRANSVERSE JOINT SPACING IS 15 FEET.
6. WHERE NEW PCC PAVEMENT IS REPLACING EXISTING, THE INTENT IS TO MATCH PRE-CONSTRUCTION GRADES, GEOMETRY AND JOINTING PATTERN.

LEGEND:

- SEEDING
- PCC PAVEMENT
- HMA PAVEMENT
- CURB AND GUTTER
- TIP OUT CURB
- M6.18 DEPRESSED CURB

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

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GENERAL

CIVIL

OVERALL GRADING AND PAVING PLAN

00-C-112

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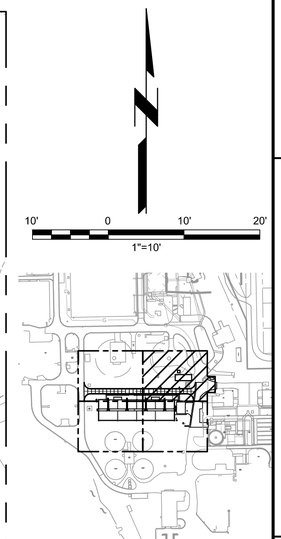
COORDINATE TABLE - PAVING				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
108	N 2025921.26	E 2586912.09	701.82	PAVEMENT EDGE
109	N 2025904.26	E 2586912.09	701.82	PAVEMENT EDGE
110	N 2025904.26	E 2586948.09	698.61	PAVEMENT EDGE
111	N 2025921.26	E 2587090.01	700.19	PAVEMENT EDGE
112	N 2025948.27	E 2587117.01	699.96	EXISTING PAVEMENT EDGE (APPROX.)
113	N 2025904.26	E 2587081.88	700.07	PAVEMENT EDGE
114	N 2025883.04	E 2587108.71	699.77	PAVEMENT EDGE
116	N 2025898.43	E 2587048.87	700.22	PIPE GALLERY CORNER
117	N 2025876.93	E 2587048.87	700.25	PIPE GALLERY CORNER
118	N 2025876.93	E 2587033.12	700.28	REACTOR AND PIPE GALLERY CORNER
146	N 2025948.27	E 2587149.61	699.91	EXISTING PAVEMENT EDGE (APPROX.)
147	N 2025960.23	E 2587160.59	700.04	EXISTING PAVEMENT EDGE (APPROX.)
148	N 2025947.99	E 2587200.45	700.42	EXISTING PAVEMENT EDGE (APPROX.)
149	N 2025922.92	E 2587200.45	700.23	EXISTING PAVEMENT EDGE (APPROX.)
162	N 2025921.26	E 2586948.09	698.61	PAVEMENT EDGE

CURVE DATA TABLE					
CURVE NO.	TANGENT (FT)	LENGTH (FT)	RADIUS (FT)	DELTA (°)	DESCRIPTION
C3	27.02	42.43	27.00	90.04	BOC
C4	21.81	36.91	27.58	76.67	BOC

COORDINATE TABLE - BOLLARDS		
BOLLARD NO.	NORTHING	EASTING
309	2025900.68	2587038.02
310	2025900.68	2587043.02
311	2025900.68	2587048.02
312	2025900.68	2587053.72

LEGEND:

- SEEDING
- PCC PAVEMENT
- HMA PAVEMENT
- CURB AND GUTTER
- TIP OUT CURB
- M6.18 DEPRESSED CURB
- BACK OF CURB — BOC



KEY PLAN

NOTES:

1. SEE DWG 00-C-001 FOR LEGENDS AND GENERAL NOTES AND DWG 00-C-112 FOR GRADING AND PAVING NOTES.
2. SEEDING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 329221.
3. REFER TO DETAIL D ON DWG 99-C-504 FOR JOINTING AND DWG 99-C-502 FOR REINFORCEMENT, AND ADDITIONAL PAVEMENT REQUIREMENTS.
4. REFER TO DETAIL A ON DWG 99-C-505 FOR ADDITIONAL CURB AND GUTTER REQUIREMENTS.

FOR CONTINUATION, SEE DRAWING 00-C-113

FOR CONTINUATION, SEE DRAWING 00-C-116

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AEROBIC GRANULAR SLUDGE - PHASE 1

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GRADING AND PAVING PLAN 2 OF 4

00-C-114

44 OF 163

PLOTTED: 1/17/2023 6:58:48 PM
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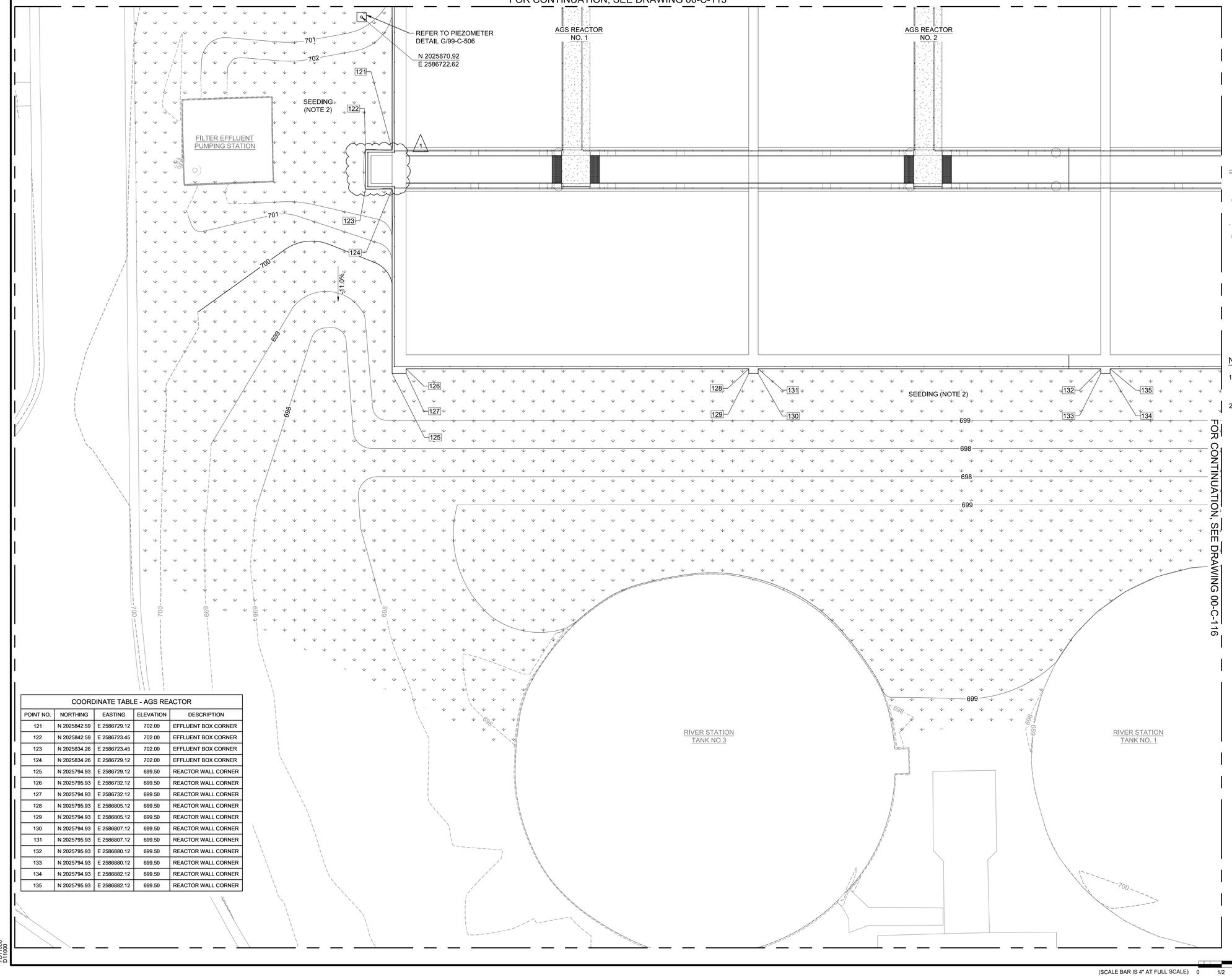
FDT1000
FDT005

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

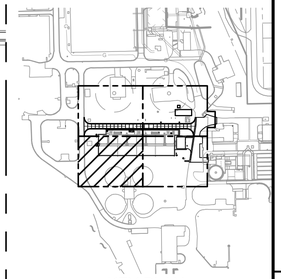
FOR CONTINUATION, SEE DRAWING 00-C-113



FOR CONTINUATION, SEE DRAWING 00-C-116

COORDINATE TABLE - AGS REACTOR				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
121	N 2025842.59	E 2586729.12	702.00	EFFLUENT BOX CORNER
122	N 2025842.59	E 2586723.45	702.00	EFFLUENT BOX CORNER
123	N 2025834.26	E 2586723.45	702.00	EFFLUENT BOX CORNER
124	N 2025834.26	E 2586729.12	702.00	EFFLUENT BOX CORNER
125	N 2025794.93	E 2586729.12	699.50	REACTOR WALL CORNER
126	N 2025795.93	E 2586732.12	699.50	REACTOR WALL CORNER
127	N 2025794.93	E 2586732.12	699.50	REACTOR WALL CORNER
128	N 2025795.93	E 2586805.12	699.50	REACTOR WALL CORNER
129	N 2025794.93	E 2586805.12	699.50	REACTOR WALL CORNER
130	N 2025794.93	E 2586807.12	699.50	REACTOR WALL CORNER
131	N 2025795.93	E 2586807.12	699.50	REACTOR WALL CORNER
132	N 2025795.93	E 2586880.12	699.50	REACTOR WALL CORNER
133	N 2025794.93	E 2586880.12	699.50	REACTOR WALL CORNER
134	N 2025794.93	E 2586882.12	699.50	REACTOR WALL CORNER
135	N 2025795.93	E 2586882.12	699.50	REACTOR WALL CORNER

10' 0 10' 20'
1"=10'



KEY PLAN

NOTES:

1. SEE DWG 00-C-001 FOR LEGENDS AND GENERAL NOTES AND DWG 00-C-112 FOR GRADING AND PAVING NOTES.
2. SEEDING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 329221.

LEGEND:

SEEDING

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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FILE: C:\PW_WORKING\BVW_AMERICAS\D1495368\00-C-115.DWG
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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	SM
DETAILED:	AB
CHECKED:	AM/JH
APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

GENERAL

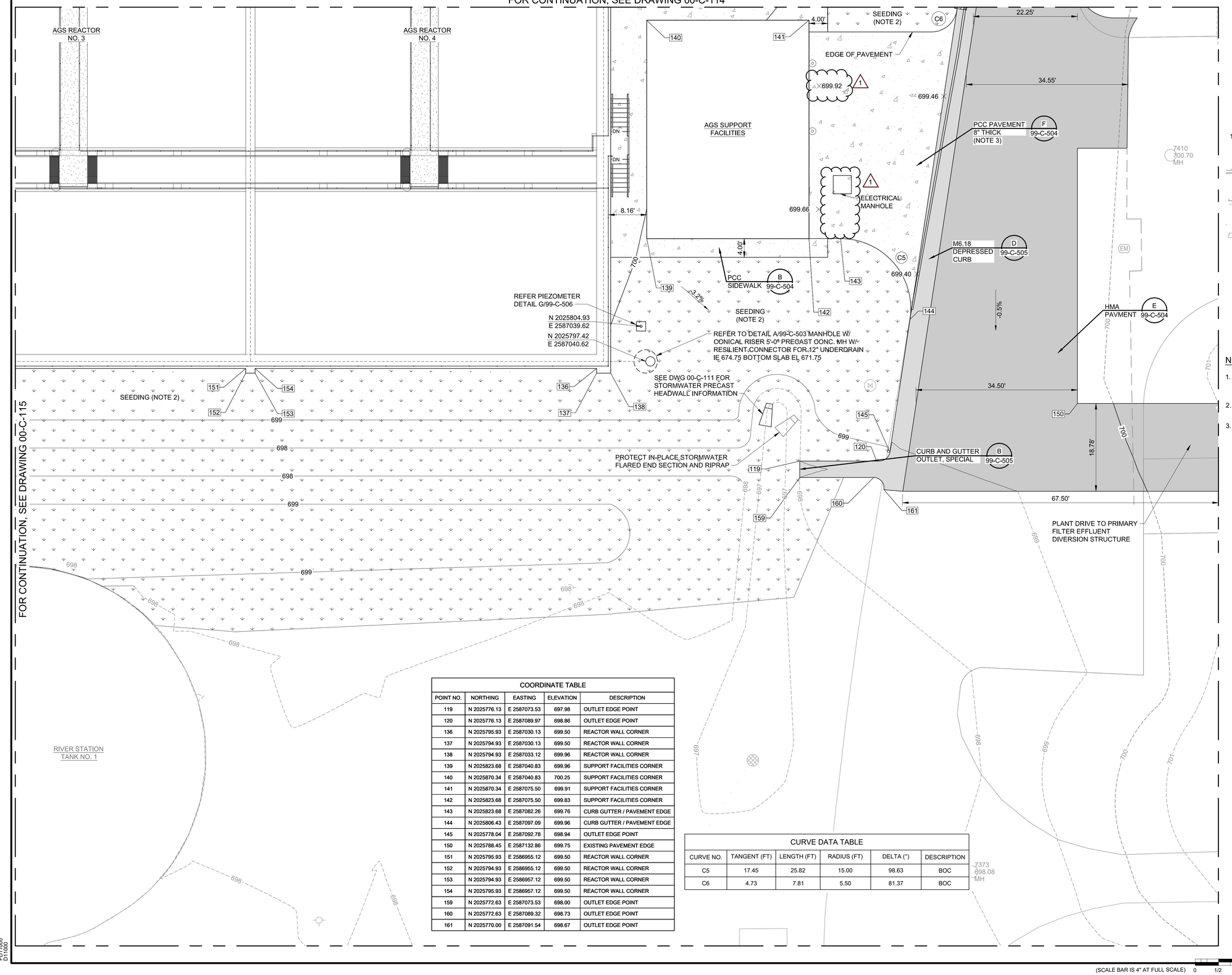
CIVIL

GRADING AND PAVING PLAN 3 OF 4

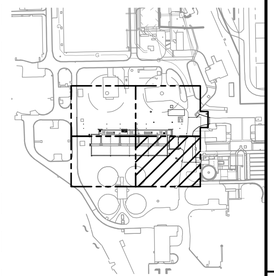
00-C-115

45 OF 163

FOR CONTINUATION, SEE DRAWING 00-C-114



KEY PLAN



NOTES:

1. SEE DWG 00-C-001 FOR LEGENDS AND GENERAL NOTES AND DWG 00-C-112 FOR GRADING AND PAVING NOTES.
2. SEEDING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 329221.
3. REFER TO DETAIL D ON DWG 99-C-504 FOR JOINTING AND DWG 99-C-502 FOR REINFORCEMENT, AND ADDITIONAL PAVEMENT REQUIREMENTS.

LEGEND:

SEEDING	
PCC PAVEMENT	
HMA PAVEMENT	
M6.18 DEPRESSED CURB	
BACK OF CURB	BOC

COORDINATE TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
119	N 2025776.13	E 2587073.53	697.98	OUTLET EDGE POINT
120	N 2025776.13	E 2587089.97	698.86	OUTLET EDGE POINT
136	N 2025795.93	E 2587030.13	699.50	REACTOR WALL CORNER
137	N 2025794.93	E 2587030.13	699.50	REACTOR WALL CORNER
138	N 2025794.93	E 2587033.12	699.96	REACTOR WALL CORNER
139	N 2025823.68	E 2587040.83	699.96	SUPPORT FACILITIES CORNER
140	N 2025870.34	E 2587040.83	700.25	SUPPORT FACILITIES CORNER
141	N 2025870.34	E 2587075.50	699.91	SUPPORT FACILITIES CORNER
142	N 2025823.68	E 2587075.50	699.83	SUPPORT FACILITIES CORNER
143	N 2025823.68	E 2587082.26	699.76	CURB GUTTER / PAVEMENT EDGE
144	N 2025806.43	E 2587097.09	699.96	CURB GUTTER / PAVEMENT EDGE
145	N 2025778.04	E 2587092.78	698.94	OUTLET EDGE POINT
150	N 2025788.45	E 2587132.86	699.75	EXISTING PAVEMENT EDGE
151	N 2025795.93	E 2586955.12	699.50	REACTOR WALL CORNER
152	N 2025794.93	E 2586955.12	699.50	REACTOR WALL CORNER
153	N 2025794.93	E 2586957.12	699.50	REACTOR WALL CORNER
154	N 2025795.93	E 2586957.12	699.50	REACTOR WALL CORNER
159	N 2025772.63	E 2587073.53	698.00	OUTLET EDGE POINT
160	N 2025772.63	E 2587089.32	698.73	OUTLET EDGE POINT
161	N 2025770.00	E 2587091.54	698.67	OUTLET EDGE POINT

CURVE DATA TABLE

CURVE NO.	TANGENT (FT)	LENGTH (FT)	RADIUS (FT)	DELTA (°)	DESCRIPTION
C5	17.45	25.82	15.00	98.63	BOC
C6	4.73	7.81	5.50	81.37	BOC

FOR CONTINUATION, SEE DRAWING 00-C-115

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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FILE: C:\PW_WORKING\BVW_AMERICAS\D1495368\00-C-116.DWG
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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	SM
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DATE:	12/20/2022
PROJECT NO.:	411752

GENERAL

CIVIL

GRADING AND PAVING PLAN 4 OF 4

00-C-116

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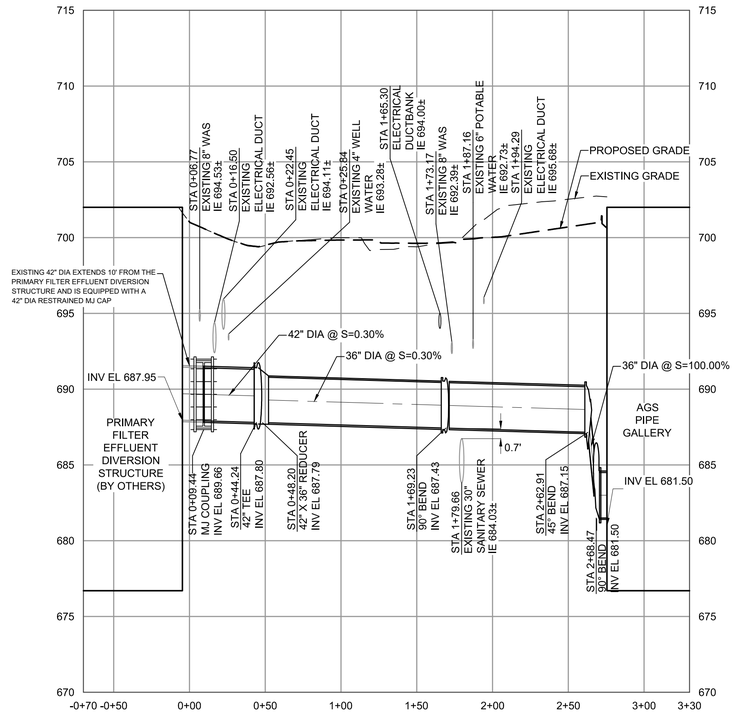
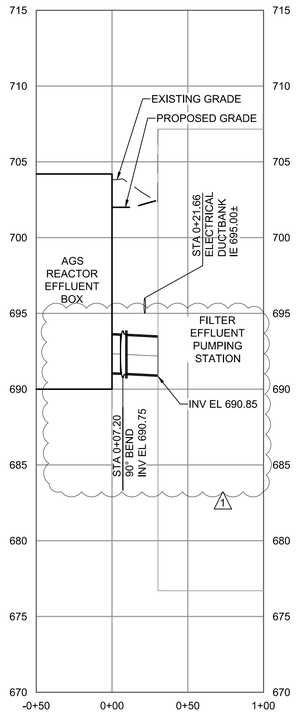


- 00-C-109, 111 **36" AND 42" AGS INFLUENT PROFILE**
SCALE : HOR 1" = 50'
VER 1" = 5'



- 00-C-110 **30" AGS EFFLUENT PROFILE**
SCALE : HOR 1" = 50'
VER 1" = 5'

(SCALE BAR IS 4" AT FULL SCALE)

5' 0 5' 10'
1"=5'

50' 0 50' 100'
1"=50'

0 1/2 1 2 3 4

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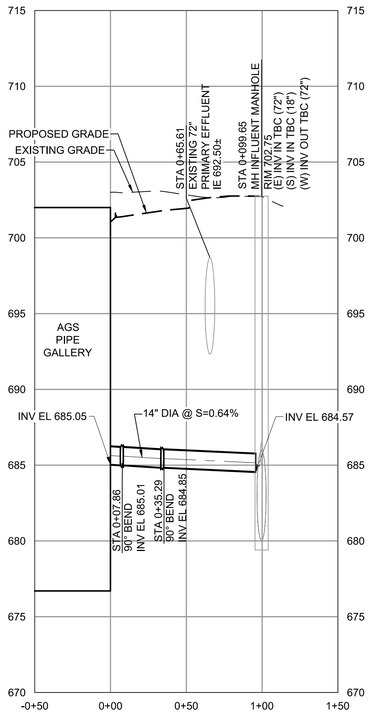
GENERAL

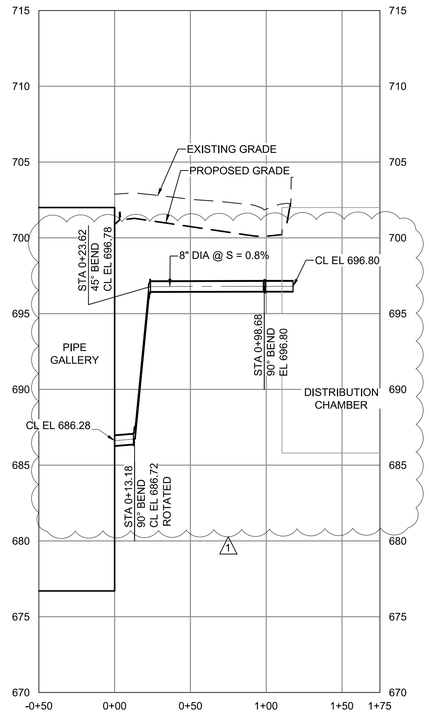
CIVIL

PIPING PROFILES 1 OF 2

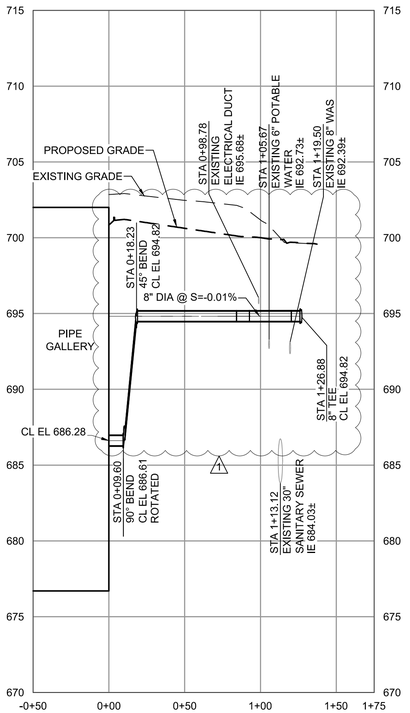
00-C-301



- 14" WLC BYPASS PROFILE
00-C-109 SCALE : HOR 1" = 50'
VER 1" = 5'



- 8" WAGS/WLC PUMP DISCHARGE PROFILE
00-C-109 SCALE : HOR 1" = 50'
VER 1" = 5'



- 8" WAGS PUMP DISCHARGE PROFILE
00-C-109 SCALE : HOR 1" = 50'
VER 1" = 5'

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AEROBIC GRANULAR SLUDGE - PHASE 1

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PROJECT NO.:	411752

GENERAL

CIVIL

PIPING PROFILES 2 OF 2

00-C-302

48 OF 163

5' 0 5' 10'
1"=5'

50' 0 50' 100'
1"=50'

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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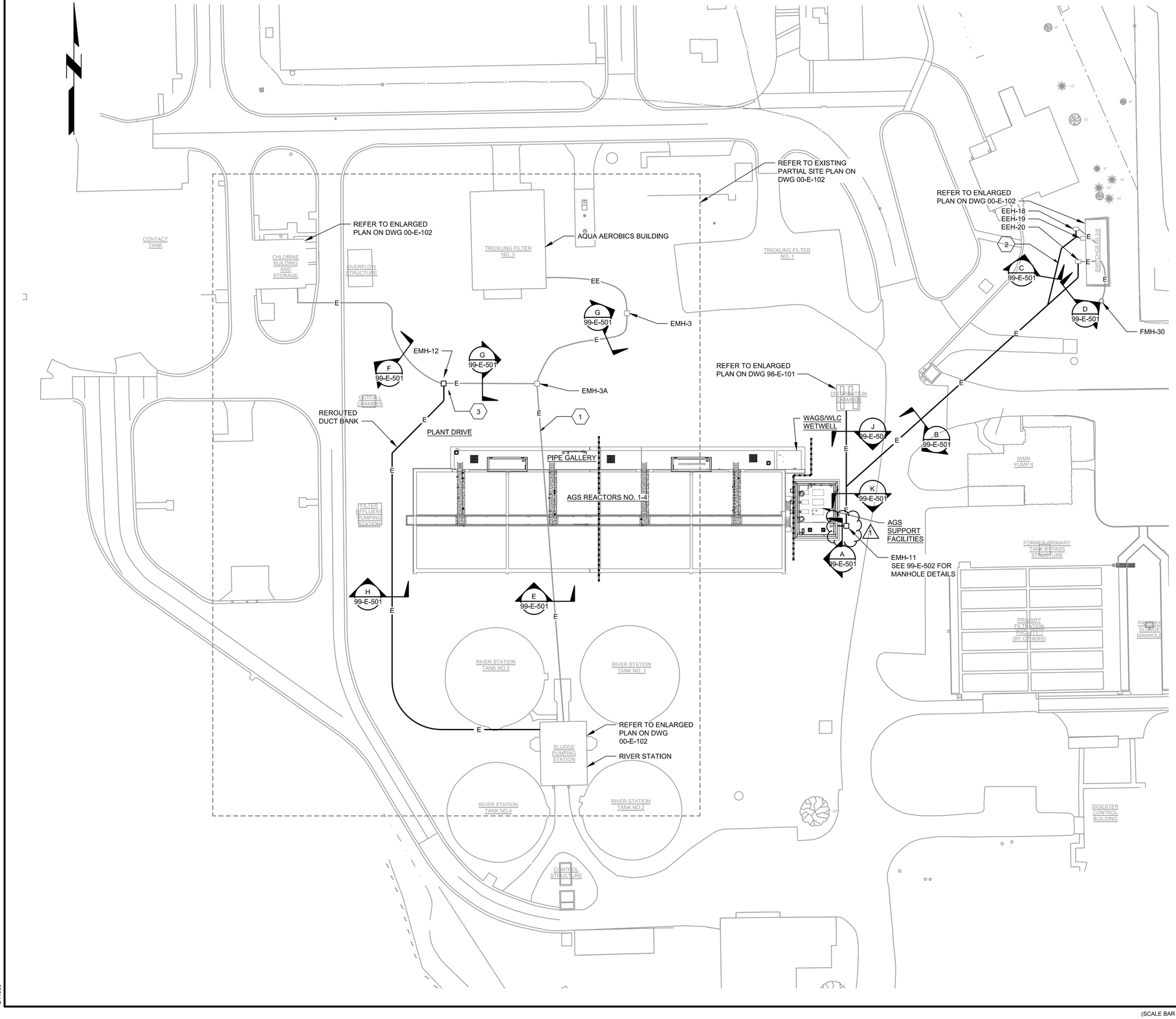

GENERAL SHEET NOTES

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR LEGENDS, ABBREVIATIONS AND NOTES.

SHEET KEYNOTES

1. CONTRACTOR SHALL DEMOLISH EXISTING DUCT BANK BETWEEN EXISTING MANHOLE EMH-3A AND THE RIVER STATION. ALL CIRCUITS WITHIN SHALL BE REPLACED, TERMINATED, TESTED, AND PLACED BACK INTO SERVICE UTILIZING NEW CABLES IN NEW "REROUTED" DUCT BANK. FOR EXISTING CABLE DETAILS SEE 99-E-501. ANY OPENINGS IN EMH-3A FROM THE DEMOLISHED DUCT BANK SHALL BE SEALED FLUSH WITH CONCRETE.
2. CONTRACTOR SHALL CONNECT DUCT BANK GROUNDING CONDUCTORS TO EXISTING GROUNDING GRID AT SWITCHGEAR 3-6.
3. CONTRACTOR SHALL REMOVE A SECTION OF THE EXISTING DUCT BANK AND INSTALL A NEW MANHOLE. THE EXISTING DUCT BANK AND NEW DUCT BANK SHALL BE CONNECTED TO THIS NEW MANHOLE.

   EXISTING DUCT BANK AT NEW MANHOLE LOCATION IS THREE 4" DIAMETER CONDUITS WIDE AND TWO 4" CONDUITS TALL (APPROX 2'-0" W X 1.5" H). CONTRACTOR SHALL SAW CUT NO MORE THAN 6' WIDE SECTION FOR REMOVAL OF DUCT BANK SECTION. EXCAVATION SHALL BE SUPPORTED AS NEEDED. PLACE AND COMPACT STONE BENEATH, POUR SLAB BENEATH, FORM WALLS AROUND EXISTING DUCT BANK, CAST WALLS, REMOVE FORMS, FORM AND INSTALL TOP SLAB WITH 36" DIAMETER FRAME.

   EXISTING INFLUENT 72" INFLUENT SEWER IS APPROXIMATELY 18 TO 20-FT DEEP IN THIS AREA.

40' 20' 0 40' 80'

1"=40'

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

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PROJECT NO.:	411752

GENERAL

ELECTRICAL

SITE PLAN

00-E-101

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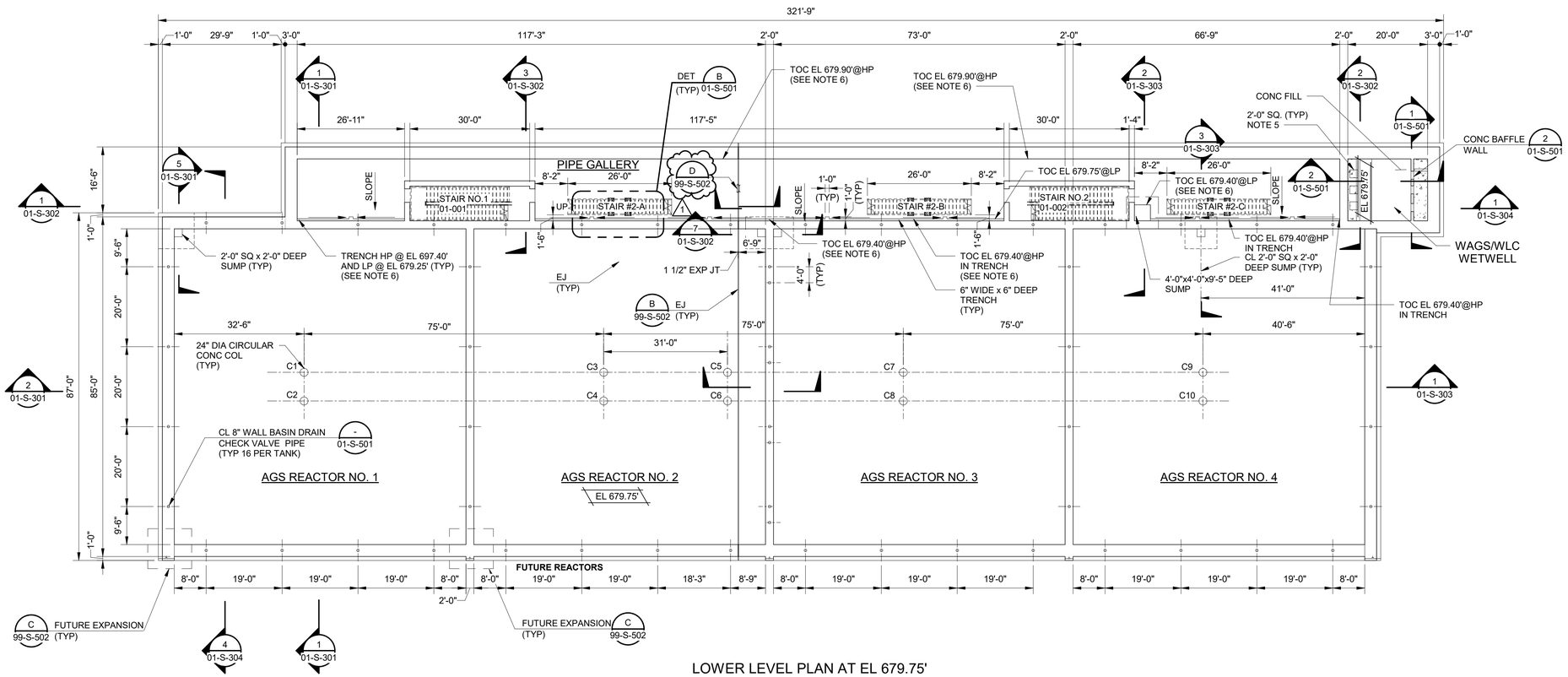
PLOTTED: 1/10/2023 8:23:09 AM
FILE: C:\PW_WORKING\BVW_AMERICAS\D1498380\00-E-101.DWG
FDT1000
DT1000

GENERAL SHEET NOTES:

1. FOR GENERAL STRUCTURAL NOTES, REFER TO SHEET 00-S-001.
2. FOR STRUCTURAL ABBREVIATIONS, REFER TO SHEET 00-S-002.
3. FOR OTHER NOTES, REFER TO SHEET 01-S-103.
4. FOR PIPE SUPPORT TYPE AND LOCATIONS SEE PIPING DWGS AND SCHEDULE ON SHEET 99-M-502.
5. COORDINATE PUMP BASE DIMENSIONS WITH PUMP SUPPLIER.
6. HP, LP AND SLOPES SHOWN IS APPROXIMATE. SEE PLUMBING DWG FOR REQUIRED ELEVATIONS AND SLOPE.

1



LOWER LEVEL PLAN AT EL 679.75'

1/16" = 1'-0"

16' 12' 8' 4' 0' 16' 32'

1/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	SKA
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DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

STRUCTURAL

AGS REACTORS AND GALLERY FOUNDATION PLAN

01-S-101

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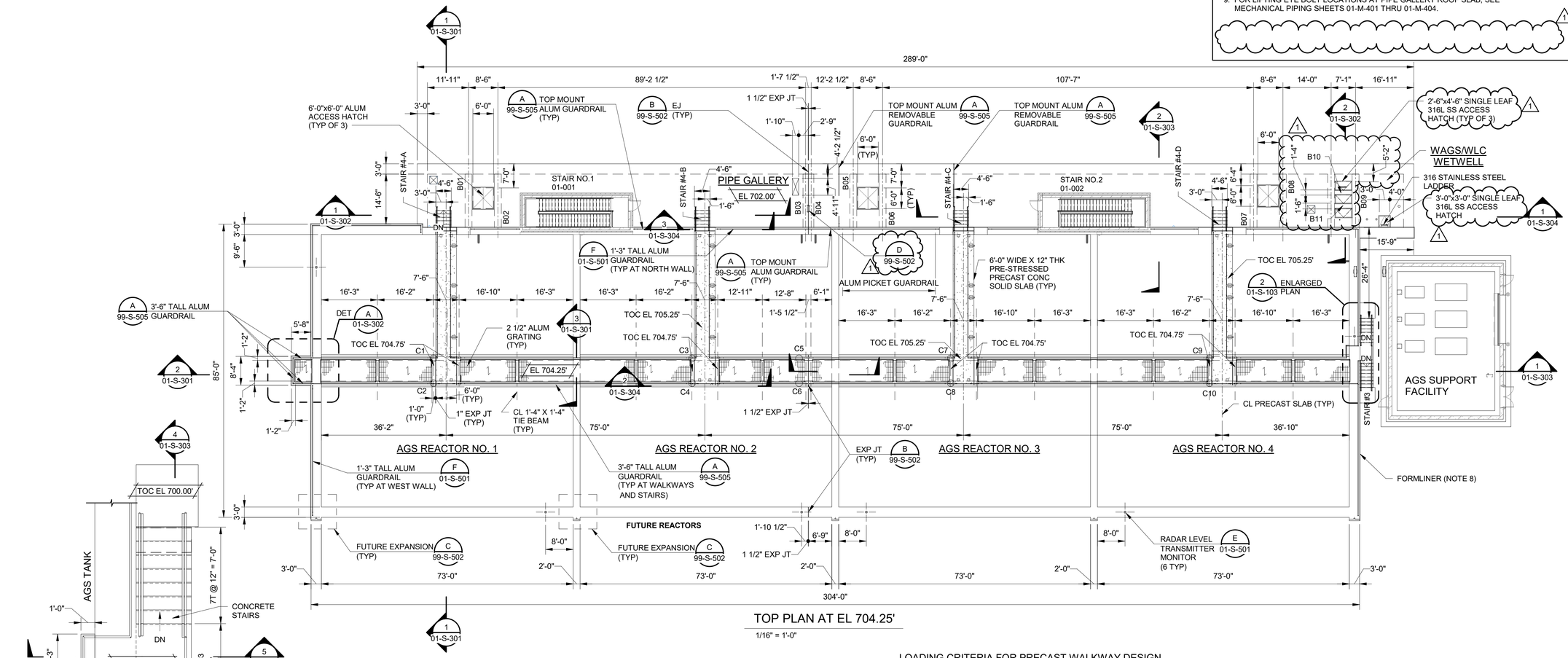
PLOTTED: 1/16/2023 3:30:32 PM
FILE: BIM 360://409469 - Aerobic Granular Sludge Phase 1/409469 - AGS.rvt
D11000

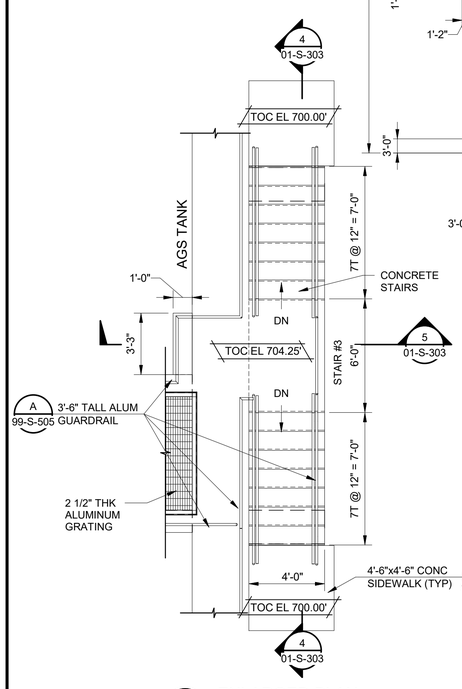
GENERAL SHEET NOTES:

1. FOR GENERAL NOTES, REFER TO SHEET 01-S-101
2. FOR PIPE SUPPORT TYPE AND LOCATIONS SEE PIPING DRAWINGS AND SCHEDULE ON SHEET 99-M-502.
3. FOR STRUCTURAL ABBREVIATIONS, REFER TO SHEET 00-S-002.
4. FOR PIPES / PIPE OPENINGS, SLAB OPENINGS, PIPE SUPPORTS EQUIPMENT LOCATION AND DETAILS REFER TO RELEVANT MECHANICAL DRAWINGS.
5. FOR DUCT AND DUCT OPENING DETAILS REFER TO HVAC DRAWINGS.
6. FOR ROOF SLOPE AND DETAILS, REFER TO ARCHITECTURAL DRAWINGS.
7. AGS SUPPORT FACILITY REFER TO SHEETS 02-S-101 AND 02-S-102.
8. FORMLINERS ARE REQUIRED AT THE EXTERIOR WALL SURFACE FROM 1 FT BELOW GRADE TO 11" BELOW TOP OF WALLS AT NORTH, EAST AND WEST SIDES OF AGS TANK. FORMLINERS ARE NOT REQUIRED AT FUTURE EXPANSION SIDE (SOUTH SIDE).
9. FOR LIFTING EYE BOLT LOCATIONS AT PIPE GALLERY ROOF SLAB, SEE MECHANICAL PIPING SHEETS 01-M-401 THRU 01-M-404.



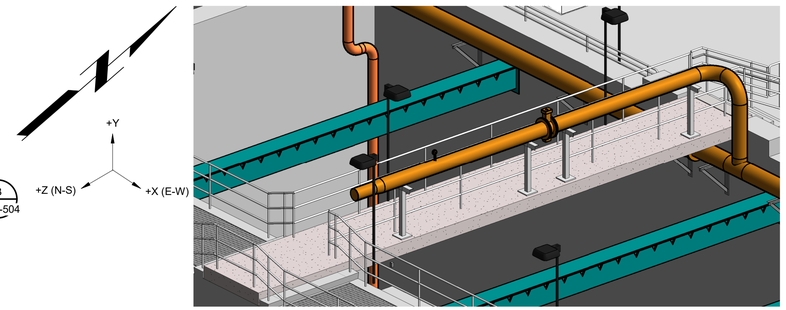
TOP PLAN AT EL 704.25'

1/16" = 1'-0"



ENLARGED PLAN

1/4" = 1'-0"



LOADING CRITERIA FOR PRECAST WALKWAY DESIGN

1. DEAD LOAD AS CALCULATED BY PRECAST MANUFACTURER.
2. LIVE LOAD : 100 PSF
3. SNOW LOAD : 34 PSF
4. VIBRATIONS CONSIDERATIONS FOR WALKWAY SHALL BE PROVIDED, MINIMUM fn = 4.4 HERTZ. CALCULATIONS PROVIDED SHALL INCLUDE DETERMINATION OF MINIMUM FUNDAMENTAL NATURAL FREQUENCY.

WALKWAY LOADING

	DEAD LOAD (KIPS)	ICE LOAD (KIPS)	WIND LOADS				
			X (KIPS)	Z (KIPS)	Mx (KIP-FT)	My (KIP-FT)	Mz (KIP-FT)
AIR PIPE SUPPORT	0.5	0.3	0.6	0.2	0.8	0.1	3
LAMP POST	0.6	0.6	1.0	1.0	6.0	0.1	6

NOTES:-

1. WIND AND ICE LOAD REACTIONS INDICATED ABOVE ARE AT CODE LEVEL ULTIMATE REACTIONS.
2. POSITIVE REACTIONS INDICATE DOWNWARD LOAD ON SLAB.
3. SEE SPECIFICATION 03 41 00 FOR OTHER DESIGN REQUIREMENTS.
4. SEE MECHANICAL AND ELECTRICAL SHEETS FOR AIR PIPE SUPPORT AND LAMP POST LOCATIONS.

4' 2' 0' 4' 8'
1/4" = 1'-0"

16' 12' 8' 4' 0' 16' 32'
1/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

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APPROVED:	TNG
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

STRUCTURAL

AGS REACTORS AND GALLERY TOP PLAN

01-S-103

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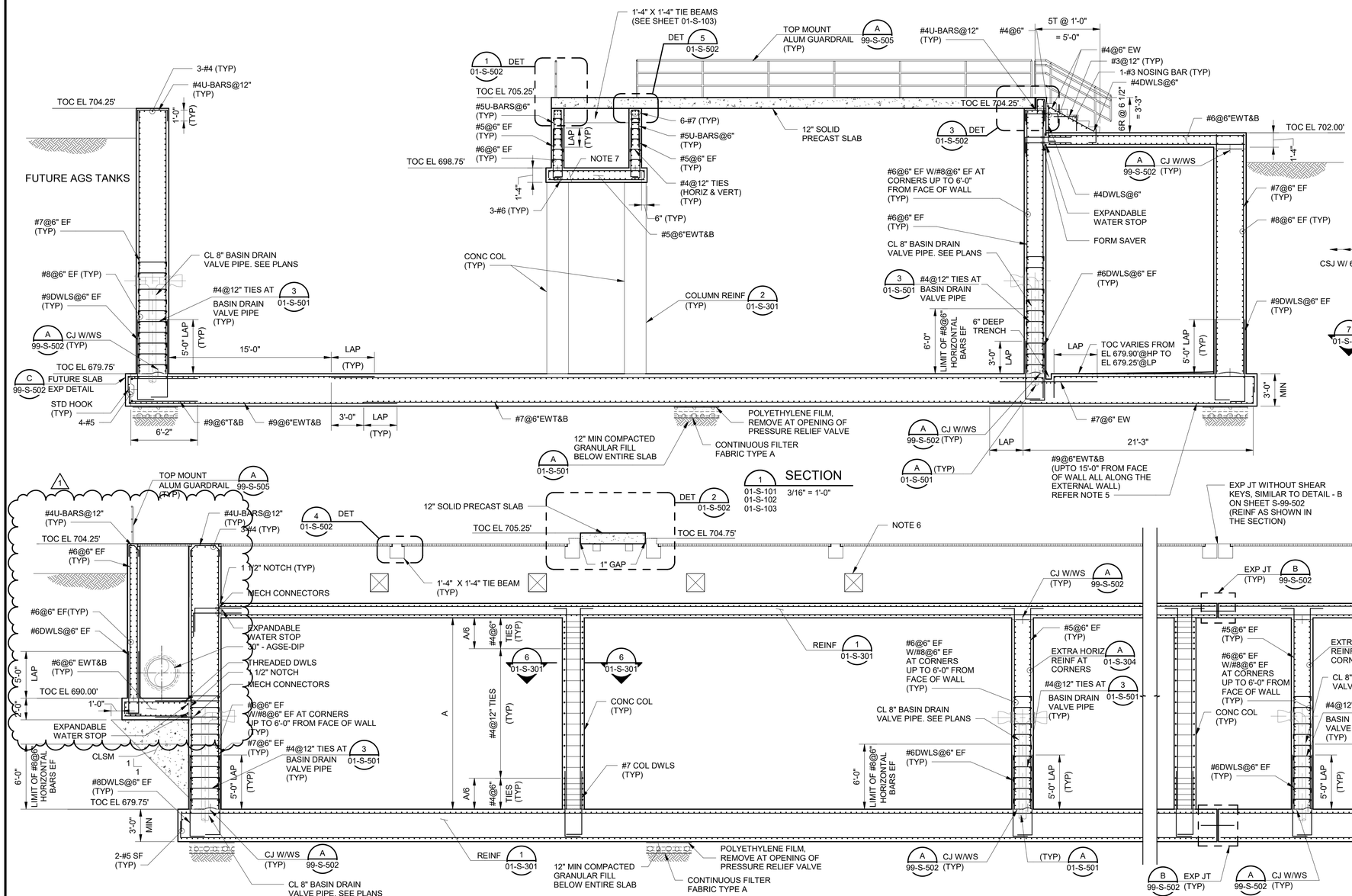
PLOTTED: 1/16/2023 3:30:35 PM
FILE: BIM 360://409469 - Aerobic Granular Sludge Phase 1/409469 - AGS.rvt
D11000

GENERAL SHEET NOTES:

1. FINISHED GRADE ELEVATION SHOWN IS APPROXIMATE. SEE CIVIL SITE PLAN FOR REQUIRED GRADE ELEVATION OF THIS LOCATION.
2. FOR GENERAL NOTES, REFER TO SHEET 01-S-101.
3. FOR STRUCTURAL ABBREVIATIONS, REFER TO SHEET 00-S-002.
4. FOR OTHER NOTES, REFER TO SHEET 01-S-103.
5. MINIMUM COVER FOR TOP REINFORCEMENT OF SLAB WITH SLOPING TOP SURFACE SHALL BE MAINTAINED AT LP ELEVATION. TOP REINFORCEMENT CAN BE LAID FLAT.
6. THE CONTRACTOR SHALL COORDINATE THE LOCATION AND SIZE OF OPENING WITH THE EQUIPMENT SUPPLIER.
7. THE SCAFFOLDING SUPPORTING THE EFFLUENT CHANNEL BOTTOM SLAB MUST REMAIN IN PLACE UNTIL THE CONCRETE SIDE WALLS HAVE ACHIEVED 28 DAY COMPRESSIVE STRENGTH.



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AEROBIC GRANULAR SLUDGE - PHASE 1

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DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

STRUCTURAL

SECTIONS AND DETAILS 1 OF 4

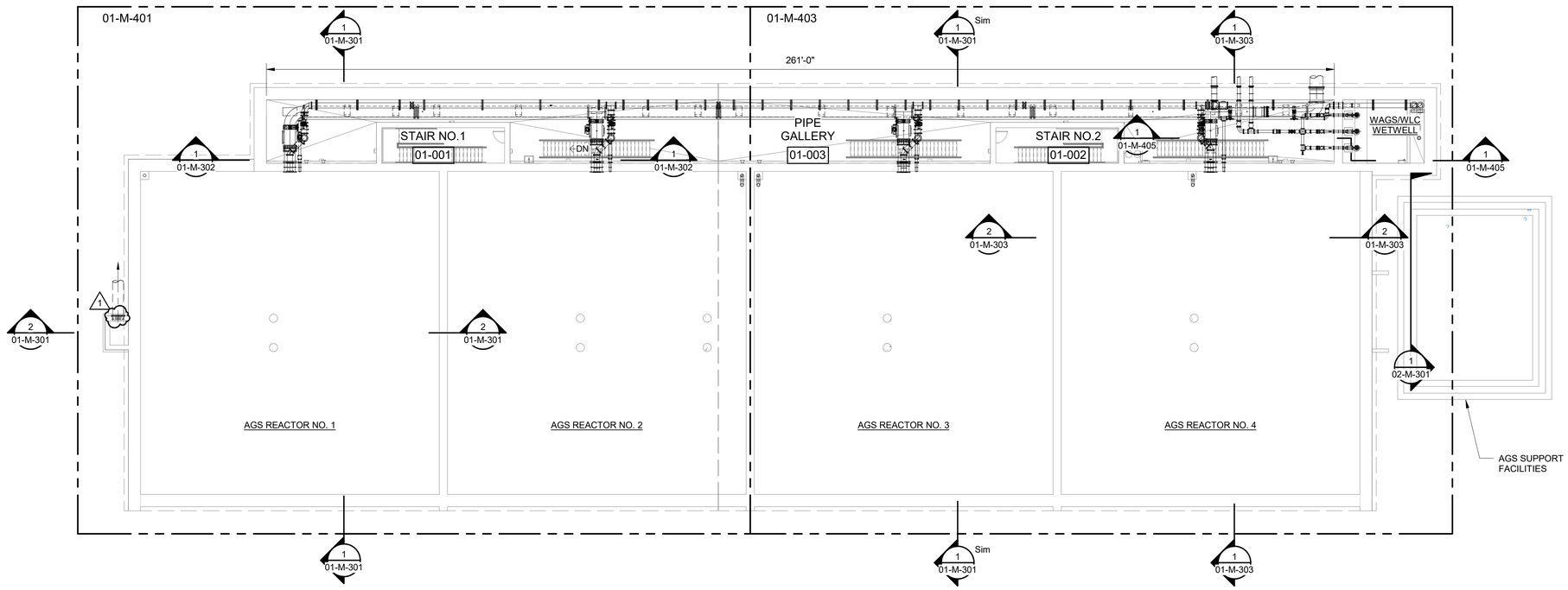
01-S-301

60 OF 163

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

6' 4' 2' 0' 5' 10' 3/16" = 1'-0"
4' 2' 0' 4' 8' 1/4" = 1'-0"
12" 0' 1' 2' 3' 4' 5' 6' 7' 3/8" = 1'-0"
12" 9" 6" 3" 0' 1' 2' 1" = 1'-0"

PLOTTED: 1/16/2023 4:48:40 PM
FILE: BIM 360://409469 - Aerobic Granular Sludge Phase 1/409469 - AGS.rvt
D11000



OVERALL SECTIONAL PLAN

1/16" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO ENLARGED PLANS FOR ADDITIONAL DETAIL.
2. ALL BLOWER INLET, BLOW-OFF AND DISCHARGE PIPING SHALL BE INSULATED AND JACKETED. REFER TO SECTION 40 42 11 - MECHANICAL INSULATION FOR REQUIREMENTS.

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AEROBIC GRANULAR SLUDGE - PHASE 1

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DETAILED:	VP
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APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PROCESS MECHANICAL

OVERALL SECTIONAL PLAN

16' 12' 8' 4' 0' 16' 32'

1/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

01-M-101

66 OF 163

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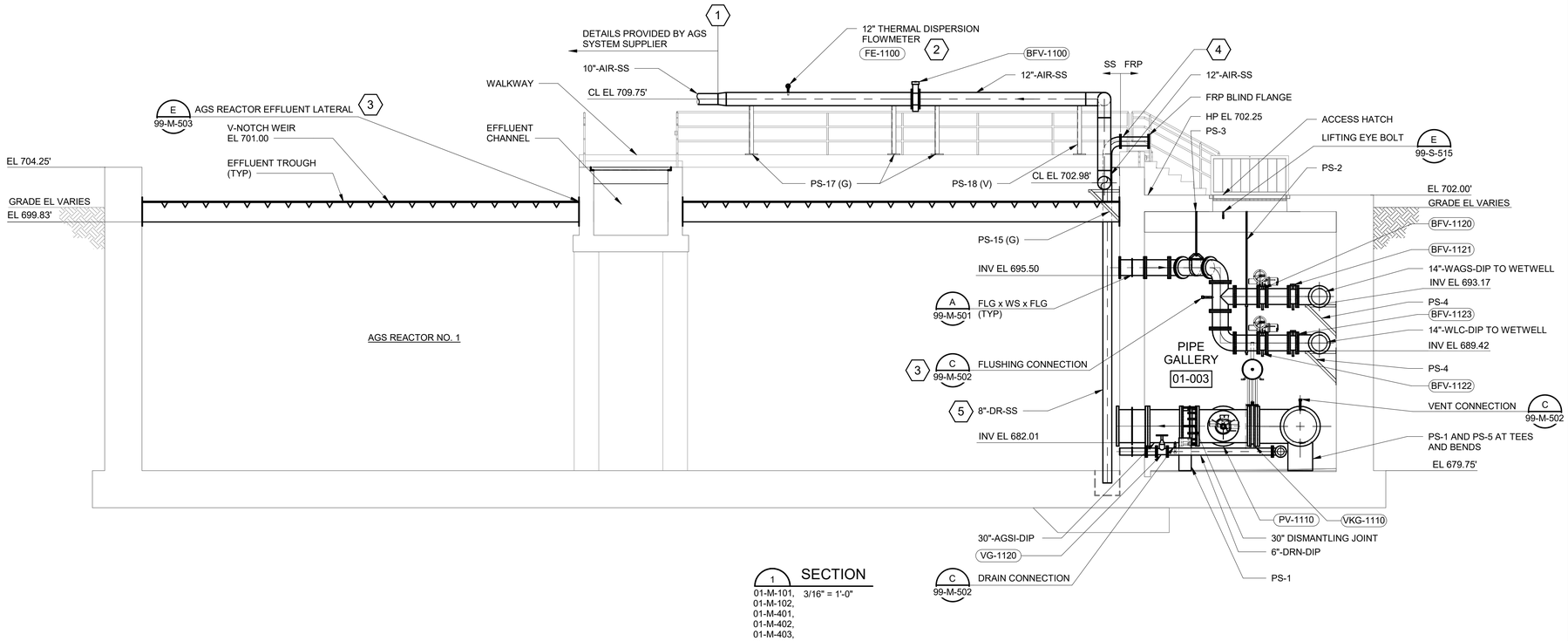
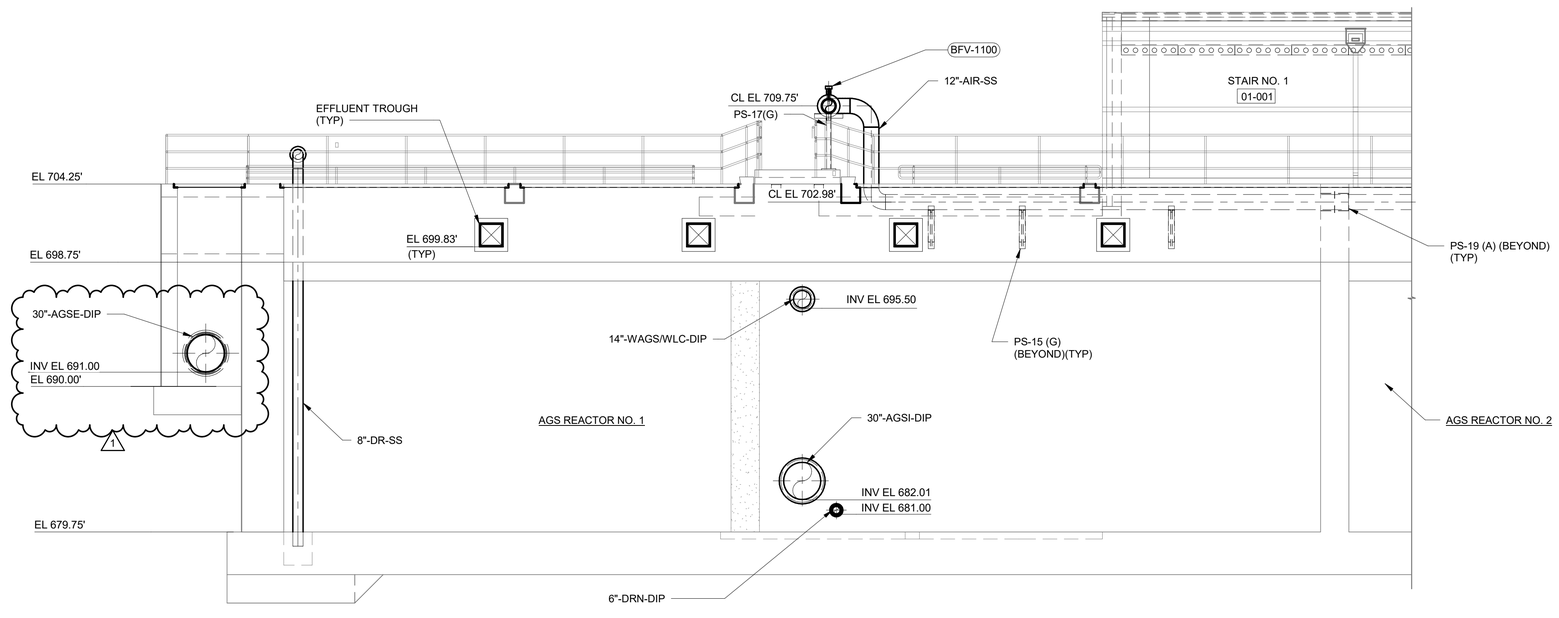
D1000



1 SECTION
01-M-101, 01-M-102, 01-M-401, 01-M-402, 01-M-403, 01-M-404
3/16" = 1'-0"



2 SECTION
01-M-101, 01-M-102, 01-M-401, 01-M-402
3/16" = 1'-0"

GENERAL SHEET NOTES

1. AIR DIFFUSER LAYOUT AND CONNECTION DETAILS SHALL BE PROVIDED BY AGS SYSTEM SUPPLIER AFTER AWARD OF CONTRACT.
2. AGS REACTOR TANK INTERNAL EQUIPMENT INCLUDING MANIFOLDS, TROUGHS, SUPPORTS AND DIFFUSERS ARE PROVIDED BY AGS SYSTEM SUPPLIER. FINAL EQUIPMENT AND PIPING LAYOUT IS PROPRIETARY AND SHALL BE AS PROVIDED IN VENDOR SUBMITTAL DRAWINGS. FINAL EQUIPMENT LIST AND QUANTITIES TO BE PROVIDED BY AGS SYSTEM SUPPLIER. REFER TO AGS SPECIFICATION AND SHEETS 99-M-502, 99-M-503, AND 99-M-504 FOR ADDITIONAL DETAIL.
3. PS-X REPRESENTS PIPE SUPPORT TYPE. SEE PIPE SUPPORT SCHEDULE ON SHEET 99-M-502.

   AIR PIPING SUPPORT TYPES ARE IDENTIFIED USING THE FOLLOWING DESIGNATIONS:

   (G) : GUIDE SUPPORT
   (A) : AXIAL STOP
   (V) : VERTICAL SUPPORT
   (SPR) : SPRING HANGER SUPPORT
4. PIPE SUPPORTS TO BE ADJUSTED IN THE FIELD AS REQUIRED TO AVOID FLANGE LOCATIONS IN PIPES.

SHEET KEYNOTES

1. REFER TO P&IDS AND EQUIPMENT SPECIFICATION FOR ADDITIONAL INFORMATION ON AGS SYSTEM SUPPLIER SCOPE. DETAILED PIPE ROUTING AND EQUIPMENT LOCATIONS TO BE PROVIDED BY SUPPLIER AFTER AWARD OF CONTRACT. AGS SYSTEM SUPPLIER IS RESPONSIBLE FOR PIPE SUPPORTS WITHIN THE PIPING PROVIDED BY THE AGS SYSTEM SUPPLIER.
2. THERMAL DISPERSION FLOWMETER PROVIDED BY AGS SYSTEM SUPPLIER. FLOWMETERS SHALL BE PROVIDED WITH MINIMUM UPSTREAM STRAIGHT RUN OF 10 PIPE DIAMETERS AND MINIMUM DOWNSTREAM STRAIGHT RUN OF 5 PIPE DIAMETERS.
3. CONTRACTOR SHALL COORDINATE THE LOCATION AND SIZE OF EFFLUENT CHANNEL OPENINGS WITH THE AGS SYSTEM SUPPLIER.
4. DRAIN PIPING SHOWN IS TYPICAL OF AGS REACTOR NO. 1. FOR AGS REACTORS NO. 2, 3, AND 4, CONTRACTOR SHALL ROUTE DRAIN PIPING TO AVOID AIR PIPING.
5. SUPPORTS FOR DRAIN PIPING SHALL BE DUPLEX SS AND SHALL MEET THE REQUIREMENTS OF SECTION 40 05 07 PIPE SUPPORTS.

6' 4' 2' 0' 5' 10'
3/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JL
DETAILED:	VP
CHECKED:	AM/JH
APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PROCESS MECHANICAL

REACTOR SECTIONS 1 OF 3

01-M-301

68 OF 163

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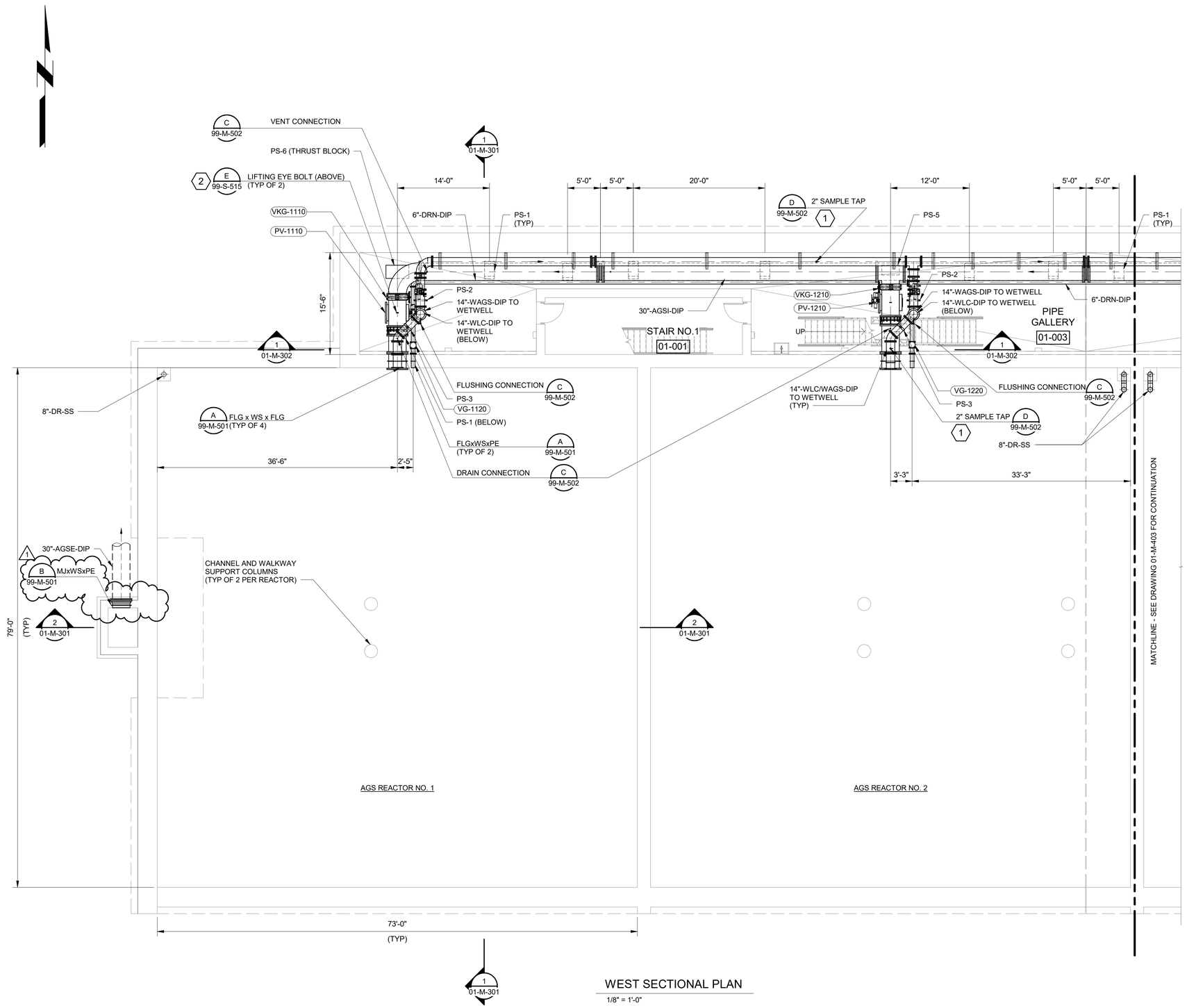

WEST SECTIONAL PLAN

1/8" = 1'-0"

8' 4' 0' 8' 16'

1/8" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

GENERAL SHEET NOTES

1. AIR DIFFUSER LAYOUT AND CONNECTION DETAILS SHALL BE PROVIDED BY AGS SYSTEM SUPPLIER AFTER AWARD OF CONTRACT.
2. AGS REACTOR TANK INTERNAL EQUIPMENT INCLUDING MANIFOLDS, TROUGHS, SUPPORTS, AND DIFFUSERS ARE PROVIDED BY AGS SYSTEM SUPPLIER. FINAL EQUIPMENT AND PIPING LAYOUT IS PROPRIETARY AND SHALL BE AS PROVIDED IN VENDOR SUBMITTAL DRAWINGS. FINAL EQUIPMENT LIST AND QUANTITIES TO BE PROVIDED BY AGS SYSTEM SUPPLIER. REFER TO AGS SPECIFICATION AND SHEETS 99-M-502, 99-M-503, AND 99-M-504 FOR ADDITIONAL DETAIL.
3. PIPE SUPPORTS TO BE ADJUSTED IN THE FIELD AS REQUIRED TO AVOID FLANGE LOCATIONS IN PIPES.
4. PS-X REPRESENTS PIPE SUPPORT TYPE. SEE PIPE SUPPORT SCHEDULE ON SHEET 99-M-502.

   AIR PIPING SUPPORT TYPES ARE IDENTIFIED USING THE FOLLOWING DESIGNATIONS:

   (G) : GUIDE SUPPORT
   (A) : AXIAL STOP
   (V) : VERTICAL SUPPORT
   (SPR) : SPRING HANGER SUPPORT

SHEET KEYNOTES

1. CONTRACTOR TO FIELD ROUTE SAMPLE PIPING TO NEAREST SERVICE SINK.
2. LIFTING EYE BOLT TO BE LOCATED DIRECTLY ABOVE CENTER OF 30-INCH PLUG VALVE.

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JL
DETAILED:	VP
CHECKED:	AM/JH
APPROVED:	MR
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PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PROCESS MECHANICAL

WEST SECTIONAL PLAN

01-M-401

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PLOTTED: 1/16/2023 10:39:53 AM
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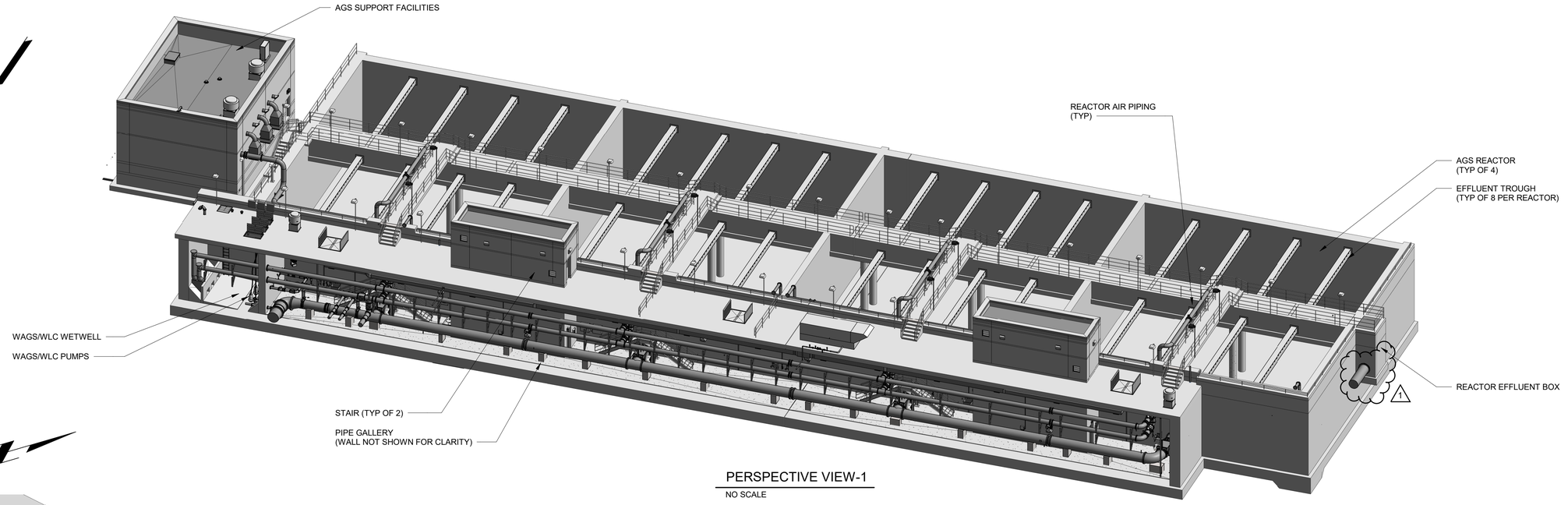
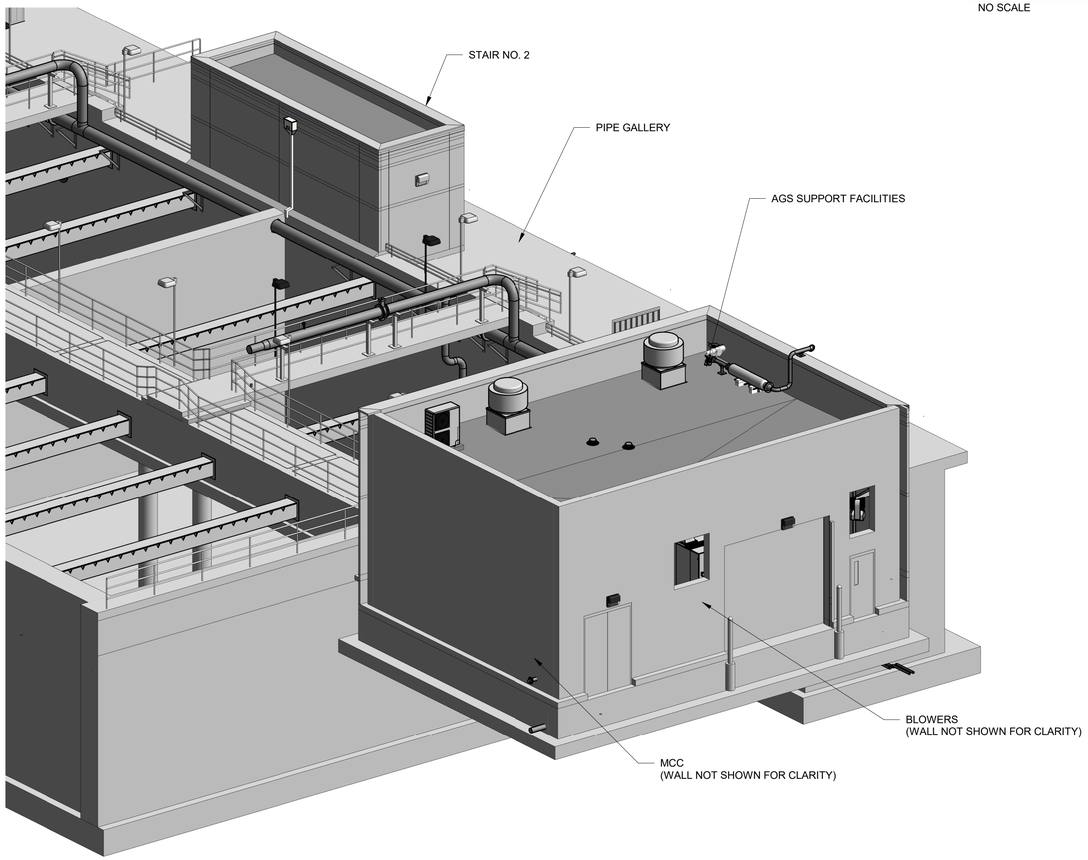


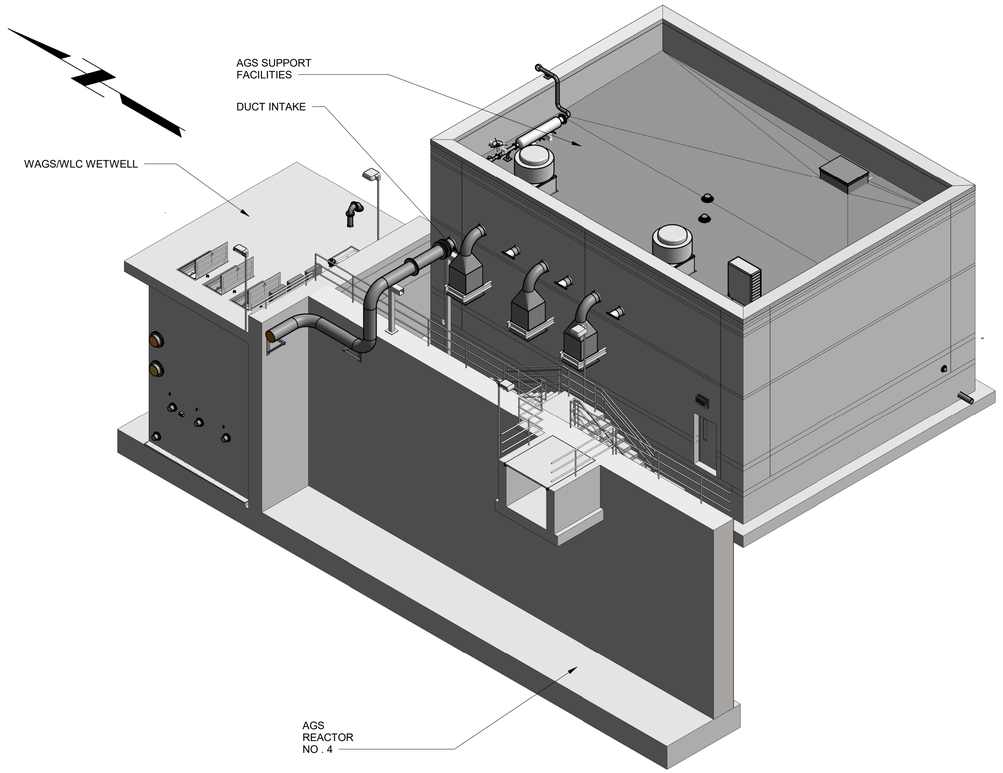
PERSPECTIVE VIEW-1

NO SCALE



PERSPECTIVE VIEW-2

NO SCALE



PERSPECTIVE VIEW-3

NO SCALE

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	AM
DETAILED:	KDG
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APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

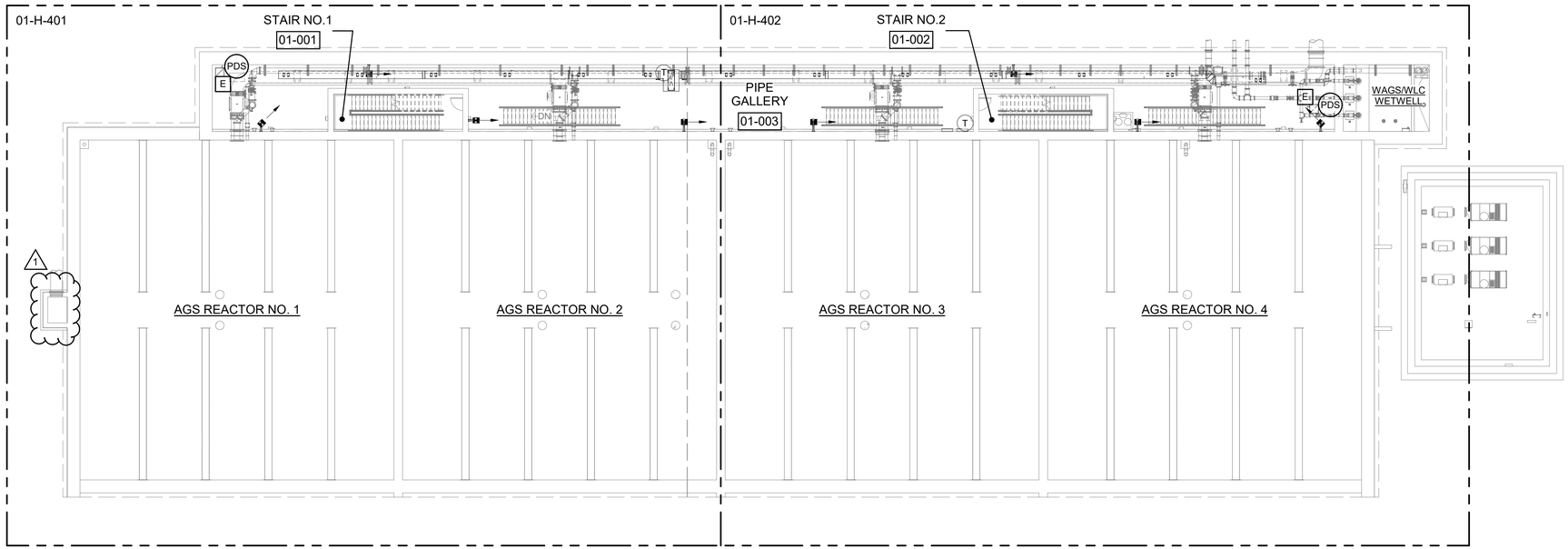
PROCESS MECHANICAL

PERSPECTIVE VIEWS

01-M-901

GENERAL SHEET NOTES

1. SEE DRAWING 00-H-001 FOR LEGENDS, ABBREVIATIONS AND GENERAL NOTES.



OVERALL FLOOR PLAN

1/16" = 1'-0"

16' 12' 8' 4' 0' 16' 32'

1/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	VSS
DETAILED:	AJP
CHECKED:	KMC
APPROVED:	SP
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

HVAC

REACTORS AND GALLERY OVERALL FLOOR PLAN

01-H-101

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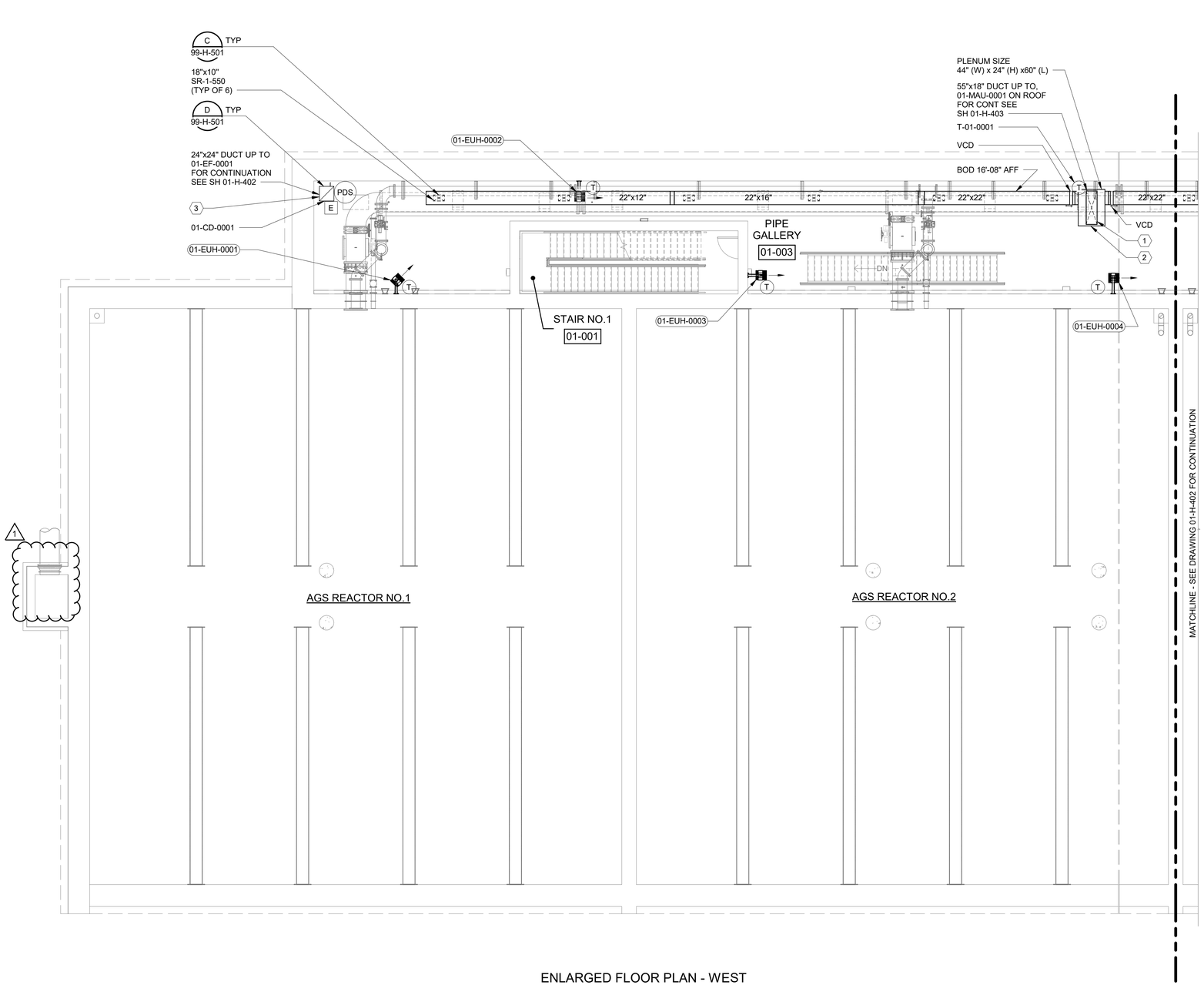

ENLARGED FLOOR PLAN - WEST

1/8" = 1'-0"

GENERAL SHEET NOTES

1. SEE DRAWING 00-H-001 FOR LEGENDS, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. DUCT DROP FROM 01-MAU-0001 MATERIAL - STAINLESS STEEL 304L
2. S/A DUCTING - FRP
3. DUCT SLEEVES AND PLENUMS FOR EXHAUST FANS - STAINLESS STEEL 304L

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	VSS
DETAILED:	AJP
CHECKED:	KMC
APPROVED:	SP
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

HVAC

REACTORS AND GALLERY ENLARGED FLOOR PLAN - WEST

01-H-401

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8' 4' 0' 8' 16'

1/8" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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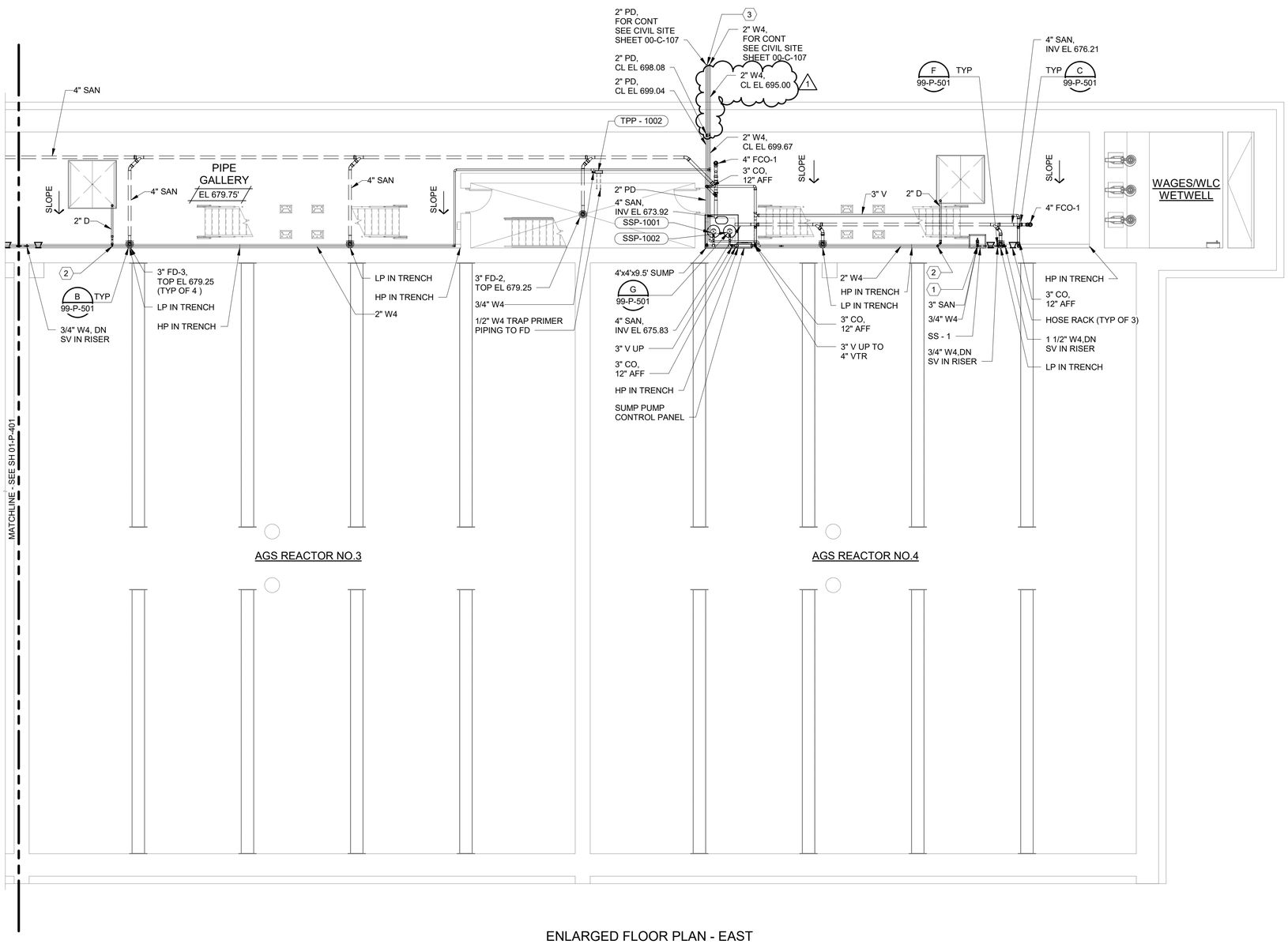
FILE: BIM 360://409469 - Aerobic Granular Sludge Phase 1/409469 - AGS.rvt
D11000

GENERAL SHEET NOTES

1. SEE DRAWING 00-P-001 FOR LEGENDS, ABBREVIATIONS AND GENERAL NOTES.

SHEET KEYNOTES

1. LEAVE 3" SAN LINE WITH 1" AIR GAP ABOVE TRENCH GRATING.
2. LEAVE 2" D LINE WITH 1" AIR GAP ABOVE TRENCH GRATING.
3. SUMP PUMP DISCHARGE (PD) CONTINUOUS AS SANITARY (SAN) ON 00-C-107.



ENLARGED FLOOR PLAN - EAST

1/8" = 1'-0"

8' 4' 0' 8' 16'

1/8" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	SAM
DETAILED:	AJP
CHECKED:	DAV
APPROVED:	SP
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PLUMBING

REACTORS AND GALLERY ENLARGED FLOOR PLAN - EAST

01-P-402

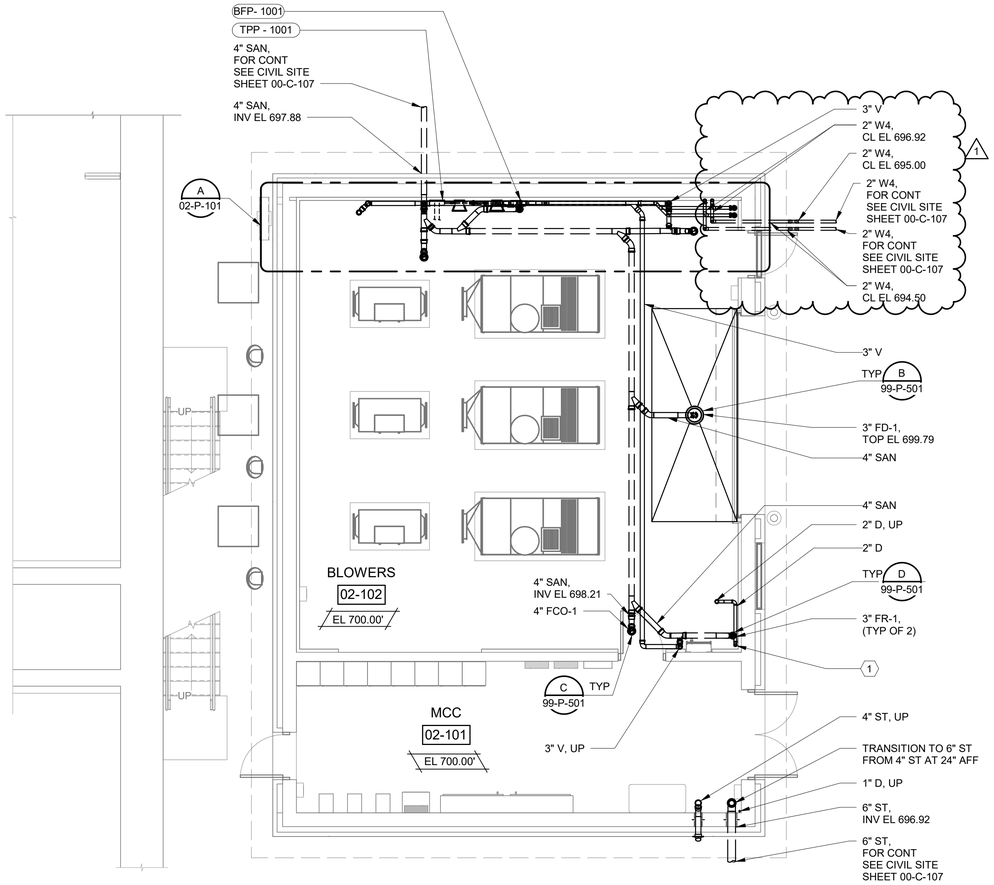
PLOTTED: 1/16/2023 3:19:23 PM
FILE: BIM 360://409469 - Aerobic Granular Sludge Phase 1\409469 - AGS.rvt
D1000

GENERAL SHEET NOTES

1. SEE DRAWING 00-P-001 FOR LEGENDS, ABBREVIATIONS AND GENERAL NOTES.

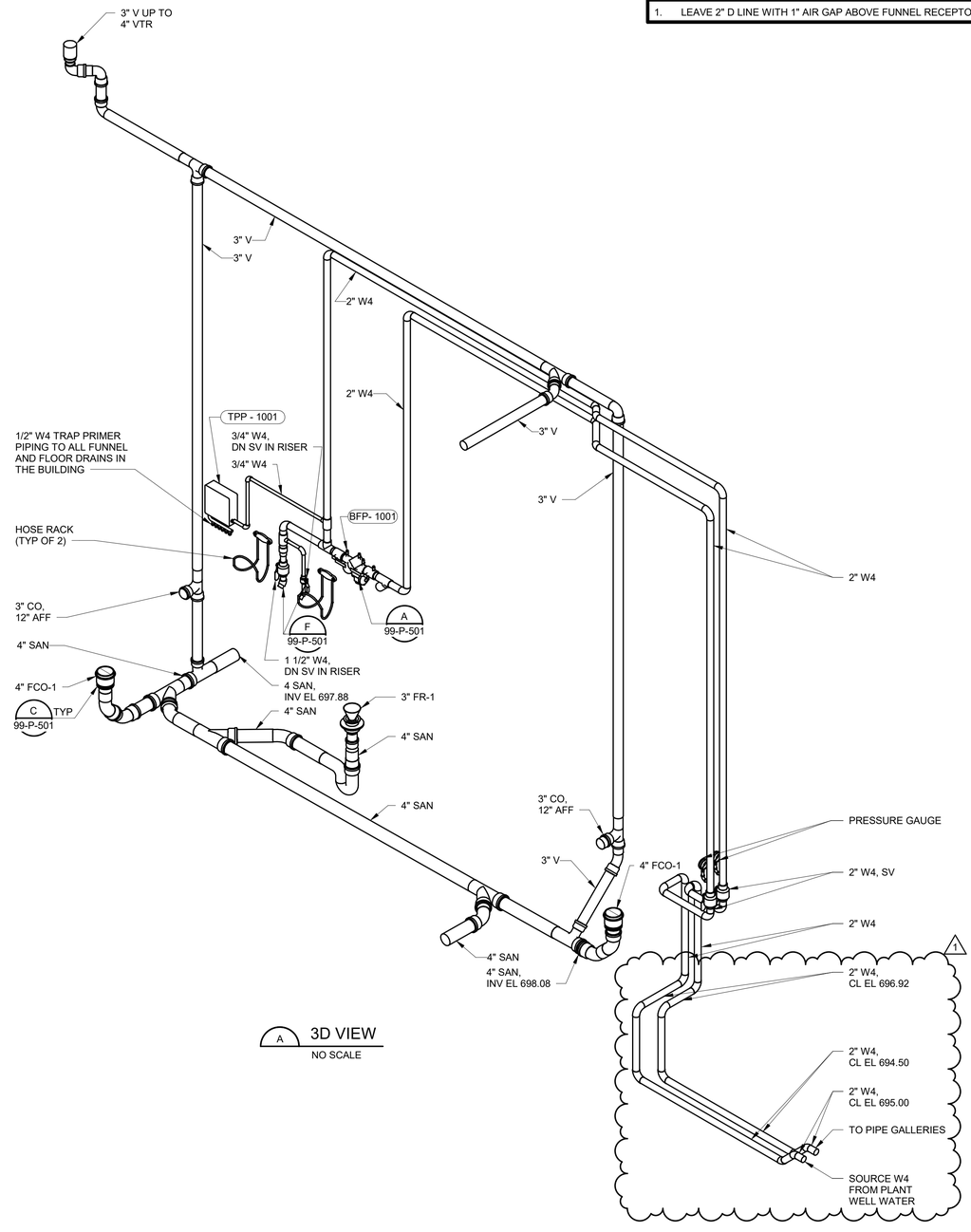
SHEET KEYNOTES

1. LEAVE 2" D LINE WITH 1" AIR GAP ABOVE FUNNEL RECEPTOR.



OPERATING FLOOR

3/16" = 1'-0"



A 3D VIEW

NO SCALE

6' 4' 2' 0' 5' 10'

3/16" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	SAM
DETAILED:	AJP
CHECKED:	DAV
APPROVED:	SP
DATE:	12/20/2022
PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PLUMBING

BLOWERS FLOOR PLAN AND DETAIL

02-P-101

103 OF 163

PLOTTED: 1/16/2023 3:19:27 PM
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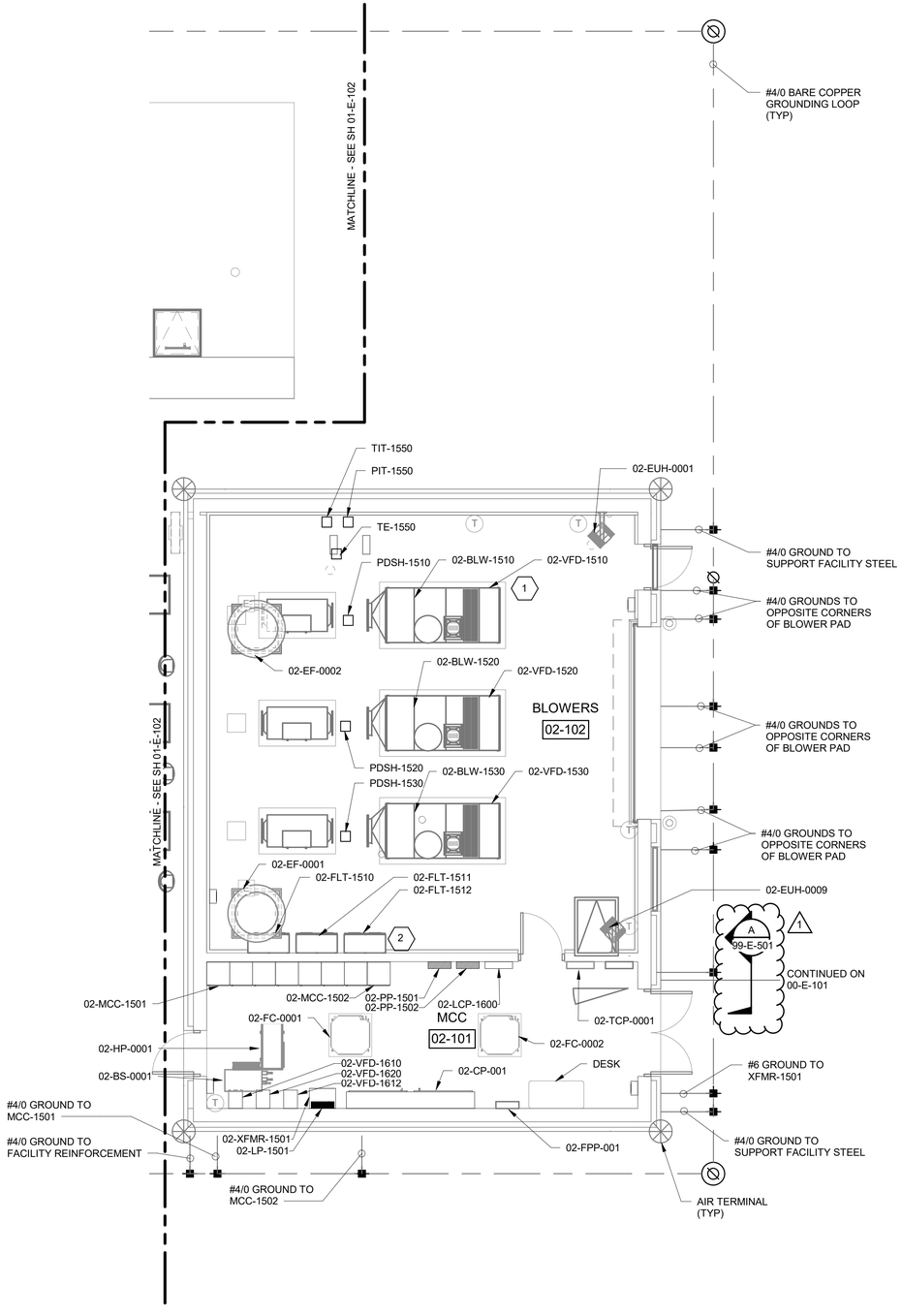

ELECTRICAL POWER AND GROUNDING PLAN

3/16" = 1'-0"

GENERAL NOTES

1. SEE DRAWINGS 00-E-001 AND 00-E-002 DOR LEGENDS, ABBREVIATIONS AND NOTES.

SHEET KEYNOTES

1. VARIABLE FREQUENCY DRIVES SUPPLIED AS PACKAGED UNIT WITH BLOWER BY BLOWER VENDOR. TYPICAL OF THREE BLOWERS.
2. HARMONIC FILTERS SUPPLIED BY BLOWER VENDOR BUT SHIPPED LOOSE. TYPICAL OF THREE BLOWERS.

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	EJB
DETAILED:	SFR
CHECKED:	SDS
APPROVED:	EJB
DATE:	12/20/2022
PROJECT NO.:	411752

AGS SUPPORT FACILITIES

ELECTRICAL

FACILITIES POWER & GROUNDING PLAN

6' 4' 2' 0' 5' 10'

3/16" = 1'-0"

02-E-101

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(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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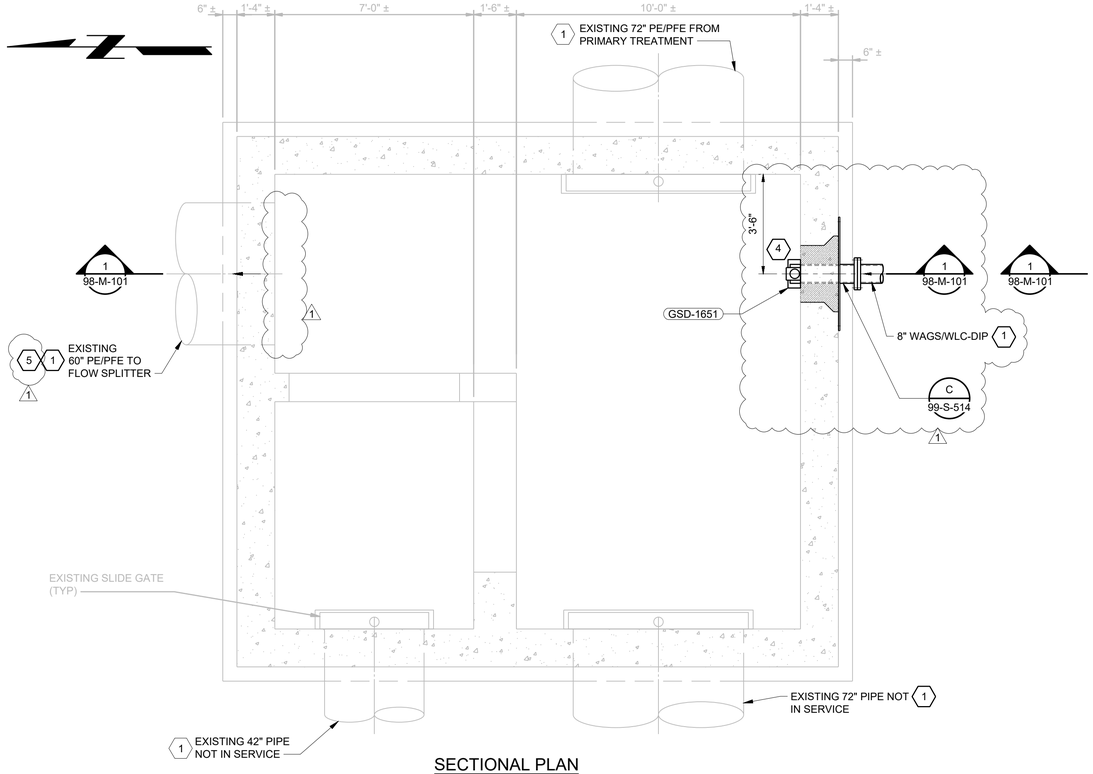
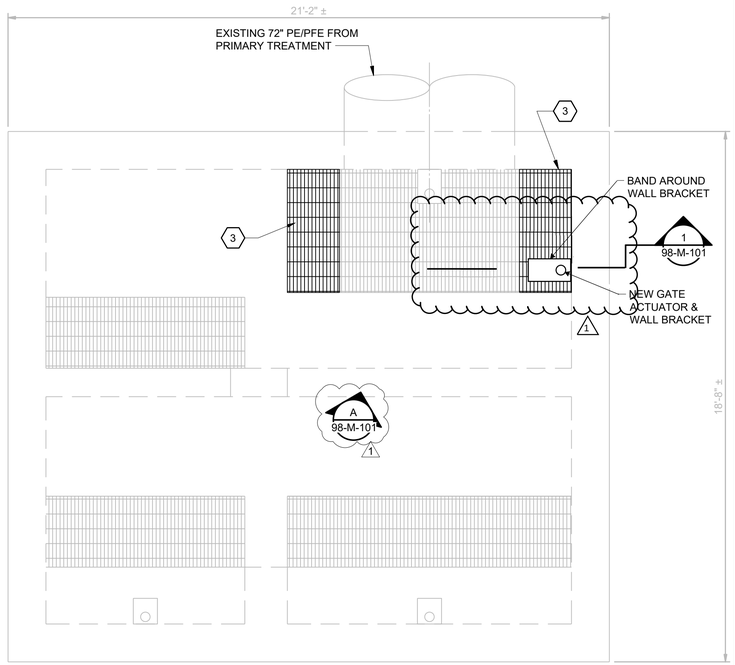
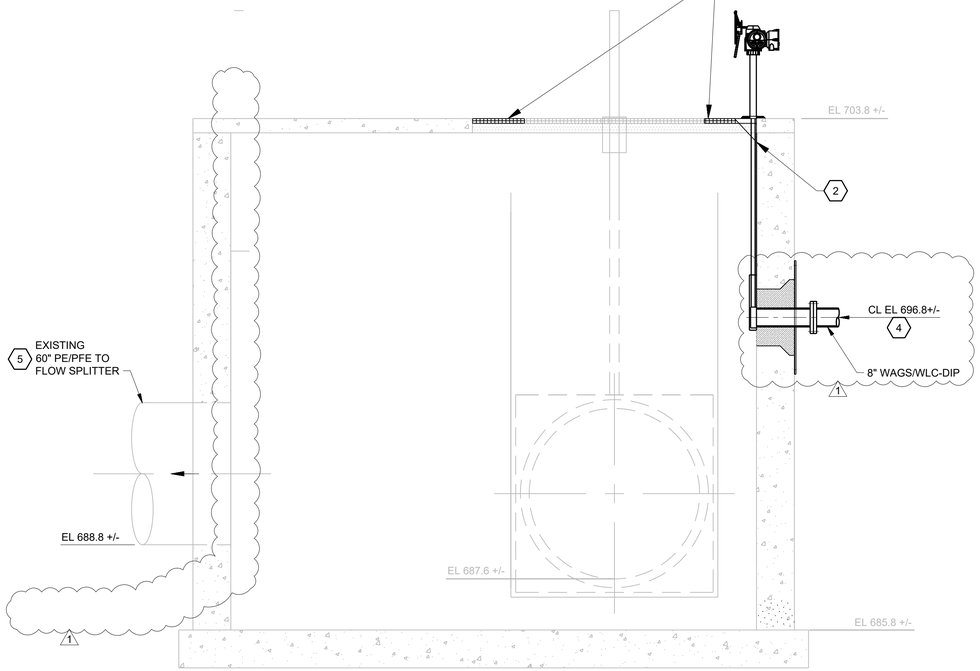


SECTIONAL PLAN
3/8" = 1'-0"



PLAN
3/8" = 1'-0"



1 SECTION
98-M-101 3/8" = 1'-0"

A EXISTING DISTRIBUTION CHAMBER GRATING AT 72" PE GATE OPERATOR
98-M-101 NO SCALE

GENERAL SHEET NOTES

1. SEE EXISTING STRUCTURE NOTES ON SHEET 00-S-001.
2. LOCATIONS AND ELEVATIONS OF ALL EXISTING PIPING, STRUCTURES, AND EQUIPMENT ARE BASED ON RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING PIPING, STRUCTURES, AND EQUIPMENT.

SHEET KEY NOTES:

1. SEE YARD PIPING DRAWING 00-C-109 FOR CONTINUATION.
2. GATE MANUFACTURER SHALL DESIGN AND FURNISH WALL BRACKET FOR SUPPORT OF GATE ACTUATOR.
3. NEW GALVANIZED STEEL GRATING. NEW GRATING THICKNESS SHALL MATCH EXISTING GRATING THICKNESS. BAND AROUND THE NEW WALL BRACKET AS SHOWN WITH 1" CLEAR GAP BETWEEN EDGE OF WALL BRACKET AND GRATING BANDING.
4. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING 24" WALL PIPE.
5. PROVIDE TEMPORARY PLUG OF 60" PE/PFE TO FLOW SPLITTER CONNECTION FOR DURATION OF 8" WAGS/WLC CONNECTION OUTAGE.

1

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JL
DETAILED:	VP
CHECKED:	AM/JH
APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

YARD

PROCESS MECHANICAL

DISTRIBUTION CHAMBER PLANS AND SECTION

98-M-101

116 OF 163

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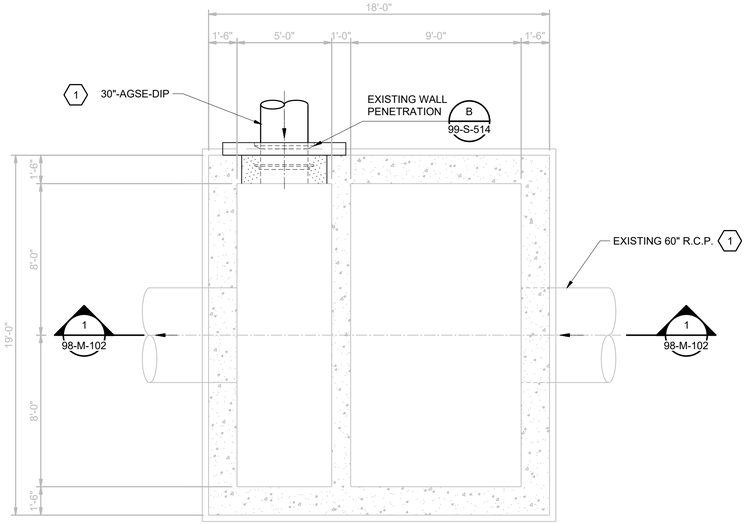
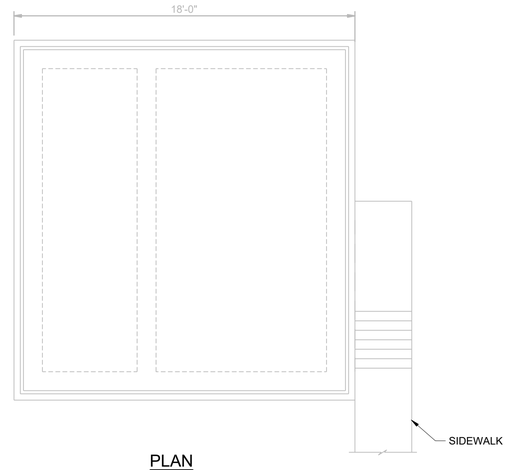
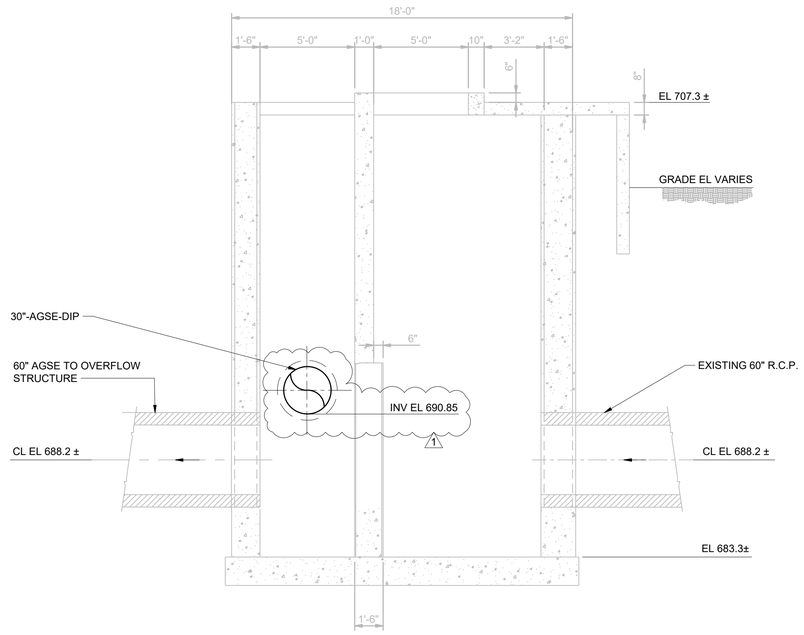
EDIT1002



SECTIONAL PLAN
1/4" = 1'-0"



PLAN
1/4" = 1'-0"



1 SECTION
98-M-102 1/4" = 1'-0"

GENERAL SHEET NOTES

1. SEE EXISTING STRUCTURE NOTES ON SHEET 00-S-001.
2. LOCATIONS AND ELEVATIONS OF ALL EXISTING PIPING, STRUCTURES, AND EQUIPMENT ARE BASED ON RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING PIPING, STRUCTURES, AND EQUIPMENT.

SHEET KEY NOTES:

1. SEE YARD PIPING DRAWING 00-C-110 FOR CONTINUATION.

12" 6" 0 1' 2' 3' 4' 5' 6' 7"
3/8"=1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JL
DETAILED:	VP
CHECKED:	AM/JH
APPROVED:	MR
DATE:	12/20/2022
PROJECT NO.:	411752

YARD

PROCESS MECHANICAL

FILTER EFFLUENT PUMPING STATION PLAN AND SECTION

98-M-102

PLOTTED: 1/16/2023 10:31:40 AM
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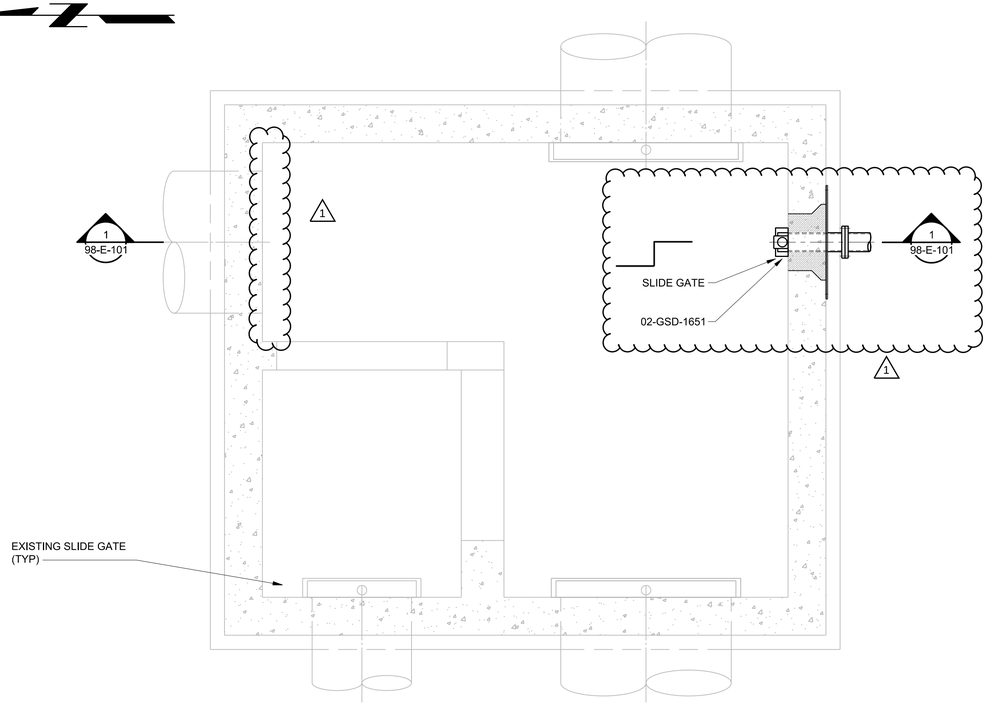
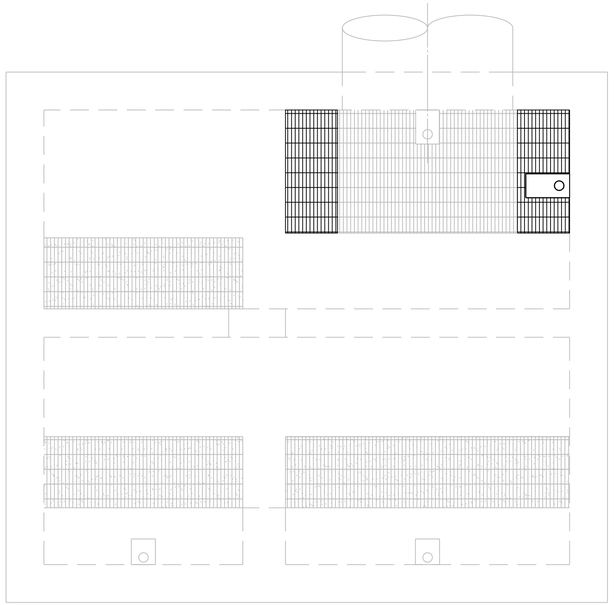
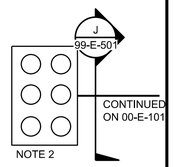
D1:1000

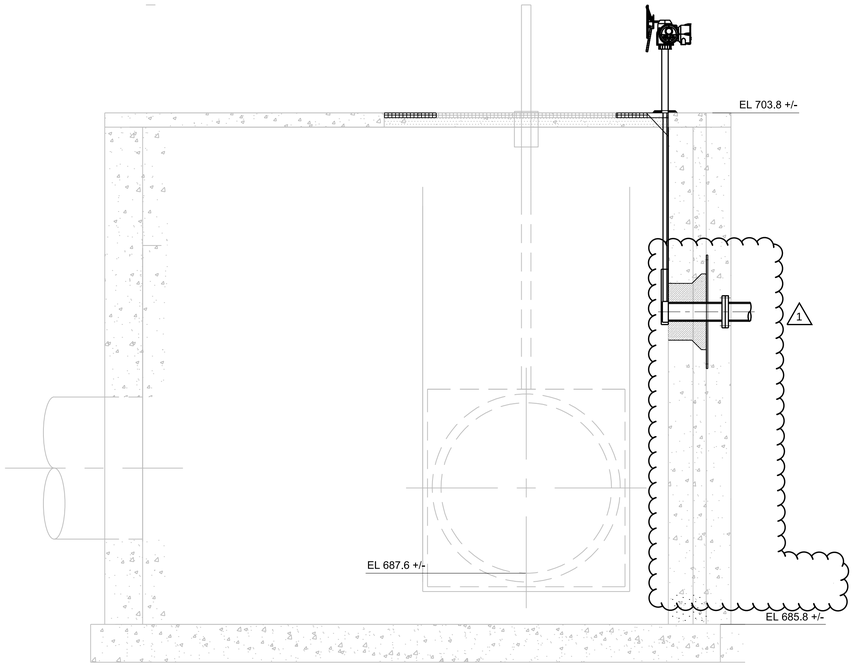


SECTIONAL PLAN
3/8" = 1'-0"



PLAN
3/8" = 1'-0"





1 SECTION
98-M-101 3/8" = 1'-0"

GENERAL SHEET NOTES

1. SEE DRAWINGS 0-E-001 AND 00-E-002 FOR LEGENDS, ABBREVIATIONS AND NOTES.
2. STUB UP DUCT BANK AND TERMINATE ALL DUCTS INTO A STAINLESS STEEL JUNCTION BOX.

SHEET KEY NOTES:

12" 6" 0 1' 2' 3' 4' 5' 6' 7"
3/8"=1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

DESIGNED:	EJB
DETAILED:	SFR
CHECKED:	SDS
APPROVED:	EJB
DATE:	12/20/2022
PROJECT NO.:	411752

YARD

ELECTRICAL

DISTRIBUTION CHAMBER PLANS AND SECTIONS

98-E-101

120 OF 163

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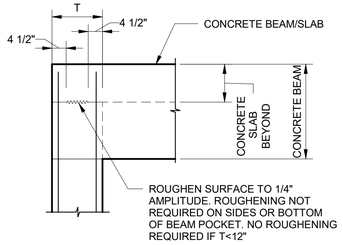
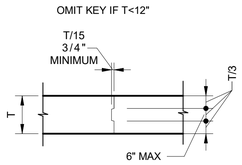
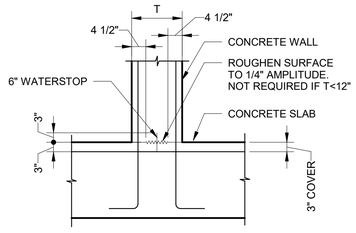


TOP OF WALL TO BEAM/SLAB

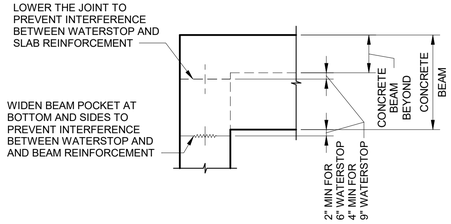


SLAB TO SLAB

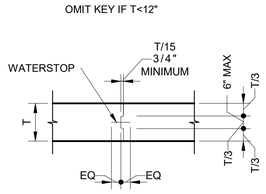


FOR T < 18"

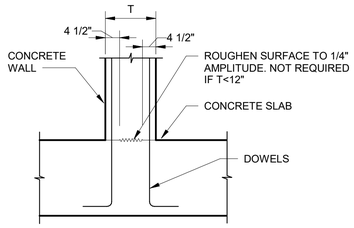
SLAB TO BOTTOM OF WALL



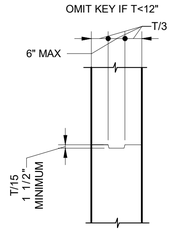
TOP OF WALL TO BEAM/SLAB



SLAB TO SLAB (T>=12")

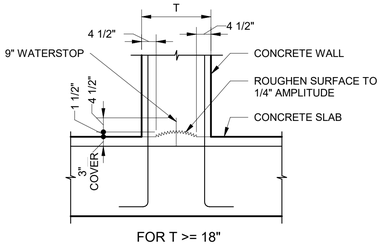


SLAB TO BOTTOM OF WALL



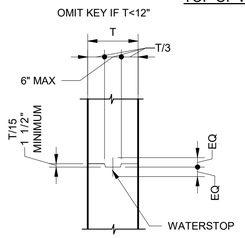
WALL TO WALL

JOINTS WITHOUT WATERSTOPS



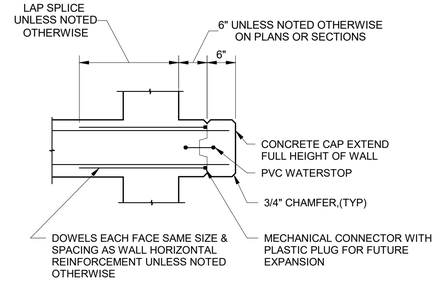
FOR T >= 18"

SLAB TO BOTTOM OF WALL

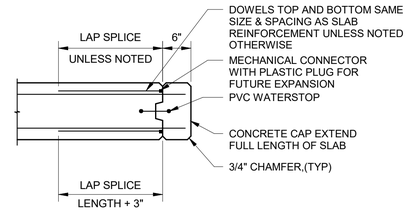


WALL TO WALL

JOINTS WITH WATERSTOPS



WALLS (PLAN)

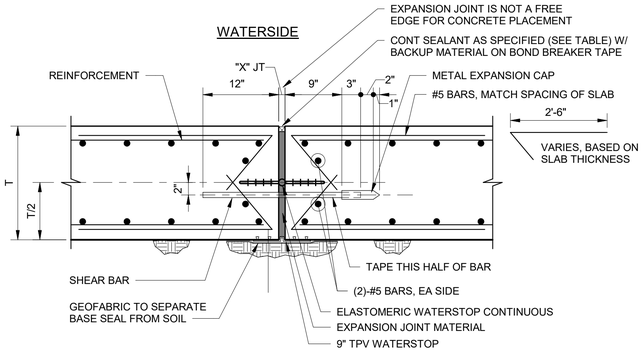


SLABS (SECTION)

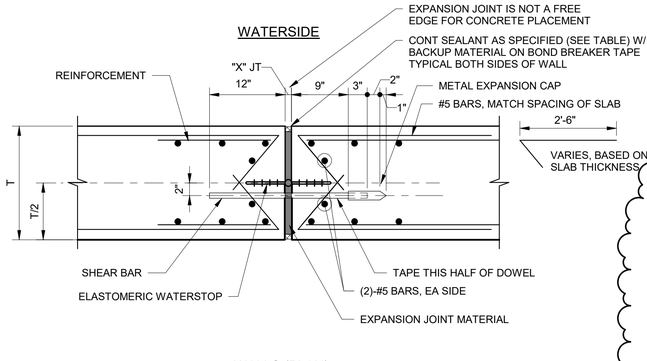
NOTES:
1. REINFORCEMENT STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS.
2. "CSJ W/ WS" - CONSTRUCTION JOINT WITH WATERSTOP.
3. "CSJ" - CONSTRUCTION JOINT WITHOUT WATERSTOP.
4. UNLESS NOTED OTHERWISE, WATERSTOPS MAY BE STEEL OR PVC.
5. WATERSTOP SIZE SHALL BE 6" FOR WALLS AND SLABS 18" OR LESS IN THICKNESS, AND SHALL BE 9" FOR WALLS AND SLABS THICKER THAN 18".

A TYPICAL CONSTRUCTION JOINTS
1/2" = 1'-0"

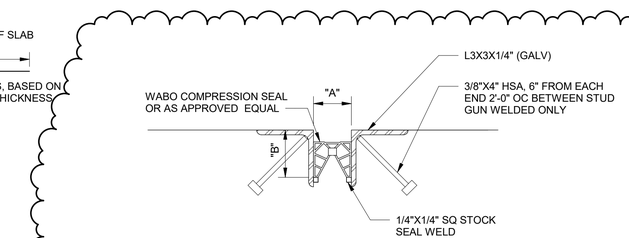
C FUTURE EXPANSION DETAILS
3/4" = 1'-0"



SLABS (SECTION)



WALLS (PLAN)



MODEL NUMBER	GROOVE WIDTH "A"						MIN INSTALL WIDTH		GROOVE DEPTH "B"		NOMINAL			
	MIN		MAX		TOTAL						WIDTH		HEIGHT	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
WA-200	0.875	22	1.700	43	0.825	21	1.250	32	2.625	67	2.000	51	2.000	51

NOTES:
1. ONLY USED AT WALKING SURFACES AT PIPE GALLERY AND ROOF SLAB ABOVE.
2. TERMINATE ANGLE AT FACE OF WALL, ON THE FLOOR SLABS, PROVIDE CONTINUOUS AROUND ENTIRE JOINT FOR INTERIOR SPACES, SLAB, WALLS AND ROOF.
3. PROVIDE JOINT AT TOP OF PIPE GALLERY SLAB, TERMINATE ANGLES AT WALLS, EXTEND UNARMORED UP FACE OF WALL AND OVER TOP OF WALL.
4. SEE DETAIL B/99-S-502 FOR FURTHER INFORMATION ON CONCRETE DETAILS AND WATER STOP.

D WALKING SURFACE EXPANSION JOINT DETAIL
3" = 1'-0"

SHEAR BAR DIAMETER AND SPACING

CONCRETE THICKNESS (IN)	SHEAR BAR DIA (IN)	SPACING (IN)
T <= 10	3/4	12
10 < T <= 22	1	12
22 < T =< 36	1-1/4	9

EXPANSION JOINT (WALLS & SLAB)

SEALANT TYPE	EJ SIZE "X"	SEALANT DEPTH
POLYURETHANE OR POLYSULFIDE	3/4"	3/8"
	1"	1/2"
	1 1/2"	3/4"

NOTES:
1. FOR SHEAR BAR DIAMETER AND SPACING, SEE TABLE.
2. REINFORCING STEEL SHALL NOT BE EXTENDED ACROSS JOINT UNLESS NOTED OTHERWISE. SHEAR BARS SHALL BE SMOOTH FREE FROM RUST OR SCALE, AND GREASED TO PREVENT BOND (ONE HALF BAR ONLY).
3. WATERSTOP SIZE SHALL BE 6" FOR WALLS AND SLABS LESS THAN 18" IN THICKNESS, AND SHALL BE 9" FOR WALLS AND SLABS THICKER THAN 18".
4. "EJ W/ WS" - EXPANSION JOINT WITH ELASTOMERIC WATERSTOP
"EJ" - EXPANSION JOINT WITHOUT WATERSTOP.

B TYPICAL EXPANSION JOINT DETAILS
1" = 1'-0"

12" 6" 0' 1' 2' 3'
3/4" = 1'-0"

12" 6" 0' 1' 2' 3' 4' 5'
1/2" = 1'-0"

12" 9" 6" 3" 0' 1' 2'
1" = 1'-0"

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

GENERAL SHEET NOTES:

1. DETAILS ON THIS DRAWING APPLY TO ALL DRAWINGS UNLESS NOTED OTHERWISE.
2. WORK THIS DRAWING WITH THE STANDARD CONCRETE REINFORCEMENT DETAILS.
3. AT WALL JOINTS AND AT WALL BASE JOINTS, SECURE ALL ELASTOMERIC WATERSTOPS IN THE CORRECT POSITION USING HOG RINGS OR GROMMETS SPACED AT 12 INCHES ALONG THE LENGTH OF THE WATERSTOP AND WIRE TIE TO ADJACENT REINFORCING STEEL.
4. AT SLAB JOINTS AND FOOTING JOINTS, ENSURE SPACE BENEATH AND AROUND WATERSTOP IS COMPLETELY FILLED WITH CONSOLIDATED CONCRETE. DURING OPERATION, MAKE VISUAL INSPECTION OF ENTIRE WATERSTOP AREA. LIMIT CONCRETE PLACEMENT TO ELEVATION OF WATERSTOP IN FIRST LIFT. RAISE ELASTOMERIC WATERSTOPS TO CONFIRM FULL CONSOLIDATION WITHOUT VOIDS. PLACE REMAINING CONCRETE TO FULL DEPTH OF SLAB.

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

1	1/18/23	ADDENDUM NO. 1

REVISIONS AND RECORD OF ISSUE

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DETAILED:	UBS
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APPROVED:	TNG
DATE:	12/20/2022
PROJECT NO.:	411752

DETAILS

STRUCTURAL

STANDARD CONCRETE JOINT DETAILS

99-S-502

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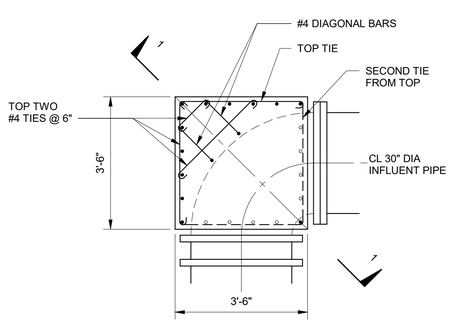
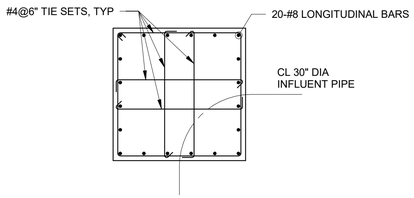
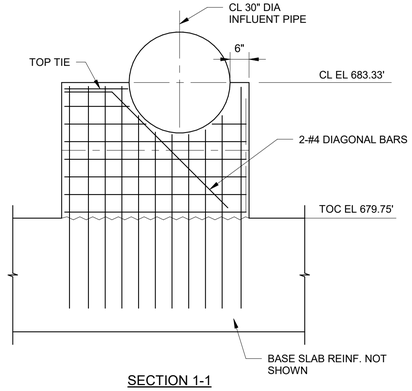


PLAN AT PIPE BEARING



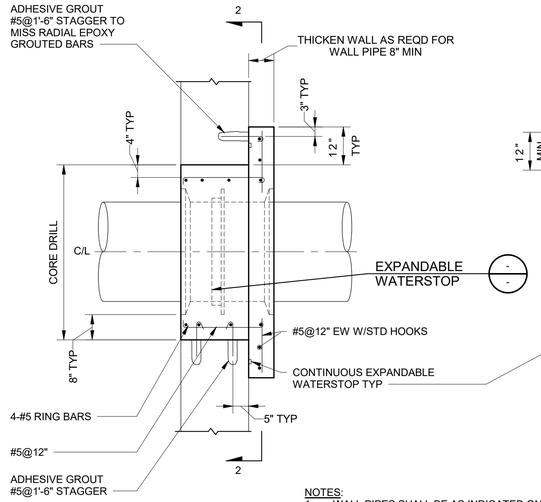
PLAN BELOW PIPE BEARING

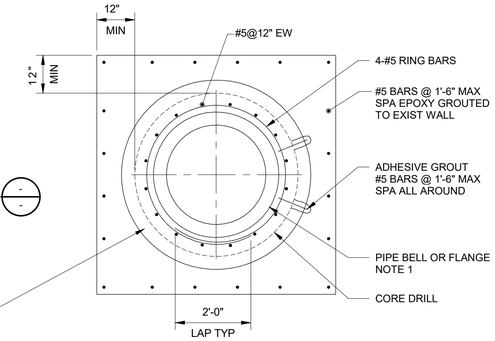


SECTION 1-1

A 30" INFLUENT PIPE THRUST BLOCK DETAILS (PS-6)

1/2" = 1'-0"





SECTION 2-2

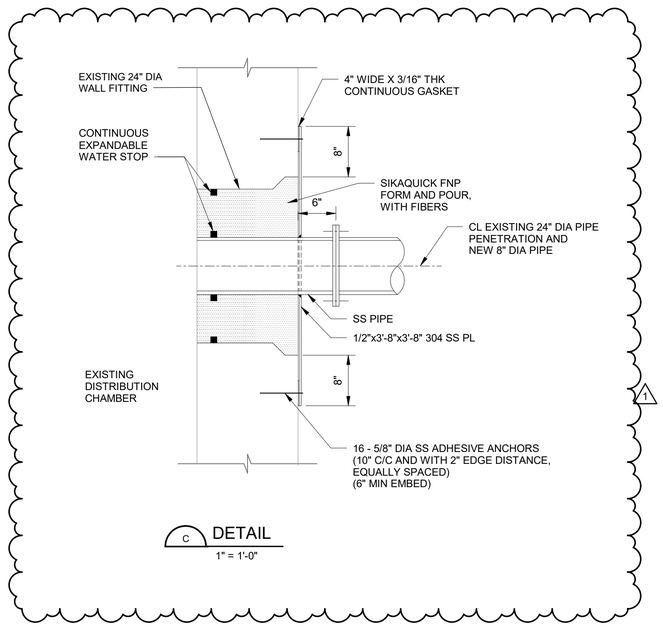
NOTES:
1. WALL PIPES SHALL BE AS INDICATED ON PLANS.
2. WHERE PIPE IS REQUIRED ON ONE SIDE ONLY, PROVIDE MJ X PE WALL PIPE.
3. WALL PIPE MATERIAL SHALL BE DUCTILE IRON OR STEEL AS INDICATED ON DRAWINGS.
4. FOR BURIED PIPING, CONTRACTOR SHALL PROVIDE AN ADDITIONAL FIELD JOINT AS CLOSE AS PRACTICAL TO FACE OF WALL, BUT NO MORE THAN 5 FEET.
5. USE WAX TAPE TO PROTECT ALL BURIED FERROUS SURFACES INCLUDING PAINTED SURFACES. FOR PROTECTION OF ADJACENT PIPE BARREL SURFACES, SHRINK WRAP MAY BE USED IN LIEU OF WAX TAPE, SEE SPECIFICATIONS

B EXISTING WALL PENETRATION

1/2" = 1'-0"

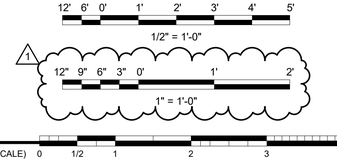
GENERAL SHEET NOTE:

1. PS-X REPRESENT PIPE SUPPORT TYPE. FOR PIPE SUPPORT SCHEDULE, SEE SHEET 99-M-502. SEE MECHANICAL PIPING SHEETS FOR PIPE SUPPORT TYPE AND LOCATIONS.



C DETAIL

1" = 1'-0"



(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

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DETAILS

STRUCTURAL

PIPE SUPPORT DETAILS 2 OF 4

99-S-514

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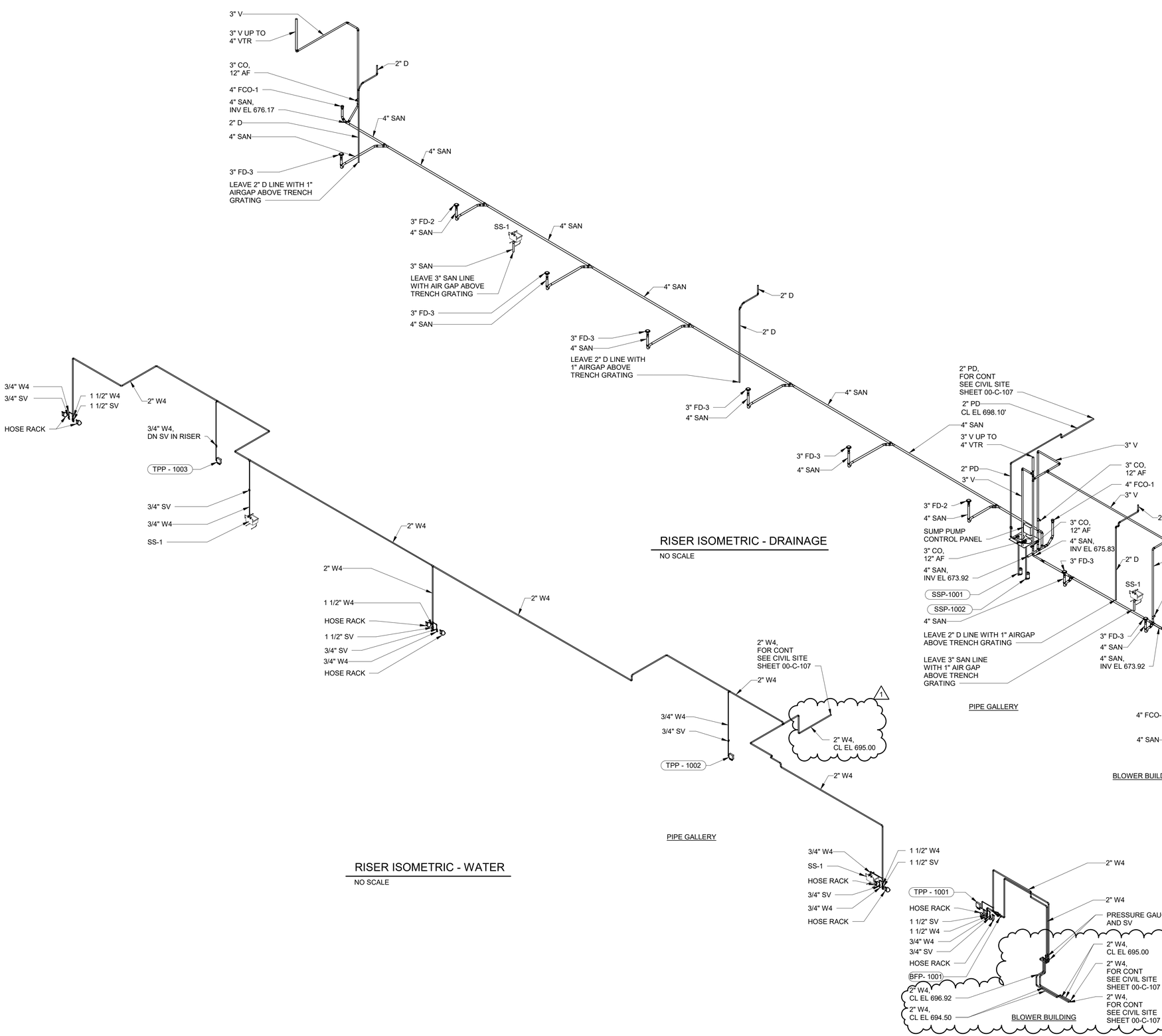
D11000

GENERAL SHEET NOTES

1. SEE DRAWING 00-P-001 FOR LEGENDS, ABBREVIATIONS AND GENERAL NOTES.



RISER ISOMETRIC - DRAINAGE

NO SCALE

RISER ISOMETRIC - WATER

NO SCALE

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Four Rivers Sanitation Authority

AEROBIC GRANULAR SLUDGE - PHASE 1

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PROJECT NO.:	411752

AGS REACTORS AND PIPE GALLERY

PLUMBING

WATER AND DRAINAGE ISOMETRICS

99-P-901

155 OF 163

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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