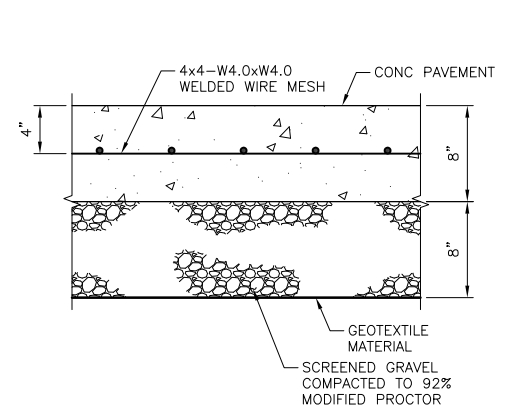
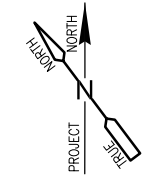
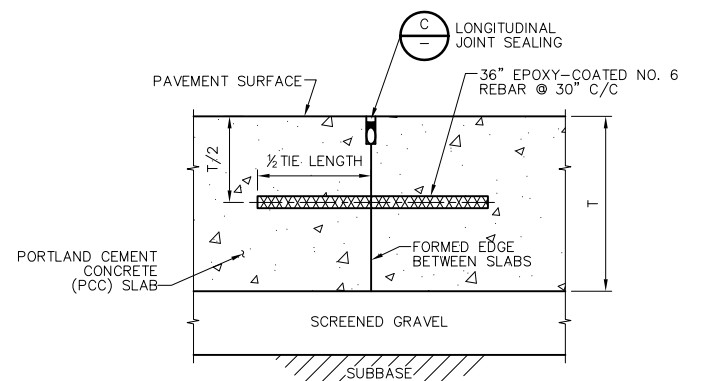


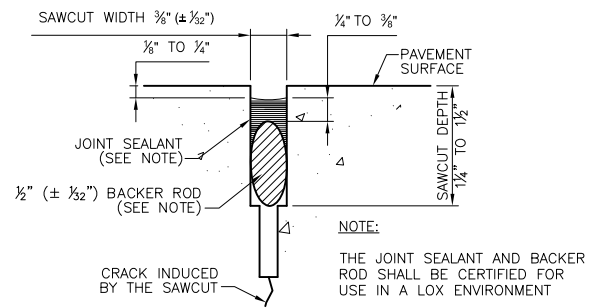
**PLAN**  
1" = 10'



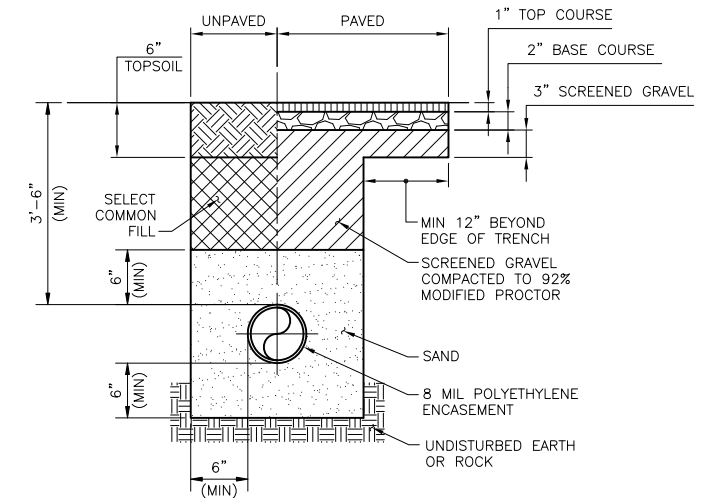
**TYPICAL SECTION**  
**CONCRETE PAVEMENT**  
**DETAIL A**  
NTS



**LONGITUDINAL JOINT SEALING**  
**DETAIL B**  
NTS



**LONGITUDINAL JOINT SEALING**  
**DETAIL C**  
NTS



**TRENCH DETAIL**  
**DETAIL D**  
NTS

- NOTES:**
- CONCRETE PAVEMENT SHALL BE PLACED IN NO LESS THAN TWO STAGES TO MAINTAIN TRUCK ACCESSIBILITY TO THE WATER TREATMENT BUILDING.
  - DIMENSIONS TO PAVEMENT CURB ARE TO BACK OF CURB.
  - DIMENSIONS TO RETAINING WALL BETWEEN CRUSHED ROCK AND GRASS ARE TO GRASS SIDE OF WALL.
  - CONCRETE SLAB AT LOX FILL STATION SHALL BE 6" THICK, REINFORCED WITH 4x4, W1.4xW1.4 WWF. 28-DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 4,000 PSI MIN.
  - RETAINING WALL SHALL BE CONSTRUCTED OF 6" PRECAST CONCRETE RETAINING WALL BLOCKS (HIGHLAND STONE BY ANCHOR WALL SYSTEMS OR APPROVED EQUAL). THE WALL HEIGHT SHALL BE 12"± ABOVE GRADE. THE WALL SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - CONCRETE JOINT DETAILS ON THIS SHEET DO NOT APPLY TO SLAB AT LOX STORAGE TANK AND VAPORIZER.

**ATTACHMENT A**

LARRY ROBERT SMITH  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE No. 24GE04544000

REV. NO.	DATE	DRWN	CHKD	REMARKS

**SCALE NOTE**  
SCALE BAR SHOWN BELOW IS ONE INCH LONG ON A FULL SIZE DRAWING. WHEN SCALING DRAWINGS, MEASURE BAR TO DETERMINE IF SCALES SHOWN WILL REQUIRE ADJUSTING.

DESIGNED BY: B. LUBENOW  
DRAWN BY: J. ROBINSON  
SHEET CHK'D BY: L. SMITH  
CROSS CHK'D BY: L. SMITH  
APPROVED BY: L. SMITH  
DATE: DECEMBER 2009

**CDM**  
Camp Dresser & McKee Inc.  
Raritan Plaza I, Raritan Center  
Edison, New Jersey 08818-3142  
Tel: (732) 225-7000  
consulting • engineering • construction • operations

NEW JERSEY CERTIFICATE OF AUTHORIZATION  
No. 24GA28020200

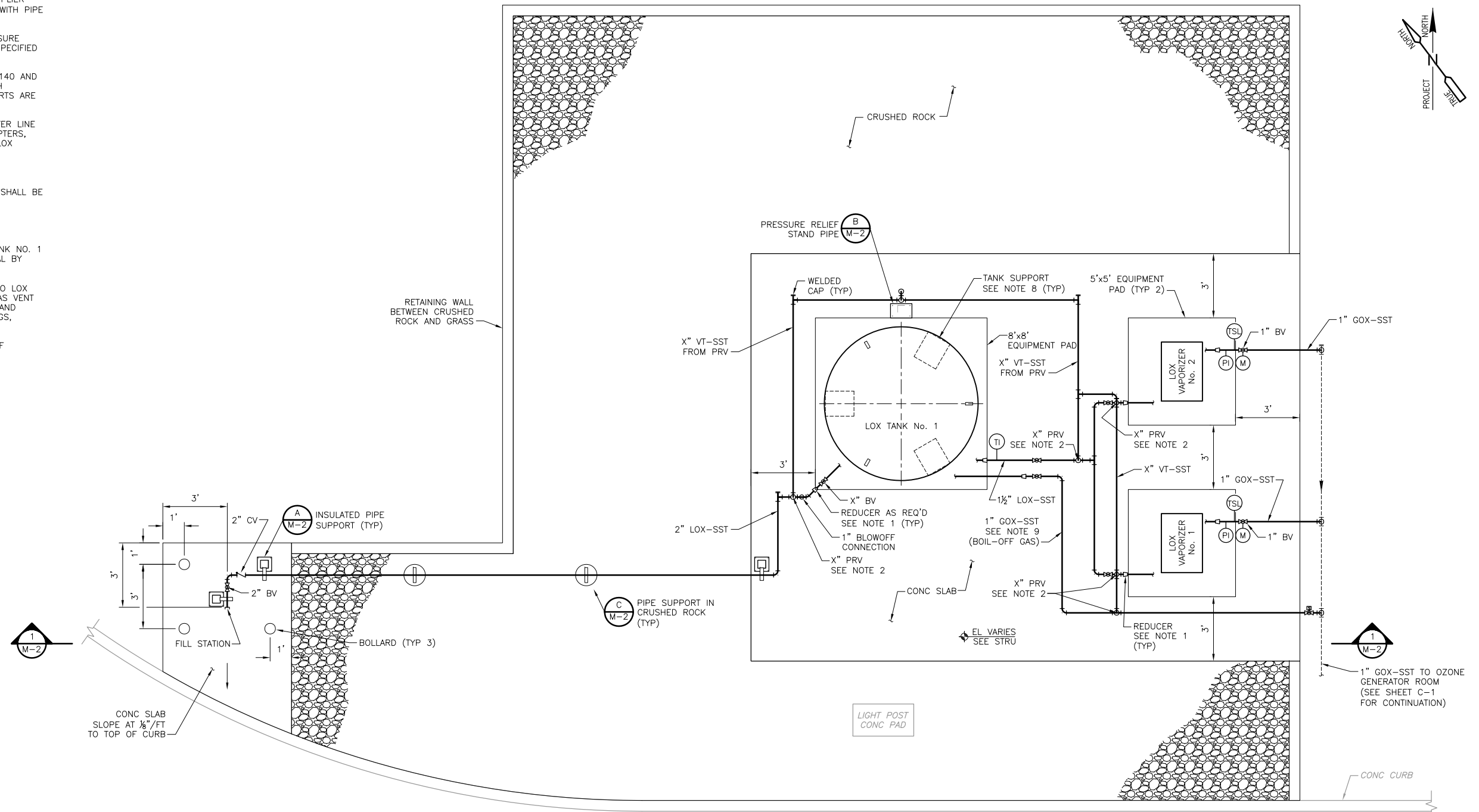
NEW JERSEY WATER SUPPLY AUTHORITY  
MANASQUAN WATER TREATMENT PLANT  
WALL TOWNSHIP, NEW JERSEY  
OZONE SYSTEM IMPROVEMENTS

**CIVIL**  
**AREA PLAN AND DETAILS**

PROJECT NO. 5085-59709  
FILE NAME: C00102PL  
SHEET NO. **C-1**

**NOTES:**

- CONTRACTOR SHALL VERIFY LOCATIONS AND SIZES OF INLET AND OUTLET PIPING FROM VAPORIZERS AND TANK WITH OZONE SYSTEM SUPPLIER (OSS) PRIOR TO PIPE FABRICATION TO ENSURE COMPATIBILITY WITH PIPE FITTINGS.
- FIELD ROUTE PRESSURE RELIEF VALVES VENT PIPING TO PRESSURE RELIEF STAND PIPE. PRESSURE RELIEF VALVES SHALL BE AS SPECIFIED AND SIZED PER OSS RECOMMENDATIONS.
- PROVIDE PROPER PIPE SUPPORT AS SPECIFIED IN SECTION 15140 AND DIVISION 13. ALL PIPE SUPPORTS SHALL BE COMPATIBLE WITH ENVIRONMENT IN WHICH THEY ARE INSTALLED. NOT ALL SUPPORTS ARE SHOWN ON THIS SHEET.
- INSTALL LOX STORAGE TANK FILL PIPING SO THAT PIPING CENTER LINE IS A MINIMUM OF 3'-FT ABOVE GRADE. PROVIDE FITTINGS, ADAPTERS, ETC., AS REQUIRED TO MATCH AND CONNECT FILL PIPING TO LOX STORAGE TANK INLET PIPE.
- X" DENOTES SIZE TO BE DETERMINED BY OSS.
- ALL LOX PIPING BETWEEN LOX FILL STATION AND VAPORIZERS SHALL BE INSULATED PER SECTION 15250 OF SPECIFICATIONS.
- ALL LOX AND GOX PIPING SHALL BE STAINLESS STEEL PER SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE ANCHORAGE SYSTEM FOR LOX TANK NO. 1 PER OSS RECOMMENDATIONS AND SHALL SUBMIT FOR APPROVAL BY ENGINEER.
- FIELD ROUTE 1" GOX-SST FROM VAPORIZER OUTLET HEADER TO LOX TANK NO. 1 FOR CONNECTION TO MFR SUPPLIED BOIL-OFF GAS VENT LINES. CONTRACTOR SHALL CONFIRM CONNECTION TYPE, SIZE, AND LOCATION WITH OSS AND SHALL PROVIDE ALL REQUIRED FITTINGS, COUPLINGS, ADAPTERS, ETC., FOR CONNECTION.
- CRUSHED ROCK SHALL BE AS SPECIFIED IN SECTION 02230 OF SPECIFICATIONS.



**PLAN**  
3/8" = 1'-0"

LARRY ROBERT SMITH  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE No. 24GE04544000

REV. NO.	DATE	DRWN	CHKD	REMARKS

**SCALE NOTE**  
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DESIGNED BY: A. SEN  
DRAWN BY: J. ROBINSON  
SHEET CHK'D BY: L. SMITH  
CROSS CHK'D BY: L. SMITH  
APPROVED BY: L. SMITH  
DATE: DECEMBER 2009

**CDM** NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA28020200  
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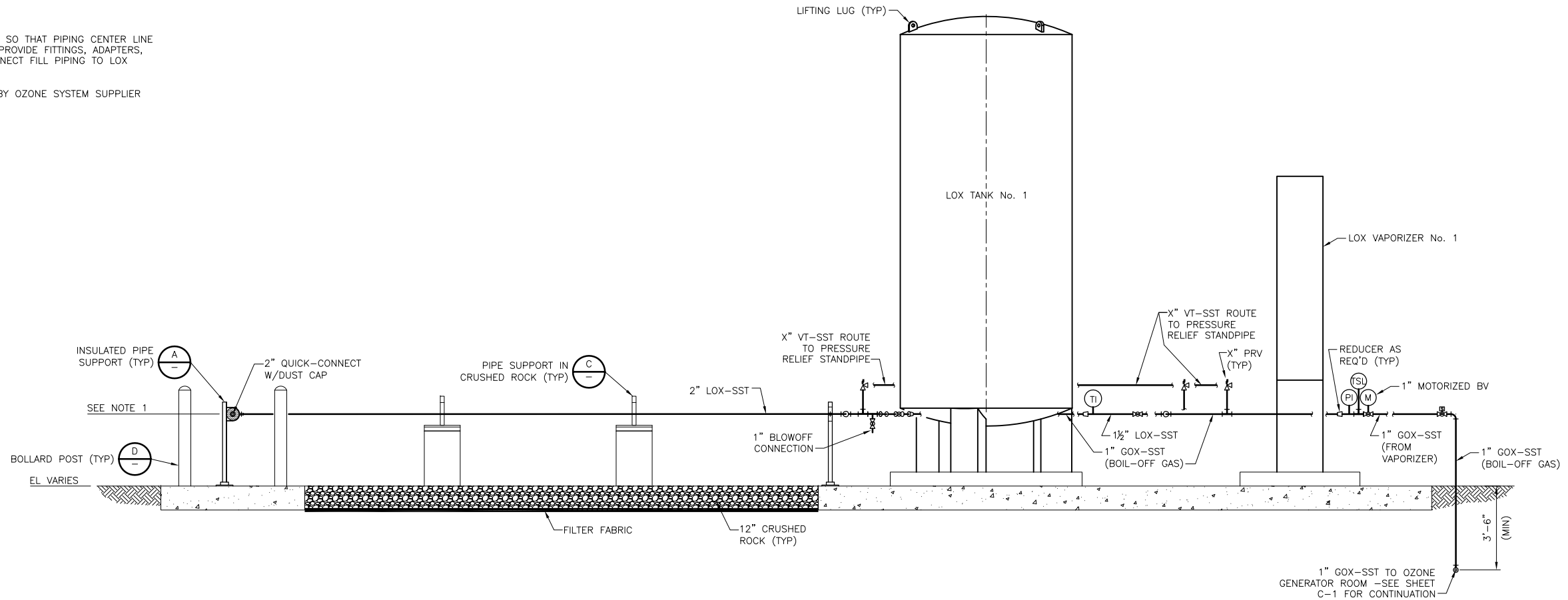
NEW JERSEY WATER SUPPLY AUTHORITY  
MANASQUAN WATER TREATMENT PLANT  
WALL TOWNSHIP, NEW JERSEY  
OZONE SYSTEM IMPROVEMENTS

**MECHANICAL**  
**LOX AREA PLAN**

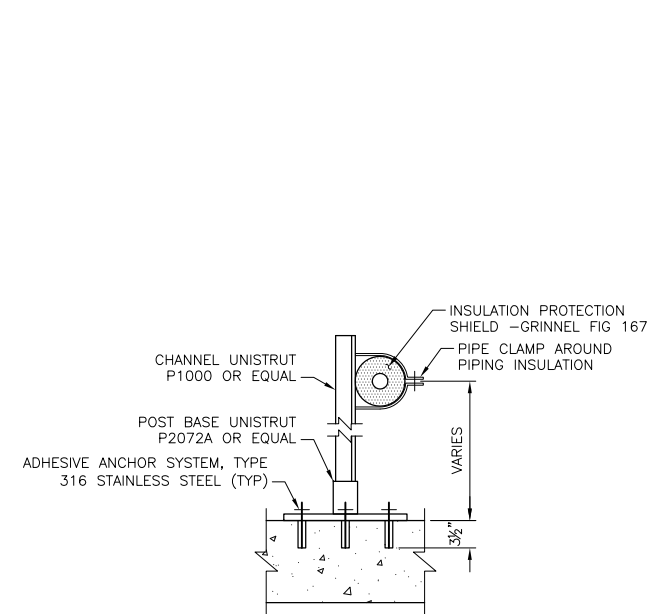
PROJECT NO. 5085-59709  
FILE NAME: M001LXPL  
SHEET NO.  
**M-1**

**NOTES:**

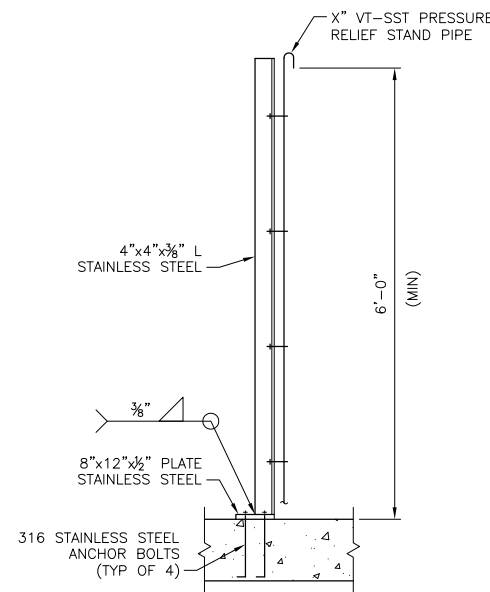
1. INSTALL LOX STORAGE TANK FILL PIPING SO THAT PIPING CENTER LINE IS A MINIMUM OF 3-FT ABOVE GRADE. PROVIDE FITTINGS, ADAPTERS, ETC., AS REQUIRED TO MATCH AND CONNECT FILL PIPING TO LOX STORAGE TANK INLET PIPE.
2. "X" DENOTES SIZE TO BE DETERMINED BY OZONE SYSTEM SUPPLIER (OSS).



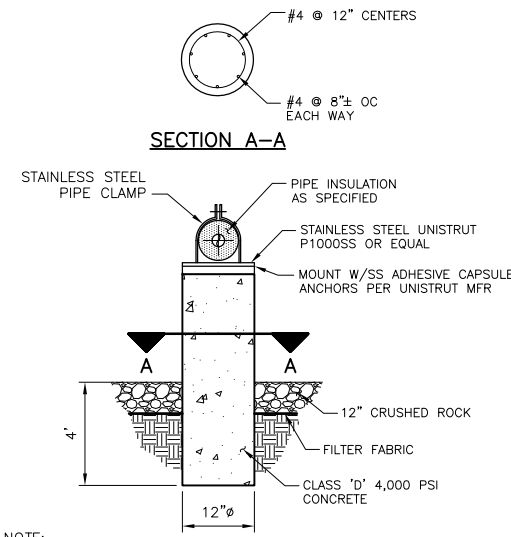
**SECTION 1**  
3/8" = 1'-0"



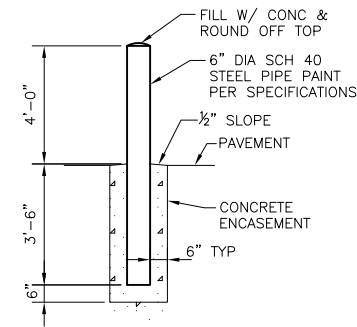
**INSULATED PIPE SUPPORT**  
DETAIL A  
NTS



**PRESSURE RELIEF STAND PIPE**  
DETAIL B  
NTS



**PIPE SUPPORT IN CRUSHED ROCK**  
DETAIL C  
NTS



**BOLLARD POST**  
DETAIL D  
NTS

**NOTE:**  
PROVIDE PIPE CLAMP MOUNTING WITH SLACK TO PERMIT LATERAL EXPANSION AND CONTRACTION OF 2" LOX-SST PIPING.

REV. NO.	DATE	DRWN	CHKD	REMARKS

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NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GAZ8020200  
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MANASQUAN WATER TREATMENT PLANT  
WALL TOWNSHIP, NEW JERSEY  
OZONE SYSTEM IMPROVEMENTS

**MECHANICAL**  
**LOX AREA SECTION AND DETAILS**

PROJECT NO. 5085-59709  
FILE NAME: M002LXSC  
SHEET NO. **M-2**

LARRY ROBERT SMITH  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE No. 24GE04544000