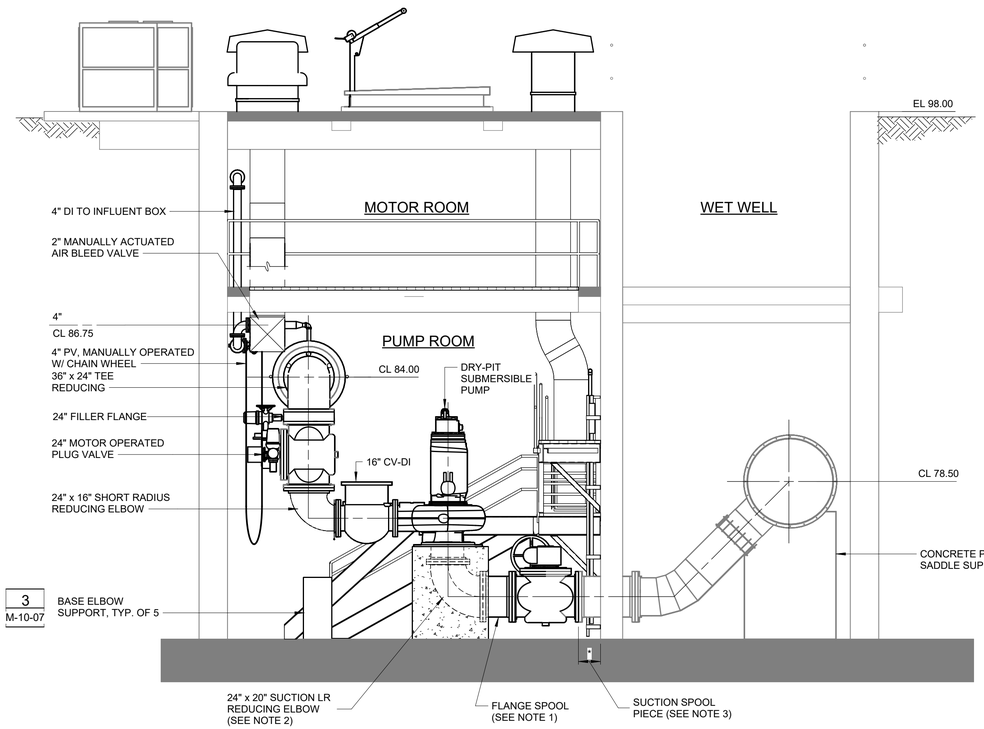
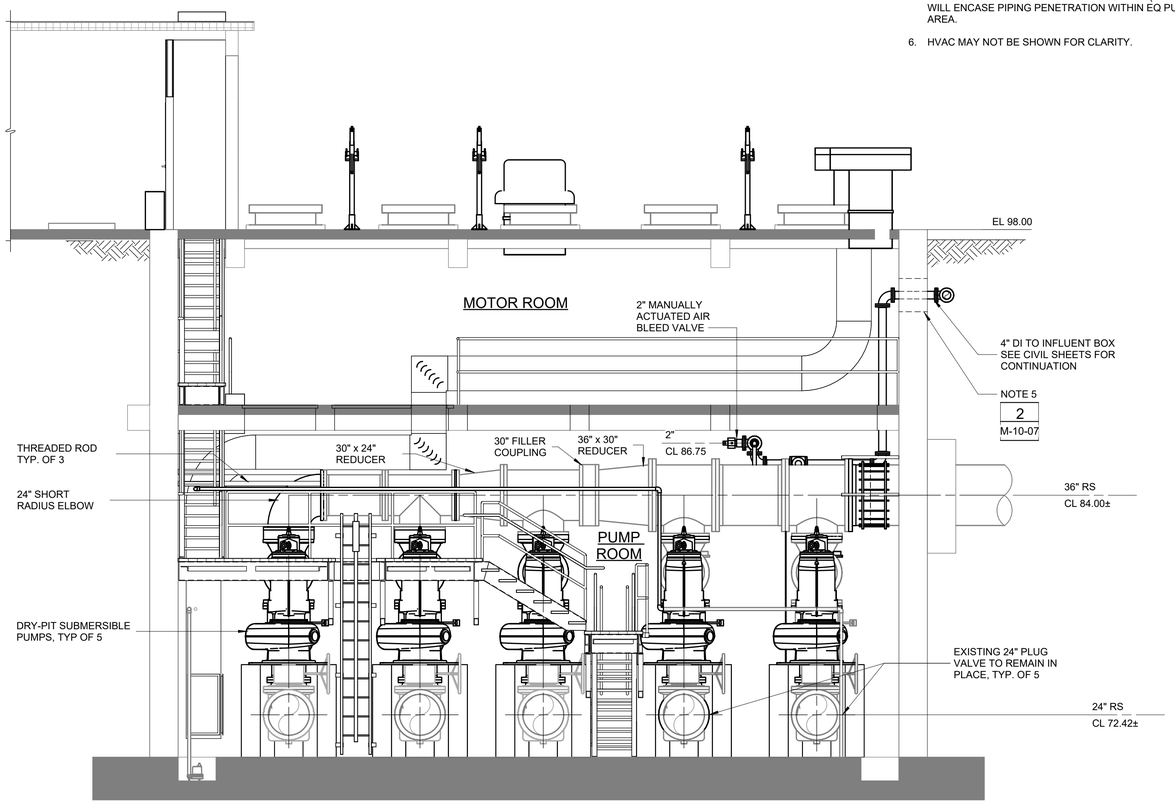
EXHIBIT A2

NOTES:

1. LENGTH OF FLANGE SPOOL VARIES FOR EACH PUMP. CONTRACTOR TO VERIFY THE LENGTH OF FLANGE SPOOL REQUIRED FOR PUMP ALIGNMENT BASED ON PUMP SELECTION.
2. FLYGT USES 24" x 20" SUCTION ELBOW, WHEREAS ~~ABS SULZER USES 24" x 16" SUCTION ELBOW.~~ CONTRACTOR TO VERIFY THE REQUIRED ELBOW SIZE BASED ON PUMP SELECTION.
3. SUCTION SPOOL PIECE LENGTH VARIES FOR EACH PUMP. CONTRACTOR TO FIELD VERIFY LENGTH OF SUCTION SPOOL PIECE FOR EACH PUMP.
4. CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS.
5. CORE HOLES IN EXISTING WALL FOR NEW PIPING. INSTALL PIPE AND RUBBER ANNULAR HYDROSTATIC SEAL (LINK-SEAL) THAT WILL ENCASE PIPING PENETRATION WITHIN EQ PUMP STATION AREA.
6. HVAC MAY NOT BE SHOWN FOR CLARITY.



SECTION A
1/4" = 1'-0" M-10-03



SECTION B
1/4" = 1'-0" M-10-03

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	CD

PROJECT ENGINEER:	K. BLANTON
DESIGNED BY:	B. UPRETI
DRAWN BY:	C. CIFUENTES
CHECKED BY:	C. KUNIHIRO

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

Hazen
HAZEN AND SAWYER
2420 S. LAKEMONT AVENUE, SUITE 325
ORLANDO, FLORIDA 32814

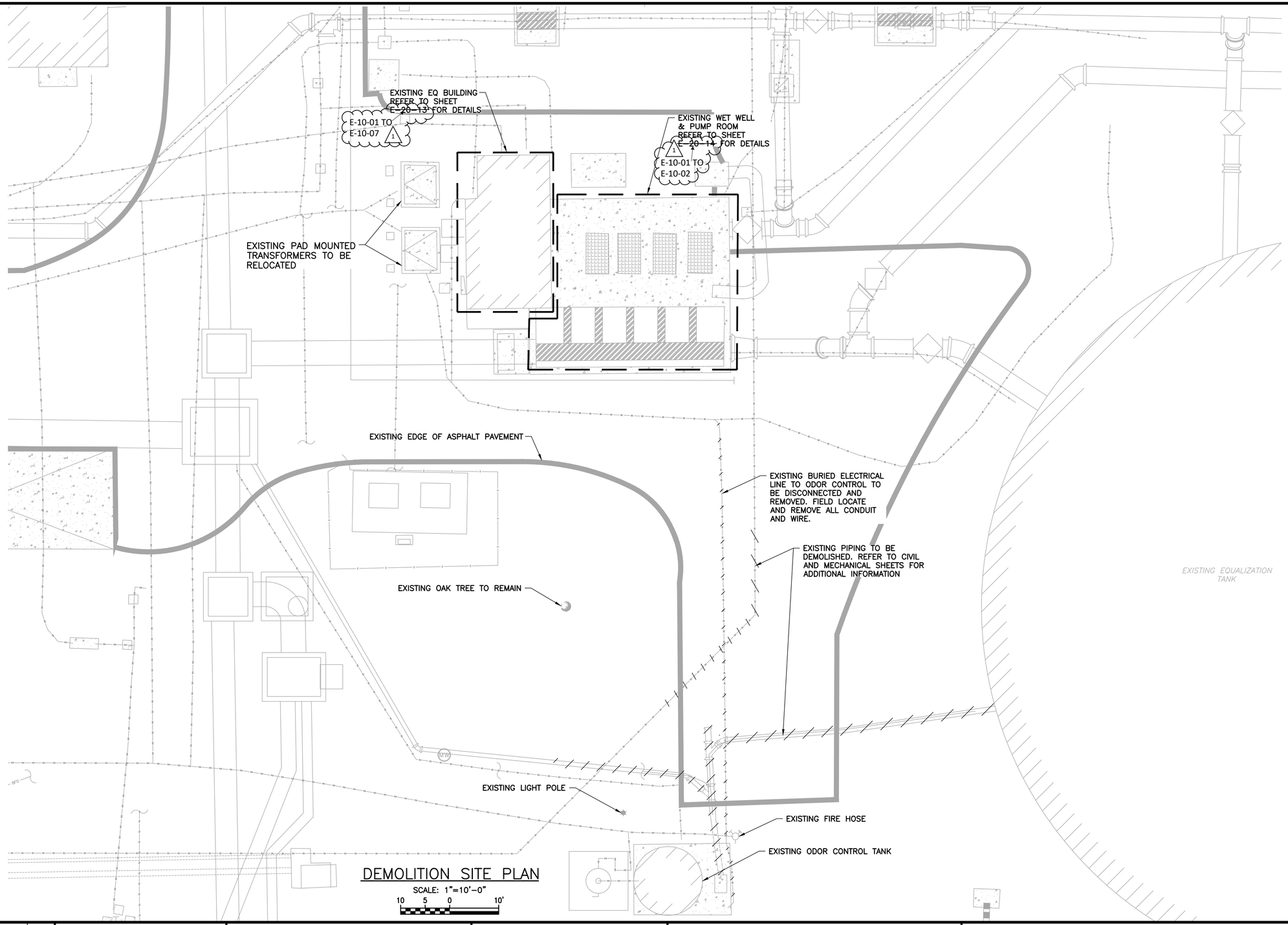
CITY OF ORLANDO

CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

MECHANICAL
EQUALIZATION PUMP STATION
SECTIONS

DATE:	MAR 2026
HAZEN NO.:	44051-001
CONTRACT NO.:	RQS22-0040
DRAWING NUMBER:	M-10-04

EXHIBIT A3



DEMOLITION SITE PLAN

SCALE: 1"=10'-0"

10 5 0 10'

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 311
ORLANDO, FLORIDA 32835
PHONE: (407) 745-5604
FAX: (407) 745-5603
C.O.A. No. 8079
WILLIAM C. NELSON, P.E.
Florida P.E. No. 42017

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	W. NELSON
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

WILLIAM C. NELSON PE. No.42017

Hazen
HAZEN AND SAWYER
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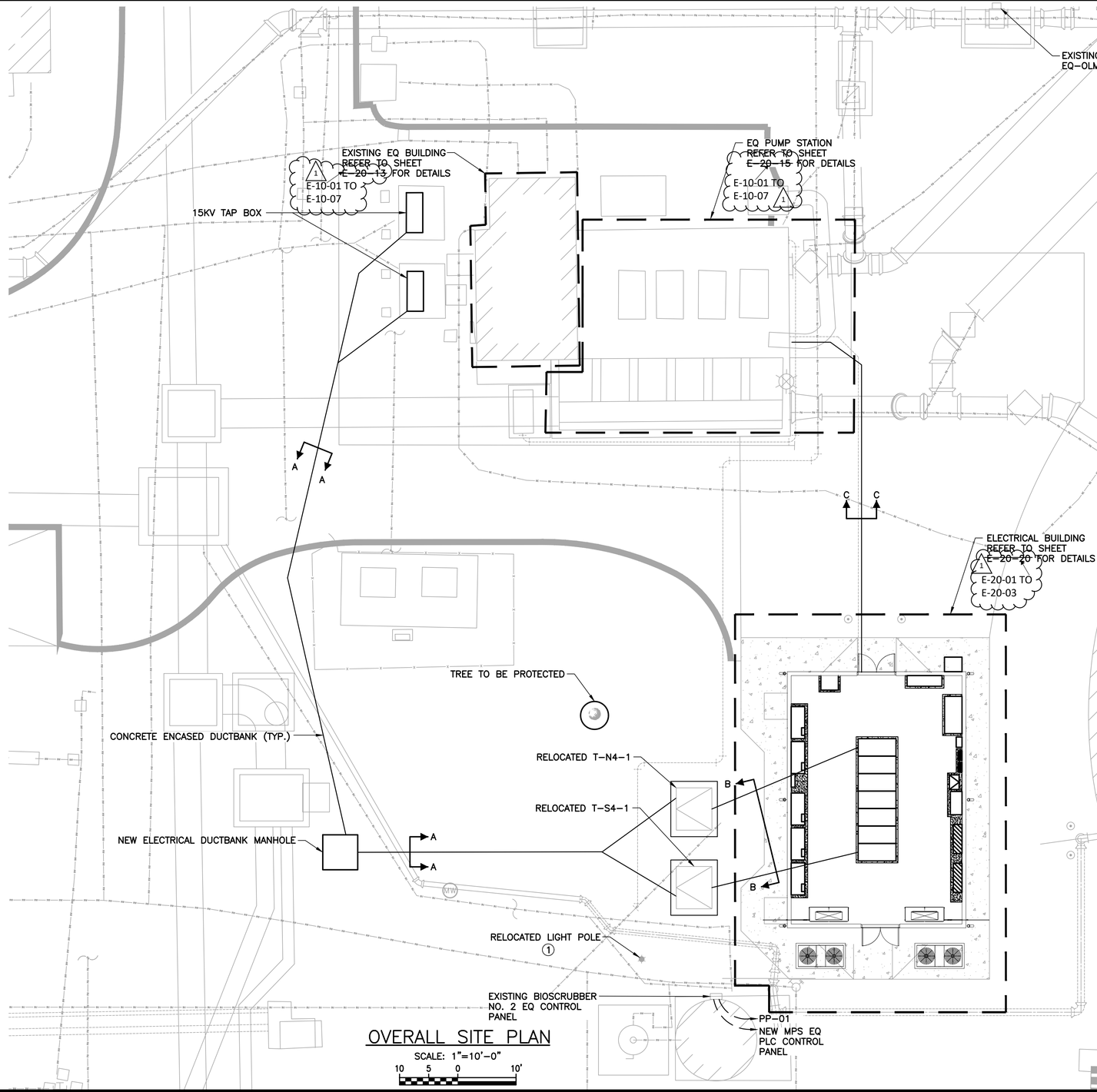
CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

ELECTRICAL
DEMOLITION SITE PLAN

DATE:	JULY 2025
HAZEN No.:	44051-001
CONTRACT No.:	
DRAWING NUMBER:	E-00-01



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Florida P.E. No. 42017

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	LT

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

PROJECT ENGINEER:	W. NELSON
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON

WILLIAM C. NELSON PE. No.42017

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CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

ELECTRICAL
OVERALL SITE PLAN

DATE:	MAR 2026
HAZEN No.:	44051-001
CONTRACT No.:	
DRAWING NUMBER:	E-00-02

EXHIBIT A4

SECTION 15892

FIBERGLASS-REINFORCED PLASTIC DUCTWORK FOR ODOR CONTROL SERVICE

PART 1 – GENERAL

1.01 SUMMARY

A. The Contractor shall furnish and install fiberglass reinforced plastic (FRP) duct, fittings, dampers, expansion joints, pipe supports, and all appurtenances, complete and in place for above-grade Odor Control Service, all in accordance with the requirements of the Contract Documents. See 15009 High Density Polyethylene (HDPE) Pipe for below grade foul air piping.

1.02 REFERENCED SPECIFICATIONS, CODES, AND STANDARDS

A. Codes: All codes, as referenced herein, are specified in Section 01090 – Reference Standards.

B. Commercial Standards

1. ASTM C582 – Standard Specification for Contact-Molded Reinforced Thermosetting Plastic Laminates for Corrosion-Resistant Equipment.

2. ASTM D2583 – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

3. ASTM D2996 – Standard Specification for Filament-Wound “Fiberglass” (Glass-Fiber-Reinforced-Thermosetting-Resin) Pipe.

4. ASTM D3299 - Standard Specification for Filament-Wound Glass-Fiber-Reinforced Thermoset Resin Corrosion-Resistant Tanks.

5. ASTM D3567 – Standard Practice for Determining Dimension of “Fiberglass” (Glass-Fiber Reinforced-Thermosetting-Resin) Pipe and Fittings.

6. ASTM D3982 – Standard Specification for Contact Molded “Fiberglass” (Glass Fiber Reinforced Thermosetting Resin) Duct.

7. NBS PS 15-69 – Custom Contact-Molded Reinforced Polyester Chemical-Resistant Process Equipment.

8. Or similar international standard.

1.03 SUBMITTALS

A. Shop Drawings

1. The Contractor shall submit Shop Drawings of FRP piping systems, including duct, fittings, dampers, and all appurtenances in accordance with the requirements in Section 15000 – Basic Mechanical Requirements, and Division 01, General Requirements.

    a. Calculations and dimensioned duct layout showing locations of supports, hangers, anchors, guides and expansion joints, sealed by a Professional Engineer licensed in the State or Commonwealth in which the project is located. The Professional Engineer shall determine the locations required for any supports not detailed on the Contract Drawings, the type of support necessary for that location, and the locations of expansion joints.

    b. Joint fabrication details.

    c. Field joint hand layup procedures and details.

    d. Shop testing procedure.

    e. Detailed shipping and installation instructions.

    f. Visual inspection checklist.

    g. Recommended bolting torque values for flanged joints.

    h. Details for duct supports and calculations, sealed by a Professional Engineer currently licensed in the State or Commonwealth in which the project is located.

    i. Dampers: Submit manufacturer's product data (materials, construction, dimensions, and installation details), including leakage, pressure drop, and maximum pressure data in accordance with AMCA 500 testing. Submit data for full range of damper sizes provided.

PART 2 – PRODUCTS

2.01 GENERAL

A. Manufacturer: Demonstrate a minimum of five (5) projects in service a minimum of five (5) years constructed of FRP Ductwork. Example projects shall be of a similar size as this project and include ductwork 10” to 14” in diameter.

1. Acceptable Manufacturers include the following:

    a. Ershigs/Belco

    b. Southeastern Fiberglass

06-05-2025

c. Industrial Plastic Systems

d. Perry Fiberglass

e. Daniel Company

f. Engineered Composite Systems (ECS)

g. Ameron International

h. L.F. Manufacturing

i. R.L. Industries

j. Augusta Fiberglass

2. Both the Manufacturer and the installer shall demonstrate experience on at least 5 projects requiring similar fabrication and installation methods.

B. The Manufacturer shall be responsible for design of the ductwork system, including, but not limited to the FRP ductwork, shear collars, expansion joints, duct/piping supports and anchorage which are not detailed on the Contract Drawings, and other appurtenances for a complete and functioning system. This specification is intended to provide minimum standards only and the final design shall be the responsibility of the Manufacturer. Design shall include all vertical and lateral loads on the ductwork system in accordance with the governing Building Code and shall consider the geometry of the ductwork and location of supports as shown in the Contract Drawings.

C. Service Conditions

1. The FRP piping system shall be designed and fabricated for odor control service to carry warm moisture-laden air with hydrogen sulfide, mercaptans and other organic and inorganic compounds typically associated with wastewater treatment.

2. The maximum unsupported spans shall be as follows.

Duct Inside Diameter (Inches)	Maximum Span (Feet)
3 – 14	10

3. Maximum hoop deflection shall be 1% of the duct nominal diameter, including all service loads.

4. Duct wall thickness shall be designed by the Manufacturer to meet the criteria specified in this Section. The minimum wall thickness for all FRP duct shall be the greater of the calculated thickness or the following:

Duct Inside Diameter (Inches)	Wall Thickness (Inches)
3 – 16	0.1875

5. Resin:

   a. Resin shall be premium corrosion resistant and fire retardant brominated bisphenol-A vinyl ester. Fillers are only permitted for flame retardance. The product shall have a Class 1 flame spread rating (25 or less). Thixotropic agents can be added to control resin viscosity per resin manufacturer's recommendation.

   b. Acceptable resins with no more than 3 percent antimony trioxide shall be:

      1) Reichhold Dion 9300 FR.

      2) Interplastics CoRezyn 8440.

      3) Ashland Chemical Hetron FR992.

      4) AOC Vipel K-022

      5) Or equal.

6. Reinforcement:

   a. Surfacing veil shall be C glass veil with a silane finish and a styrene soluble binder.

   b. Chopped strand mat shall be Type E glass minimum 1-1/2 ounces per square foot with silane finish and styrene soluble binder.

   c. Continuous roving for chopper gun spray up shall be Type E glass. Chopper gun is only permitted if an automated process is used. Manual operation of chopper gun shall not be permitted.

   d. Woven roving shall be Type E glass minimum 24 ounces per square yard with a five by four weave.

   e. Continuous roving for filament winding shall be Type E glass with a silane finish.

D. Construction

1. All FRP ductwork shall be of filament wound or hand lay-up construction.

2. Maximum allowable deflection for any size ductwork shall be ½ inch between supports for any size of duct under worst case design conditions.

3. FRP ductwork shall be designed using a safety factor of 10 to 1 for pressure and 5 to 1 for vacuum. FRP ductwork shall be designed for a maximum vacuum pressure of 20” w.c. and a maximum positive pressure of 12” w.c.

4. Location: Outside or inside as shown on the Drawings.

5. Ambient temperature: 0 degrees F to 120 degrees F.

6. Wind and Seismic Loads: Meet requirements shown on the structural drawings.

7. Out of roundness of duct shall be limited to ± ¼ inch for duct sizes greater than 30 inches in diameter.

8. Length of all flanged duct sections shall not vary more than ± ½ inch at 70°F.

9. All unflanged duct shall be square on the ends in relation to the center axis within ± 1/8 inch up to and including 24-inch diameter and within ± 3/16 inch for all diameters greater than 24 inches.

10. Laminates

    a. All ductwork shall have a resin-rich inner surface, an interior corrosion barrier, an interior structural layer and an exterior layer.

    b. Ductwork to meet or exceed requirements of ASTM D3982, ASTM D2996, ASTM D3567, and ASTM C582 or any applicable international standards.

    c. Inner surface: Minimum 20 mils thick composed of a single ply of the Type C glass surfacing veil embedded in a resin rich surface. Resin content shall be 90%.

    d. Interior layer: Minimum of at least two layers of 1 ½ oz per square foot chopped strand mat. Resin content shall be 75%. The combined thickness of the inner surface and interior layer shall be a minimum of 100 mils thick.

    e. Structural layer: Type E glass to meet minimum wall thickness as specified. The total wall thickness includes the inner surface and inner layer. The total wall thickness does not include the exterior layer.

        1) Contact molded structural layer shall include alternate layers of chopped strand mat and woven roving.

        2) Filament wound structural layer shall be preceded by a layer of chopped strand mat or spray chop. The structural layer shall consist of a minimum of three complete cross hatched layers of continuous filaments applied in a helix angle per ASTM D3299.

f. Exterior layer: Factory applied paraffinated gel coat with UV inhibitors. Pigmentation shall be determined by the Owner. Pigmentation shall not be added to the exterior layer until visual inspection is completed.

g. The duct shall have a Barcol hardness of at least 90 percent of the resin manufacturer's minimum specified hardness for the cured resin when tested in accordance with ASTM D2583.

11. Fittings:

a. All fittings shall be hand-layup construction fabricated from the same resin and having the same strength as the FRP ductwork.

b. The internal diameter of all fittings shall be equal to the adjacent duct.

c. The tolerance on angles of all fittings shall be ± 1° up to and including 24-inch diameter.

12. Elbows:

a. The centerline radius of all elbows shall be 1-1/2 times the diameter.

b. Elbows 24-inch diameter and small shall be smooth radius. Elbows 30 inches and larger shall be mitered. Provide a minimum of two mitered joints for all elbows up to and including 45 degrees and four mitered joints for elbows up to and including 90 degrees.

13. Flanges:

a. Provide flanged connections to dampers, flexible connectors, expansion joints, vessels, demisters, fans, silencers and other locations as shown on the Drawings.

b. Flanges shall be hand lay-up construction, fabricated from the same resin and having the same ratings as the FRP ductwork. Dimensions shall be in accordance with NBS PS 15-69.

c. Flanges shall be drilled in accordance with NBS PS 15-69 Table 2. Flange faces shall be suitable for use with full face gaskets. Backs of bolt holes shall be spot faced for a standard diameter washer.

d. Flange faces shall be perpendicular to the axis of the duct within ½ inch.

e. Flange faces shall be flat to within ± 1/32 inch up to and including 18-inch diameter ducts and flat within ± 1/16 inch for 20-inch diameter ducts and larger.

f. Gaskets shall be EPDM, full face and minimum 1/8-inch thickness.

g. Provide all Type 316 stainless steel bolts, nuts and washers.

14. Joints:

a. Provide all butt and strap joints in accordance with NBS PS 15-69.

b. Field weld kits shall be supplied by the duct manufacturer. All necessary fiberglass and reinforcing material shall be supplied pre-cut and individually packaged for each joint.

c. All resin, catalyst and putty shall be supplied in bulk to complete all field joints plus 25% extra for waste.

15. Provide minimum ¼ inch buildup of FRP over the duct at each duct support location. FRP buildup shall extend a minimum of 2 inches on either side of the pipe support saddle.

16. Shear Collars:

a. Shear collars shall be provided where specifically called for on Drawings and in additional locations as required to provide for support of the ductwork system.

b. Shear collars consist of a buildup of FRP over the duct on each side of the duct support to provide longitudinal restraint of the ductwork.

c. Shear collars shall be considered to be points of fixity in the ductwork system. They shall have sufficient strength to withstand wind and seismic loads on the ductwork acting in any direction for the tributary length of the duct.

2.02 EXPANSION JOINTS

A. Provide expansion joints where shown on the Drawings and as required to avoid damage to the duct or equipment. For straight duct runs, locate expansion joints every 75 feet or less. There must be a minimum of 1 expansion joint in each straight duct run, at the inlet and exhaust of all equipment, and at each duct connection to a fixed structure.

B. Type: W-design configuration with integral flanges suitable for service with FRP duct under the conditions specified.

C. Material: EPDM.

D. Backing Rings: 3/8 inch thick, 2 inches wide, Type 316 stainless steel.

E. Extension: 1.5 inches.

F. Compression: 2.5 inches.

G. Lateral Offset: 2.0 inches.

H. Thickness: ¼ inch, minimum.

I. Bolts, Nuts and Washers: Type 316 stainless steel.

J. Expansion joints shall be manufactured by RM-Holz, The Metraflex Company, Garlock, or equal.

2.03 DUCT HANGERS AND SUPPORTS

A. All duct supports, interior and exterior, shall meet the requirements of Section 15020 – Pipe Supports, except that hangers and supports for FRP duct spacing shall be as specified in Paragraph 2.01 C-2 of this Section. Duct spans shall not exceed the duct manufacturer's recommendations.

B. The Contractor shall note that not all duct support locations are shown on the Drawings, and the Contractor shall follow the Specifications herein in locating additional supports as required. The Contractor shall be responsible for the design of additional supports and for the overall stability of the entire support system. Support and hanger details and a detailed layout showing the location of all duct supports and hangers shall be submitted in the Shop Drawings and stamped by a registered Professional Engineer licensed in the State of Florida.

C. There shall not be less than ¼ inch buildup of FRP over the duct at each saddle support. FRP buildup shall extend a minimum of 2 inches on either side of the pipe support saddle.

D. Unless otherwise shown on the Drawings, duct supports are to be fabricated from Type 316 Stainless Steel. All fasteners and anchors are to be Type 316 Stainless Steel.

E. Provide duct supports on both sides of each expansion joint.

PART 3 – EXECUTION

3.01 INSTALLATION

A. General: All FRP duct shall be installed in a neat and workmanlike manner, properly aligned, and cut from measurements taken at the site to avoid interferences with structural members, architectural features, openings and equipment. Exposed pipes shall afford maximum headroom and access to equipment, and where necessary. All installations shall be acceptable to the Engineer. It is recommended that the Contractor obtain the assistance of the duct manufacturer's field representative to instruct the duct fitters in the correct installation and support of all FRP duct. The Contractor shall obtain

training by the duct manufacturer's field representative in the correct installation and support of all FRP duct. Instruction shall be a minimum of one eight (8) hour day.

B. Sloping: All piping shall be installed with sufficient slopes (minimum 1/8" per foot) for venting and drainage of liquids and condensate to low points. Provide 1" port with CPVC p-trap and CPVC ball valve at each low point for condensate removal.

C. Supports and Anchors: All duct/piping shall be firmly supported in accordance with the requirements of the Specifications. Supports shall be provided where necessary to avoid overstressing equipment, ductwork, or structural members. Expansion joints and guides shall compensate for pipe expansion due to temperature differences. Provide a minimum of one expansion joint in each straight run (maximum spacing is 75 feet between joints for long runs) and at the connections to each structure and entrance/exit to each vessel, piece of equipment, and fan.

3.02 DUCT PREPARATION

A. Prior to installation, each duct length shall be carefully inspected, flushed clean of any debris or dust, and straightened, if not true. All pipe fittings shall be equally cleaned before assembly.

3.03 DUCT JOINTS

A. Adhesive Joints: Adhesive joints shall be made with freshly mixed 2-part epoxy on clean dry duct ends. The joints shall be made up at the recommended ambient temperatures, to the duct manufacturer's written recommendations. All duct ends shall be inserted to the full depth of the socket.

B. Flanged Joints: Flanged joints shall be made up in accordance with Section 15000 – Basic Mechanical Requirements.

3.04 INSPECTION AND FIELD TESTING

A. Inspection: All finished installations shall be carefully inspected for proper joints and sufficient supports, anchoring, interference, and damage to duct, fittings, and coating. Damage and leaks shall be repaired to the satisfaction of the Engineer.

B. All ductwork shall be leak tested in accordance with SMACNA Air Duct Leakage Test Manual, or appropriate international standard. Duct system shall be sealed to provide a system that is within an allowable leakage limit of 2.5 percent of total air flow at system operating flow and pressure. The ductwork test report shall be submitted to the Engineer.

C. If the system is testing in sections, the leakage rates shall be added to define the performance of the whole system.

D. Check out and certification of the installation, supervision of initial operation, and training related to the FRP butterfly dampers shall be performed in accordance with Section 15095 – Valves, General and Section 15100, Valve Operators and Electric Valve Actuators and other applicable Sections of these Specifications.

E. Ductwork system shall be tested, adjusted and balanced (TAB) following the general requirements of the SMACNA HVAC Systems Testing, Adjusting, and Balancing Manual to provide airflow rates as shown on the Drawings from each individual take-off point within a tolerance of +/- 5%. Submit testing, adjusting, and balancing plans and final reports bearing the seal and signature of the Test and Balance Engineer. Mark equipment settings, including damper control positions, valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.

END OF SECTION

EXHIBIT A5

SECTION 15009

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Reference Section 15000 – Basic Mechanical Requirements.

PART 2 – PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

A. All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. HDPE pipe shall be manufactured in accordance with ASTM F-714 and resin material shall meet the specifications of ASTM D-3350 with a minimum cell classification of 445574C. The pipe shall be SDR11, minimum.

B. The HDPE pipe shall have an elastic modulus of 100,000 psi as tested under ASTM D-638. The brittleness temperature shall be not greater than –180ºF nor the Vicat Softening Temperature less than 255ºF as tested under ASTM D-746 and D-1525, respectively. The coefficient of thermal expansion shall be 8×10^{-5} inch/ºF as tested under ASTM D-696. The Shore Hardness D shall be greater than 61 as tested under ASTM D-2240. The Hydrostatic Design Stress Basis (HDB) shall be 1,600 psi at 23ºC and 800 psi at 60ºC as tested under ASTM D-2837. The pipe shall contain no recycled materials or compounds.

C. HDPE pipe shall be marked either continuously or on intervals not to exceed five (5) feet by indirect printing with the following information:

1. Name and/or trademark of the manufacturer.

2. Nominal pipe size.

3. Dimension ratio.

4. The letters PE followed by the polyethylene grade per ASTM D-1248, followed by the Hydrostatic Design basis in 100's of psi.

5. Manufacturing Standard Reference.

6. Production Code from which time and date of manufacture can be determined.

D. The pipe shall be color coded for the intended service in accordance with APWA/ULCC Color Code Standards. The color coding shall be permanently co-extruded stripes on the pipe outside surface as part of the pipe manufacturing process.

E. Mechanical connections of polyethylene pipe to systems or fittings of other materials, or to unlike SDR, shall be by means of flanged connections (flange adapters and back up rings rated for the same pressure service as the system piping), or mechanical compression couplings designed for jointing HDPE to HDPE or HDPE to another piping material where approved by the Engineer.

2.02 HIGH DENSITY POLYETHYLENE (HDPE) FITTINGS

A. HDPE fittings shall be manufactured to the requirements of ASTM D-3261, AWWA C906, and this Section. Fabricated fittings shall be manufactured from pipe of the same material, manufacturer, and outside diameter and at least one SDR heavier pipe than the system piping and shall be pressure rated to match the system piping. The butt fusion outlets of fabricated fittings shall be machined to the same SDR as the system piping to which they are to be fused. Molded fittings shall be manufactured to the same SDR and pressure class as the system piping. The manufacturer shall subject samples of each production lot of molded fittings to x-ray inspection for voids. Voids shall not be permitted. Should voids be found in the samples, the entire production lot shall be x-ray inspected. If additional voids are found, the production lot shall be rejected. The x-ray testing shall be conducted by an independent laboratory and certified test reports made available to the Engineer upon request. Initial sampling shall be limited to not less than 5% of the production lot. Markings for molded fittings shall comply with the requirements of ASTM D 3261. Fabricated fittings shall be marked in accordance with ASTM F 2206.

1. Fabricated fittings shall be mitered and have the following number of pieces:

a. Less than 30 degrees: 2 pieces

b. 30 degrees and greater, up to 45 degrees: 3 pieces

c. 45 degrees and greater, up to 67.5 degrees: 4 pieces

d. 67.5 degrees and greater, up to and including 90 degrees: 5 pieces.

B. HDPE pipes and fittings shall be joined one to another by thermal butt fusion, saddle fusion, or socket fusion in accordance with procedures recommended by the pipe manufacturer and as outlined in ASTM D-2620. The manufacturer shall provide fusion training services to the Contractor upon request.

C. Electrofusion Fittings – Electrofusion Fittings, where allowed by the Engineer via approval in writing, shall have a manufacturing standard of ASTM F1055.

1. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans.

2. All electrofusion fittings shall be suitable for use as pressure conduits and have nominal burst values of four times the Working Pressure Rating (WPR) of the fitting. Markings shall be according to ASTM F 1055.

3. Service saddles shall have a threaded connection in accordance with Owner's requirements. Saddles shall be manufactured by GF Central Plastics, or equal.

4. The electrofusion fittings shall be installed by qualified personnel. Proof of qualification will be required. The Contractor shall formally submit product information for the electrofusion fittings and equipment including the manufacturer's installation procedures for Engineer's review.

D. Flanges and Mechanical Joint Adapters (MJ Adapters) – Flanged and Mechanical Joint Adapters shall be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206.

1. Flanges and MJ Adapters shall have a pressure rating equal to the pipe unless otherwise specified. Flanged connections and mechanical couplings shall only be used where specifically shown on the Drawings or allowed by the Engineer

2. Flange joints shall consist of the following: a polyethylene flange thermally butt-fused to the stub end of the pipe, a back-up ring to mate to another back-up ring or flange, bolts and nuts, full-face gaskets. Bolts, nuts and backup rings shall match those specified for adjoining piping, or if not specified, shall be Type 316 stainless steel. Flanged stub-end pieces shall have sufficient through-bore length to allow being clamped in a butt fusion machine without the use of a stub end holder, and shall have the face machined with small V-shaped grooves.

3. Flanged joints shall use compatible bolts in accordance with the American Standard Gaskets of reinforced rubber or asbestos-rubber shall be required when joining to non-HDPE materials (except use EPDM where chlorine residual is present). Flanged HDPE joints shall be gasketed at all service pressures.

4. Bolts in flanged joints shall be evenly torqued in a crossing pattern. Bolts shall be re torqued after one hour or more has passed. HDPE pipe adjacent to flanged joints and the joints themselves shall be rigidly supported for a distance of one foot or one pipe diameter, whichever is greater, beyond the flange assembly.

5. Mechanical joint adapters shall consist of the following: a polyethylene Mechanical Joint (MJ) adapter thermally butt-fused to the stub end of the pipe, a back-up ring to mate to the pairing mechanical joint, bolts and nuts, and a mechanical joint gasket. Materials shall be specifically compatible to the application.

6. Markings for molded or machined flange adapters or MJ Adapters shall be per ASTM D 3261. Fabricated (including machined) flange adapters shall be per ASTM F 2206.

7. Van-Stone style, metallic (including stainless steel), convoluted or flat-plate, back-up rings and bolt materials shall follow the guidelines of PPI TR-38, and shall have the bolt-holes and bolt-circles conforming to the pairing flange (e.g., one of these standards: ASME B-16.5 Class 150, ASME B-16.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E). The back-up ring shall provide a long-term pressure rating equal to or greater than the pressure-class of the pipe (and adjoining pipe) with which the flange adapter assembly will be used, and such pressure rating shall be marked on the back-up ring. Flange assemblies shall be assembled and torqued according to PPI TR-38 “Bolt Torque for Polyethylene Flanged Joints.”

E. When mechanical compression couplings are used HDPE pipes shall be reinforced by a stiffener in the pipe bore. Stiffeners shall be properly sized from the size and SDR of pipe being joined. Mechanical couplings shall be installed in accordance with the manufacturer's recommended procedure.

2.03 BUTT FUSION EQUIPMENT

A. Butt fusion equipment shall contain stops to prevent excessive pressure on pipe ends during fusion process including equipment to plane pipe ends prior to fusion process. Contractor shall provide a data logger to document temperatures and pressures for each butt fusion joint.

PART 3 – INSTALLATION

3.01 PIPE INSTALLATION

A. Reference Section 15000 – Basic Mechanical Requirements.

B. Buried HDPE pipe and fittings shall be installed in accordance with ASTM D2321 or ASTM D2774 for pressure systems and AWWA Manual of Practice M55 Chapter 7.

C. Slings for handling the pipeline shall not be positioned at pipe joints. Sections of the pipes with cuts and gouges or excessive deformations shall be removed and replaced.

D. Install in accordance with pipe manufacturer’s installation manual and recommendations.

E. The Contractor shall be responsible for the proper assembly of all pipe and appurtenances in accordance with the pipe manufacturer’s written procedure. Prior to joint assembly, all joints and joint components shall be thoroughly cleaned and

examined to assure proper assembly and performance. Contractor shall be experienced with the assembly of the type of flexible restrained joint being used.

F. Pressure testing shall be conducted in accordance withthe Manufacturer's recommended procedure. Pressure testing shall use water as the test media.

3.02 JOINING METHODS

A. Butt Fusion

1. HDPE pipes and fittings shall be joined one to another by thermal butt fusion in accordance with procedures recommended by the pipe manufacturer and as outlined in ASTM F 2620 or PPI TR-33. The manufacturer shall provide fusion training services to the Contractor upon request. Fusion joints shall be made by qualified fusion technicians per PPI TN-42. The pipe manufacturer's butt fusion processes shall be followed at all times as well as the recommendations of the fusion machine manufacturer.

2. Butt fusion joining of unlike SDR's shall not be permitted. Transition from one SDR to another shall be accomplished by the use of mechanical couplings or a transition nipple, which is a short length of the heavier SDR pipe with one end machined to the lighter SDR.

3. On each day butt fusions are to be made; the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12 inches or 30 times the wall thickness in length (minimum) and one (1) inch or one and a half (1.5) times the wall thickness in width (minimum). Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made, cooled completely and tested. Butt fusion of a pipe to be installed shall not commence until a trial fusion has passed the bent strap test. For pipes thicker than 1", the first fusion of each day shall be tested in accordance with ASTM F3183 using a "Guided Side Bend Tester" in lieu of the mechanical means noted above.

4. Prior to heating of the joint each pipe section to be butt fused will require the ends to be planed in the fusion machine to assure the ends will mate at the fusion point. The pipe ends shall be pushed together in the fusion machine to make a visual check of the computability and alignment of the two ends.

5. The Contractor shall adhere to the manufacturer's procedures and recommended heating time for the pipe ends based upon pipe diameter and ambient temperature. A visual inspection shall be made immediately upon removal of the heating element to verify blistering of the pipe has not occurred. The integrity of the heating plate in the fusion equipment shall be checked a minimum of twice per each 8 hour work shift for temperature uniformity.

6. Upon completion of the fusion process for each joint, the pipe shall not be removed from the fusion machine until the pipe has cooled in accordance with the pipe manufacturer's published installation guidelines.

B. Saddle Fusion

1. Saddle fusion shall be done in accordance with ASTM F 2620 or TR-41 or the fitting manufacturer's recommendations and PPI TR-41.

2. Saddle fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of fusion training within the past year on the equipment to be utilized on this project.

C. Socket Fusion

1. Molded socket fusion fittings are only to be used for joining of HDPE pipe between 1/2 inch and 2 inch diameter. Socket fusion shall be done in accordance with ASTM F 2620 or the fitting manufacturer's recommendations.

2. Socket fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized for this project.

D. Electrofusion

1. Electrofusion joining shall be done only where allowed by the Engineer via approval in writing.

2. Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F 1290 and PPI TN 34.

3. The electrofusion box must be capable of reading and storing the input parameters and the fusion results for later download to a record file.

4. Electrofusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized for this project. No electrofusion fittings shall be fused in the absence of the engineer to observe the preparation and fusion process.

E. Mechanical

1. Mechanical connections of polyethylene pipe to systems or fittings of other materials, or to unlike SDR, shall be by means of MJ or flanged connections (MJ

or flange adapters and back up rings rated for the same pressure service as the system piping), or mechanical compression couplings designed for jointing HDPE to HDPE or HDPE to another piping material.

2. Mechanical couplings, including tapping saddles, couplings, clamps etc. shall be recommended by the manufacturer as being designed for use with HDPE pipe at the pressure class listed in this section.

3. Unless specified by the fitting manufacturer, a restraint harness or concrete anchor shall be used with mechanical couplings to prevent pullout.

4. Mechanical coupling installation shall be performed by qualified technicians. Qualification of the field technician shall be demonstrated by evidence of mechanical coupling training within the past year. This training shall be on the equipment and pipe components to be utilized for this project.

5. Prior to installing saddles, the pipe shall be inspected for scratches or damage that might create a leak path.

6. Bolts in flanged joints shall be evenly torqued in a crossing pattern. Bolts shall be re-torqued after one hour or more has passed. HDPE pipe adjacent to flanged joints and the joints themselves shall be rigidly supported for a distance of one foot or one pipe diameter, whichever is greater, beyond the flange assembly.

END OF SECTION

EXHIBIT A6

NOTES:
1. CONTRACTOR TO FIELD VERIFY EXACT LINE LOCATION AND DEPTH
2. RECLAIMED WATER LINE RELOCATION IS SHOWN ON DRAWING C-01-03.

N

EXISTING EQUALIZATION PUMP STATION

SAW OFF EXISTING 14" FRP PIPE, ENSURING A CLEAN AND SQUARE CUT. PREPARE PIPE ENDS.

PHOTO 2 - ABOVE GROUND PIPING AT EQUALIZATION TANK
SCALE: NTS

BURIED ELECTRIC. SEE ELECTRICAL SITE PLAN FOR RELOCATION

REMOVE 3" ALUM LINE

REMOVE 10" FRP FOUL AIR LINE

REMOVE 14" FRP FOUL AIR LINE

DISCONNECT RW LINE FROM HOSE BIBB

SEE PHOTO 1 FOR DEMOLITION OF ABOVE GRADE PIPING.

REMOVE 4" RECLAIMED WATER LINE (SEE NOTE 2)

3" RPZ BACKFLOW PREVENTER ASSEMBLY

SEE PHOTO 2 FOR DEMOLITION OF ABOVE GROUND PIPING AT THE EQ TANK

EQUALIZATION TANK

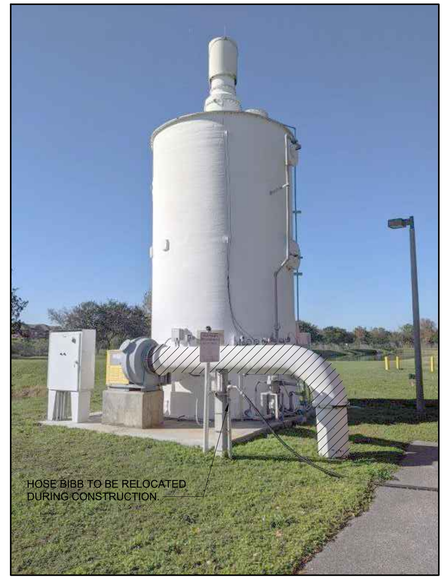


PHOTO 1 - ODOR CONTROL ABOVE GROUND
SCALE: NTS

CATCH BASIN
TOP OF GRATE ELEV=95.13'
S INV(UNKNOWN MATERIAL AND SIZE)=85.89'

LEGEND

EXISTING

TO BE DEMOLISHED / REMOVED

PLAN
SCALE: 1" = 10'-0"

1" = 10'

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	CD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

PROJECT ENGINEER:	K. BLANTON
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	W. MARSHALL

KENNY BLANTON PE. No. 46654

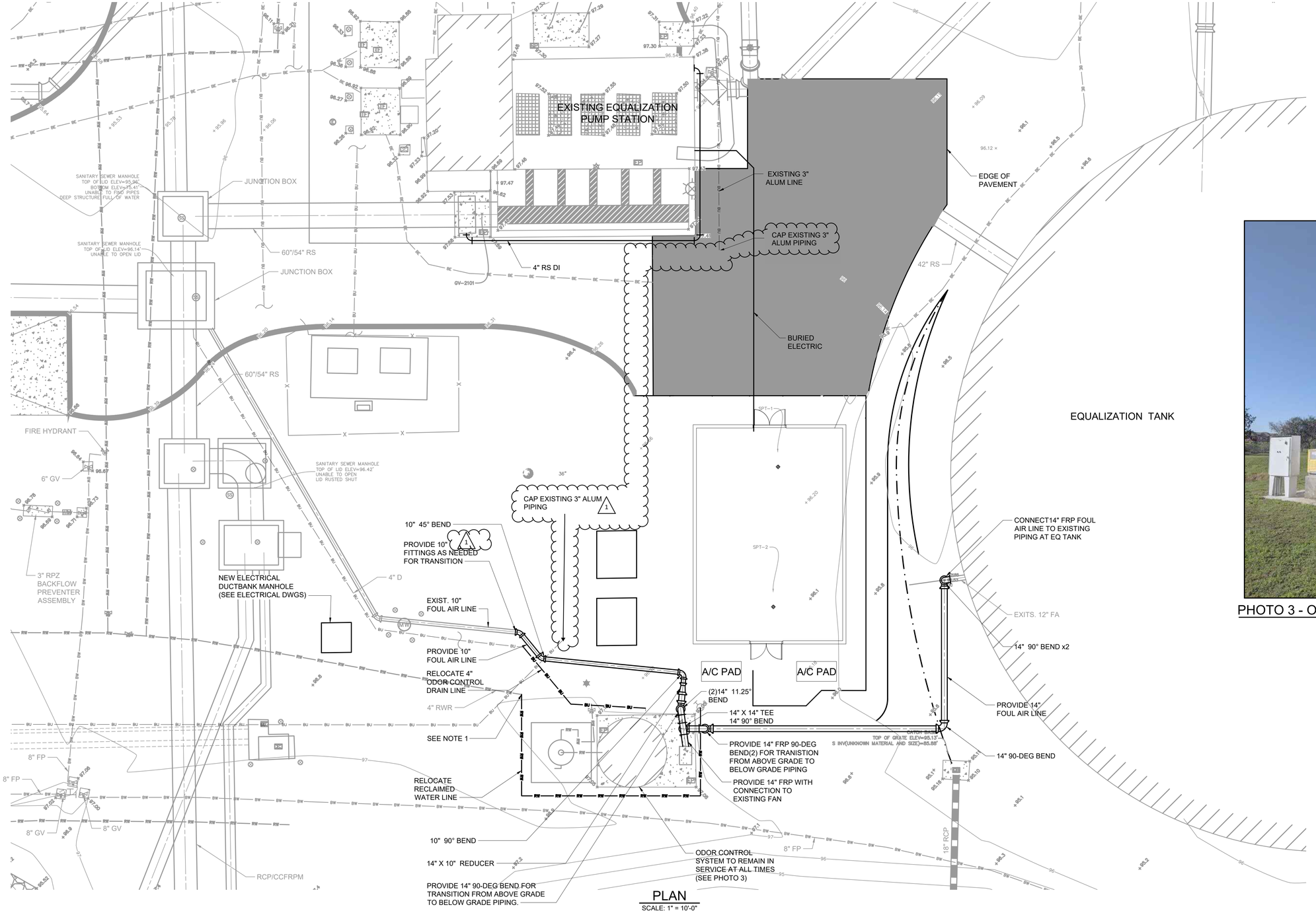
Hazen
HAZEN AND SAWYER
2420 S. LAKEMONT AVENUE, SUITE 325
ORLANDO, FLORIDA 32814

CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

CIVIL
EXISTING SITE PLAN AND DEMOLITION

DATE:	MAR 2026
HAZEN No.:	44051-001
CONTRACT No.:	
DRAWING NUMBER:	C-01-02



PLAN
SCALE: 1" = 10'-0"

NOTES:

1. APPROXIMATE LOCATIONS OF NEW YARD PIPING PROVIDED. CONTRACTOR TO REROUTE AND SLOPE YARD PIPING AS REQUIRED.

PHOTO 3 - ODOR CONTROL ABOVE GROUND
SCALE: NTS

1" = 10'
10 5 0 10'

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	LT

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

PROJECT ENGINEER:	K. BLANTON
DESIGNED BY:	TAN QU
DRAWN BY:	O. CABARCAS
CHECKED BY:	W. MARSHALL

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ORLANDO, FLORIDA 32814

CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

CIVIL
YARD PIPING

DATE:	MAR 2026
HAZEN No.:	44051-001
CONTRACT No.:	
DRAWING NUMBER:	C-01-03

EXHIBIT A7

SECTION 14600 PORTABLE
DAVIT CRANES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The manufacturer shall furnish all necessary equipment and materials to install the portable davit crane specified herein and as shown on the Contract Drawings

B. Contractor shall install, test, paint, and place in satisfactory operation, davit crane pedestal bases and the portable davit cranes complete with all necessary accessories specified herein and as shown on the Contract Drawings.

C. The portable davit crane equipment shall be provided complete with all accessories, special tools, spare parts, mountings, anchor bolts and other appurtenances as specified and as may be required for a complete and operating installation. The portable davit crane equipment shall consist of the following:

1. 3 pedestal bases
2. 1 base extension
3. 1 mast
4. 1 crane boom
5. 1 boom extension
6. 1 winch with cable, and all necessary accessories for one crane.

The portable davit crane shall be installed at the new headworks structure.

D. It shall be Contractor's responsibility to ensure that the portable davit crane and appurtenances furnished and installed shall be compatible and have the necessary operating clearances with the structural elements and equipment shown on the Contract Drawings.

E. Equipment submittals, operation and maintenance data manuals, performance affidavit and field testing shall be provided in accordance with the requirements of Section 11000–Equipment General Provisions

1.02 OPERATING CAPACITY AND PERFORMANCE REQUIREMENTS

A. The portable davit crane shall be designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.

Portable Davit Crane

Crane Type	Portable Davit Crane
Mounting	Pedestal Base
Total Number of Cranes	1 (Portable for use at all locations)
Power	Manual
Operating Floor Elevation (ft)	98
Radius Span, ft	5.5
Min Hook Elevation	70.19
Max Hook Elevation	105 ft
Capacity with boom at shortest length	1,200 lbs
Capacity with boom fully extended	550 lbs

1.03 SUBMITTALS

A. The following items shall be submitted in accordance with, or in addition to the submittal requirements specified in Section 01300 – Submittals and Section 11000 – Equipment General Provisions:

1. General Arrangement drawings that illustrate the layout of the equipment, equipment weight, principal dimensions with related verifications required for installation including anchorage locations. Other related data including descriptive literature and Catalog Cut Sheets for individual components.

2. A list of recommended Spare Parts including any Special Tools required for routine maintenance of the equipment.

3. Field performance testing sampling plan. Certification that the equipment has been field tested and passed.

4. O&M Manuals including As-Built Drawings of the Portable Davit Crane Arrangement shall be provided in digital format after equipment ship for inclusion in the Close-Out Submittal process.

5. Submit certifications and materials under this section to show compliance with the following requirements, codes, and standards:

   a. CMAA – Crane Manufacturers Association of America

   b. AISC – “Manual of Steel Construction”

   c. OSHA 1910-179 – Occupation Safety and Health Administration

1.04 WARRANTY AND GUARANTEE

A. Warranty and Guarantee shall be as specified in Section 11000 – Equipment General Provisions with the exception that the warranty period shall be for two (2) years.

PART 2 – EQUIPMENT

2.01 ACCEPTABLE MANUFACTURERS

A. Portable davit crane assemblies shall be as manufactured by Thern, Inc., Commander Series, or equal.

B. The portable davit crane manufacturer shall be experienced in the design, construction and successful operation of portable davit cranes having a minimum of five (5) years of experience producing substantially similar equipment and shall show evidence of at least five (5) installations in satisfactory operation for at least five (5) years in the United States. Within one month after Award of this Contract and prior to submission of Shop Drawings, the portable davit crane manufacturer shall submit records and data to demonstrate his experience and qualifications.

C. Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

2.02 PORTABLE DAVIT CRANE

A. General

1. The davit crane shall break down into portable components with no single component weighing more than 40 pounds. Carrying handles shall be welded to mast and boom.

2. The Davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer’s name, model number, serial number, and other essential information

3. The rated load capacity of each crane shall be clearly labeled on each crane using a label size easily read from the floor level and/or loading position

B. Crane Base

1. The base type for the portable davit crane shall be pedestal and shall be anchored directly into the concrete structure. Type 316 stainless steel anchor bolts and accessories shall be provided to securely anchor the pedestal bases to the concrete structure.Anchor bolts shall be provided by the manufacturer.The pedestal base anchor systems shall be designed to withstand the lifting capacity of the unit with the design factor discussed in Paragraph 1.02.A and horizontal loadings of 40 pounds per square foot or the maximum wind load at the location in accordance with the latest edition of the Building Code in the jurisdiction where the system will be installed, for the area under the worst condition, whichever is greater.

2. The crane base shall allow for the removal of the mast.

3. The pedestal base shall have a pin bearing to support the end of the mast and a Nylatron GSM bearing sleeve to support the mast at the top of the base.

4. The pedestal base and accessories shall be fabricated from AISI 316 stainless steel with electro-polish finish.

C. Crane Boom

1. The davit crane boom shall telescope up to 4 different lengths allowing a maximum hook reach of at least 66 inches measured from mast center to hook center.

2. The minimum height of the boom shall be 48 inches between mounting surface and the underside of the boom in all base configurations.

3. The boom angle shall be adjustable at all times, including when underfull rated load, with a hand operated screw jack acting to raise or lower the boom between horizontal and 45 degrees from vertical.

4. The sheave at the end of the boom shall have a bronze bearing.

5. The wire rope construction shall be 1/4-inch diameter and shall pass over the sheave at the end of the boom. Approximately 60 feet of wire rope shall be provided for the crane.

6. The crane boom, boom extension, mast, wire rope, and accessories shall be fabricated from AISI 316 stainless steel with electro-polish finish.

D. Lifting Winch and Accessories

1. The lifting winch shall be located such that the center point of the drive shaft is behind the centerline of the mast.

2. The lifting winch shall have spur gear with brake and be provided with a zinc plated finish.

3. The lifting winch shall include a quick disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.

4. Latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 316 stainless steel.

5. Crane components shall be fastened together using stainless steel clevis style pins, secured with lynch pins with lanyards fastening the lynch pins to primary structural components.

6. All bolts, nuts, washers, and other fasteners shall be Type 316 stainless steel unless otherwise noted.

2.03 TOOLS, SUPPLIES, AND SPARE PARTS

A. The manufacturer shall furnish one (1) set of all special tools required to disassemble, service, repair, and adjust the portable davit cranes equipment and appurtenances.

B. The portable davit cranes shall include the following spare parts:

1. Five (5) clevis style pins

2. One (1) 45 foot length of 316 stainless steel rope (3/16-inch diameter)

C. Contractor shall furnish other spare parts as recommended by the manufacturer. All of these materials shall be properly packed, labeled and stored where directed by the Engineer. Contractor shall furnish start-up lubricants.

2.04 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Reference Specifications:

1. Division 01 – General Requirements

2. Division 05 – Metals

3. Division 11 – Equipment

4. Division 15 – Mechanical

PART 3 – EXECUTION

3.01 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Shall conform to the requirements of Section 11000 –Equipment General Provisions.

B. All equipment shall be assembled and shipped so that field assembly will be minimized, and installation can be completed with little or no field fabrication

3.02 PROTECTIVE COATING

A. All surface preparation, shop painting, field repairs, finish painting and other pertinent detailed painting specifications shall conform to applicable sections of Section 09900 – Painting.

B. Gears, bearing surfaces, and other unpainted surfaces shall be protected prior to shipment by a heavy covering of rust-preventive compound sprayed or hand applied which shall be maintained until the equipment is placed in operation. This coating shall be easily removable by a solvent.

3.03 EQUIPMENT TESTING

A. Field tests shall be made in accordance with Section 01650 -Checkout and Startup Procedures and Section 11000 –Equipment General Provisions.

B. . Prior to equipment shipment, the portable davit crane shall be proof-tested at 125% of their rated load in accordance with all OSHA requirements.

3.04 MANUFACTURER'S FIELD SERVICES

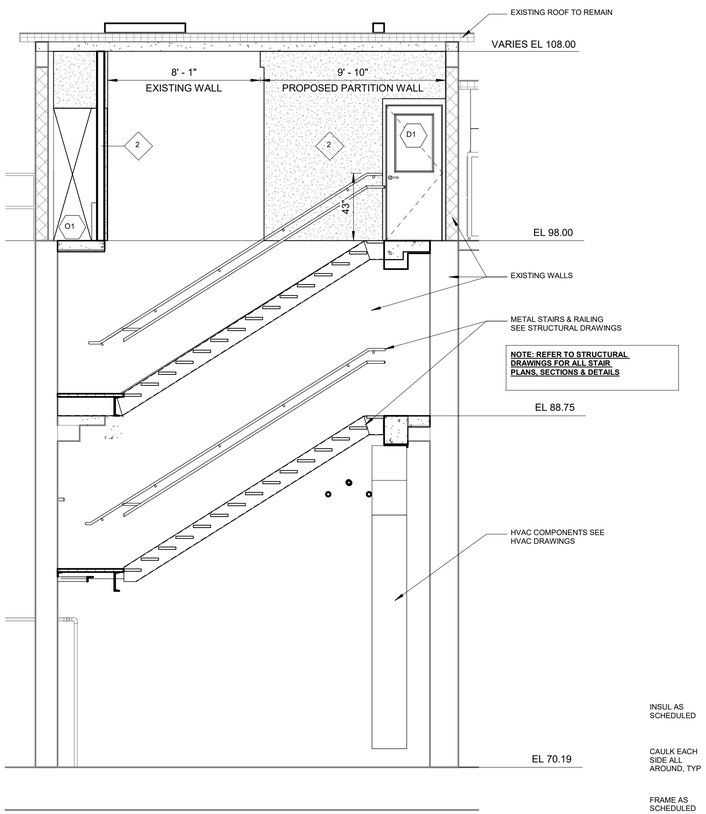
A. The services of a qualified manufacturer's technical representative shall be provided in accordance with Section 11000 – Equipment General Provisions and shall include the following site visits:

Service	Number of Trips	Number of Days/Trip
Installation and Testing	1	1
Startup and Training	1	1
Services after Startup	1	1

B. Any additional time required to achieve successful installation and operation shall be at the expense of Contractor.

END OF SECTION

EXHIBIT A8



SECTION A
1/4" = 1'-0"
A-10-02

DOOR LEGEND			
AL	ALUMINUM	MFR	MANUFACTURER
HM	HOLLOW METAL	PT	PAINT
IG	INSULATING GLAZING	STL	STEEL
FRG	FIRE GLASS	TG	TEMPERED GLASS
FRP	FIBERGLASS REINFORCED PLASTIC		

DOOR HARDWARE SCHEDULE:

1. NEW DOOR:
   - 1-1/2" PAIR FULL MORTISED STAILESS STEEL BUTT HINGES
   - (4-1/2" X 4-1/2" MCKINNEY MPB91, 630 FINISH
   - HEAVY DUTY OVERHEAD CLOSER, LCN 1461
   - LEVER HANDLE WITH KEY OUTSIDE AND PUSH BUTTON INSIDE LOCKSET (ANSI F82/SCHLADGE D50PD LESS CORE, RHODES LEVER 626, BEST CORE W/626 FINISH
   - 12" X 24" STAINLESS STEEL KICK PLATE (BOTH SIDES)
   - FLOOR STOP TRIMCO 1211 DOME STOP, 626 FINISH
   - 12" X 36"X1/2" TEMPERED VISION PANEL

DOOR SCHEDULE

Type	FRAME		DOOR						DETAILS			FIRE RATING	GLAZING		FINISH	WIND	SECURITY WIRING	HARDWARE		THRESHOLD	REMARKS
	TYPE	MATL	TYPE	MATL	ACTIVE WIDTH	INACTIVE WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	SILL		TYPE	SIZE				NO	NOTE		
HS Single Door - HG - 3'-0"x7'-2"	F-1	HM	HG	HM	3' - 0"	0' - 0"	7' - 2"	1 3/4"	1	1	1		TG	24"x36"	PT			-	--	AL	

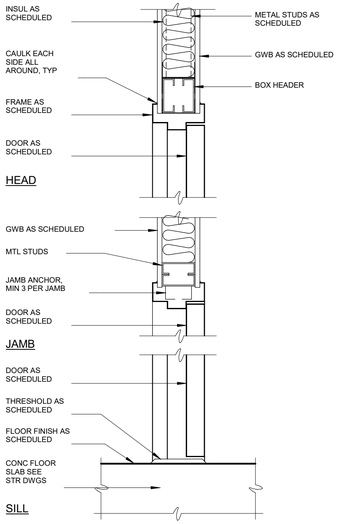
ROOM FINISH LEGEND			
CL	CONTAINMENT LINER	EX	EXISTING
CONC	CONCRETE	GWB	GYPSUM WALLBOARD
CMU	CONCRETE MASONRY UNITS	MFR	MANUFACTURER
ES	EXPOSED STRUCTURE	PT	PAINT

ROOM FINISH SCHEDULE NOTES:

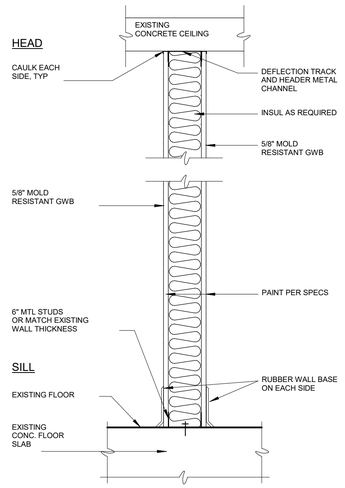
1. NEW WALL GWB PAINT (SEE PAINT SPECIFICATIONS)
2. EXISTING CONCRETE CEILING, PAINT TO MATCH EXISTING FINISH WHERE NECESSARY. (SEE PAINT SPECIFICATIONS)

NEW PARTITION WALL

NO.	DESCRIPTION	FLOOR		BASE		CEILING	RM WALL - FINISH	RM WALL SUBSTRATE	RM CEILING HEIGHT	CEILING	REMARKS
		SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE				FINISH	
100	EXISTING ELECTRICAL ROOM	EXISTING CONCRETE	-	-	-	EXISTING CONCRETE	PAINT-PER SPECS	GWB	EXISTING	EXISTING CONCRETE	MATCH EXISTING HEIGHT BOTH SIDES

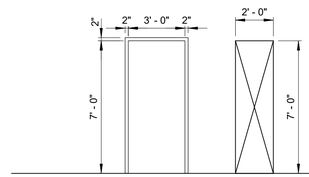


DETAIL 1
1 1/2" = 1'-0"

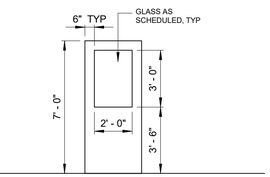


DETAIL 2
1 1/2" = 1'-0"

FRAME TYPES 1/4" = 1'-0"



DOOR TYPES 1/4" = 1'-0"



REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	CD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

PROJECT ENGINEER: K. BLANTON
DESIGNED BY: C.DELGADO
DRAWN BY: J. SCHEINBERG
CHECKED BY: W.RUSSELL

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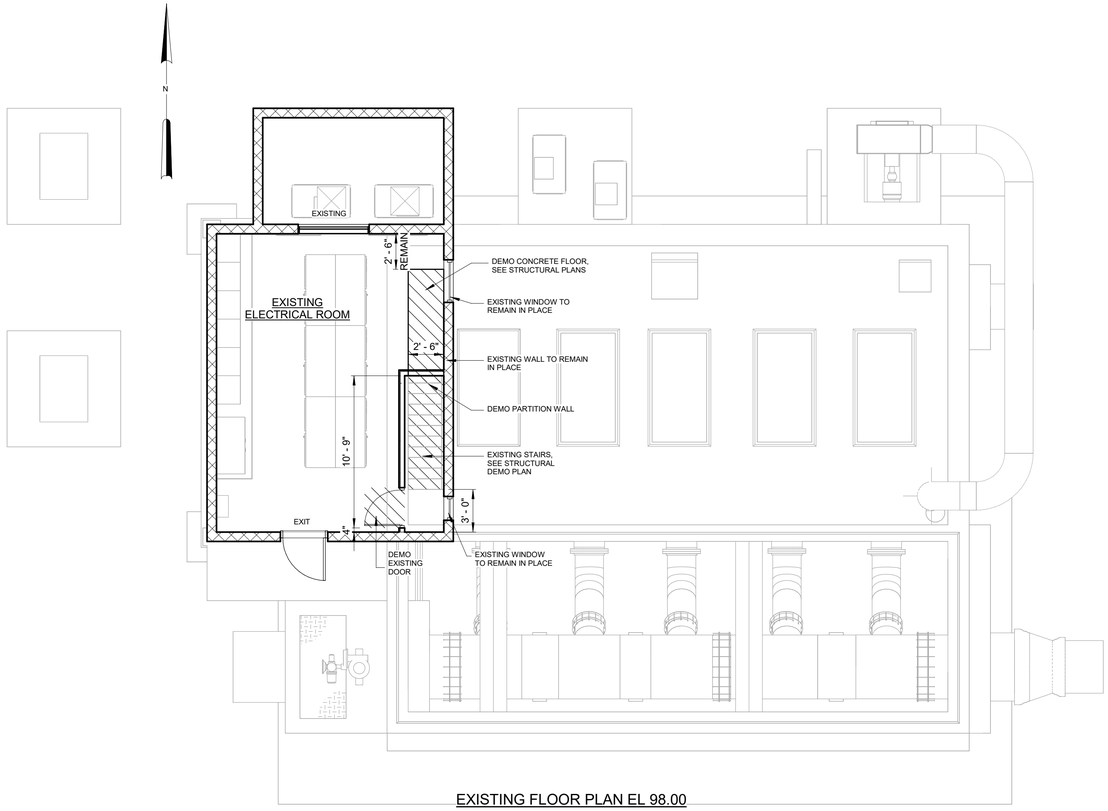
CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

ARCHITECTURAL
EQUALIZATION PUMP STATION
ELEVATIONS, DETAILS AND NOTES

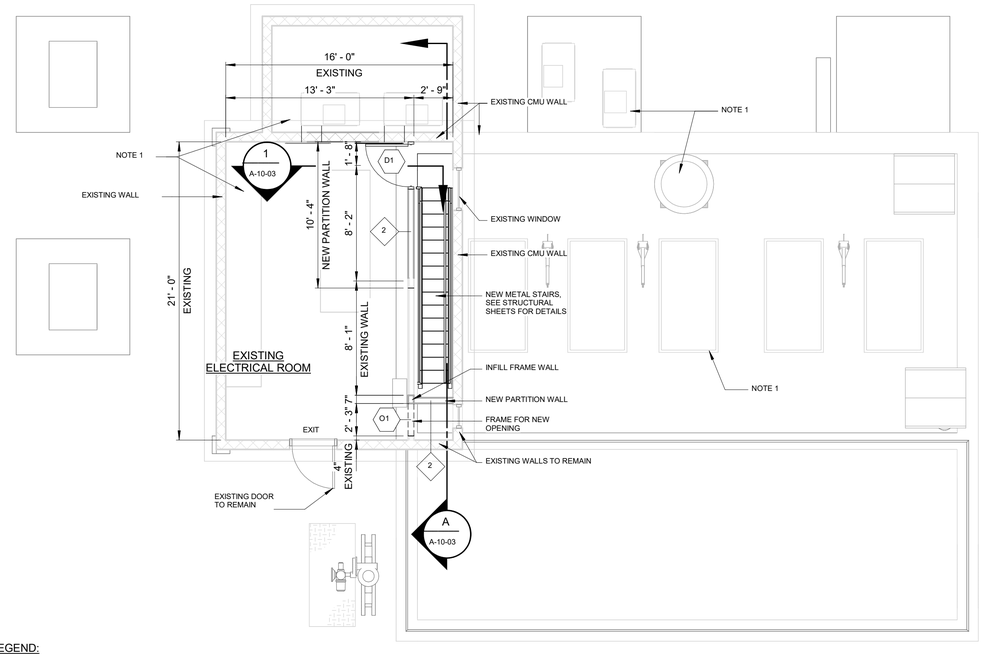
DATE: MARCH 2026
HAZEN NO.: 44051-001
CONTRACT NO.:
DRAWING NUMBER: A-10-03

EXHIBIT A9



EXISTING FLOOR PLAN EL 98.00

3/16" = 1'-0"



PROPOSED FLOOR PLAN EL 98.00

3/16" = 1'-0"

LEGEND:

100	DOOR NUMBER - SEE DRAWING A-02
P1	PARTITION TYPE - SEE DRAWING A-02
	DEMO AREAS

GENERAL ARCHITECTURAL NOTES

1. FOR CONCRETE AND STEEL SIZES AND CONFIGURATIONS, SEE STRUCTURAL DRAWINGS.
2. FOR LOCATION OF EQUIPMENT PADS, SEE STRUCTURAL AND PROCESS MECHANICAL DRAWINGS.
3. ITEMS NOT NOTED ON DRAWINGS SHALL BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME MANNER.
4. SURFACES TO BE PAINTED ARE NOT COMPLETELY INDICATED ON DRAWINGS. SEE DETAILS SPECIFICATION 09900 PAINTING AND FINISH SCHEDULE.
5. INTERIOR WALLS SHALL EXTEND TO UNDERSIDE OF THE ROOF UNO.
6. PROVIDE TOP OF WALL ANCHORS TO THE TOP METAL STUD WALL OF ALL INTERIOR NEW WALLS TO THE UNDER ROOF STRUCTURE UNO.
7. TOP OF METAL STUD WALLS TO RECEIVE DEFLECTION TRACK AND 4'-0" OC WIRE BRACING OR AS RECOMMENDED BY STUD MANUFACTURER.
8. NEW DOOR OR OPENINGS SHALL BE LOCATED 8" FROM THE CORNERS OF MASONRY WALLS, AND 6" FROM THE CORNERS OF METAL STUD WALLS UNLESS OTHERWISE DIMENSIONED ON THE PLAN.
9. WALL DIMENSIONS ARE TO FACE OF EXISITNG MASONRY OR FACE OF NEW METAL STUD. SEE PARTITION SCHEDULE FOR ADDITIONAL INFORMATION.
10. DIMENSIONS REPRESENT METAL STUD WALL OPENINGS, AND NOMINAL OPENINGS IN METAL FRAMED WALLS.
11. EXISTING MASONRY WALL DIMENSIONS ARE NOMINAL MASONRY SIZES UNO.
12. INTERIOR MASONRY WALLS THAT ARE TO RECEIVE METAL FURRING ARE DIMENSIONED TO THE FACE OF THE METAL FURRING. SEE PARTITION SCHEDULE FOR METAL FURRING TYPE AND FINISH.
13. WHERE THE TERM "ALIGN" IS SHOWN ON THE DRAWING, IT SHALL MEAN THAT FINISH MATERIALS ON WALLS SHALL ALIGN. WHERE FINISHES HAVE DIFFERENT SUBSTRATES, PROVIDE A CONTROL JOINT IN THE FINISH MATERIAL WHERE THE DIFFERENT MATERIALS MEET.
14. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED IN METAL STUD WALLS.
15. WHERE DISSIMILAR METALS ADJOIN, SEPARATE WITH BARRIER COATING TO PREVENT GALVANIC CORROSION.
16. FOR EXPOSED METAL DECK CEILINGS, ROOFING SCREWS TO BE CUT TO NOT EXTEND MORE THAN 1" THROUGH METAL DECK.
17. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL LOADS, INCLUDING NON-STRUCTURAL COMPONENT ANCHORAGE TO RESIST SEISMIC FORCES.
18. WHERE DISCREPANCIES ARE FOUND, VERIFY IN FIELD CONDITIONS AND NOTIFY THE ENGINEER IN ACCORDANCE WITH THE GENERAL CONDITIONS.
19. DRAWINGS ARE REPRESENTATIVE, AND DO NOT SUGGEST THE USE OF A PARTICULAR PRODUCT. NOTES AND SPECIFICATIONS SHALL DEFINE SPECIFIC PRODUCTS.

NOTE 1:

FOR ALL STRUCTURAL, ELECTRICAL, HVAC, MECHANICAL, SEE APPROPRIATE DISCIPLINE DRAWINGS, SHOWN FOR REFERENCE ONLY.

BUILDING CODE SUMMARY OF WORK

1. WORK WILL COMPLY WITH THE EIGHTH EDITION OF THE EXISTING FLORIDA BUILDING CODE 2023.
2. THE BUILDING OCCUPANCY WILL REMAIN THE SAME, EXIT PATHS, AND EXITS WILL NOT CHANGE LOCATION, CONSTRUCTION TYPE WILL NOT BE MODIFIED. THE BUILDING IS OCCASIONALLY ENTERED FOR MAINTENANCE, MONITORING, AND REPAIR BY SERVICE PERSONNEL. THE BUILDING IS NOT REQUIRED TO MEET THE ACCESSIBILITY REQUIREMENTS AS IT MEETS THE EXCEPTION FOR MACHINERY SPACES 203.5.
3. EXISTING STAIRS WILL BE REMOVED AND THE RISE AND RUN WILL BE MODIFIED TO AGREE WITH CURRENT BUILDING CODE REQUIREMENTS AND THE STRUCTURAL CONSTRAINTS OF THE BUILDING.
4. WALLS ENCLOSING THE STAIR WILL BE MODIFIED TO PROPOSED CONFIGURATION. WALLS ARE DESIGNED TO NOT INCREASE LOADING ON THE EXISTING STRUCTURE.

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	CD

PROJECT ENGINEER: K. BLANTON
DESIGNED BY: C.DELGADO
DRAWN BY: J. SCHEINBERG
CHECKED BY: W.RUSSELL

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

Hazen
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ORLANDO, FLORIDA 32814

CITY OF ORLANDO

WATER CONSERV II WRF
EQUALIZATION PUMP STATION
IMPROVEMENTS

ARCHITECTURAL
EQUALIZATION PUMP STATION
EXISTING AND PROPOSED FLOOR PLANS

DATE: MARCH 2026
HAZEN NO.: 44051-001
CONTRACT NO.:
DRAWING NUMBER: A-10-02

EXHIBIT A10


U.S.MOTORS
CAUTION


EXIT
FIRE EXTINGUISHER


DEZURIK
24
DEZURIK
24

EXHIBIT A11


LOCKOUT
FOR SAFETY
STEPS FOR SHUTDOWN
STEPS FOR RESTART
CITY OF ORLANDO
FIRST AID K

C2.EQS.102

CITY OF
ORLANDO
ST AID KIT

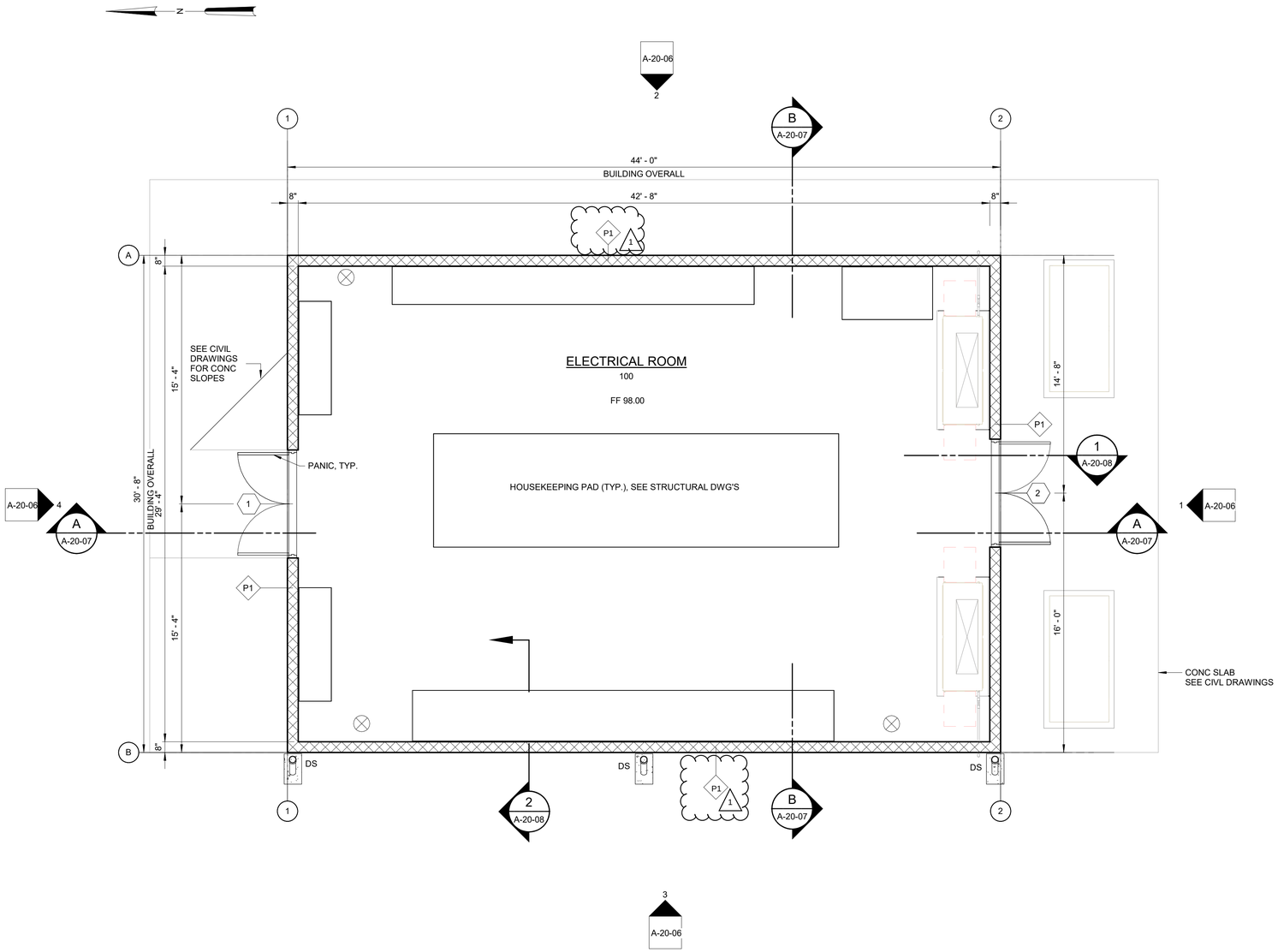
EXHIBIT A12

GENERAL ARCHITECTURAL NOTES

1. FOR CONCRETE AND STEEL SIZES AND CONFIGURATIONS, SEE STRUCTURAL DRAWINGS.
2. FOR LOCATION OF EQUIPMENT PADS, SEE STRUCTURAL, HVAC AND ELECTRICAL DRAWINGS.
3. FOR FINAL GRADING AND BUILDING LOCATION, SEE CIVIL DRAWINGS.
4. ITEMS NOT NOTED ON DRAWINGS SHALL BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME MANNER.
5. SURFACES TO BE PAINTED ARE NOT COMPLETELY INDICATED ON DRAWINGS. SEE DETAILS SPECIFICATION 09900 PAINTING AND FINISH SCHEDULE.
6. INTERIOR WALLS SHALL EXTEND TO UNDERSIDE OF THE ROOF UNO.
7. PROVIDE TOP OF WALL ANCHORS FROM THE TOP COURSE OF ALL INTERIOR MASONRY WALLS TO THE ROOF STRUCTURE ABOVE UNO.
8. DOORS SHALL BE LOCATED 8" FROM THE CORNERS OF MASONRY WALLS, AND 6" FROM THE CORNERS OF METAL STUD WALLS UNLESS OTHERWISE DIMENSIONED ON THE PLAN.
9. WALL DIMENSIONS ARE TO FACE OF MASONRY. SEE PARTITION SCHEDULE FOR ADDITIONAL INFORMATION.
10. DIMENSIONS REPRESENT MASONRY OPENINGS IN MASONRY WALLS, AND NOMINAL OPENINGS IN METAL FRAMED WALLS.
11. MASONRY WALL DIMENSIONS ARE NOMINAL MASONRY SIZES UNO.
12. INTERIOR MASONRY WALLS THAT ARE TO RECEIVE METAL FURRING ARE DIMENSIONED TO THE FACE OF THE METAL FURRING. SEE PARTITION SCHEDULE FOR METAL FURRING TYPE AND FINISH.
13. WHERE THE TERM "ALIGN" IS SHOWN ON THE DRAWING, IT SHALL MEAN THAT FINISH MATERIALS ON WALLS SHALL ALIGN. WHERE FINISHES HAVE DIFFERENT SUBSTRATES, PROVIDE A CONTROL JOINT IN THE FINISH MATERIAL WHERE THE DIFFERENT MATERIALS MEET.
14. VERTICAL MASONRY REINFORCING SHALL BE IN FULLY GROUTED CELLS, AND SPACED AS INDICATED ON DRAWINGS, ADJACENT TO ALL OPENINGS AND AT CORNERS.
15. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED IN MASONRY AND METAL STUD WALLS.
16. WHERE DISSIMILAR METALS ADJOIN, SEPARATE WITH BARRIER COATING TO PREVENT GALVANIC CORROSION.
17. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL LOADS, INCLUDING NON-STRUCTURAL COMPONENT ANCHORAGE TO RESIST SEISMIC FORCES.
18. WHERE DISCREPANCIES ARE FOUND, NOTIFY THE ENGINEER IN ACCORDANCE WITH THE GENERAL CONDITIONS.
19. DRAWINGS ARE REPRESENTATIVE, AND DO NOT SUGGEST THE USE OF A PARTICULAR PRODUCT. NOTES AND SPECIFICATIONS SHALL DEFINE SPECIFIC PRODUCTS.
20. EXTERIOR ENVELOPE MATERIALS INCLUDING DOORS, OTHER ITEMS REQUIRED BY THE FLORIDA BUILDING CODE SHALL MEET FLORIDA PRODUCT APPROVAL REQUIREMENTS IN ADDITION TO SPECIFIED REQUIREMENTS. FLORIDA PRODUCT APPROVAL INSTALLATION REQUIREMENTS WILL BE CONSIDER EQUAL TO SPECIFIED REQUIREMENTS AND CONFORMED TO.

LEGEND:

100	DOOR NUMBER - SEE DETAIL F1 SHEET A-20-06
FE	FIRE EXTINGUISHER - DRY CHEMICAL
CO_2	FIRE EXTINGUISHER - CARBON DIOXIDE
P1	PARTITION TYPE - SEE DETAIL 2 PAGE A-20-09
DS	DOWNSPOUT



FLOOR PLAN

1/4" = 1'-0"

REV	ISSUED FOR	DATE	BY
1	ADDENDUM ONE	03/26	CD

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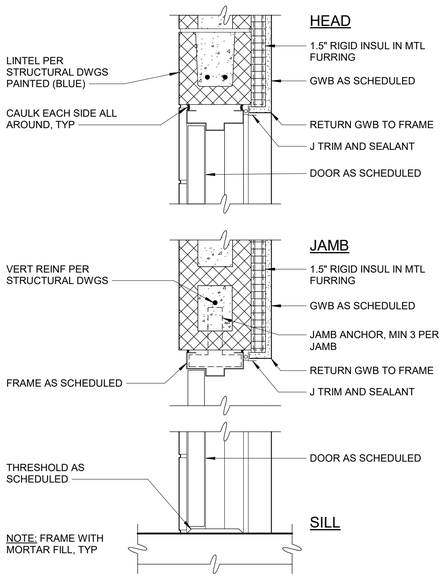
ELECTRICAL BUILDING
FLOOR PLAN

DATE:	MAR 2026
HAZEN NO.:	44051-001
CONTRACT NO.:	
DRAWING NUMBER:	A-20-03

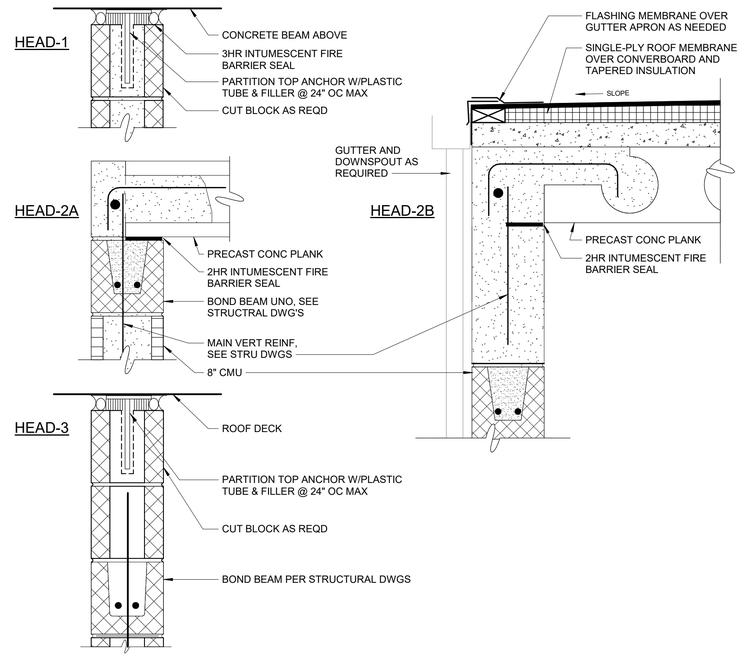
EXHIBIT A13



DOOR IN 8" CMU WALL WITH FURRING

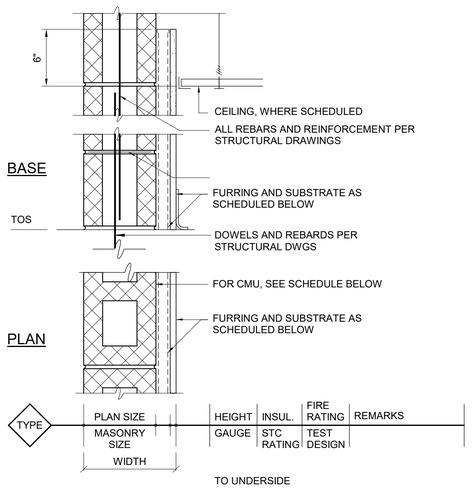
DETAIL 1

1 1/2" = 1'-0"



DETAIL 2

1 1/2" = 1'-0"



TYPE	PLAN SIZE		HEIGHT	INSUL.	FIRE RATING	REMARKS
	MASONRY SIZE	WIDTH	GAUGE	STC RATING	TEST DESIGN	
P1	8"	TO UNDERSIDE OF CONCRETE BEAM		NONE	NONE	NON-LOAD BEARING
	7 5/8"		N/A	N/A	N/A	HEAD-1

MASONRY WALL

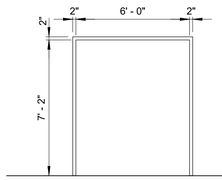
DOOR LEGEND

AL	ALUMINUM	MFR	MANUFACTURER
HM	HOLLOW METAL	PT	PAINT
IG	INSULATING GLAZING	STL	STEEL
FRG	FIRE GLASS	TG	TEMPERED GLASS
FRP	FIBERGLASS REINFORCED PLASTIC		

DOOR SCHEDULE NOTES:

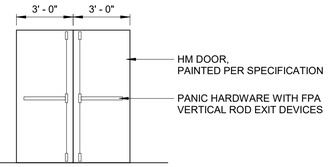
1. NEW DOORS:
   * 1-1/2" PAIR FULL MORTISED STAILESS STEEL BUTT HINGES
   * (4-1/2" X 4-1/2" MCKINNEY MPB91, 630 FINISH
   * HEAVY DUTY OVERHEAD CLOSER, LCN 1461
   * LEVER HANDLE WITH KEY OUTSIDE AND PUSH BUTTON INSIDE LOCKSET (ANSI F82/SCHLADGE D50PD LESS CORE, RHODES LEVER 626, BEST CORE W/626 FINISH
   * 12" X 24" STAINLESS STEEL KICK PLATE (BOTH SIDES)
   * FLOOR STOP TRIMCO 1211 DOME STOP, 626 FINISH

FRAME TYPES 1/4" = 1'-0"



F1 (1 & 2)

DOOR TYPES 1/4" = 1'-0"



HM (1 & 2)

DOOR SCHEDULE

BUILDING - DOOR	Count	DR FINISH	DR FRAME MATERIAL	DR FRAME TYPE	Finish	Height	Type	Width
1	1	PER SPECS	HM	HM	PAINT	7' - 2"	Flush - 80" x 86"	6' - 4"
2	1	PER SPECS	HM	HM	PAINT	7' - 2"	Flush - 80" x 86"	6' - 4"

ROOM FINISH LEGEND

CO	CONCRETE	EX	EXISTING
CB	CONCRETE MASONRY UNITS	GWB	GYPSUM WALLBOARD
EXP	EXPOSED STRUCTURE (1)	MFR	MANUFACTURER
		PT	PAINT

ROOM FINISH SCHEDULE NOTES:

1. INTERIOR WALLS GWB PAINTED (SEE PAINT SPECIFICATIONS) (1)

ELECTRICAL BUILDING ROOM SCHEDULE

ROOM NO.	ROOM NAME	FLOOR		WALLS												CEILING			
				NORTH			EAST			SOUTH			WEST						
		MATRL	FINISH	MATRL	FINISH	BASE	MATRL	FINISH	BASE	MATRL	FINISH	BASE	MATRL	FINISH	BASE	MATRL	FINISH	HEIGHT	REMARKS
1	ELECTRICAL ROOM	CO	FS	CB	GWB (1)	NO	CB	GWB (1)	NO	CB	GWB (1)	NO	CB	GWB (1)	NO	EXP	PT	12'-8" MAX	SLOPED CEILING

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