



**DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR ANDREW CUOMO
EMPIRE STATE PLAZA
ALBANY, NY 12242**

ADDENDUM NO. 3 TO PROJECT NOS. 45147-C,E

**CONSTRUCTION AND ELECTRICAL WORK
PROVIDE WATER STORAGE & FIRE SUPPRESSION UPGRADES
TROOP K HEADQUARTERS BUILDING
2541 ROUTE 44
SALT POINT, NY 12578**

December 9, 2019

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

BIDDING REQUIREMENTS

1. DOCUMENT 001114 ADVERTISEMENT FOR BIDS: The last date for receipt of bids is changed from 2:00pm Wednesday, December 11, 2019 to 2:00pm Wednesday, December 18, 2019.

ELECTRICAL WORK SPECIFICATIONS

1. Section 230533 – ELECTRIC HEATING CABLE SYSTEM FOR WATER PIPES: Add the accompanying Section (pages 230533-1 thru 230533-4) to the Project Manual.

CONSTRUCTION WORK DRAWINGS

1. Addendum Drawings:
 - a. Drawing No. FP-100, noted “ADDENDUM DRAWING 12/6/2019” accompanies this Addendum and forms part of the Contract Documents.

ELECTRICAL WORK DRAWINGS

1. Drawing No. FP-100: Delete this Drawing in its entirety.

END OF ADDENDUM

Eric T. Deyoe, P.E.
Director, Division of Design
Design and Construction

SECTION 230533

ELECTRIC HEATING CABLE SYSTEM FOR WATER PIPES

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Fire Water Piping: Section 211300
- B. Electrical Specifications: Division 26

1.02 REFERENCES

- A. FM, IEEE.

1.03 SYSTEM DESCRIPTION

- A. Provide a low temperature, all electric, self-regulating type heating cable trace system for metallic pipes that will maintain the pipeline water temperature at approximately 50 degrees F when the ambient temperature drops to a low of -40 degrees F.

1.04 SUBMITTALS

- A. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.
- B. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.
- C. Shop Drawings:
 - 1. Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be acceptable).
Include:
 - a. Actual location length, routing, and rating of each heating cable.
 - b. Location of branch circuit connections, including conductor size and overcurrent rating recommended for each branch circuit.
 - c. Location of terminations, thermostats, etc.
 - d. Expected current draw of each heating cable (Data to be used in conjunction with system acceptance test).
- D. Product Data:
 - 1. Catalog sheets, specifications and installation instructions.
- E. Quality Control Submittals:
 - 1. Company Field Advisor Data: Include:
 - a. Name, business address and telephone number of Company Field Advisor secured for the required services.

- b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
 - c. Services and each product for which authorization is given by the Company, listed specifically for this project.
- G. Contract Closeout Submittals:
- 1. System acceptance test report.
 - 2. Certificates:
 - a. Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
 - 3. Operation and Maintenance Data:
 - a. Deliver 2 copies, covering the installed products, to the Director's Representative. Include:
 - 1) Operation and maintenance data for each product.

1.05 QUALITY ASSURANCE

- A. Heating cables shall be Factory Mutual (FM) approved, in compliance with IEEE 515.
- B. Company Field Advisor: Secure the services of a Company Field Advisor for the following services:
 - 1. Render advice regarding installation of the system.
 - 2. Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.

PART 2 PRODUCTS

2.01 HEATING CABLES FOR FREEZE PROTECTION

- A. Type SR-10: Self-regulating; Nelson Electric's Hevi-Duty Limitrace LT10/LT210, Raychem Corp.'s Chemelex Auto-Trace 10BTV1/10BTV2, or Thermon Mfg. Co.'s 10-FLX-1/10-FLX-2:
 - 1. Thermal output of 10 watts/ft (120V cable operated at 120V).
 - 2. Shall be compatible with standard 120V outlet.
 - 3. If a GFCI-protected outlet is not available, the contractor shall provide materials to create a GFCI-protected outlet.

2.02 SYSTEM ACCESSORIES

- A. Furnish the heating cable manufacturer's accessories to suit the system requirements:
 - 1. Splice, Tee & Power Connection Kits: Nelson Electric's Hevi-Duty PLT Series Kits, Raychem Corp.'s PMKG Series Kits, or Thermon Mfg. Corp.'s PCA Series Kits.
 - 2. Thermostat Control Kits: Capable of operating with standard 120V outlet.

3. Aluminum Foil Tape: Nelson Electric's Hevi-Duty AT-50, Raychem Corp.'s AT-180, or Thermon Mfg. Corp.'s AL-20P.
4. Stainless Steel Banding: Nelson Electric's Hevi-Duty PS-6, Raychem Corp.'s NA, or Thermon Mfg. Corp.'s PCB.
5. Fiberglass Tape: Nelson Electric's Hevi-Duty GT-6, Raychem Corp.'s GT-66, or Thermon Mfg. Corp.'s PF-1.
6. Electric Traced Warning Labels: Nelson Electric's Hevi-Duty WS-100, Raychem Corp.'s ETL, or Thermon Mfg. Corp.'s CL.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions:
 1. Examine areas and conditions under which electric heating cables are to be installed.
 2. Notify Director's Representative in writing of conditions detrimental to proper completion of the work.
 3. Ensure that surfaces, and pipes to which electric heating cables are to be installed are free of burrs and other sharp protrusions and that pipes have been pressure tested for leakage.
 4. Do not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 INSTALLATION

- A. Install the Work of this Section in accordance with manufacturer's printed instructions.
- B. After attaching heating cables to pipe, test cables for insulation resistance of 20 megaohms or greater, measured to ground. Where leakage is detected replace cable and retest.
- C. Install electric traced warning labels every 10 feet on the exterior of the pipe insulation.
- D. Set thermostats so that heating cables will be de-energized when the pipeline temperature rises above 55 degrees F.

3.03 FIELD QUALITY CONTROL

- A. System Test:
 1. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test.
 2. Make the following tests:
 - a. Verify that each heating cable is operating properly by noting and recording its current draw. Note surface temperature of pipe to which cable is attached and ambient air temperature. Use manufacturers approved shop drawing data for expected current

draw for each tape at given surface/ambient temperature.
Compare actual current draw with expected draw. Any cable with a + 15 percent variance from the manufacturer's expected draw will be rejected.

3. Supply all equipment necessary for system adjustment and testing.
4. Submit written report of test results signed by Company Field Advisor and the Director's Representative.

END OF SECTION

FIRE PROTECTION NOTES:

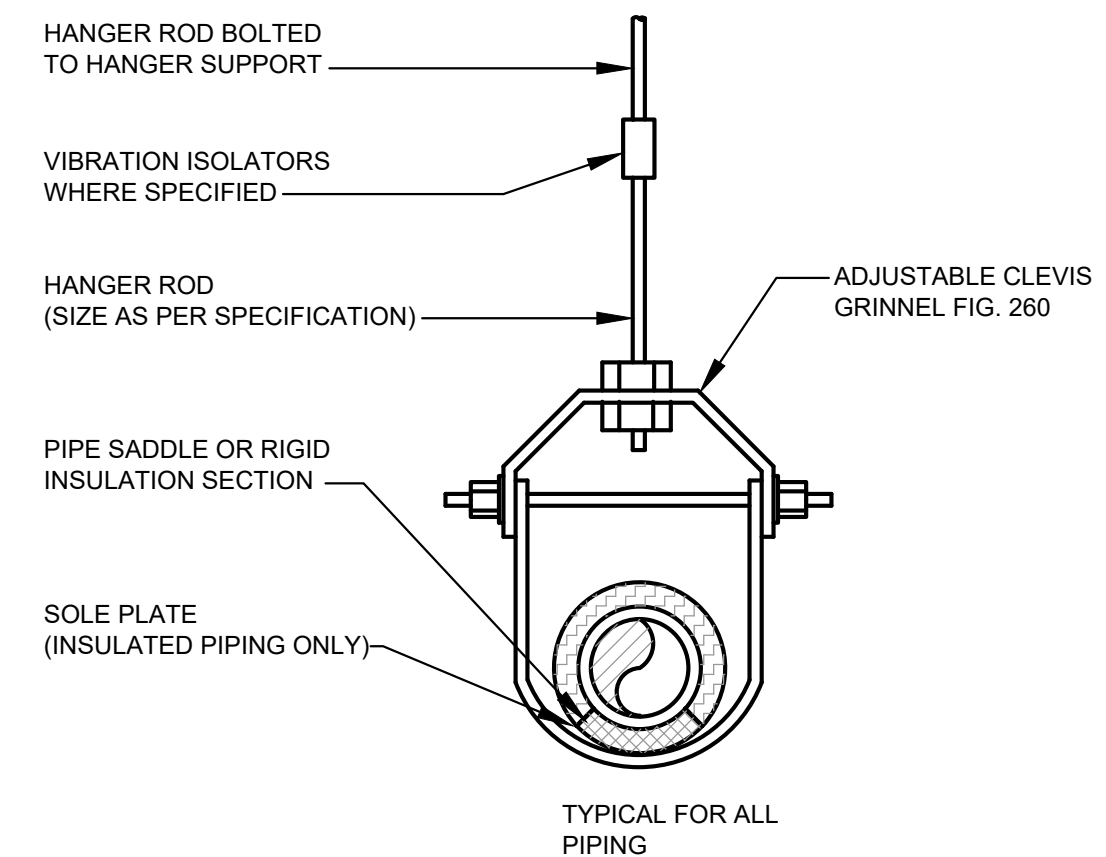
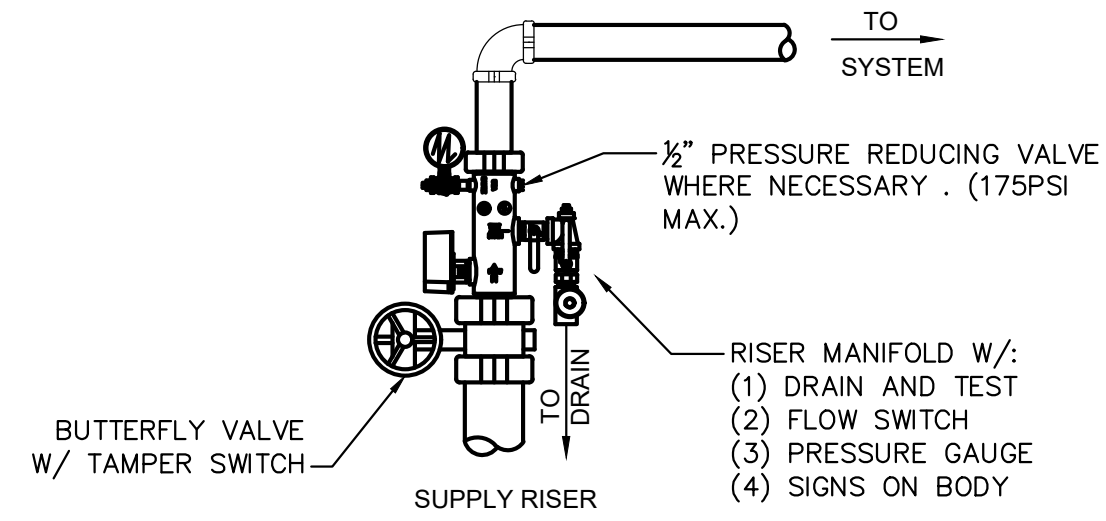
1. FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED AND TESTED PER IFC 2015 AND REFERENCED STANDARD NFPA 13 EDITION 2013
2. FIRE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED BY A FIRE PROTECTION CONTRACTOR USING PERFORMANCE REQUIREMENTS AND DESIGN DOCUMENTATION CRITERIA. A CERTIFIED NICET LEVEL III OR IV TECHNICIAN CERTIFIED IN WATER-BASED FIRE PROTECTION SYSTEM LAYOUT SHALL PERFORM SHOP DRAWINGS AND SUPERVISE THE LAYOUT AND INSTALLATION OF THE SYSTEM AND THE TESTING OF THE SYSTEM. PROVIDE HYDRAULIC CALCULATIONS AND SHOP DRAWINGS REVIEWED BY AND SEALED AND STAMPED BY A LICENSED NYS PROFESSIONAL ENGINEER TO SUBMIT.

DESIGN CRITERIA:

1. FIRE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED BASED ON THE FOLLOWING CRITERIA:
 PUMP ROOM OCCUPANCY: ORDINARY HAZARD I
 DENSITY: 2 GPM/SQFT
 DESIGN AREA: 1500 SQFT
 MAXIMUM AREA PER SPRINKLER: 225 SQFT
 HOSE ALLOWANCE: 250 GPM
2. PUMP PERFORMANCE:
 STATIC PRESSURE: 100 PSI
 FLOW: 500 GPM
3. SPRINKLER HEADS SHALL HAVE A 1/2" NOMINAL ORIFICE AND A TEMPERATURE RATING OF 165° F TYPE.
4. ALL DROP NIPPLES SHALL BE 1" UNLESS NOTED.

LEGEND	
SYMBOL	DESCRIPTION
—	EXISTING WORK
—	NEW WORK
○	PIPE UP
—○	PIPE DOWN
●	POINT OF CONNECTION NEW TO EXISTING
⊠	GATE VALVE
⊘	CHECK VALVE
⊙	UPRIGHT SPRINKLER HEAD
OS&Y	OUTSIDE STEM & YOKE
F.D.	FIRE DEPARTMENT
OS&Y	OUTSIDE STEM & YOKE
F.D.	FIRE DEPARTMENT
DCDA	DOUBLE CHECK VALVE ASSEMBLY
FCVA	FLOW CONTROL VALVE ASSEMBLY

NOTE: ALL WORK IS NEW UNLESS NOTED OTHERWISE.



FIRE CONTROL VALVE ASSEMBLY DETAIL (FCVA)

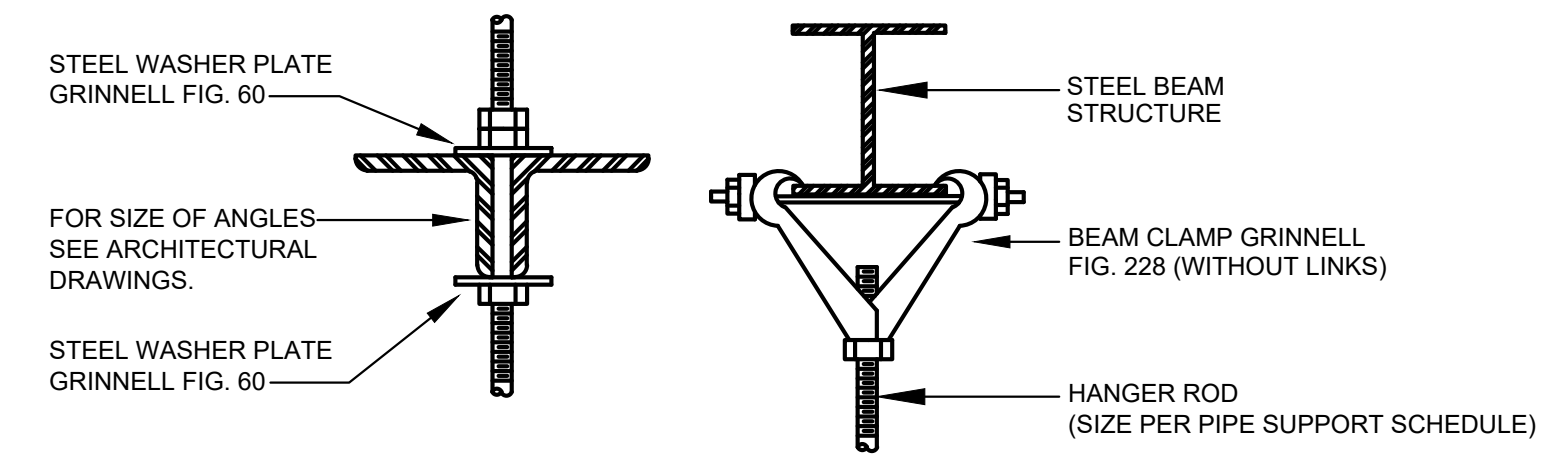
NO SCALE

INDIVIDUAL PIPE HANGER ROD & SPACING SCHEDULE												
NOMINAL PIPE OR TUBE SIZE - INCHES	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12
HANGER ROD SIZES - INCHES	3/8	3/8	3/8	3/8	1/2	1/2	5/8	5/8	7/8	7/8	7/8	7/8
MAXIMUM SPACING BETWEEN PIPE SUPPORTS - FEET	6	7	9	10	11	12	14	16	17	19	22	23
MAX. SPACING BETWEEN CU. TUBE SUPPORTS - FEET	6	6	8	9	10	10	12	14	14	16	18	20

NOTES: TRAPEZE HANGER SPACING SHALL BE BASED ON SPACING OF SMALLEST PIPE ON TRAPEZE. TRAPEZE SHALL BE DESIGNED WITH A FACTOR OF SAFETY OF 5 FOR CENTER OF SPAN CONCENTRATED LOAD.

SUSPENDED PIPING SUPPORT DETAIL

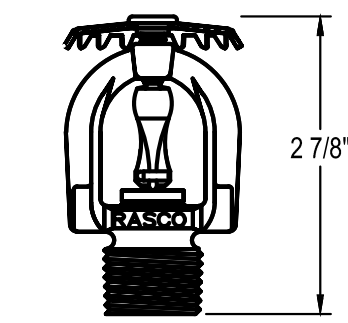
NO SCALE



PIPE SUPPORT ATTACHMENT DETAILS

NO SCALE

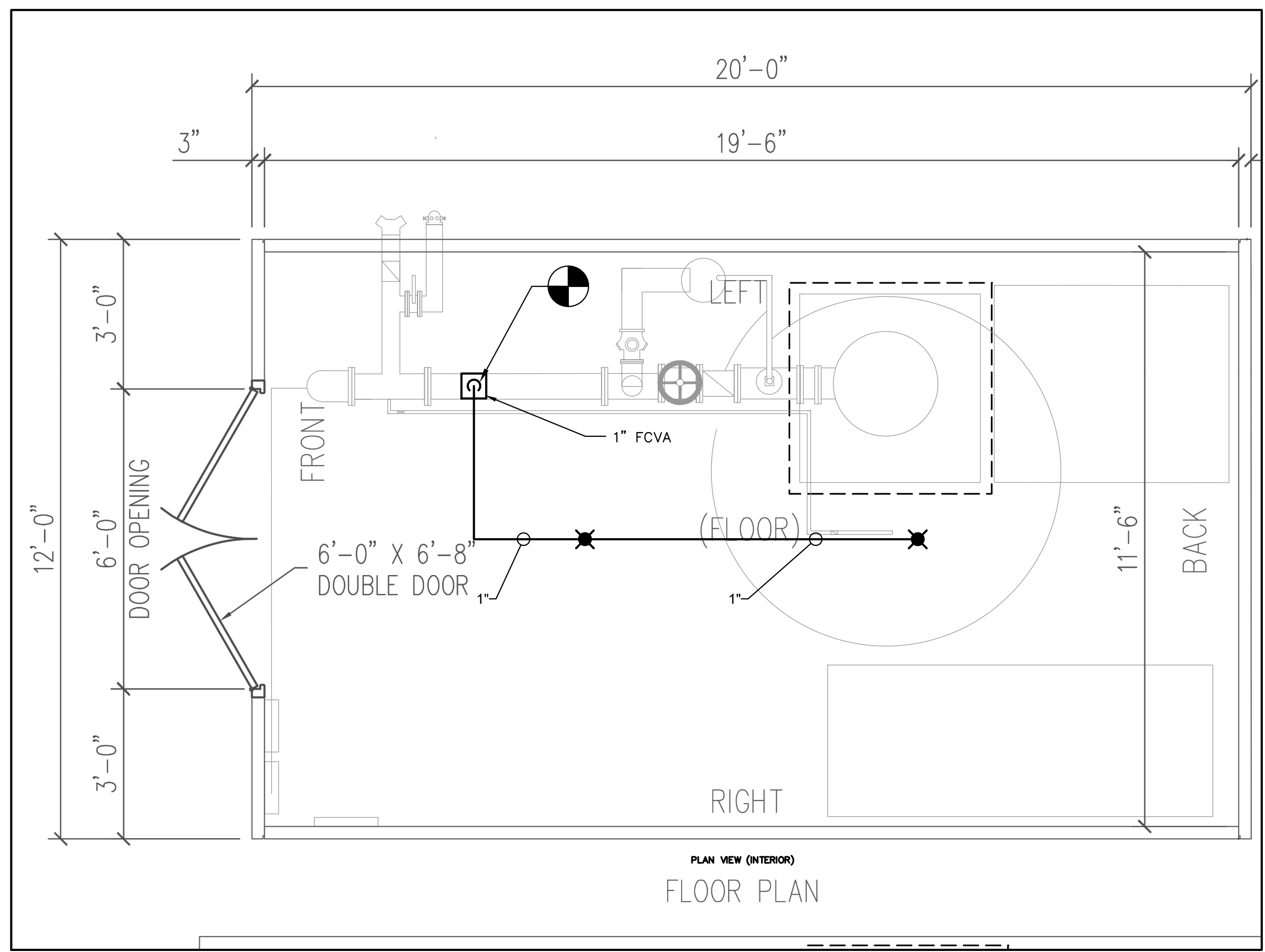
- NOTES:
1. BEAM CLAMP OR OTHER APPROVED ATTACHMENT DEVICES SHALL BE USED.
 2. ALL INTERMEDIATE STEEL FRAMING REQUIRED TO HANG PIPING, DUCTS AND OTHER EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
 3. ALL HANGERS AND SUPPLEMENTARY STEEL ATTACHMENTS TO THE BUILDING STRUCTURE SHALL BE DONE WITH BEAM CLAMPS (NO WELDING ALLOWED).
 4. NO PIPES SHALL BE ATTACHED OR HUNG FROM THE UNDERSIDE OF ROOF OR FLOOR DECK.
 5. INSTALL PER MANUFACTURERS INSTRUCTIONS



UPRIGHT SPRINKLER UL LISTED/FM APPROVED MEA#258-93-E/BS&A#587-75-SA

SPRINKLER HEAD DETAILS

NO SCALE



PRECAST PUMP STATION BUILDING FIRE PROTECTION

SCALE: 1/2"=1'

CONSULTANTS

WOODARD & CURRAN

LYNSTAAR ENGINEERING, P.C.

WARNING: THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

CONSTRUCTION

TROOP K
WATER SUPPLY

TROOP K HEADQUARTERS
2541 ROUTE 44
SALT POINT, NY 12578

NEW YORK
STATE POLICE

BPO	12/6/19	ADDENDUM NO. 3
MARK	8/20/19	BID DOCUMENTS

PROJECT NUMBER:	45147-C
DESIGNED BY:	JSR
DRAWN BY:	JSR
CHECKED BY:	GRL
APPROVED BY:	

SHEET TITLE

FIRE PROTECTION PLAN