DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL SERVICES
UTILITIES DESIGN AND CONSTRUCTION DIVISION

COUNTY OF FAIRFAX
VIRGINIA

ADDENDUM NO. 3

Difficult Run Raw Sewage Pump Station Rehabilitation
CONTRACT NO. CN14402005
PROJECT NO. WW-000001-009

This addendum consists of twenty-five (25) pages including attachments.

This addendum is supplementary to the contract documents for the Difficult Run Raw Sewage Pump Station Rehabilitation Project.

All revisions, additions or deletions included herein as Addendum No. 3 shall become a part of the Contract Documents as if originally called for in the Drawings, Specifications and Form of Bid.

Contents of Addendum No.3:

	DOCUMENT	DESCRIPTION
	SPECIFICATIONS	
3.1	Table of Contents	**INSERT** "Section 10200 Louvers and Dampers" into Table of Contents
3.2	Section B – Form of Bid	**RENUMBER** pages B-13 through B-15 as pages B-14 through B-16.
3.3	Section B – Form of Bid	**INSERT** new page B-13 with **Attachment 1.**
3.4	Section E – Special Conditions	**REPLACE** last sentence of Paragraph 16 with the following: "Septage service stoppage for Septage improvements and paving shall be limited to 45 days"
3.5	Specification 02050	**ADD** Section 2.02.B as follows: "B. The Septage Receiving Station may be used by the contractor to disposal of wet-well material."
3.6	Specification 03732	**DELETE** section 2.01.A from Specification 03732.
3.7	Specification 05520	**DELETE** section 2.04 from Specification 05520.
3.8	Specification 09800	**REPLACE** Paragraph 1.01.B.1 with the following: "1. Diversion chamber located between the 36-inch influent pipe and the influent channels".
3.9	Specification 10200	**ADD** Specification 10200 provided in **Attachment 2** to the Contract Documents
3.10	Specification 11170	**REPLACE** Paragraph 3.03.D with the following: "B. Each pump shall be tested and inspected by an authorized representative of the pump manufacturer following rehabilitation to confirm that it operates according to the original equipment performance. Pumps shall be tested using water."

	DOCUMENT	DESCRIPTION
3.11	Specification 13252	**DELETE** section 2.05.J from Specification 13252.
3.12	Specification 14600	**REPLACE** in its entirety with **Attachment 3**
3.13	Specification 15390	**REPLACE** Title of Piping Schedule in Paragraph 1.03 with "Interior and Exterior Piping Schedule". Note that this was previously updated in Addendum 1 item 1.9.
3.14	Specification 15584	**REPLACE** Paragraph 2.03.B in Specification 15584 with the following: "Unit base shall be fabricated from C-channels with all joints fully welded. Base shall be heavy gage aluminum."
3.15	Specification 15584	**REPLACE** Paragraph 2.03.C in Specification 15584 with the following: "Exterior walls, roof and down turn plenum shall be 26 gauge galvanized steel with epoxy coating per paragraph 2.11 of this section."
3.16	Specification 15584	**REPLACE** Paragraph 2.03.D in Specification 15584 with the following: "Unit exterior exposed to weather, including but not limited to weather hood, roof curb, and fan wheel; shall be coated with a 2-part epoxy coating system specified in this section."
3.17	Specification 15584	**REPLACE** Paragraph 2.08.D.2 in Specification 15584 with the following: "All unit wiring shall be run within rigid aluminum conduit in conformance with Sections 16111 and 16123."
3.18	Specification 15584	**REPLACE** Paragraph 2.13.B in Specification 15584 with the following: "Provide NEMA 4X stainless steel enclosures with epoxy coating same color as unit exterior."
3.19	Specification 17000	**DELETE** Paragraph 1.04.C
	DRAWINGS	
3.20	Drawing G3	**ADD** the following sentence to Construction Constraint 3: "The Owner does not guarantee that the existing diversion gate will provide sufficient isolation from the 42" interceptor."
3.21	Drawing DM101	**REPLACE** Reference to Section 01040 in Note 6 with reference to Section 01560
3.22	Drawing DM103	**ADD** Note 9 to Drawing DM103 that reads: "9. Where conduit and piping supports have been removed from existing glazed masonry, patch holes with grout. Where over ½ of the face of a masonry unit has been damaged, replace with material to match existing adjacent surfaces: Structural Glazed Faced Tile by Elgin-Butler or Glazed Architectural CMU per Specification Section 04200.2.02.E."
3.23	Drawing DM103	**ADD** Note 10 to Drawing DM103 as follows: "10. Contractor to remove and dispose of the existing flexible connector on the discharge side of odor control blower fan"
3.24	Drawing C2	**DELETE** Note 6 and renumber Notes 7 and 8 as Notes 6 and 7, respectively
3.25	Drawing C4	**ADD** Note 2 as follows: "2. Contractor to field verify all

	DOCUMENT	DESCRIPTION
		measurements on manholes along the existing 42-inch gravity sewer. The 42-inch interceptor sewer shall remain in service at all times."
3.26	Drawing C4	**ADD** Note 3 as follows: "Contractor shall field locate proposed screening vegetation to avoid existing trees. Existing deciduous trees on southwest side of sewage easement greater than 8" Diameter Breast Height, and existing evergreens greater than 8 feet tall, and any trees requested by Owner, will require tree protection. Tree protection fence shall be installed 2' beyond the drip line of protected trees. Screening vegetation will be installed on Fairfax County Park Authority property. Contractor will restore any disturbed Fairfax County Park Authority property to its original condition. Contractor to provide the Owner at least 72-hour notice before proceeding with installation of screening vegetation"
3.27	Drawing C5	**REPLACE** Note 2 on Drawing C5 with the following: "Elevation of concrete pavement and full-depth asphalt shall match the elevation of the overlay asphalt"
3.28	Drawings C5	**DELETE** all "Limits of Asphalt Overlay" callouts.
3.29	Drawings C5	**ADD** reference to Detail 0251500 to "Limits of Concrete Drive" callout
3.30	Drawings C5	**DELETE** "Pavement Junction" callout with reference to detail 0251301 adjacent to existing concrete bridge deck on Drawing C5.
3.31	Drawing M101	**REPLACE** with call out on Drawing M101 as shown in **Attachment 4.** "4" D from existing floor drain near chemical storage area to be routed thru floor into existing diversion chamber. Core drill penetration approximately ½" larger than pipe O.D. and fill annular space with backer rod and sealant."
3.32	Drawing M102	**ADD** Note 9 as follows: "9. Contractor shall supply one new flexible connector on the discharge side of the odor control blower fan. Flexible connector shall be "slip on" type constructed of Hypalon and stainless steel tightening clamps."
3.33	Drawings M102 and E103	**ADD** the forcemain vault sump pump control panel inside the Difficult Run Pump Station on the wall between the bathroom door and elevator (on floor elevation 201.00).
3.34	Drawings M106 and M107	**ADD** a total of two 6-inch plug valves and operators in the vertical directly downstream of the two system drain pump suction connections to the 20-inch Pump Suction Header (one 6-inch plug valve for each connection) to Drawings M106 and M107 as shown in **Attachments 5a and 5b**.
3.35	Drawing M200	**ADD** Note 3 as follows: "3. The existing forcemain is not active. Owner will drain existing forcemain".
3.36	Drawing S100	**REPLACE** reference to Note 6 in callout between column lines 3 and 4 and A and B with reference to Note 7.
3.37	Drawing S100	**REPLACE** Note 7 with the following: 7. See page B-13 of contract documents for concrete repair. Drywell

	DOCUMENT	DESCRIPTION
		quantities shall be confirmed by joint inspection of Contractor and Engineer. Drywell crack repair shall be a waterproof injection grout and shall only be required for cracks that show efflorescence. Other cracks shall be considered cosmetic and shall only be repaired if joint inspections determine it is warranted. Wetwell quantities shall be confirmed by joint inspection of Contractor, MIC coating supplier, MIC Coating installer, and Engineer.
3.38	Drawing S100	**REPLACE** Note 5 in its entirety with the Following: "Contractor shall install a microbiologically influenced corrosion (MIC) system on all concrete surfaces in the wetwell above elevation 157.50. See Section 09800 for additional information"
3.39	Drawing S102	**REPLACE** note 2 with the following: "2. Manufacturer of new hoist and monorail system shall be exclusively responsible for design of support system and monorail beam modifications for relocation of switch in existing monorail system and for extension of existing monorail beam. New monorail beam sections shall match existing monorail beam sections provided existing monorail beam can withstand additional load due to increased hoist capacity. Contractor/hoist and monorail manufacturer shall confirm compatibility of new equipment and monorail beam sections with existing monorail equipment and monorail beam sections. Support system for switch and monorail in its current location shall not be relocated. An entirely new support system shall be designed by and furnished by hoist manufacturer. Structural calculations and drawings for the support system for the monorail due to the switch track relocation as well as the monorail beam extension shall be submitted. Calculations and drawings shall be sealed by a Professional Engineer currently registered in the Commonwealth of Virginia." **ADD** the phrase "See Note 2"to the callout that says "4'-0" Monorail Extension"
3.40	Drawing A100	**ADD** the following note to A100 "9. Seal new and patched areas of concrete floor in lower level. See Structural Drawings for locations and Specification 03350."
3.41	Drawing A102	**REPLACE** the second Note 4 on Drawing A102 with the following: "5. Power wash all exterior brick and concrete. Seal all exterior masonry walls with liquid applied water repellent after masonry repairs have been made."
3.42	Drawing A105	**ADD** the following note to Drawing A105 and add call outs for the note in Details 37 and 38: "1. Repoint 200 LF horizontal joints in masonry wall cap at north exterior cast in place concrete wall. This is in addition to the 400 SF brick repointing listed in Note 3 on Drawing A102."
3.43	Drawing E1	**ADD** Note 13, as follows: "13. Refer to Specification 16000 for scope of Electrical demolition work within the Pump Station"
3.44	Drawing E112	**ADD** the elementary control schematic shown in **Attachment 6** to

	DOCUMENT	DESCRIPTION
		Drawing E112.
3.45	Drawing D1	**ADD** Detail 0222102 to Drawing D1 as shown in **Attachment 7**.
3.46	Drawing D3	**REMOVE** Note 2 from Detail 0257500 on Drawing D3.
3.47	Drawing D11	**ADD** Detail entitled "Duct Bank Termination at Concrete Wall" to Sheet D11 as shown in **Attachment 8**
3.48	Drawing P100	**REPLACE** Drawing P100 with **Attachment 9**

END OF ADDENDUM NO. 3

Bidders are required to acknowledge receipt of all addenda on Page B-2 of the Form of Bid, Section B. Failure to indicate receipt of any addenda may be cause for rejection of Bid.

COUNTY OF FAIRFAX, VIRGINIA

By: _____
Brad Melton, Director, Utilities Design and Construction Division
Department of Public Works and Environmental Services

ATTACHMENT 1
(Form of Bid – Page B-13)

ALLOWANCES FOR DIFFICULT RUN PUMP STATION

CONTRACT NO. CN.14402005
PROJECT NO.WW-000001-009

The following allowances are to be included in the Lump Sum Base Bid. Allowances shall include all direct cost, indirect costs, testing, monitoring, safety costs, overhead, supervision, trade coordination, taxes, bonding, insurance, profit, delay, re-sequencing, and/or any other related costs. Allowances may be increased, decreased, or eliminated by Change Order as required.

A. Dominion Virginia Power Services:
The Contractor shall include in the Lump Sum Base Bid an allowance of $50,000 for the reimbursement of Dominion Virginia Power's cost for the work to furnish and install their equipment for the new electric power service as necessary to complete the project. The OWNER will reimburse the Contractor from this allowance for the cost of Dominion Virginia Power's work.

B. Concrete Repair:
The Contractor shall include in the Lump Sum Base Bid an allowance of $300,000 for concrete repair work in the dry well and wet well as necessary to complete the project. Any quantities listed in the contract documents or estimates. Payment shall be made on a time and material basis.

SECTION 10200

LOUVERS AND DAMPERS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

A. Furnish all labor, materials, equipment, and appliances required for the complete execution of additions, modifications, alterations, to existing buildings and new construction work as shown on the Drawings and specified under the several sections of the Specifications.

B. Principal items of work include:

1. Fixed type, stormproof louvers and frames.

2. Manual, gravity or electrically operated dampers and frames.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01300 - Submittals

1.03 REFERENCE CODES, SPECIFICATIONS, AND STANDARDS

A. Without limiting the generality of these Specifications, work shall conform to the applicable requirements of the following documents. All referenced Specifications, codes, and standards refer to the most current issue available at the time of the Bid.

1. All work shall comply with the Virginia Building Code and the requirements of all other authorities having jurisdiction.

2. All units shall conform to AA-Aluminum Standards and Data, latest edition.

3. Louvers shall bear the AMCA Seal with ratings in accordance with AMCA Standard 500 which applies to air performance ratings and water penetration ratings.

4. All louvers, fasteners and supports shall be designed to meet a wind loading in accordance with the local building codes, but shall not be less than 25 pounds per square foot.

1.04 SUBMITTALS

A. In accordance with the procedures and requirements set forth in the General Conditions and Division I, the Contractor shall submit the following:

1. Samples

2. Shop Drawings

B. Each submittal shall be identified by the Specification Section Number.

C. Each submittal shall be complete in all respects, incorporating all information and data listed herein and all additional information required for evaluation of the proposed materials compliance with the Contract Documents.

D. Partial, incomplete or illegible submissions will be returned to the Contractor without review for resubmission.

E. Samples shall include:

1. Color and finish samples for each finish type required.

F. Shop Drawings shall include but not be limited to:

1. Complete detail drawings showing materials, methods of fabrication and clearly indicating all dimensions.

2. Detailed installation drawings showing all methods of attachment.

1.05 DELIVERY, STORAGE AND HANDLING

A. Brace and support units to prevent deformation during delivery.

B. Factory wrap units with approved materials to protect finish during delivery and storage.

C. Handle units with care to prevent bending or scratching.

PART 2 -- PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Specifications, provide products manufactured by the following:

1. Construction Specialties, Inc.

2. Airolite Company, Marietta, Ohio

3. Greenheck, Inc.

4. Ruskin, Philips Industries, Inc.

2.02 FIXED EXTRUDED ALUMINUM LOUVERS

A. Fabrication: Extruded aluminum 6063-T5 alloy, extruded within commercial tolerances and free of defects, minimum 0.120 inches thick frame with reinforcing bosses. Blades shall be extruded aluminum 6063T5 alloy, 0.10 nominal wall thickness, double drainable at approximately 45 degree angle with 6-inch center to center spacing.

B. Hardware and fasteners shall be of Type 316 stainless steel placed through nylon bushings.

C. The louvers shall be architectural style, double drainable type with fixed blade with hidden mullions.

D. The stationary blades shall be contained within a single 6-inch deep louver frame.

E. Provide double rain gutter in each blade with downspouts in jambs and mullions to drain water from each blade along sides and at mullions.

F. Louver and damper assemblies which are to be placed in openings exceeding 5 feet in width shall have slidable interlocked heavy gauge extruded aluminum mullions at mid span of integral tongue and groove construction.

G. Gravity back draft damper shall be standard with the approved louver by the louver manufacturer. Material and special finishes of the back draft damper shall match louver.

H. Coordinate louver sizes and free area requirements with the HVAC work and architectural elevations. Published performance ratings and free area shall be based on testing in accordance with AMCA 511. Louver performance shall be AMCA certified and carry the AMCA seal.

I. Bird screens shall be 1/2-inch square FRP or aluminum mesh P.V.C. coated, placed in removable .081-inch thick folded aluminum frames standard with the manufacturer.

J. Performance Requirements:

1. Free Area: Not less than 7.0 sq. ft. for 48-inch-wide by 48-inch-high louver.

2. Air Performance: Not more than 0.10-inch wg static pressure drop at 800-fpm free-area velocity.

3. Wind-Driven Rain Performance: Maximum of 0.01 ounces per square foot of free area at 680 feet per minute free area velocity when tested for 15 minutes.

4. Design Wind Load: Incorporate structural supports required to withstand wind loads of up to 20 pounds per square foot force or local code, whichever is more stringent.

2.03 FINISH

A. Extruded aluminum louvers and damper frames and blades to receive finish in accordance with the Aluminum Designation AA-M12-C22-A44, anodic coating Architectural Class I.

B. Extruded aluminum louvers, damper frames and blades to receive Kynar 500, finish in accordance with the AAMA Specification 605.2. Color shall be selected by Owner from manufacturer’s full range of colors.

1. Fluoropolymer Two-Coat Coating System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.

PART 3 -- EXECUTION

3.01 INSTALLATION

A. Anchor louver frames using stainless steel bolts into holes drilled and tapped in channel or angle subframes and suspended lintels, or with strap anchors to masonry in accordance with the manufacturer's approved directions.

B. Isolate aluminum from contact with masonry or dissimilar metals with heavy coat of bituminous paint or neoprene gaskets.

C. Mount bird screens on inside face with clips, machine screwed into frames.

D. All frames shall be installed with aluminum (or compatible) screws, bolts, anchors, etc., in such a manner that the frames are removable.

3.02 CUTTING AND FITTING

A. Do all cutting and fitting required for the installation in a neat manner.

3.03 CLEANING

A. Upon completion remove any and all protective coatings, clean off all parts of the work and leave entire installation in orderly condition.

- END OF SECTION -

SECTION 14600

CRANES AND HOISTS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall furnish, install and make fully operational the hoist system in the locations and conditions of service, as shown on the Drawings and as specified in the Hoist Schedule.

B. These Specifications shall be considered as minimum requirements. The Contractor shall add such additional features as are necessary for satisfactory operation.

C. Equipment shall be provided in accordance with the requirements of Section 11000 – Equipment General Provisions.

D. All equipment supplied under this Specification shall comply in all respects with the provisions of the Occupational Safety and Health Act of 1970, including all standards promulgated under the authority of such Act, and shall also meet all applicable industrial codes in the State in which the project is located.

E. The manufacturer and ultimately the Contractor shall be totally responsible for structural design of the hoist systems, for the compatibility of all equipment, and for verification of required operating clearances. This provision includes verification of the geometric and material properties of the existing monorail beam and ensuring that all new monorail beam sections provided for monorail modifications match the properties of the existing beam and can be adequately added and spliced to the existing monorail system.

F. All parts of the mechanism furnished shall be amply designed and constructed for the maximum stresses occurring during fabrication, erection and continuous operation. All equipment specified herein shall be designed for the Crane Manufacturer's Association of America Duty Classification as specified herein.

G. If the Contractor elects to utilize the crane and hoist equipment in any way during the erection of piping and installation of equipment, he shall notify the Owner in writing and shall provide for an inspection by the equipment manufacturer and take any steps necessary to return the equipment to "as new" condition. He shall also obtain recertification by the manufacturer and reinstate all warranties and guarantees.

H. Perform load testing on existing monorail beam as required by this specification and industry standards for verification of the structural integrity with the increased hoist capacity proposed. Prior to making any of the modifications described herein and depicted on the Drawings, Contractor shall confirm via load testing the existing monorail beam is capable of adequately withstanding the increased loads induced upon it due to installation of hoist with increased capacity.

1.02 CAPACITY AND DESIGN LOADS

A. Standard capacity ratings shall represent the net rated load at the hook of any type of trolley hoist with the same load rating installed on the monorail having a trolley hoist weight within the established limits.

B. All design loads shall meet CMAA requirements. The design load for stress calculations shall be based upon the capacity plus 15% for the weight of the hoist and trolley and an additional 25% for impact (capacity x 1.4). Design load for deflection calculations shall be based upon the capacity plus 15% for the weight of the trolley hoist (capacity x 1.15).

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

D. The rated load capacity of the existing monorail shall be clearly labeled on the monorail beam and hoist following successful completion of the required load testing procedures. Label shall be painted in stencil in a size easily read from the floor level and/or loading position.

1.03 HOIST SCHEDULE

Location	**Channel Area**
General	
Scope	Modification to existing 1-ton hoisting system
Indoor / Outdoor	Indoor
Capacity, tons	2
Operating Floor Elevation	201.00
Crane	
Crane Type	Existing Monorail
Trolley Hoist	
Trolley Type	Electric
Hoist Type	Electric
ASME Duty Classification	Class H3
Hook Elevation	
High Point	209.00
Low Point	170.00
Operating Speeds	
Trolley Speed, fpm	65
Hoist Speed(s), fpm	22 and 7

All elevations and spans are approximate. All equipment shall be installed as shown on the Drawings.

1.04 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of the Specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced

Specifications, codes and standards refer to the most current issue available at the time of the Bid.

1.	CMAA	Crane Manufacturers Association of America
2.	AISC	“Manual of Steel Construction”
3.	ASTM A48	Standard Specifications for Gray Iron Castings
4.	ANSI B30.11	Safety Code for Underhung Cranes and Monorail Systems
5.	ANSI B30.16	Safety Code for Overhead Hoists
6.	MMA MH27.1	Monorail Manufacturers Association
7.	OSHA 1910-179	Occupation Safety and Health Administration

1.05 SUBMITTALS

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

1. Certification that the systems have been designed to resist all loads implied herein and loadings stipulated in the applicable building codes of the Commonwealth of Virginia. The Certification shall also state that the design has been performed and signed and sealed by a Professional Engineer registered in the Commonwealth of Virginia.

2. Procedure for load testing of existing monorail runway beam and report summarizing pre-testing inspection of the monorail runway beam, connections to the superstructure and structural framing elements supporting the runway beam.

3. Qualifications of the load testing agency showing a minimum of 5 years of experience in the testing of crane and hoist systems

4. Performance Affidavit

B. Certification that the equipment has been field tested and passed. Certification shall include report summarizing result of monorail beam test. Report on monorail testing results shall be provided sealed by a currently registered Professional Engineer in the Commonwealth of Virginia.

PART 2 -- PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. The equipment covered by these Specifications are intended to be standard equipment of proven reliability and as manufactured by reputable manufacturers having experience in the production of such equipment. Contractor shall use only those manufacturers capable

of providing monorail beam sections, hoists, and any other equipment that are compatible with existing monorail beams and equipment.

2.02 MONORAILS

A. Existing monorail runway beam system shall be tested for reuse with proposed hoist of increased capacity. Rated capacity of monorail shall be painted with stencil on both the hoist and the monorail beam.

2.03 TROLLEY HOISTS

A. Trolley hoists shall be as manufactured by ACCO Industries, Electrolift, or Yale, provided manufacturers are capable of providing hoists and other associated equipment that is compatible with existing monorail beams and other associated equipment.

B. All load carrying parts shall be of steel. The wheels shall have hardened treads. Wheels and axles shall be equipped with antifriction bearings which are permanently sealed and lubricated. The gear head of the motor shall have an alloy steel, heat-treated gear train operating in a fully enclosed oil bath. The gear shaft shall have precision, oil lubricated ball bearings. Trolley shall be the swivel-type to negotiate curved sections.

1. Electrically operated trolleys shall include a gear-motor with solid-state soft start with adjustable time and torque, and electric brake.

C. The hoist drive shall be of the close-headroom, double reeved, cross-mounted type and shall include a geared train with inherent or mechanical load brake, hook, wire rope, and drum. Rated capacity shall be stamped on the hoist frame. The frame shall be oil-tight, of cast steel construction, with no part of the load carried by assembly bolts. Gearing shall be machine cut and heat-treated, and shall operate in an oil bath. Except for the drum pinion, no gears shall be cantilever mounted. Shafting shall be ground and polished and all bearings shall be of the antifriction type. Grease fittings and oil reservoir shall be readily accessible. The drum shall be of the large diameter, guarded, flanged type with machine cut grooves to accommodate the hoist cable without overwrapping. Right- and left-hand drum grooving shall be utilized in close-headroom, double-reeved, cross-mounted hoist applications to provide a true vertical lift. The wire ropes shall be of the preformed extra flexible type, have a safety factor of at least five, and be anchored to the hoist drum. The load block shall be of the safety type with guarded sheaves and forged swiveled hooks. Hooks shall open slowly when subjected to heavy overloads.

1. Electrically driven hoists shall include a two (2) speed, direct coupled motor, electrical controls, and solenoid brake. The solenoid brake shall be spring set with magnetic release operated by and interlocked with the electrical control equipment. Either a worm gear drive with an inherent load brake or a mechanical load brake designed in accordance with the Hoist Manufacturer's Institute standards shall be provided for controlling the speed when lowering, and for holding maximum hook load for any load up to capacity. Stressed parts shall be of cast or forged steel. In the event of a power failure the braking system shall automatically lock the piece of equipment being lifted to prevent further movement. Hoists shall also include either a clutch-type or electric-type overload cut-off device to protect hoist from an overload condition.

D. Rated capacity of trolley hoists shall be painted with stencil on the trolley hoist.

2.04 ELECTRICAL AND CONTROL REQUIREMENTS

A. Electrical power wiring and connection to the electrical system integral to the equipment shall be provided under Division 16, Electrical. All other power wiring associated with and integral to the hoist systems shall be furnished and installed under Division 14.

B. All electrical appurtenances furnished by the equipment manufacturer shall be rated for installation in classified areas (Class 1, Division 2, Group D) as indicated on the Drawings.

C. All wiring between motor, limit switches and starters shall be short, compact and protected by PVC coated rigid galvanized steel conduit.

D. The Electrical System providing power to trolley drives, and hoists shall be festoon type as specified herein.

1. Festoon Type: A track supported festoon system shall be supplied where specified herein and shall include trolleys with tandem wheels of a corrosion resistant material which shall provide suitable service with the track that is used. The trolleys shall have saddles for supporting the cables in equal loops not exceeding 9'-0" of cable per loop. The track shall be stainless steel and supported at spans not exceeding 6'-0". The track shall be adequately supported with horizontal arms spanning to the festoon tow bar. The equipment manufacturer shall be fully responsible for the design and suitability of the festoon system.

E. Starting equipment shall be integral with the crane drives and/or trolley hoist unit and shall be of the full voltage, magnetic-reversing type with three overload elements. Equipment shall be housed in an enclosure suitable to the conditions of service and as specified herein.

F. Hoisting motors shall be a two-speed motors. The trolley motors shall be a single speed squirrel cage induction motors NEMA Design "D". Motors shall be of the totally enclosed type designed for hoist service. The motor rating shall be on a 30-minute 55°C, duty cycle basis.

G. Electrical/Control Requirements

	Channel Area
Area Classification	Class I, Division 2, Group D
Electrical System	Festoon
Control System	Pendant
Motors	
Rating	460V, 3 ph, 60 Hz
Trolley Motor HP	0.5
Hoist Motor HP	5
Enclosure	TEFC
Insulation	Class F
Inverter Duty	No
Service Factor	1.15
Space Heater	No
Motor Winding Temperature Switches	No

H. Limit switches shall be approved geared typed, positive in action, compact, oil proof and readily accessible. Solenoid brakes shall be disk type, spring set with magnetic release. Solenoids shall be totally enclosed, protected from oil and moisture, readily accessible for adjustment and maintenance and shall develop the required forces without overheating.

I. All electrical and control components shall conform to the applicable standards of UL and NEMA, unless specified otherwise. International Electrotechnical Commission (IEC) standards are not recognized. Equipment designed, manufactured, and labeled in compliance with IEC standards is not acceptable.

2.05 CONTROLS

A. The Control System providing control of the trolley drives, and hoists shall be through wired pendent controls as specified herein.

1. Pendent controls for lift and travel shall be provided complete with heavy-duty push-button station of constant pressure type with silver-to-silver contact elements, and sufficient control cable and chain for support of the control station at a point 4 feet above the lowest operating floor where multiple levels are to be accessed. A balancer shall be provided which will allow the control pushbutton station to be retracted to a maximum of four feet above the upper operating level. Two speed control of the hoist drive shall be effected by a two-step pushbutton. Pendant controls shall be suspended from the hoist for monorail applications. Pendant controls shall be suspended independently from the hoist using a c-track festoon for bridge crane applications.

B. Control power shall be 120 volt, provided by a control power transformer within the starter units. One side of this transformer shall be grounded, the other side shall be connected via a fuse of adequate rating.

PART 3 -- EXECUTION

3.01 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 for each hoist system:

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

3.02 INSTALLATION

A. All hoist equipment shall be installed in accordance with the applicable sections of Division 16 – Electrical and the manufacturer's instructions and recommendations.

3.03 FIELD TESTS

A. Field tests of new equipment shall be conducted in accordance with Section 11000 and the manufacturer's instructions and recommendations. Prior to initial use, all cranes shall be proof-tested at 125% of their rated load in accordance with all OSHA requirements.

B. Load testing of the existing monorail runway beam shall consist of both pre-testing and load testing as indicated below:

1. Pre-testing shall be performed prior to the loading of the monorail system and shall consist of the following as a minimum:

a. The operator’s manual for the runway system shall be available for review prior to and during the load test.

b. Determine all lifting gear to be used for the load test and that all lifting attachments are clearly labeled with their safe working loads.

c. Obtain and review (as applicable) all prior load test reports, maintenance records and documentation of repairs.

d. Install barriers around the operating perimeter and clearly indicate that only testing personnel are allowed within the testing area.

e. Inspect the monorail runway beam and structural support members in their entirety according to manufacturer’s normal checklist. Attention shall be paid to the connections of the runway beam to the structural members and to the supporting structural members and their connections. Fasteners used for the connection of the runway beam to the support beams should be checked for adequate tightness and any welds should be visually checked for cracking. Any evidence of degradation of any portion of the runway beam system or structural members shall be evaluated prior to the load testing.

f. The monorail system shall be operated without a load through its full range of motion prior to beginning the load test and any locations that show impedance to travel shall be adjusted for appropriate function.

g. A 25% partial load shall be applied and the monorail system shall be operated through its full range of motion and any adjustments shall be made if necessary.

2. Load testing shall be performed as indicated below and shall consist of a rated load test and a proof load test consisting of 125% of the rated load. Load testing shall only be performed after all work on the roof of the structure, including the installation of any roof mounted equipment, have been performed. During testing the monorail runway beam and supporting superstructure shall be constantly monitored and testing shall cease if any members show excessive deformation. Load testing to confirm existing monorail beam is capable of withstanding increased loading due to hoist upgrade shall be conducted prior to making any of the modifications to the existing monorail system to allow confirmation existing beam can handle increased loading. Upon confirmation existing beam is adequate, modifications can proceed.

Final system shall be load tested after completion of all modifications and additions. Load tests shall consist of the following as a minimum:

a. At the start of the test the hoist shall be positioned adjacent to a supporting structural member. Lift the test load a sufficient amount off the floor such that all load is carried by the hoist and hoist itself can be moved. Measure the deflection of the structural members supporting the runway beam at the load point. If deflection exceeds SPAN LENGTH/ 480 then testing shall be stopped and Engineer notified

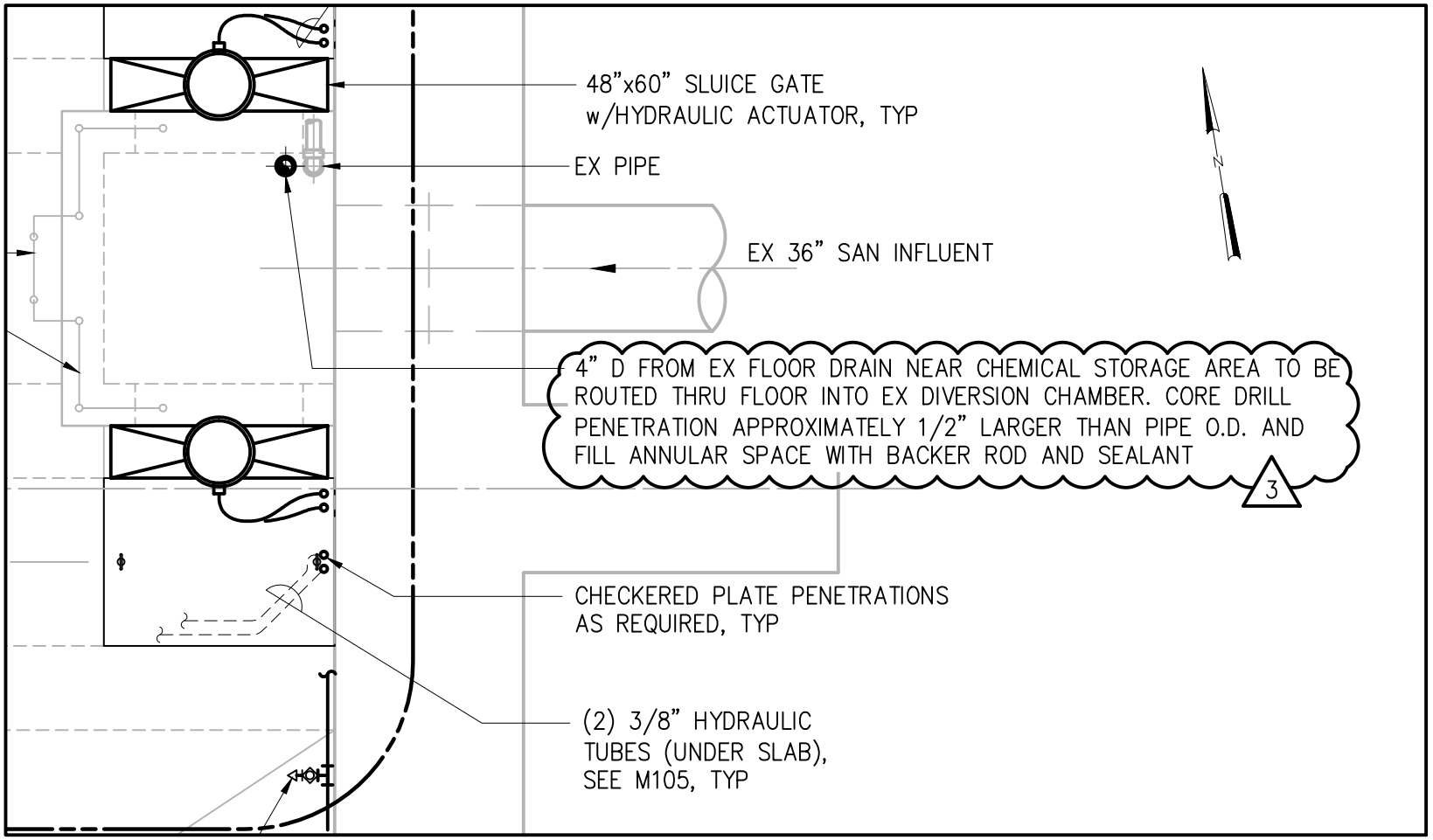
b. Traverse the hoist along the full length of the runway beam stopping at midspan of each runway beam and at each structural member supporting the runway beam and measure the deflection of the member. Deflections of the runway beam shall meet the published deflection specifications of ANSI MH27.1. Deflection of structural members shall meet the requirements as indicated above. If deflections exceed the limits prescribed the load test shall be stopped and the Engineer notified.

c. After completion of the load test the monorail system shall be tested for the proof load. Proof load testing shall performed utilizing the same procedures as indicated above.

d. If the existing monorail beam is unable to adequately withstand the increased loads induced upon it due to the hoist capacity increase, required modifications to the monorail beam will be submitted by manufacturer of new hoist and associated equipment. The Contractor shall schedule a joint meeting between the Contractor, Manufacturer, Owner, and Engineer prior to proceeding with any modifications. Any modifications shall be approved by the Owner and Engineer.

3. After completion of the load test all components of the runway beam system and structural support members shall be re-inspected. As a minimum, inspect structural members for damage or distortion, check fasteners connecting runway beam to structural members for looseness and deformation and check welds for cracks or separations. Check runway beam for track alignment, deformation of the beam and deformation to splice connections.

- END OF SECTION -



INTERMEDIATE PLAN

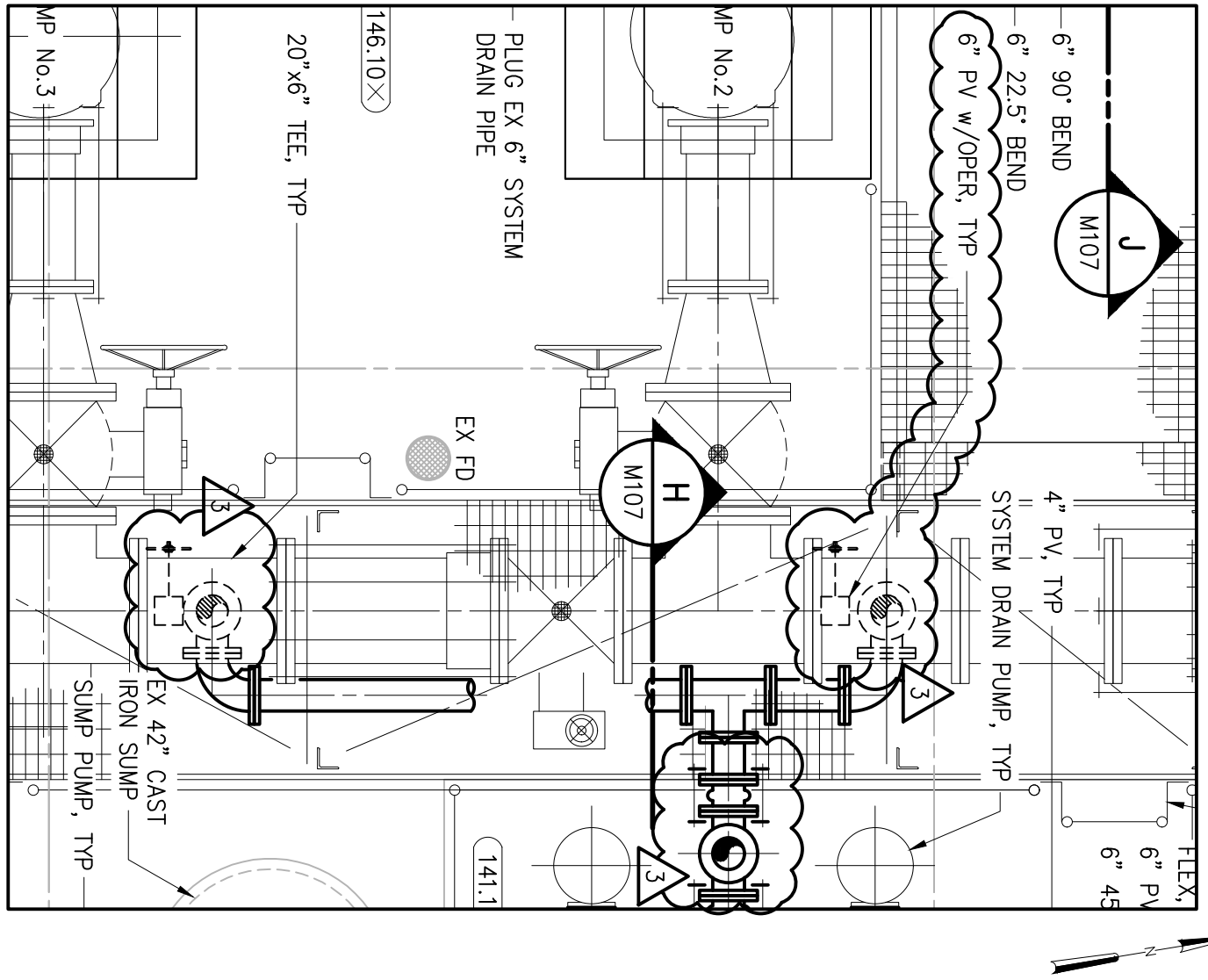
1/4" = 1'

ADDENDUM NO. 3	DATE 06/25/15	FAIRFAX COUNTY, VIRGINIA DPWES	H & S JOB NUMBER 32236-001	REFER TO CONTRACT DRAWING NUMBER M101
ATTACHMENT NO. 4	BY MKS	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CONTRACT NUMBER CN14402005	SHEET 1 OF 1

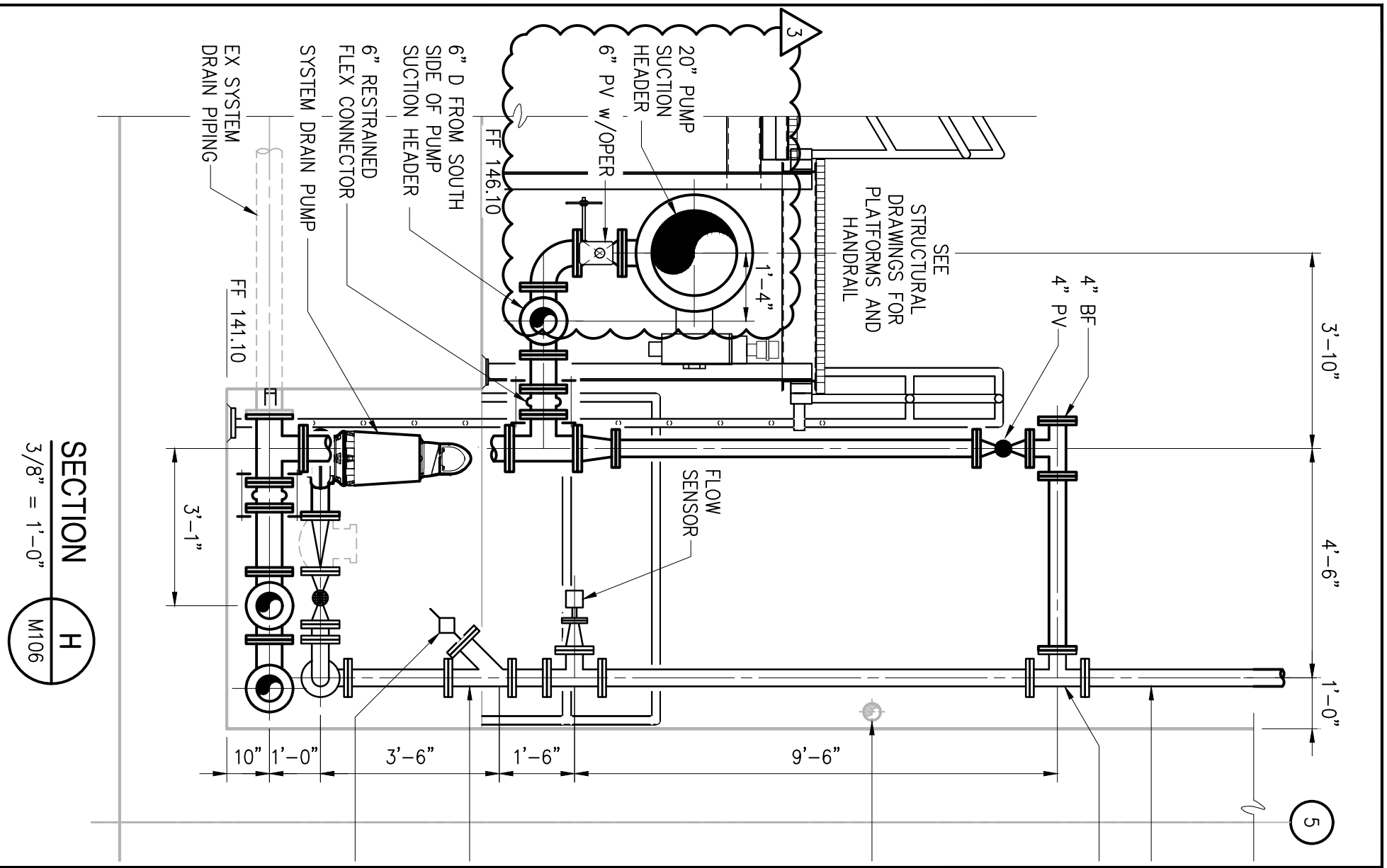
DRAINAGE SYSTEM & SUMP PUMP ENLARGED PLAN

3/8" = 1'-0"

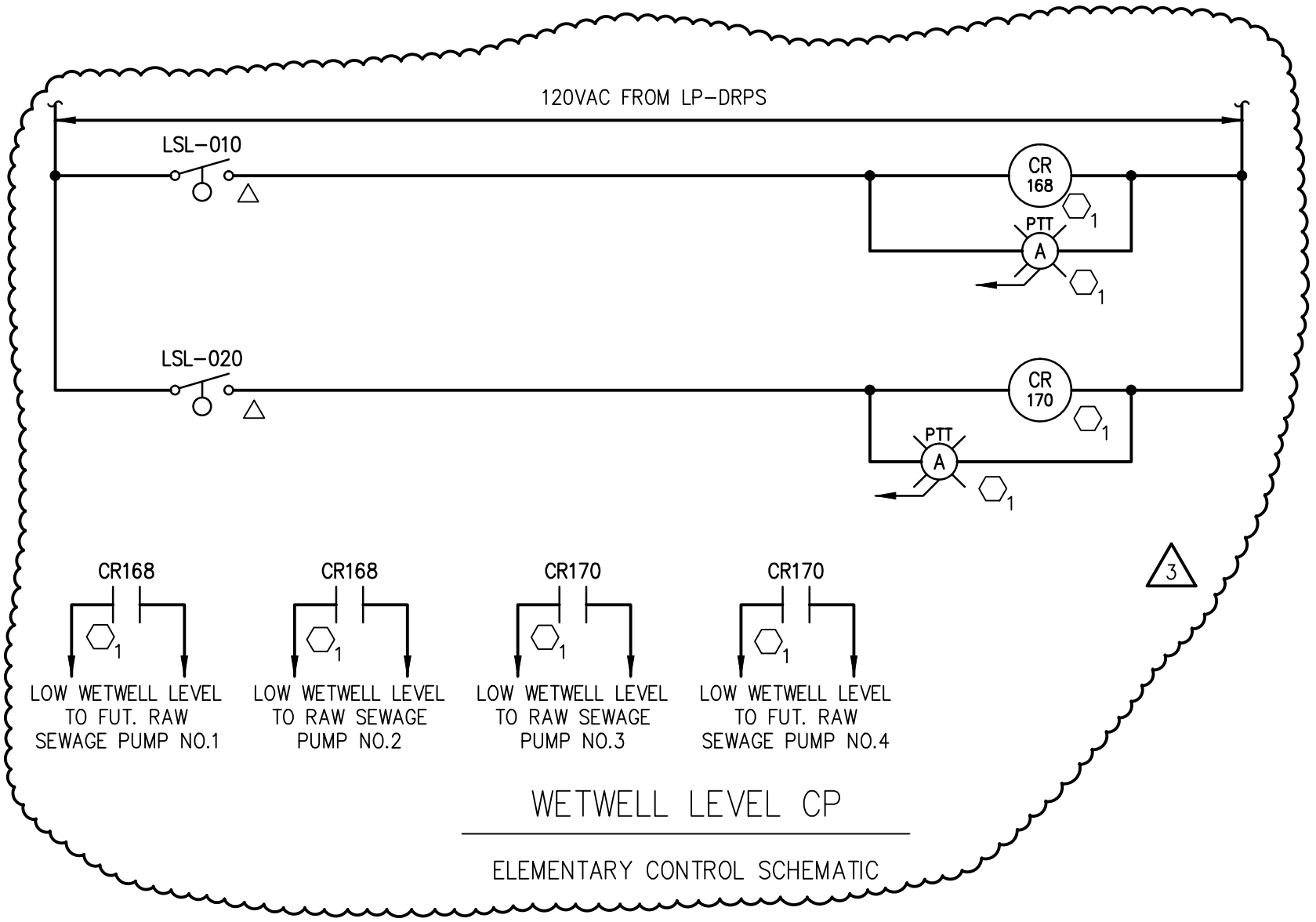
(SEE DWG M100 FOR MAIN PUMPING SYSTEM DETAILS)



ADDENDUM NO.	DATE	FAIRFAX COUNTY, VIRGINA DPWES	H & S JOB NUMBER	REFER TO CONTRACT DRAWING NUMBER
3	06/25/15		32236-001	M106
ATTACHMENT NO.	BY	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CONTRACT NUMBER	SHEET 1 OF 2
5a	MKS		CN14402005	



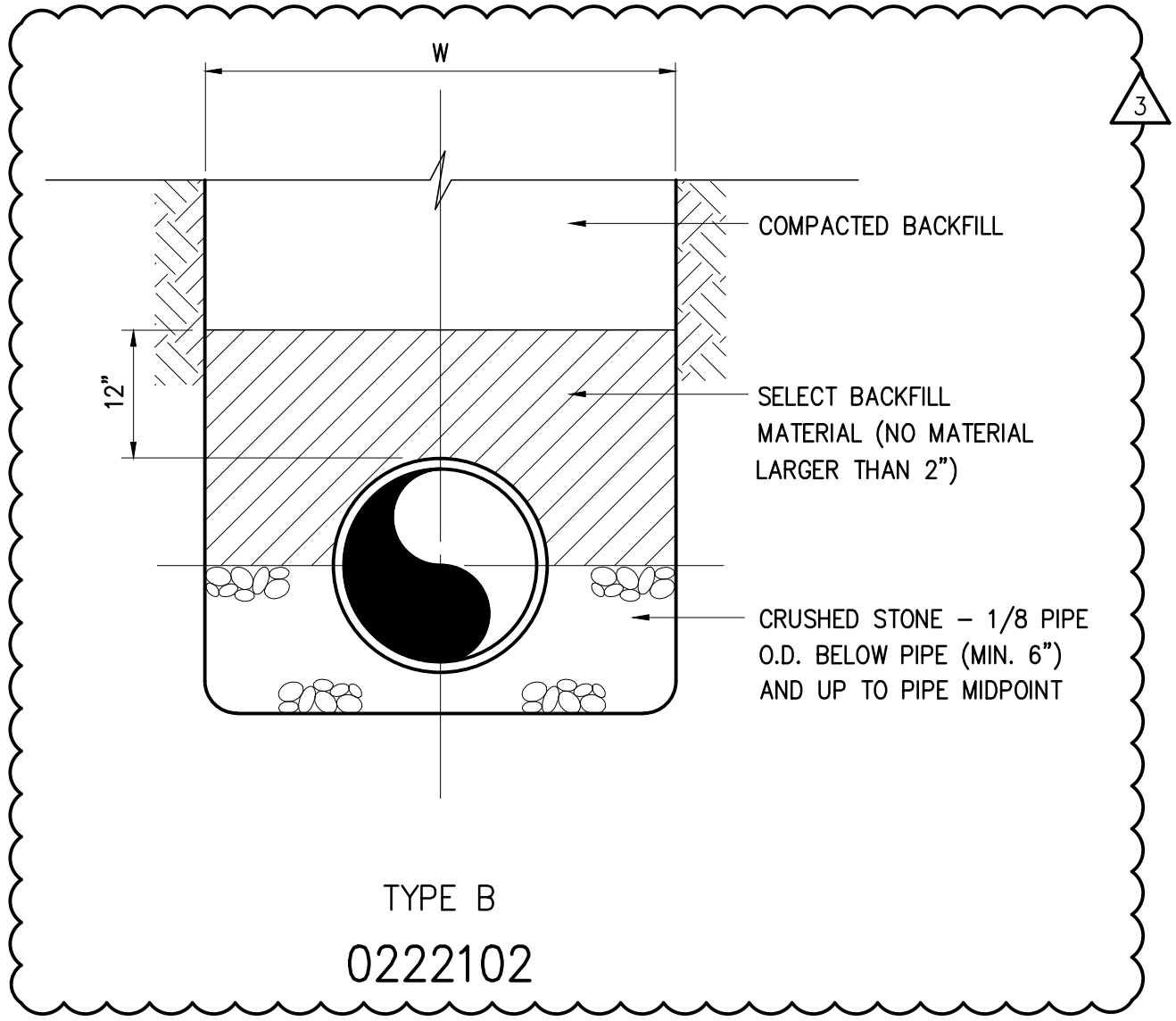
ADDENDUM NO. 3	DATE 06/25/15	FAIRFAX COUNTY, VIRGINIA DPWES	H & S JOB NUMBER 32236-001	REFER TO CONTRACT DRAWING NUMBER M107
ATTACHMENT NO. 5b	BY MKS	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CONTRACT NUMBER CN14402005	SHEET 2 OF 2



WETWELL LEVEL CP

ELEMENTARY CONTROL SCHEMATIC

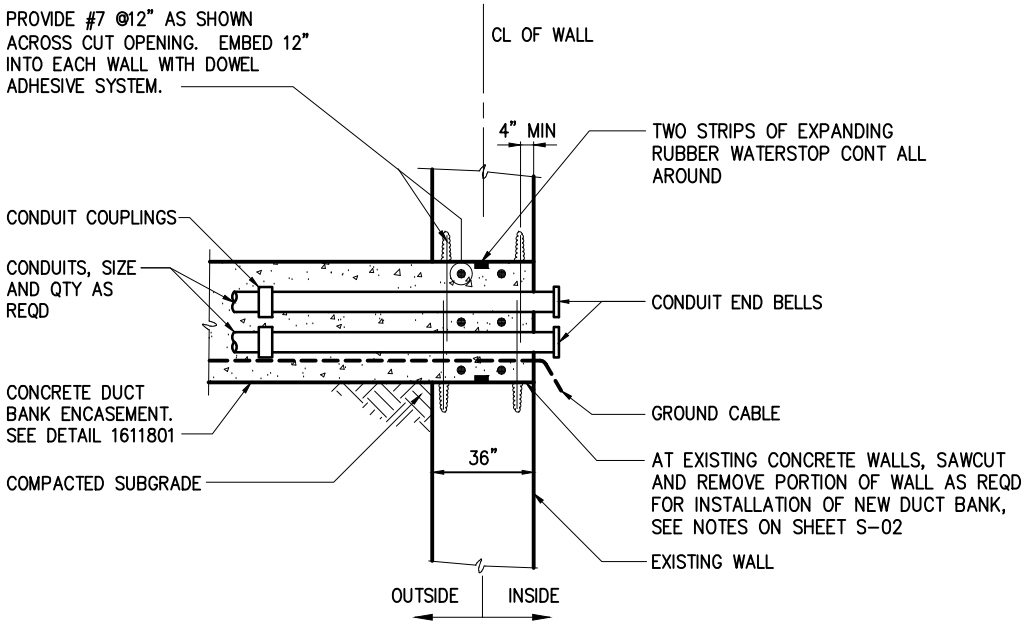
ADDENDUM NO.	DATE		H & S JOB NUMBER	REFER TO CONTRACT DRAWING NUMBER
3	06/25/15	FAIRFAX COUNTY, VIRGINIA DPWES	32236-001	E112
ATTACHMENT NO.	BY		CONTRACT NUMBER	
6	MKS	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CN14402005	SHEET 1 OF 1



TYPE B

0222102

ADDENDUM NO. 3	DATE 06/25/15	FAIRFAX COUNTY, VIRGINIA DPWES	H & S JOB NUMBER 32236-001	REFER TO CONTRACT DRAWING NUMBER D1
ATTACHMENT NO. 7	BY MKS	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CONTRACT NUMBER CN14402005	SHEET 1 OF 1

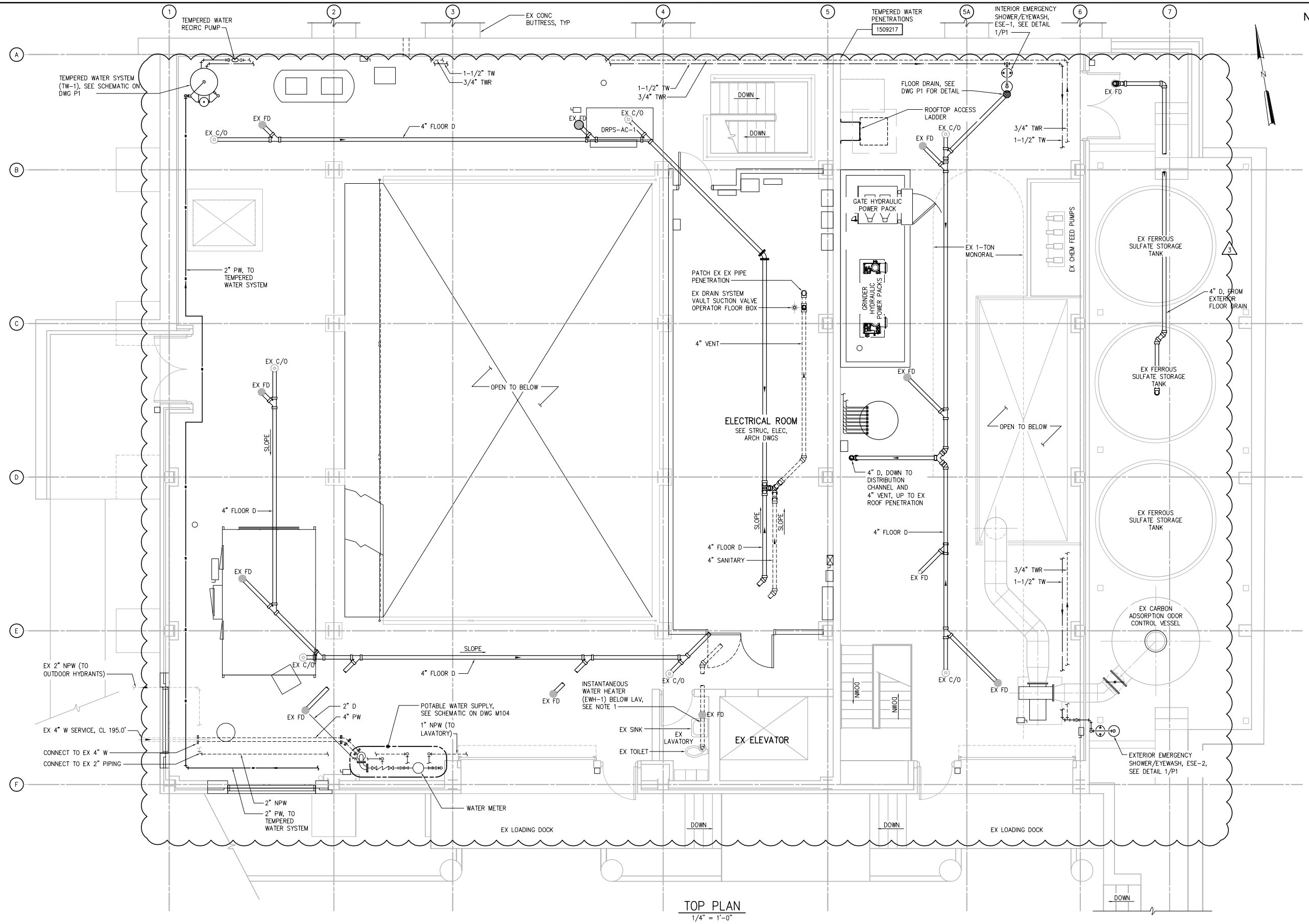


DUCT BANK TERMINATION AT CONCRETE WALL DETAIL

NTS

3

ADDENDUM NO. 3	DATE 06/25/15	FAIRFAX COUNTY, VIRGINIA DPWES	H & S JOB NUMBER 32236-001	REFER TO CONTRACT DRAWING NUMBER D11
ATTACHMENT NO. 8	BY MKS	DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION	CONTRACT NUMBER CN14402005	SHEET 1 OF 1



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

1/4"=1'-0"

NOTES:

1. WALL MOUNT NEW INSTANTANEOUS WATER HEATER BELOW LAVATORY SUPPLY WITH 3/8" COLD AND HOT WATER BELOW LAVATORY AND CONNECT TO EXISTING LAVATORY FAUCET SUPPLIES BELOW LAVATORY. REFER TO SPECIFICATION SECTION 15400 FOR EWH-1 REQUIREMENTS.
2. SEE NOTES 1 AND 2 ON DRAWING P100.
3. ALL POTABLE WATER AND TEMPERED WATER PIPING SHALL BE ROUTED A MINIMUM OF 10' AFF.

3 ADDENDUM NO. 3: NEW FLOOR DRAINS SHOWN BOLD FOR CLARITY

FUND NO. 690-C69300 / PROJECT NO. WW-000001-009 / CONTRACT NO. CN14402005

NO.	ISSUED FOR	DATE	BY
2	ISSUED FOR BID	05/2015	ASG
1	ISSUED FOR PERMIT APPROVAL	12/2014	ASG

DESIGNED MPV
DRAWN MKS
CHECKED
PROJ.ENGR. MPV
APPROVED

COMMONWEALTH OF VIRGINIA
ANDREW S. GREGSON
Lic. No.24113
PROFESSIONAL ENGINEER

COMMONWEALTH OF VIRGINIA
ALAN C. VESTAL
Lic. No.49530
PROFESSIONAL ENGINEER

HAZEN AND SAWYER
Environmental Engineers & Scientists
4035 Ridge Top Road, Fairfax, Va. 22030

FAIRFAX COUNTY, VIRGINIA
DPWES

DIFFICULT RUN RAW SEWAGE PUMP STATION REHABILITATION

PUMPING STATION
PLUMBING
TOP PLAN

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.

DATE	MAY 2015
H & S JOB NUMBER	32236-001
CONTRACT NUMBER	CN14402005
DRAWING NUMBER	P100
SHEET	53 OF 91

XREFs:
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