

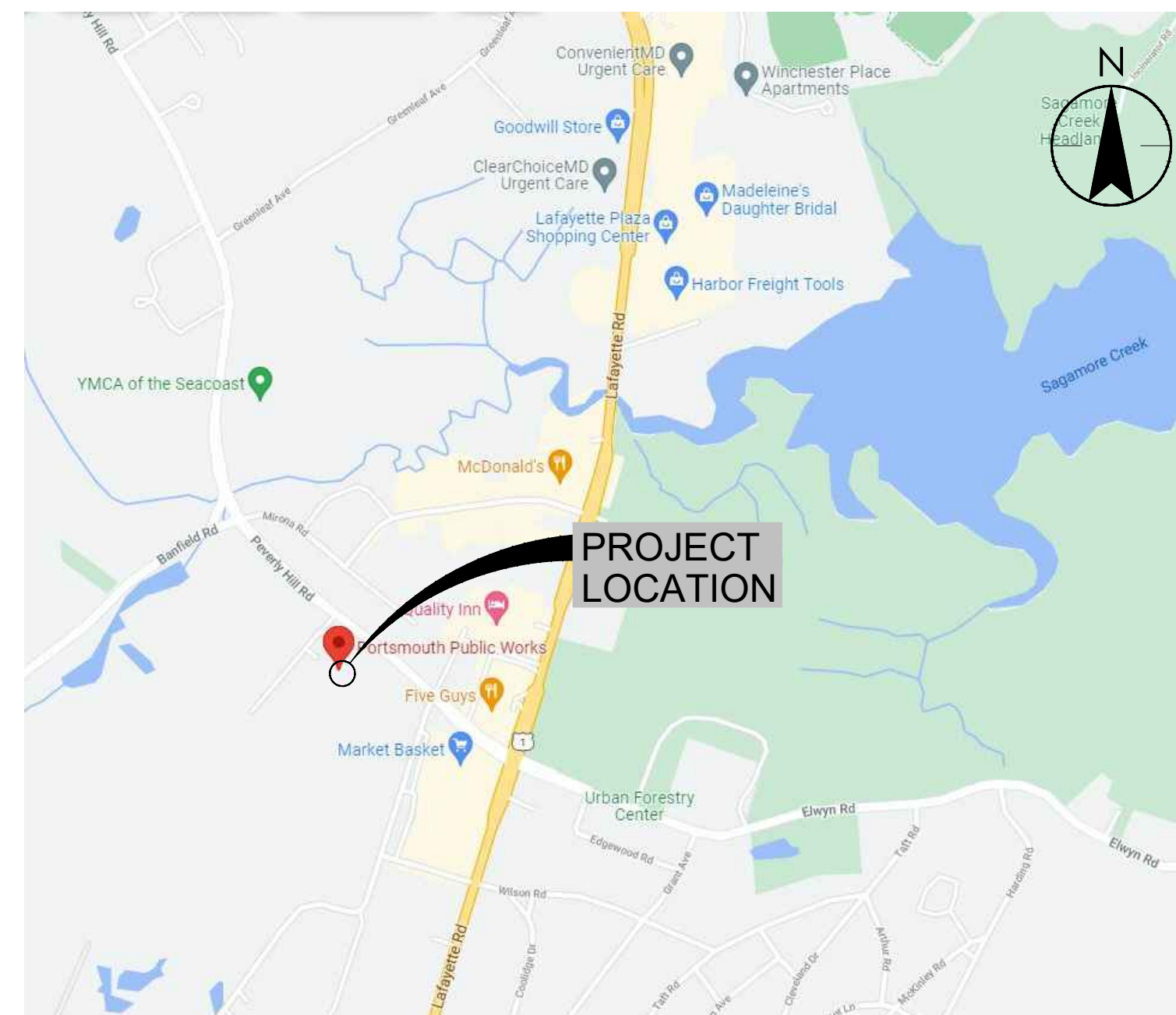
# CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS FUEL SYSTEM UPGRADE

## 680 PEVERLY HILL RD PORTSMOUTH, NEW HAMPSHIRE

### INDEX OF SHEETS

SHEET NO.	TITLE	SHEET NO.	TITLE	SHEET NO.	TITLE
FS.100	COVER SHEET	FS.310	PIPING PLAN	FS.410	CONDUIT PLAN AND CONDUIT SCHEDULE
FS.101	FUEL SYSTEM NOTES, ABBREVIATIONS & LEGENDS, WELL MAP, AND FLOOD MAP	FS.320	UST INSTALLATION DETAILS AND NOTES CONTAINMENT SOLUTIONS 10K GAS AND DIESEL	FS.420	SINGLE LINE DIAGRAM
FS.102	VERIFICATION FORMS	FS.322	UST RISER DETAILS AND HIGH LEVEL SET POINTS	FS.421	UST SUMP CONDUIT DETAILS AND DISPENSER SUMP CONDUIT DETAILS
FS.210	EXISTING SITE PLAN	FS.323	UST PIPING SUMP PLAN AND DETAILS	FS.422	INTERSTITIAL RISER, I.S. SENSOR, AND CONDUIT TRENCH DETAILS.
FS.211	DEMOLITION PLAN	FS.324	PIPING TRENCH AND DISPENSER SUMP DETAILS	FS.423	HIGH LEVEL ALARM AND E-STOP DETAILS, PANEL SCHEDULE AND ELECTRICAL COMPONENTS LIST.
FS.212	PROPOSED SITE PLAN	FS.325	VENT RISER PIPING DETAILS	FS.424	ELECTRICAL SCHEMATIC (1 OF 3)
FS.213	GRADING AND DRAINAGE PLAN			FS.425	ELECTRICAL SCHEMATIC (2 OF 3)
FS.220	DISPENSER AND FUEL ISLAND DETAILS			FS.426	ELECTRICAL SCHEMATIC (3 OF 3)
FS.221	CONCRETE PLANS AND DETAILS			FS.427	ELECTRICAL HAZARD LOCATION PLAN
FS.222	PLB, BOLLARD, AND PAVEMENT DETAILS				
FS.223	CANOPY AND SIGN DETAILS				
FS.224	FENCING DETAILS				
FS.225	TRAFFIC CONTROL PLAN				

## CITY OF PORTSMOUTH COUNTY OF ROCKINGHAM



### VICINITY MAP

43° 2' 16.1" N  
70° 46' 38.99" W



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NHDES SITE #199706017  
NHDES FACILITY ID #0113665

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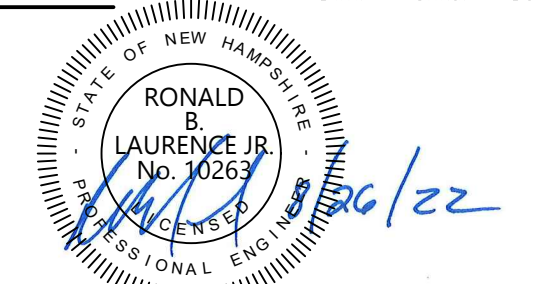
### Project Notes

### Legend

### Sheet Notes

Revision	By	Appd.	MM.DD.YY	
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22	
ISSUED FOR BID	CLC	RBL	08.26.22	
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22	
Issued	By	Appd.	MM.DD.YY	
File Name: 1_195602217_Portsmouth-DPW_G.dwg	CLC	RBL	05.12.22	
	Dwn.	Chkd.	Dsgn.	MM.DD.YY

### Permit-Seal



RONALD B. LAURENCE JR.  
NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
CITY OF PORTSMOUTH  
DEPARTMENT OF PUBLIC WORKS  
FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
PORTSMOUTH, NH 03801

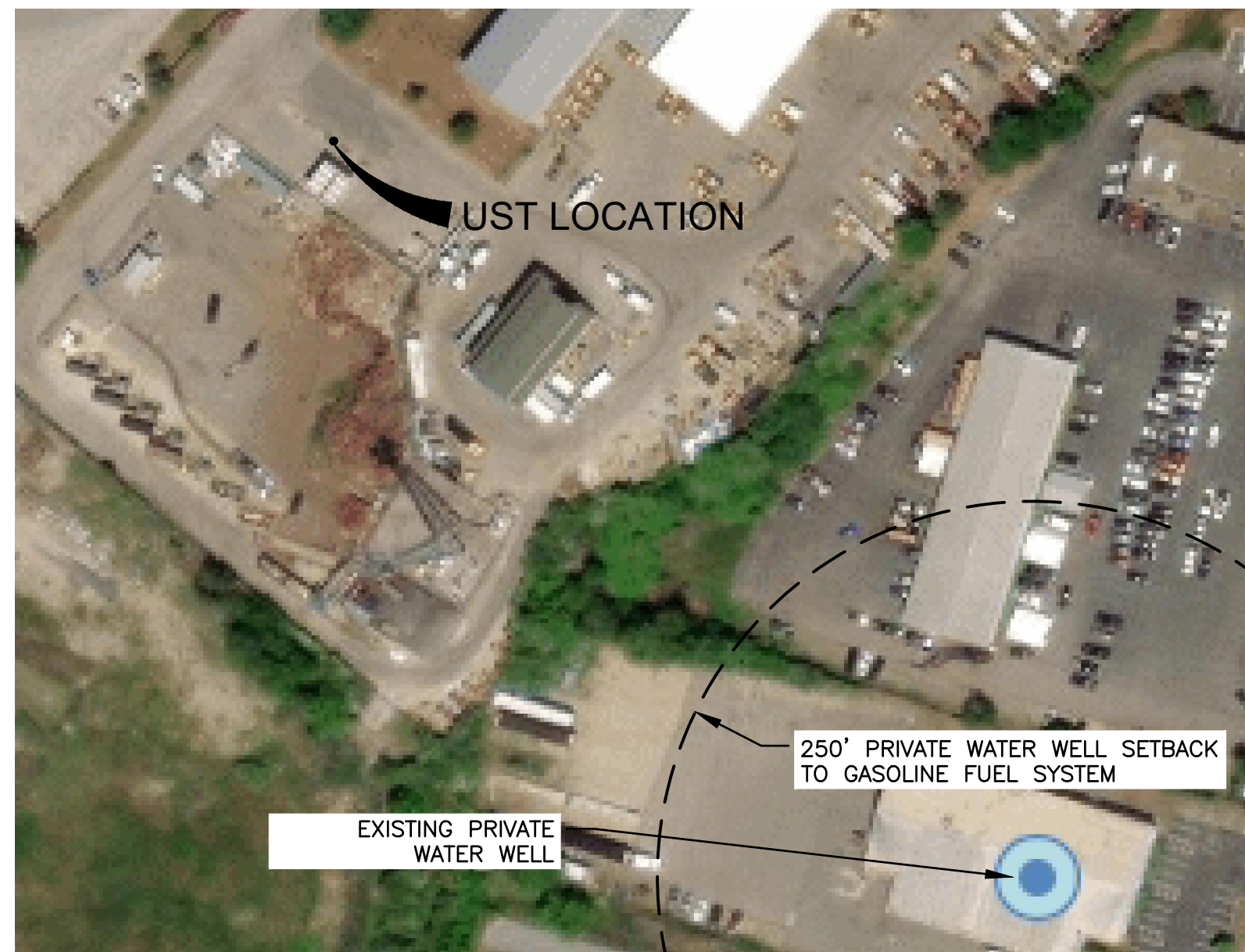
Title  
COVER SHEET

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.100	Sheet 1 of 28
	Revision 0

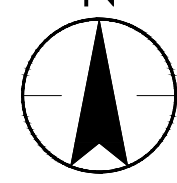
**GENERAL NOTES:**

- ALL EQUIPMENT IS PROPOSED
- TANK SPECIFICATIONS:  
MANUFACTURER: NOV/CONTAINMENT SOLUTIONS  
MODEL: DWT-6 TYPE II  
MATERIAL: FRP  
NOMINAL DIAMETER: 8'  
VOLUME: 10,000 GAL. ; 10,000 GAL.  
LENGTH: 30'-6" ; 30'-6"  
DEGREE OF WRAP: 360'  
PROPOSED UST #8 AND #9
- PRIMARY\SECONDARY PIPING:  
MANUFACTURER: FRANKLIN FUELING COMPONENTS  
MODEL NO.: APT XP-200-SC  
MATERIAL: NYLON 12, SIZE: 2"  
BEND RADIUS: 36" MIN  
SUCTION SYSTEM  
INSTALL WITH ROCK GUARD DUCTING: FRANKLIN FUELING: APT DUCT-400-250
- VENT PIPING:  
MANUFACTURER: NOV/AMERON  
MODEL NO.: DUALOY 3000/LCX, SIZE: 2"
- PIPE TESTING REQUIREMENTS (REQUIRED FOR PRODUCT AND VENT PIPING):  
5.1. PRODUCT PIPE (APT) TESTING REQUIREMENTS:  
PRIMARY: 50 MIN TO 100PSI MAX. FOR 1 HOUR  
SECONDARY: 5-BPSI MAX FOR 1 HOUR  
5.2. VENT PIPE (AMERON LCX) TESTING REQUIREMENTS:  
PRIMARY: 50PSI FOR 1 HOUR  
SECONDARY: 10PSI MAX FOR 1 HOUR  
MAINTAIN THE REQUIRED PRESSURE FOR A MINIMUM OF (2)-HOURS AFTER THE BACKFILL PROCESS HAS BEEN COMPLETED.
- TANKS SHALL BE FILLED BY GRAVITY DROP
- SITE IS NOT WITHIN A FLOOD ZONE (SEE MAP)
- EXISTING WATER TABLE NOT KNOWN. BUOYANCY CALCULATIONS ASSUMES GROUNDWATER AT GRADE.
- STORM WATER SHALL NOT BE DIRECTED TO FLOW OVER ANY TANK PAD OR DISPENSING PAD, PER ENV-OR 407.06(i).
- GROUNDWATER AND SURFACE WATER SHALL BE PREVENTED FROM ENTERING THE SUMPS BY USING WATER TIGHT PIPING PENETRATIONS, SEALING THE SUMPS TO THE TANK USING FIBERGLASS RESIN AND USING WATERTIGHT SURFACE MANHOLES.
- SUMPS MUST PASS A TIGHTNESS TEST PER Env-or 406.15, HYDROSTATIC TIGHTNESS TEST:  
11.1. HYDROSTATICALLY TEST AT A LEVEL THAT IS WITHIN ONE INCH OF THE TOP OF THE SUMP OR 10 INCHES ABOVE THE HIGHEST PENETRATION FITTING, WHICHEVER IS LOWER.  
11.2. LIQUID LEVEL MEASUREMENTS SHALL BE RECORDED AT THE BEGINNING AND END OF THE TEST.  
11.3. A PASSING TIGHTNESS TEST SHALL INCLUDE NO LOSS OF LIQUID FOR THE 3 HOUR DURATION OF THE TEST.
- OVERSPILL CONTAINMENT MANHOLES SHALL BE VACUUM TESTED AS FOLLOWS, PER ENV-OR 406.15:  
12.1. REMOVE THE GAUGE FROM THE INSPECTION PORT AND INSTALL THE TEST ADAPTER P/N 494343  
12.2. ATTACH AIR PRESSURE SOURCE TO AIR PRESSURE REGULATOR ON VACUUM APPARATUS.  
12.3. SLOWLY APPLY VACUUM OF 30" WATER COLUMN (2.2" MERCURY) TO THE INTERSTITIAL SPACE.  
12.4. ENSURE THAT THE VACUUM SOURCE IS OFF AND START TIMER. RECORD VACUUM AFTER 1 MINUTE.  
12.5. IF THE VACUUM AFTER 1 MINUTE IS 26" WATER COLUMN (1.9" MERCURY) OR GREATER, BOTH PRIMARY AND SECONDARY CONTAINMENT VESSELS ARE TIGHT.  
12.6. IF TEST FAILS, PERFORM PRESSURE TEST PER EMCO WHEATON INSTRUCTIONS FOR CONFIRMATION.  
12.7. REPLACE COMPONENTS OR REPAIR AS NECESSARY.  
12.8. REINSTALL GAUGE.
- POSITIVE LIMITING BARRIER(PLB) VOLUME, PER ENV-OR 405.07(b):  
(5)-ROWS OF PLB  
MINIMUM "V" GROOVE - 3/4" WIDE X 3/4"  
DEEP GROOVE CROSS SECTIONAL AREA: 0.281 SQ.IN.  
TOTAL PLB GROOVE LENGTH: 8610"  
TOTAL PLB VOLUME (DOWN GRADIENT PORTIONS ONLY): (6457in\*.281in²)/(231in³/gal) = 7.85 GAL
- NOTIFICATION AND INSPECTIONS, PER ENV-OR 407.07:  
14.1. CONTACT THE NHDES DEPARTMENT TO ARRANGE FOR AN INSPECTION OF THE SYSTEM AT LEAST 5 DEPARTMENT BUSINESS DAYS PRIOR TO BACKFILLING THE TANK TOP.  
14.2. AT LEAST 8 DEPARTMENT WORKING HOURS PRIOR TO AN INSPECTION BY THE DEPARTMENT, SUBMIT A LETTER PREPARED AND STAMPED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER. STATING THAT THE INSTALL UST SYSTEM HAS BEEN INSPECTED BY A NH PE TO VERIFY THAT THE SYSTEM WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S APPROVED PLANS AND SPECIFICATIONS.  
14.3. TANK REMOVAL AND CLOSURE ACTIVITIES SHALL COMPLY WITH ENV-OR 408  
14.4. REGULATED SUBSTANCE SHALL NOT BE PLACED IN ANY TANK OR DRAWN INTO ANY PIPING UNTIL WRITTEN AUTHORIZATION IS GIVEN BY NHDES.
- ALL ELECTRICAL WORK WILL BE PERFORMED IN ACCORDANCE WITH NFPA 70.
- THE FOLLOWING POSTINGS MUST BE DISPLAYED WITHIN THE PATROL SHED BEFORE FUEL MAY BE DISPENSED:  
16.1. TANK CERTIFICATE  
16.2. SPILL RESPONSE GUIDELINES  
16.3. CLASS C OPERATOR DETAILS  
16.4. PERMIT TO OPERATE  
16.5. TANK MONITOR ALARM LEGEND
- CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:  
A. CAST-IN-PLACE CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE NHDOT STANDARD SPECIFICATIONS.  
B. UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS, CONCRETE MIX SHALL BE 4,000 PSI MINIMUM, CLASS AA, 658 LBS. AND 3.0 BAGS PER CUBIC YARD WITH FIBER MESH (COMPLYING WITH ASTM C 1116 TYPE III 4.1.3). CONFORM TO NHDOT STANDARD SPECIFICATIONS DIVISION 500 SECTION 520.  
C. ALL CONCRETE SHALL BE COATED WITH A WATER REPELLENT SEALER IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS SECTION 534. CONCRETE SHALL BE CURED IN ACCORDANCE WITH TABLE 520-9, CURE METHOD "A".  
D. REINFORCING: AS SPECIFIED IN THE CONSTRUCTION DRAWINGS AND CONFORMING TO NHDOT STANDARD SPECIFICATIONS SECTION 544.  
E. FORMS OR SCREDS SHALL BE USED FOR ALL CONCRETE AND SHALL BE SO CONSTRUCTED AND PLACED THAT THE RESULTING CONCRETE WILL BE OF THE SHAPE, LINES, DIMENSIONS, AND TO THE ELEVATIONS INDICATED ON THE CONSTRUCTION DRAWINGS.  
F. NO CONCRETE SHALL BE PLACED UNTIL REINFORCING ANCHORS, ETC. AND OTHER WORK REQUIRED TO BE BUILT INTO THE CONCRETE HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.  
G. REINFORCING SHALL BE FORMED AND SPACED, SECURED IN PLACE BY REBAR CHAIRS TO WITHSTAND ALL CONSTRUCTION SHOCKS. OTHER METHODS FOR SECURING REBAR ARE NOT ACCEPTABLE.  
H. CONSOLIDATE PLACED CONCRETE USING MECHANICAL VIBRATING EQUIPMENT WITH HAND-RODDING AND TAMPING, SO THAT CONCRETE IS WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO PARTS OF ALL FORMS.  
I. THE TOP FACE OF CONCRETE SLABS SHALL BE GIVEN A BROOM FINISH. SLABS SHALL BE KEPT WET DURING THE CURING PERIOD AND BE COVERED WITH CURING PAPER. CONCRETE SHALL BE SEALED WITHIN 24 HOURS OF THE POUR.  
J. THE CONTRACTOR SHALL NOT DRIVE ON OR ALLOW OTHERS TO DRIVE ON THE CONCRETE UNTIL SUFFICIENTLY CURED.  
K. ALL GROUTING AND REPAIR WORK SHALL BE DONE USING AN APPROVED NON-SHRINK GROUT MIXED AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
- FOLLOWING NHDES FINAL INSPECTION AND PRIOR TO ISSUANCE OF AUTHORIZATION TO OPERATE, THE PRIMARY CONTAINMENT SYSTEM SHALL BE CHECKED TO VERIFY VAPOR TIGHTNESS. TIGHTNESS TESTING PROCEDURES SHALL CONFORM WITH ENV-OR 406.05 AND SHALL INCLUDE A LISTED TEST METHOD THAT IS CERTIFIED TO MEET LEAK RATE DETECTION CRITERIA SPECIFIED IN ENV-OR 406.06. TEST RESULTS SHALL BE FORWARDED TO NHDES INSPECTOR AND UPLOADED TO NHDES ONESTOP (BY OWNER).
- ALL PROPOSED AREAS OF EXCAVATION SHALL BE INVESTIGATED FOR EXISTING UTILITIES PRIOR TO COMMENCING DEMOLITION ACTIVITIES. CONTRACTOR SHALL PROVIDE DIG SAFE AS REQUIRED BY NH RSA 374:51.
- ALL EQUIPMENT SHALL BE INSTALLED BY AN ICC CERTIFIED TANK INSTALLER AS REQUIRED BY ENV-OR 407.05. INSTALLER SHALL ALSO BE QUALIFIED BY THE MANUFACTURER OF THE EQUIPMENT BEING INSTALLED FOR EVERY COMPONENT IN THE SYSTEM.
- BOSTIK TYPE SEALANTS SHALL NOT BE USED ON THE INSIDE OF ANY CONTAINMENT SUMP FOR ANY REASON.
- THE SUMP LIQUID SENSORS IN ALL DISPENSER AND PIPING SUMPS SHALL BE PROGRAMMED FOR POSITIVE DISPENSER SHUTDOWN UPON DETECTION OF A LEAK IN EITHER SUMP. REFER TO ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.

**1 FUEL SYSTEM NOTES**  
SCALE: N.T.S.



100 FT



WELL NOTES:  
MAP SOURCE: NHDES ONESTOP DATA MAPPER, 9/27/2021

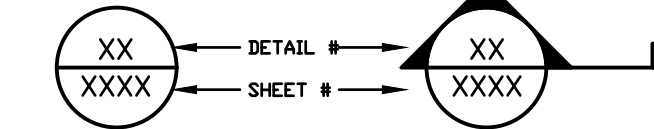
- OVER 3000 FEET TO PUBLIC WATER SUPPLY
- APPROX. 635 FEET TO SURFACE WATER
- APPROX. 605 FEET TO PRIVATE WATER WELLS
- SITE IS NOT WITHIN DESIGNATED RIVER CORRIDOR, GA1, GA2 OR GAA GROUNDWATER CLASSIFICATION AREAS.

**2 NHDES WELL MAP**  
SCALE: AS INDICATED

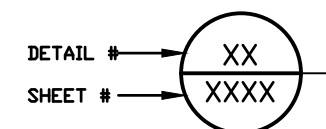
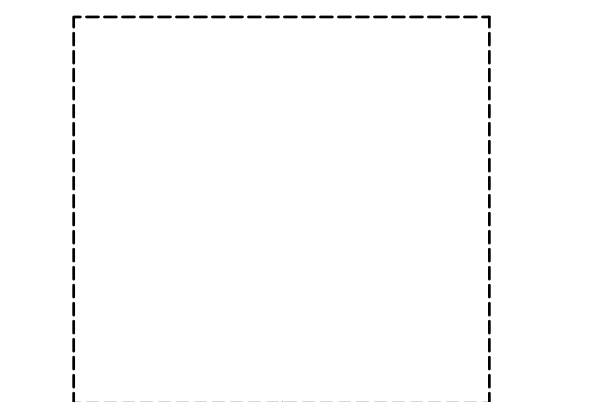
**3 ABBREVIATIONS & LEGENDS**  
SCALE: N.T.S.

- ABBREVIATIONS**
- AG ABOVEGROUND
  - AL AREA LIGHT
  - AST ABOVEGROUND STORAGE TANK
  - ATG AUTOMATIC TANK GAUGE
  - BLK BLACK
  - CONT CONTINUATION
  - COMM COMMUNICATIONS
  - DIA. DIAMETER
  - DISP. DISPENSER
  - DW DOUBLE WALL
  - EMT ELECTRICAL METALLIC TUBING
  - E-STOP EMERGENCY STOP
  - FMP FUEL MANAGEMENT PEDESTAL
  - FMS FUEL MANAGEMENT SYSTEM
  - FRP FIBERGLASS REINFORCED PLASTIC
  - FS FUEL SYSTEM
  - GAP GASOLINE ADVERTISING PRODUCTS
  - GLV GALVANIZED
  - HLA HIGH LEVEL ALARM
  - I.S. INTRINSICALLY SAFE
  - MFR MANUFACTURER
  - N.T.S. NOT TO SCALE
  - O.C. ON CENTER
  - PL PROPERTY LINE
  - RC RIGID CONDUIT
  - RMC RIGID METAL CONDUIT
  - SCH SCHEDULE
  - SS STAINLESS STEEL
  - STP SUBMERSIBLE TURBINE PUMP
  - SW SINGLE WALL
  - TBD TO BE DETERMINED
  - TYP TYPICAL
  - UG UNDERGROUND
  - UST UNDERGROUND STORAGE TANK
  - VR VAPOR RECOVERY

**CALL OUT LEGEND**



**ENLARGED PLAN  
DETAIL BOX LEGEND**

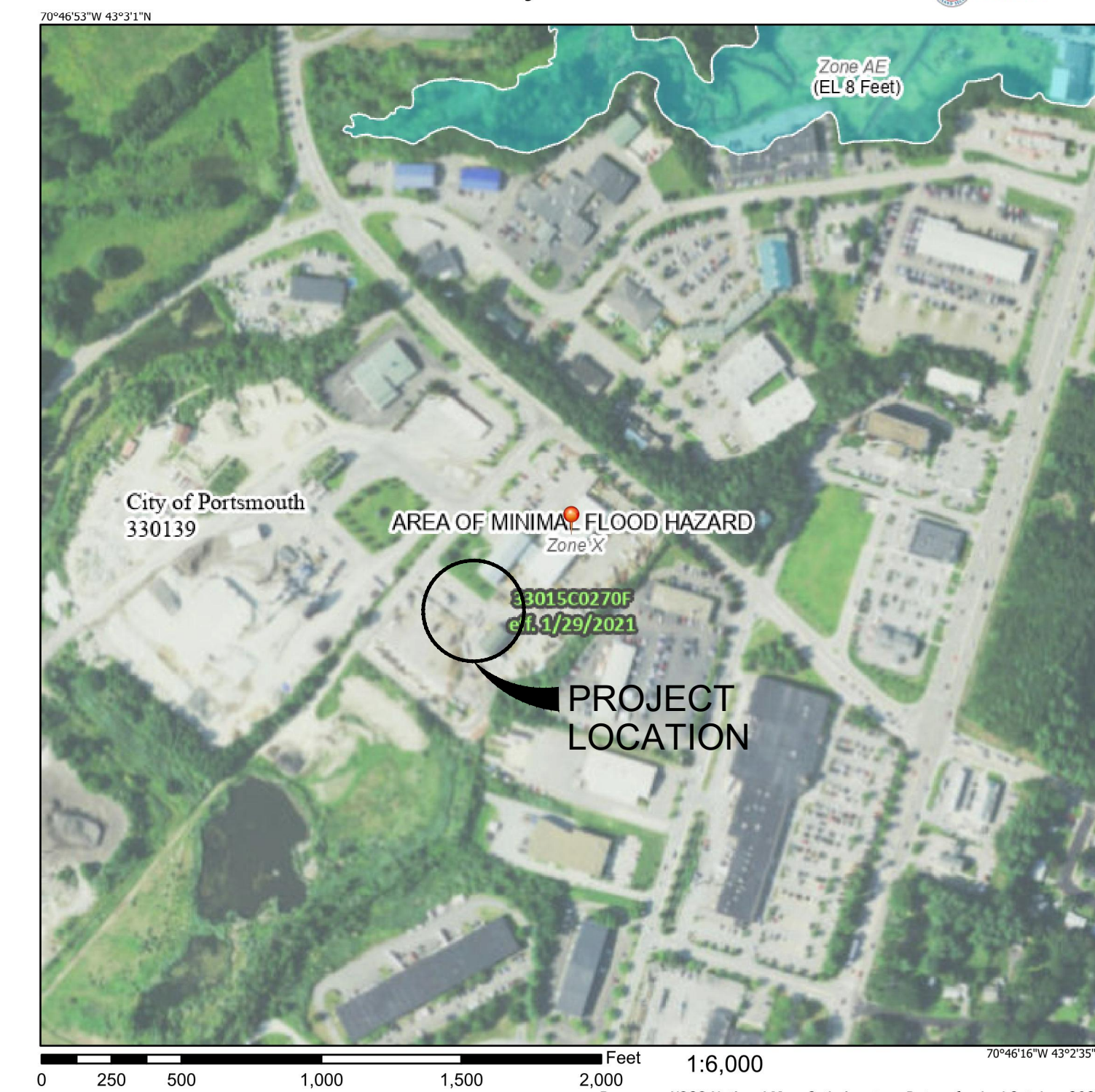


**4 WORK SCOPE**  
SCALE: N.T.S.

GENERAL SCOPE OF WORK:  
NOTE: CONTRACTOR SHALL REFERENCE PROPOSAL DOCUMENTS FOR COMPLETE SCOPE OF WORK.

- CONTRACTOR SHALL REMOVE EXISTING FUEL SYSTEM IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATION. REMOVAL SHALL INCLUDE BUT NOT BE LIMITED TO USTS, DISPENSERS, CANOPY, FUELING ISLAND, PIPING ETC..
- CONTRACTOR SHALL INSTALL A COMPLETE FUEL SYSTEM INCLUDING BUT NOT LIMITED TO USTS, SUCTION DISPENSERS, FUEL AND VENT PIPING, APPROVED BACKFILL AND CONCRETE, VEHICLE PROTECTION, ENVIRONMENTAL MONITORING CONSOLE, FUEL MANAGEMENT EQUIPMENT, CANOPY AND ELECTRICAL EQUIPMENT. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS AND BLEND INTO SURROUNDING GRADES IN ACCORDANCE WITH PROPOSED GRADING PLAN.

**National Flood Hazard Layer FIRMette**



**Legend**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) Zone A, X, APF
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMs
- Area of Undetermined Flood Hazard Zone D

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transact
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transact Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/27/2021 at 3:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**5 FLOOD MAP**  
SCALE: AS INDICATED



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**Project Notes**

Legend

**Sheet Notes**

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File Name: 1_195602217_Portsmouth-DPW_G.dwg	CLC	RBL	CLC
	Dwn.	Chkd.	Dsgn.
			MM.DD.YY

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RONALD B. LAURENCE JR.  
NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
CITY OF PORTSMOUTH  
DEPARTMENT OF PUBLIC WORKS  
FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
PORTSMOUTH, NH 03801

Title  
FUEL SYSTEM NOTES, ABBREVIATIONS & LEGENDS, WELL MAP AND FLOOD MAP

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.101	2 of 28	0

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Project Notes

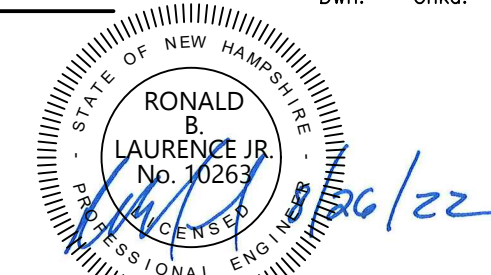
Legend

Sheet Notes

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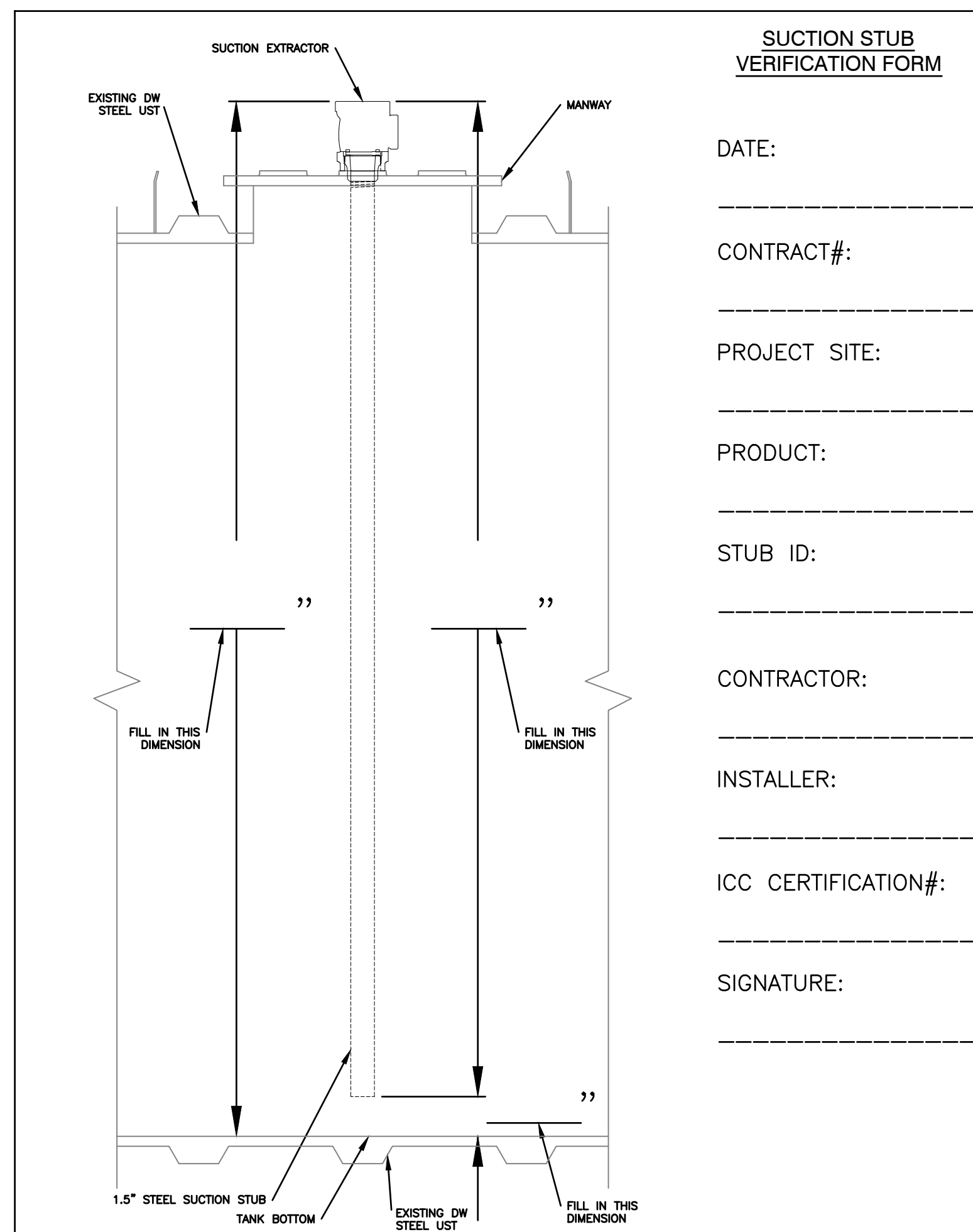
Client/Project

CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 VERIFICATION FORMS

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.102	Sheet 3 of 28
	Revision 0



SUCTION STUB VERIFICATION FORM

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

CONTRACT#: \_\_\_\_\_

PROJECT SITE: \_\_\_\_\_

PRODUCT: \_\_\_\_\_

STUB ID: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

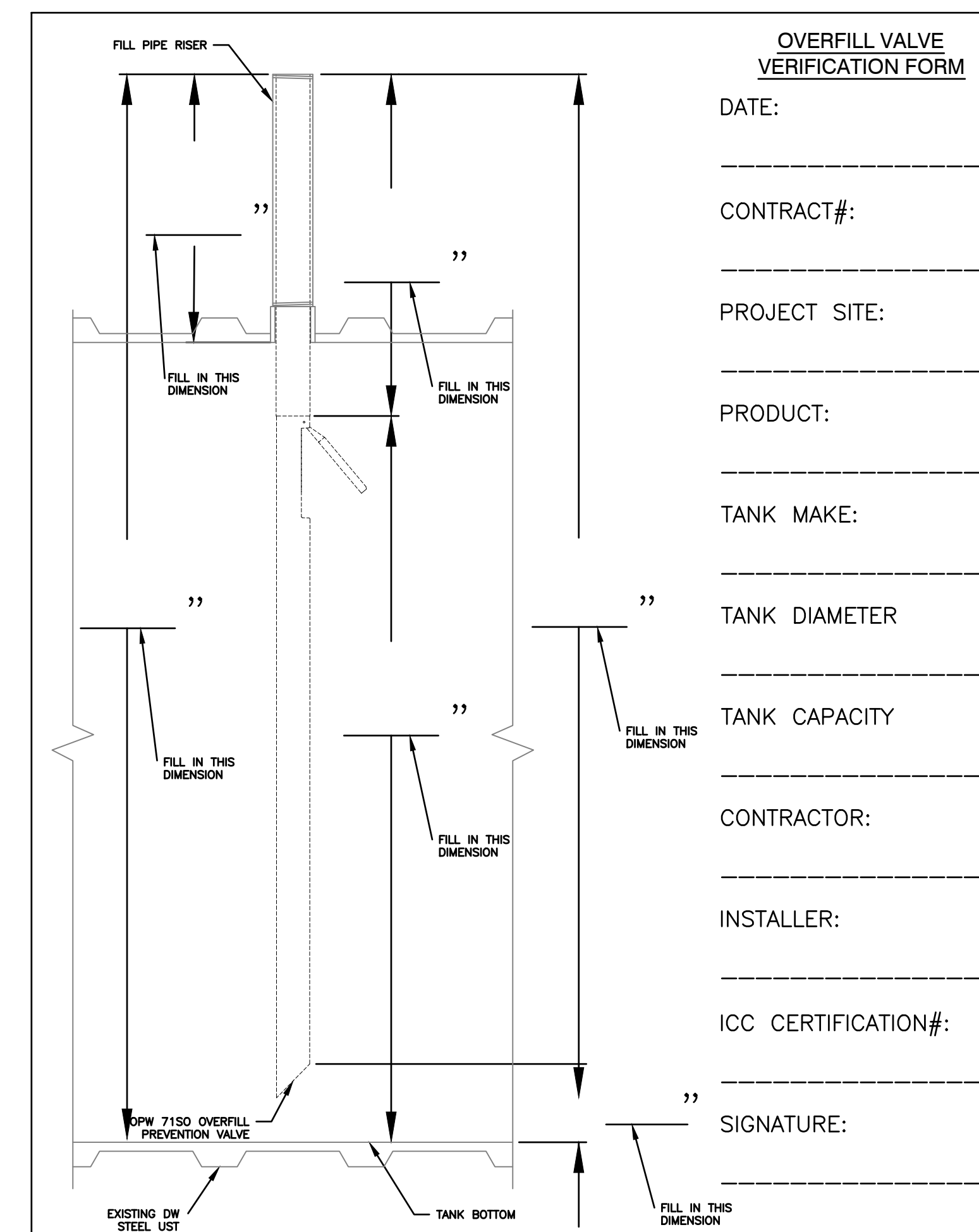
INSTALLER: \_\_\_\_\_

ICC CERTIFICATION#: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

NOTE: VERIFICATION FORMS TO BE COMPLETED AS PART OF AS BUILT PLAN. COMPLETE EACH FORM FOR EACH UST INSTALLED.

1 SUCTION STUB VERIFICATION FORM  
 SCALE: N.T.S.



OVERFILL VALVE VERIFICATION FORM

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

CONTRACT#: \_\_\_\_\_

PROJECT SITE: \_\_\_\_\_

PRODUCT: \_\_\_\_\_

TANK MAKE: \_\_\_\_\_

TANK DIAMETER: \_\_\_\_\_

TANK CAPACITY: \_\_\_\_\_

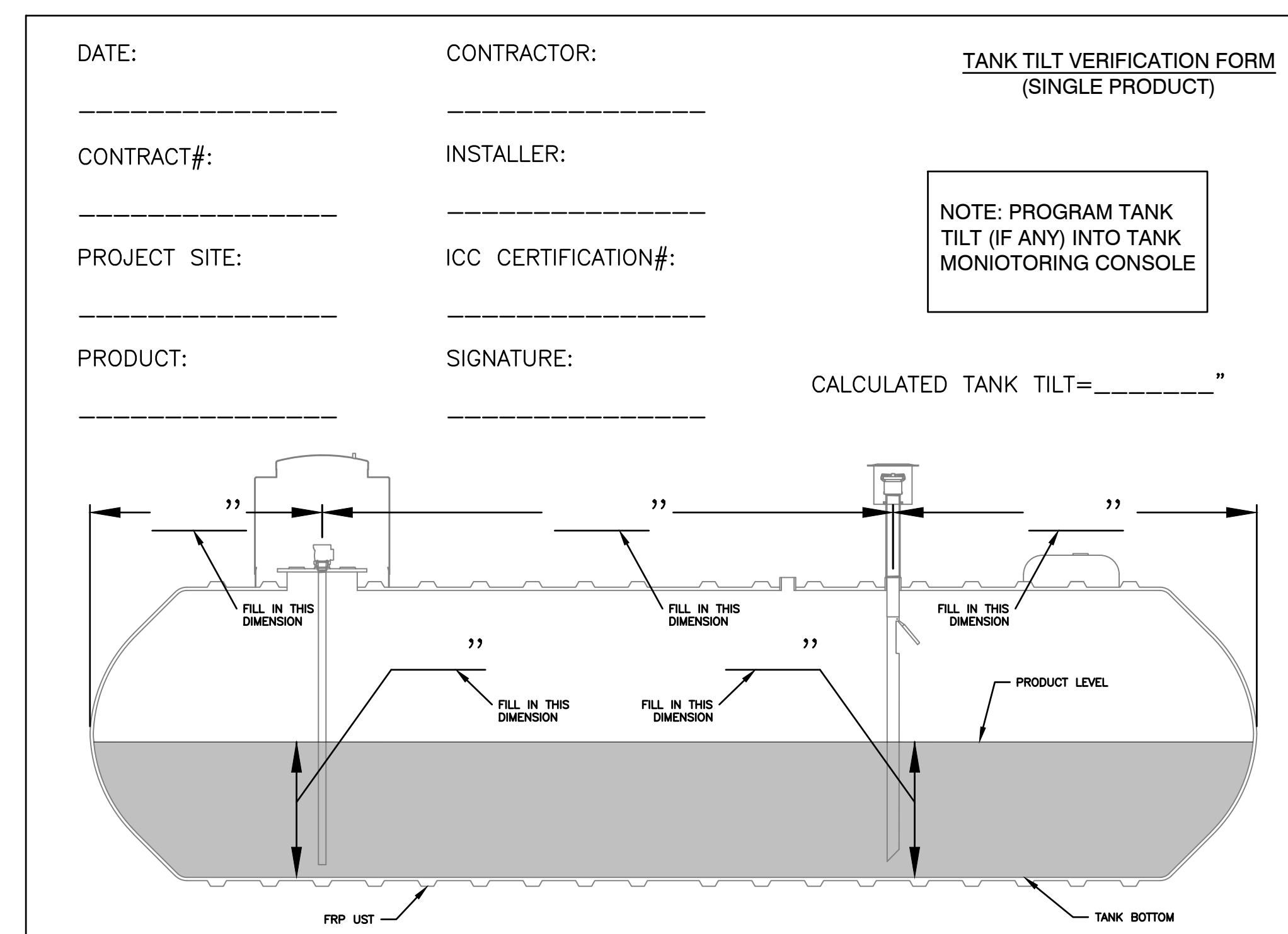
CONTRACTOR: \_\_\_\_\_

INSTALLER: \_\_\_\_\_

ICC CERTIFICATION#: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

2 OVERFILL PREVENTION VALVE VERIFICATION FORM  
 SCALE: N.T.S.

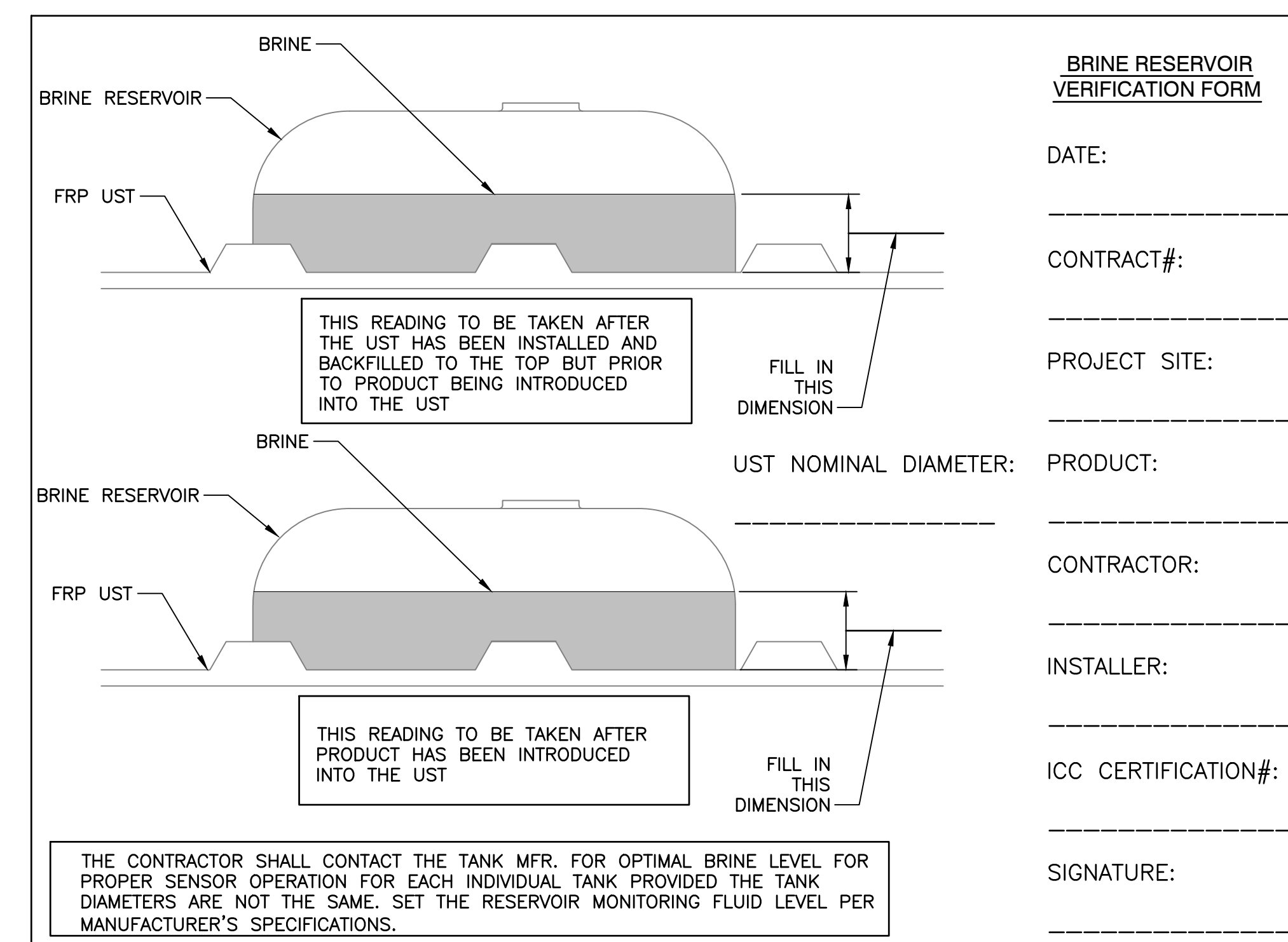


TANK TILT VERIFICATION FORM (SINGLE PRODUCT)

NOTE: PROGRAM TANK TILT (IF ANY) INTO TANK MONIOTRING CONSOLE

CALCULATED TANK TILT= \_\_\_\_\_"

3 TANK TILT VERIFICATION FORM  
 SCALE: N.T.S.



BRINE RESERVOIR VERIFICATION FORM

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

CONTRACT#: \_\_\_\_\_

PROJECT SITE: \_\_\_\_\_

PRODUCT: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

INSTALLER: \_\_\_\_\_

ICC CERTIFICATION#: \_\_\_\_\_

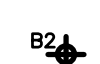
SIGNATURE: \_\_\_\_\_

THE CONTRACTOR SHALL CONTACT THE TANK MFR. FOR OPTIMAL BRINE LEVEL FOR PROPER SENSOR OPERATION FOR EACH INDIVIDUAL TANK PROVIDED THE TANK DIAMETERS ARE NOT THE SAME. SET THE RESERVOIR MONITORING FLUID LEVEL PER MANUFACTURER'S SPECIFICATIONS.

4 BRINE LEVEL VERIFICATION FORM  
 SCALE: N.T.S.

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Project Notes

Legend  
 GEOTECHNICAL BORING LOCATION, REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION

--- 53 --- EXISTING CONTOUR ELEVATION

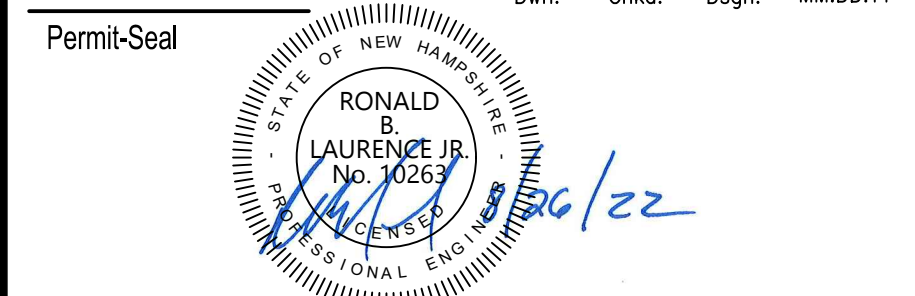
Sheet Notes

NOTES:  
 1. THIS PLAN IS BASED ON AN AERIAL IMAGERY AND LIMITED TOPOGRAPHICAL SURVEY. IT DOES NOT DEPICT ALL UNDERGROUND UTILITIES AND SHALL NOT BE RELIED UPON AS A COMPREHENSIVE UTILITY PLAN.  
 2. THE CONTRACTOR SHALL CONTACT DIGSAFE AND CONDUCT A PRIVATE UTILITY LOCATE PRIOR TO ANY EXCAVATION WORK.

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY

ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
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File Name: 2_195602217_Portsmouth-DPW_C.dwg	CLC	RBL	CLC	05.12.22
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 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

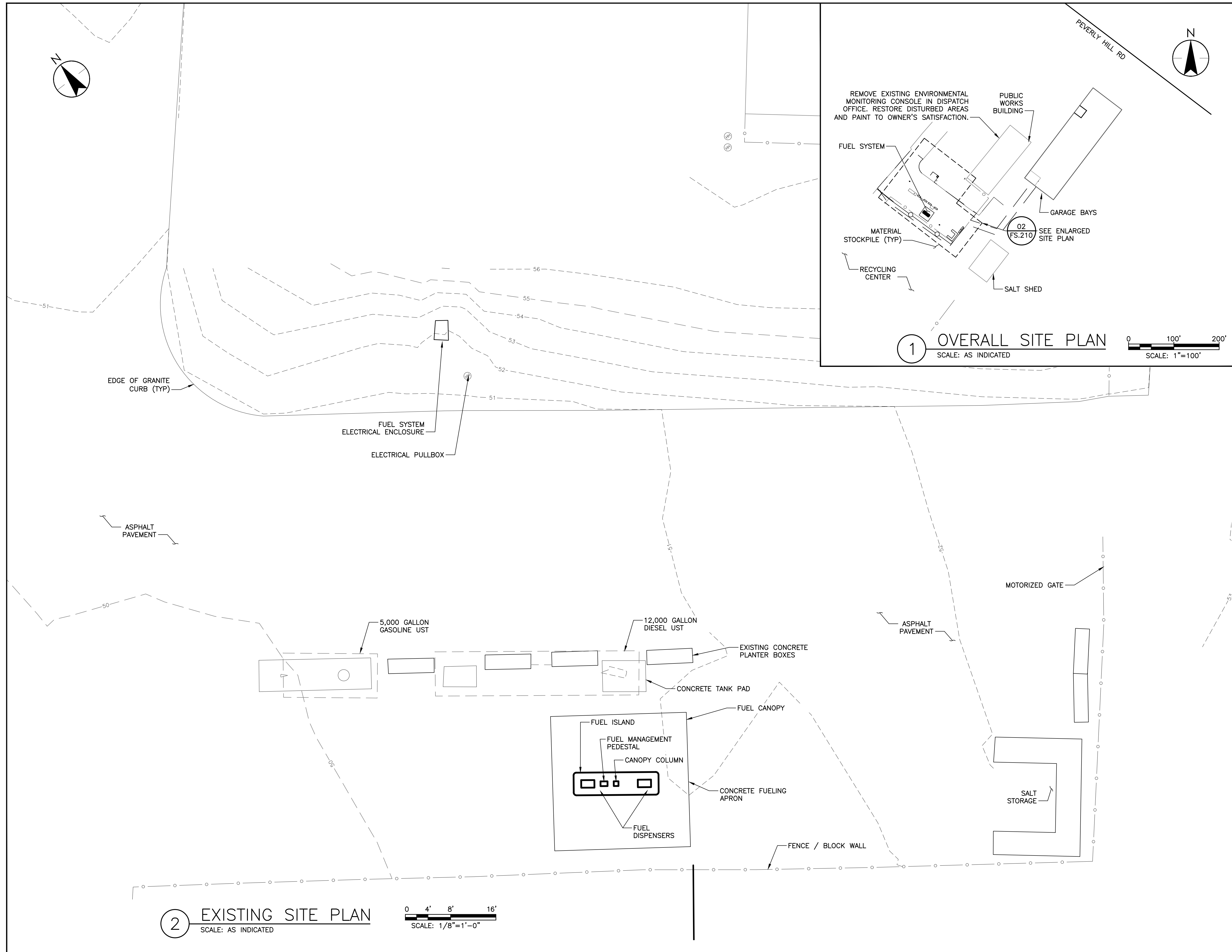
Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 EXISTING SITE PLAN

Project No. 195602217	Scale AS SHOWN	
Drawing No.	Sheet	Revision

FS.210 4 of 28 0



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 GEOTECHNICAL BORING LOCATION, REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION

 EXISTING CONTOUR ELEVATION

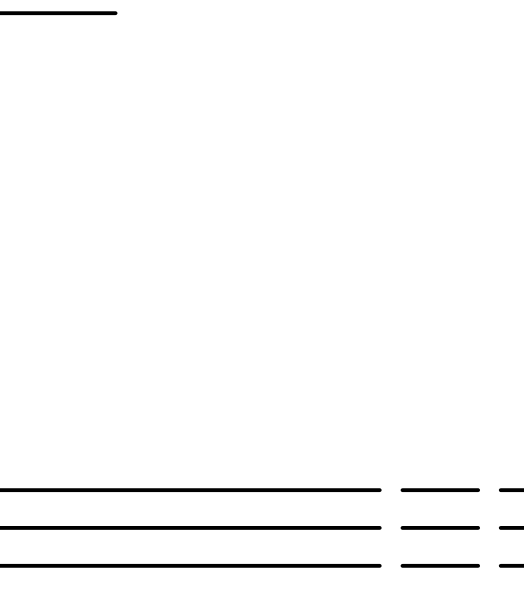
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Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22

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Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 DEMOLITION PLAN

Project No.  
 195602217

Scale  
 AS SHOWN

Drawing No.  
 FS.211

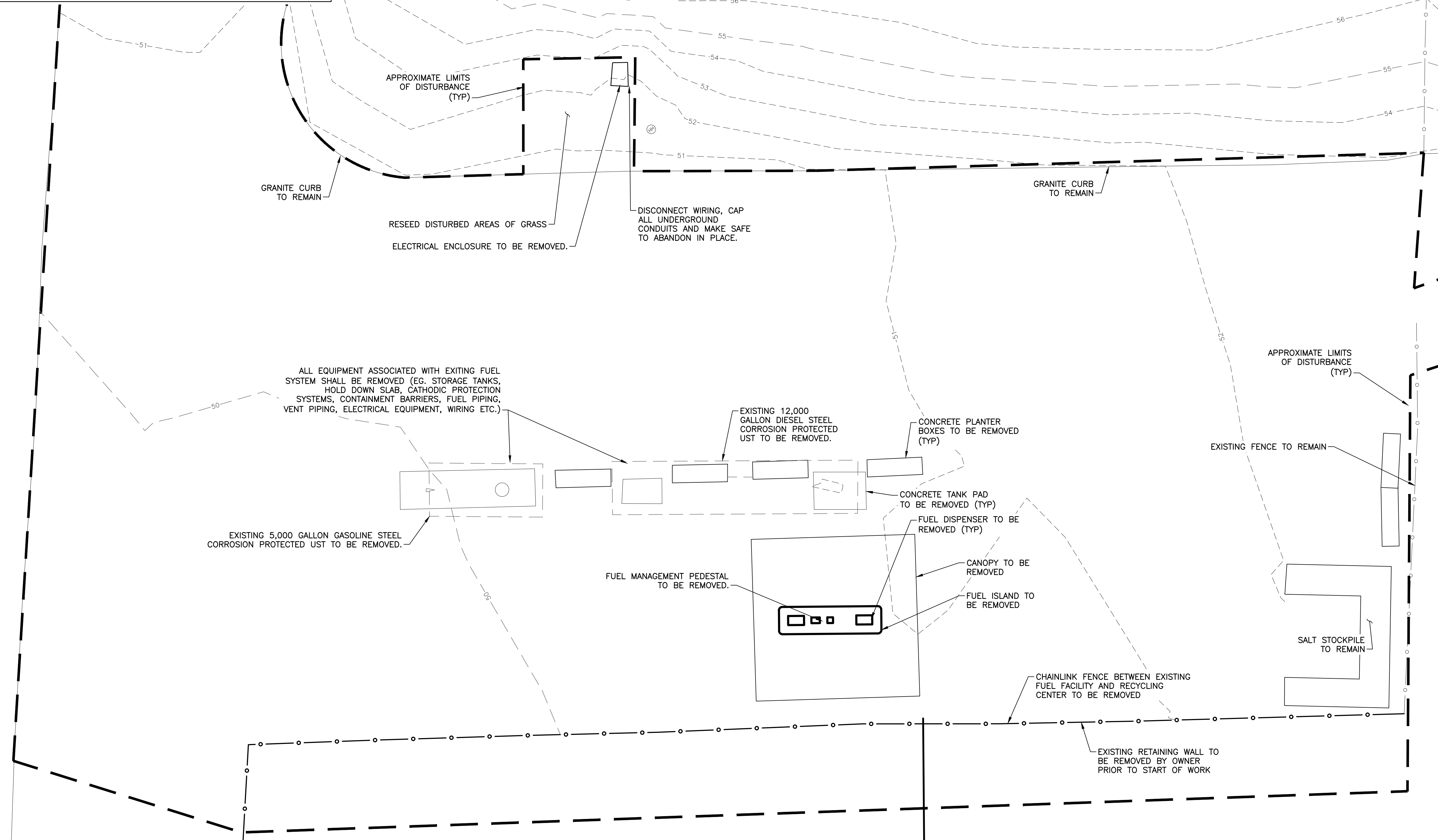
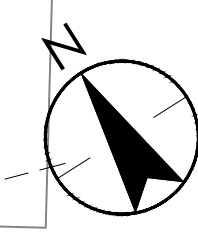
Sheet  
 5 of 28

Revision  
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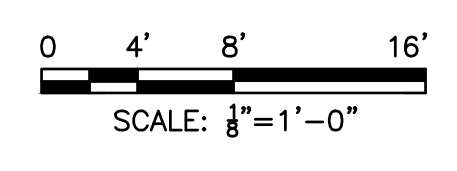
- NOTES:
- THIS PLAN IS BASED ON AN AERIAL IMAGERY AND LIMITED TOPOGRAPHICAL SURVEY. IT DOES NOT DEPICT ALL UNDERGROUND UTILITIES AND SHALL NOT BE RELIED UPON AS A COMPREHENSIVE UTILITY PLAN.
  - THE CONTRACTOR SHALL CONTACT DIGSAFE AND CONDUCT A PRIVATE UTILITY LOCATE PRIOR TO ANY EXCAVATION WORK.
  - TANK CLOSURE REPORTS SHALL BE COMPLETED FOR THE DECOMMISSIONED FUEL SYSTEM. ALL TANK REMOVAL AND CLOSURE ACTIVITIES SHALL COMPLY WITH ENV-OR 408. THE OWNER WILL HIRE A THIRD PARTY CONSULTANT TO PROVIDE ENVIRONMENTAL OVERSIGHT. THE CONTRACTOR SHALL COORDINATE REMOVAL ACTIVITIES WITH THE THIRD PARTY.
  - REFER TO THE CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS REGARDING SOIL MANAGEMENT AND DISPOSAL.
  - UNDERGROUND ELECTRICAL UTILITIES ASSOCIATED WITH THE EXISTING FUEL SYSTEM SHALL BE REMOVED AND CAPPED WITHIN THE EXCAVATED AREA. CONTRACTOR SHALL MAKE SAFE PRIOR TO COMMENCING DEMOLITION ACTIVITIES.

REMOVE EXISTING ENVIRONMENTAL MONITORING CONSOLE IN DISPATCH OFFICE (REFER TO OVERALL SITE PLAN FOR ROOM LOCATION). RESTORE DISTURBED AREAS AND PAINT TO OWNER'S SATISFACTION.

EXISTING PUBLIC WORKS BUILDING



1 DEMOLITION PLAN  
 SCALE: AS INDICATED



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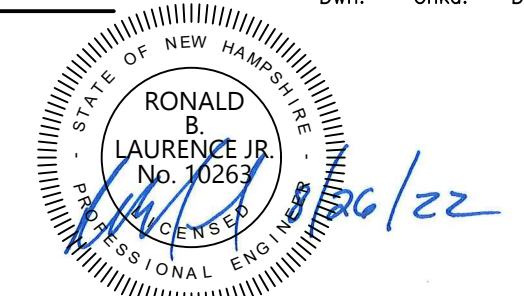
Project Notes

Legend

Sheet Notes

NOTE:  
 TANK ARRANGEMENT ON THIS PLAN SHALL BE CONSIDERED APPROXIMATE AND IS SUBJECT TO VARY WITH MANUFACTURER SELECTION.

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY
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ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
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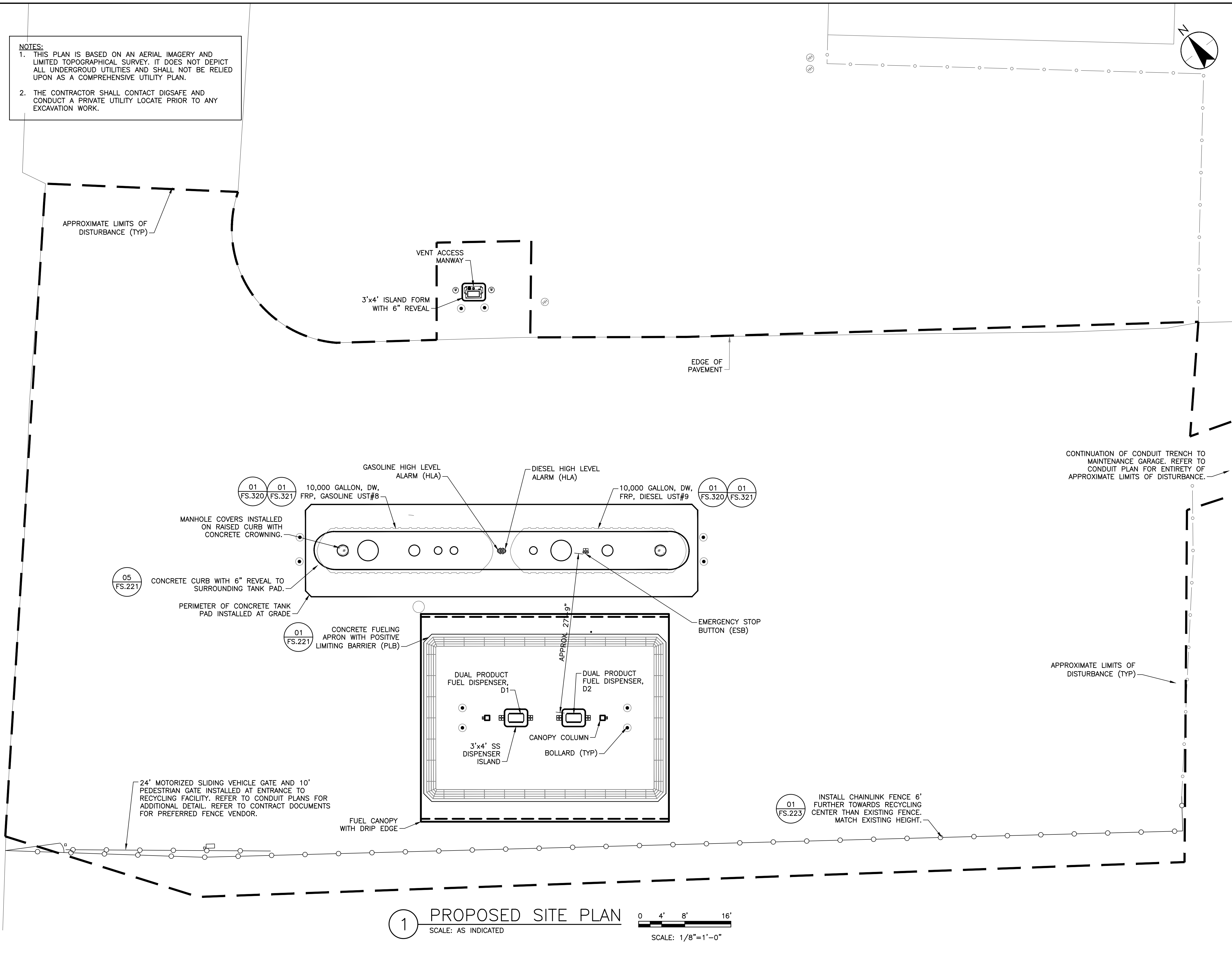
Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 PROPOSED SITE PLAN

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.212	Sheet 6 of 28
	Revision 0

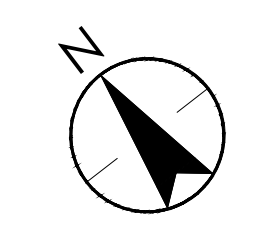
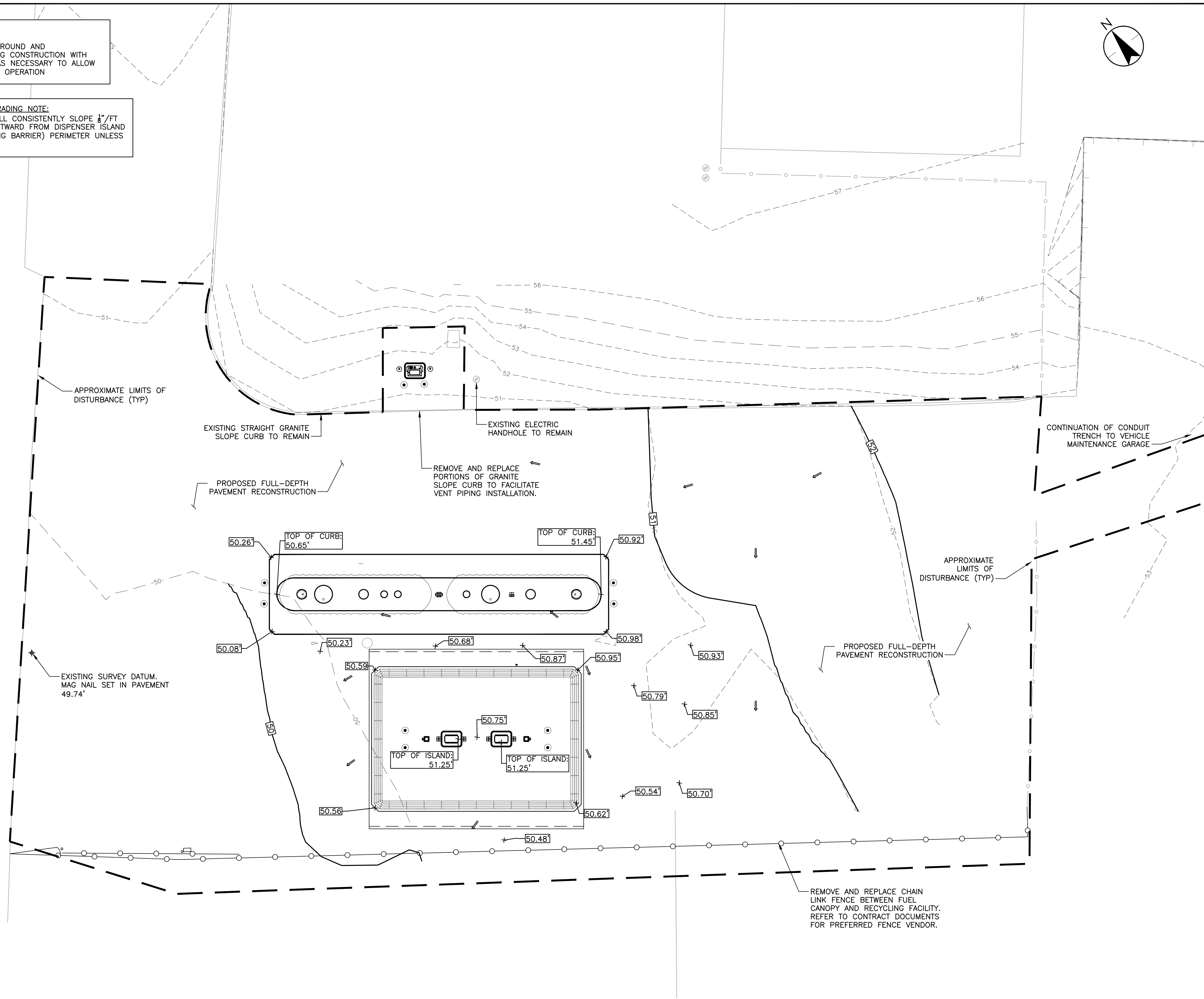
NOTES:  
 1. THIS PLAN IS BASED ON AN AERIAL IMAGERY AND LIMITED TOPOGRAPHICAL SURVEY. IT DOES NOT DEPICT ALL UNDERGROUND UTILITIES AND SHALL NOT BE RELIED UPON AS A COMPREHENSIVE UTILITY PLAN.  
 2. THE CONTRACTOR SHALL CONTACT DIGSAFE AND CONDUCT A PRIVATE UTILITY LOCATE PRIOR TO ANY EXCAVATION WORK.



1 PROPOSED SITE PLAN  
 SCALE: AS INDICATED  
 0 4' 8' 16'  
 SCALE: 1/8"=1'-0"

**NOTES:**  
 PROTECT ALL EXISTING ABOVEGROUND AND UNDERGROUND UTILITIES DURING CONSTRUCTION WITH ROAD PLATES, BARRIERS, OR AS NECESSARY TO ALLOW THE NHDOT TO MAINTAIN 24/7 OPERATION

**CONCRETE FUELING APRON GRADING NOTE:**  
 CONCRETE FUELING APRON WILL CONSISTENTLY SLOPE  $\frac{1}{8}$ "/FT RADIATING DOWNWARD AND OUTWARD FROM DISPENSER ISLAND TOWARD PLB (POSITIVE LIMITING BARRIER) PERIMETER UNLESS INDICATED OTHERWISE. (TYP.)



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**Project Notes**

**Legend**

- 50 --- EXISTING CONTOUR ELEVATION
- 51 PROPOSED CONTOUR ELEVATION
- X 50.0 PROPOSED SPOT ELEVATION (FEET)
- ← PROPOSED SURFACE FLOW

**Sheet Notes**

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
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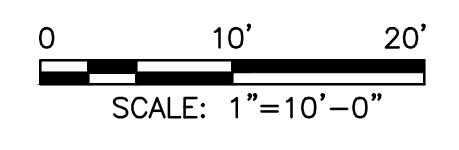
Client/Project  
**CITY OF PORTSMOUTH**  
**DEPARTMENT OF PUBLIC WORKS**  
**FUEL SYSTEM REPLACEMENT**

680 PEVERLY HILL RD  
**PORTSMOUTH, NH 03801**

Title  
**GRADING AND DRAINAGE PLAN**

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.213	Sheet 7 of 28
	Revision 0

**1 GRADING AND DRAINAGE PLAN**  
 SCALE: AS INDICATED



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Project Notes

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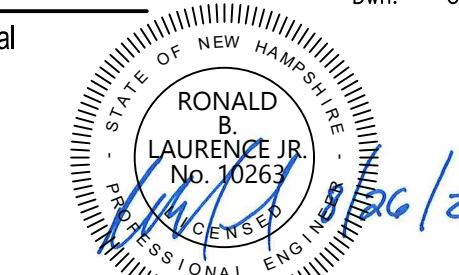
Sheet Notes

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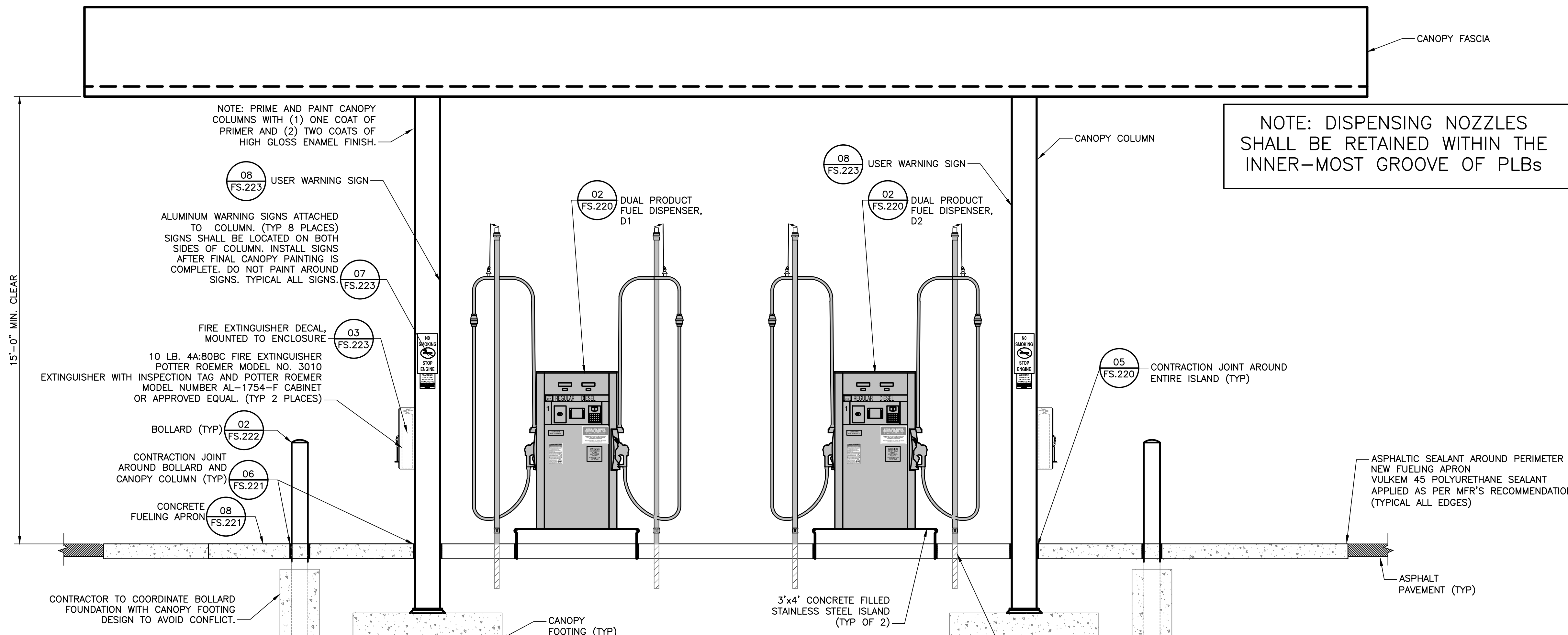
RONALD B. LAURENCE JR.  
NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

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CITY OF PORTSMOUTH  
DEPARTMENT OF PUBLIC WORKS  
FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
PORTSMOUTH, NH 03801

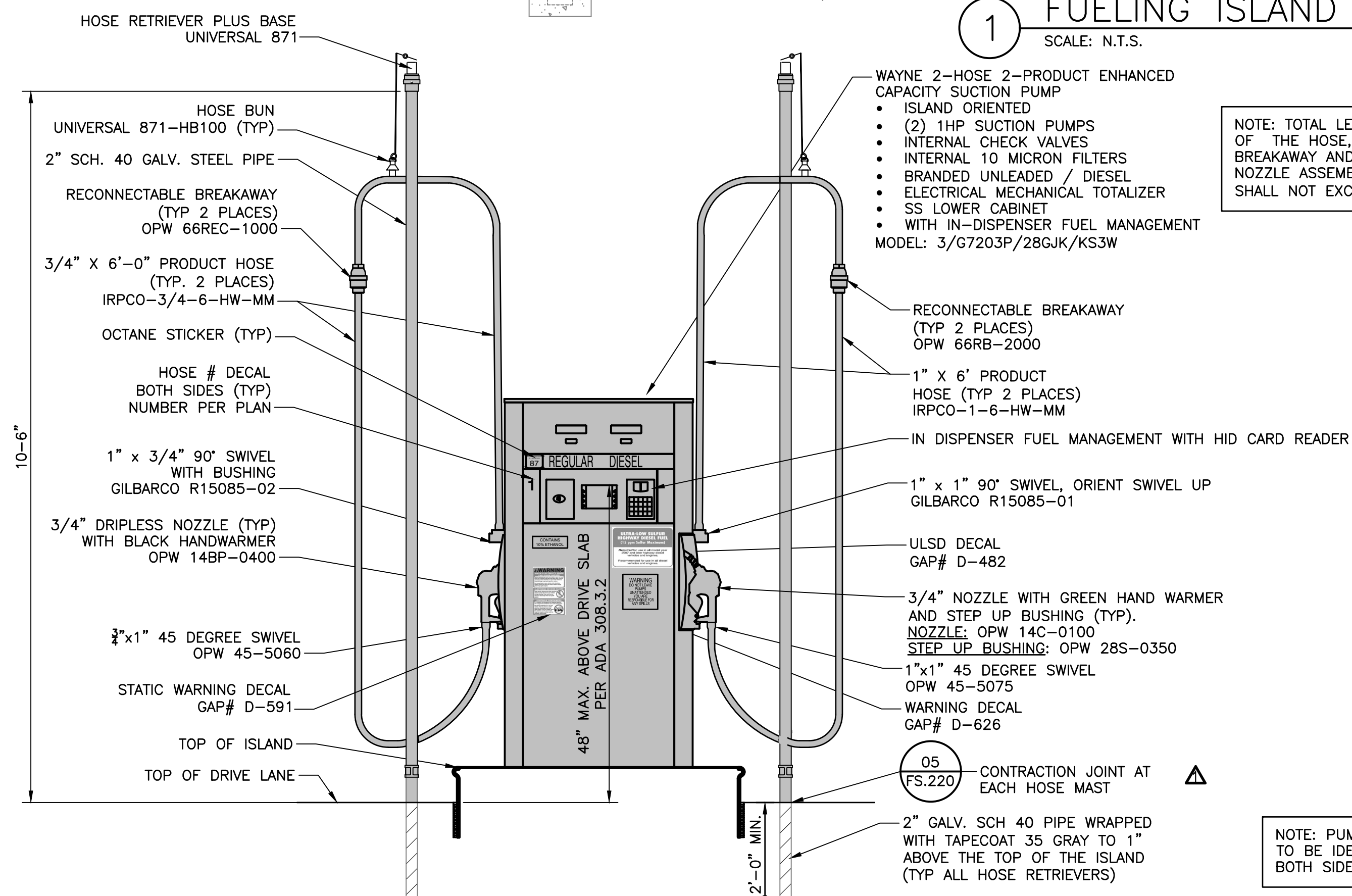
Title  
DISPENSER AND FUEL ISLAND DETAILS

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.220	Sheet 8 of 28
	Revision 0



## 1 FUELING ISLAND ELEVATION

SCALE: N.T.S.

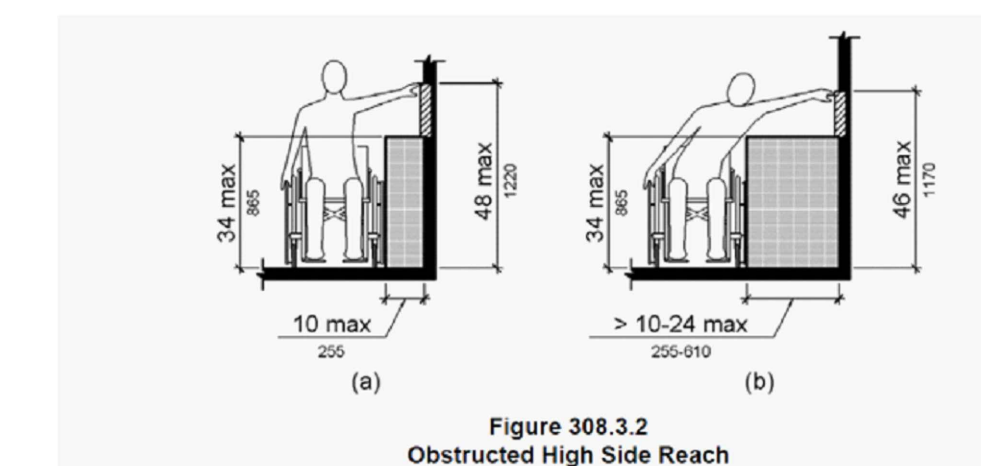


## 2 FUEL DISPENSER DETAIL

SCALE: N.T.S.

- ADA ACCESSIBILITY NOTES:
- DISPENSER NOZZLE AND FUEL MANAGEMENT PEDESTAL CONTROLS SHALL BE POSITIONED IN ACCORDANCE WITH 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADA 308.3.2) FOR OBSTRUCTED HIGH SIDE REACH REQUIREMENTS.
  - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 308.3.2 IS WRITTEN AS FOLLOWS:

308.3.2 OBSTRUCTED HIGH REACH, WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION, THE HEIGHT OF THE OBSTRUCTION SHALL BE 34 INCHES (865mm) MAXIMUM AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24 INCHES (610mm) MAXIMUM. THE HIGH SIDE REACH SHALL BE 48 INCHES (1220mm) MAXIMUM FOR A REACH DEPTH OF 10 INCHES (255mm) MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 10 INCHES (255mm), THE HIGH SIDE REACH SHALL BE 46 INCHES (1170mm) MAXIMUM FOR A REACH DEPTH OF 24 INCHES (610mm) MAXIMUM.



## 3 ACCESSIBILITY NOTES

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Legend

Sheet Notes

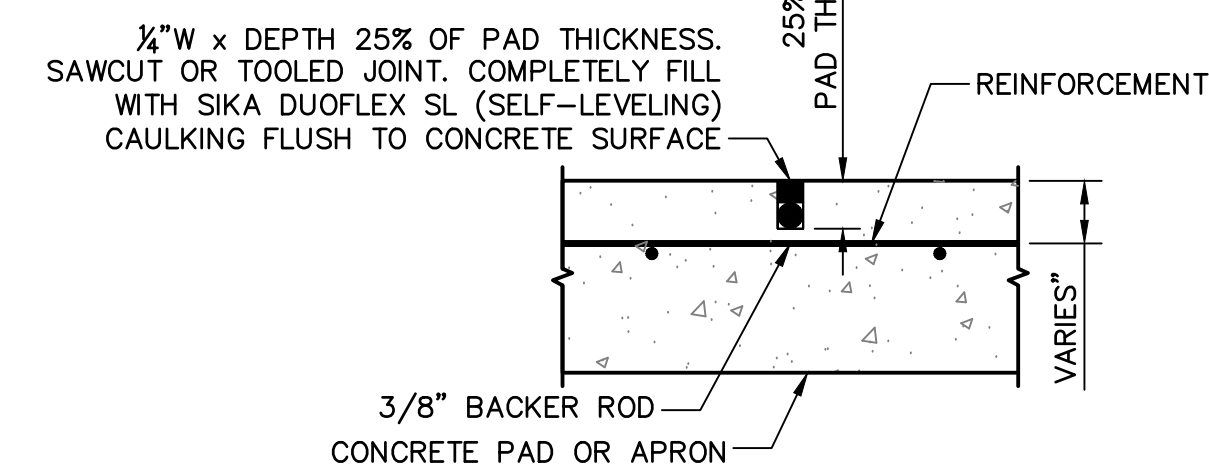
ADA ACCESSIBILITY NOTES:

- DISPENSER NOZZLE AND FUEL MANAGEMENT PEDESTAL CONTROLS SHALL BE POSITIONED IN ACCORDANCE WITH 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADA 308.3.2) FOR OBSTRUCTED HIGH SIDE REACH REQUIREMENTS.
- 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 308.3.2 IS WRITTEN AS FOLLOWS:

308.3.2 OBSTRUCTED HIGH REACH, WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION, THE HEIGHT OF THE OBSTRUCTION SHALL BE 34 INCHES (865mm) MAXIMUM AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24 INCHES (610mm) MAXIMUM. THE HIGH SIDE REACH SHALL BE 48 INCHES (1220mm) MAXIMUM FOR A REACH DEPTH OF 10 INCHES (255mm) MAXIMUM, WHERE THE REACH DEPTH EXCEEDS 10 INCHES (255mm), THE HIGH SIDE REACH SHALL BE 46 INCHES (1170mm) MAXIMUM FOR A REACH DEPTH OF 24 INCHES (610mm) MAXIMUM.

NOTE:

- SPACING BETWEEN SAWCUTS SHALL BE LESS THAN 24 TIMES THE THICKNESS OF PAD.
- CONCRETE SHALL NOT BE SAWCUT DIRECTLY IN FRONT OF DISPENSER LOCATIONS.



2 SAWCUT/TOOLED JOINT DETAIL  
 SCALE: N.T.S.

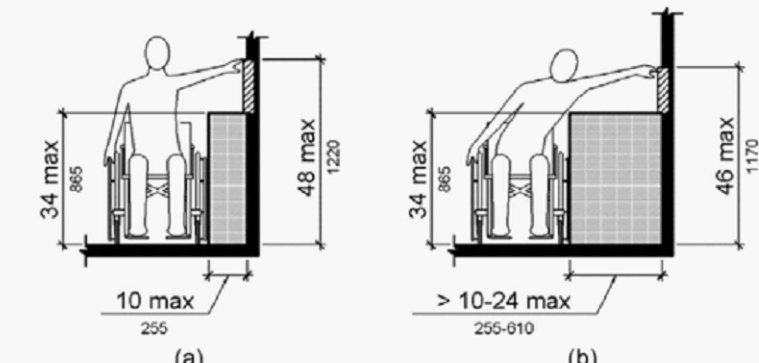
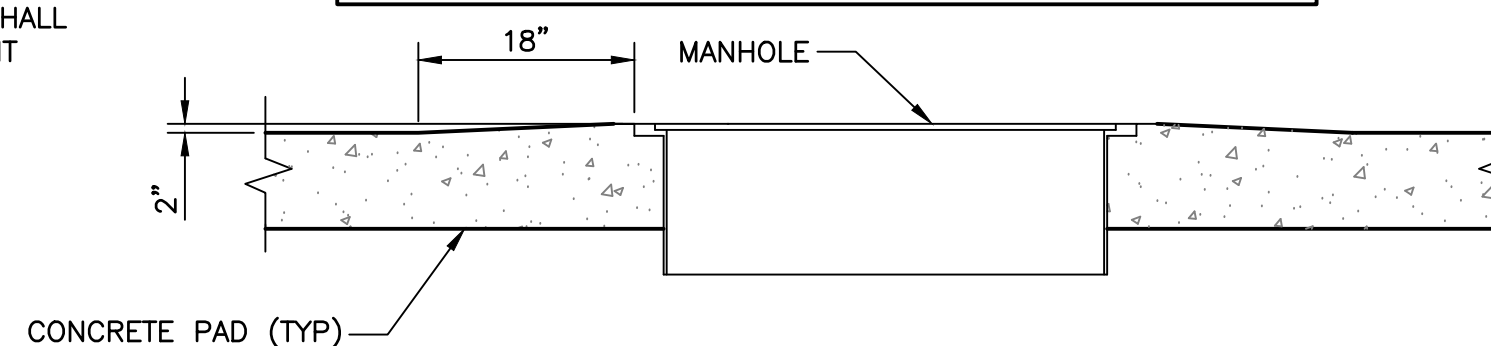
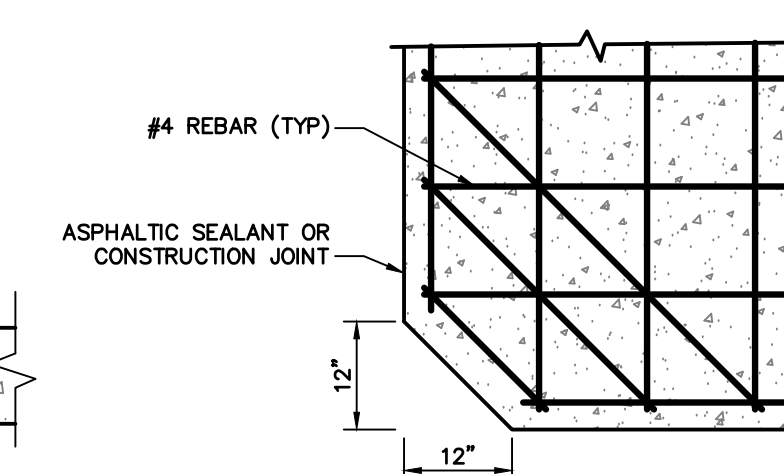


Figure 308.3.2  
 Obstructed High Side Reach

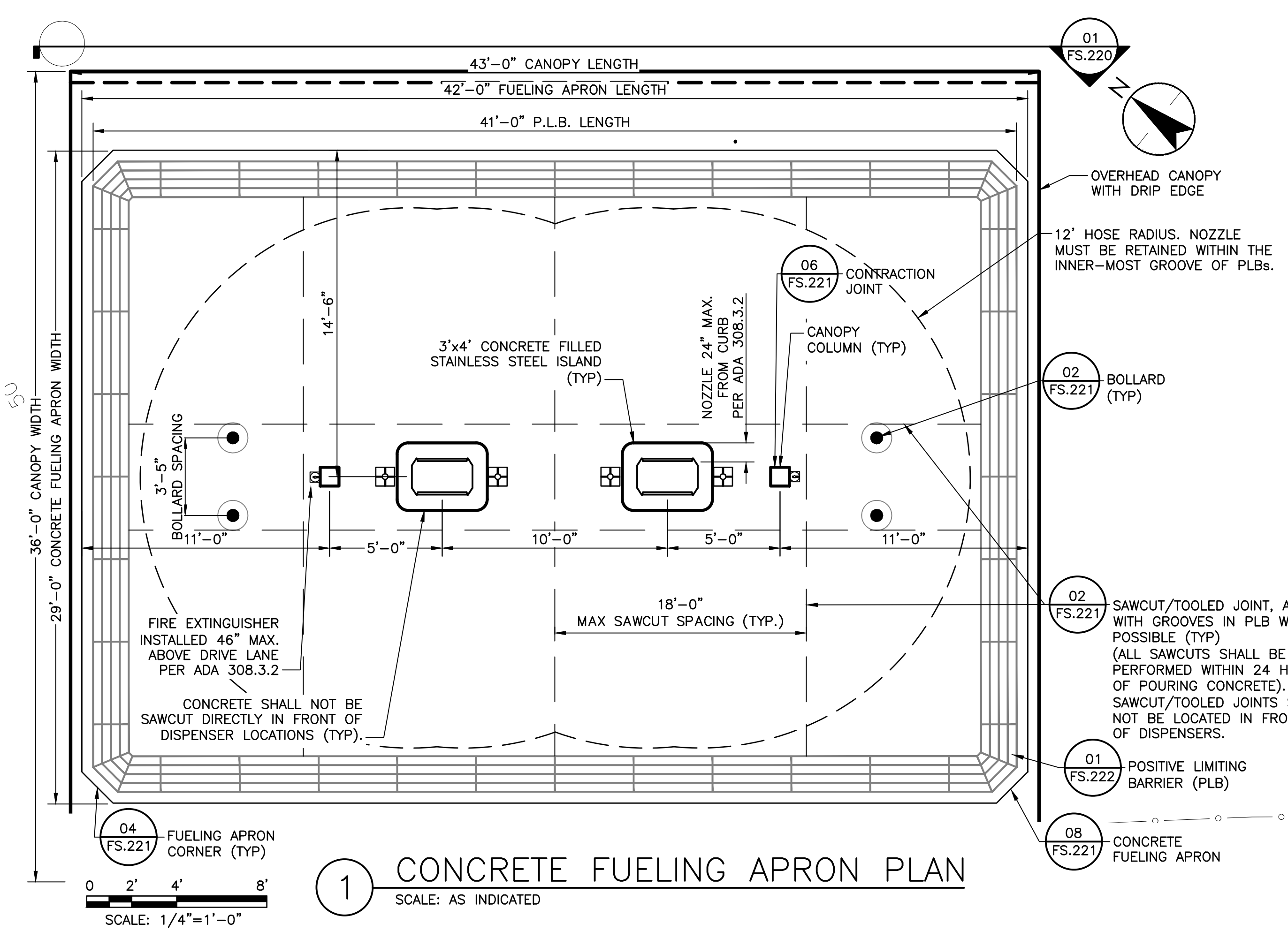
TYPICAL CROWNING OF CONCRETE AT ALL MANHOLES



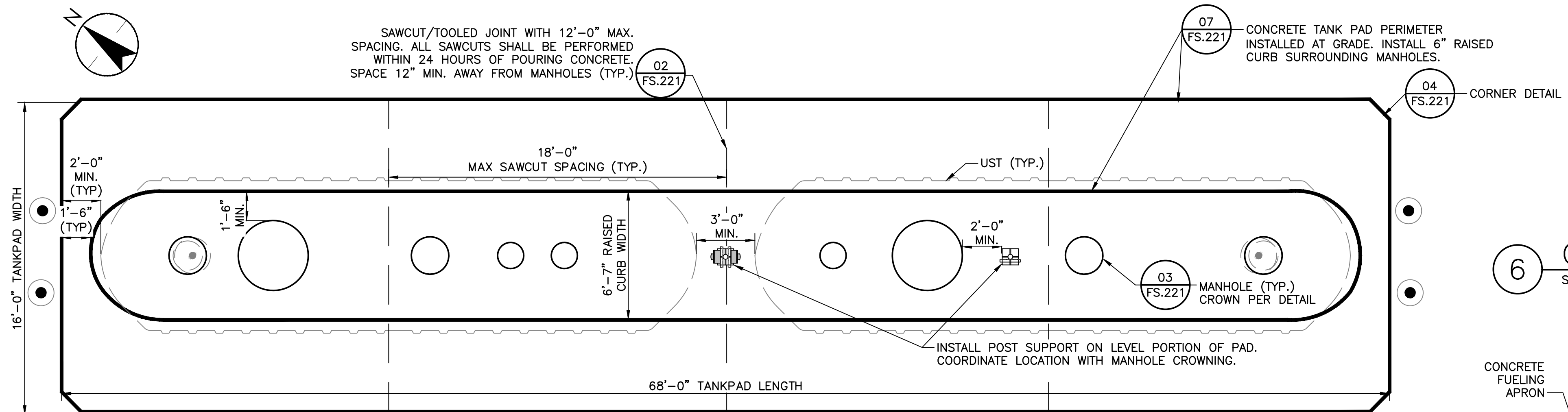
3 TYPICAL MANHOLE DETAIL  
 SCALE: N.T.S.



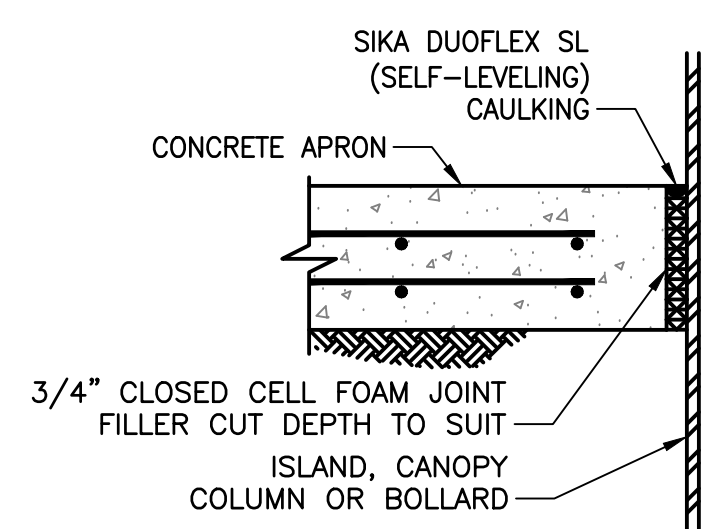
4 CORNER DETAIL  
 SCALE: N.T.S.



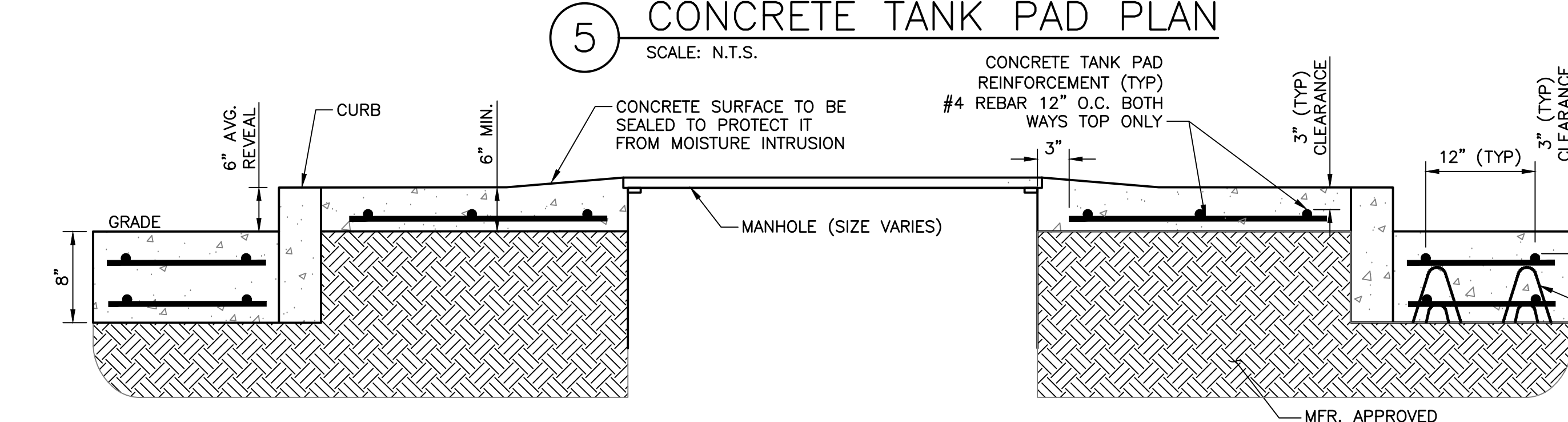
1 CONCRETE FUELING APRON PLAN  
 SCALE: AS INDICATED



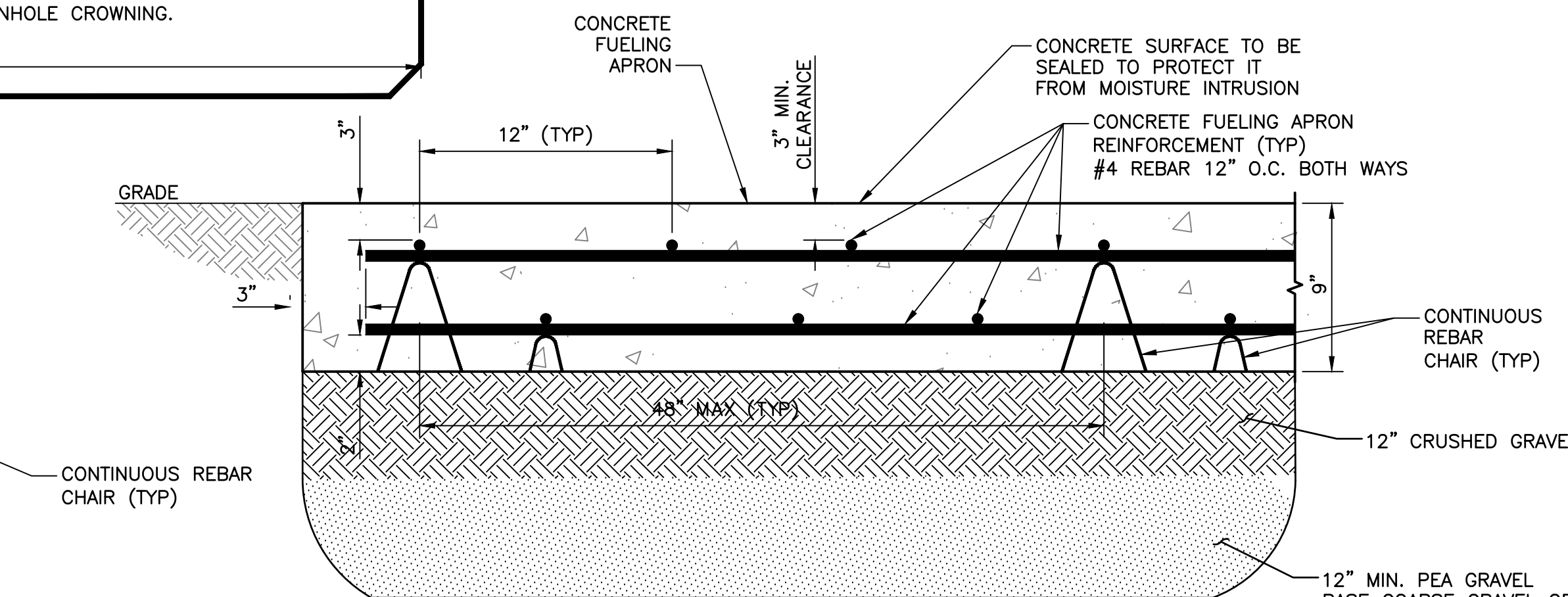
5 CONCRETE TANK PAD PLAN  
 SCALE: N.T.S.



6 CONTRACTION JOINT DETAIL  
 SCALE: N.T.S.



7 CONCRETE TANK PAD DETAIL  
 SCALE: N.T.S.



8 CONCRETE APRON DETAIL  
 SCALE: N.T.S.

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 RONALD B. LAURENCE JR.  
 No. 10263  
 PROFESSIONAL ENGINEER  
 6/16/22

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 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT  
 680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 CONCRETE PLANS AND DETAILS

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.221	9 of 28	0

Project Notes

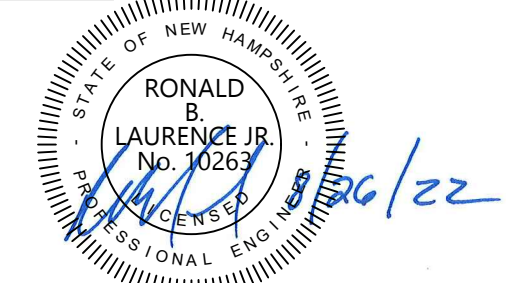
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Sheet Notes

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ISSUED FOR BID	CLC	RBL	08.26.22
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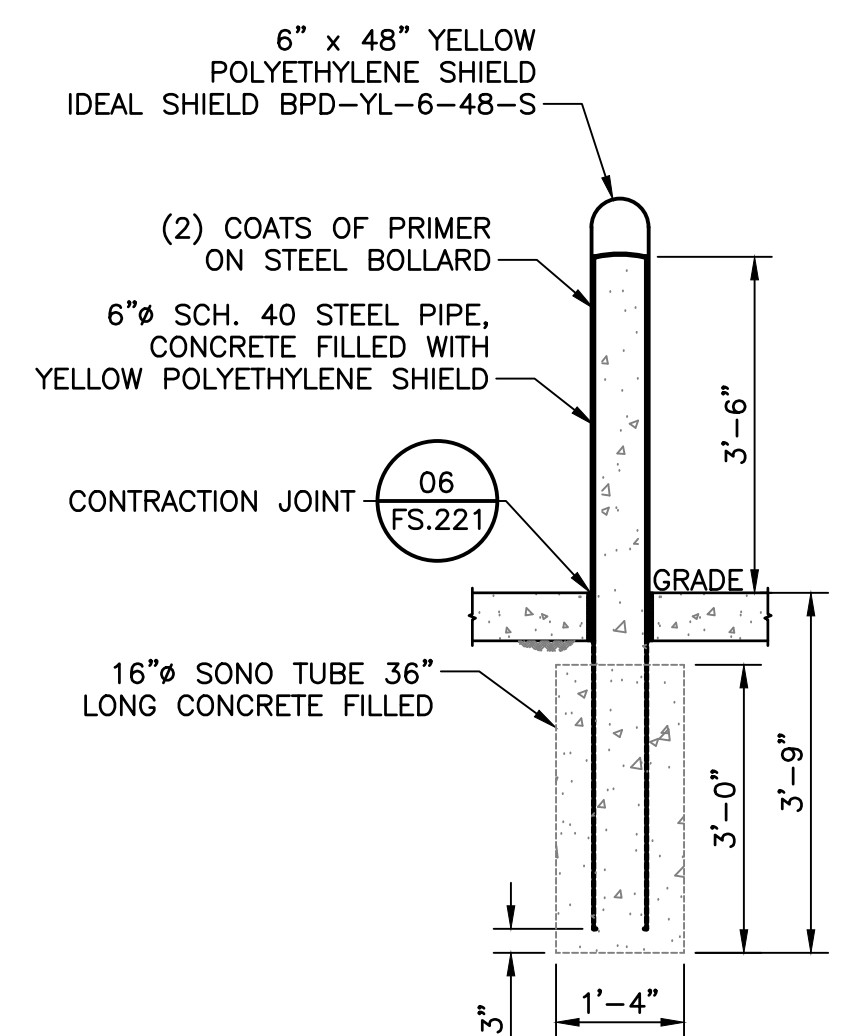
RONALD B. LAURENCE JR.  
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Client/Project  
**CITY OF PORTSMOUTH**  
**DEPARTMENT OF PUBLIC WORKS**  
**FUEL SYSTEM REPLACEMENT**

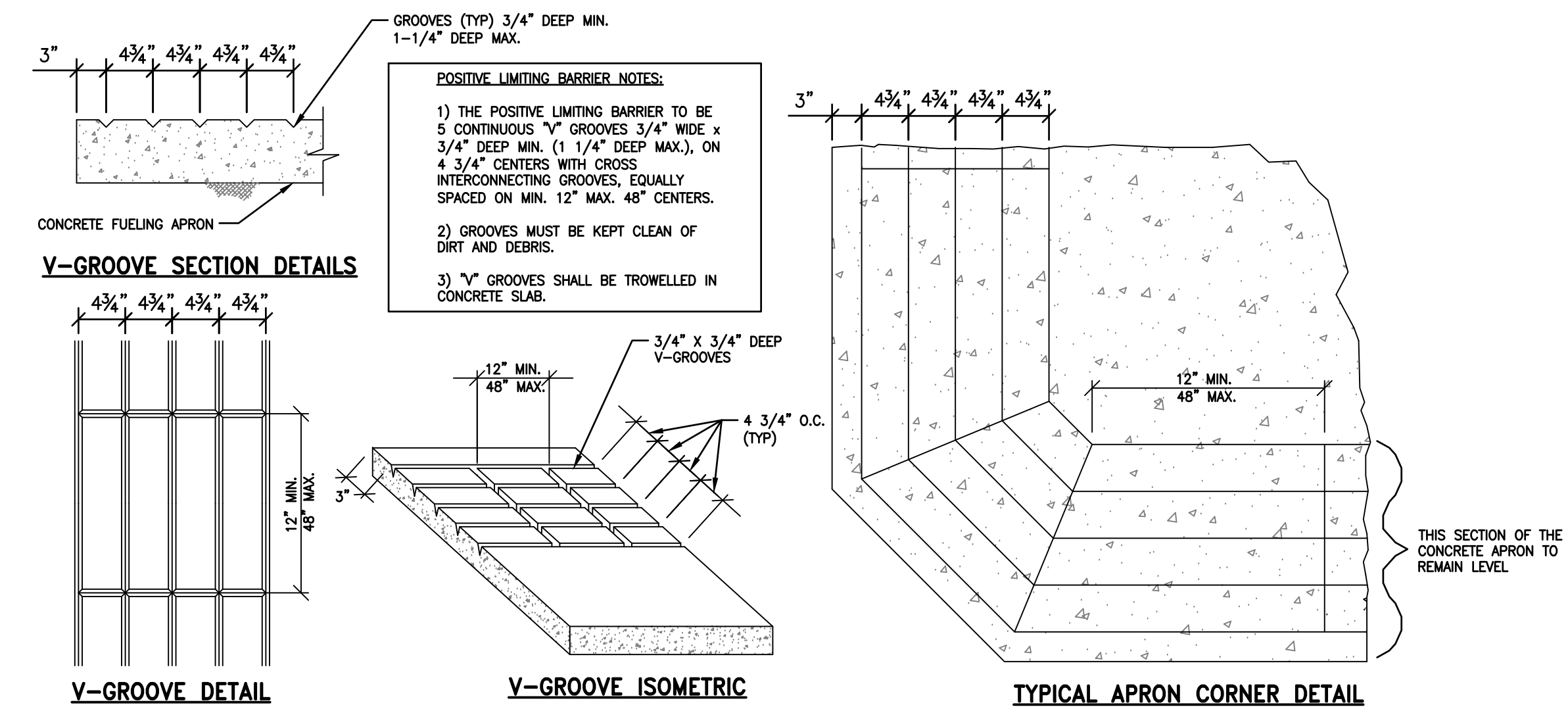
680 PEVERLY HILL RD  
**PORTSMOUTH, NH 03801**

Title  
**PLB, BOLLARD AND PAVEMENT DETAILS**

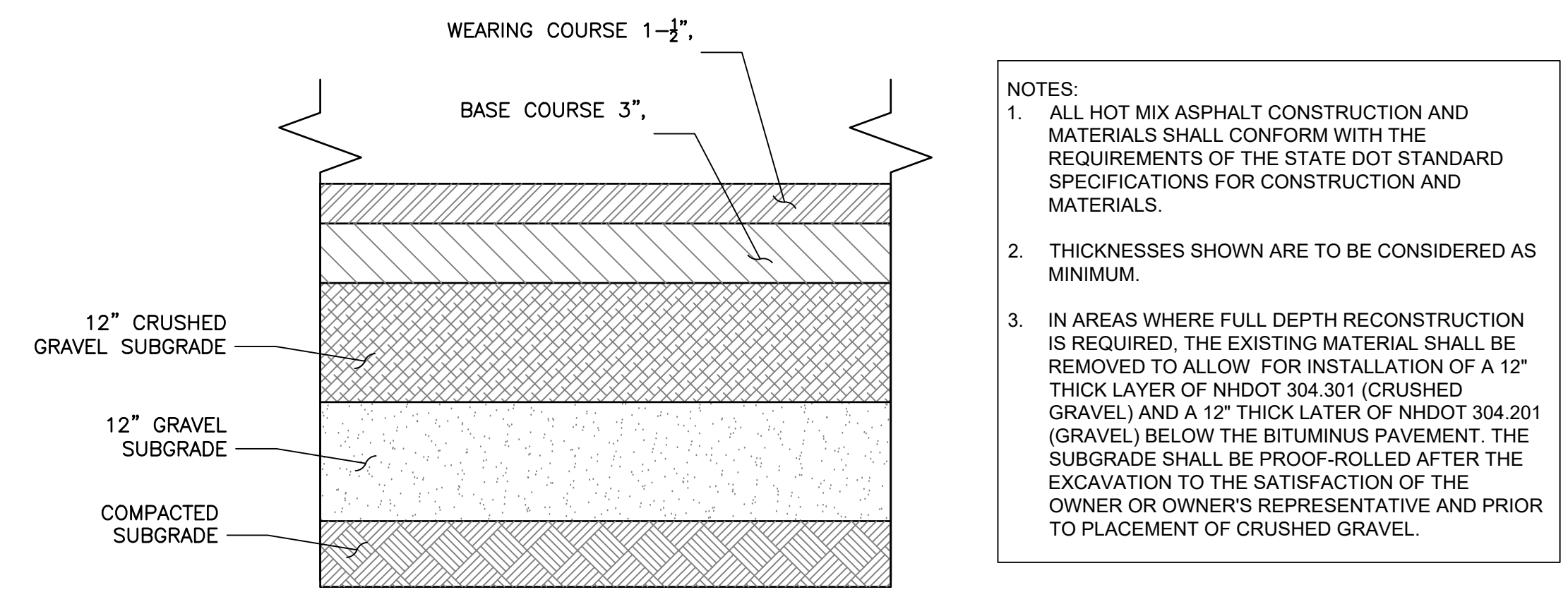
Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.222	10 of 28	0



**2 BOLLARD DETAIL**  
 SCALE: N.T.S.



**1 POSITIVE LIMITING BARRIER DETAILS**  
 SCALE: N.T.S.



**3 FULL DEPTH ASPHALT RESTORATION DETAIL**  
 SCALE: N.T.S.

NOTES:  
 1. ALL HOT MIX ASPHALT CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE REQUIREMENTS OF THE STATE DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.  
 2. THICKNESSES SHOWN ARE TO BE CONSIDERED AS MINIMUM.  
 3. IN AREAS WHERE FULL DEPTH RECONSTRUCTION IS REQUIRED, THE EXISTING MATERIAL SHALL BE REMOVED TO ALLOW FOR INSTALLATION OF A 12" THICK LAYER OF NHDOT 304.301 (CRUSHED GRAVEL) AND A 12" THICK LAYER OF NHDOT 304.201 (GRAVEL) BELOW THE BITUMINUS PAVEMENT. THE SUBGRADE SHALL BE PROOF-ROLLED AFTER THE EXCAVATION TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE AND PRIOR TO PLACEMENT OF CRUSHED GRAVEL.

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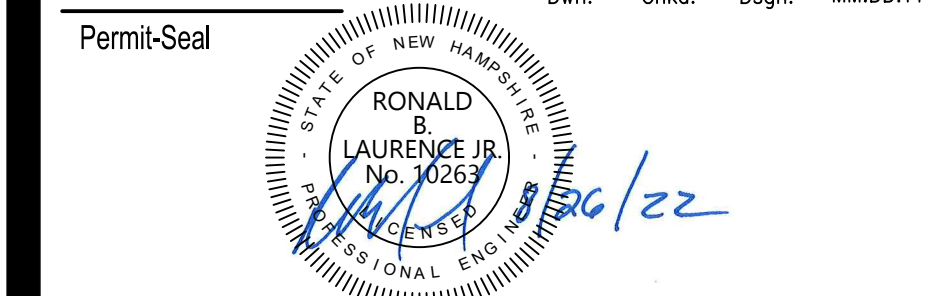
Legend

Sheet Notes

NOTE:  
 MINOR MODIFICATION DUE TO STRUCTURAL INTERFERENCES ARE ACCEPTABLE. ADJUST ALL FIXTURES ACCORDINGLY SO THAT THE FIXTURES ARE EQUIDISTANT FROM THE CENTER AXES OF THE CANOPY.

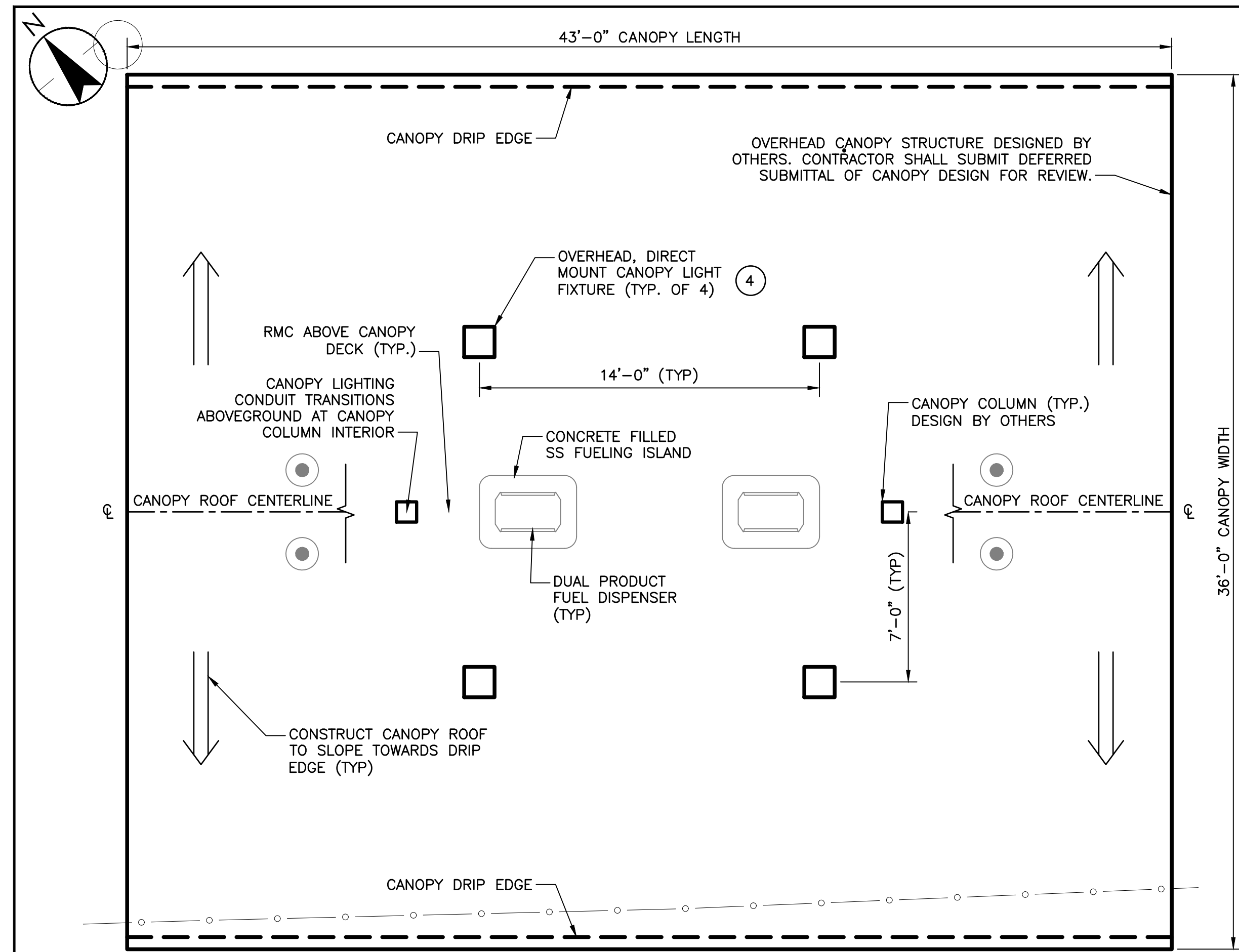
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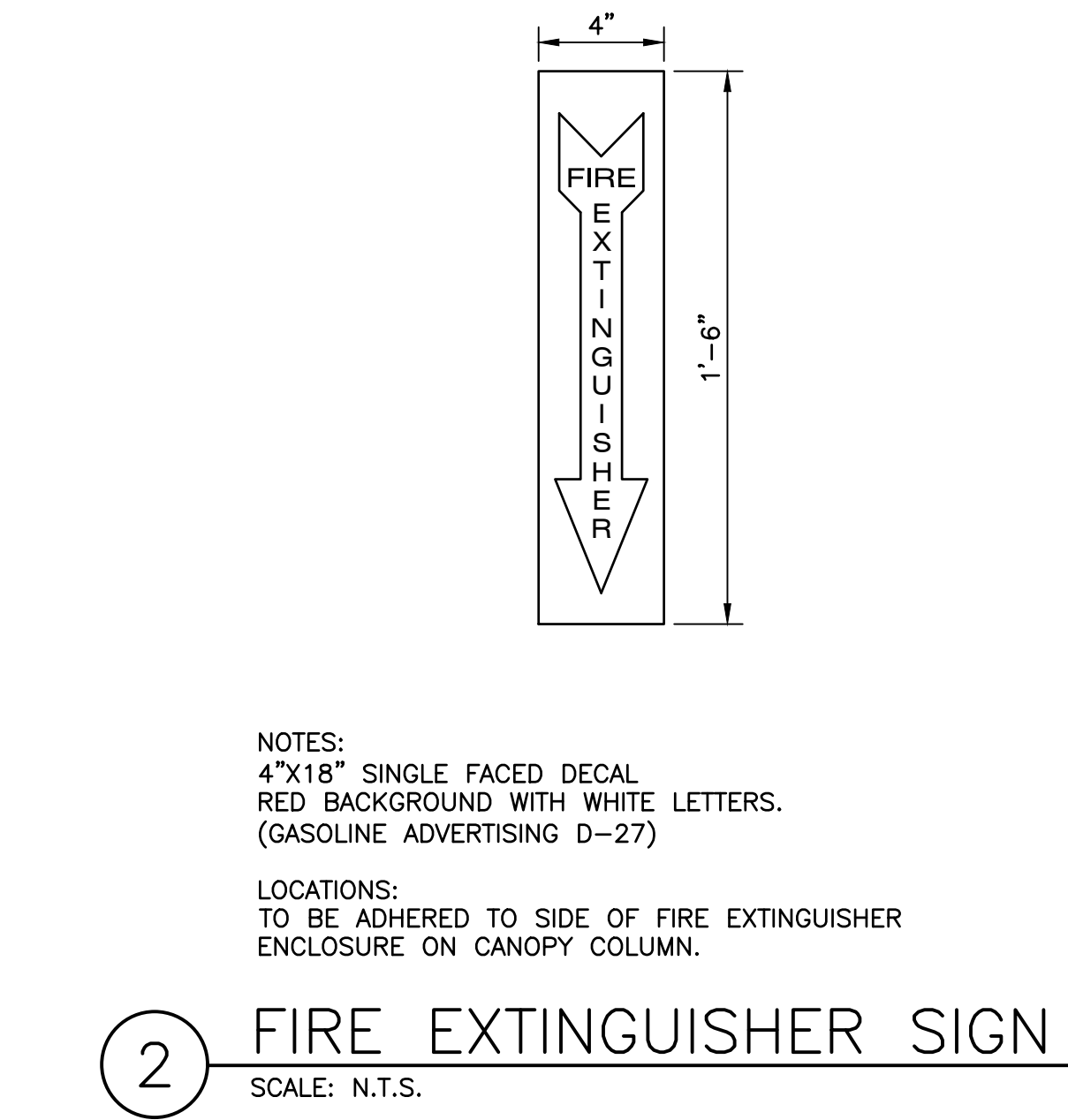
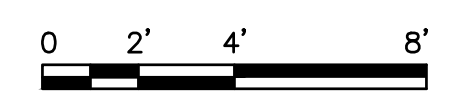


RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263  
 Client/Project  
 CITY OF PORTSMOUTH  
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 FUEL SYSTEM REPLACEMENT  
 680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 CANOPY AND SIGN DETAILS

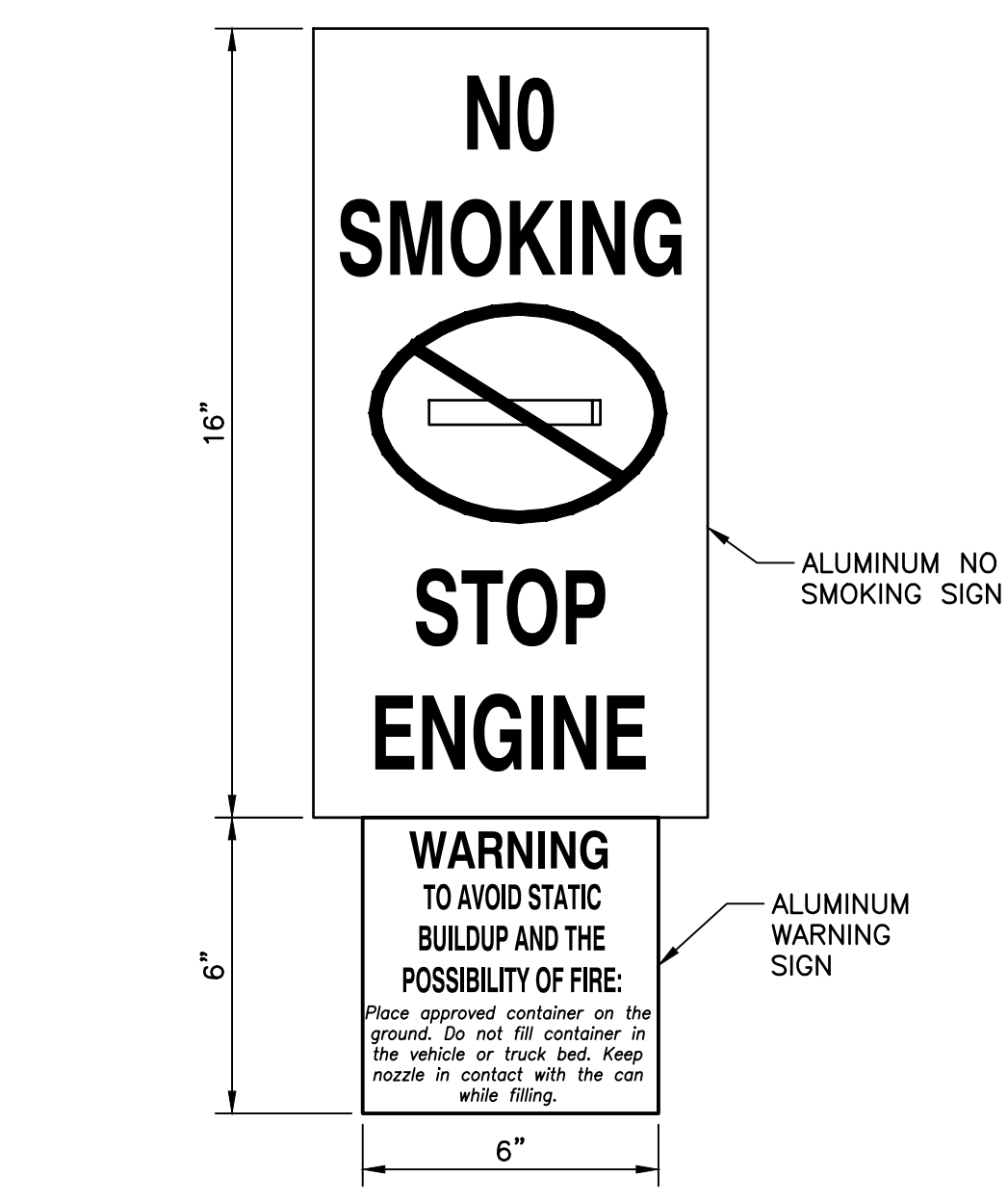
Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.223	11 of 28	0



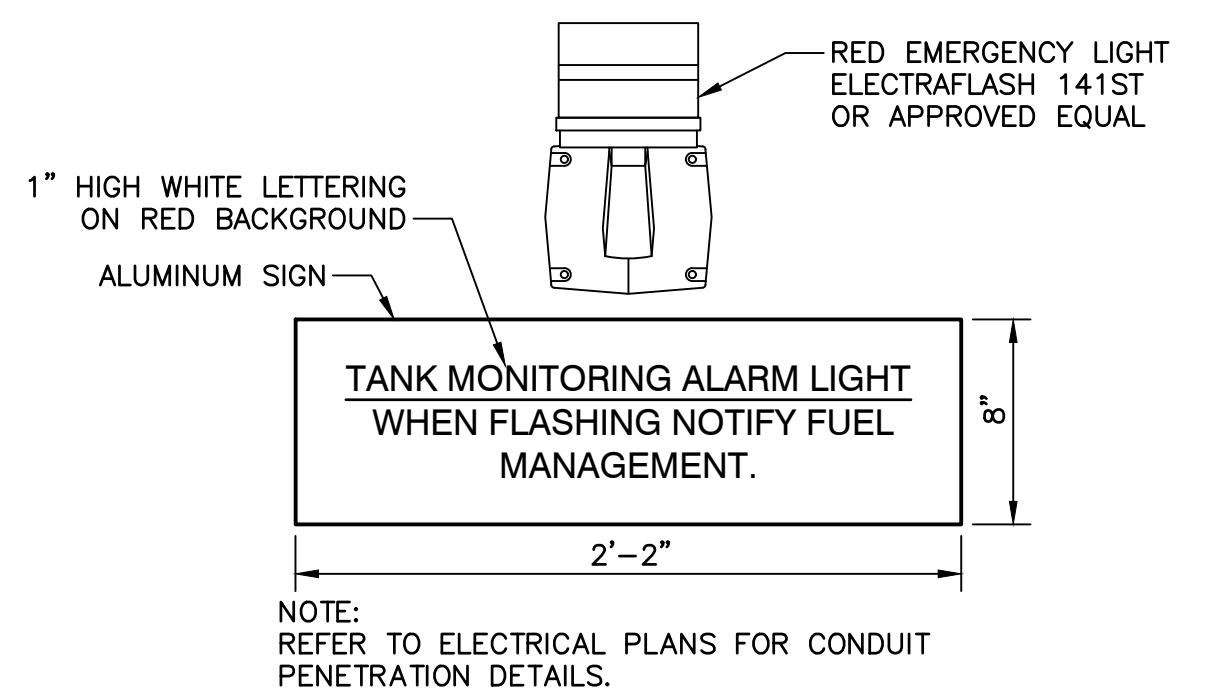
1 CANOPY PLAN  
 SCALE: 1/4"=1'-0"



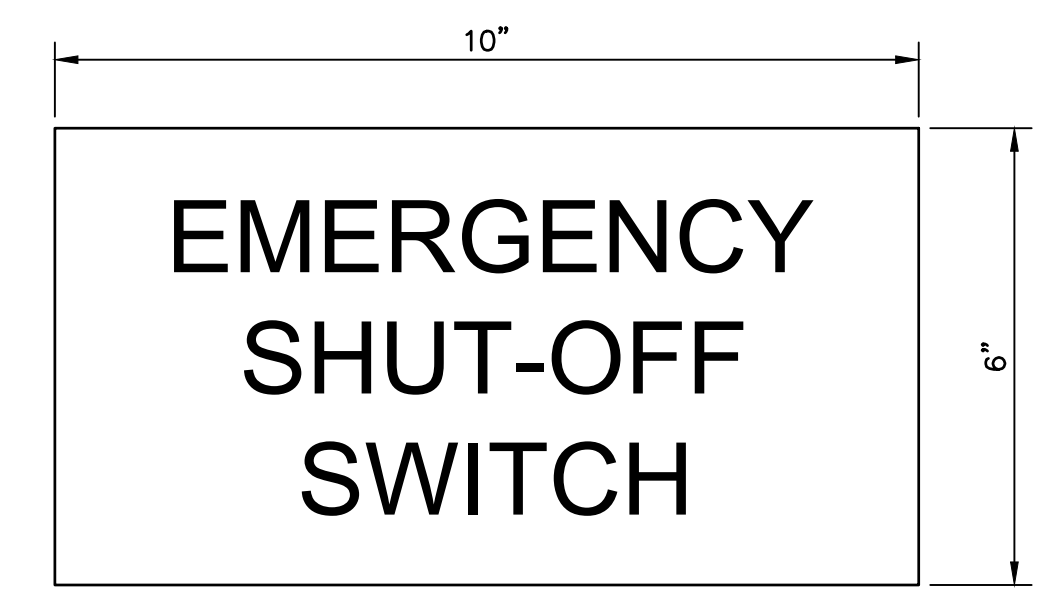
2 FIRE EXTINGUISHER SIGN  
 SCALE: N.T.S.



3 WARNING SIGN DETAIL  
 SCALE: N.T.S.

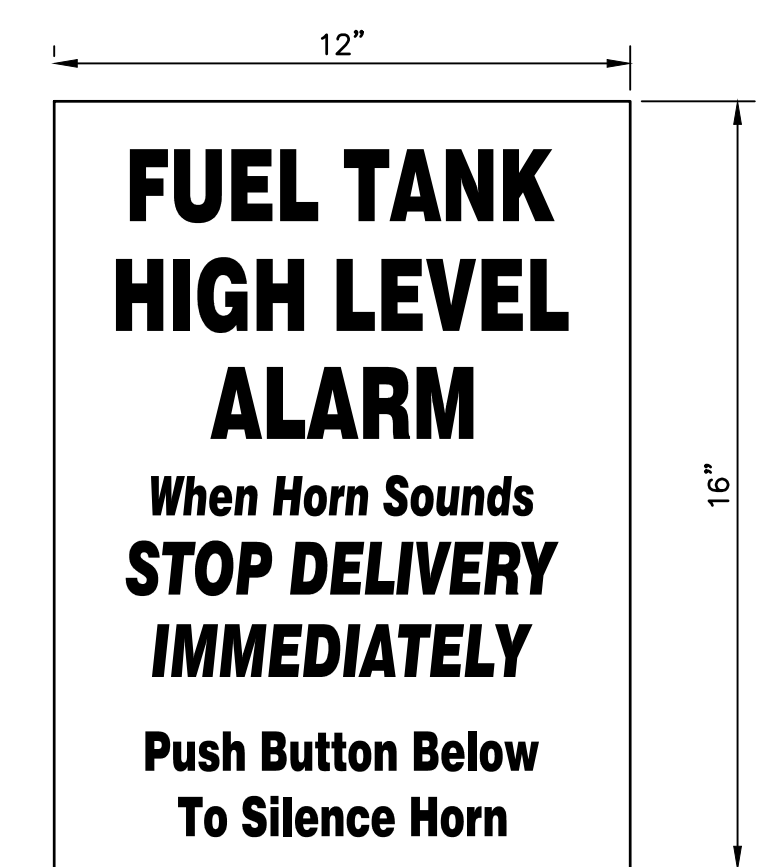


4 TANK SYSTEM MONITORING WARNING LIGHT DETAIL  
 SCALE: N.T.S.



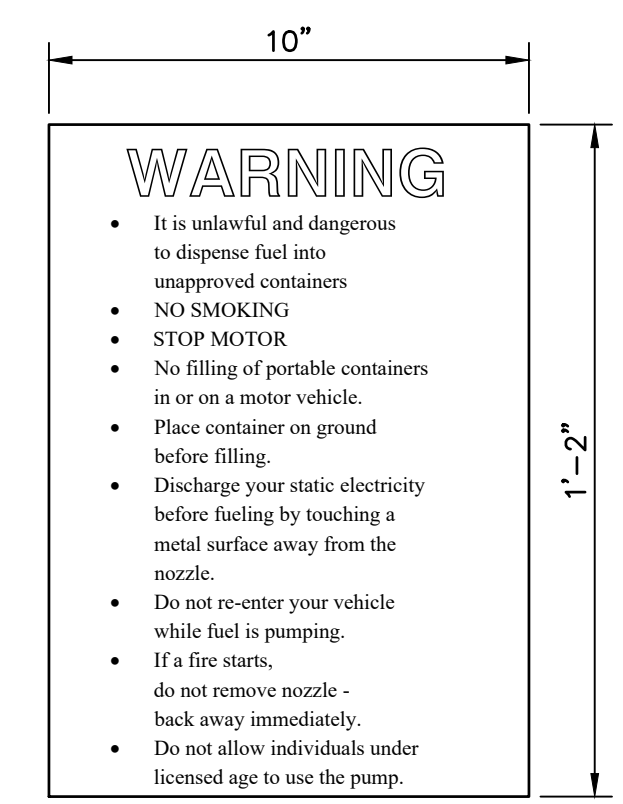
NOTES:  
 10"x6" SINGLE FACED, ALUMINUM SIGN MOUNTED TO SIGN STRUCTURE. RED BACKGROUND WITH WHITE LETTERING (GASOLINE ADVERTISING # AS-54)  
 LOCATIONS:  
 TO BE MOUNTED ABOVE EMERGENCY FUEL PUMP SHUT-OFF SWITCH

6 EMERGENCY SHUT-OFF SIGN  
 SCALE: N.T.S.



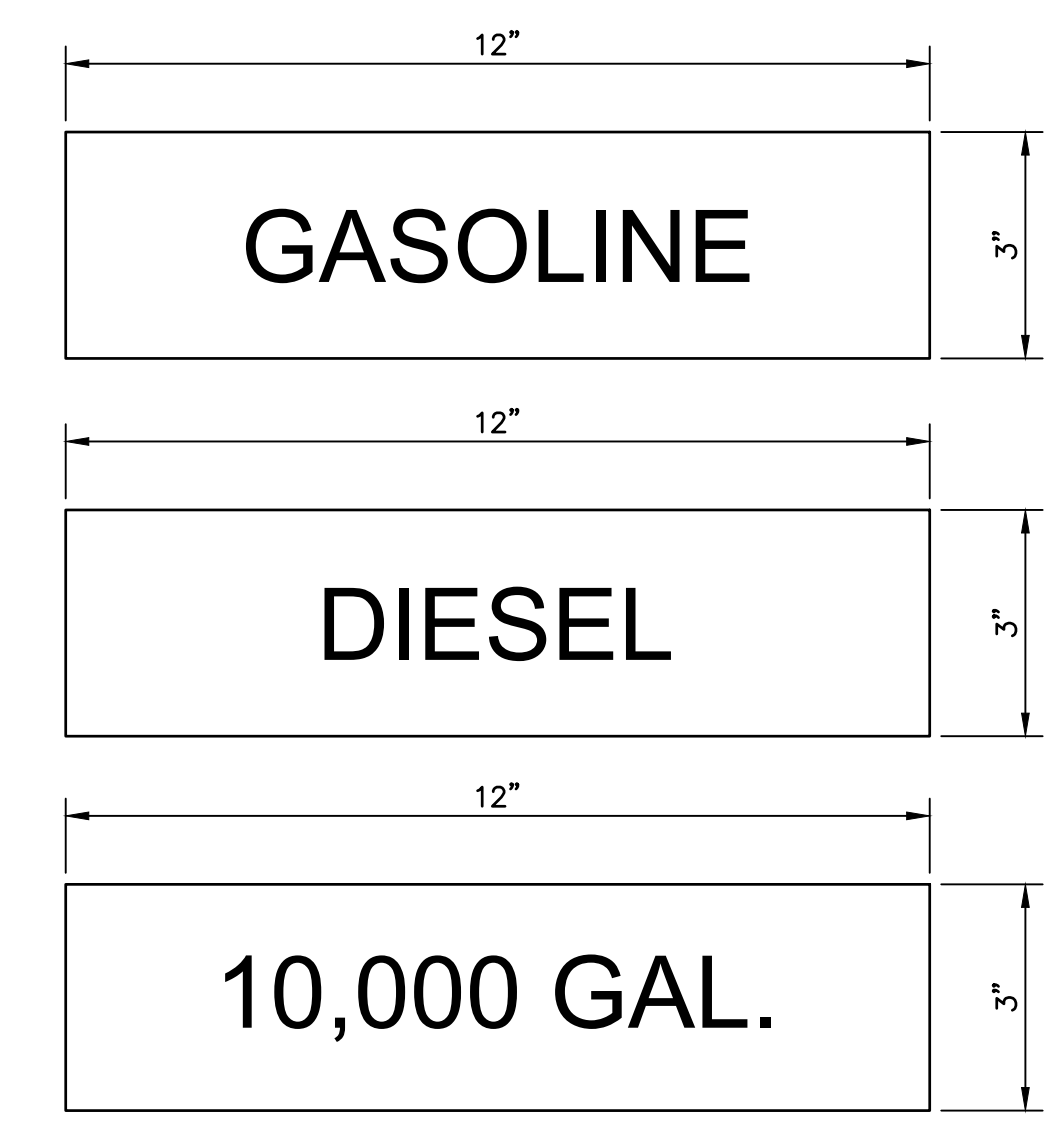
NOTES:  
 12"x16" SINGLE FACED ALUMINUM SIGN. WHITE BACKGROUND WITH RED LETTERS. (GASOLINE ADVERTISING # AS-46)  
 LOCATIONS:  
 TO BE MOUNTED DIRECTLY ABOVE HIGH LEVEL ALARM

7 HIGH LEVEL ALARM SIGN  
 SCALE: N.T.S.



NOTES:  
 10"x14" SINGLE FACED ALUMINUM SIGN. WHITE BACKGROUND WITH RED LETTERS. (GASOLINE ADVERTISING # CAS-15-35)  
 LOCATION:  
 MOUNTED WITHIN SIGHT OF FUELING POSITION

8 USER WARNING SIGN  
 SCALE: N.T.S.



NOTES:  
 12"x3" SINGLE FACED ALUMINUM SIGN. WHITE BACKGROUND WITH RED LETTERS.  
 LOCATIONS:  
 TO BE MOUNTED DIRECTLY ABOVE CORRESPONDING HIGH LEVEL ALARM SIGN

9 PRODUCT DESIGNATION SIGNS  
 SCALE: N.T.S.

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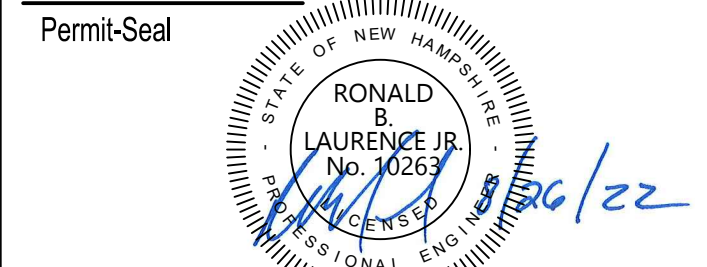
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Project Notes

Legend

Sheet Notes

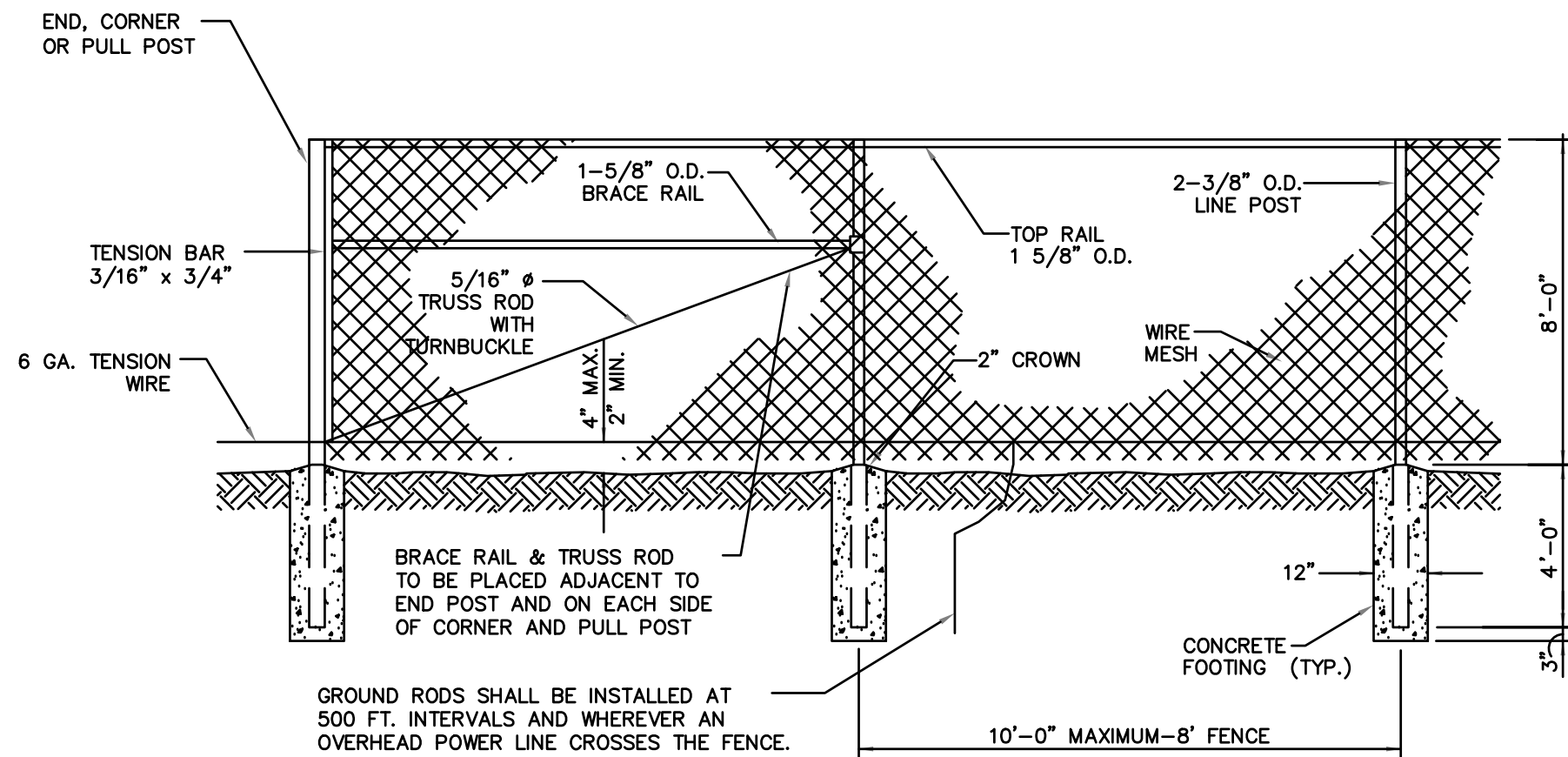
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Revision	By	Appd.	MM.DD.YY
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY
File Name: 2_195602217_Portsmouth-DPW_C.dwg	CLC	RBL	05.12.22
	Dwn.	Chkd.	Dsgn.
Permit-Seal			



RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT  
 680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 CANOPY AND SIGN DETAILS

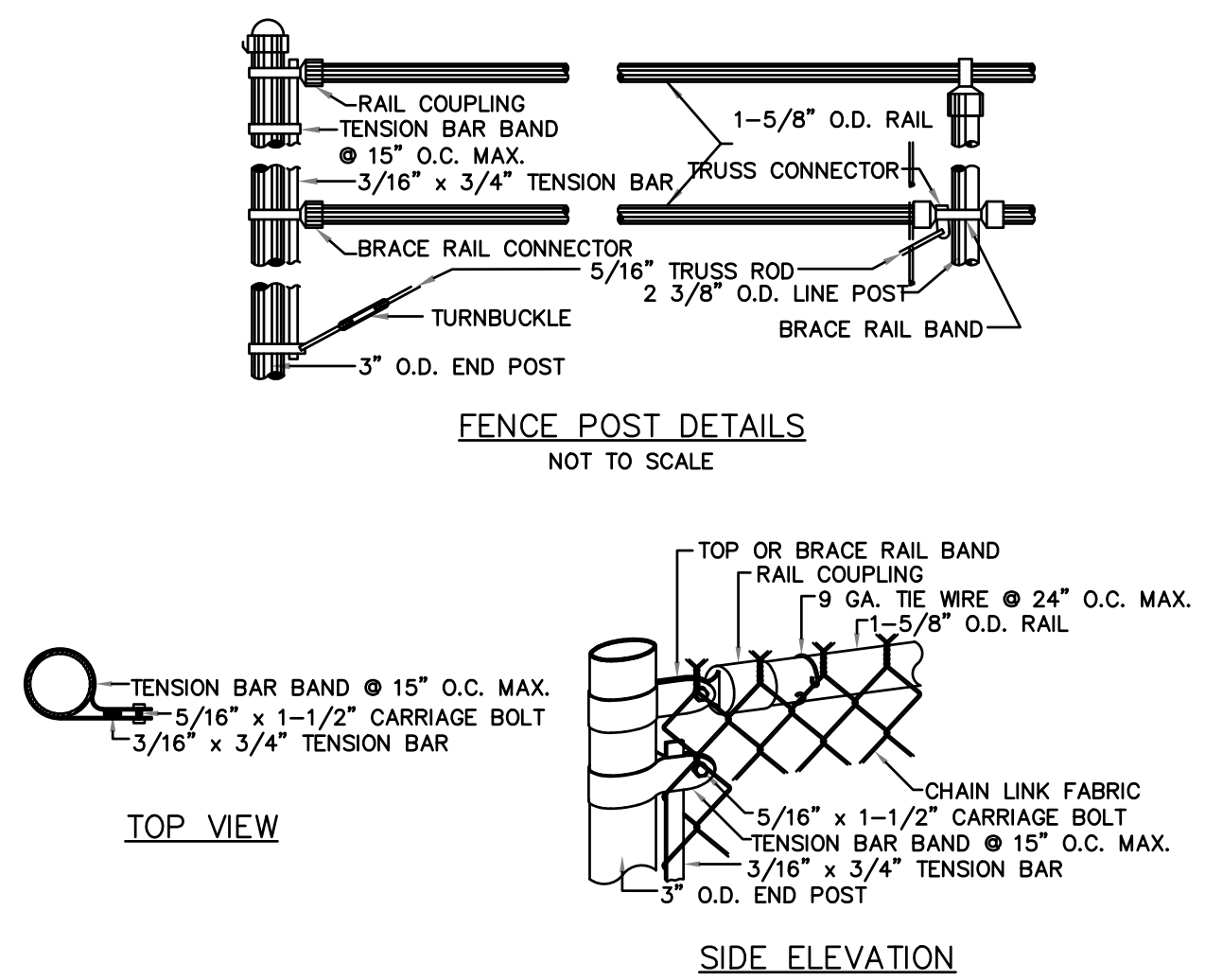
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.224	Sheet 12 of 28
	Revision 0



8' CHAIN LINK FENCE DETAIL  
 NOT TO SCALE

- NOTES:
1. USE CLAMPS TO SECURE GROUND WIRE TO ROD AND POST.
  2. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. VERIFY FENCE HEIGHT BEFORE SHOP DRAWING SUBMITTAL.

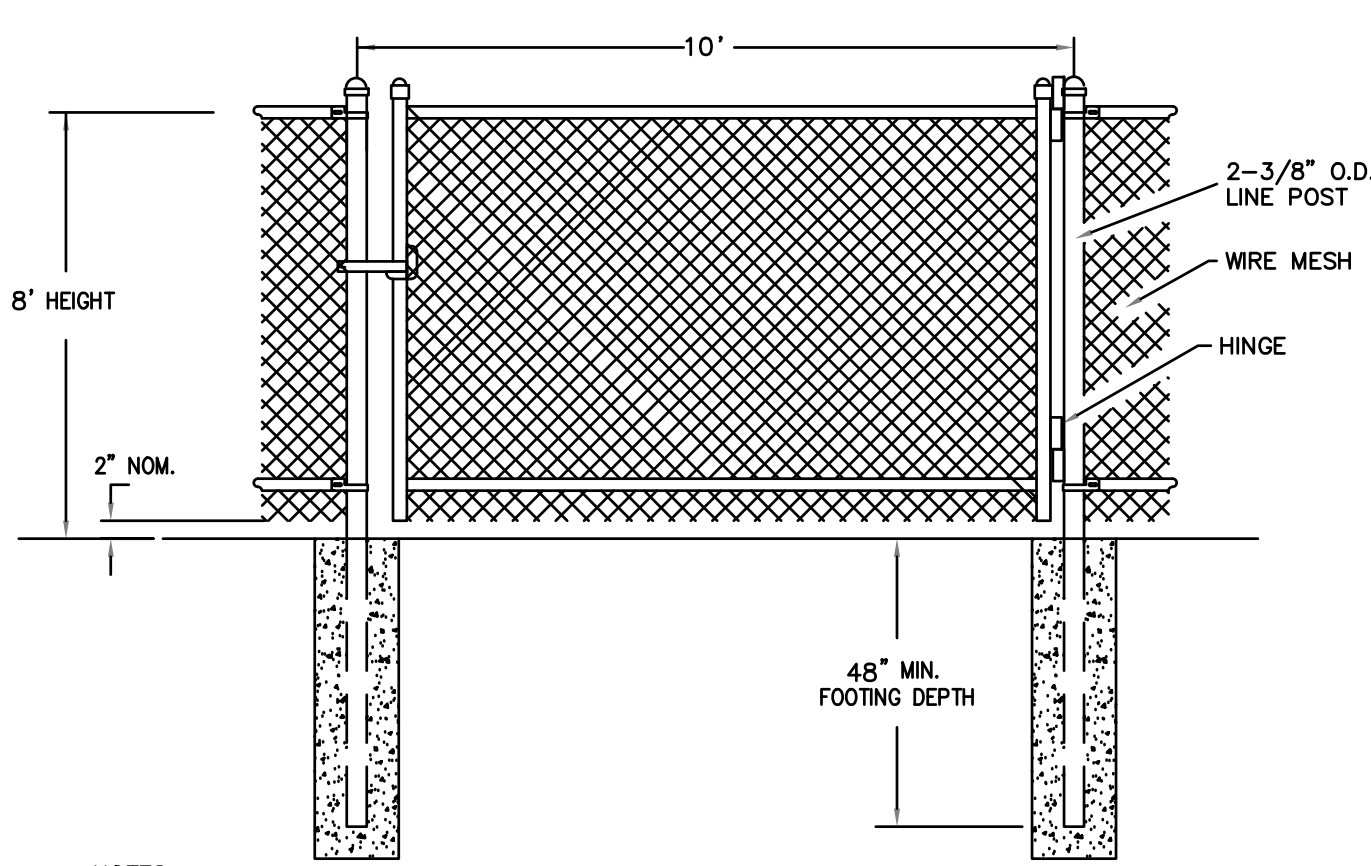
1 8' CHAINLINK FENCE DETAIL  
 SCALE: N.T.S.



FENCE POST DETAILS  
 NOT TO SCALE

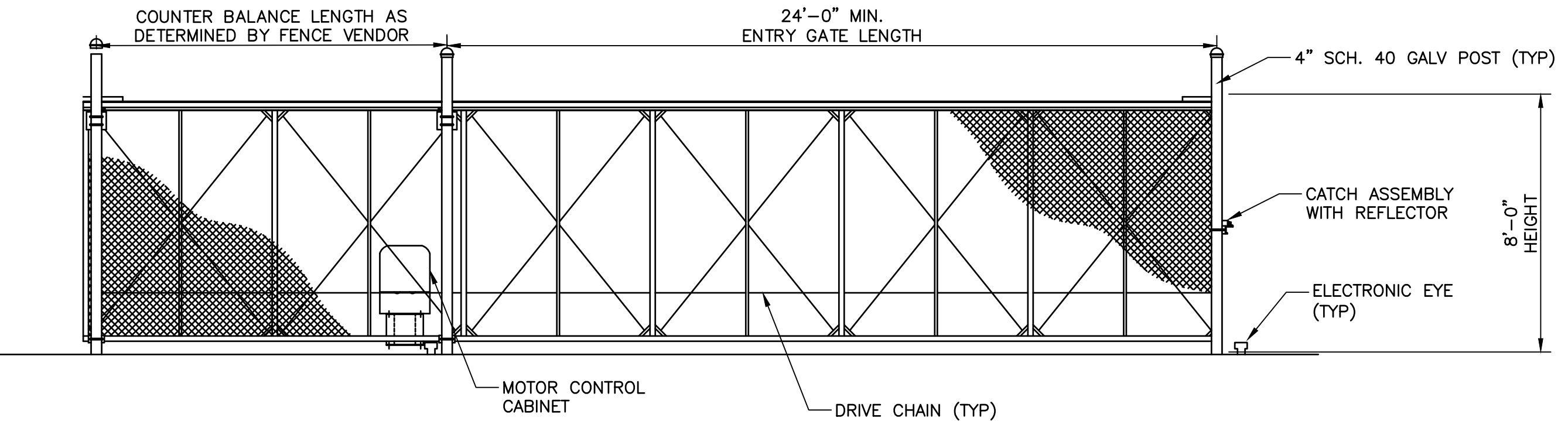
TOP VIEW

SIDE ELEVATION



- NOTES:
1. PROVIDE STANDARD LOCKABLE GATE.
  2. CONNECT GROUND WIRE TO GATE POSTS ON BOTH SIDES OF GATE.
  3. SIZE POSTS PER MANUFACTURERS RECOMMENDATIONS BASED ON GATE LENGTH.

2 CHAINLINK MAN GATE DETAIL  
 SCALE: N.T.S.



**IMPORTANT NOTE:**  
 CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF FENCING AND GATES FOR REVIEW. CONTRACTOR SHALL HIRE GC AAA FENCE AS MOTORIZED GATE VENDOR/INSTALLER. CONTRACTOR SHALL COORDINATE INSTALLATION OF FENCE AND MAN GATE WITH MOTORIZED GATE VENDOR. REFER TO ELECTRICAL SHEETS FOR ADDITIONAL WIRING REQUIREMENTS.

**GATE VENDOR CONTACT INFORMATION:**  
 ATTN: MICHAEL CARPENTER  
 GC/AAA FENCES, INC.  
 294 DURHAM RD  
 DOVER NH 03820  
 1-800-660-0833

3 MOTORIZED GATE DETAIL  
 SCALE: N.T.S.

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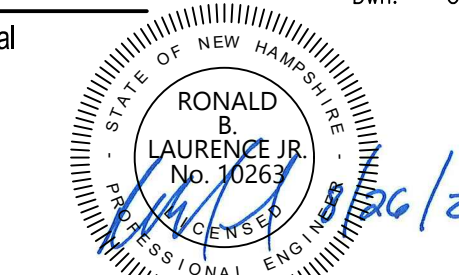
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Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22

ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name: 2_195602217_Portsmouth-DPW_C.dwg	CLC	RBL	CLC	05.12.22
	Dwn.	Chkd.	Dsgn.	MM.DD.YY

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 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 TRAFFIC CONTROL PLAN

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.225	Sheet 13 of 28
	Revision 0

NOTES:  
 CONTRACTOR SHALL IMPLEMENT HEALTH AND SAFETY PLAN THROUGHOUT CONSTRUCTION. AT A MINIMUM DAILY TAILGATE MEETINGS SHALL BE REQUIRED. CONTRACTOR SHALL IDENTIFY CONSTRUCTION RISKS AND IMPLEMENT REVISIONS TO THE SAFETY PLAN AS NECESSARY TO KEEP ALL PEOPLE INFORMED AND SAFE. REFER TO CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS.

CONTRACTOR SHALL MAINTAIN ONE-LANE OF TRAFFIC TO DPW YARD. ANY DOWNTIME TO BE INCURRED SHALL BE COORDINATED WITH OWNER IN ADVANCE. CONTRACTOR SHALL PROVIDE ROAD PLATES AND PHASE CONSTRUCTION AS NECESSARY TO LIMIT DOWN TIME.

CONTRACTOR SHALL MAINTAIN ONE-LANE OF TRAFFIC TO RECYCLING. ANY DOWNTIME TO BE INCURRED SHALL BE COORDINATED WITH OWNER IN ADVANCE. CONTRACTOR SHALL PROVIDE ROAD PLATES AND PHASE CONSTRUCTION AS NECESSARY TO LIMIT DOWN TIME.

1 TRAFFIC CONTROL PLAN  
 SCALE: N.T.S.

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Project Notes

Legend

- 52 -- EXISTING CONTOUR ELEVATION
- 51 PROPOSED CONTOUR ELEVATION
- X 49.33 PROPOSED SPOT ELEVATION (FEET)
- ← PROPOSED SURFACE FLOW

Sheet Notes

PIPING INSTALLATION NOTES:

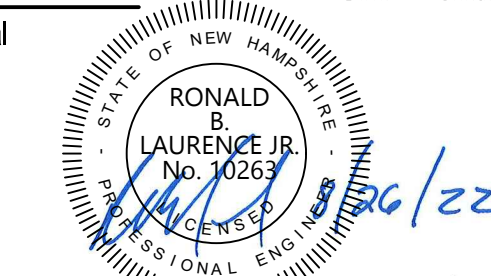
- ALL PIPING ELEVATION BENCHMARKS INDICATED ON THIS SHEET ARE SHOWN RELATIVE TO GRADE OF CONCRETE FUELING APRON EDGE. REFER TO GRADING PLAN FOR ADDITIONAL DETAIL.

RESPONSE TO NHDES COMMENTS, DATED 7/5/22  
 Revision By Appd. MM.DD.YY

ISSUED FOR BID  
 ISSUED FOR NHDES PERMIT  
 Issued By Appd. MM.DD.YY

File Name: 4\_195602217\_Portsmouth-DPW\_M.dwg  
 Dwn. Chkd. Dsgn. MM.DD.YY

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Client/Project

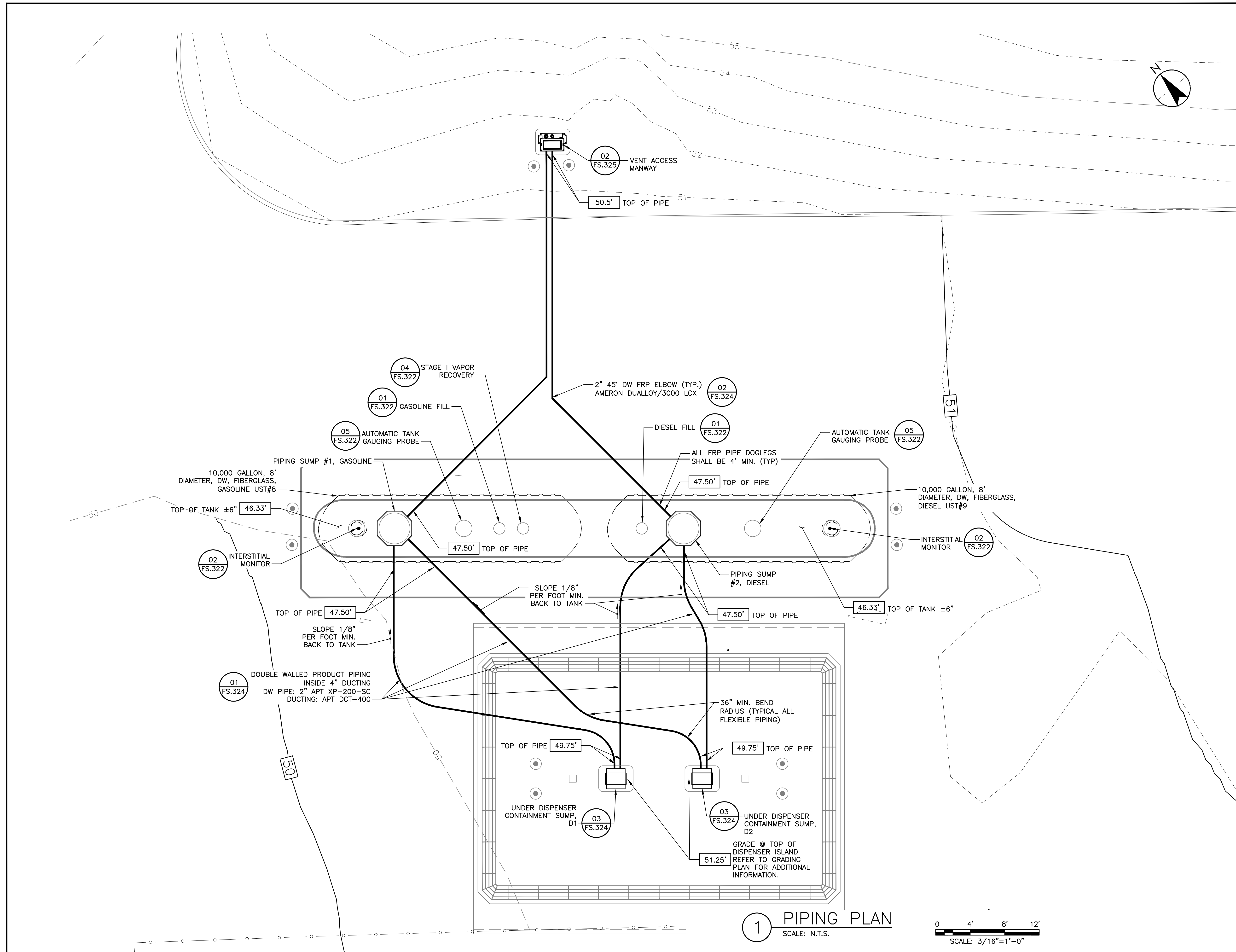
CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

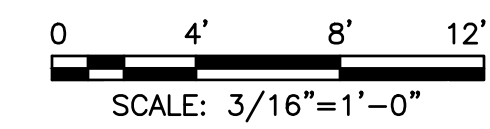
Title  
 PIPING PLAN

Project No. 195602217 Scale AS SHOWN

Drawing No. FS.310 Sheet 14 of 28 Revision 0



1 PIPING PLAN  
 SCALE: N.T.S.



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Project Notes

Legend

Sheet Notes

- INSTALLATION NOTES:**
- ALL ELEVATION BENCHMARKS INDICATED ON THIS SHEET ARE SHOWN RELATIVE TO GRADE OF CONCRETE FUELING APRON EDGE.
  - TANK PAD SHALL HAVE A 3" REVEAL.

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name	CLC	RBL	CLC	05.12.22
4_195602217_Portsmouth-DPW_M.dwg	Dwn.	Chkd.	Dsgn.	MM.DD.YY

Permit-Seal

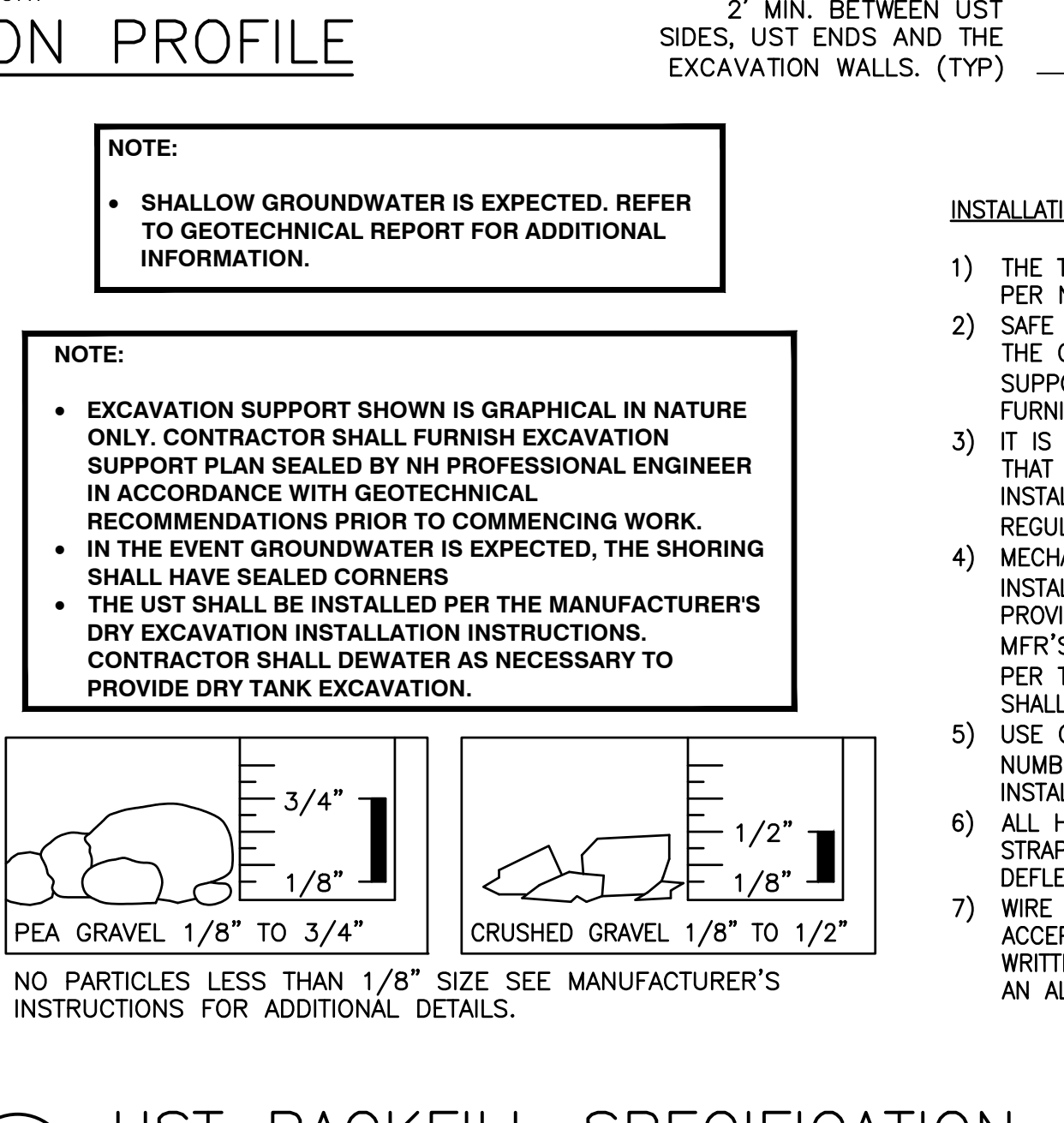
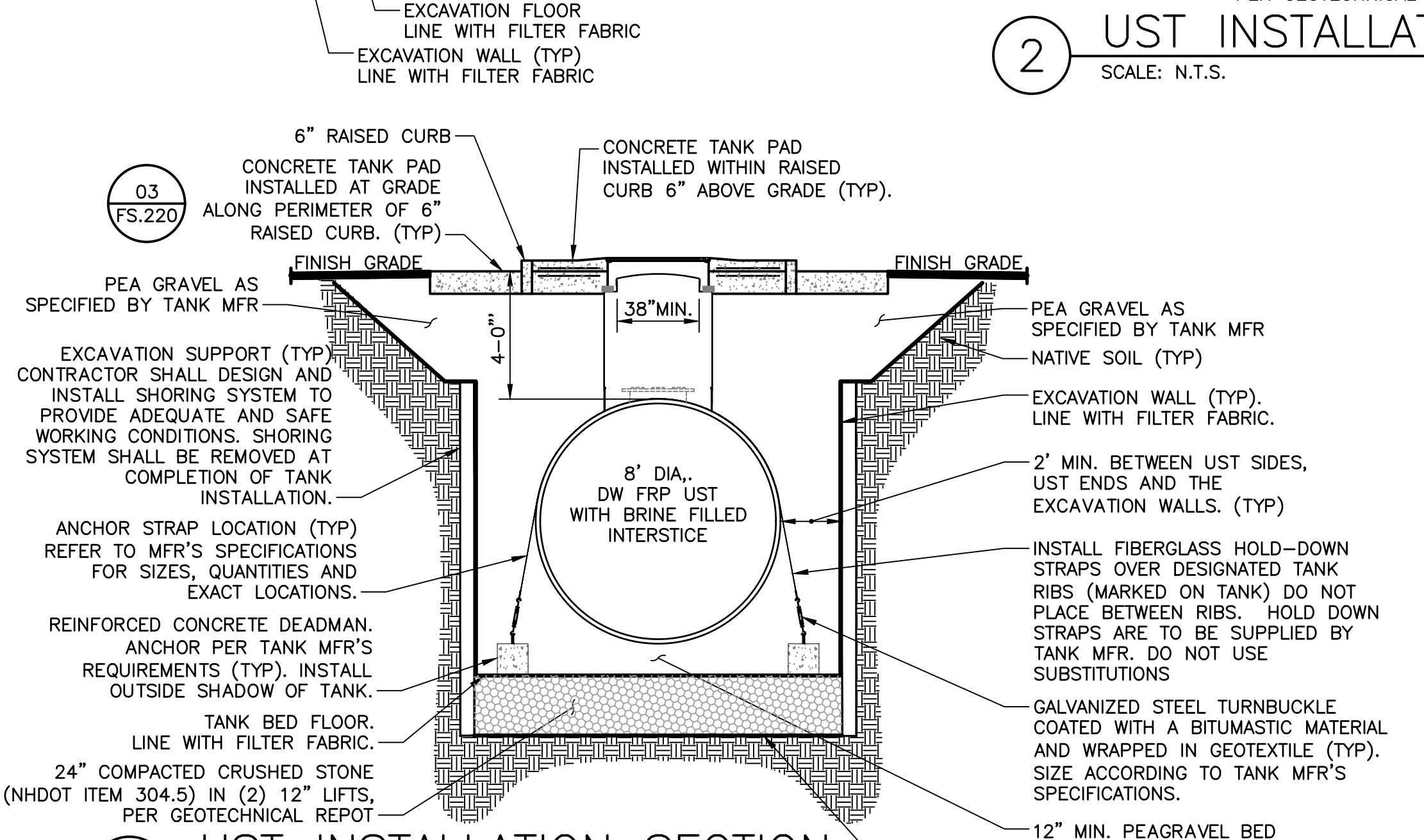
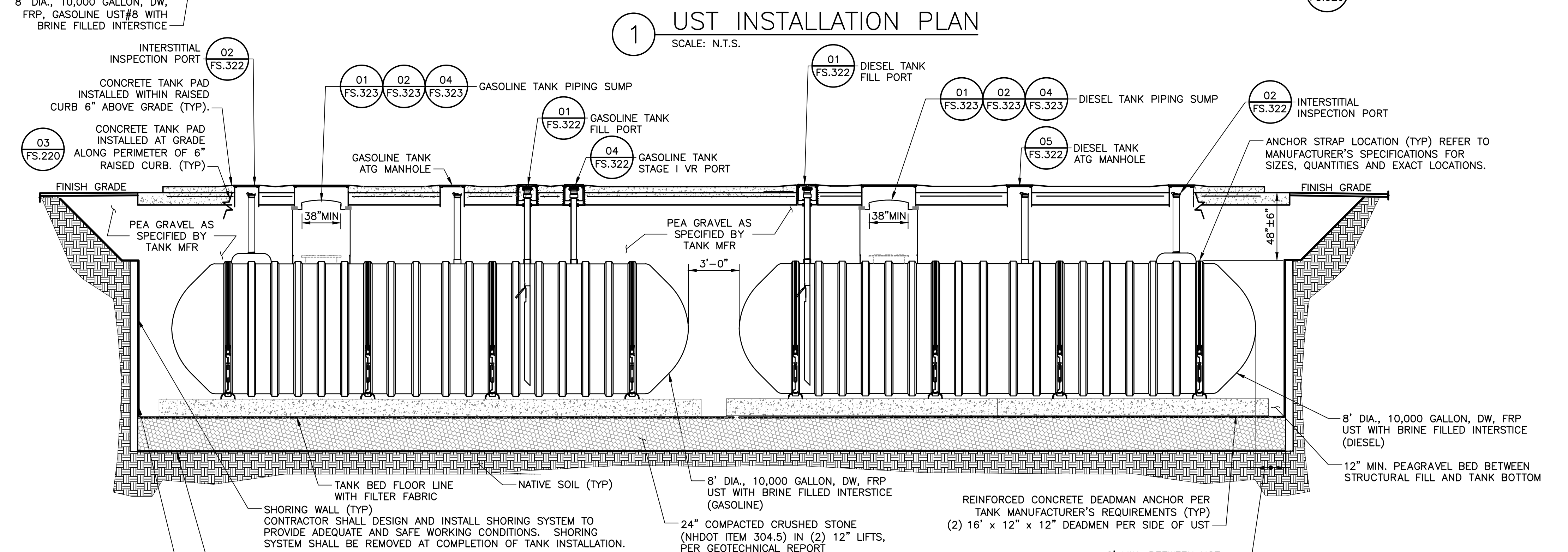
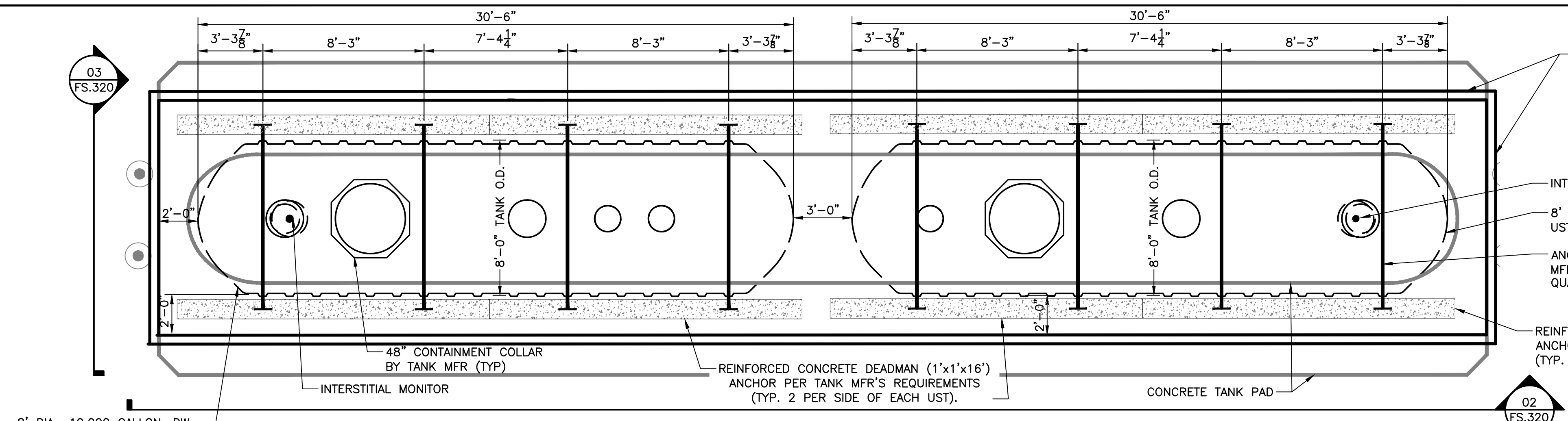
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
**CITY OF PORTSMOUTH**  
 DEPARTMENT OF PUBLIC WORKS  
**FUEL SYSTEM REPLACEMENT**

680 PEVERLY HILL RD  
**PORTSMOUTH, NH 03801**

Title  
**UST INSTALLATION DETAILS AND NOTES**  
**CONTAINMENT SOLUTIONS**  
**10K GAS AND DIESEL**

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.320	15 of 28	0



**NOTE:**

- SHALLOW GROUNDWATER IS EXPECTED. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

**NOTE:**

- EXCAVATION SUPPORT SHOWN IS GRAPHICAL IN NATURE ONLY. CONTRACTOR SHALL FURNISH EXCAVATION SUPPORT PLAN SEALED BY NH PROFESSIONAL ENGINEER IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS PRIOR TO COMMENCING WORK.
- IN THE EVENT GROUNDWATER IS EXPECTED, THE SHORING SHALL HAVE SEALED CORNERS.
- THE UST SHALL BE INSTALLED PER THE MANUFACTURER'S DRY EXCAVATION INSTALLATION INSTRUCTIONS. CONTRACTOR SHALL DEWATER AS NECESSARY TO PROVIDE DRY TANK EXCAVATION.

**INSTALLATION NOTES:**

- THE TANK INSTALLER MUST BE ICC CERTIFIED AND ON SITE PER NHDES REQUIREMENTS.
- SAFE EXCAVATION IS THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR WILL PROVIDE APPROPRIATE EXCAVATION SUPPORT (I.E. SHEETING AND EXCAVATION SUPPORT) TO FURNISH SAFE CONDITIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL UNDERGROUND FRP STORAGE TANKS ARE INSTALLED ACCORDING TO LOCAL, STATE, FEDERAL REGULATIONS, AND MFR'S SPECIFICATIONS.
- MECHANICAL TANK ANCHORING IS REQUIRED FOR ALL TANK INSTALLATIONS. ANCHORS/DEADMEN TO BE DESIGNED AND PROVIDED BY TANK MFR OR PREFABRICATED PER TANK MFR'S REQUIREMENTS AND ARE TO BE INSTALLED AS PER TANK MFR'S SPECIFICATIONS. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE DEADMEN. USE ONLY TANK MFR'S SPECIFIED ANCHOR STRAPS. NUMBER AND LOCATION IN ACCORDANCE WITH TANK MFR'S INSTALLATION INSTRUCTIONS.
- ALL HOLD-DOWN STRAPS MUST BE UNIFORMLY TIGHTENED. STRAPS MUST BE TIGHTENED UNTIL SNUG, BUT CAUSE NO DEFLECTION OF THE TANK.
- WIRE ROPE ANCHORS OVER THE TANKS ARE NOT ACCEPTABLE AS A MEANS OF ANCHORING TANKS. UNLESS WRITTEN CONFIRMATION IS RECEIVED FROM TANK MFR AS AN ALTERNATIVE METHOD.
- ALL TANKS ARE TO BE SET LEVEL IN ACCORDANCE WITH MFR'S INSTALLATION INSTRUCTIONS.
- ALL UNDERGROUND EXPOSED ANCHOR HARDWARE TO BE COATED WITH MASTIC AND WRAPPED IN GEOTEXTILE.
- THE USTs SHALL HAVE BALLAST INTRODUCED TO 95% OF CAPACITY AFTER THEY HAVE RECEIVED BACKFILL TO THE TOP OF THE USTs AND PRIOR TO PIPING INSTALLATION. WATER SHALL BE USED AS BALLAST.
- CONTRACTOR SHALL FILL OUT TANK TILT VERIFICATION FORM.

**DEWATERING NOTES**

REFER TO SPECIFICATIONS FOR SHORING/EXCAVATION SURFACE REQUIREMENTS

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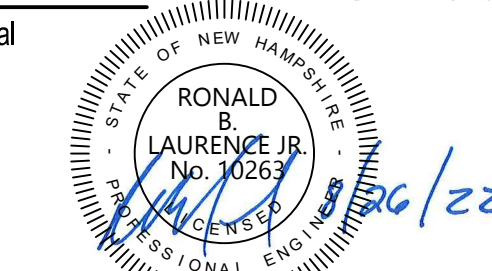
Project Notes

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Sheet Notes

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Revision	By	Appd.	MM.DD.YY
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name: 4_195602217_Portsmouth-OPW_M.dwg	CLC	RBL	CLC	05.12.22
Permit-Seal	Dwn.	Chkd.	Dsgn.	MM.DD.YY



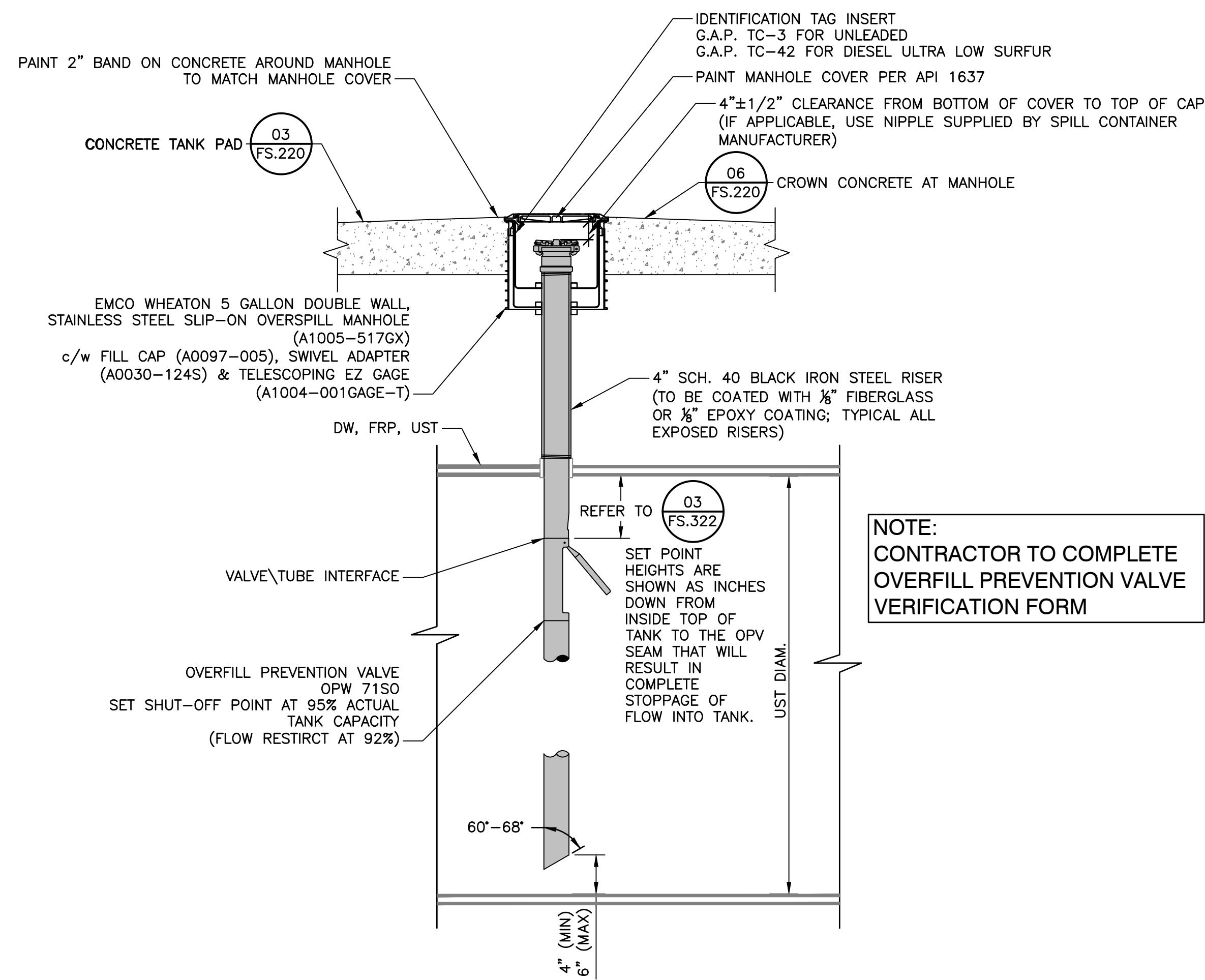
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 UST RISER DETAILS AND  
 HIGH LEVEL SET POINTS

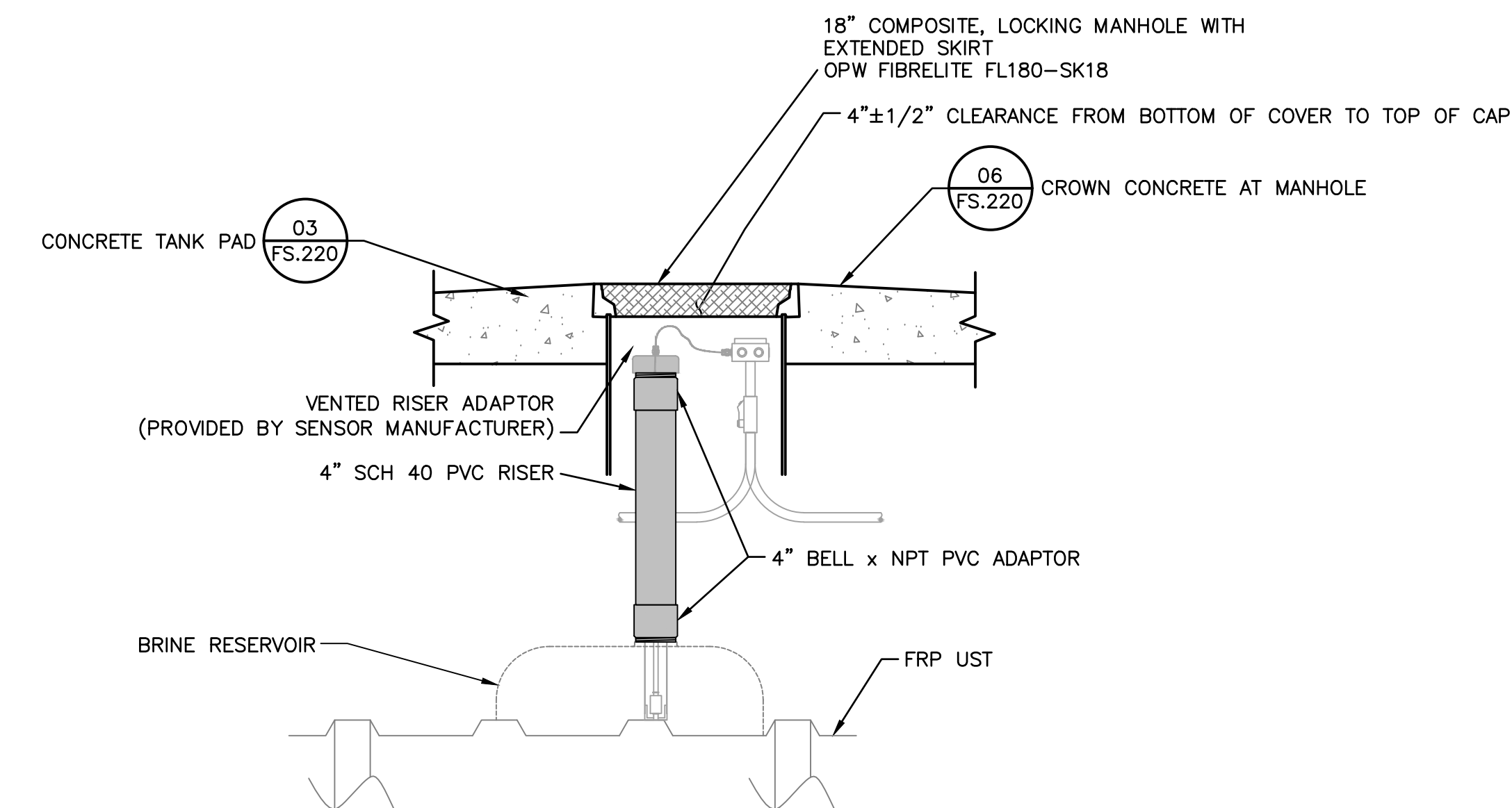
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.322	Sheet 16 of 28
	Revision 0



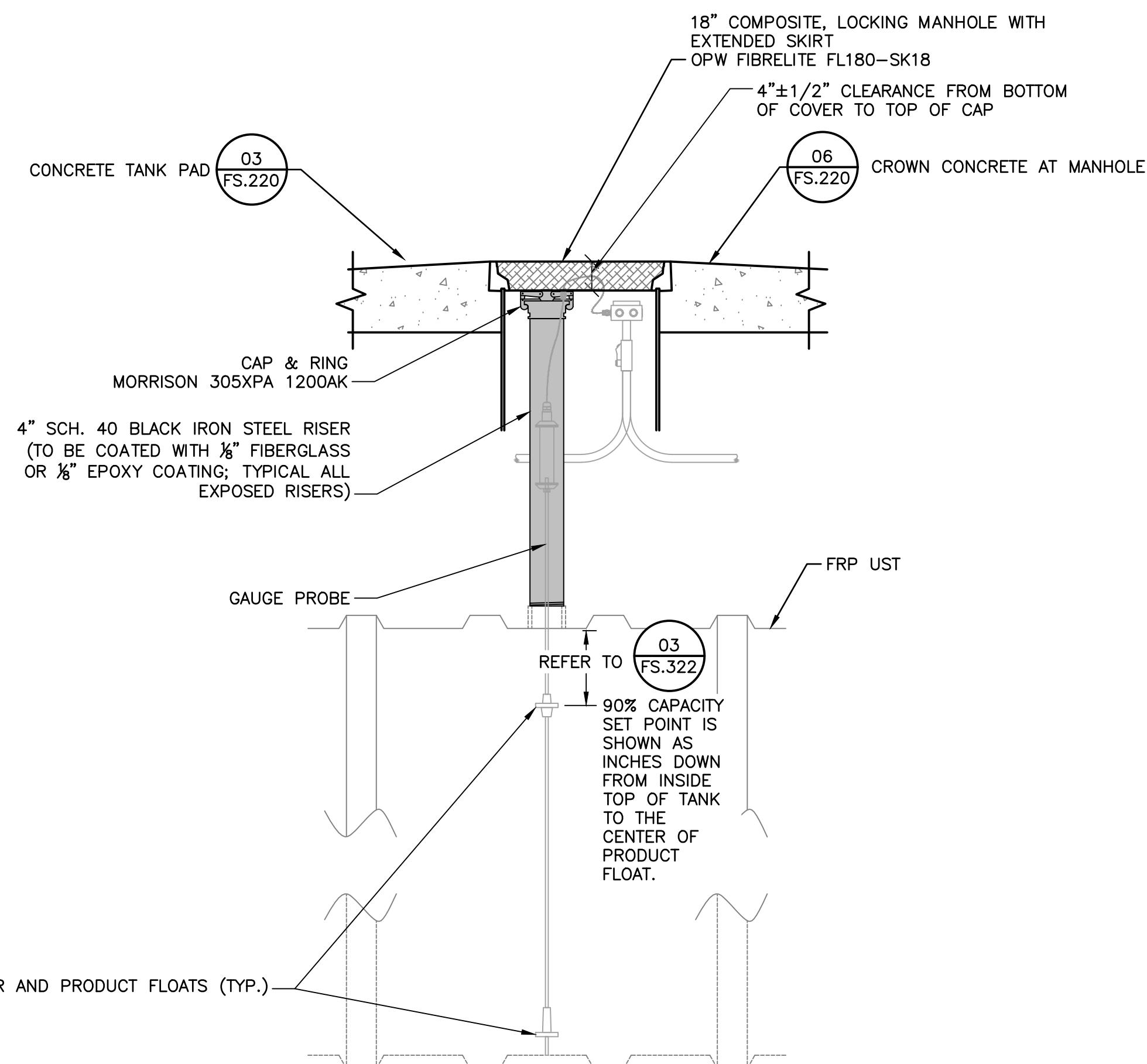
1 TYPICAL FILL PIPE RISER DETAIL  
 SCALE: N.T.S.

10,000 (CSI)	GALLONS	HEIGHT
100% CAPACITY	9,696	0"
OPV SETPOINT	8,920	10-3/4"
90% CAPACITY	8,726	14-7/8"

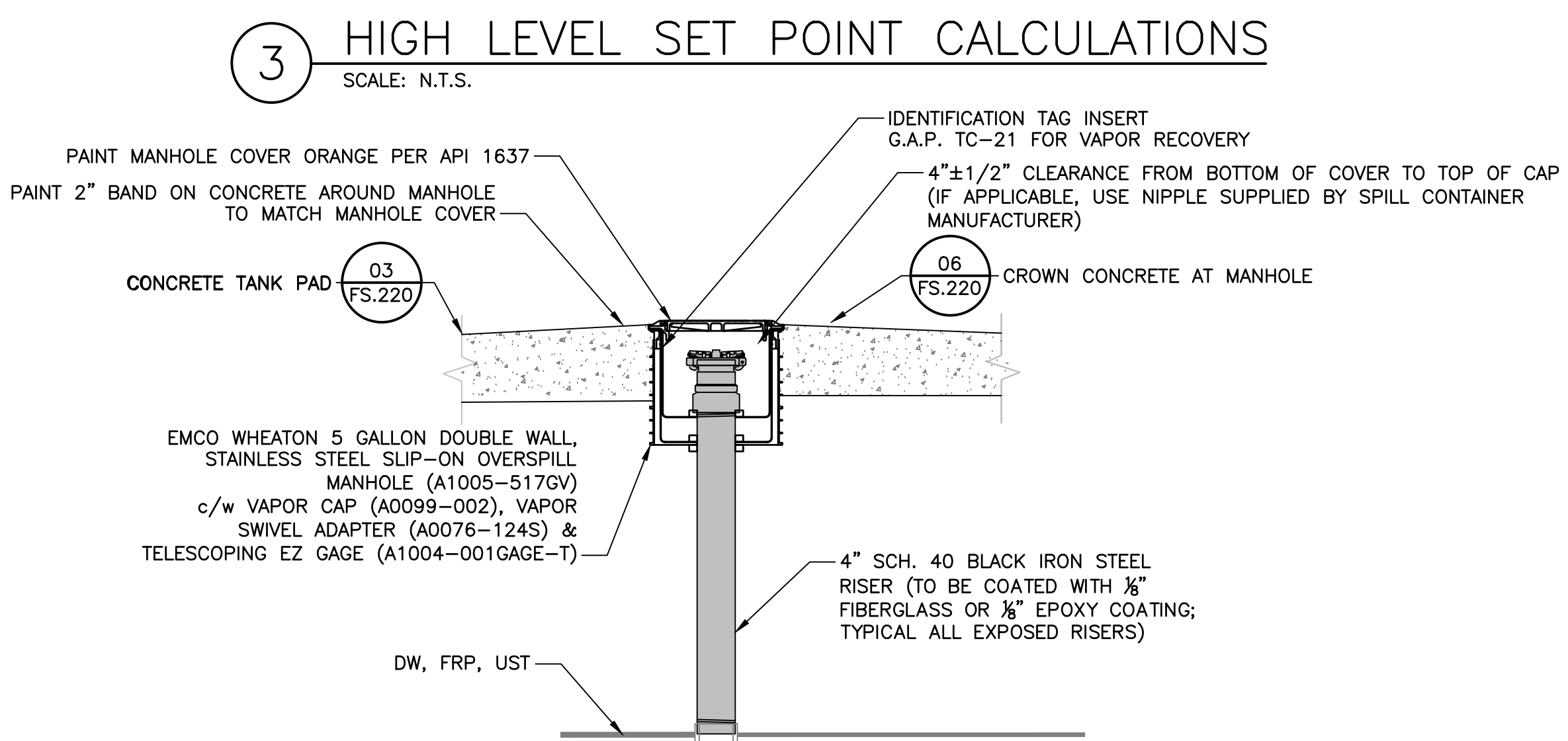
NOTE:  
 1. CONTRACTOR TO VERIFY ALL CALCULATIONS AND DIMENSIONS. REPORT ANY DISCREPANCIES TO THE ENGINEER.  
 2. SET POINT HEIGHTS ARE SHOWN AS INCHES DOWN FROM INSIDE TOP OF TANK TO THE OPV SEAM THAT WILL RESULT IN 100% STOPPAGE OF FLOW INTO TANK.



2 TYPICAL INTERSTITIAL INSPECTION PORT RISER DETAIL  
 SCALE: N.T.S.



3 TYPICAL TANK GAUGE RISER DETAIL  
 SCALE: N.T.S.



4 STAGE 1 VAPOR RECOVERY RISER DETAIL  
 SCALE: N.T.S.



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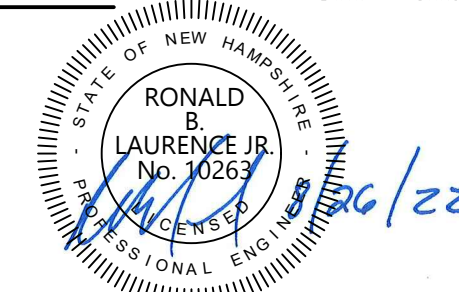
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Sheet Notes

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

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 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

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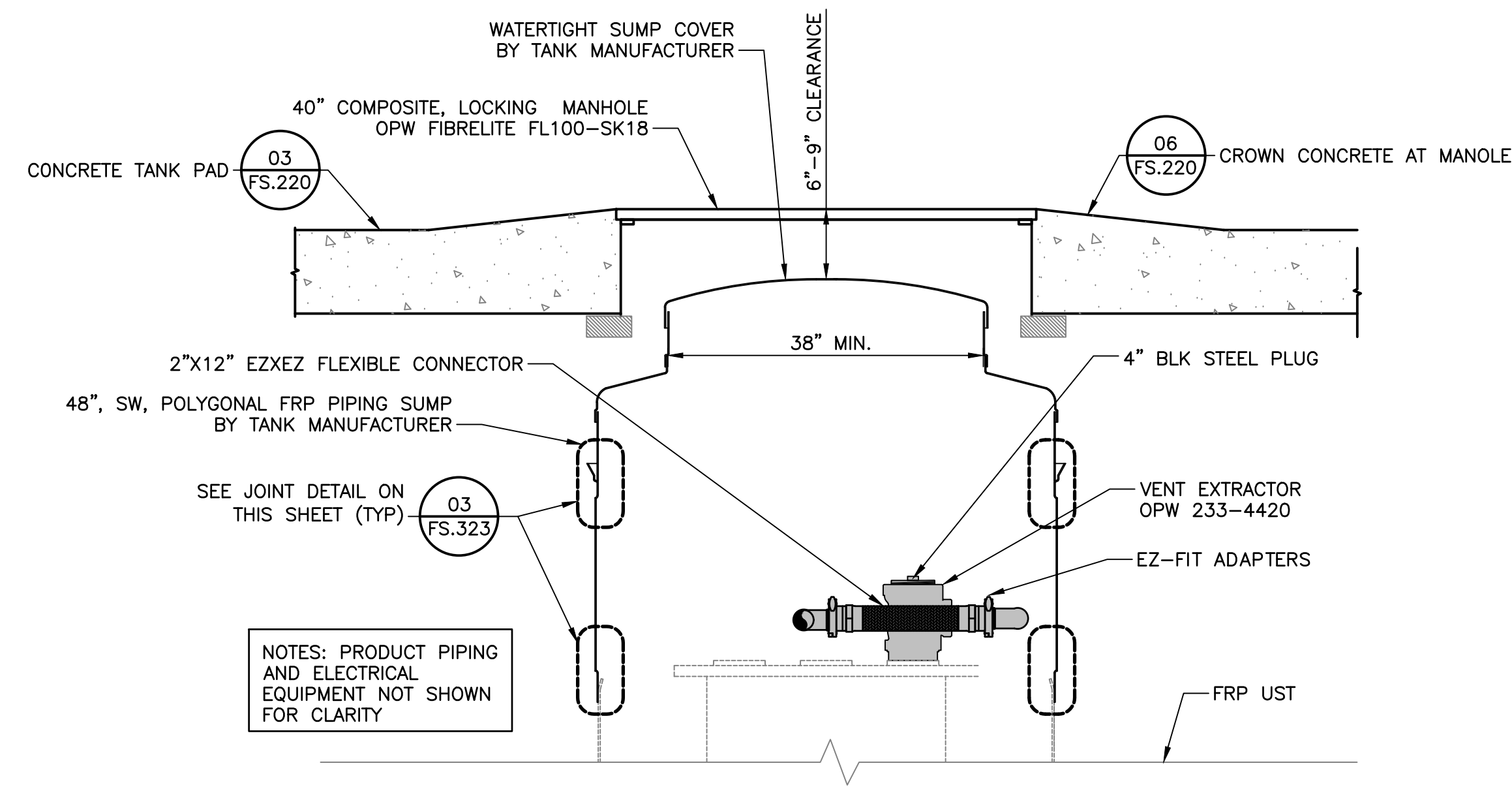
CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

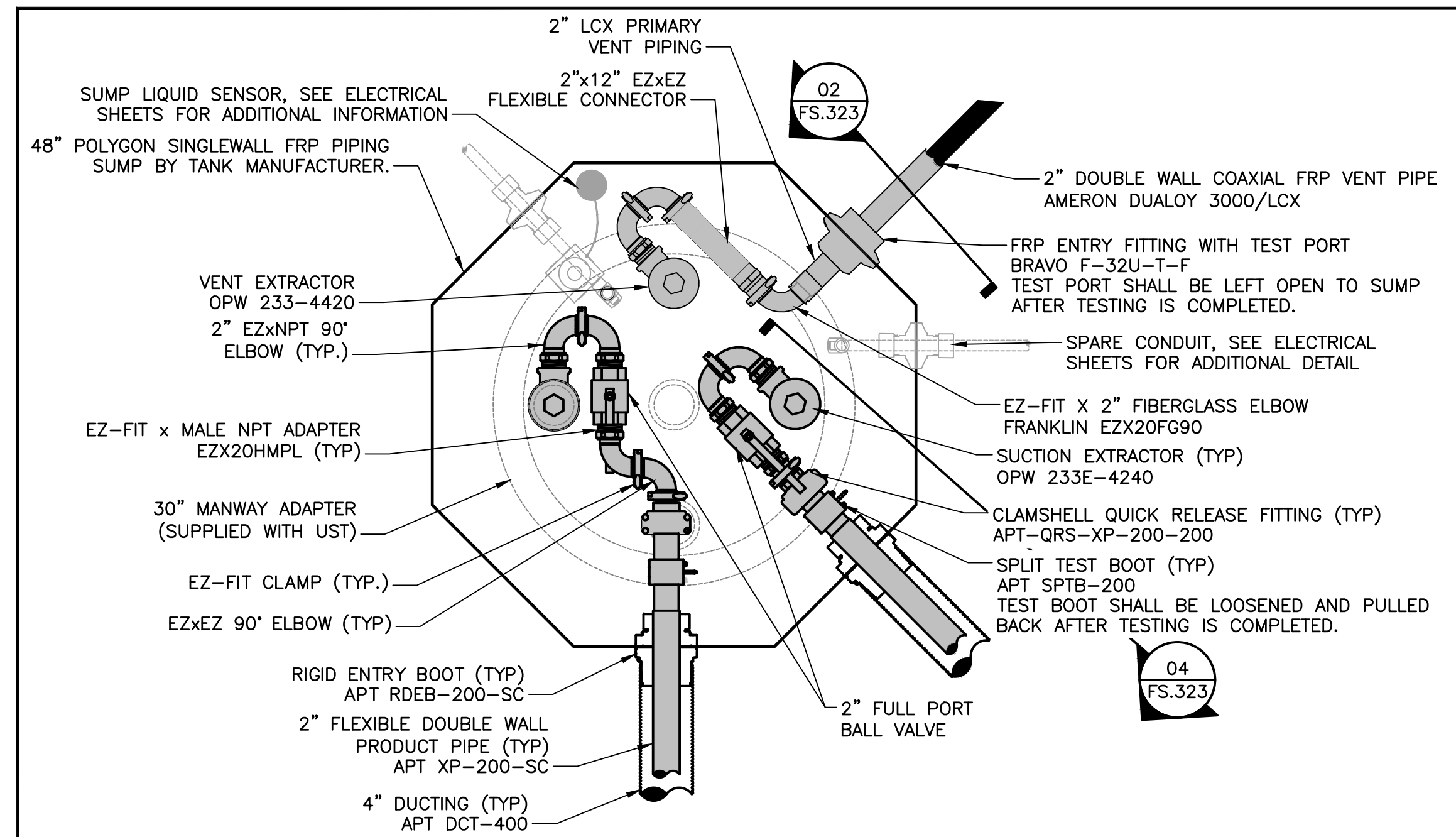
Title

UST PIPING SUMP PLAN AND DETAILS

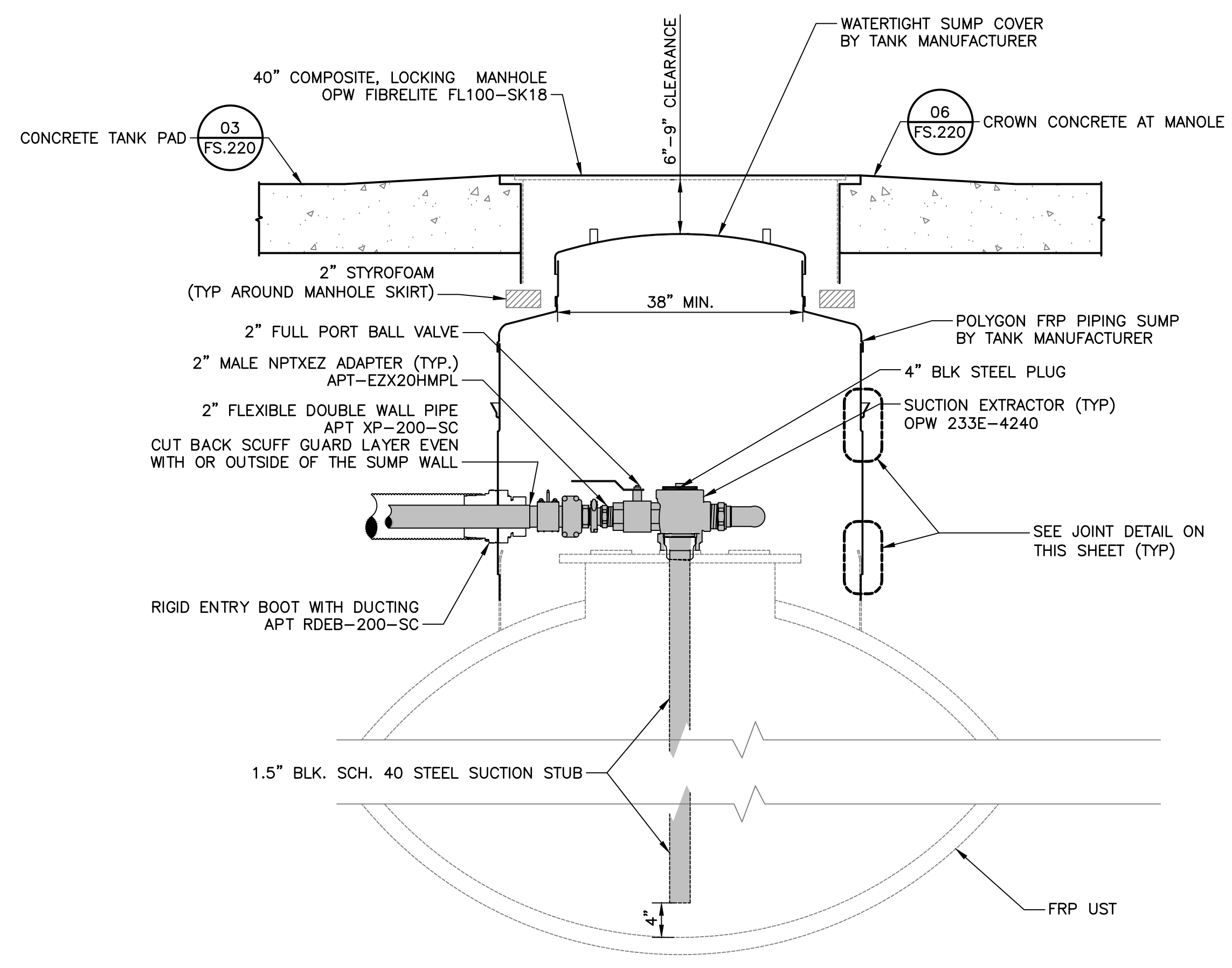
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.323	Sheet 17 of 28
	Revision 0



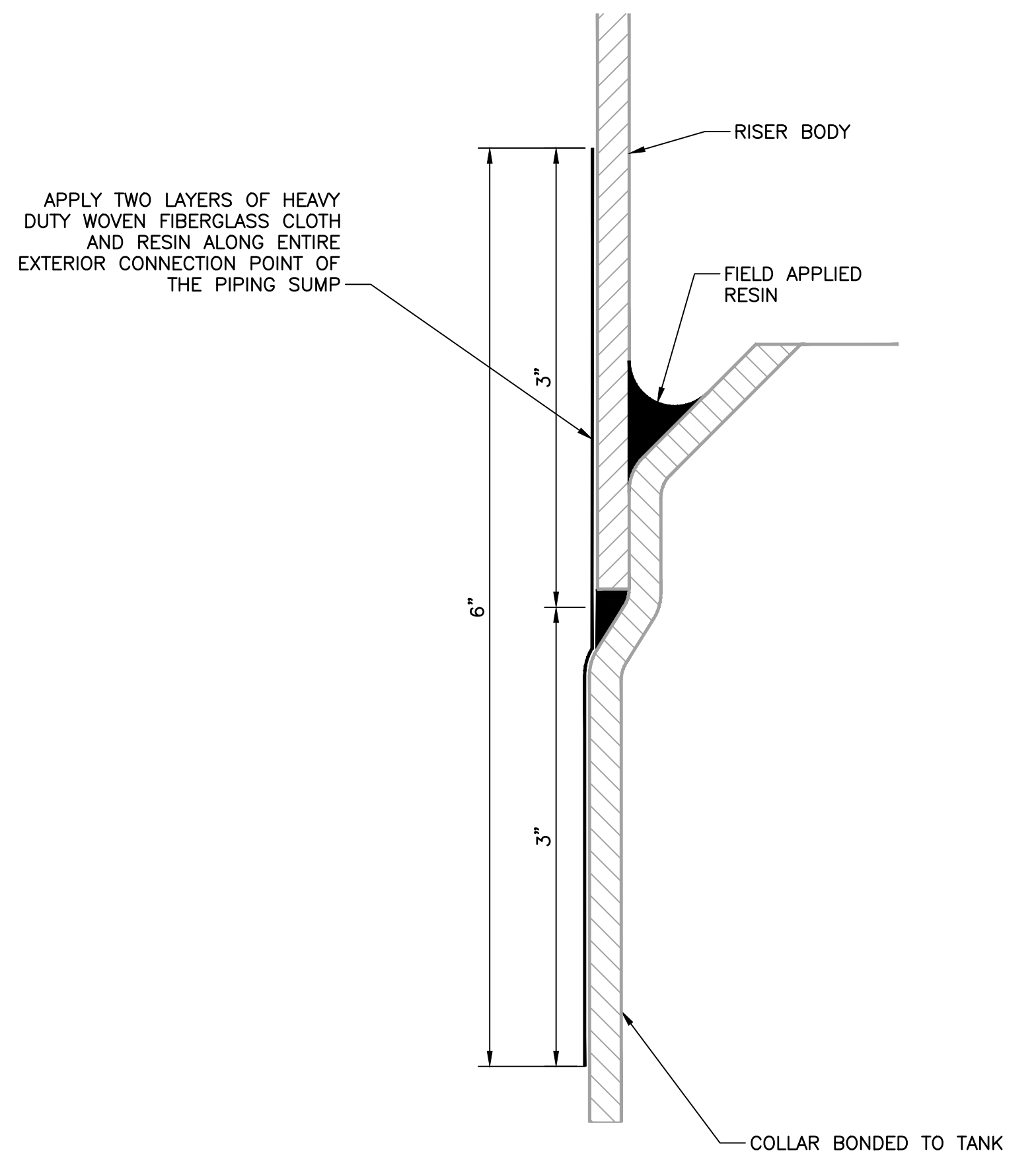
2 TYPICAL UST SUMP VENT PIPING DETAIL  
 SCALE: N.T.S.



1 TYPICAL UST SUMP PIPING PLAN  
 SCALE: N.T.S.



4 TYPICAL UST SUMP PRODUCT PIPING DETAIL  
 SCALE: N.T.S.



3 JOINT DETAIL FOR UST SUMP ATTACHMENTS  
 SCALE: N.T.S.

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Revision	By	Appd.	MM.DD.YY

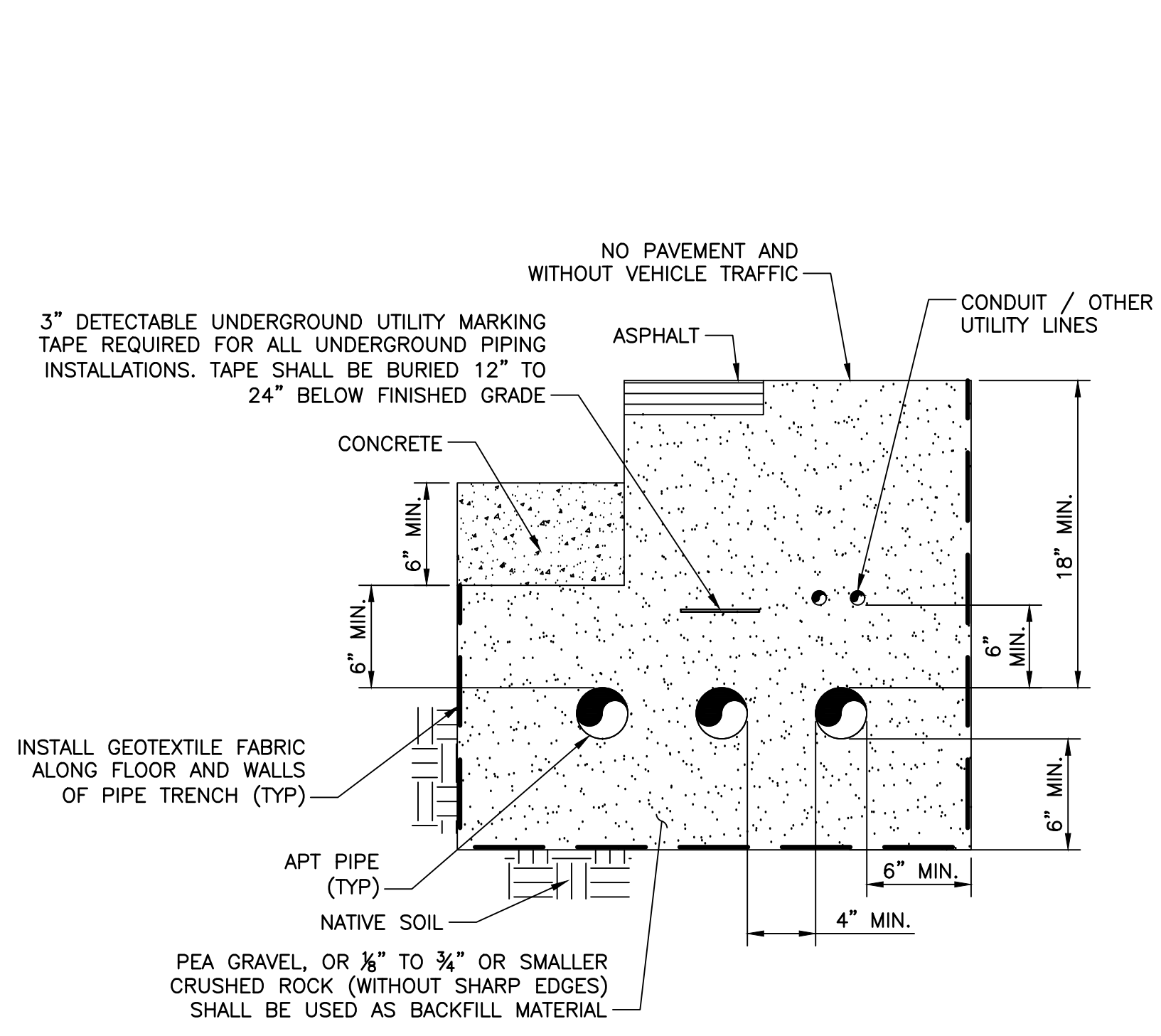
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ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name: 4_195602217_Portsmouth-DPW_M.dwg	CLC	RBL	CLC	05.12.22
	Dwn.	Chkd.	Dsgn.	MM.DD.YY

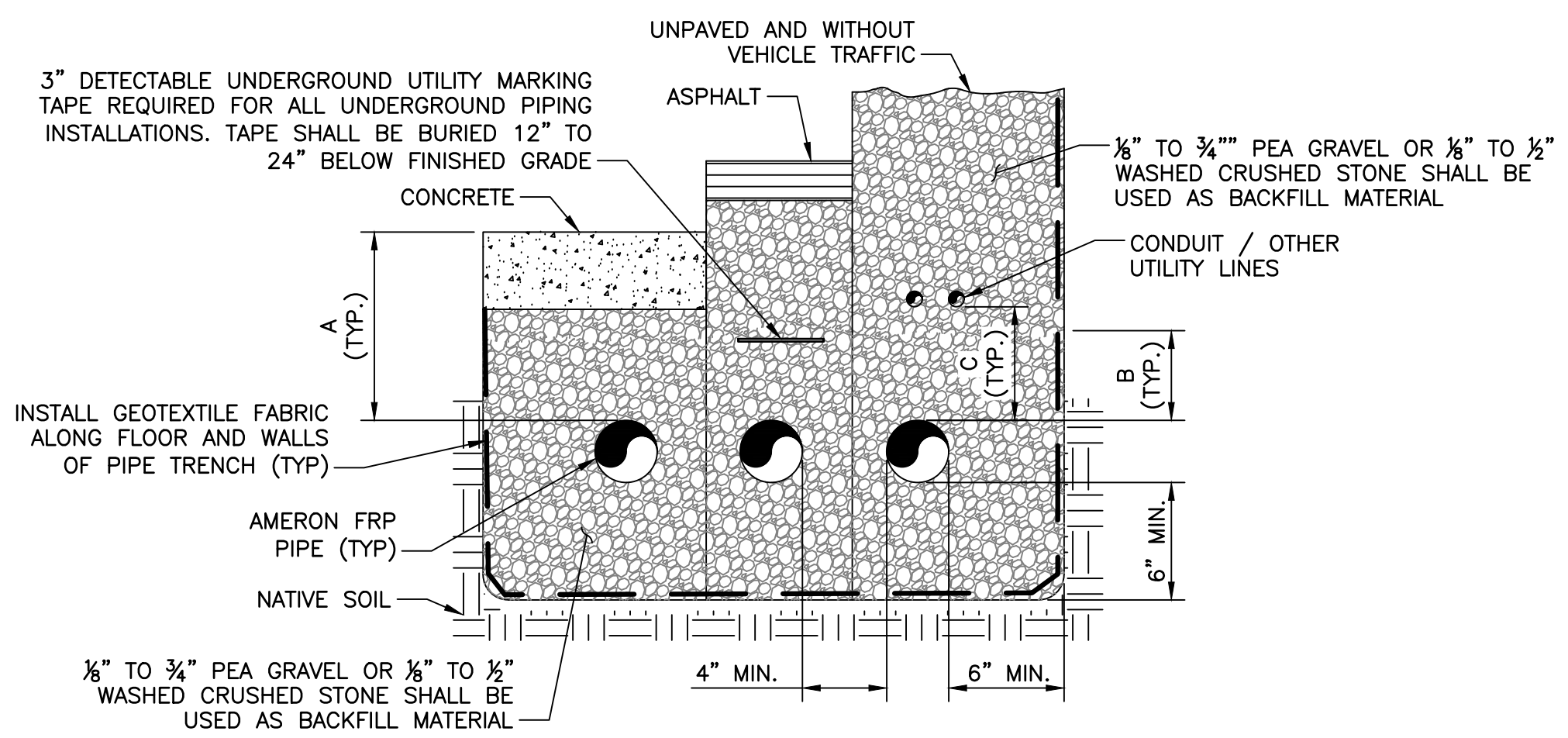
Permit-Seal  
  
 RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT  
 680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 PIPING TRENCH AND  
 DISPENSER SUMP DETAILS

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.324	Sheet 18 of 28
	Revision 0

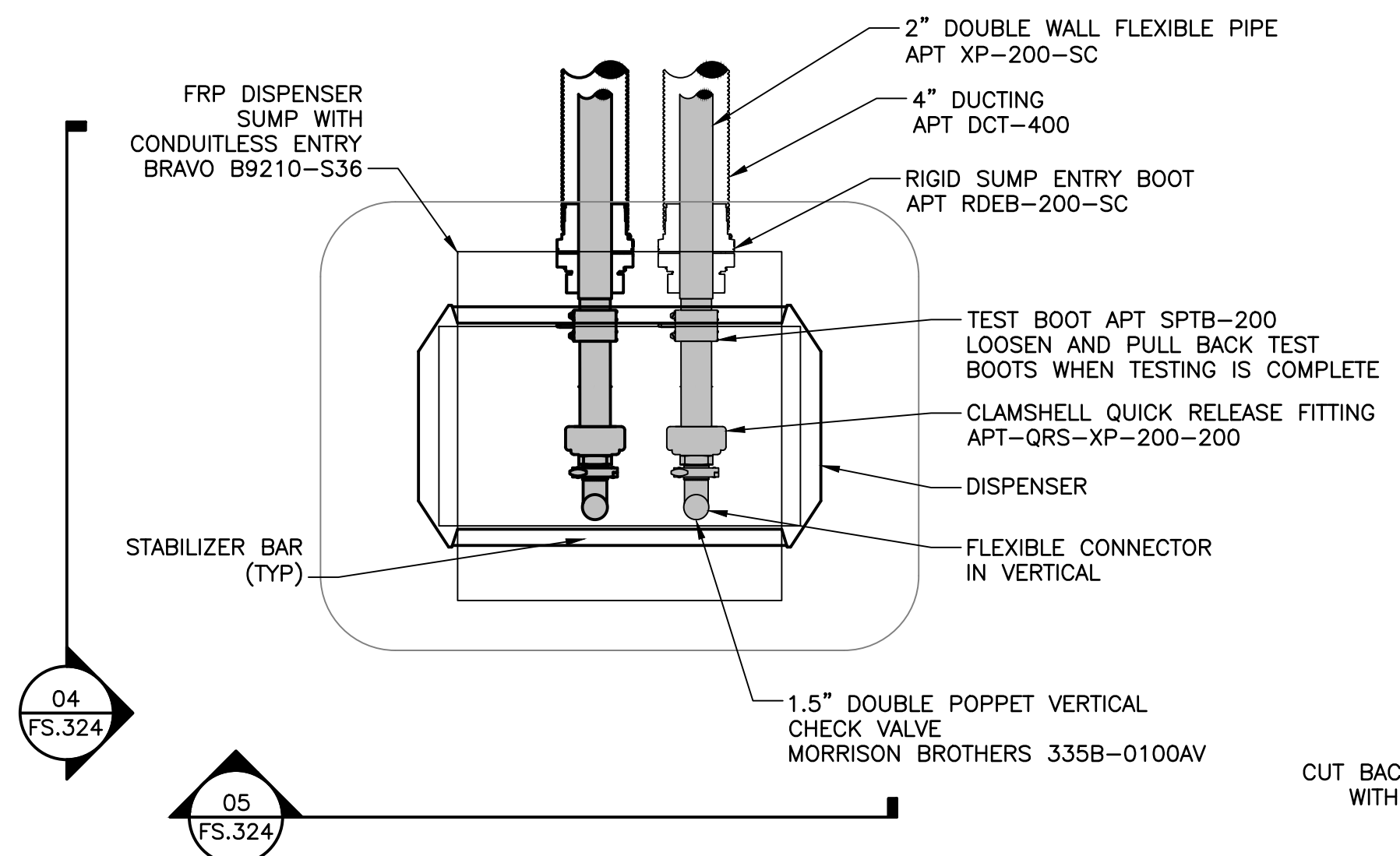


1 APT PIPING TRENCH DETAIL  
 SCALE: N.T.S.

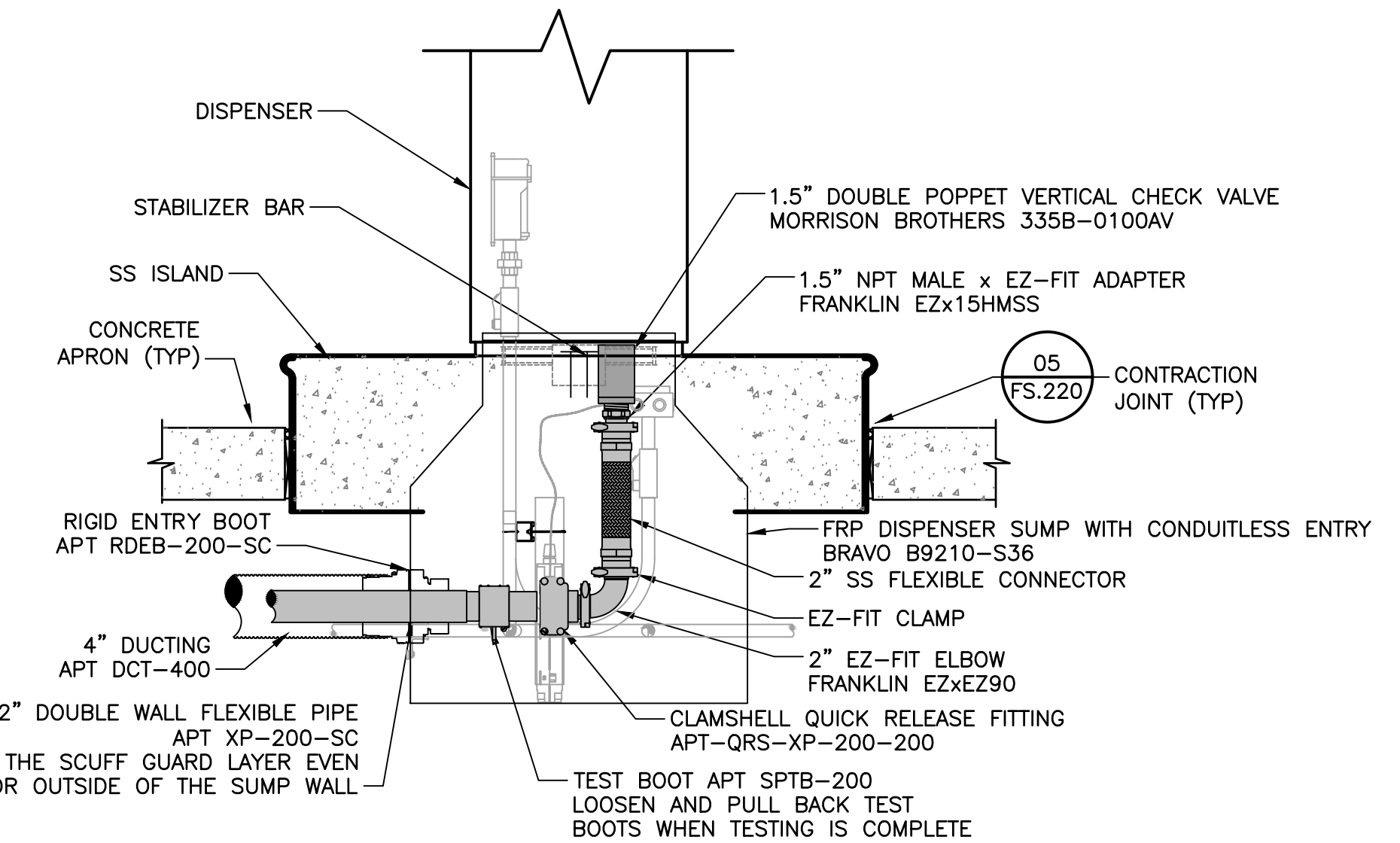


PIPE SIZE (IN.)	SURFACE CONDITION	MIN. BURIAL DEPTH "A" (IN.)	MIN. BACKFILL "B" (IN.)	MIN. SEPARATION "C" TO OTHER EQUIPMENT (IN.)
2	UNPAVED	18	12	6
	PAVED, MIN. 4" ASPHALT	12	8	6
	PAVED, MIN. 4" CONCRETE	9	5	6
3	UNPAVED	20	14	6
	PAVED, MIN. 4" CONCRETE	11	7	6

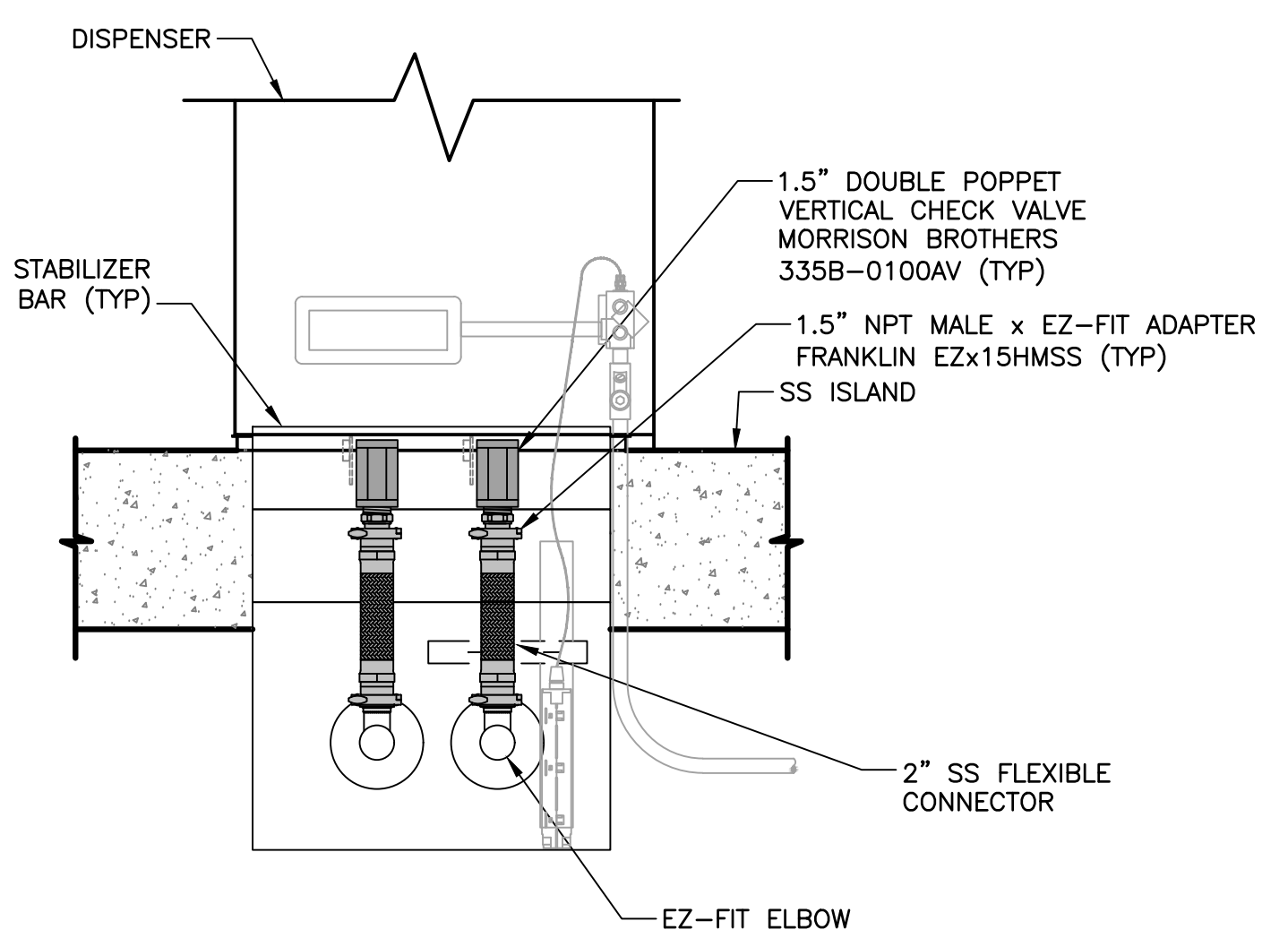
2 AMERON PIPING TRENCH DETAIL  
 SCALE: N.T.S.



3 DISPENSER SUMP PIPING PLAN  
 SCALE: N.T.S.



4 DISPENSER SUMP ELEVATION  
 SCALE: N.T.S.



5 DISPENSER SUMP ELEVATION  
 SCALE: N.T.S.

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Project Notes

Legend

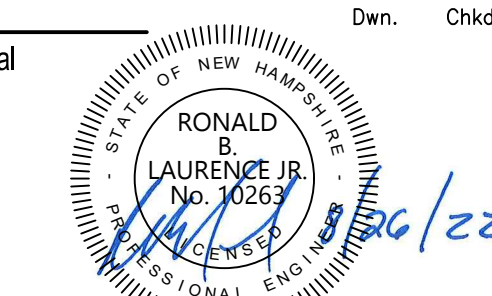
Sheet Notes

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY

ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name: 4_195602217_Portsmouth-DPW_M.dwg	CLC	RBL	CLC	05.12.22
	Dwn.	Chkd.	Dsgn.	MM.DD.YY

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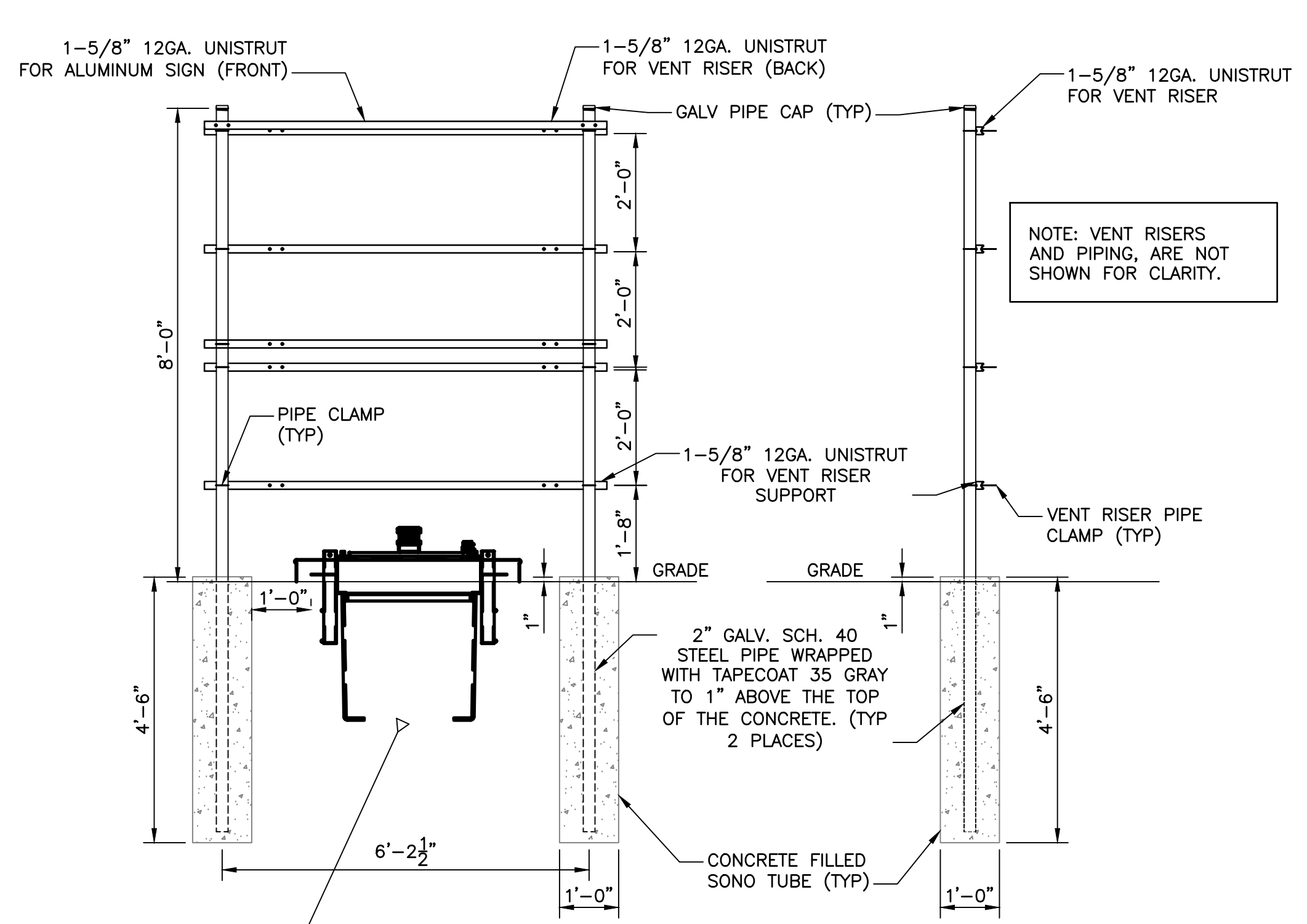
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

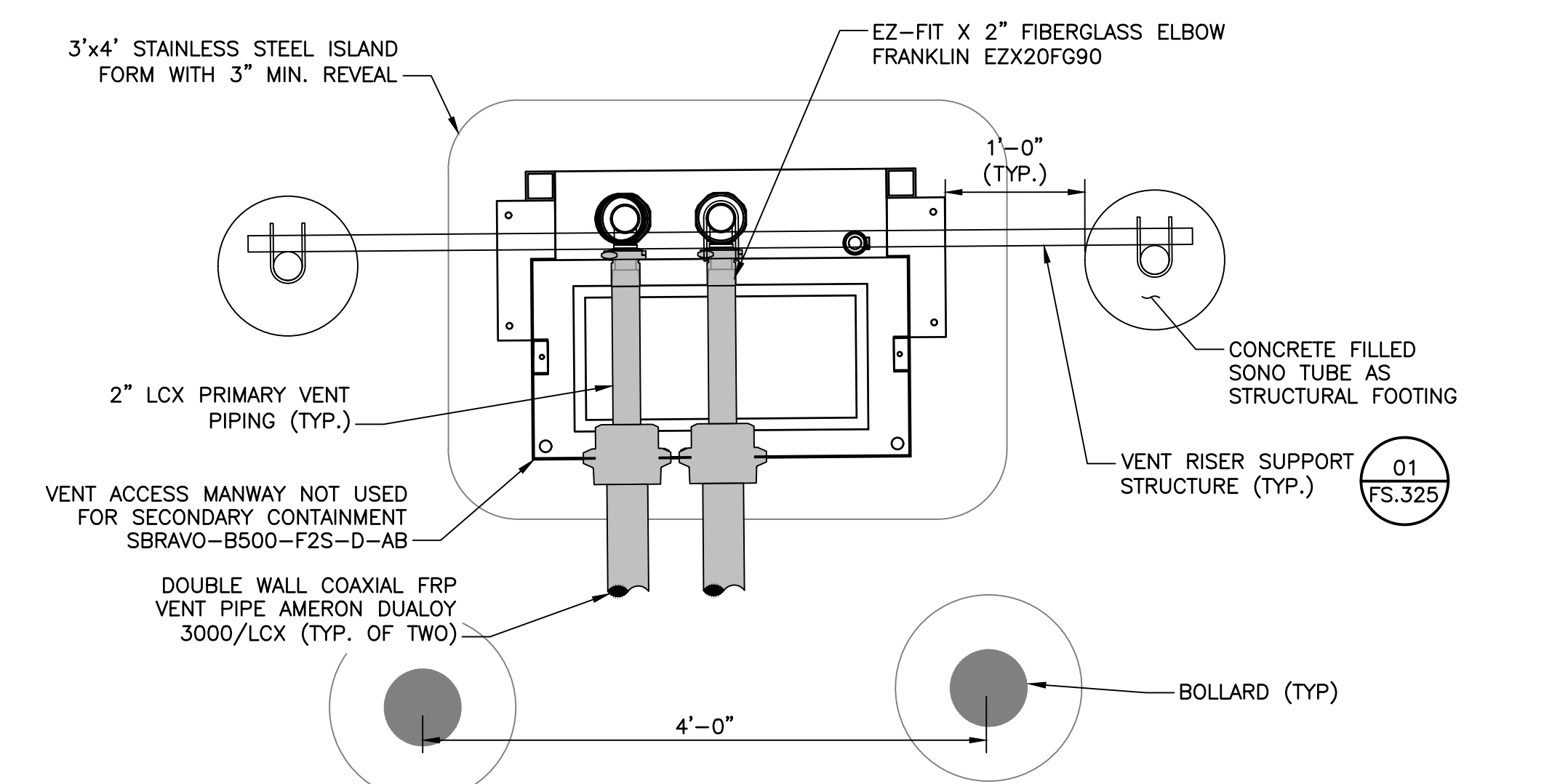
680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 VENT RISER PIPING DETAILS

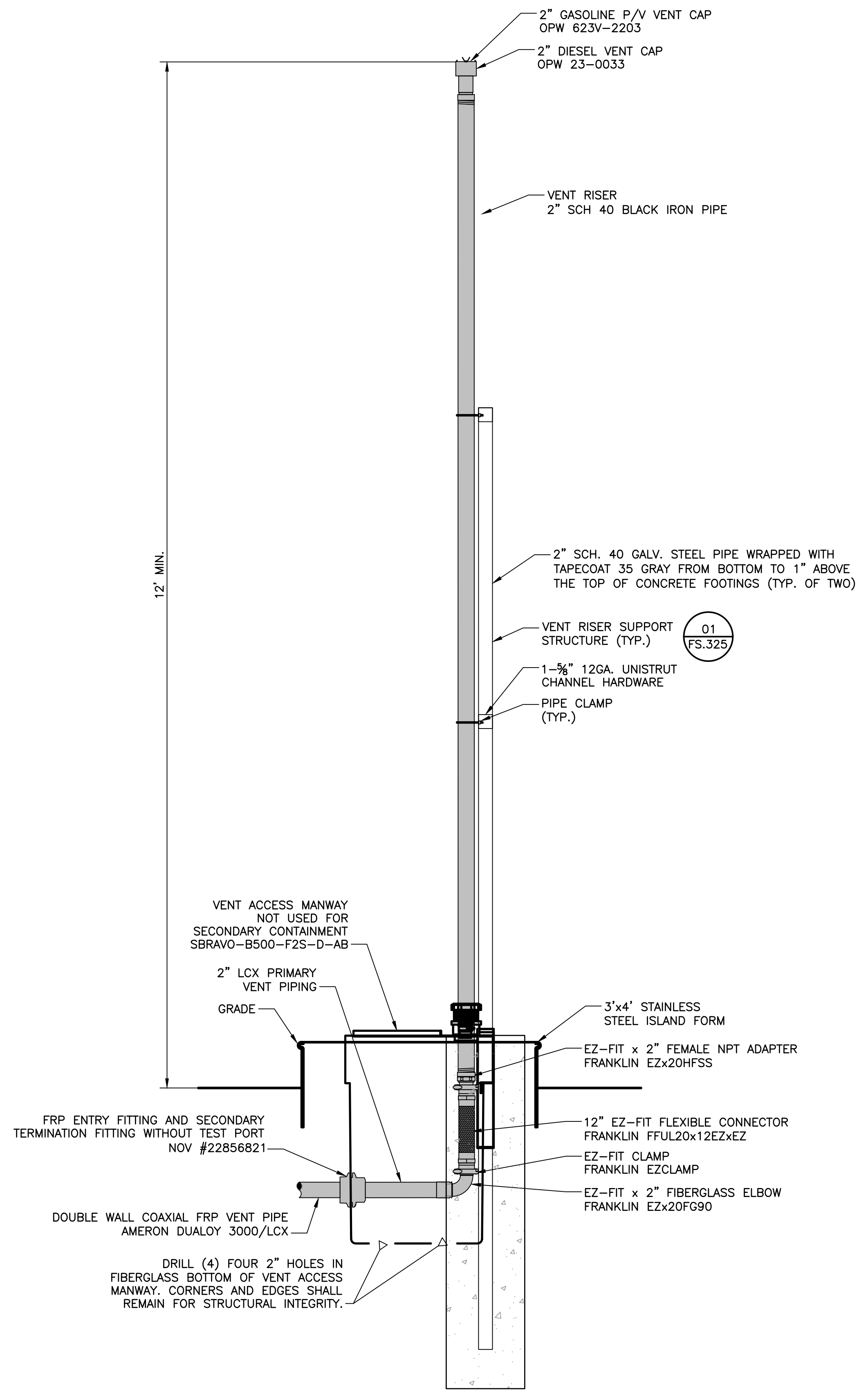
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.325	Sheet 19 of 28
Revision 0	



1 VENT RISER SUPPORT DETAIL  
 SCALE: N.T.S.

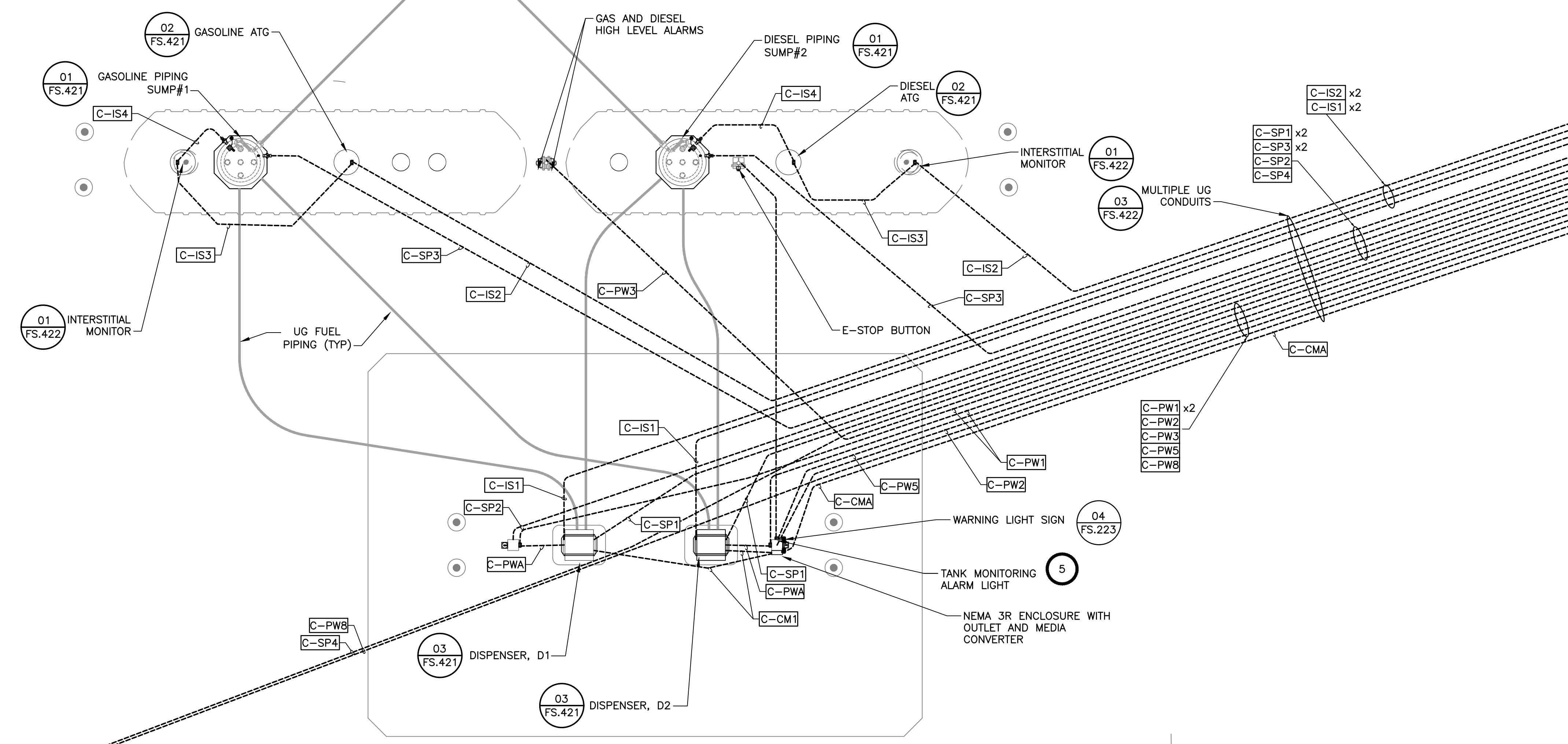


2 VENT ACCESS MANWAY PLAN  
 SCALE: N.T.S.



3 VENT ACCESS MANWAY DETAIL  
 SCALE: N.T.S.

NOTE:  
 THIS PLAN IS GRAPHICAL IN  
 NATURE TO ASSIST WITH PROJECT  
 PLANNING. CONTRACTOR SHALL  
 MINIMIZE CONDUIT BENDS AND  
 COMPLY WITH NEC REQUIREMENTS.



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Project Notes

Legend

Sheet Notes

- SCHEDULE 80 PVC CONDUIT MAY BE UTILIZED UNDERGROUND. ADJUST CONDUIT SIZES TO ACCOMMODATE WIRING INSIDE SCH 80 PVC IF USED.
- INSTALL UNDERGROUND PVC CONDUIT PURSUANT TO NFPA 70 208 (NEC) SECTION 514.8 EXCEPTION NO. 2.
- SEALING SHALL BE PURSUANT TO NFPA 70 208 (NEC) SECTIONS 514.8 AND 514.9

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name	CLC	RBL	CLC	05.12.22
5_195602217_Portsmouth-DPW_E.dwg	Dwn.	Chkd.	Dsgn.	MM.DD.YY

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 RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 CONDUIT PLAN AND CONDUIT SCHEDULE

Project No. 195602217 Scale AS SHOWN  
 Drawing No. Sheet 20 of 28 Revision 0

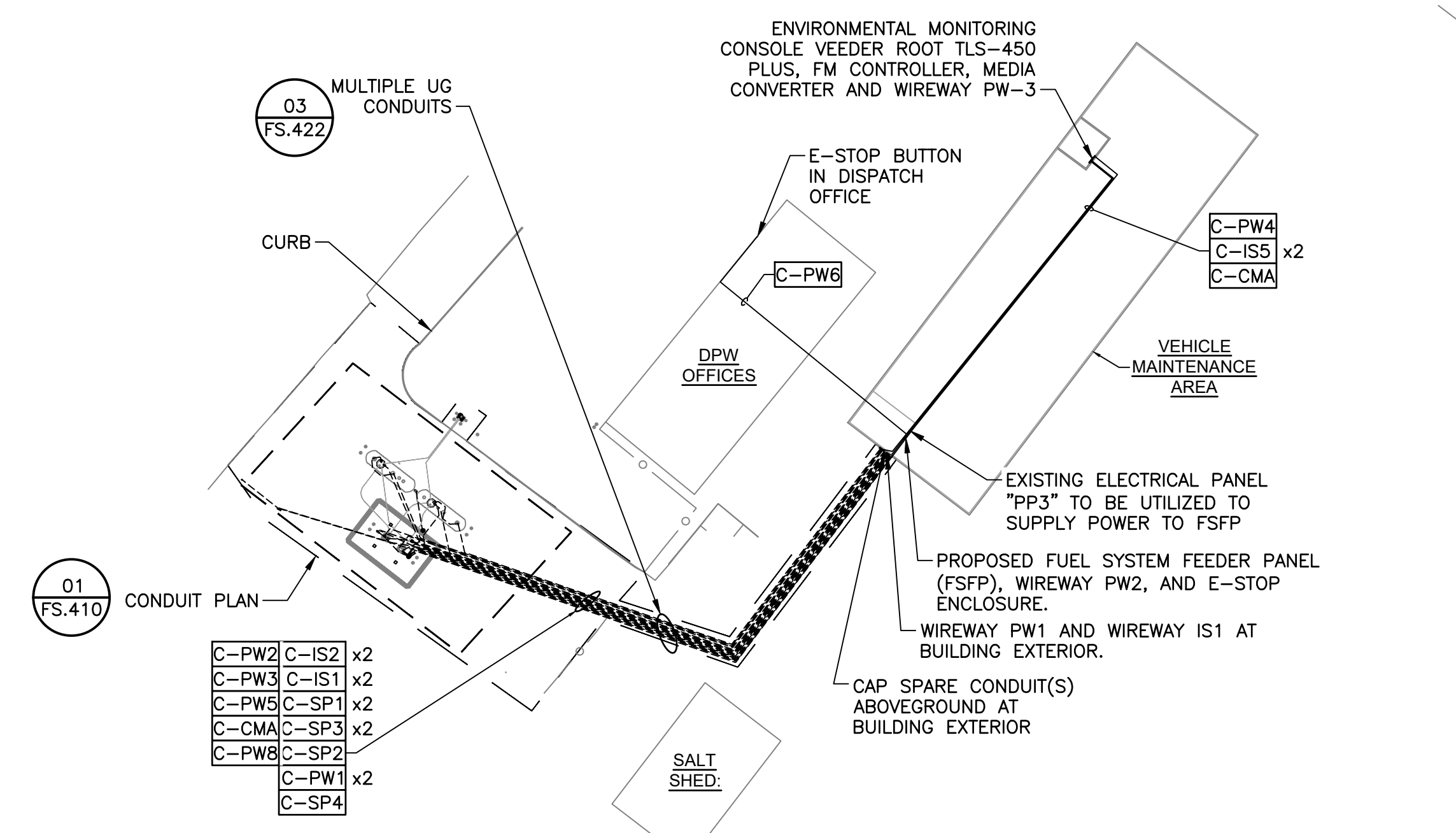
1 CONDUIT PLAN  
 SCALE: AS INDICATED



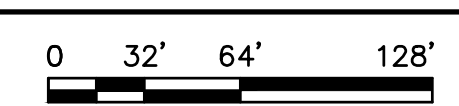
CONDUIT DESIGNATION	SIZE	DESCRIPTION	FROM	TO	CONDUCTORS
* C-IS1	3/4"	I.S. SENSOR	DISP. SUMP	WIREFAY IS1	1-BELDEN 8760
* C-IS2	3/4"	I.S. SENSORS	TANKTOP RISER (ATG / INT)	WIREFAY IS1	3-BELDEN 8760
* C-IS3	3/4"	I.S. SENSORS	INTERSTITIAL SENSOR	ATG PROBE	2-BELDEN 8760
* C-IS4	3/4"	I.S. SENSORS	ATG / INT	UST SUMP	1-BELDEN 8760
* C-IS5	3/4"	I.S. WIRING	VEEDER ROOT	WIREFAY IS1	4-BELDEN 8760
* C-SP1	3/4"	DISP. SPARE	DISP. SUMP	WIREFAY PW1	PULL STRING
* C-SP2	3/4"	CANOPY SPARE	CANOPY COLUMN	WIREFAY PW1	PULL STRING
* C-SP3	3/4"	UST SPARE	UST SUMP	WIREFAY PW1	PULL STRING
* C-SP4	1"	MOTORIZED GATE SPARE	MOTOR CONTROLLER	VARIES	PULL STRING
* C-PW1	1-1/4"	DISPENSER POWER	WIREFAY PW1	JBOX	4-#8, 2-#12, 1-#12 GND
* C-PWA	3/4"	DISPENSER POWER	JBOX	DISPENSER	6-#12, 1-#12 GND
C-PW2	1"	CANOPY LIGHTING	WIREFAY PW1	CANOPY COLUMN	2-#12, 1-#12GND
C-PW3	3/4"	HLA POWER/SIGNAL	HLA	WIREFAY PW3	6-#12, 1-#12GND
C-PW4	1 1/4"	HLA SIGNAL, E-STOP INTERFACE, RECEPT. AND ENV. POWER	WIREFAY PW2	WIREFAY PW3	14-#12, 2-#12GND
C-PW5	3/4"	E-STOP, WARN LIGHT, RECEPT.	J2	WIREFAY P1	6-#12, 1-#12GND
C-PW6	3/4"	E-STOP	WIREFAY PW2	DISPATCH OFFICE	2-#12, 1-#12GND
C-PW7	3/4"	MISC. POWER CIRCUITS	VARIES	VARIES	2-#12, 1-#12GND
C-PW8	1"	MOTORIZED GATE	MOTORIZED GATE	WIREFAY P1	3-#10, 1-#12GND
C-PWU	1 1/4"	FSFP FEED	PANEL "PP3"	FSFP	4-#4, 1-#10GND
* C-CM1	3/4"	DISPENSER COMM.	DISPENSER	MEDIA CONV. ENCL.	1-CAT5E BELDEN 7929A CABLE
* C-CMA	3/4"	DISPENSER COMM.	MEDIA CONV. ENCL.	MEDIA CONV. ENCL.	1-BELDEN FD3D006R9 FIBER OPTIC CABLE

\* - INDICATES MULTIPLE CONDUIT LOCATIONS.

2 CONDUIT SCHEDULE  
 SCALE: N.T.S.



3 PATROL SHED CONDUIT PLAN  
 SCALE: AS INDICATED



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Project Notes

Legend

- ◆ 40% FILL SEAL OFF FITTING
- J JUNCTION BOX
- R RECEPTACLE
- DSS DATA SURGE SUPPRESSOR
- 9 EQUIPMENT ID# SEE SHEET FE105
- C-CMA CONDUIT DESIGNATION

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

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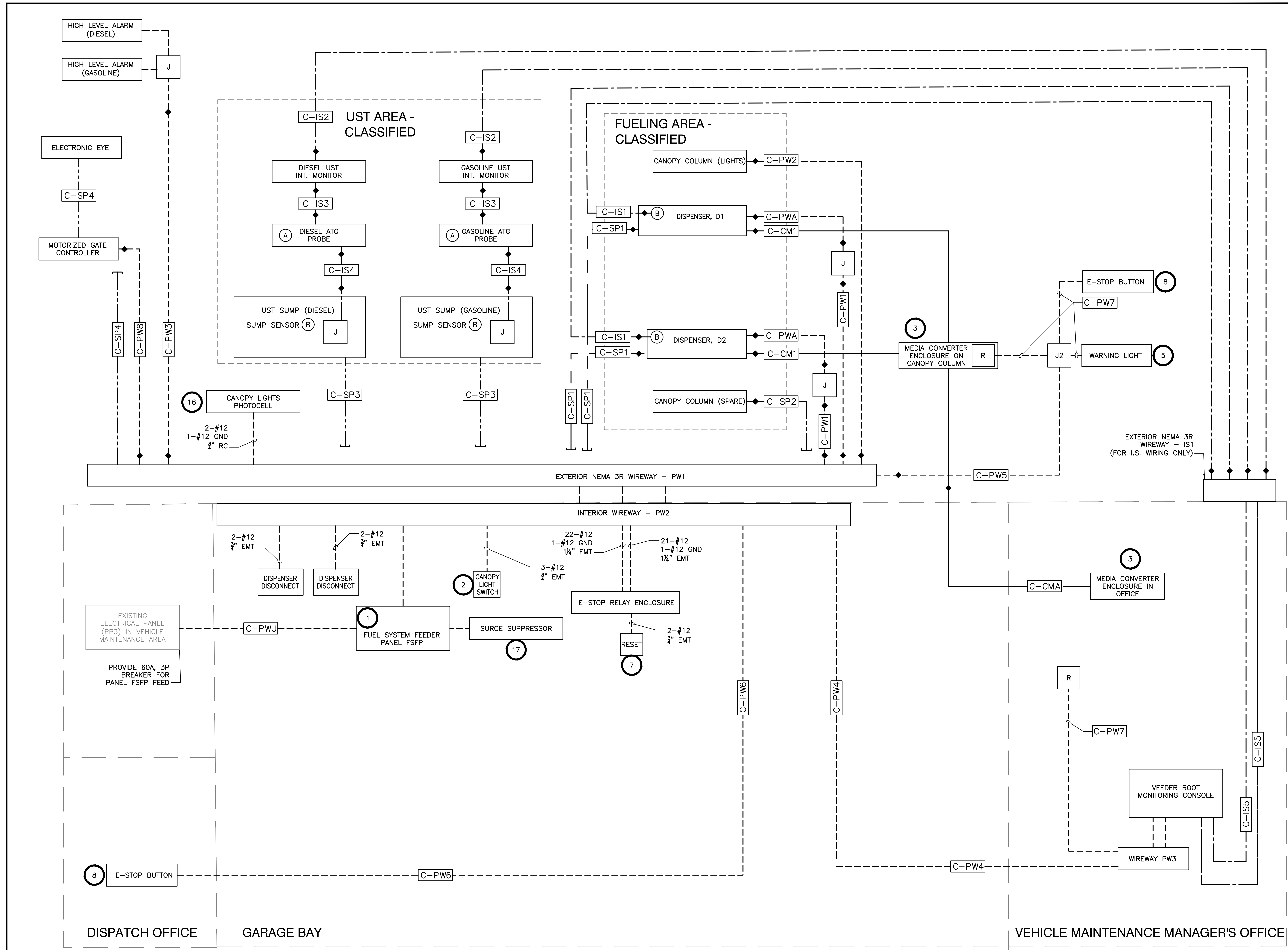
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 SINGLE LINE DIAGRAM

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.420	Sheet 21 of 28
	Revision 0



1 SINGLE LINE DIAGRAM  
 SCALE: N.T.S.

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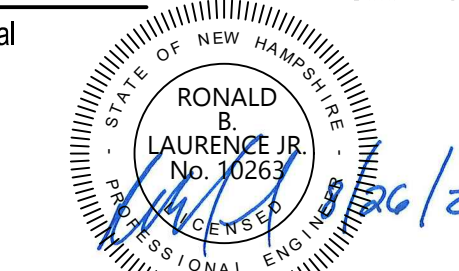
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Sheet Notes

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY

ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name: S:\95602217_Portsmouth-DPW_E.dwg	CLC	RBL	CLC	05.12.22
Permit-Seal	Dwn.	Chkd.	Dsgn.	MM.DD.YY



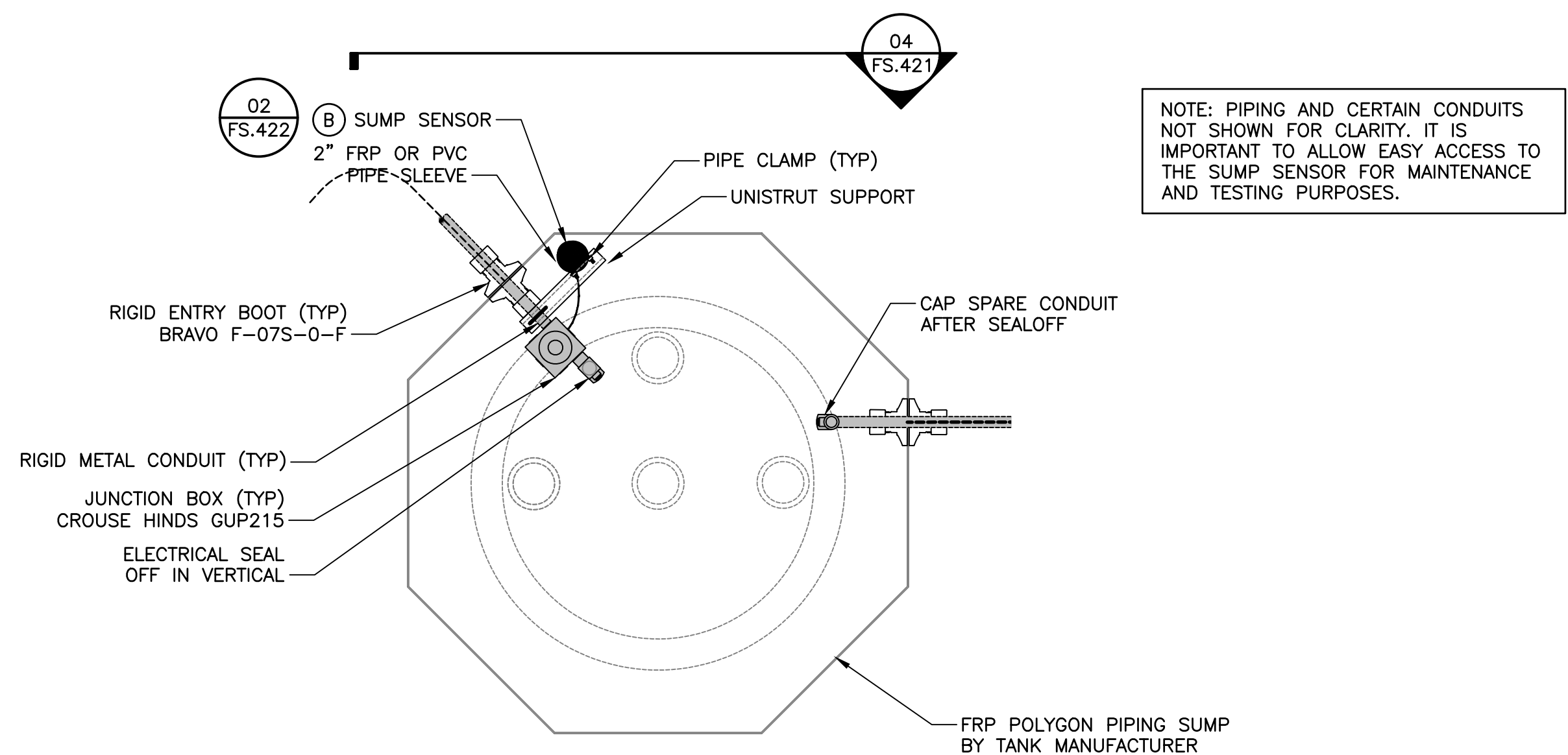
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

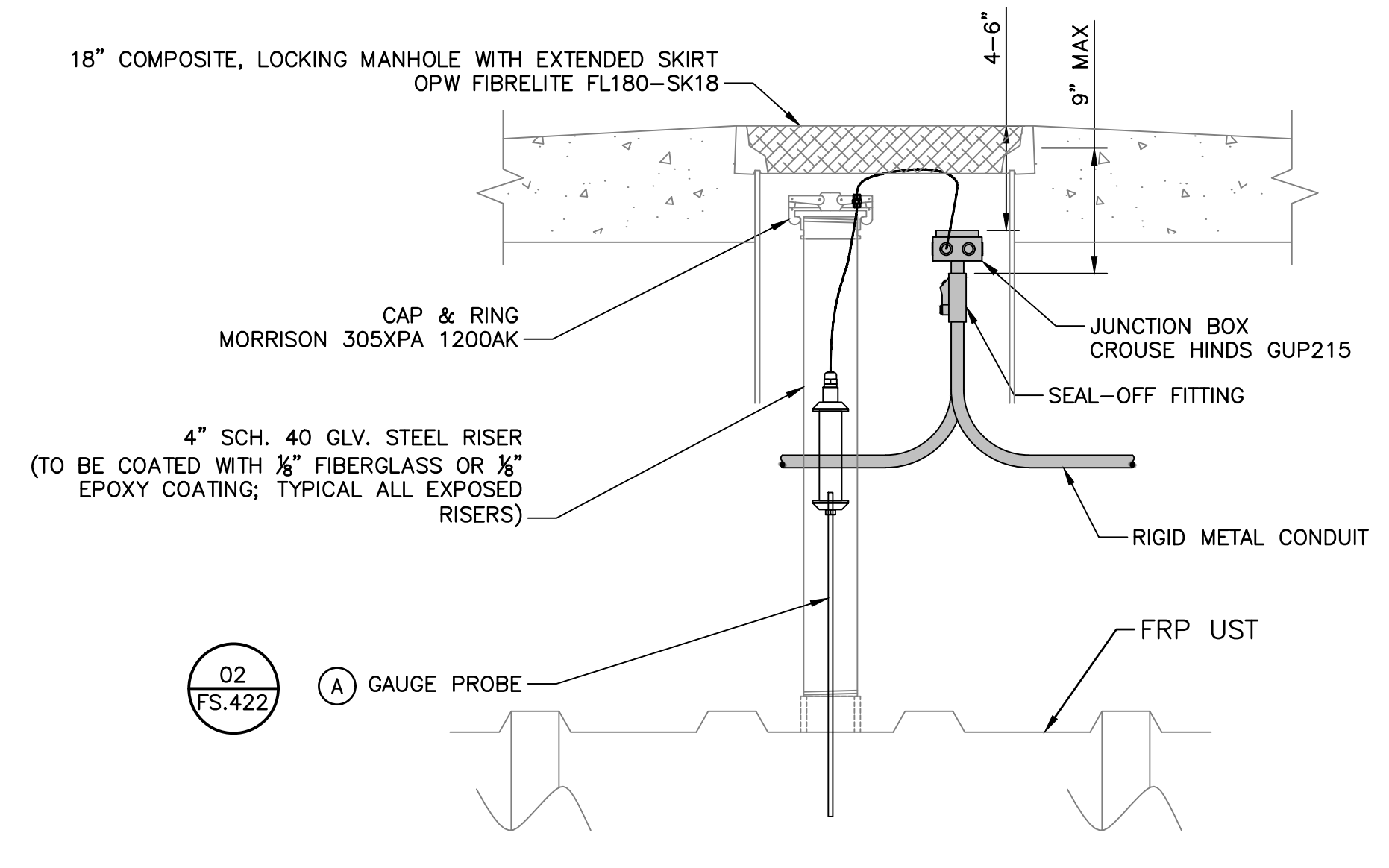
680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 UST SUMP CONDUIT DETAILS, AND  
 DISPENSER SUMP CONDUIT DETAILS

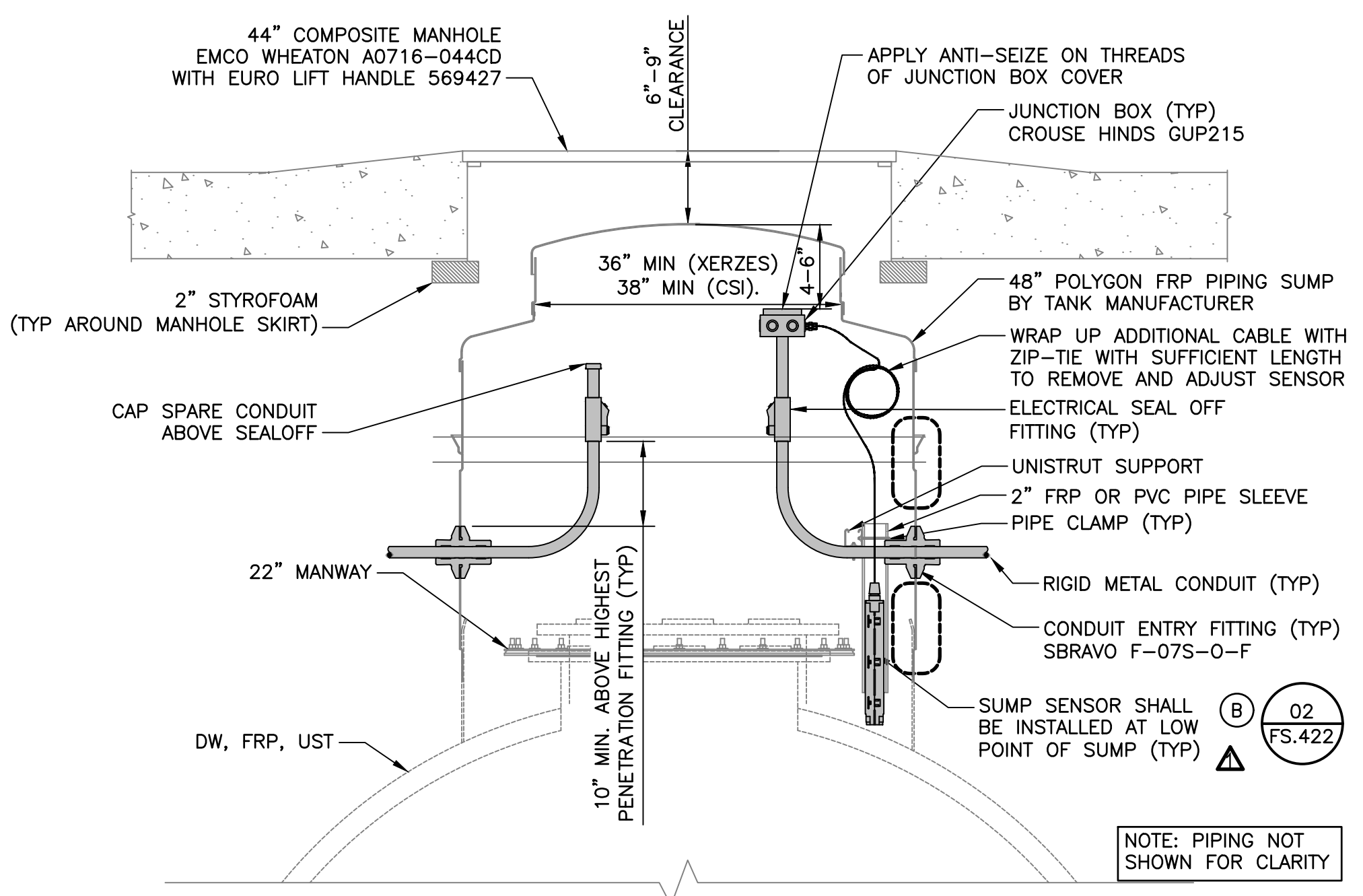
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.421	Sheet 22 of 28
	Revision 0



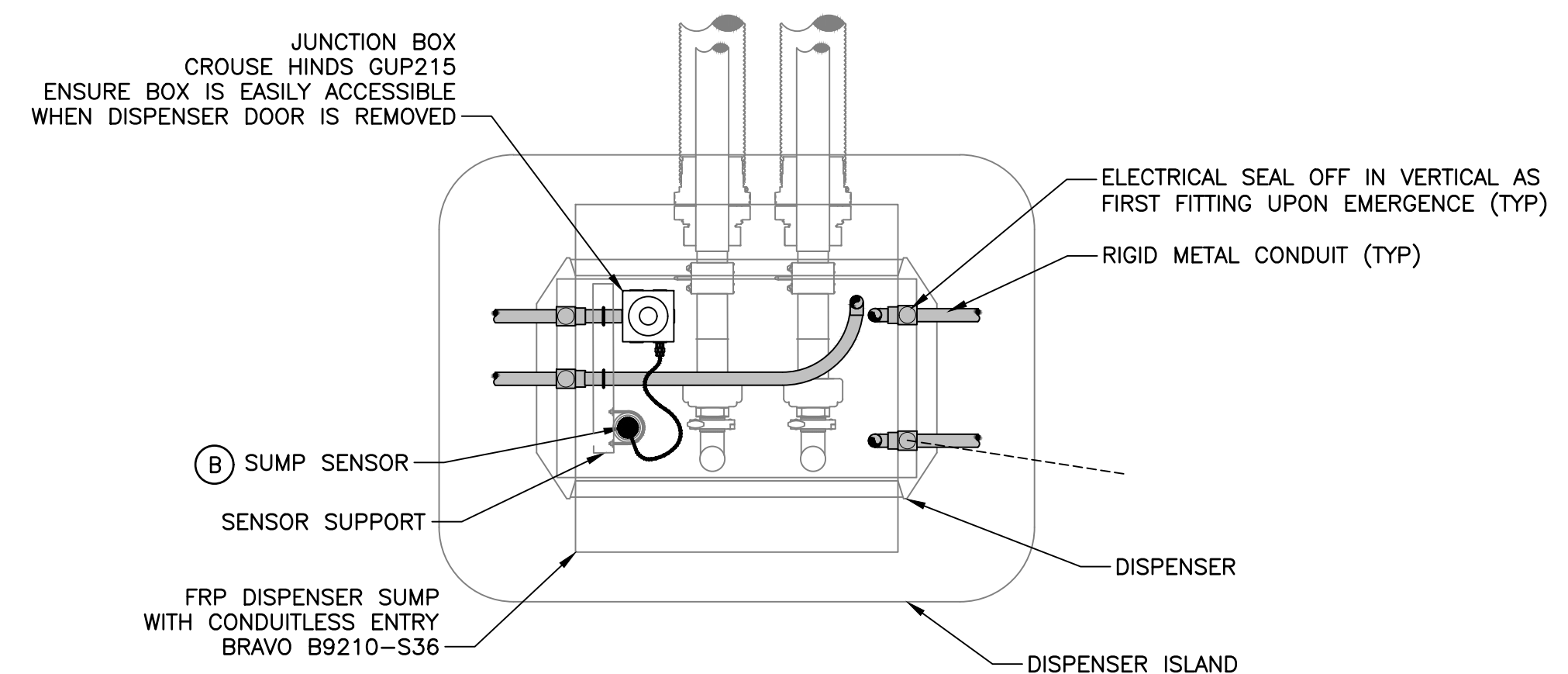
1 UST SUMP CONDUIT PLAN  
 SCALE: N.T.S.



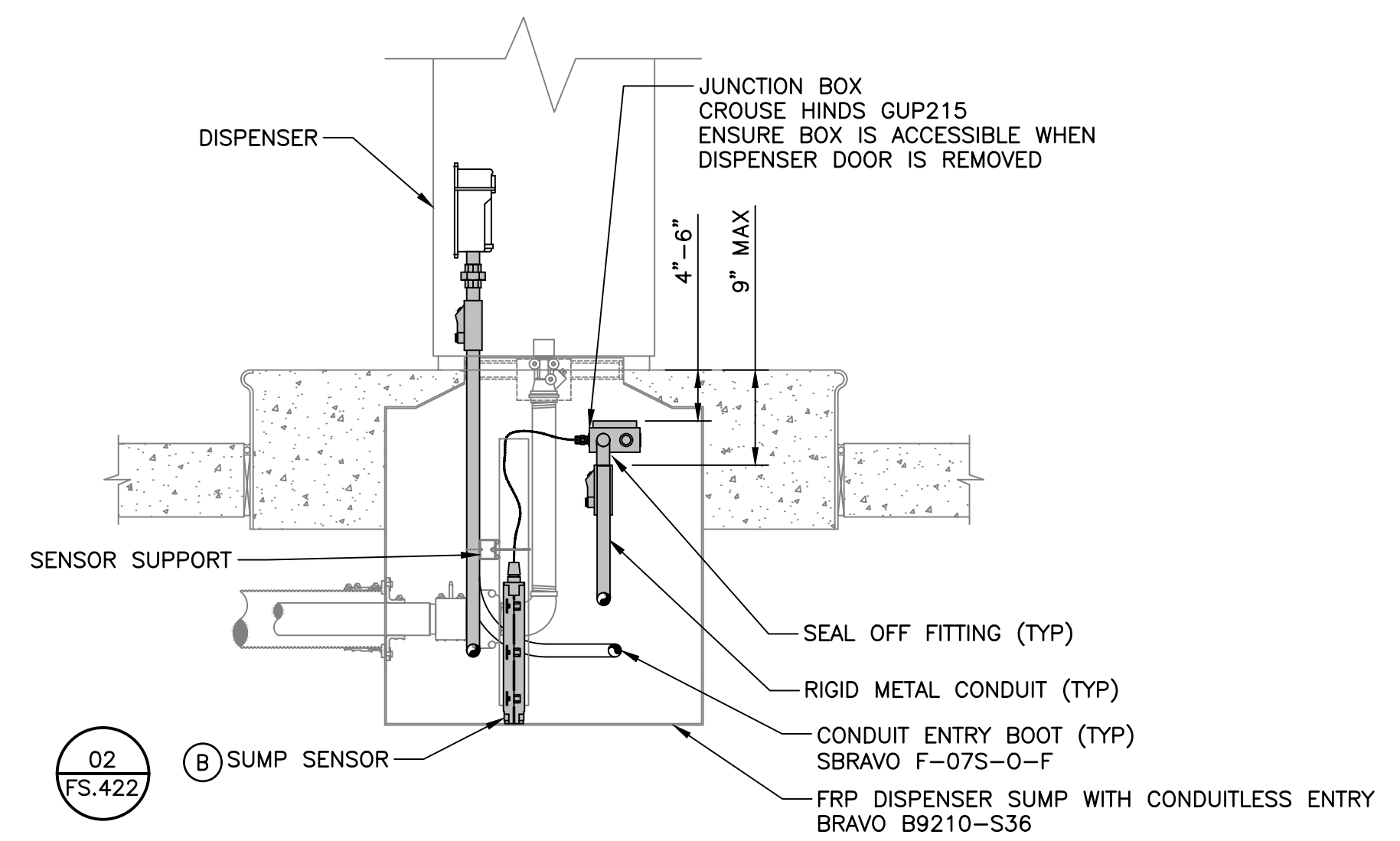
2 TANK GAUGE RISER CONDUIT DETAIL  
 SCALE: N.T.S.



4 UST SUMP CONDUIT DETAIL  
 SCALE: N.T.S.



3 TYPICAL DISPENSER SUMP CONDUIT PLAN  
 SCALE: N.T.S.



5 TYPICAL DISPENSER SUMP CONDUIT DETAIL  
 SCALE: N.T.S.

NOTE: PIPING AND CERTAIN CONDUITS NOT SHOWN FOR CLARITY. IT IS IMPORTANT TO ALLOW EASY ACCESS TO THE SUMP SENSOR FOR MAINTENANCE AND TESTING PURPOSES.

NOTE: PIPING NOT SHOWN FOR CLARITY

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Project Notes

Legend

Sheet Notes

RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
Revision	By	Appd.	MM.DD.YY

ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

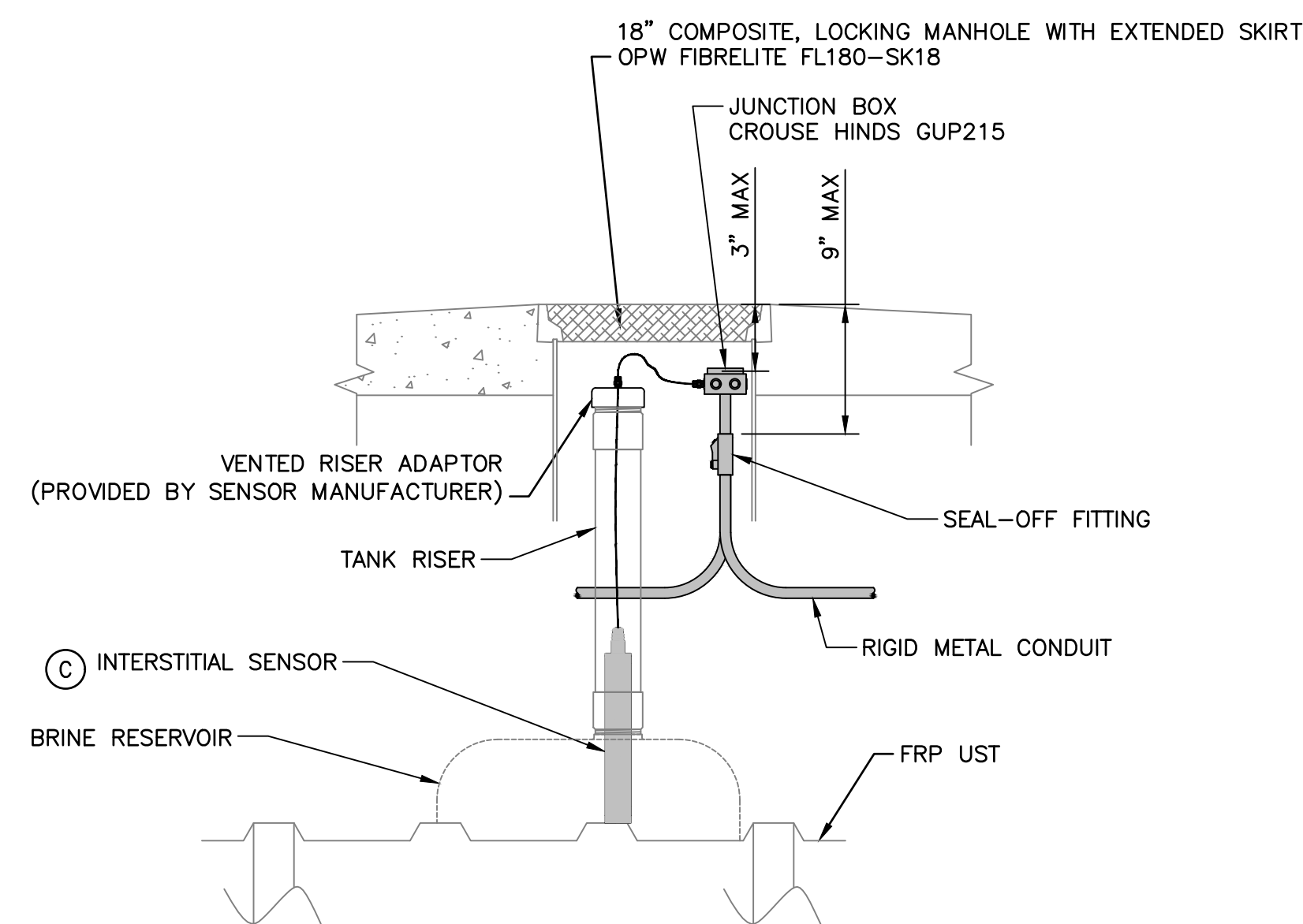
File Name: S:\195602217_Portsmouth-DPW_E.dwg	CLC	RBL	CLC	05.12.22
	Dwn.	Chkd.	Dsgn.	MM.DD.YY

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 RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

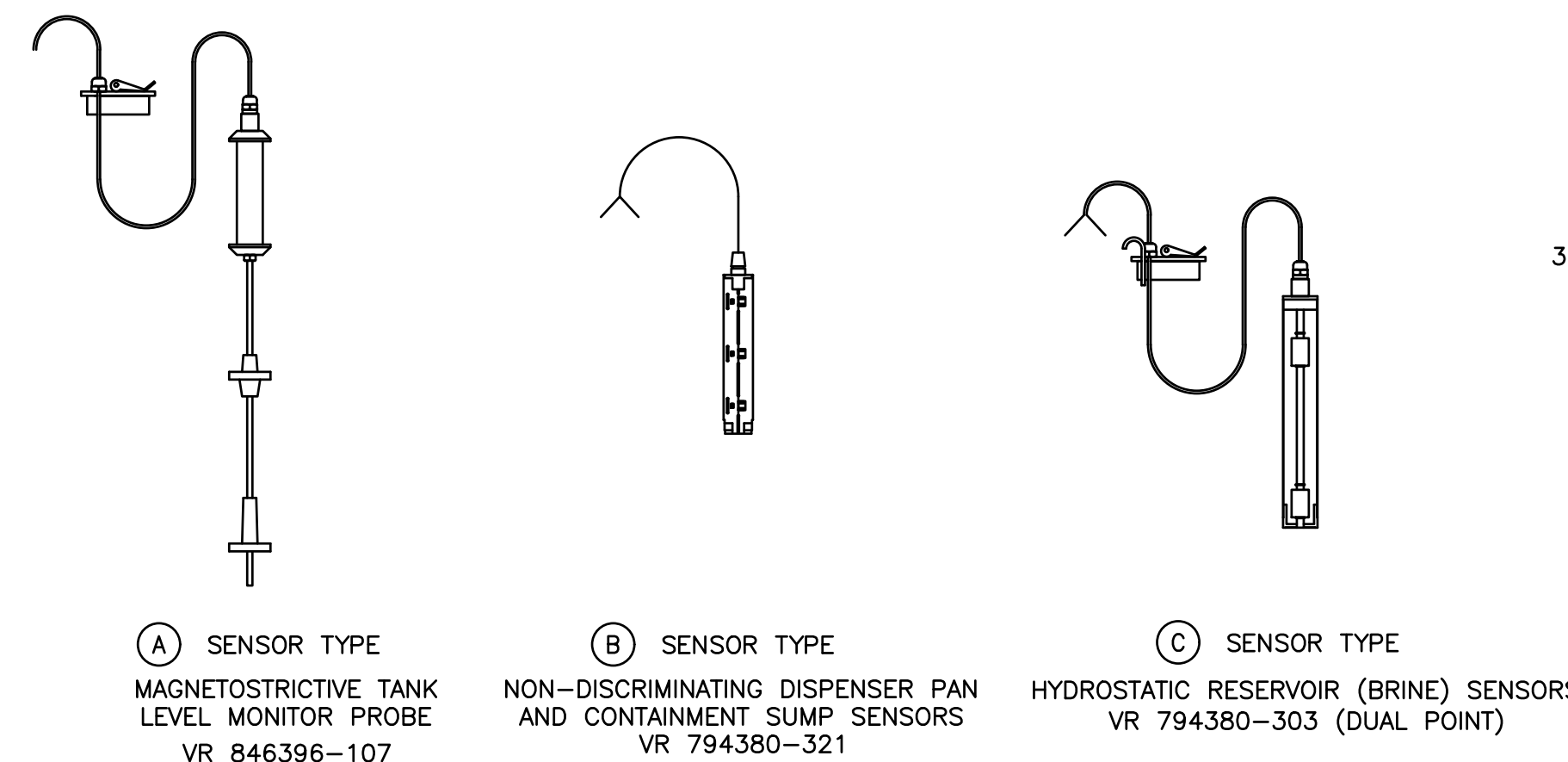
Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 INTERSTITIAL RISER, I.S. SENSOR,  
 AND CONDUIT TRENCH DETAILS

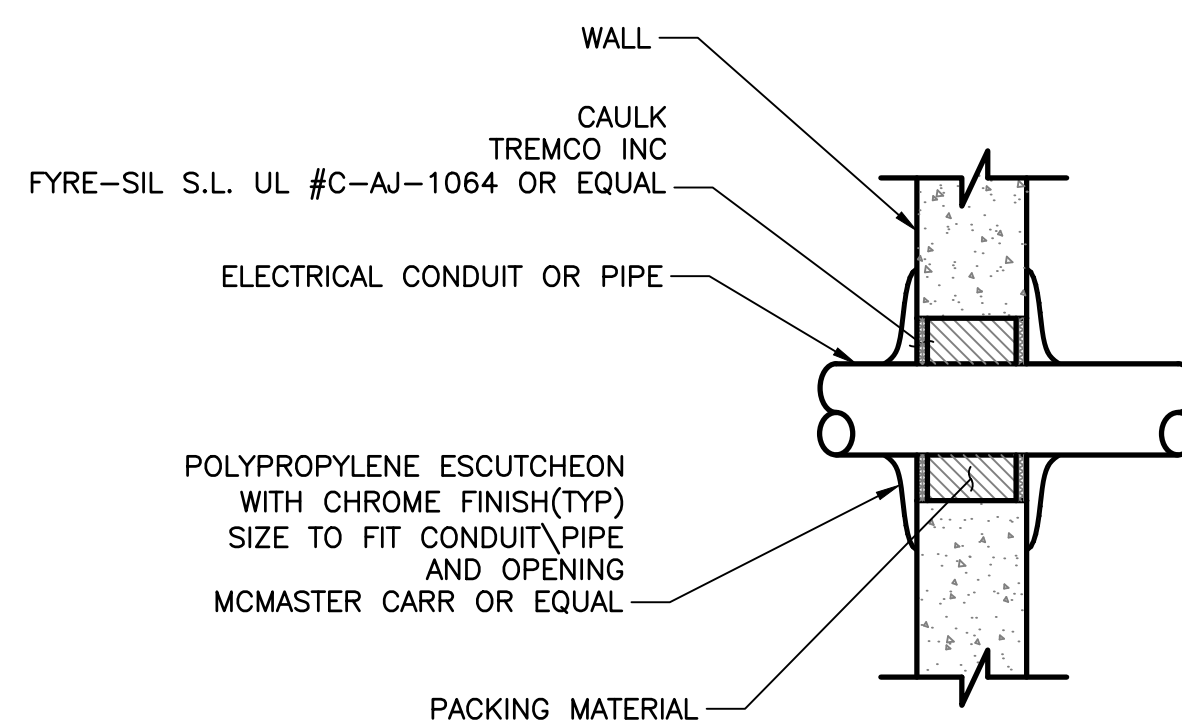
Project No. 195602217	Scale AS SHOWN
Drawing No. FS.422	Sheet 23 of 28
	Revision 0



1 INTERSTITIAL RISER CONDUIT DETAIL  
 SCALE: N.T.S.

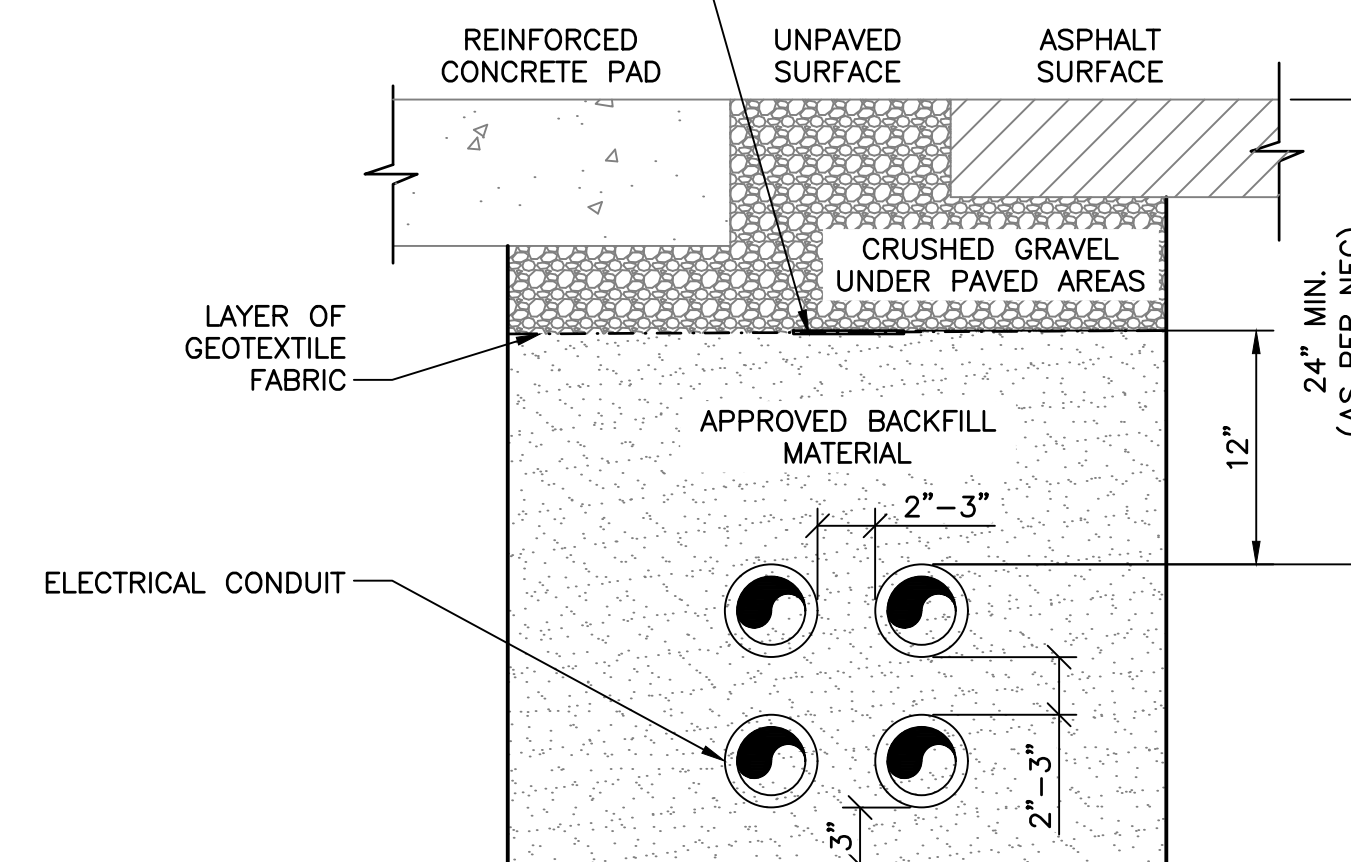


2 I.S. SENSOR DETAILS  
 SCALE: N.T.S.



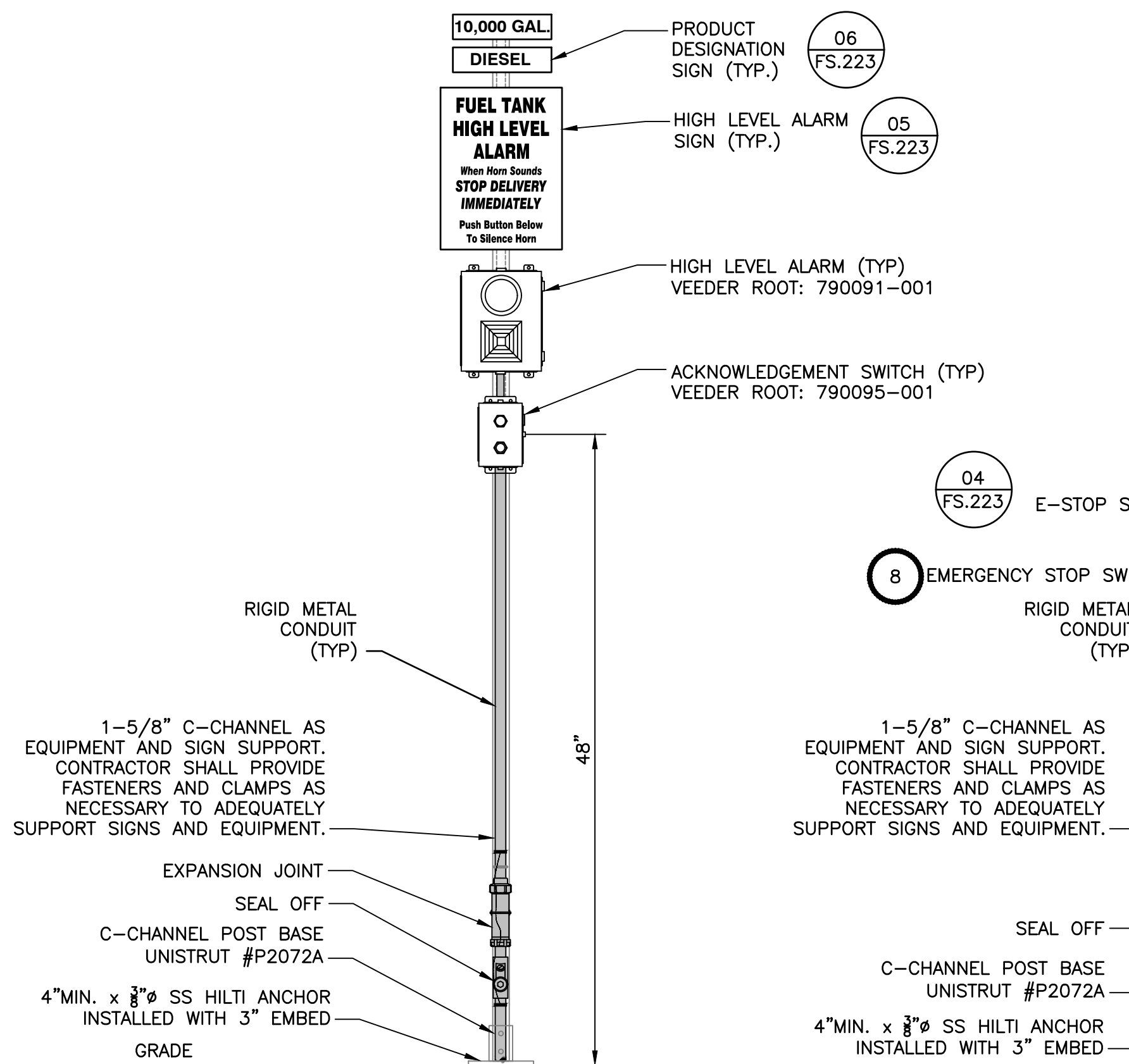
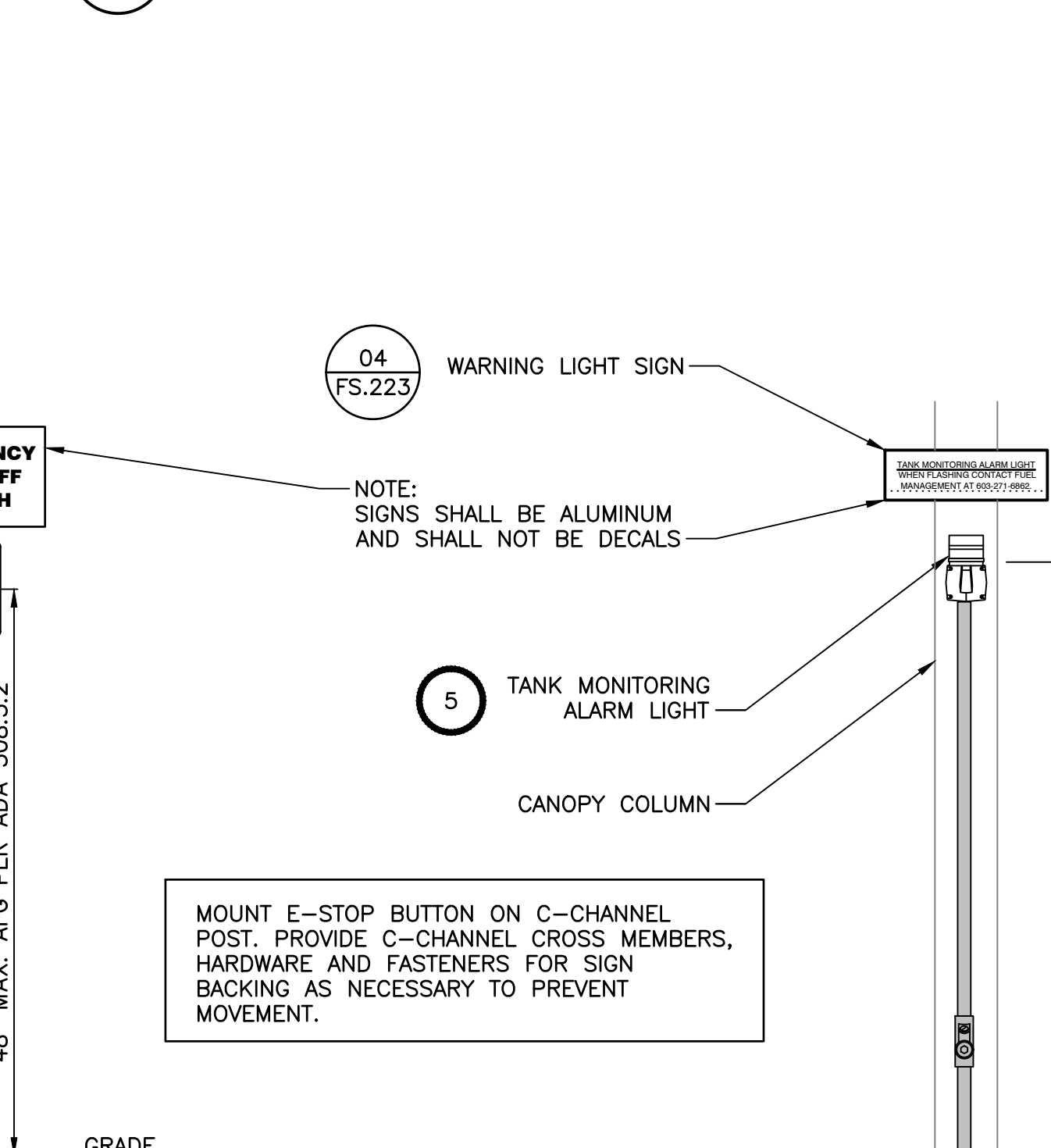
NOTE:  
 CONDUIT SHALL BE INSTALLED WITH 6\"/>

3\"/>



3 CONDUIT TRENCH DETAIL  
 SCALE: N.T.S.

4 CONDUIT PENETRATION DETAIL  
 SCALE: N.T.S.

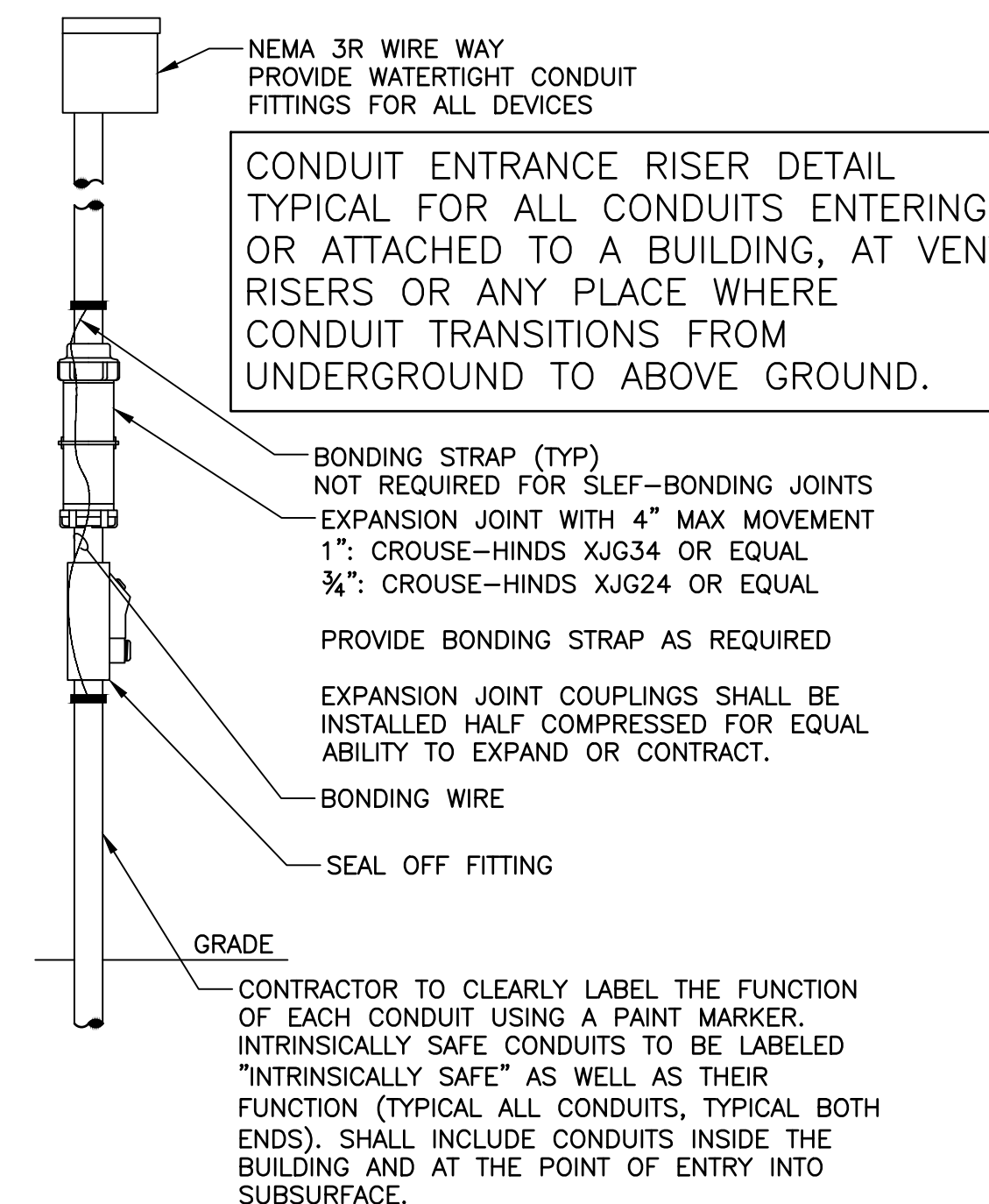


5 HIGH LEVEL ALARM DETAIL  
 SCALE: N.T.S.

6 E-STOP DETAIL  
 SCALE: N.T.S.

7 WARNING LIGHT DETAIL  
 SCALE: N.T.S.

8 CONDUIT ENTRANCE RISER DETAIL  
 SCALE: N.T.S.



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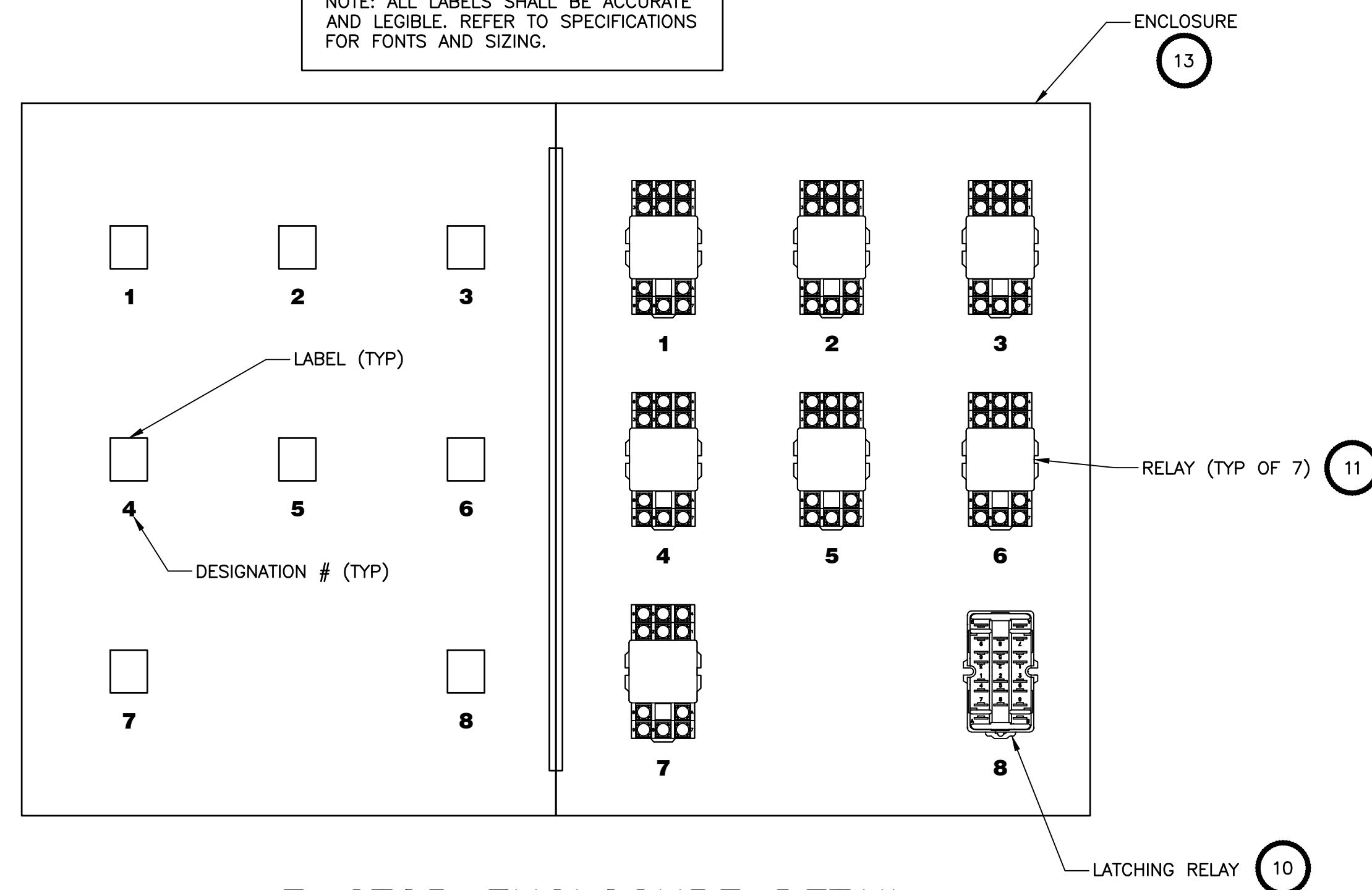
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Project Notes

Legend

Sheet Notes

NOTE: ALL LABELS SHALL BE ACCURATE AND LEGIBLE. REFER TO SPECIFICATIONS FOR FONTS AND SIZING.



1 E-STOP ENCLOSURE DETAIL  
 SCALE: N.T.S.

NOTE: ALL LABELS SHALL BE ACCURATE AND LEGIBLE. REFER TO SPECIFICATIONS FOR FONTS AND SIZING.

- RELAY LABELS:
- 1 DISPENSER #1 - MOTOR #1
  - 2 DISPENSER #1 - MOTOR #2
  - 3 DISPENSER #1 - CONTROL
  - 4 DISPENSER #2 - MOTOR #3
  - 5 DISPENSER #2 - MOTOR #4
  - 6 DISPENSER #2 - CONTROL
  - 7 VEEDER ROOT SLAVE RELAY
  - 8 MAIN LATCHING RELAY

2 RELAY SETUP  
 SCALE: N.T.S.

NOTE: ALL LABELS SHALL BE ACCURATE AND LEGIBLE. REFER TO SPECIFICATIONS FOR FONTS AND SIZING.

Pos	CB	Description	Load Type	Phase Load kVA			Load Type	Description	CB	Pos
				A	B	C				
1	20	DISPENSER, D1 CTRL	C	0.2						
3	20	DISPENSER, MOTOR#1	M	0.79			C	DISPENSER, D2, CTRL	20	2
5		DISPENSER, MOTOR#1	M	0.79			M	DISPENSER, MOTOR #3	20	4
7	20	DISPENSER, MOTOR#2	M	0.79			M	DISPENSER, MOTOR #3		6
9		DISPENSER, MOTOR #2	M	0.79			M	DISPENSER, MOTOR #4	20	8
11	15	E-STOP	C	0.2			M	DISPENSER, MOTOR #4	20	10
13	15	CANOPY LIGHTS	L	0.4			R	RECEPTACLE	20	12
15	20	MOTORIZED GATE	M	0.79						
17		MOTORIZED GATE	M	0.79			L	HLA & WARNING LIGHT	15	14
19	15	SPACE					C	ENVIRONMENTAL CONSOI	15	16
21	15	SPACE					C	FM CONTROLLER	15	18
23	15	SPACE								
				0.05			C	SURGE SUPPRESSOR	15	22
				0.05			C	SURGE SUPPRESSOR	15	24

M	C	N	R	L
	0.2			
	0.2			
0.79				
0.79				
0.79				
0.79				
0.79				
0.79				
0.79				
	0.2			
		0.1		
				0.4
				0.1
0.79				
0.79				
0.24				
				0.05
				0.05

A	B	C
2.48	4	2.96

Total Connected = 9.44  
 Calculated Code kVA = 10  
 CODE AMPS = 29

NOTES:  
 STP = SUBMERSIBLE TURBINE PUMP  
 STA = SHUNT TRIP ACCESSORY  
 SWN = SWITCHED NEUTRAL  
 M = MOTOR LOAD  
 MLO = MAIN LUG ONLY  
 C = CONTINUOUS LOAD  
 N = NON-CONTINUOUS LOAD  
 R = RECEPTICAL LOAD  
 L = LIGHTING LOAD

SUM OF MOTOR KVA + 25% LARGEST KVA = 8.5  
 CONTINUOUS LOAD x 125% = 1.2  
 NON-CONTINUOUS LOAD x 100% =  
 10KVA x 100% + 50% REMAINDER = 0.1  
 LIGHTING x 125% = 0.6  
**TOTAL DEMAND 10.3925 KVA**

3 FUEL SYSTEM FEEDER PANEL SCHEDULE  
 SCALE: N.T.S.

EQUIP#	MFR	PART #	
1	SQUARE D		24 SPACE 100 A 208/120VAC THREE PHASE ELECTRICAL PANEL BY SQUARE D
2	LEVITON	1282-I	3 POSITION CANOPY LIGHT SELECTOR SWITCH LABEL "ON", "OFF", "AUTO"
3	TRANSITION	M/E-PSW-FX-02; SPS-2460-SAL; WMBM	ETHERNET TO FIBER OPTIC MEDIA CONVERTER, POWER SUPPLY AND WALL MOUNT
4	CREE	CAN-304-PS-RS-06-E-UL-WH-525-PML	LED CANOPY LIGHTS
5	ELECTRAFLASH	141ST	MONITORING SYSTEM RED EMERGENCY LIGHT
6	NETGEAR	GS108v4	8 PORT ETHERNET SWITCH
7	SQUARE D	9001SKR1GH13 9001KN123WP	E-STOP RESET BUTTON; NORMALLY OPEN; MOMENTARY; GREEN WITH LEGEND PLATE "RESET"
8	SQUARE D	9001SKR1RH13 9001KN105RP	E-STOP BUTTUN; NORMALLY OPEN; MOMENTARY; RED WITH LEGEND PLATE "E-STOP"
9	SQUARE D	9001BG215 9001B321	DISPENSER ISOLATION SWITCH WITH LOCKOUT KIT
10	MKK	MK2KP, 110V PF113A-E	E-STOP LATCHING RELAY; MECHANICALLY LATCHED, ELECTRICALLY RESET; 120VAC COIL
11	SCHNEIDER ELECTRIC	782XBXC-120A 70-782D8-1A	E-STOP CONTROL RELAYS WITH SOCKET
12	WAYNE		FLEET IX FUEL MANAGEMENT CONTROLLER
13	HOFFMAN	A16N12ALP	12" x 16" HINGED ENCLOSURE FOR E-STOP
14	ITW Linx	CAT5-LAN-RJ45	DATA SURGE SUPPRESSOR
15	CIRCA TELCOM	2606QC-3B1E 6PR 66IN/OUTNOCVR W/3B1EGAS	DATA SURGE SUPPRESSOR
16	INTERMATIC	K4221C	PHOTOCELL
17	EATON	CHSPT2ULTRA	SURGE SUPPRESSOR

4 ELECTRICAL COMPONENTS  
 SCALE: N.T.S.

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name	CLC	RBL	CLC	05.12.22
S:\195602217_Portsmouth-DPW_E.dwg	Dwn.	Chkd.	Dsgn.	MM.DD.YY

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RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
 CITY OF PORTSMOUTH  
 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 HIGH LEVEL ALARM AND E-STOP DETAILS,  
 PANEL SCHEDULE AND ELECTRICAL  
 COMPONENTS LIST

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.423	24 of 28	0



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Project Notes

Legend

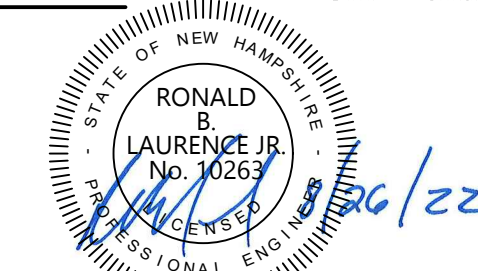
- 9 EQUIPMENT ID#  
SEE SHEET FS.423
- A CIRCUIT DESIGNATOR
- WIRE CONNECTION

Sheet Notes

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

File Name	CLC	RBL	CLC	05.12.22
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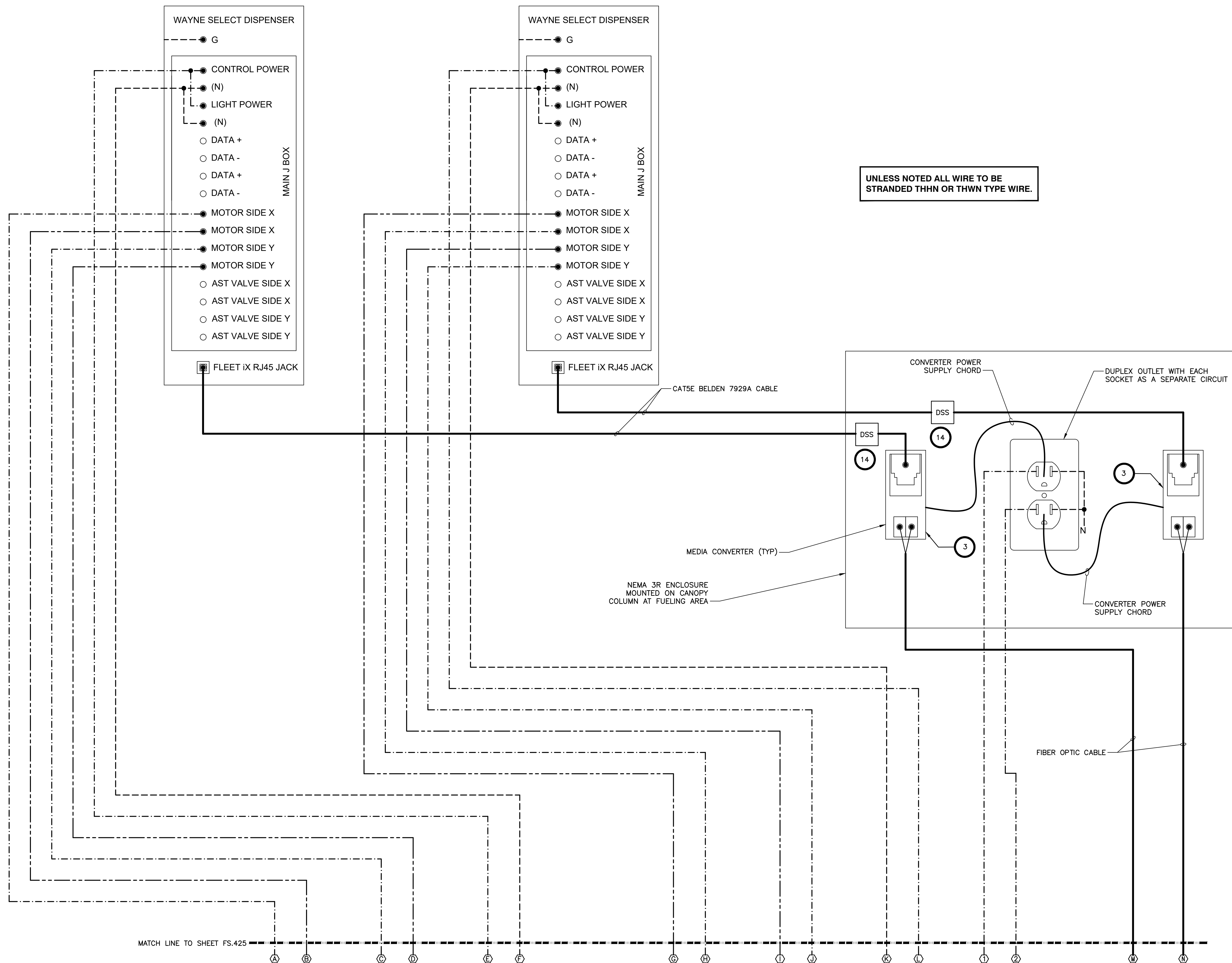
RONALD B. LAURENCE JR.  
 NEW HAMPSHIRE PROFESSIONAL ENGINEER #10263

Client/Project  
**CITY OF PORTSMOUTH**  
**DEPARTMENT OF PUBLIC WORKS**  
**FUEL SYSTEM REPLACEMENT**

680 PEVERLY HILL RD  
**PORTSMOUTH, NH 03801**

Title  
**ELECTRICAL SCHEMATIC**  
**(1 OF 3)**

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.424	25 of 28	0



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Legend

- ⑨ EQUIPMENT ID# SEE SHEET FS.423
- Ⓐ CIRCUIT DESIGNATOR
- WIRE CONNECTION

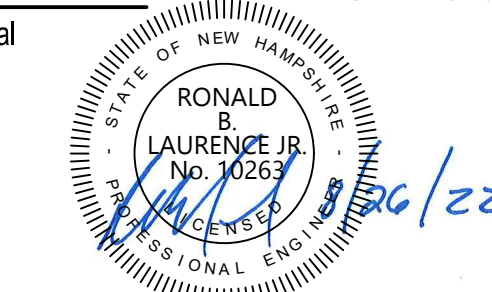
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ISSUED FOR BID CLC RBL 08.26.22  
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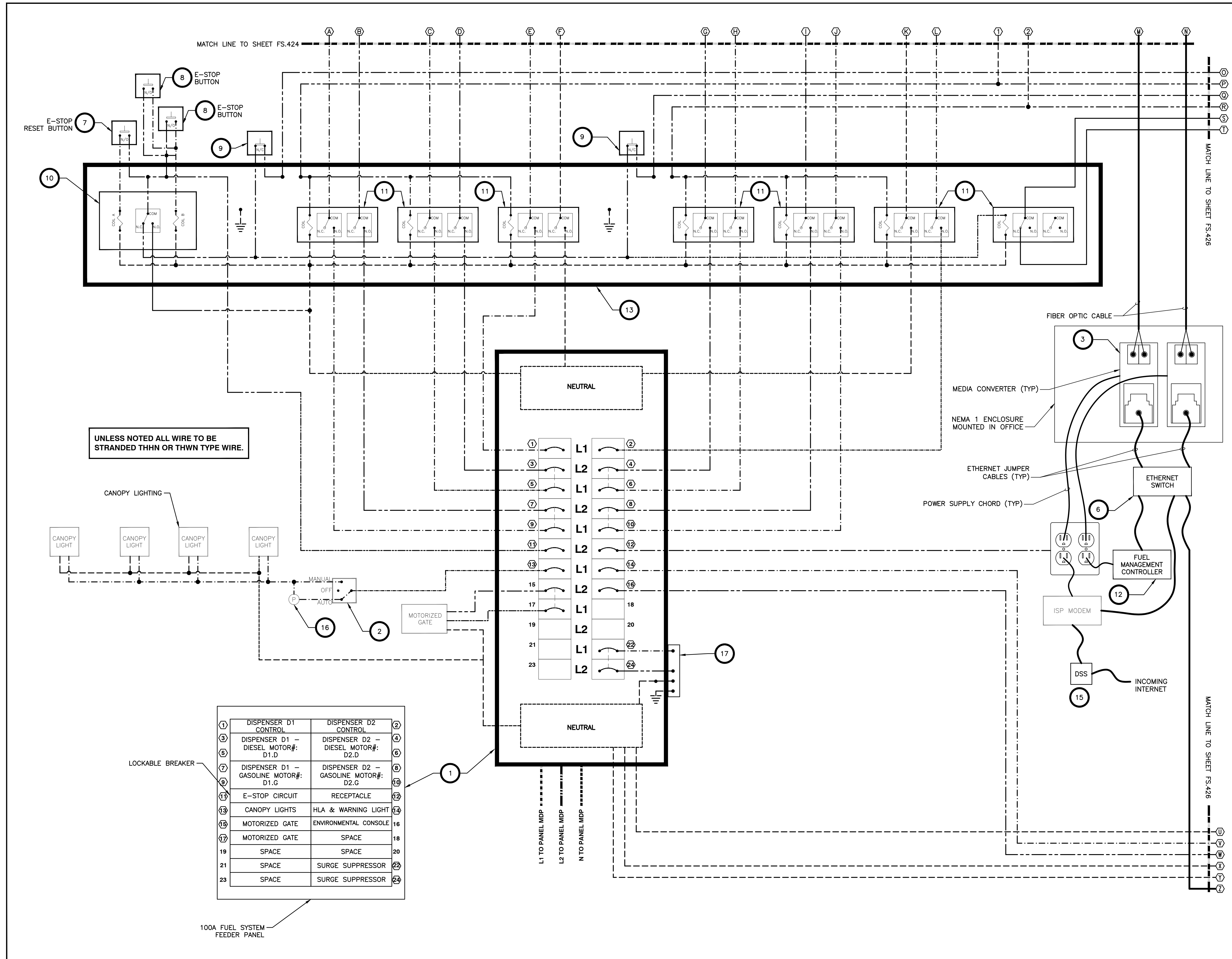
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 DEPARTMENT OF PUBLIC WORKS  
 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 ELECTRICAL SCHEMATIC  
 (2 OF 3)

Project No. 195602217 Scale AS SHOWN  
 Drawing No. FS.425 Sheet 26 of 28 Revision 0



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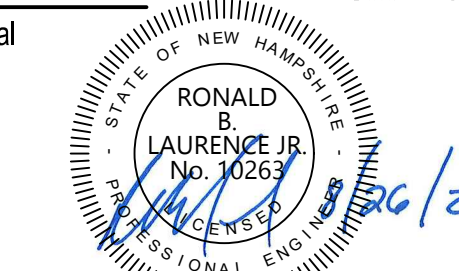
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SEE SHEET FS.423
- ⊕ CIRCUIT DESIGNATOR

Sheet Notes

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RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
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File Name:	CLC	RBL	CLC	05.12.22
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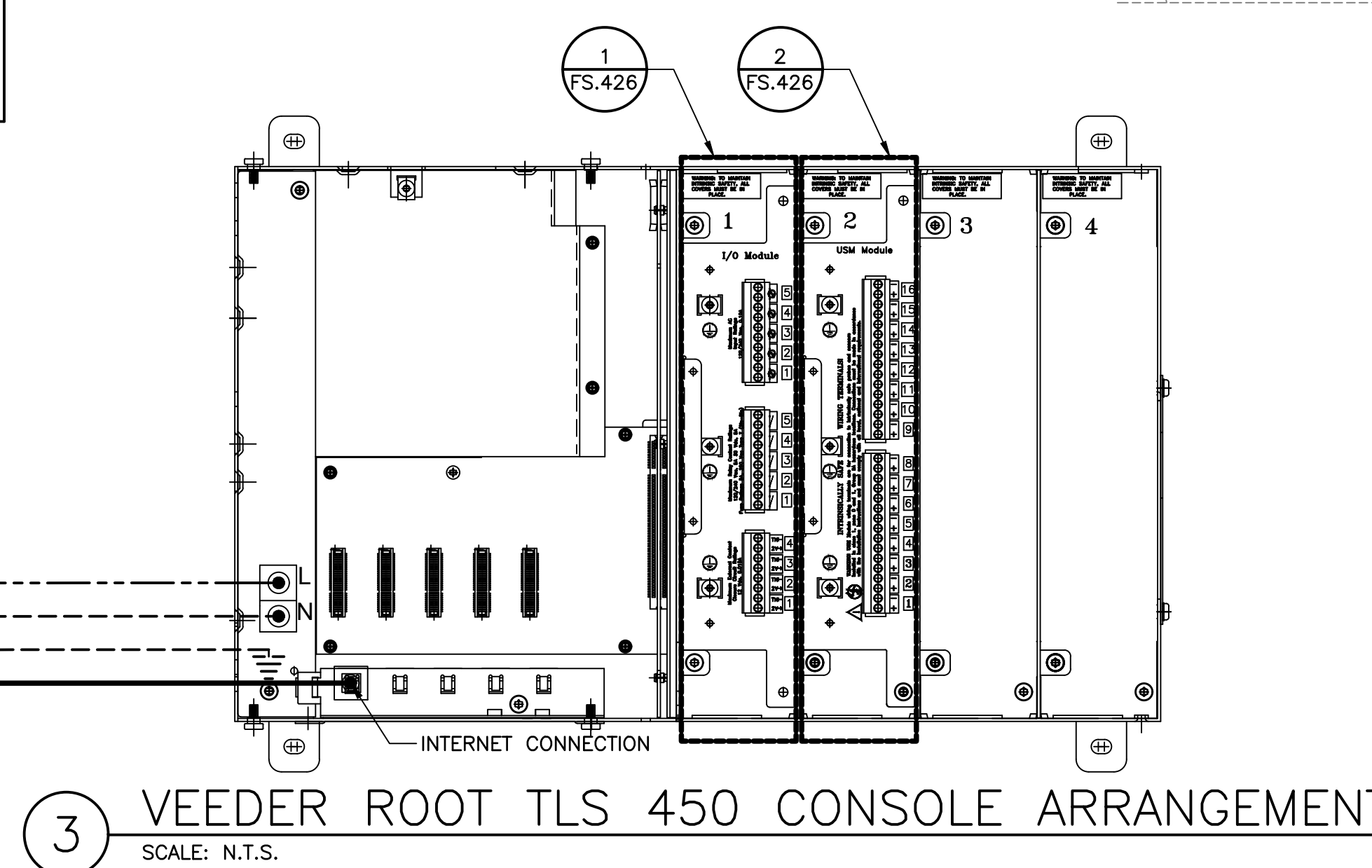
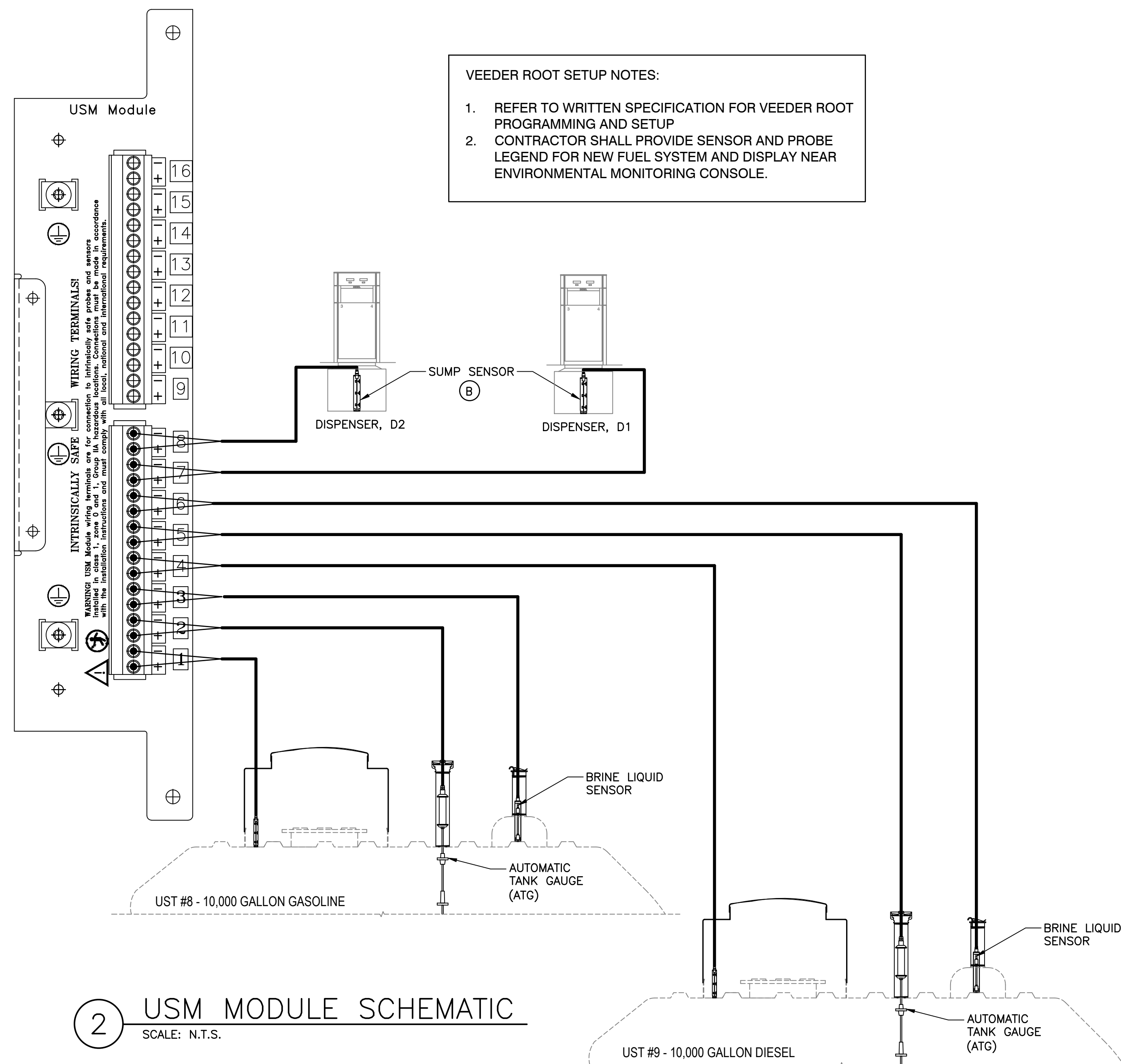
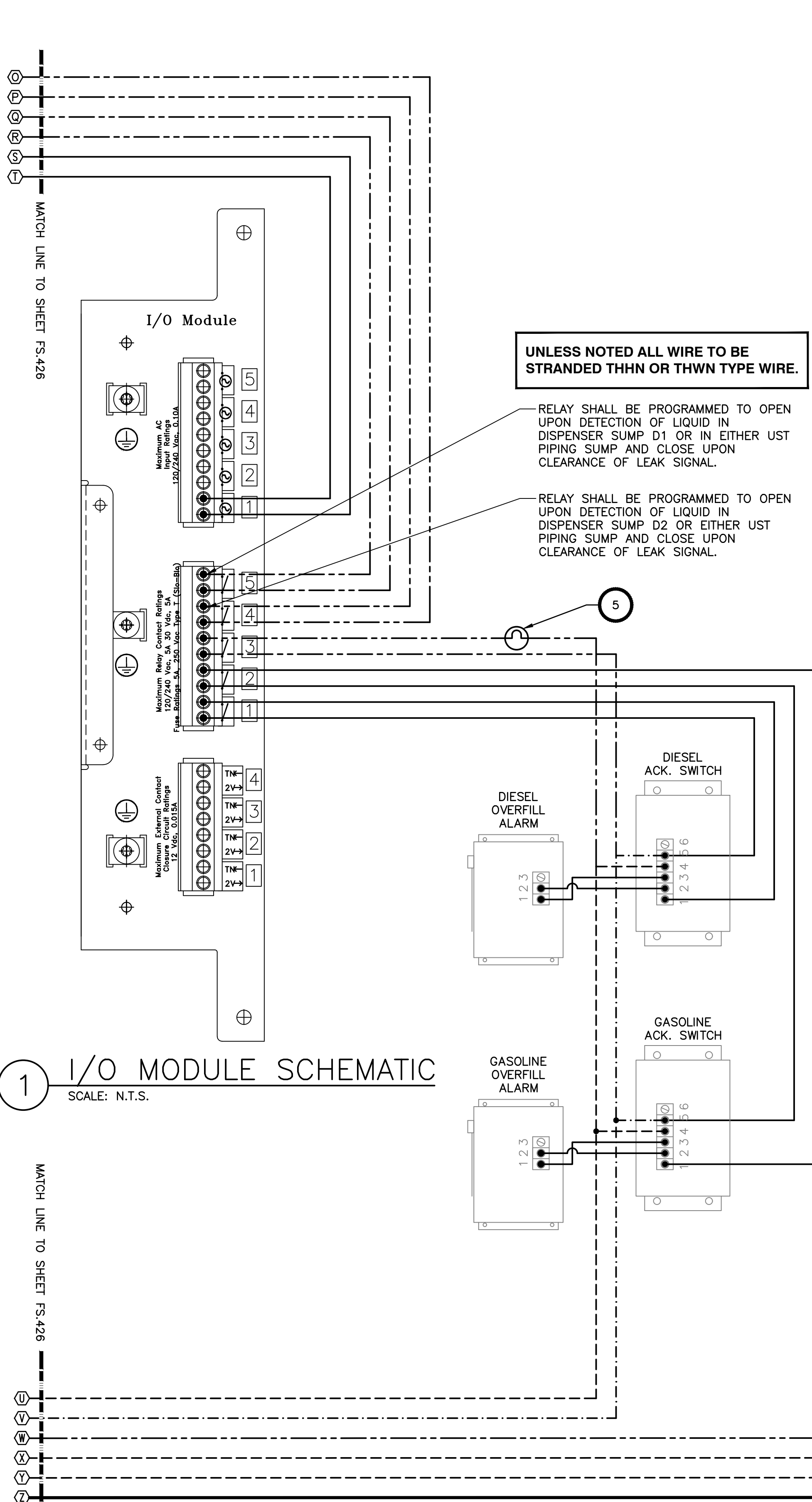
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Client/Project  
 CITY OF PORTSMOUTH  
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 FUEL SYSTEM REPLACEMENT

680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801

Title  
 ELECTRICAL SCHEMATIC  
 (3 OF 3)

Project No.	Scale	
195602217	AS SHOWN	
Drawing No.	Sheet	Revision
FS.426	27 of 28	0



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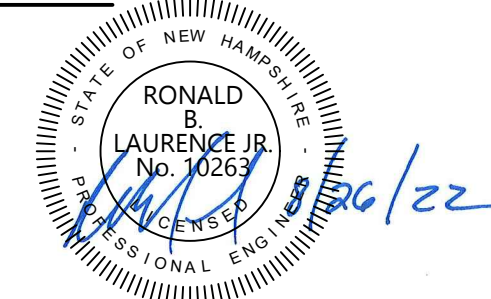
Legend

Sheet Notes

- SCHEDULE 80 PVC CONDUIT MAY BE UTILIZED UNDERGROUND. ADJUST CONDUIT SIZES TO ACCOMMODATE WIRING INSIDE SCH 80 PVC IF USED.
- INSTALL UNDERGROUND PVC CONDUIT PURSUANT TO NFPA 70 208 (NEC) SECTION 514.8 EXCEPTION NO. 2.
- SEALING SHALL BE PURSUANT TO NFPA 70 208 (NEC) SECTIONS 514.8 AND 514.9

Revision	By	Appd.	MM.DD.YY
RESPONSE TO NHDES COMMENTS, DATED 7/5/22	CLC	RBL	07.22.22
ISSUED FOR BID	CLC	RBL	08.26.22
ISSUED FOR NHDES PERMIT	CLC	RBL	05.12.22
Issued	By	Appd.	MM.DD.YY

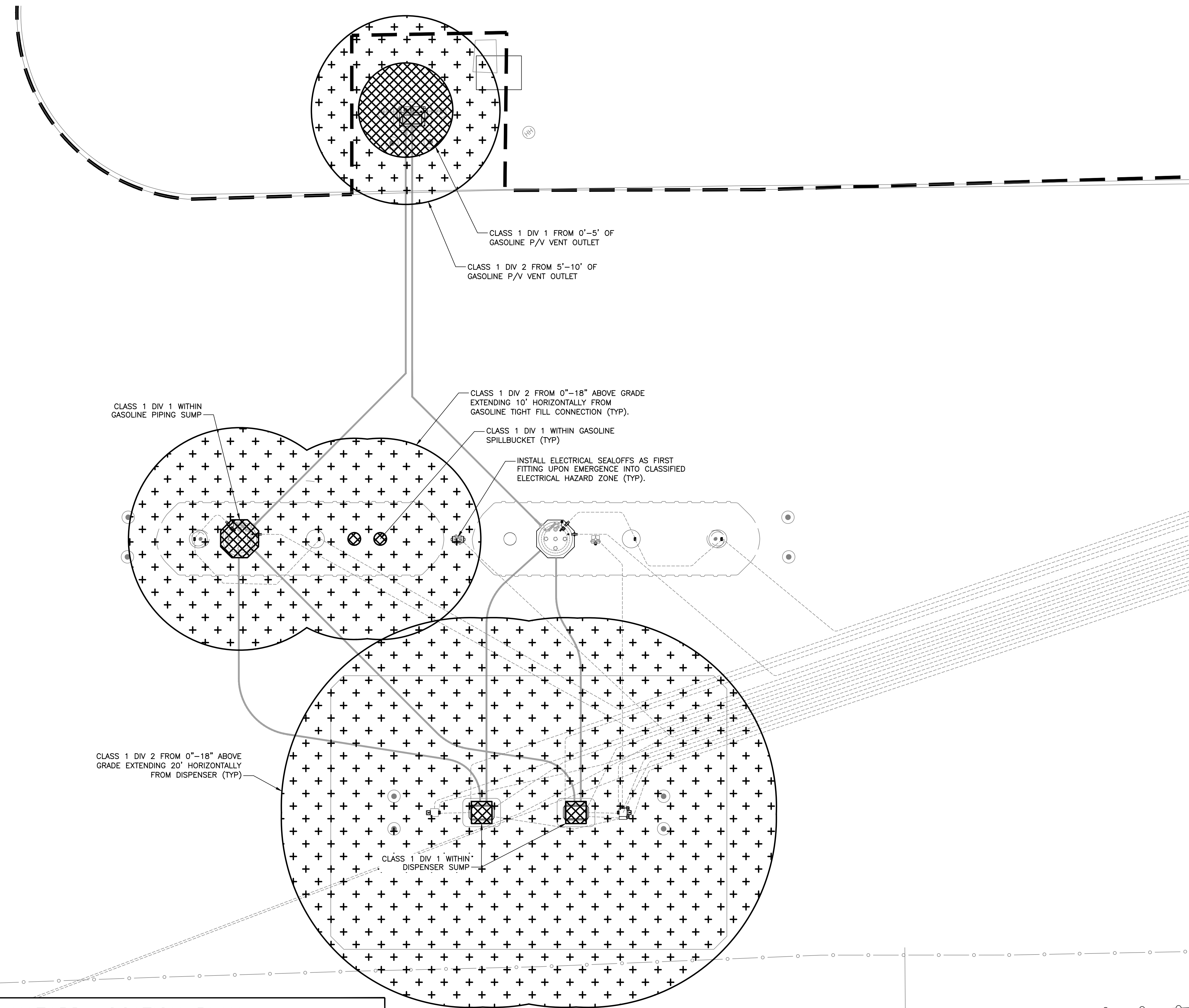
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 FUEL SYSTEM REPLACEMENT  
 680 PEVERLY HILL RD  
 PORTSMOUTH, NH 03801  
 Title  
 ELECTRICAL HAZARD LOCATION PLAN

Project No. 195602217	Scale AS SHOWN
Drawing No. FS.427	Sheet 28 of 28
	Revision 0



1 ELECTRICAL HAZARD LOCATION PLAN  
 SCALE: AS INDICATED

