



COMPLEX PROJECTS  
REQUIRE RESOLVE  
**THRASHER'S GOT IT**

**WEIRTON SANITARY BOARD  
BROOKE COUNTY, WEST VIRGINIA**

**CONTRACT #1 – WASTEWATER TREATMENT PLANT UPGRADE**

**ADDENDUM #2**

**November 8, 2023**

**THRASHER PROJECT #020-01649**

TO WHOM IT MAY CONCERN:

The following are clarifications and responses to questions posed by contractors for the above reference project.

**A. GENERAL**

1. The bid opening date has been postponed. Bids will now be opened at 11:00 AM on Wednesday, December 6<sup>th</sup>, 2023, in Room 201, 200 Municipal Plaza, Weirton, WV.
2. Reference EJCDC C-520- Agreement Between Owner and Contractor for Construction Contract (Stipulated Price): **REPLACE** Paragraph 6.02 – Progress Payments; Retainage with the following:

*6.02 Progress Payments; Retainage*

A. Owner shall make all progress payments on the basis of Contractor's Applications for Payment as established at the pre-construction conference during performance of the work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured according to the Schedule of Values established in Paragraph 2.03.A.3 of the General Conditions (and in the case of Unit Price Work, based on the number of units completed) or, in the event there is no Schedule of Values, as provided in the General Requirements.

1. Prior to Substantial Completion, Owner will retain an amount equal to 10% of each progress payment application until 50% of the work has been completed. At 50% completion, further progress payment applications shall be paid in full to the Contractor, and no additional amounts will be retained unless the Engineer certifies to Owner that the job is not proceeding satisfactorily. Amounts previously retained shall not be paid to the Contractor until Substantial

Completion of the Work. At 50% completion of the Work, or any time thereafter when the character and progress of the completion of the Work is not satisfactory to the Owner on the recommendation of Engineer, additional amounts may be retained, but in no event shall the total retainage be more than 10% of the value of the work completed.

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98% of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 15.01.C.6 of the General Conditions and less 100% of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of substantial Completion.

## **B. SPECIFICATIONS**

1. **DELETE** Section 071416 – Cold-Applied Waterproofing.
2. **DELETE** Section 096520 – Resilient Tile Flooring.
3. **ADD** Section 233116 – Nonmetal Ducts.
4. Reference Section 263213 – Packaged Engine Generators. **CHANGE** generator output in Paragraph 2.1.B to 1,000 kW.
5. Reference Section 323113 – Chain Link Fences and Gates. **DELETE** paragraph 2.6 – Horizontal Slide Gates.
6. Reference Section 463333 – Sequencing Batch Reactor System. **DELETE** Items 11 and 12 from Paragraph 1.6.B – Spare Parts. **ADD** new Item 11: Five (5) sets of 150 HP V-belts.
7. Reference Section 463333 – Sequencing Batch Reactor System. **CHANGE** Paragraph 1.10 to read as follows:  
1.10 **WARRANTY**
  - A. Section 017000- Execution and Closeout Requirements: Requirements for warranties.
  - B. All equipment, controls, and appurtenances supplied under this specification shall be supplied with a two (2) year extended warranty from the date of Substantial Completion.
  - C. The manufacturer shall provide a Process Performance Guarantee to the Owner, guaranteeing the SBR process shall meet effluent wastewater quality requirements set in Part 2.3 of this Section, as determined during the performance test.
  - D. The full Performance guarantee language and details of the performance test, defining conditions of the guarantee, responsibilities, testing protocols, sampling, and analysis, shall be supplied with the equipment submittal.
  - E. Guarantees shall be based on influent wastewater loading characteristics outlined in Part 2.3 of this Section.
8. Reference Section 463333 – Sequencing Batch Reactor System. **DELETE** the word 'mixers' from Part 2.2.A.

9. Reference Section 463333 – Sequencing Batch Reactor System, Paragraph 2.3.A. **DELETE** effluent requirements for total nitrogen.
10. Reference Section 463333 – Sequencing Batch Reactor System. **CHANGE** Paragraph 2.12.D to read as follows:
  - D. The MCC shall include motor starters and other necessary control elements for a total of nine (9) motors associated with the ICEAS. All motors shall be rated for 460 VAC, 3-phase, 60 Hz electric power. The five (5) blower motors shall have a rated output of 150 HP. The two (2) decanter actuator motors shall have a rated power output of ½ HP. The two (2) WAS pump motors shall have a rated power output of 2.4 HP. The MCC shall be wired to NEMA Class 1, Type B and shall include the following items:
    1. Nine (9) motor starters rated at 42,000 AIC for each of the motors. Motor starter disconnecting devices shall be magnetic type circuit protectors (HMCP) and rated for 100,000 A RMS. Motor starter shall be NEMA 1 rated, shall incorporate overload protection, surge suppressors, and disconnecting terminal blocks. Starters for the blower motors shall be solid-state reduced-voltage type. Control wiring shall be 16 AWG, MTW copper and color-coded by voltage.
    2. Wiring connections for communication with nine (9) VFDs, each rated for the power demands of the motor served thereby. Due to size constraints, VFDs shall be installed external to the MCC in the new blower building.
    3. Main lugs and bus system. The materials of construction shall be tin plated copper and shall be fully braced for 42,000 A RMS AIC with continuous horizontal and vertical bus bracing. The bus shall be rated for a minimum of 600 amps. Molded polycarbonate isolating material shall separate the main bus from the unit starters and the wire way. The enclosure shall have a NEMA 1 rating.
      4. 4.3-inch vertical wire way separated from the unit starters.
      5. Full-length copper ground bus.

## C. DRAWINGS

1. Reference Sheet 2A. **DELETE** Demolition Note 2.
2. Reference Sheet 5N. **CHANGE** the following:  
“ENLARGED ELECTRICAL ROOM FLOOR PLAN” to read  
“BATHROOM FLOOR PLAN”
3. **REPLACE** Sheets 10A-10B included with this Addendum #2.
4. **REPLACE** Sheet 11E included with this Addendum #2.
5. **REPLACE** Sheets 11G-11H included with this Addendum #2.
6. **REPLACE** Sheet 11K included with this Addendum #2.
7. **REPLACE** Sheets 13-13A included with this Addendum #2.
8. **DELETE** Sheet DET-8.

**D. QUESTIONS AND RESPONSES**

**QUESTION**

1. “Spec Section 463333, Paragraph 2.3.A. identifies an effluent TN of 5 mg/L. Could you please confirm if this is required?”

**RESPONSE**

Requirements for effluent total nitrogen have been deleted. Refer to Item #9 in the Specifications section of this Addendum #2.

**QUESTION**

2. “Spec Section 463333, Paragraph 2.6.A. identifies the blowers as five (5) 150 HP blowers. From review of the contract drawings, it seems the intent is to have dedicated blowers. Could you please confirm this?”

**RESPONSE**

Confirmed, but blowers are plumbed to allow supply from any blower to any basin if needed.

**QUESTION**

3. “Spec Section 463333, Paragraph 12.D. calls out an MCC that would include blower VFDs. This matches the electrical drawings for the new blower building. However, the new blower building drawing (E24) shows separate VFDs outside of the MCC for each of the blowers. Could you please confirm which is correct?”

**RESPONSE**

VFDs shall be installed outside the MCC due to size constraints. See Item #10 in the Specifications section of this Addendum #2.

**QUESTION**

4. “Spec Section 463333 has the SBR manufacturer provide a control panel. However, I couldn’t find a new SBR control panel in the electrical drawings.”

**RESPONSE**

The SBR control panel will be installed in the electrical room of the new headworks building. See Sheets 5M and E16 for reference.

**QUESTION**

5. "Spec Section 463333, Paragraph 1.10. states that a PPG is attached to the spec section and must be supplied with 15 days of NTP. Typically, we have a standard PPG that is supplied as part of the project submittal."

**RESPONSE**

Refer to Item #7 in the Specifications section of this Addendum #2 for changes to Paragraph 1.10 of the SBR spec concerning the process performance guarantee.

**QUESTION**

6. "SBR specification (463333): Part 1.6 Maintenance Material Submittals, B. Spare Parts. Items 11 and 12 refer to One set of 10-HP V-belts and four sets of 30 HP V-belts. What are these spare parts to be used for? Blowers are 150 HP units."

**RESPONSE**

Refer to Item #6 in the Specifications section of this Addendum #2 for changes to the spare parts list. Spare v-belts should be provided for each of the SBR blowers.

**QUESTION**

7. "SBR specification (463333): Part 1.10 Warranty, C. references a Process Performance Guarantee (PPG) that is attached and signed by the selected manufacturer. Please provide this document for review, or direct where this is located."

**RESPONSE**

Refer to Item #7 in the Specifications section of this Addendum #2 as well as our response to Question #5.

**QUESTION**

8. "SBR specification (463333): Part 2.2 Design Criteria, A. This is the only area where mixers are mentioned. The effluent requirements state an effluent limit of 5.0 mg/L TN, which would require mixers. Is there a specification to be included for mixers?"

**RRESPONSE**

Refer to Items #8 and #9 in the Specifications section of this Addendum #2 as well as our response to Question #1.

**QUESTION**

9. "SBR specification (463333): Part 2.3 Performance Criteria, A. States that the influent flow is 4.0 MGD (peak of 8.0 MGD), however the specifications state that only 2 SBR basins are being constructed at this time (95'x65'x20'). This is obviously not enough volume to treat the 4.0 MGD. Is the SBR system only to see part of the flow during this phase? Please confirm the flowrate these two basins are expected to treat. Is this part of the PPG?"

**RESPONSE**

System design flow is 4.0 MGD with 8.0 MGD peak flows.

**QUESTION**

10. "SBR specification (463333): Part 2.3 Performance Criteria, A. states the cycles at Max Flow are 4/day. We assume this means 4 cycles/basin/day? This would be 6-hour cycles at peak. Or is this 4 hours/cycle? What are the desired cycle times at average? We assume at peak the cycles will be shortened to the given Min aeration, settling, decant times given."

**RESPONSE**

Intent is for no more than 4 cycles per basin per day (corresponding to 6-hour cycles) to ensure sufficient treatment even at peak flow. Cycle times at average flows will be operator adjustable subject to this restriction. Minimum durations for each phase of the cycle are less than the minimum cumulative cycle length of 6 hours.

**QUESTION**

11. "SBR specification (463333); Part 2.3 Performance Criteria, A. gives the oxygen requirements at 1.25 lbs. O<sub>2</sub>/hour. Please confirm this requirement?"

**RESPONSE**

Confirmed.

**QUESTION**

12. "SBR specification (463333): Part 2.12 Electrical, D. references nine (9) associated motors to provide starters/VFD. This includes the 5 blowers, 2 WAS pumps, and what we assume are the decanter actuators? With [Question #8] above regarding mixers, we assume mixer motor starters would be desired."

**RESPONSE**

See our response to Question #8. Mixers will not be required.

**QUESTION**

13. "Please clarify if immersion (wastewater) coatings are required on the interior of SBR 1&2, EQ basins 1&2."

**RESPONSE**

Crystalline concrete admixture is required for proposed concrete basins. Additional immersion coatings are not required for SBR Basins 1 & 2 and EQ Basins 1 & 2.

**QUESTION**

14. "Spec 262213 calls for the generator to be 800 kW. Drawing E37 shows 100 kW. Please clarify."

**RESPONSE**

Generator shall be 1,000 kW. Refer to Item #4 in the Specifications section of this Addendum #2.

**QUESTION**

15. "Specification 071416 – Cold Applied Waterproofing. Can we get a schedule where this material is to be applied?"

**RESPONSE**

Section 071416 – Cold-Applied Waterproofing has been deleted. Refer to Item #1 in the Specifications section of this Addendum #2.

**QUESTION**

16. "Specification 095123 – Acoustical Tile Ceilings. Can we get a schedule where this material is to be applied?"

**RESPONSE**

Acoustical tile ceilings will be used in the headworks electrical room. General ceiling requirements can be found in the Room Finish Schedules on Sheets 5L, 7E, and 15B.

**QUESTION**

17. "Specification 096520 – Resilient Tile Flooring. Can we get a schedule where this material is to be applied?"

**RESPONSE**

Section 096520 – Resilient Tile Flooring has been deleted. Refer to Item #2 in the Specifications section of this Addendum #2.

**QUESTION**

18. "Odor Control Building, Plan Sheet 16A, FRP Pipe for Ducts. Can we get a specification for the FRP or is it Contractor's Choice?"

**RESPONSE**

Section 233116 – Nonmetal Ducts has been added to the Contract Documents per Item #3 in the Specifications section and is included with this Addendum #2.

**QUESTION**

19. "Sheet DET-8 Operated Gate. There is also a spec section on this. Where is it on the plans? What size is it?"

**RESPONSE**

Refer to Item #5 in the Specifications section and Item #8 of the Drawings section of this Addendum #2.



**QUESTION**

20. "Can the existing plant single line diagram be provided? And can you provide how much spare power is available currently?"

**RESPONSE**

The existing single-line diagram is not available.

**QUESTION**

21. "Can the contract be extended 9-12 months due to the nature of electrical equipment delivery timelines?"

**RESPONSE**

A Change Order will be considered to adjust the contract times following award of the contract based on actual equipment delivery dates and in accordance with Engineer's approval of the Contractor's submittal schedule.

**QUESTION**

22. "If the time is extended due to equipment delays beyond the Contractor's control, will the Contractor be reimbursed for extended general conditions and overhead?"

**RESPONSE**

No change to the Contract Price will be made due to equipment delays.

**QUESTION**

23. "Will the CAD File be available?"

**RESPONSE**

The AutoCAD file will be available to the successful low bidder following award of the contract. A waiver will need to be signed prior to transmittal of the electronic file.

**QUESTION**

24. "Please confirm the aggregate required to be WVDOT approved.

**RESPONSE**

Confirmed.

**QUESTION**

25. "Are any undercuts or over-excavations anticipated for the proposed structures?"

**RESPONSE**

Neither undercuts nor over-excavation are anticipated for the proposed structures. However, per Section 312316 – Excavation, Paragraph 3.4.A, no additional payment shall be made for over-excavation less than two feet below required levels.

**QUESTION**

26. "Is the excavated soil considered clean fill? Can the material be hauled offsite to a clean fill waste site?"

**RESPONSE**

Excavated soil is believed to be clean fill. No environmental assessment has been completed on the soil on site.

**QUESTION**

27. "Please reconsider the 10% retainage requirements. Typical project requirements are 5% retention reduction at 50% project completion and the remaining 5% at substantial completion."

**RESPONSE**

Refer to Item #2 in the General section of this Addendum #2.

**QUESTION**

28. "Is it the engineer's intent to have all the asphalt replaced, including new subbase for the entire facility or just the proposed sections?"

**RESPONSE**

It is not the intent to replace the entirety of existing asphalt.

**QUESTION**

29. "Please confirm that the Contractor is responsible for 3<sup>rd</sup> party geotechnical and concrete testing."

**RESPONSE**

Confirmed.

**QUESTION**

30. "Please clarify if flood insurance is required and if so, what the limit is?"

**RESPONSE**

Flood insurance is not required for this project.

**QUESTION**

31. "Sales Tax Exemption: The Addendum stated that the project will be tax exempt but indicated that the Contractor must coordinate with the Authority on applications to the state. Please advise what applications would be required."

**RESPONSE**

Owner will provide their Sales Tax Exemption number to the selected Contractor following award of the Contract. No additional forms will need to be completed by the Contractor.

**QUESTION**

32. "Please confirm that all submittals will be processed electronically, and no hard copies are required."

**RESPONSE**

Submittal review will be conducted electronically. One (1) final hard copy submittal will need to be submitted following approval of the electronic submittal documents.

**QUESTION**

33. "Will the Owner consider providing an allowance for the temporary disinfection work? Will the owner consider fully performing this work?"

**RESPONSE**

Temporary disinfection shall be the responsibility of the Contractor. A separate allowance for disinfection shall not be provided.

**QUESTION**

34. "Within the sequence of events, there are several but not all temporary bypasses listed. Will the engineer provide the flows for all required bypasses?"

**RESPONSE**

Average daily flow of the existing facility is 4.0 MGD. Peak flows are 8.0 MGD.

**QUESTION**

35. "Please confirm that the Contractor is required to remove all waste, sludge, and grit from existing facilities in order to complete the scope of work."

**RESPONSE**

Confirmed.

**QUESTION**

36. "Will an allowance or unit price be added for all concrete repairs? Active structures are unable to be inspected."

**RESPONSE**

The current scope of work does not require repair of existing concrete structures. A change order for concrete repair would be considered during construction at the Engineer's direction.

**QUESTION**

37. "How long can the plant operate without Effluent Water, and what is the Engineer's plan to effectively upgrade this system?"

**RESPONSE**

The plant can operate without effluent water for a week at a time. Notify Owner prior to taking the effluent water out of service so Owner can prepare appropriately.

**E. CLARIFICATIONS**

1. NOT APPLICABLE.

If you have any questions or comments, please feel free to contact me at your earliest convenience. As a reminder, bids will be received until 11:00 a.m. on Wednesday, December 6, 2023, at 200 Municipal Plaza, Room 201, Weirton, WV. Good luck to everyone and thank you for your interest in the project.

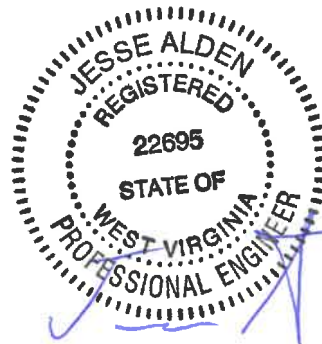
Sincerely,

THE THRASHER GROUP, INC.



JESSE ALDEN, P.E.  
Project Manager

*Enclosures*



11-8-2023

## SECTION 233116 - NONMETAL DUCTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Fibrous-glass ducts and fittings.

B. Related Requirements:

1. Section 233113 "Metal Ducts" for single- and double-wall, rectangular and round ducts.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of the following products:

1. Fibrous-glass duct materials.

B. Shop Drawings:

1. Fabrication, assembly, and installation, including plans, elevations, sections, components, and attachments to other work.

#### 1.3 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Data: Certificates, for nonmetal ducts, accessories, and components, from manufacturer.

B. Welding certificates.

C. Field quality-control reports.

#### 1.4 QUALITY ASSURANCE

A. Hanger and Support Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel," for steel hangers and supports.
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum," for aluminum hangers and supports.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Duct Design: Duct construction, including duct closure, reinforcements, and hangers and supports, shall comply with the following and with the Works' performance requirements and design criteria:
1. SMACNA's "Fibrous Glass Duct Construction Standards."
  2. Static-Pressure Classes:
    - a. Supply Ducts (except in Mechanical Rooms): 2-inch wg.
    - b. Supply Ducts (Upstream from Air Terminal Units): 2-inch wg.
    - c. Supply Ducts (Downstream from Air Terminal Units): 1-inch wg.
    - d. Supply Ducts (in Mechanical Equipment Rooms): 2-inch wg.
    - e. Return Ducts (Negative Pressure): 1-inch wg.
    - f. Exhaust Ducts (Negative Pressure): 1-inch wg.
- B. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1, Section 5.4 - "Airstream Surfaces."
- C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."
- D. ASHRAE/IES Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."
- E. NFPA Compliance:
1. NFPA 90A, "Installation of Air Conditioning and Ventilating Systems."
  2. NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."

### 2.2 FIBROUS-GLASS DUCTS AND FITTINGS

- A. Fibrous-Glass Duct Materials: Resin-bonded fiberglass, faced on the outside surface with fire-resistant FSK vapor retarder and with a smooth fiberglass mat finish on the air-side surface.
1. Duct Board: Factory molded into rectangular boards.
  2. Temperature Limits: 40 to 250 deg F inside ducts; 150 deg F ambient temperature surrounding ducts.
  3. Maximum Thermal Conductivity: 0.24 Btu x in./h x sq. ft. x deg F at 75 deg F mean temperature.
  4. Moisture Absorption: Not exceeding 5 percent by weight at 120 deg F and 95 percent relative humidity for 96 hours when tested according to ASTM C1104/C1104M.
  5. Acoustical Performance: Conform to sound absorption coefficients listed in NAIMA AH116.
  6. Permeability: 0.02 perm maximum when tested according to ASTM E96/E96M, Procedure A.

7. Antimicrobial Agent: Compound shall be tested for efficacy by an NRTL, and registered by the EPA for use in HVAC systems.
8. Noise-Reduction Coefficient: 0.65 minimum when tested according to ASTM C423, Mounting A.
9. Fire/Smoke Resistance: Duct material shall comply with UL 181, Class 1, maximum flame-spread index of 25 and maximum smoke-developed index of 50 when tested by an NRTL according to ASTM E84.
10. Required Markings: EI stiffness rating, UL label, and other markings required by UL 181 on each full sheet of duct board.

B. Closure Materials:

1. Pressure-Sensitive Tape: Comply with UL 181A; imprinted by manufacturer with coding "181A-P," manufacturer's name, and a date code.
  - a. Tape: Aluminum foil-scrim tape imprinted with listing information.
  - b. Minimum Tape Width: 2-1/2 inches; 3 inches for duct board thicker than 1 inch.
  - c. Staples: 1/2-inch outward clinching, 2 inches o.c. in tabs, one tab per joint.
  - d. Water resistant.
  - e. Mold and mildew resistant.
2. Heat-Activated Tape: Comply with UL 181A; imprinted by manufacturer with coding "181A-H," manufacturer's name, and a date code.
  - a. Tape: Aluminum foil-scrim tape imprinted with listing information.
  - b. Minimum Tape Width: 3 inches.
  - c. Heat-Sensitive Imprint: Printed indicator on tape to show proper heating during application has been achieved.
  - d. Water resistant.
  - e. Mold and mildew resistant.
3. Two-Part Tape Sealing System: Comply with UL 181A; imprinted by manufacturer with coding "181A-M," manufacturer's name, and a date code.
  - a. Tape: Woven glass fiber impregnated with mineral gypsum.
  - b. Minimum Tape Width: 3 inches.
  - c. Sealant: Modified styrene acrylic.
  - d. Water resistant.
  - e. Mold and mildew resistant.

C. Fabrication:

1. Comply with: SMACNA's "Fibrous Glass Duct Construction Standards," Ch. 3, "Specifications and Closure," and Ch. 4, "Fittings and Connections" for the following:
  - a. Joints, seams, transitions, elbows, and branch connections.
  - b. Reinforcements, including channel and tie rod reinforcement materials, spacing, and fabrications.
2. Fabricate 90-degree mitered elbows to include turning vanes.



- D. Reinforcements: Comply with requirements in SMACNA's "Fibrous Glass Duct Construction Standards," Ch. 5, "Reinforcement" for channel- and tie-rod reinforcement materials, spacing, and fabrication.

### 2.3 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Zinc-plated steel rods and nuts.
- B. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
- C. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct."
- D. Steel Cables: ASTM A492, stainless-steel cables with end connections made of stainless-steel assemblies with brackets, swivel, and bolts designed for duct hanger service; with an automatic-locking and clamping device.
- E. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.
- F. Trapeze and Riser Supports: Steel shapes complying with ASTM A36/A36M.

## PART 3 - EXECUTION

### 3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
- B. Install duct sections in maximum practical lengths with fewest possible joints.
- C. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.
- D. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.
- E. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
- F. Install ducts with a minimum clearance of 1 inch, plus allowance for insulation thickness.
- G. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.

- H. Where ducts pass through non-fire-rated interior partitions and exterior walls, and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges. Overlap openings on four sides by at least 1-1/2 inches.
- I. Install fire and smoke dampers where indicated on Drawings and as required by code and by authorities having jurisdiction. Comply with requirements in Section 233300 "Air Duct Accessories" for fire and smoke dampers and specific installation requirements of the fire damper UL listing.
- J. Install heating coils, cooling coils, air filters, dampers, and all other duct-mounted accessories in air ducts where indicated on Drawings.
- K. Protect duct interiors from moisture, construction debris and dust, and other foreign materials both before and after installation. Comply with SMACNA's "IAQ Guidelines for Occupied Buildings under Construction," Appendix G, "Duct Cleanliness for New Construction Guidelines."
- L. Elbows: Use long-radius elbows wherever they fit.
  - 1. Fabricate 90-degree rectangular mitered elbows to include turning vanes, and 90-degree round elbows with a minimum of three segments for 12 inches and smaller and a minimum of five segments for 14 inches and larger.
- M. Branch Connections: Use lateral or conical branch connections.
- N. Install fibrous-glass ducts and fittings to comply with SMACNA's "Fibrous Glass Duct Construction Standards."
- O. Air Balance: Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."

### 3.2 HANGER AND SUPPORT INSTALLATION

- A. Install hangers and supports for fibrous-glass ducts and fittings to comply with SMACNA's "Fibrous Glass Duct Construction Standards," Ch. 6, "Hangers and Supports."
- B. Install hangers and supports for phenolic-foam ducts and fittings to comply with SMACNA's "Phenolic Duct Construction Standards" Ch. 6, "Hangers and Supports" and with manufacturer's written instructions.
- C. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
  - 1. Install concrete inserts before placing concrete.
  - 2. Install powder-actuated concrete fasteners after concrete is placed and completely cured.
  - 3. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches thick.
  - 4. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches thick.
  - 5. Do not use powder-actuated concrete fasteners for seismic restraints.

- D. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

### 3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Leakage Tests:
  - 1. Comply with SMACNA's "HVAC Air Duct Leakage Test Manual." Submit a test report for each test.
  - 2. Where static pressure and leakage values shown below differ from those in the SMACNA manual, the more stringent values shall apply.
  - 3. Test the following systems:
    - a. Ducts with a Pressure Class Higher Than 3-Inch wg: Test representative duct sections totaling no less than 25 percent of total installed duct area for each designated pressure class.
    - b. Supply Ducts with a Pressure Class of 2-Inch wg or Higher: Test representative duct sections totaling no less than 50 percent of total installed duct area for each designated pressure class.
    - c. Return Ducts with a Pressure Class of 2-Inch wg or Higher: Test representative duct sections totaling no less than 50 percent of total installed duct area for each designated pressure class.
    - d. Exhaust Ducts with a Pressure Class of 2-Inch wg or Higher: Test representative duct sections totaling no less than 50 percent of total installed duct area for each designated pressure class.
    - e. Outdoor Air Ducts with a Pressure Class of 2-Inch wg or Higher: Test representative duct sections totaling no less than 50 percent of total installed duct area for each designated pressure class.
  - 4. Disassemble, reassemble, and seal segments of systems to accommodate leakage testing and for compliance with test requirements.
  - 5. Conduct tests at static pressures equal to maximum design pressure of system or section being tested. If static-pressure classes are not indicated, test entire system at maximum system design pressure. Do not pressurize systems above maximum design operating pressure.
  - 6. Give seven days' advance notice for testing.
- C. Duct system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

### 3.4 DUCT SCHEDULE

- A. Indoor Ducts and Fittings:
  - 1. Fibrous-Glass Rectangular Ducts and Fittings:

- a. Minimum Flexural Rigidity: EI-475.
- b. Minimum Board Thickness: 1 inch.

B. Outdoor Ducts and Fittings:

1. Provide suitable external surface protection as recommended by manufacturer.
2. Phenolic-Foam Rectangular Ducts and Fittings:
  - a. Minimum Panel Thickness: 7/8 inch.
  - b. Aluminum Cladding: Minimum 0.032 inch thick.
  - c. Joints: Secure joints with adhesive or clips according to duct manufacturer's written instructions, then tape joints with aluminum vapor tape.
  - d. Sealing: All joints shall be sealed with a generous and continuous bead of silicone sealant and pressed into corners using a smooth radius tool.

END OF SECTION 233116

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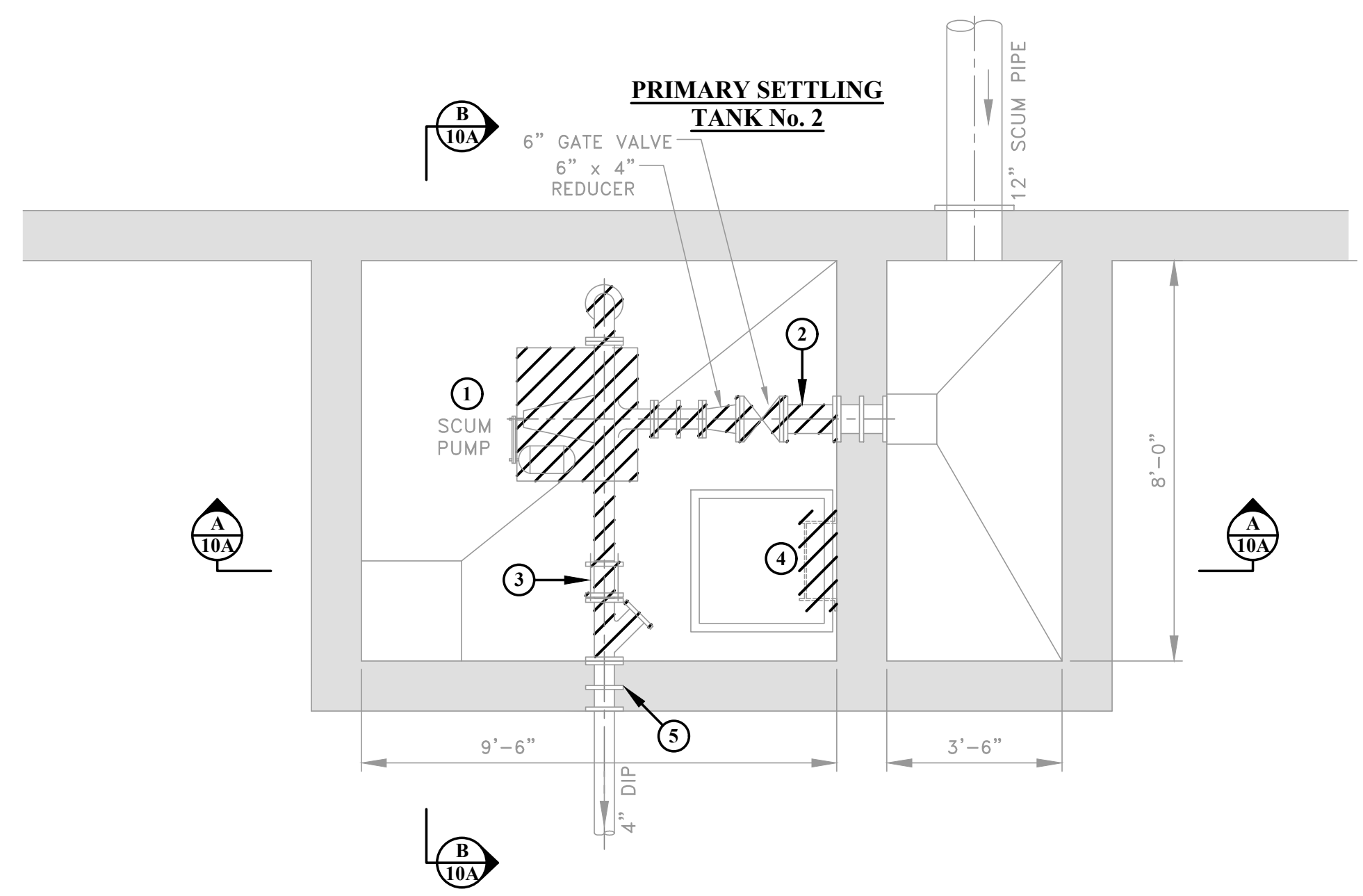
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**GENERAL NOTES:**

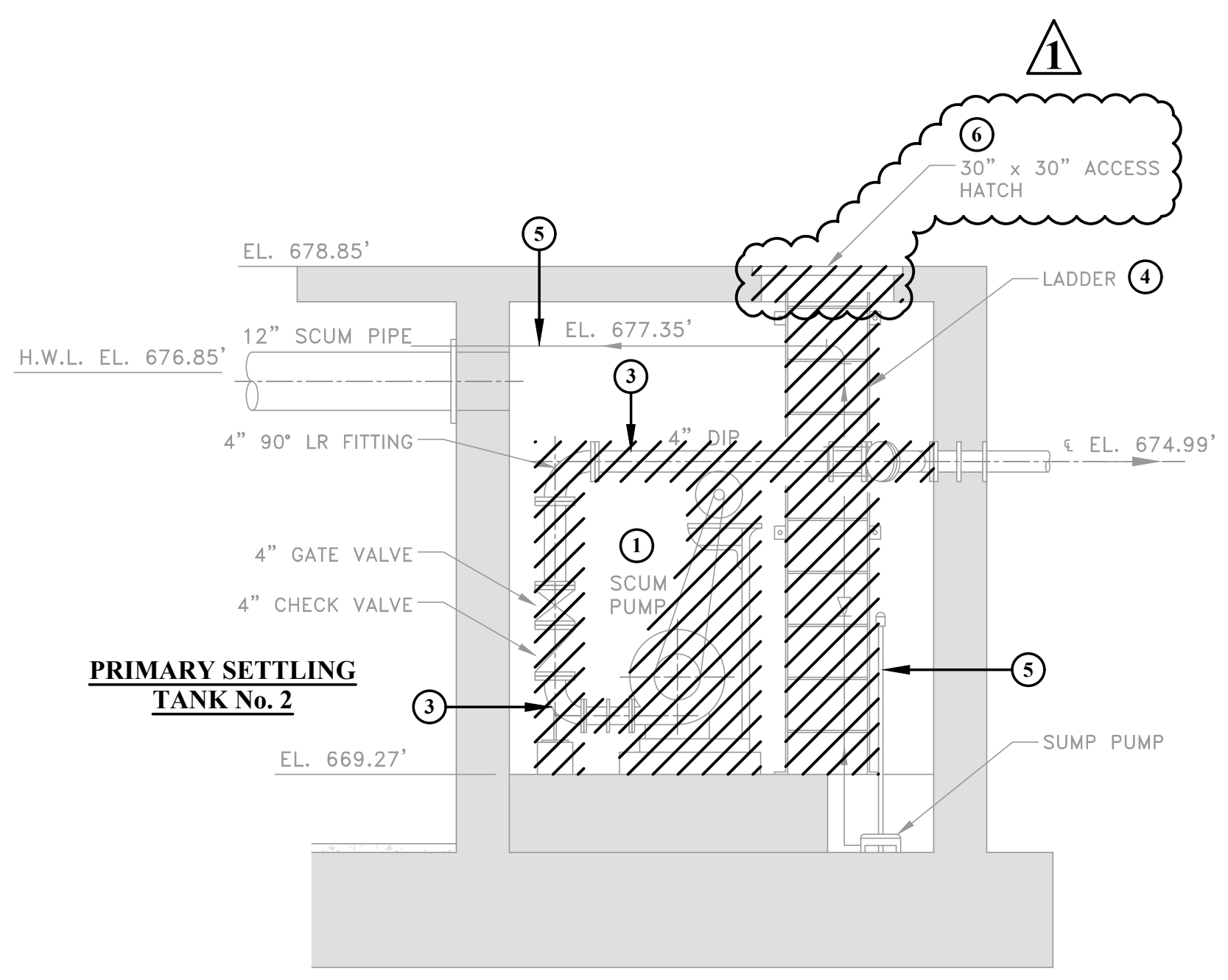
1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE OWNER.
2. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
3. ALL ITEMS TO BE DISPOSED SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS .
4. CONTRACTOR SHALL FIELD VERIFY ALL STRUCTURE DIMENSIONS PRIOR TO ORDERING EQUIPMENT.

**DEMOLITION NOTES:**

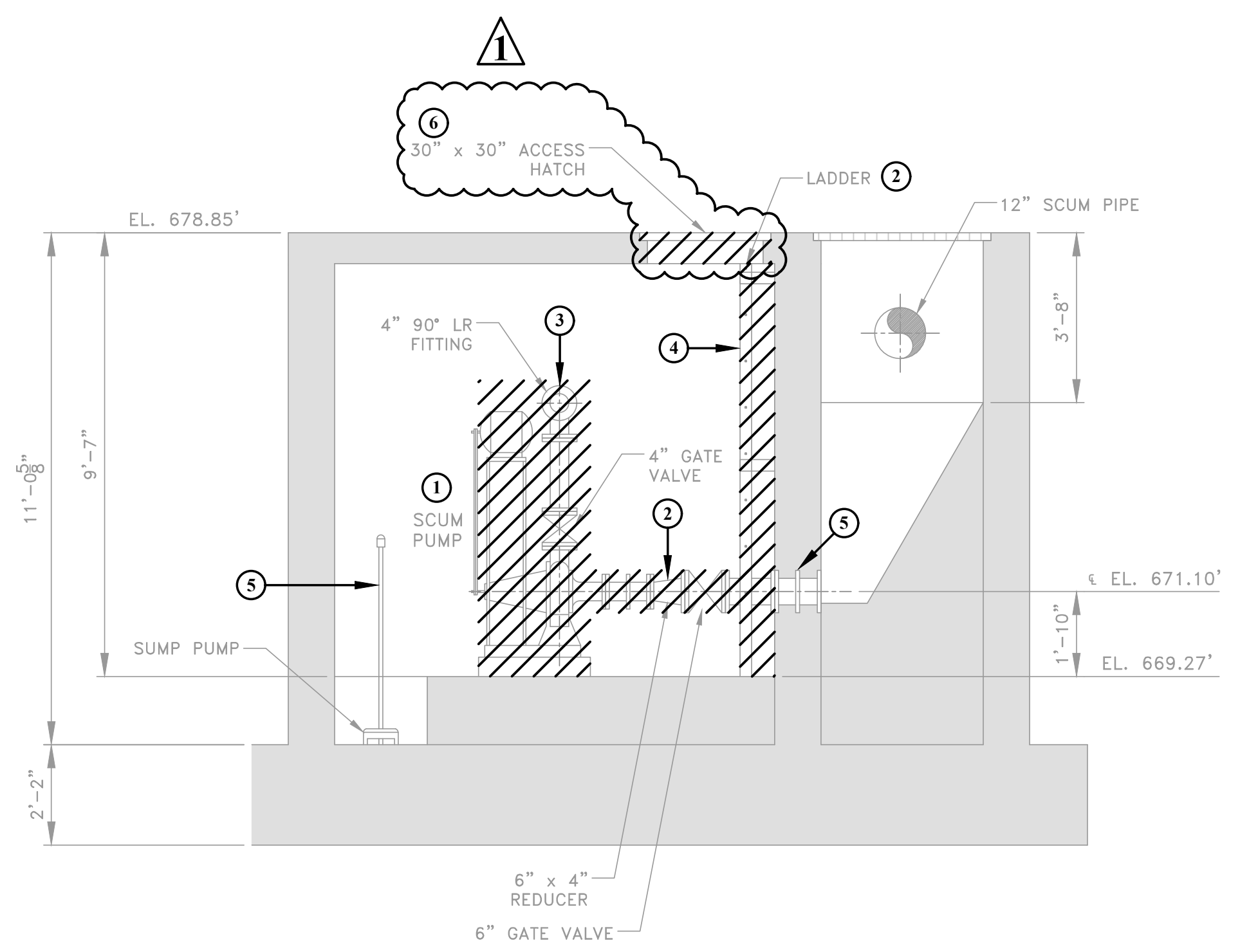
- ① CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SCUM PUMP.
- ② CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 4" DIP SCUM PUMP INLET PIPING.
- ③ CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 4" DIP SCUM PUMP DISCHARGE PIPING.
- ④ CONTRACTOR SHALL REMOVE AND REPLACE EXISTING ACCESS LADDER.
- ⑤ EXISTING ITEM TO REMAIN.
- ⑥ CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 30"x30" ACCESS HATCH.



**EXISTING SCUM PUMP PIT - DEMOLITION PLAN**



**SECTION B-10A**



**SECTION A-10A**

**LEGEND**

	ITEM TO BE REMOVED
	EX. STRUCTURE

**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 - REMOVE ACCESS HATCH

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DRAWN: R. STOWERS DATE: 2/2020
CHECKED: J. ALDEN DATE: 5/2020
APPROVED: J. ALDEN DATE: 6/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

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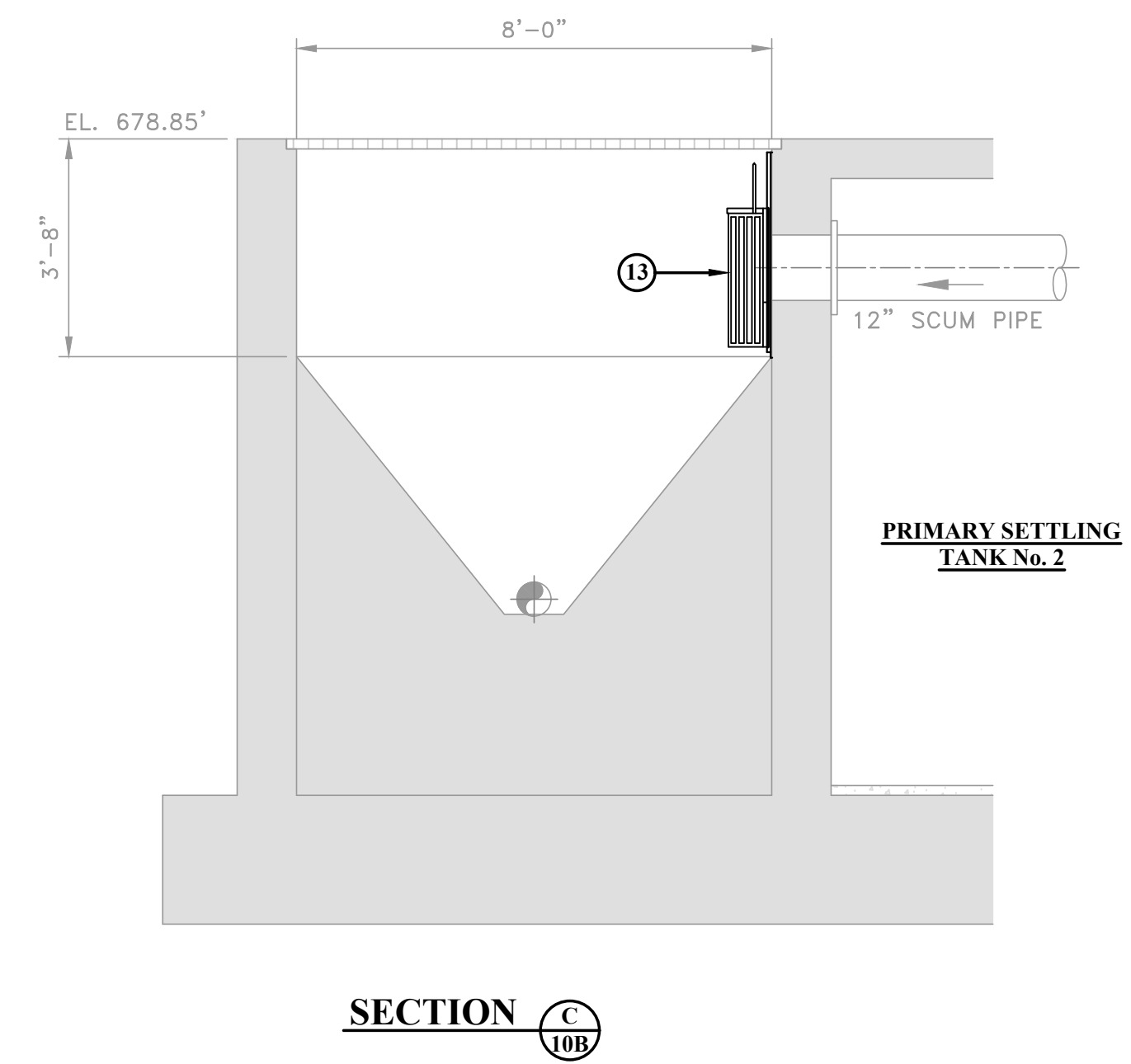
PHONE (304)-343-7601  
 FAX (304)-343-7604

PHASE No.
CONTRACT No.
PROJECT No.

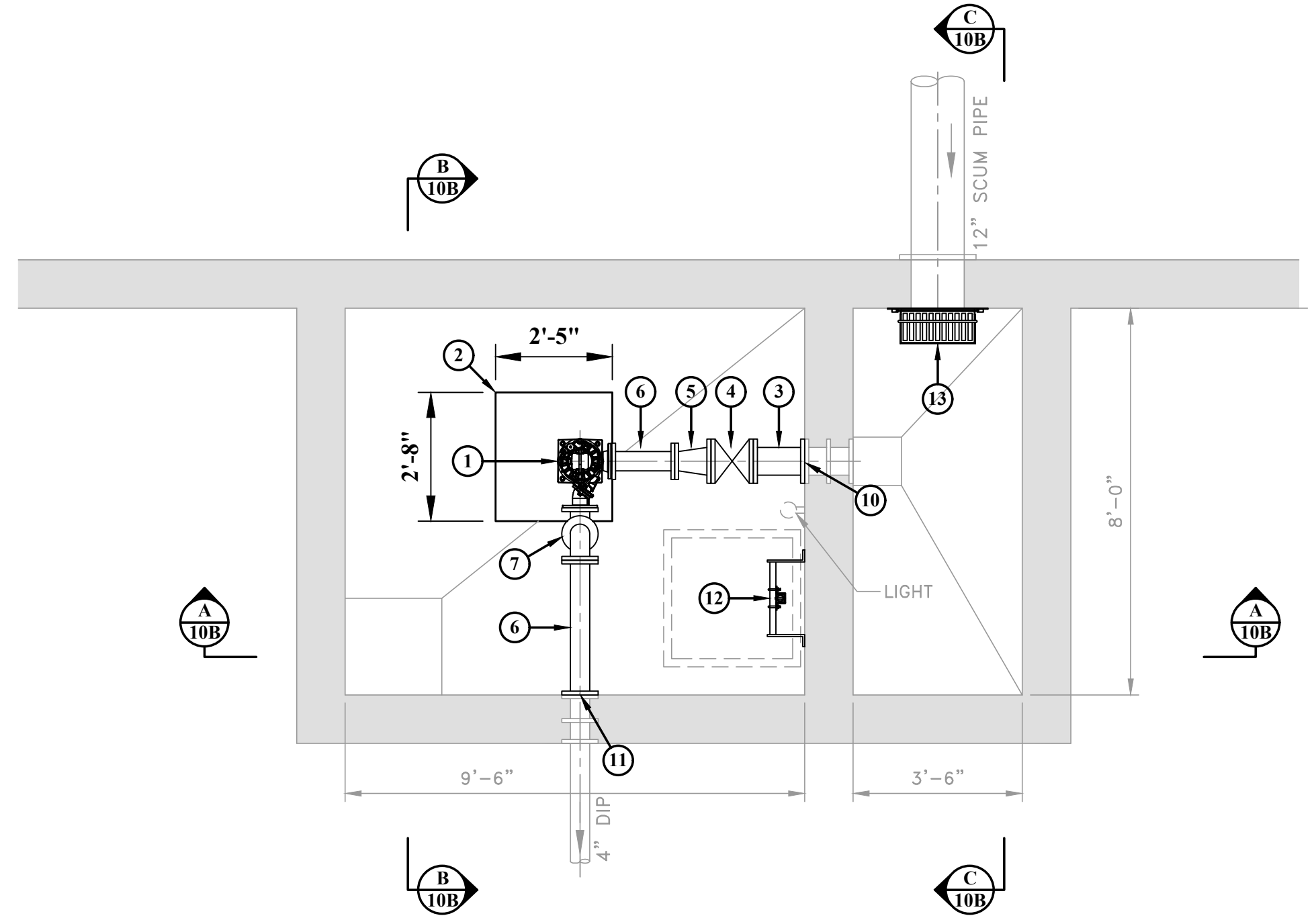
WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING SCUM PUMP PIT  
 DEMOLITION PLAN AND SECTIONS

SHEET No.
<b>10A</b>

CAD FILE: R:\020\020-1649-WWTP IMPROVEMENTS-WEIRTON-\Drawing\Contract 1\01-012-Ex Primary Clarifier.dwg  
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 LAYOUT: Sheet 10B  
 USER: robert.stowers



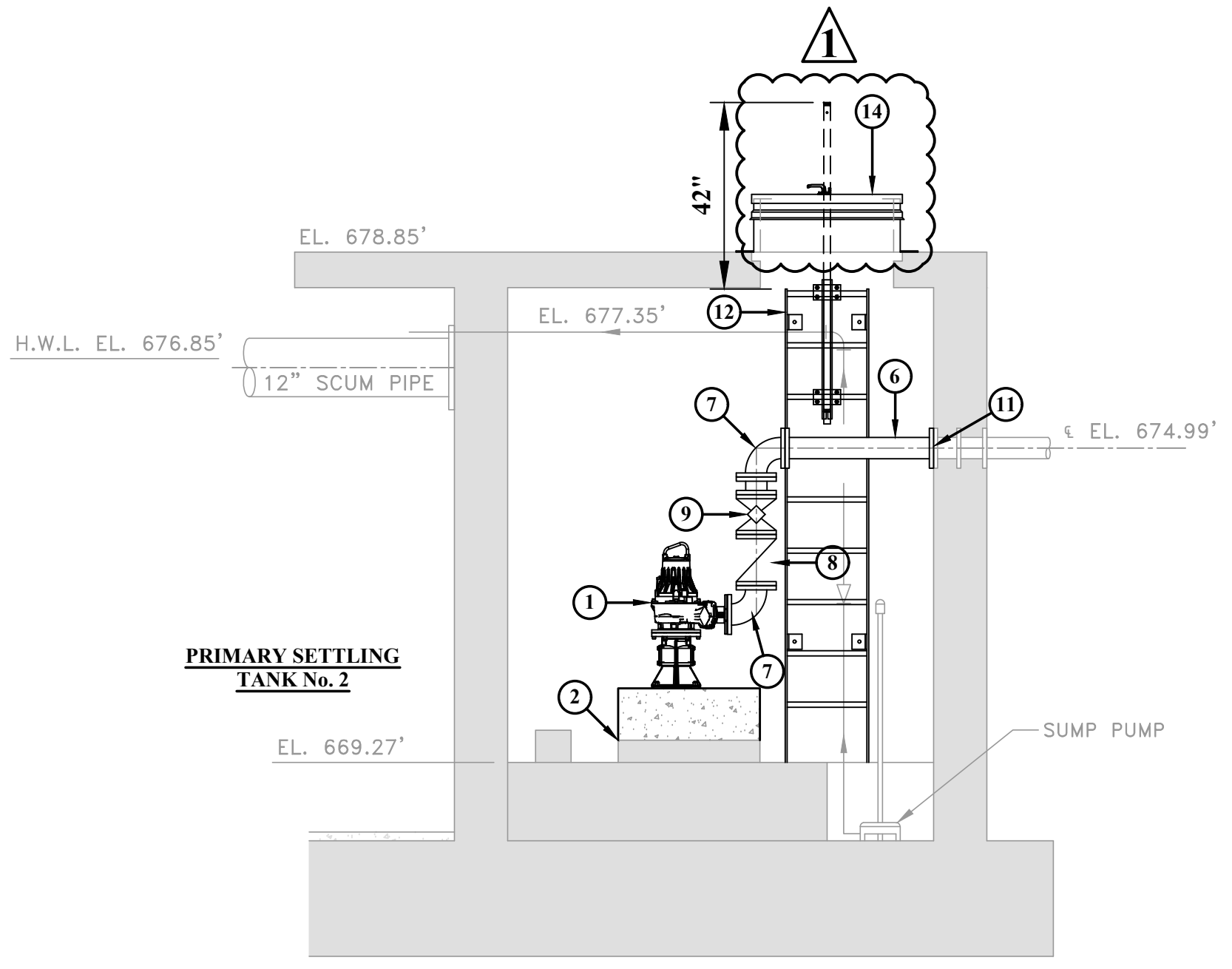
SECTION C-10B



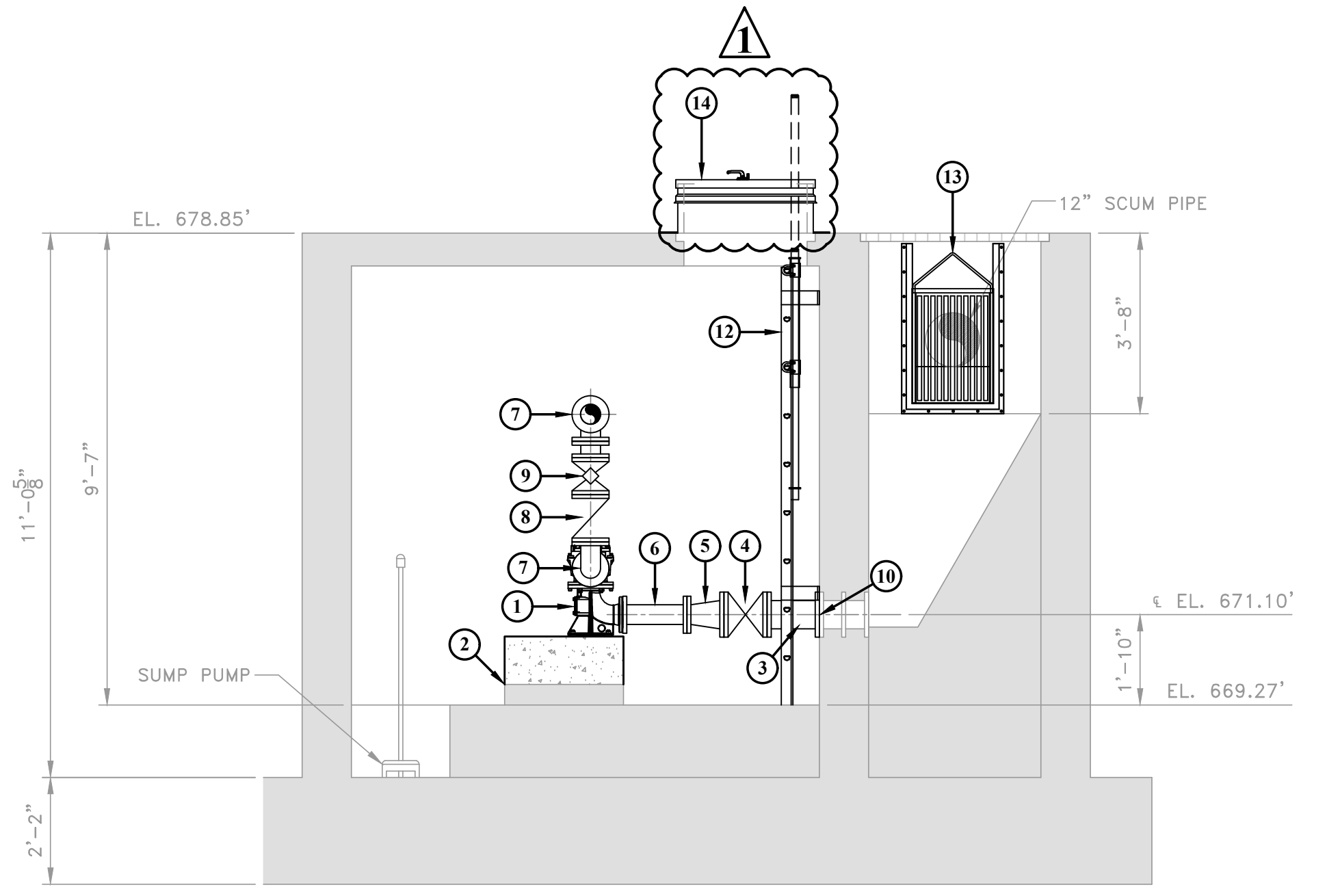
EXISTING SCUM PUMP PIT - IMPROVEMENT PLAN

- GENERAL NOTES:**
- ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
  - ALL EQUIPMENT AND PIPING SHALL BE INSTALLED TO MATCH EXISTING CENTERLINE ELEVATIONS.
  - CONTRACTOR SHALL FIELD VERIFY ALL STRUCTURE DIMENSIONS PRIOR TO ORDERING EQUIPMENT.
  - EQUIPMENT LAYOUT BASED ON PRELIMINARY INFORMATION PROVIDED BY CANDIDATE MANUFACTURER. CONTRACTOR SHALL PROVIDE ALL ADDITIONAL WORK AND MODIFICATIONS AS REQUIRED TO PROVIDE COMPLETE AND OPERATIONAL SYSTEM AT NO ADDITIONAL COST TO THE OWNER. MODIFICATIONS TO LAYOUT SHOWN SHALL BE SUBMITTED FOR APPROVAL BY ENGINEER AND OWNER.

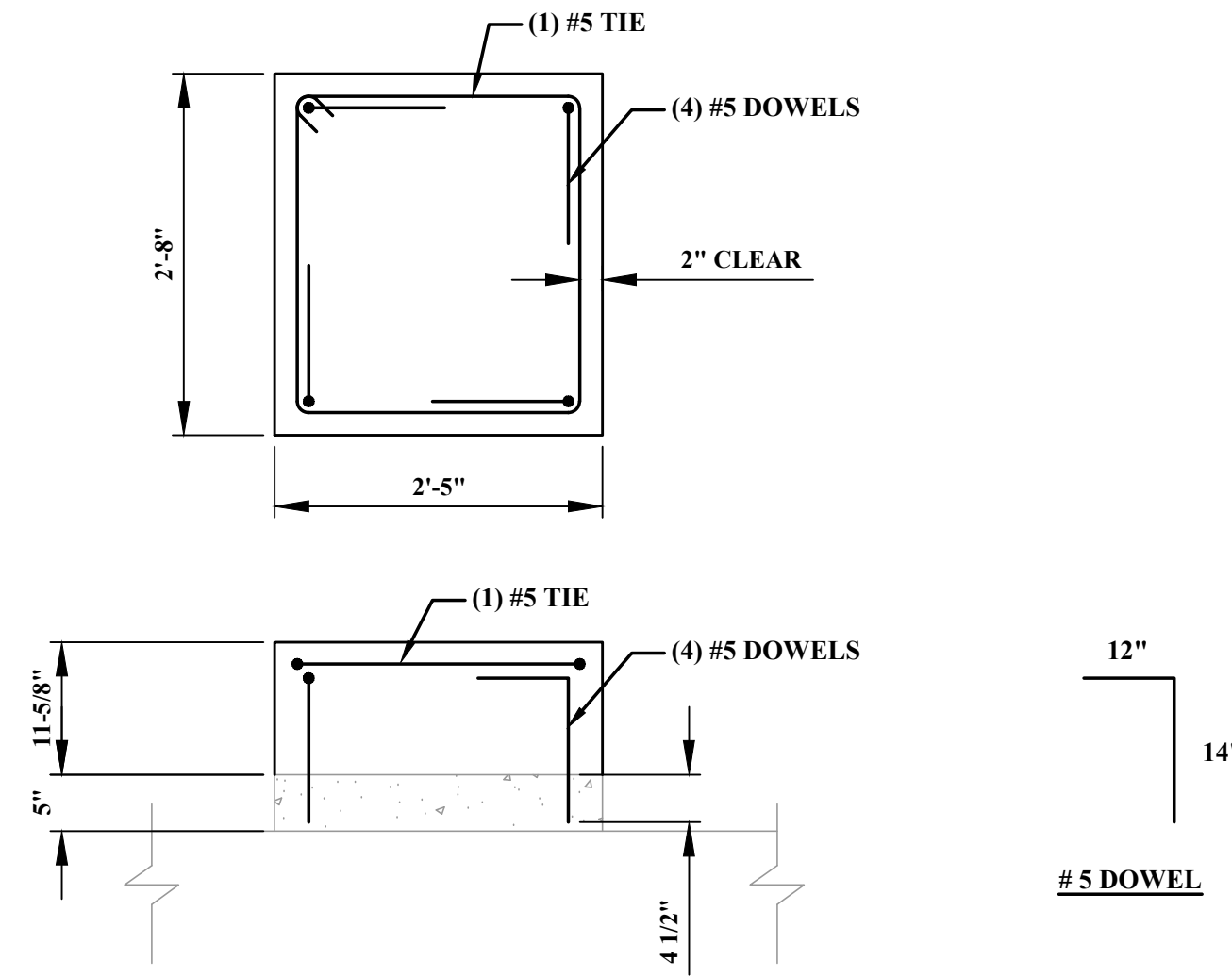
- KEY NOTES:**
- SCUM PUMP
  - EXISTING CONCRETE MOUNTING BASE SHALL BE MODIFIED AS REQUIRED.
  - 6" DIP.
  - 6" PLUG VALVE, FL.
  - 6" x 4" D.I. REDUCER, FL.
  - 4" DIP.
  - 4" D.I. 90° FITTING, FL.
  - 4" CHECK VALVE, FL.
  - 4" PLUG VALVE, FL.
  - CONNECT TO EXISTING 6" D.I. FLANGE.
  - CONNECT TO EXISTING 4" D.I. FLANGE.
  - ACCESS LADDER W/ SAFETY ARM EXTENSION.
  - REMOVABLE TRASH BASKET WITH GUIDE RAIL AND MOUNTING BRACKETS.
  - 30" x 30" ALUMINUM ROOF MOUNT ACCESS HATCH.



SECTION B-10B



SECTION A-10B



PUMP PAD REINFORCEMENT  
SCALE: N.T.S.

**LEGEND**  
 [Grey Box] EX. STRUCTURE

**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 - ADDED NEW ACCESS HATCH

SCALE: 3/16" = 1'-0"
DRAWN: R. STOWERS DATE: 2/2020
CHECKED: J. ALDEN DATE: 5/2020
APPROVED: J. ALDEN DATE: 6/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

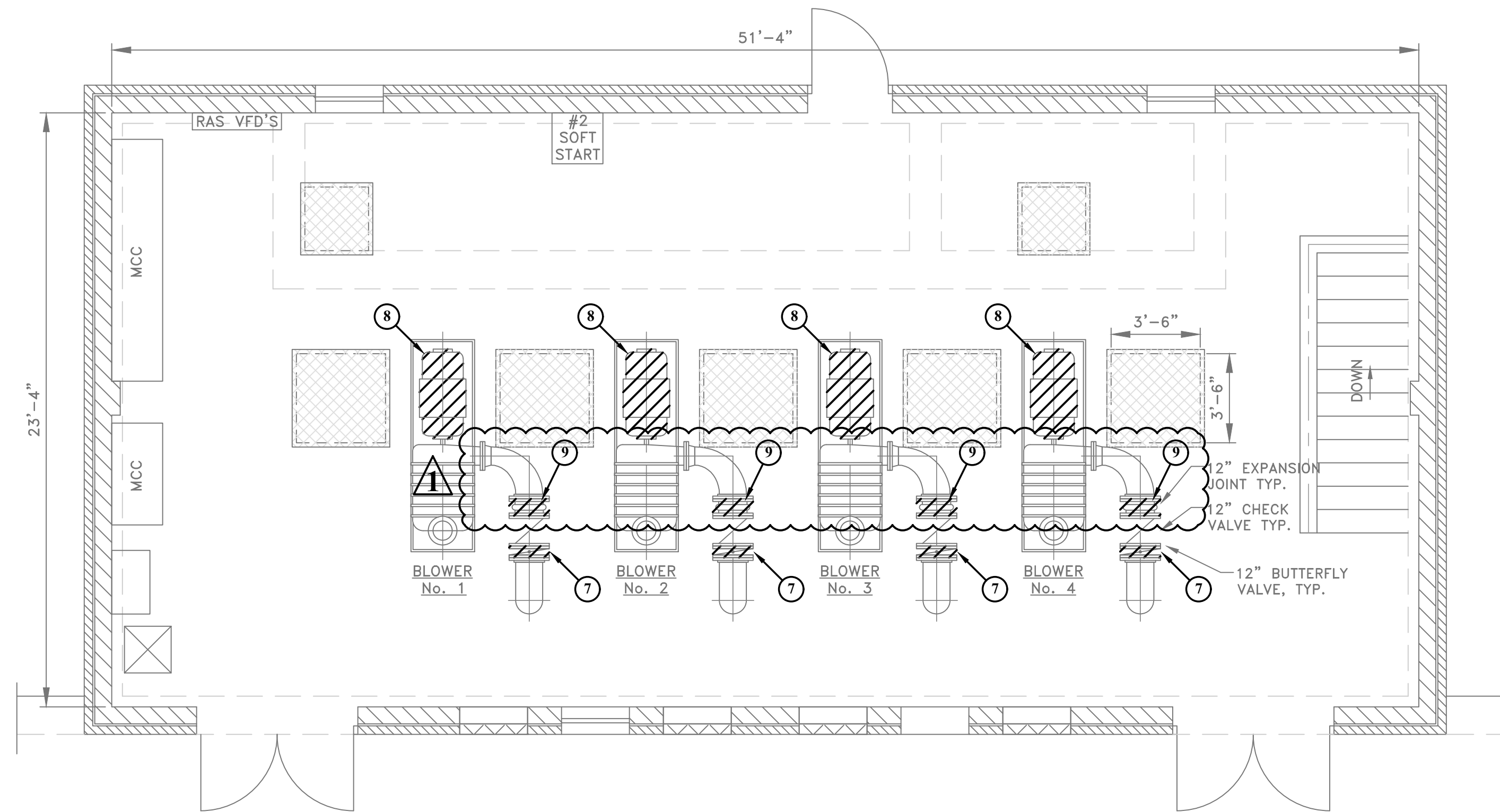
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 300 ASSOCIATION DRIVE  
 CHARLESTON, WV 25311  
 www.thrashergroup.com  
 PHONE (304)-343-7601 FAX (304)-343-7604

PHASE No.	
CONTRACT No.	1
PROJECT No.	020-01649

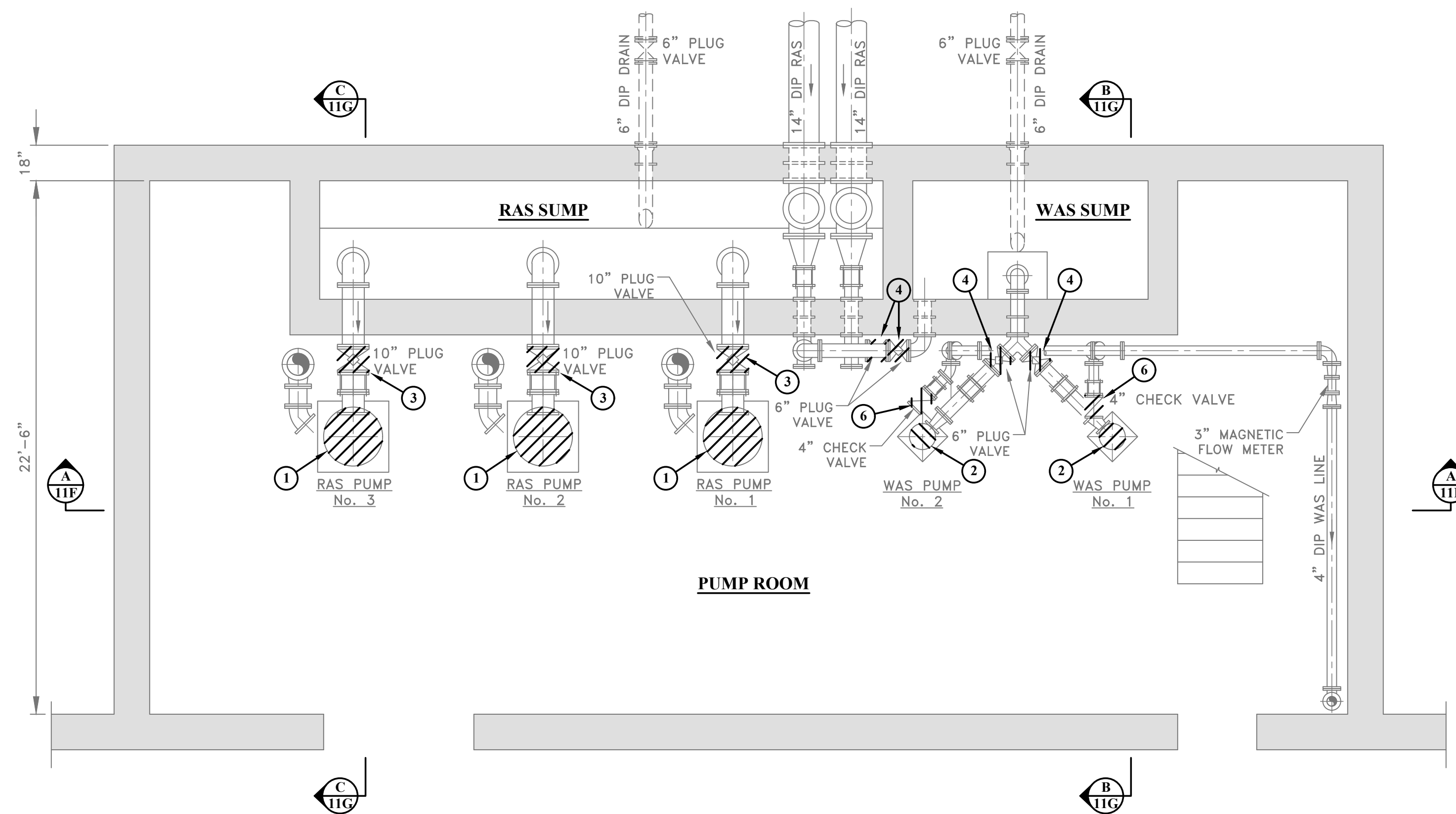
WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING SCUM PUMP PIT  
 IMPROVEMENT PLAN AND SECTIONS

SHEET No.  
**10B**

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 PLOT DATE/TIME: 10/25/2023 9:07 AM  
 LAYOUT: Sheet 11E  
 USER: robert stowers



**EXISTING BLOWER BUILDING - BLOWER FLOOR PLAN**



**EXISTING BLOWER BUILDING - PUMP ROOM LOWER PIPING DEMOLITION PLAN**

**GENERAL NOTES:**

1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE OWNER.
2. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
3. ALL ITEMS TO BE DISPOSED SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING EQUIPMENT.

**DEMOLITION NOTES:**

- ① CONTRACTOR SHALL REMOVE EXISTING RAS PUMPS.
- ② CONTRACTOR SHALL REMOVE EXISTING WAS PUMPS.
- ③ CONTRACTOR SHALL REMOVE EXISTING 10" PLUG VALVES.
- ④ CONTRACTOR SHALL REMOVE EXISTING 6" PLUG VALVES.
- ⑤ CONTRACTOR SHALL REMOVE EXISTING 4" PLUG VALVES. (NOT SHOWN ON THIS SHEET)
- ⑥ CONTRACTOR SHALL REMOVE EXISTING 4" CHECK VALVES.
- ⑦ CONTRACTOR SHALL REMOVE EXISTING 12" FLOW CONTROL BUTTERFLY VALVES.
- ⑧ CONTRACTOR SHALL REMOVE EXISTING BLOWER MOTOR.
- ⑨ CONTRACTOR SHALL REMOVE EXISTING 12" EXPANSION JOINT.

**LEGEND**

- ITEM TO BE REMOVED
- EX. STRUCTURE

**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 - 12" EXPANSION JOINTS TO BE REMOVED

SCALE: 1/4" = 1'-0"	
DRAWN: R. STOWERS	DATE:
CHECKED: J. ALDEN	DATE:
APPROVED: J. ALDEN	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

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PHASE No.	
CONTRACT No.	1
PROJECT No.	020-01649

**WEIRTON SANITARY BOARD**  
**BROOKE COUNTY, WEST VIRGINIA**  
**WASTEWATER TREATMENT PLANT UPGRADE**  
**EXISTING BLOWER BUILDING**  
**DEMOLITION FLOOR PLANS**

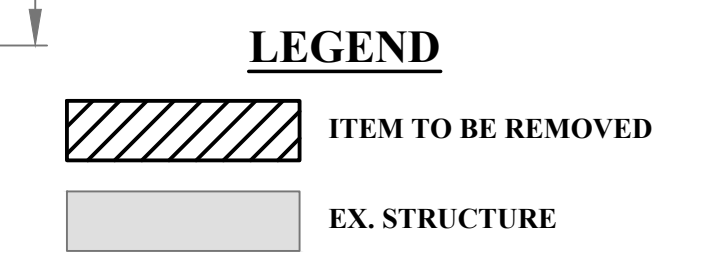
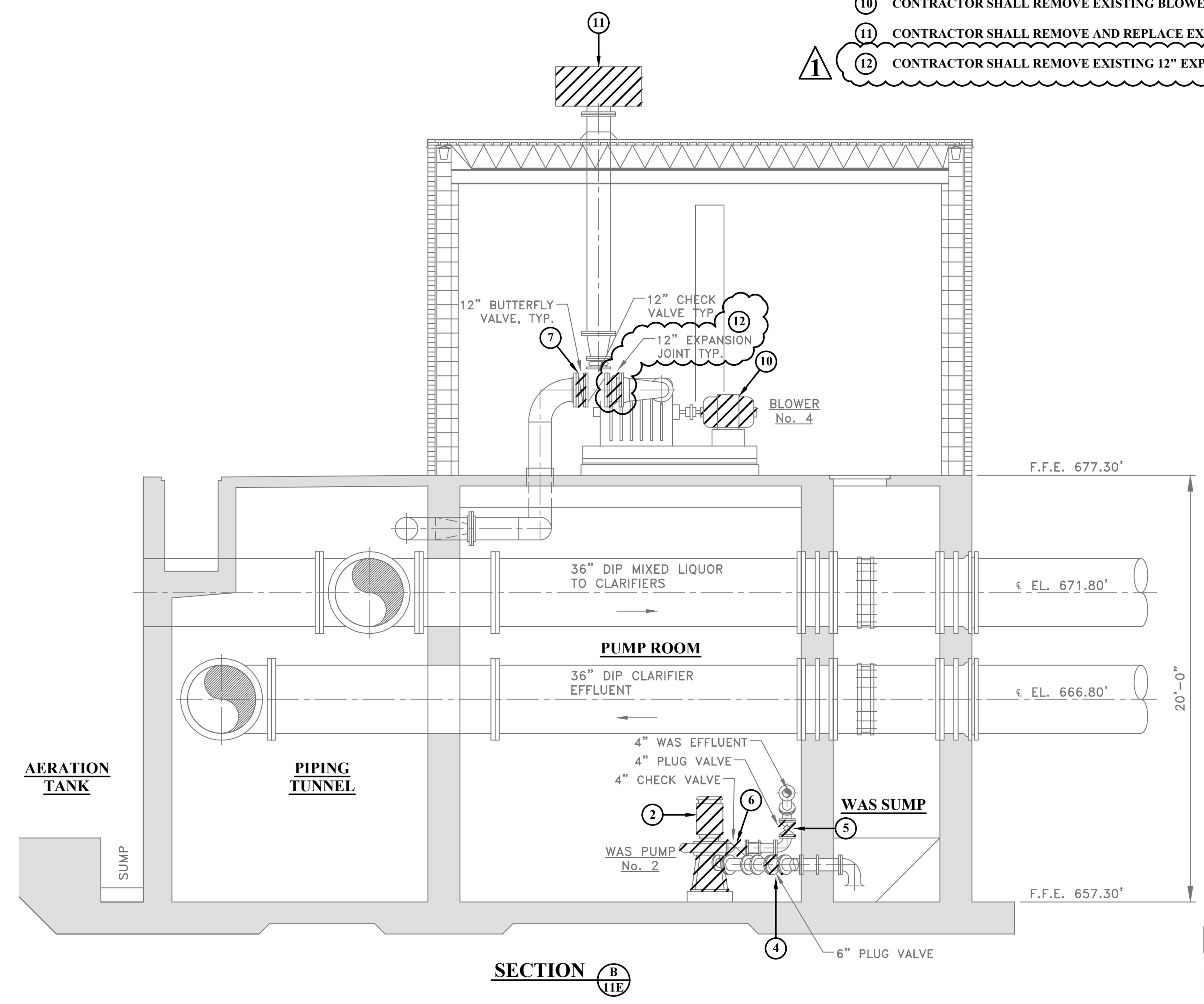
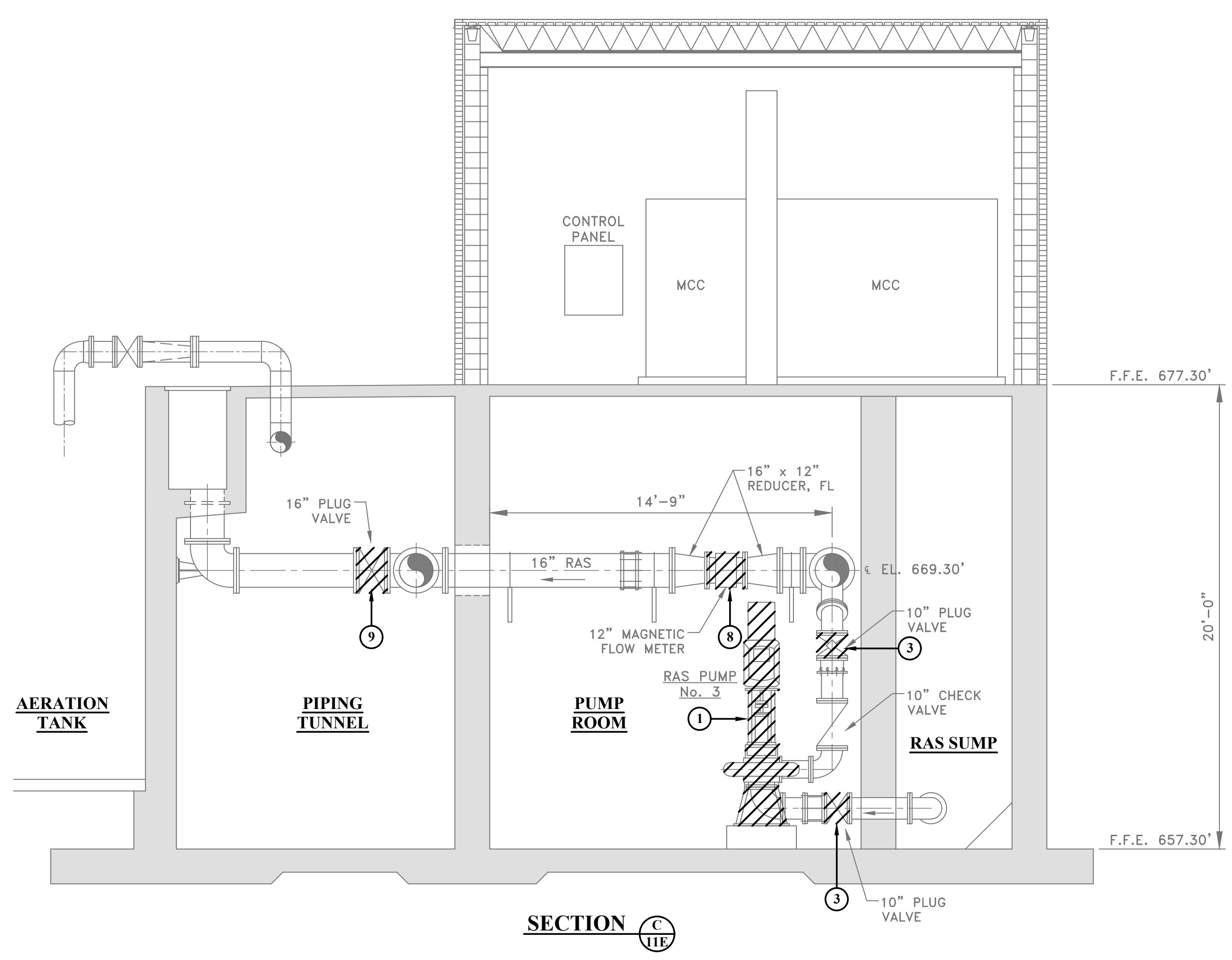
SHEET No.  
**11E**



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 LAYOUT: Sheet 11G  
 USER: robert stowers

- GENERAL NOTES:**
1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE OWNER.
  2. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
  3. ALL ITEMS TO BE DISPOSED SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
  4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING EQUIPMENT.

- DEMOLITION NOTES:**
1. CONTRACTOR SHALL REMOVE EXISTING RAS PUMPS.
  2. CONTRACTOR SHALL REMOVE EXISTING WAS PUMPS.
  3. CONTRACTOR SHALL REMOVE EXISTING 10" PLUG VALVES.
  4. CONTRACTOR SHALL REMOVE EXISTING 6" PLUG VALVES.
  5. CONTRACTOR SHALL REMOVE EXISTING 4" PLUG VALVES.
  6. CONTRACTOR SHALL REMOVE EXISTING 4" CHECK VALVES.
  7. CONTRACTOR SHALL REMOVE EXISTING 12" FLOW CONTROL BUTTERFLY VALVE.
  8. CONTRACTOR SHALL REMOVE EXISTING 12" MAGNETIC FLOW METER.
  9. CONTRACTOR SHALL REMOVE EXISTING 16" PLUG VALVES. (TYP. OF 3)
  10. CONTRACTOR SHALL REMOVE EXISTING BLOWER MOTOR.
  11. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING AIR FILTER CANISTERS. (TYP. OF 4)
  12. CONTRACTOR SHALL REMOVE EXISTING 12" EXPANSION JOINT. (TYP. OF 4)



**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 - 12" EXPANSION JOINT TO BE REMOVED


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

DRAWN: R. STOWERS DATE: \_\_\_\_\_

CHECKED: J. ALDEN DATE: \_\_\_\_\_

APPROVED: J. ALDEN DATE: \_\_\_\_\_

SURVEY DATE: \_\_\_\_\_

SURVEY BY: \_\_\_\_\_

FIELD BOOK No.: \_\_\_\_\_

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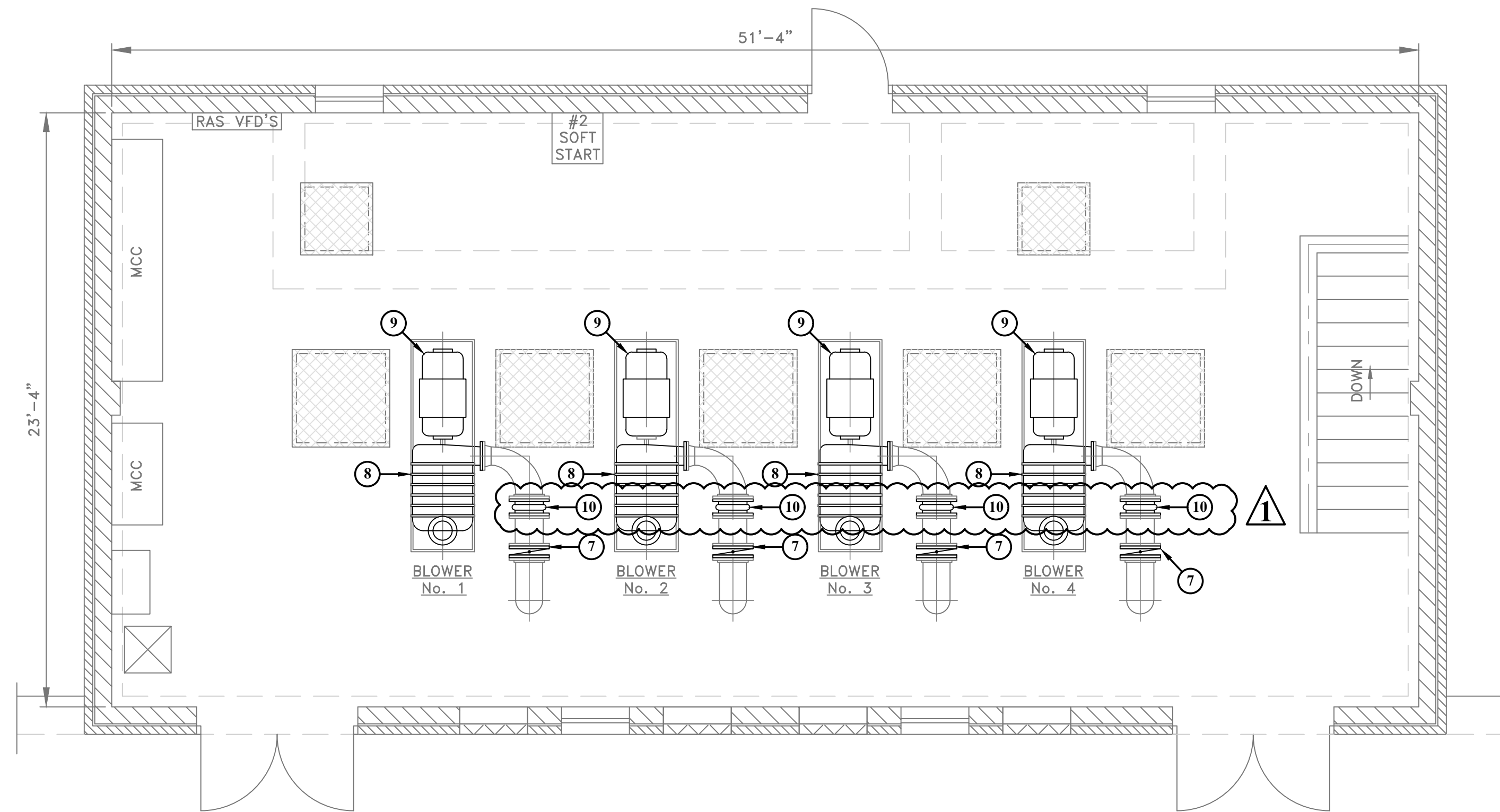
PHONE (304)-343-7601 FAX (304)-343-7604

PHASE No.	
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PROJECT No.	020-01649

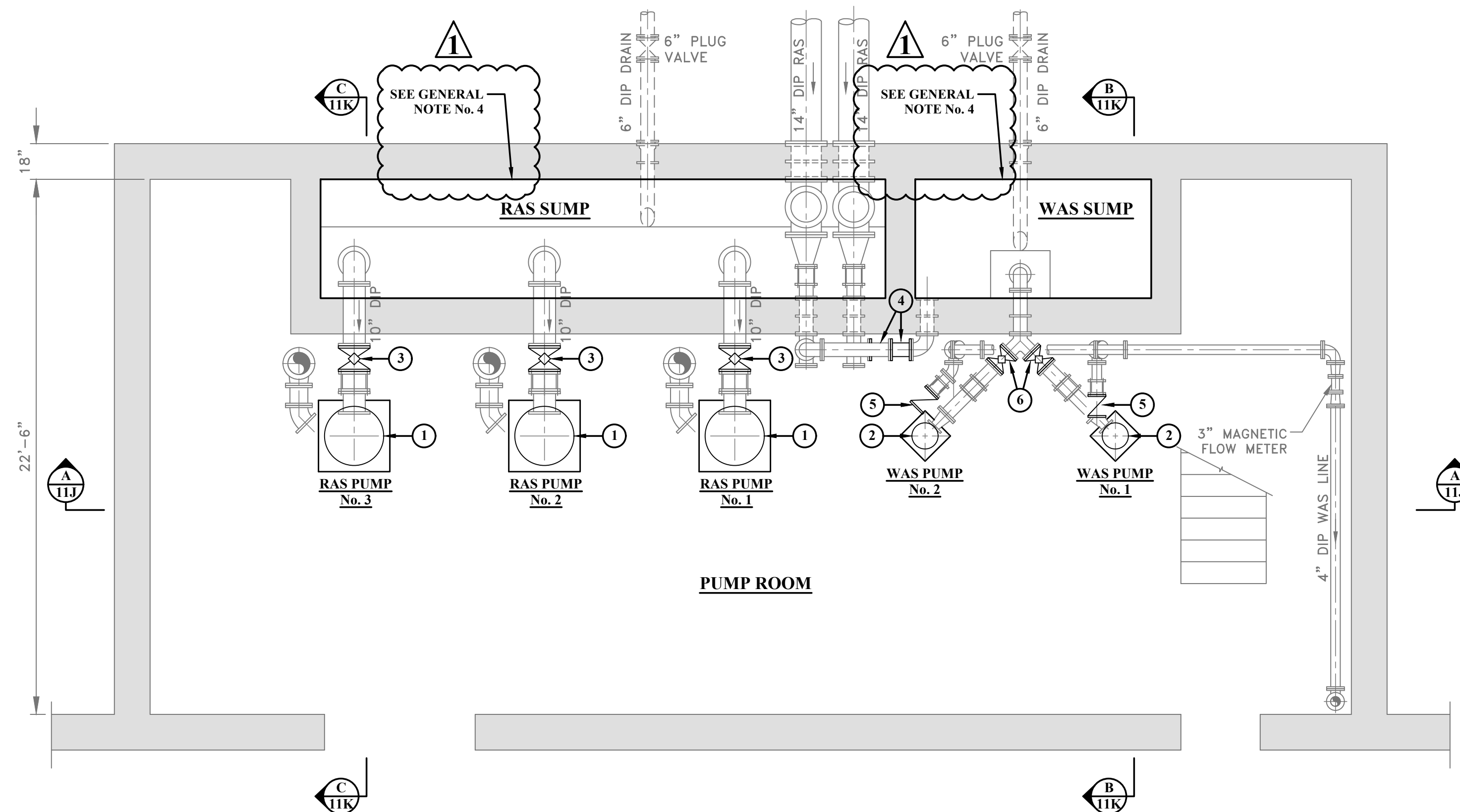
WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING BLOWER BUILDING  
 DEMOLITION SECTIONS

SHEET No.  
**11G**

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 LAYOUT: Sheet 11H  
 USER: robert stowers



**EXISTING BLOWER BUILDING - BLOWER FLOOR IMPROVEMENT PLAN**



**EXISTING BLOWER BUILDING - PUMP ROOM LOWER PIPING IMPROVEMENT PLAN**

**GENERAL NOTES:**

1. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
2. CONTRACTOR SHALL FIELD VERIFY ALL STRUCTURE DIMENSIONS PRIOR TO ORDERING EQUIPMENT.
4. CONTRACTOR SHALL REMOVE ALL SLUDGE AND OTHER MATERIAL IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. CONCRETE SHALL BE CLEANED AND PRESSURE WASHED FOLLOWING REMOVAL ACTIVITIES.

**KEY NOTES:**

1. CONTRACTOR SHALL INSTALL THREE (3) NEW RAS PUMPS. CONNECT TO EXISTING PIPING AND MODIFY CONCRETE BASE AS NECESSARY. PUMPS SHALL BE RECONNECTED TO EXISTING ELECTRICAL SUPPLY.
2. CONTRACTOR SHALL INSTALL TWO (2) NEW WAS PUMPS. CONNECT TO EXISTING PIPING AND MODIFY CONCRETE BASE AS NECESSARY. PUMPS SHALL BE RECONNECTED TO EXISTING ELECTRICAL SUPPLY.
3. 10" D.I. PLUG VALVE, FL.
4. 6" D.I. SPOOL PIECE, FL.
5. 4" D.I. CHECK VALVE, FL.
6. 6" D.I. PLUG VALVE, FL.
7. 12" AIR FLOW CONTROL BUTTERFLY VALVE WITH HANDWHEEL OPERATOR.
8. CONTRACTOR SHALL REHABILITATE EXISTING BLOWERS. REFER TO SPECIFICATION 463000 FOR REQUIREMENTS.
9. CONTRACTOR SHALL INSTALL NEW INVERTER RATED MOTORS. REFER TO SPECIFICATION 463000 FOR REQUIREMENTS.
10. CONTRACTOR SHALL INSTALL 12" D.I. EXPANSION JOINT, FL.

**LEGEND**

EX. STRUCTURE

**ADDENDUM No.2**

1	JLA	10/25/23	ADDENDUM No.2
NO.	BY	DATE	DESCRIPTION

SCALE: 1/4" = 1'-0"  
 DRAWN: R. STOWERS DATE:  
 CHECKED: J. ALDEN DATE:  
 APPROVED: J. ALDEN DATE:  
 SURVEY DATE:  
 SURVEY BY:  
 FIELD BOOK No.:

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PHASE No.	
CONTRACT No.	1
PROJECT No.	020-01649

WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING BLOWER BUILDING  
 IMPROVEMENT FLOOR PLANS

SHEET No.  
**11H**

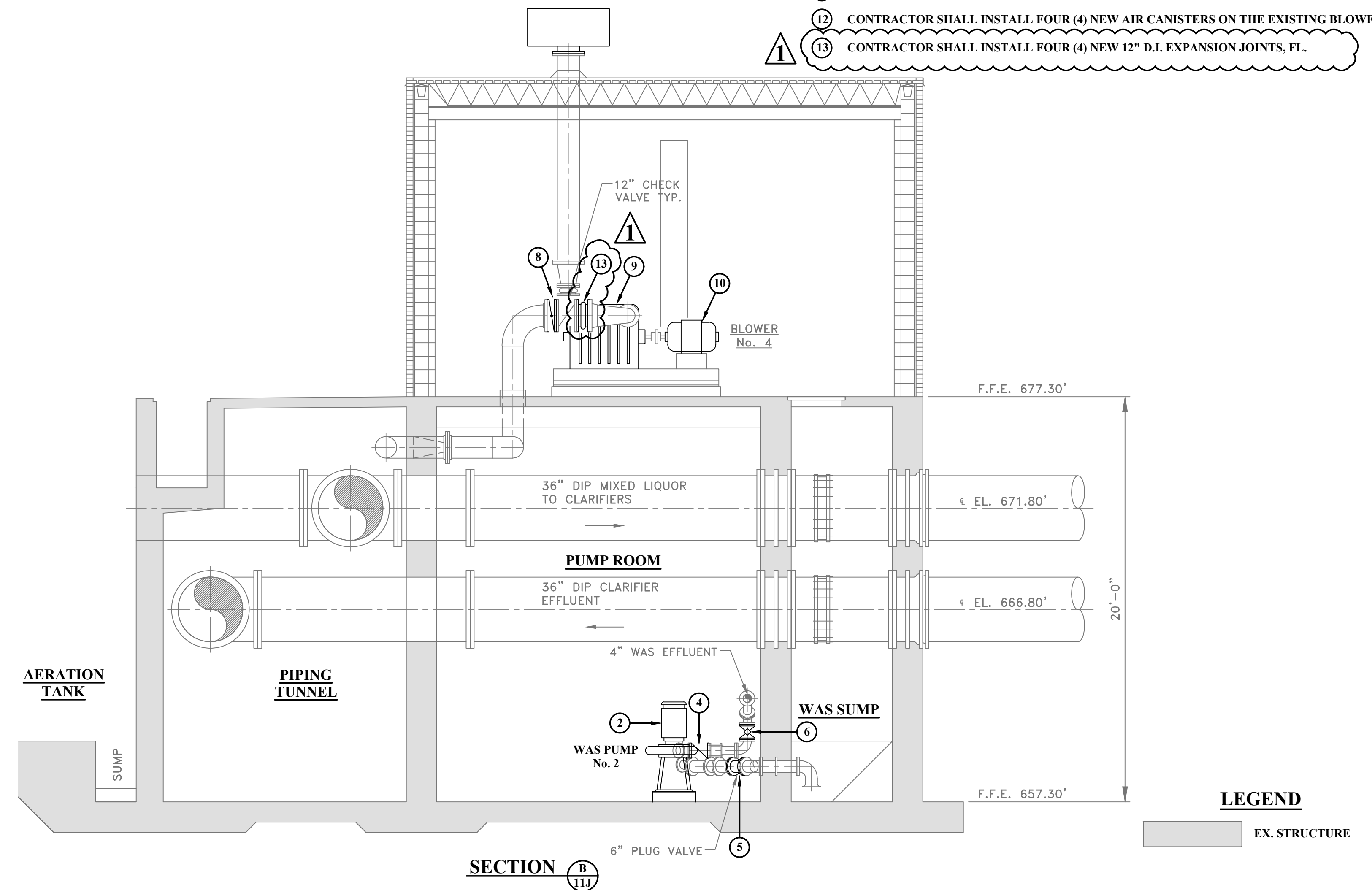
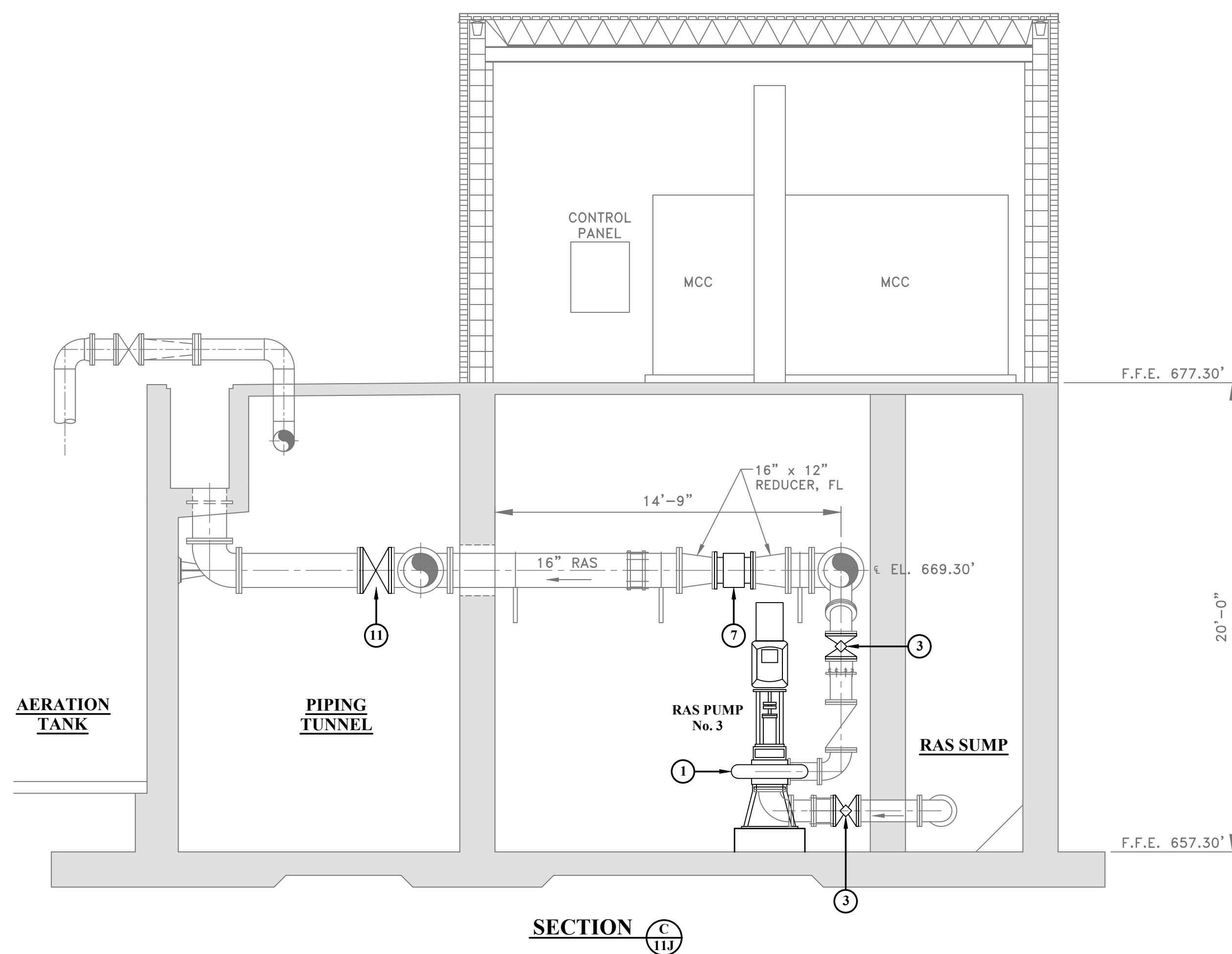
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 PLOT DATE/TIME: 10/25/2023 9:57 AM  
 LAYOUT: Sheet 11K  
 USER: robert stowers

**GENERAL NOTES:**

1. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
2. CONTRACTOR SHALL FIELD VERIFY ALL STRUCTURE DIMENSIONS PRIOR TO ORDERING EQUIPMENT.

**KEY NOTES:**

- ① CONTRACTOR SHALL INSTALL THREE (3) NEW RAS PUMPS. CONNECT TO EXISTING PIPING AND MODIFY CONCRETE BASE AS NECESSARY. PUMPS SHALL BE RECONNECTED TO EXISTING ELECTRICAL SUPPLY.
- ② CONTRACTOR SHALL INSTALL TWO (2) NEW WAS PUMPS. CONNECT TO EXISTING PIPING AND MODIFY CONCRETE BASE AS NECESSARY. PUMPS SHALL BE RECONNECTED TO EXISTING ELECTRICAL SUPPLY.
- ③ 10" D.I. PLUG VALVE, FL.
- ④ 4" D.I. CHECK VALVE, FL.
- ⑤ 6" D.I. PLUG VALVE, FL.
- ⑥ 4" D.I. PLUG VALVE, FL.
- ⑦ CONTRACTOR SHALL INSTALL NEW 12" MAGNETIC FLOW METER.
- ⑧ 12" AIR FLOW CONTROL BUTTERFLY VALVE. CONNECT TO EXISTING POWER AND CONTROL WIRING.
- ⑨ CONTRACTOR SHALL REHABILITATE EXISTING BLOWERS. REFER TO SPECIFICATION 463000 FOR REQUIREMENTS.
- ⑩ CONTRACTOR SHALL INSTALL INVERTER RATED MOTORS. REFER TO SPECIFICATION 463000 FOR REQUIREMENTS.
- ⑪ CONTRACTOR SHALL INSTALL THREE (3) NEW 16" PLUG VALVES W/ CHAIN OPERATORS.
- ⑫ CONTRACTOR SHALL INSTALL FOUR (4) NEW AIR CANISTERS ON THE EXISTING BLOWERS.
- ⑬ CONTRACTOR SHALL INSTALL FOUR (4) NEW 12" D.I. EXPANSION JOINTS, FL.



**LEGEND**  
 EX. STRUCTURE

**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 -- ADDED 12" EXPANSION JOINT

SCALE: 1/4" = 1'-0"	
DRAWN: R. STOWERS	DATE:
CHECKED: J. ALDEN	DATE:
APPROVED: J. ALDEN	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

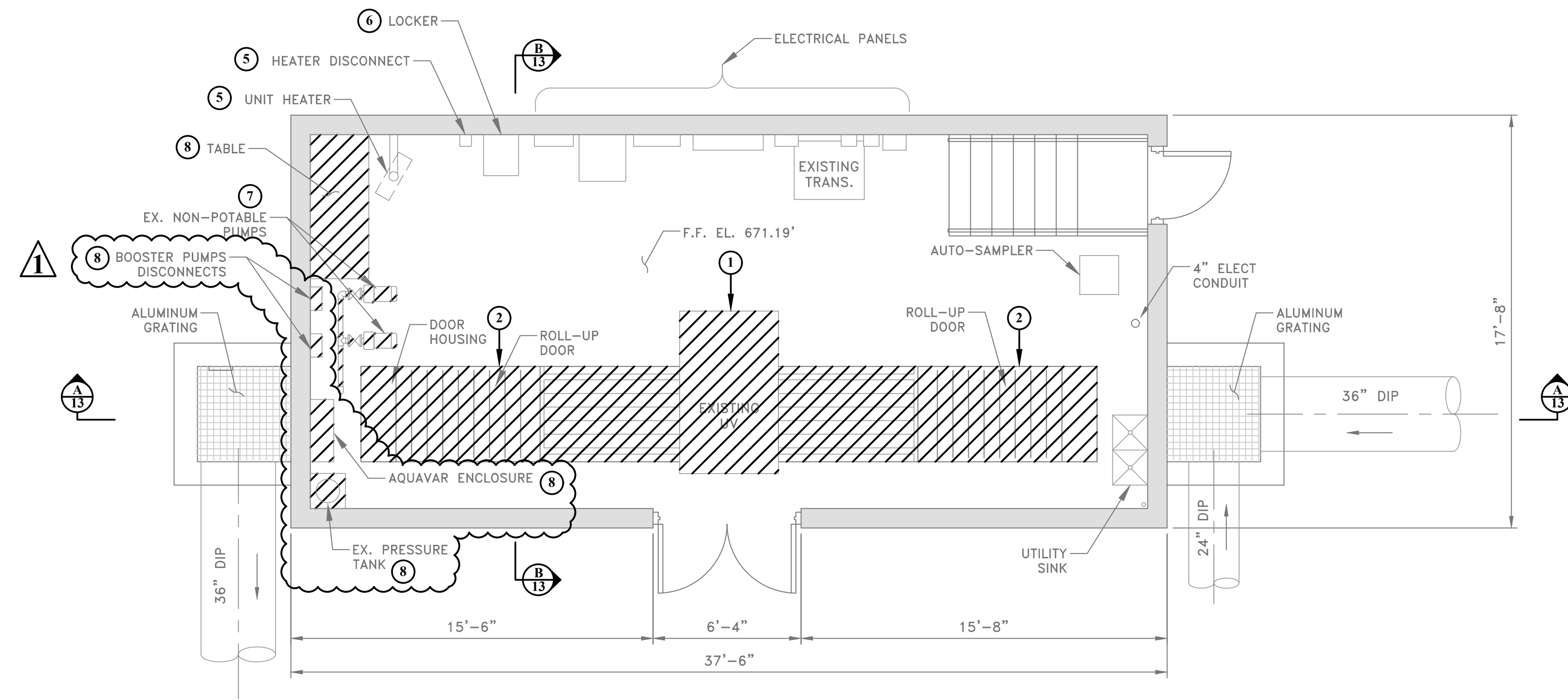
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 www.thrashergroup.com  
 PHONE (304)-343-7601 FAX (304)-343-7604

PHASE No.	
CONTRACT No.	
PROJECT No.	020-01649

WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING BLOWER BUILDING  
 IMPROVEMENT SECTIONS

SHEET No.  
**11K**

USER: robert.stowers  
 LAYOUT: Sheet 13  
 PLOT DATE/TIME: 10/25/2023 1:45 PM  
 CAD FILE: R:\020\020-1649-WWTP IMPROVEMENTS-WEIRTON-\Drawing\Contract 1\01-015-Ex Uv Unit.dwg



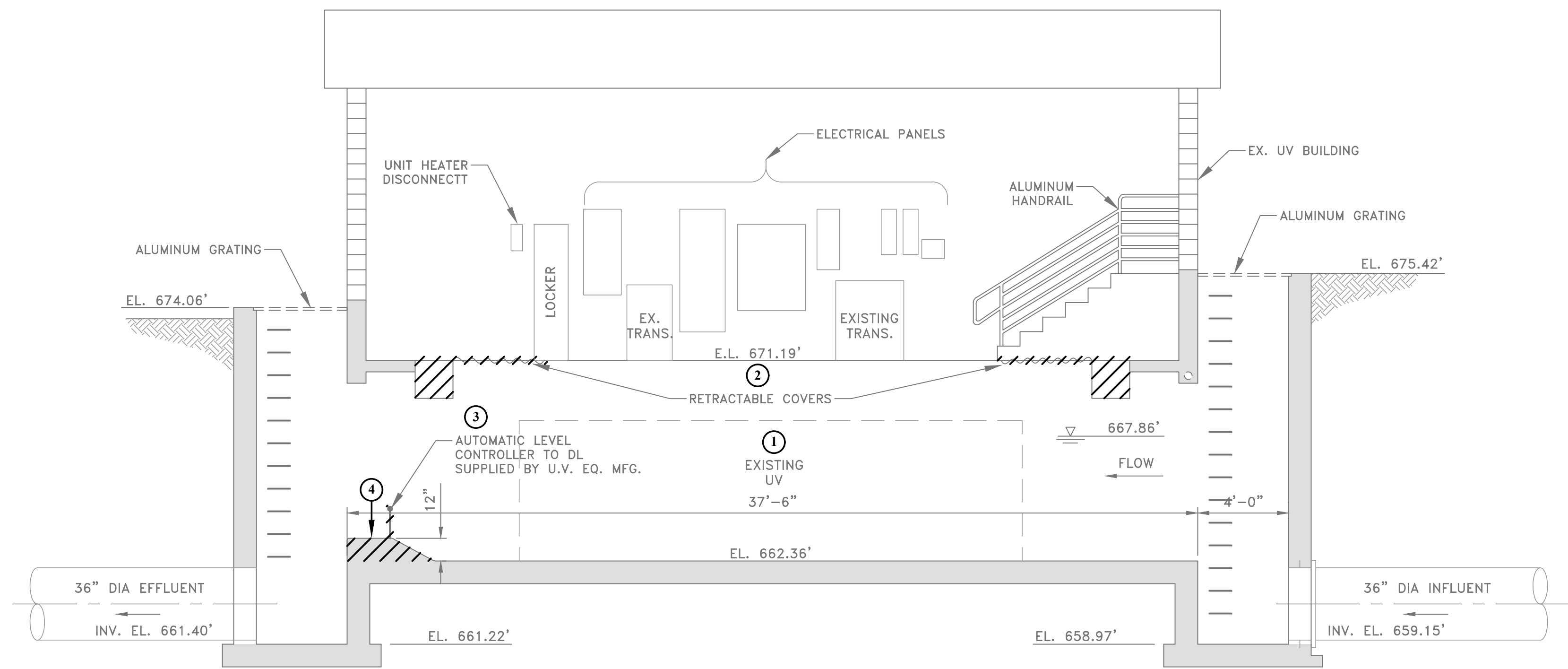
**EXISTING UV BUILDING - DEMOLITION PLAN**

**GENERAL NOTES:**

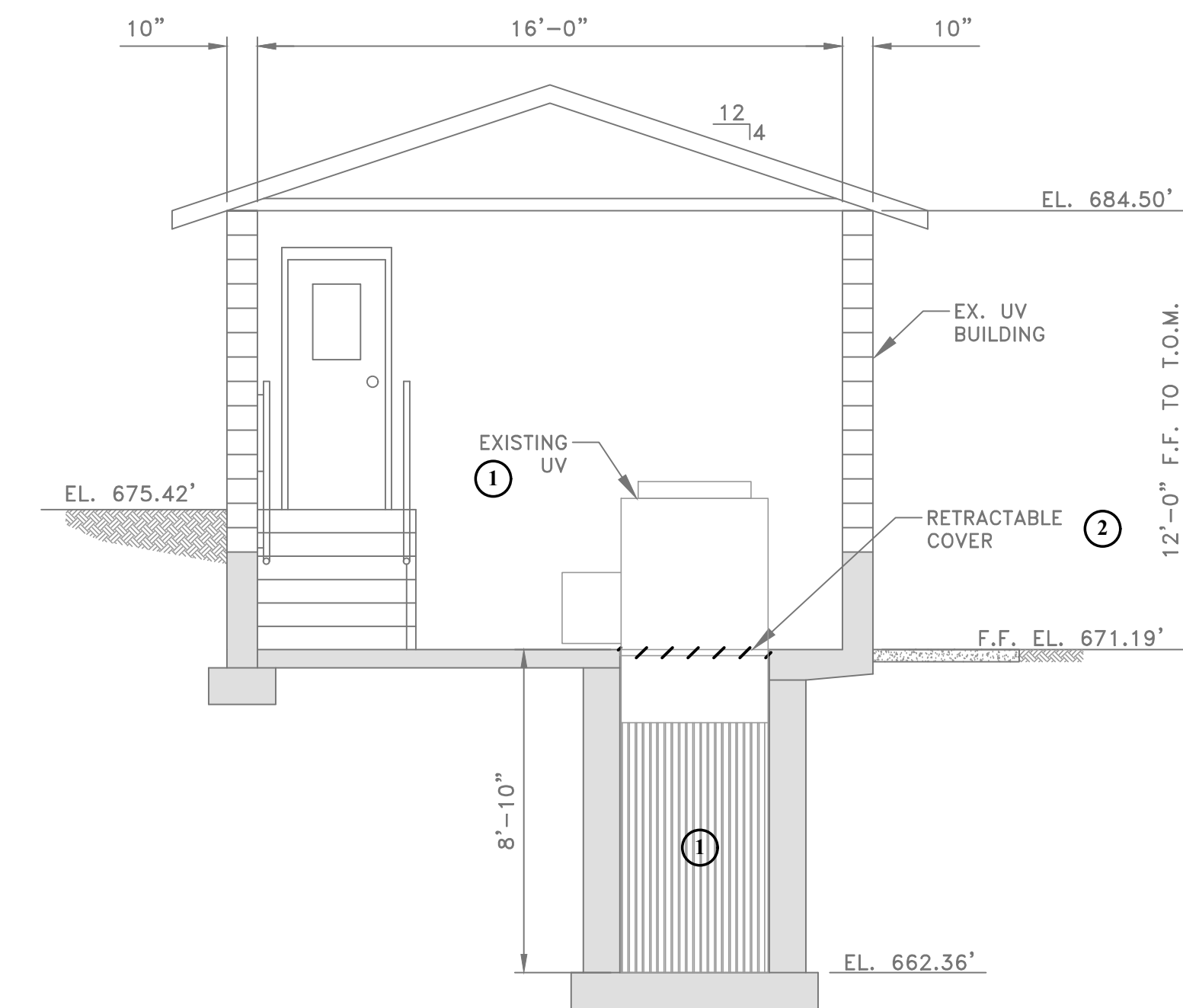
1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE OWNER.
2. CONTRACTOR SHALL REMOVE ALL EXISTING UV EQUIPMENT TO LOCATION DESIGNATED BY OWNER.
3. ALL WORK SHALL BE COORDINATED WITH THE CONSTRUCTION SEQUENCE OF EVENTS. SEE SPECIFICATION 011000.
4. CONTRACTOR SHALL REMOVE ALL SLUDGE AND OTHER MATERIAL IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. CONCRETE SHALL BE CLEANED AND PRESSURE WASHED FOLLOWING REMOVAL ACTIVITIES.
5. ALL ITEMS TO BE DISPOSED SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
6. CONTRACTOR SHALL FIELD VERIFY ALL STRUCTURE DIMENSIONS PRIOR TO ORDERING EQUIPMENT.

**DEMOLITION NOTES:**

- ① CONTRACTOR SHALL REMOVE EXISTING UV UNIT AND ALL ASSOCIATED ELECTRICAL PANELS.
- ② CONTRACTOR SHALL REMOVE EXISTING RETRACTABLE COVERS AND DOOR HOUSING.
- ③ CONTRACTOR SHALL REMOVE EXISTING LEVEL CONTROLLER.
- ④ CONTRACTOR SHALL REMOVE EXISTING CONCRETE, TO EXISTING FLOOR ELEVATION.
- ⑤ CONTRACTOR SHALL RELOCATE UNIT HEATER AND ELECTRICAL DISCONNECT AS NECESSARY. COORDINATE WITH MECHANICAL/ELECTRICAL SHEETS.
- ⑥ CONTRACTOR SHALL RELOCATE LOCKER TO LOCATION DESIGNATED BY OWNER.
- ⑦ CONTRACTOR SHALL REMOVE EXISTING NON-POTABLE PUMPS AND ALL ASSOCIATED PIPING.
- ⑧ TO BE REMOVED



**SECTION A-A**



**SECTION B-B**

**LEGEND**

	ITEM TO BE REMOVED
	EX. STRUCTURE

**ADDENDUM No.2**

NO.	BY	DATE	DESCRIPTION
1	JLA	10/25/23	ADDENDUM No.2 - ADDITIONAL EQUIPMENT TO BE REMOVED

SCALE: 1/4" = 1'-0"
DRAWN: R. STOWERS DATE: 1/2019
CHECKED: J. ALDEN DATE: 5/2020
APPROVED: J. ALDEN DATE: 6/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

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 300 ASSOCIATION DRIVE  
 CHARLESTON, WV 25311  
 www.thrashergroup.com  
 PHONE (304)-343-7601 FAX (304)-343-7604

PHASE No.
CONTRACT No.
PROJECT No.
<b>020-01649</b>

WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING UV SYSTEM  
 DEMOLITION PLAN AND SECTIONS

SHEET No.
<b>13</b>

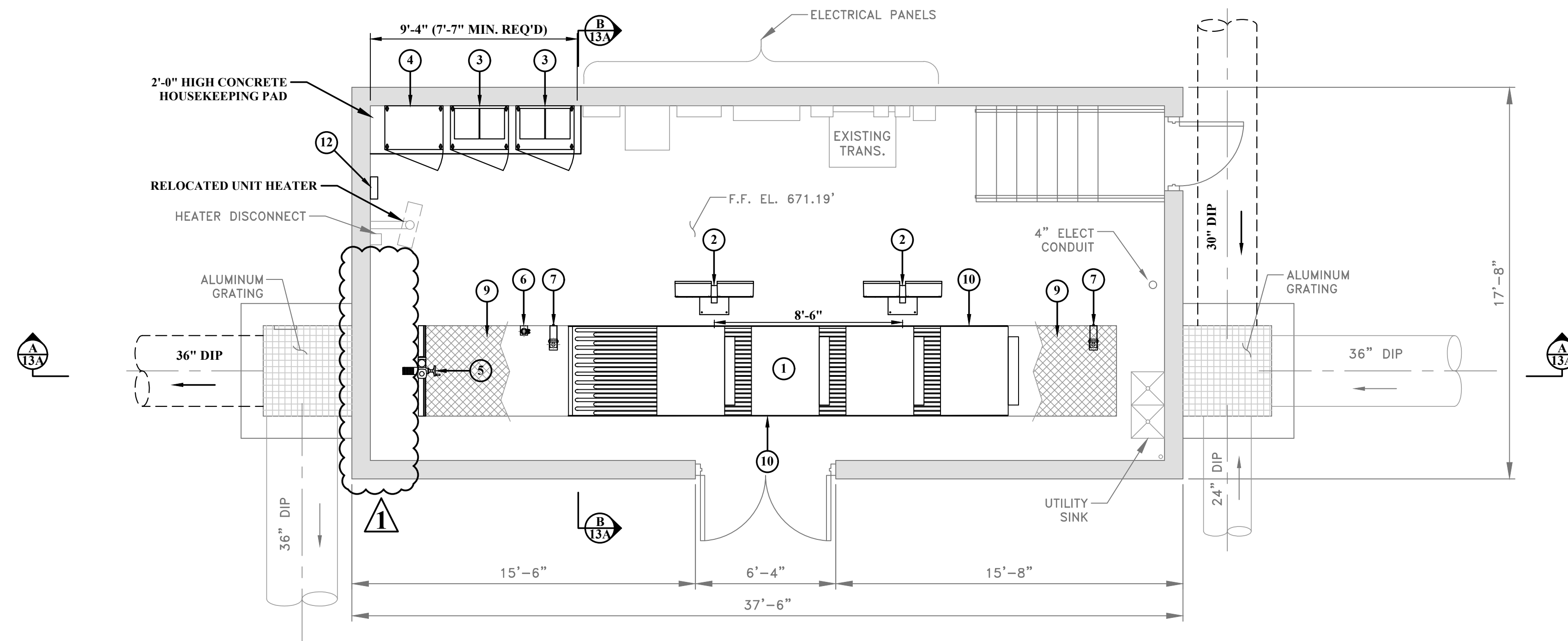
CAD FILE: R:\020\020-1649-WWTP IMPROVEMENTS-WEIRTON-\Drawing\Contract\1\01-015-Ex\_Uv\_Units.dwg  
 PLOT DATE/TIME: 10/25/2023 1:48 PM  
 LAYOUT: Sheet 13A  
 USER: robert.stowers

**GENERAL NOTES:**

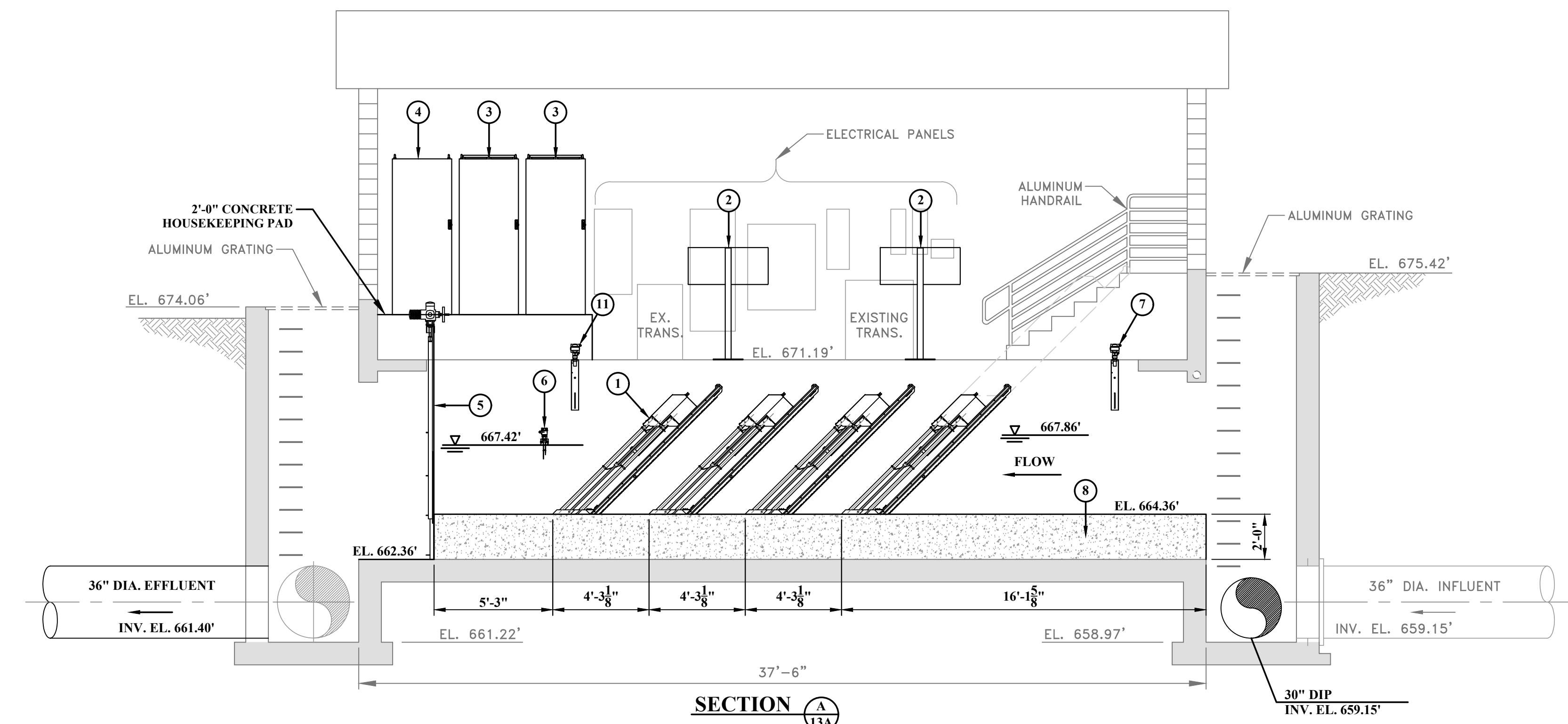
- COORDINATE INSTALLATION WITH ELECTRICAL SHEETS.
- SEE CONSTRUCTION SEQUENCE OF EVENTS IN SECTION 011000.
- CONTRACTOR SHALL INSTALL AND MAINTAIN A TEMPORARY WASTEWATER DISINFECTION SYSTEM AS REQUIRED FOR THE WORK IN THE U.V. BUILDING. REQUIREMENTS FOR TEMPORARY DISINFECTION ARE SPECIFIED IN SECTION 221500.

**KEY NOTES:**

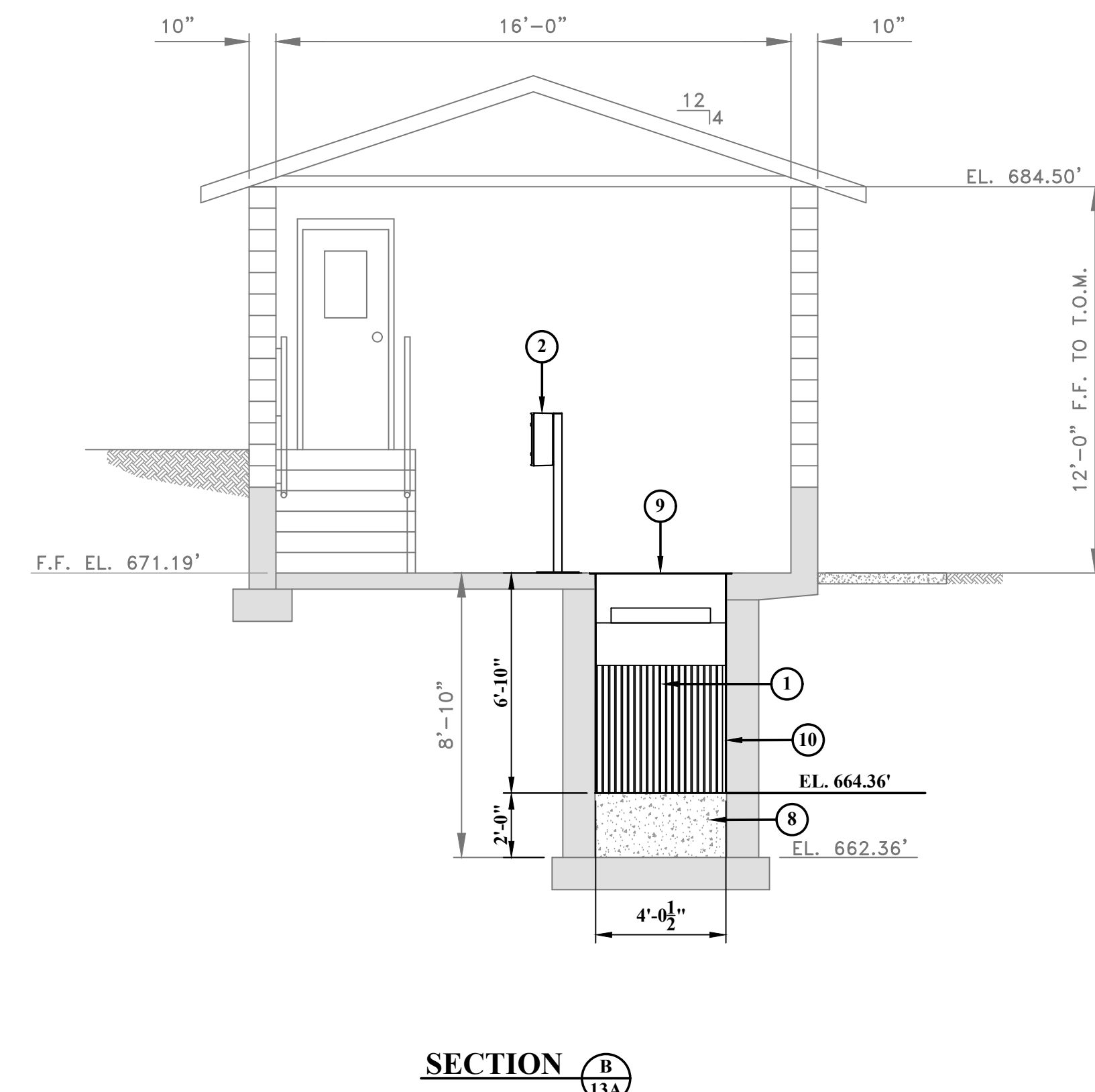
- MODULAR OPEN CHANNEL UV EQUIPMENT.
- UV EQUIPMENT PANEL.
- UV EQUIPMENT BALLAST ENCLOSURE.
- UV EQUIPMENT MAIN CONTROL CABINET.
- DOWNWARD OPENING PENSTOCK. SEE DETAIL ON SHEET No. 13B.
- LOW LEVEL PROBE. MOUNTING BRACKETS TO BE PROVIDED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- ULTRA SONIC LEVEL SENSOR. MOUNTING BRACKETS TO BE PROVIDED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR SHALL RAISE EXISTING CHANNEL FLOOR BY 2'-0". SEE DETAIL ON SHEET No. 13B.
- 1-5/8" THICK FIBERGLASS DECKING W/ REMOVABLE SECTIONS AND SOLID TOP COVER. SEE DETAIL ON SHEET No. 13B.
- 1/4" THICK POLYCARBONATE WALL PANEL. SEE DETAIL ON SHEET No. 13B FOR MOUNTING INFORMATION.
- ULTRA SONIC LEVEL SENSOR / FLOW MONITORING ELEMENT. MOUNTING BRACKETS TO BE PROVIDED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- FLOW METER CHART RECORDER, DATA LOGGER AND ANALYZER. MOUNTING BRACKETS TO BE PROVIDED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.



**EXISTING UV BUILDING - IMPROVEMENTS PLAN**



**SECTION A-A**



**SECTION B-B**

**LEGEND**

	EX. STRUCTURE
	PROPOSED CONCRETE

**ADDENDUM No.2**

1	JLA	10/25/23	ADDENDUM No.2 - EXISTING EQUIPMENT REMOVED
NO.	BY	DATE	DESCRIPTION

SCALE: 1/4" = 1'-0"
DRAWN: R. STOWERS DATE: 1/2019
CHECKED: J. ALDEN DATE: 5/2020
APPROVED: J. ALDEN DATE: 6/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

PHONE (304)-343-7601	FAX (304)-343-7604
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**THRASHER**  
 300 ASSOCIATION DRIVE  
 CHARLESTON, WV 25311  
 www.thrashergroup.com

PHASE No.	
CONTRACT No.	1
PROJECT No.	020-01649

WEIRTON SANITARY BOARD  
 BROOKE COUNTY, WEST VIRGINIA  
 WASTEWATER TREATMENT PLANT UPGRADE  
 EXISTING UV SYSTEM  
 IMPROVEMENT PLAN AND SECTIONS

SHEET No.  
**13A**