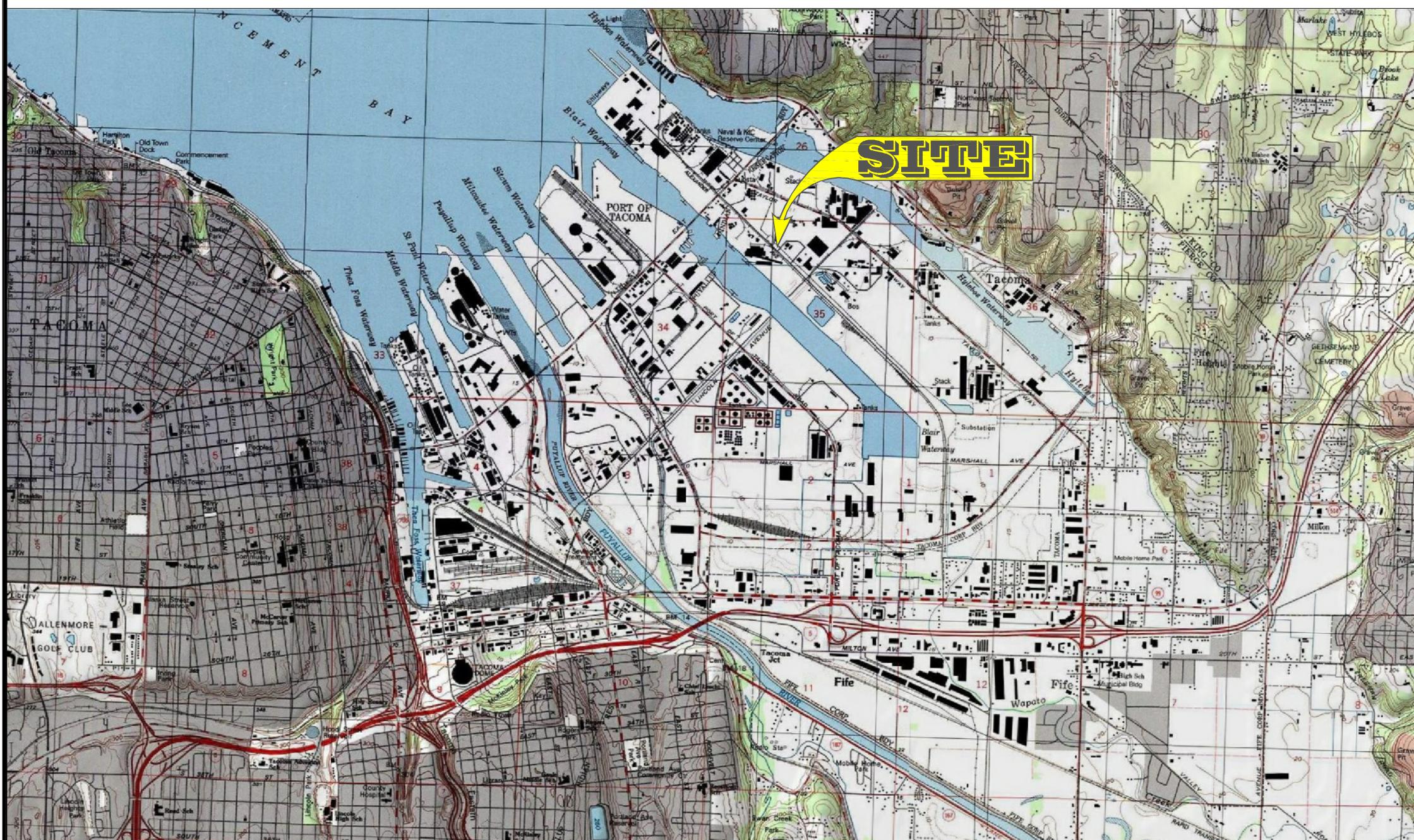


STERICYCLE VAPOR MITIGATION SYSTEM

1701 ALEXANDER AVE E, TACOMA WA 98421

VICINITY MAP



AERIAL PHOTO



INDEX OF DRAWINGS

SHEET NUMBER	DESCRIPTION
ENV-0	TITLE SHEET
ENV-1	VAPOR MITIGATION SYSTEM PIPING LAYOUT
ENV-2	VAPOR MITIGATION SYSTEM TYPICAL SECTIONS
ENV-3	VAPOR MITIGATION SYSTEM VAPOR BARRIER LINER DETAILS
ENV-4	VAPOR MITIGATION SYSTEM VAPOR BARRIER LINER DETAILS
ENV-5	VAPOR MITIGATION SYSTEM EXTERIOR EXHAUST PIPING

MATERIALS SCHEDULE

- ① 3/4" - 1-1/2" CLEAN CRUSHED ROCK
- ② COMPACTED FILL
- ③ STRUCTURAL SUBGRADE PER ORIGINAL DESIGN
- ④ RAVEN INDUSTRIES ABSOLUTE BARRIER X40BAL GEOLINER (40-MIL HPDE LINER)
- ⑤ AGRU AMERICA AGRUTEX 321 GEOFABRIC
- ⑥ CONCRETE
- ⑦ PEA GRAVEL
- ⑧ CONTROLLED DENSITY FILL (CDF)



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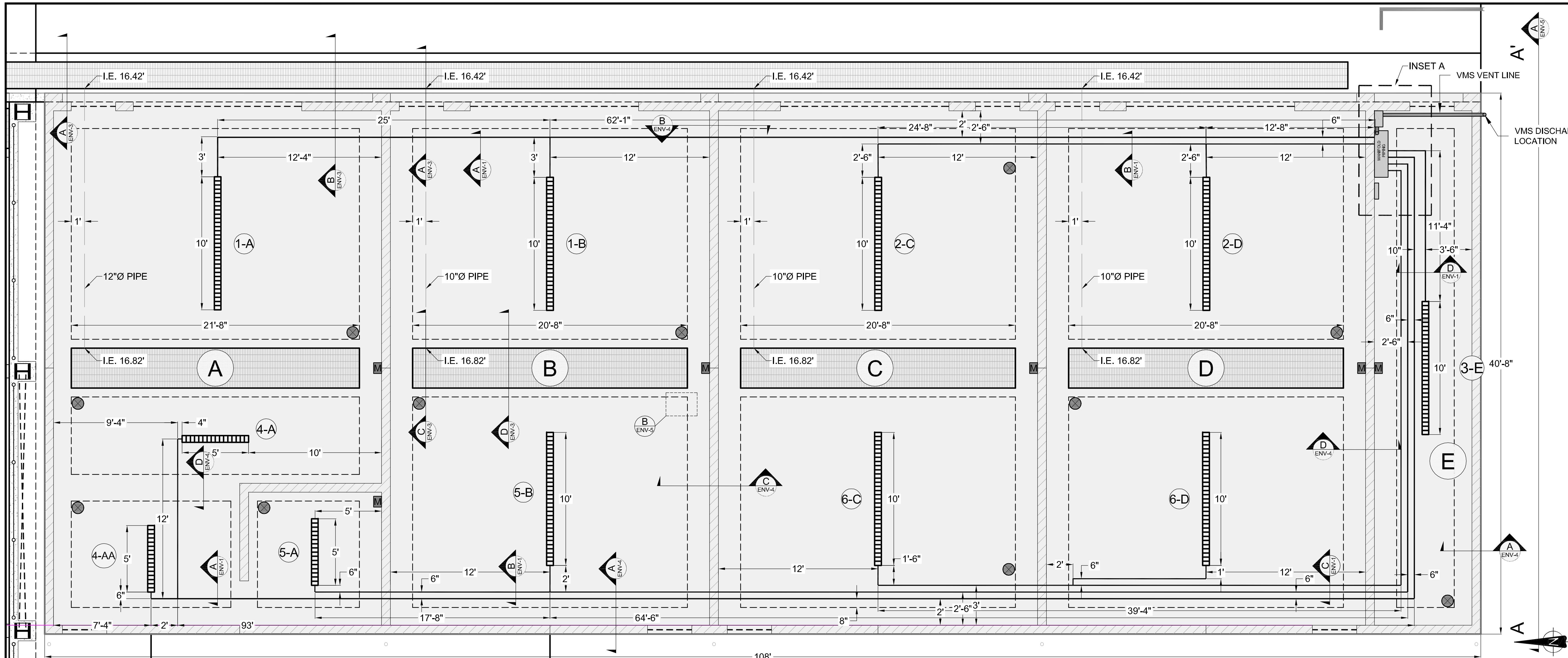
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7376 S.W. Durham Road
Portland, OR 97224

VAPOR MITIGATION SYSTEM PIPING LAYOUT

ENGINEER STAMP

STERICYCLE VAPOR MITIGATION SYSTEM

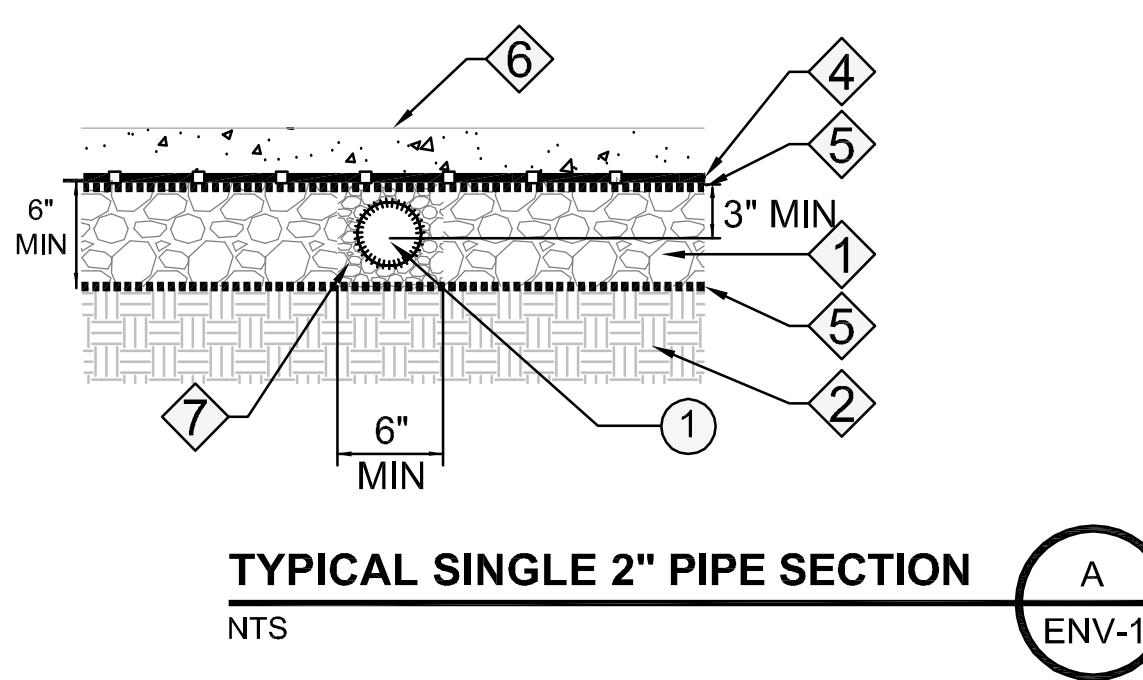
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EET ENV-1
SHEET 2 of 6



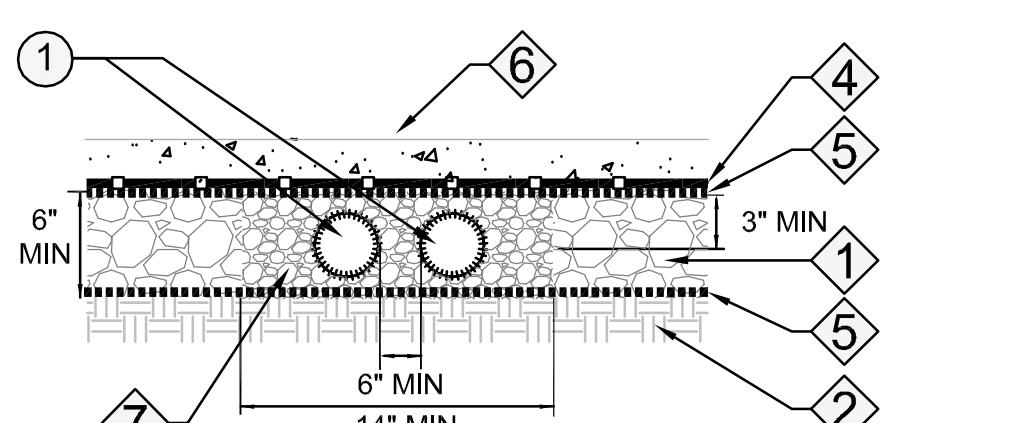
SCALE: 1/4" = 1'

LEGEND

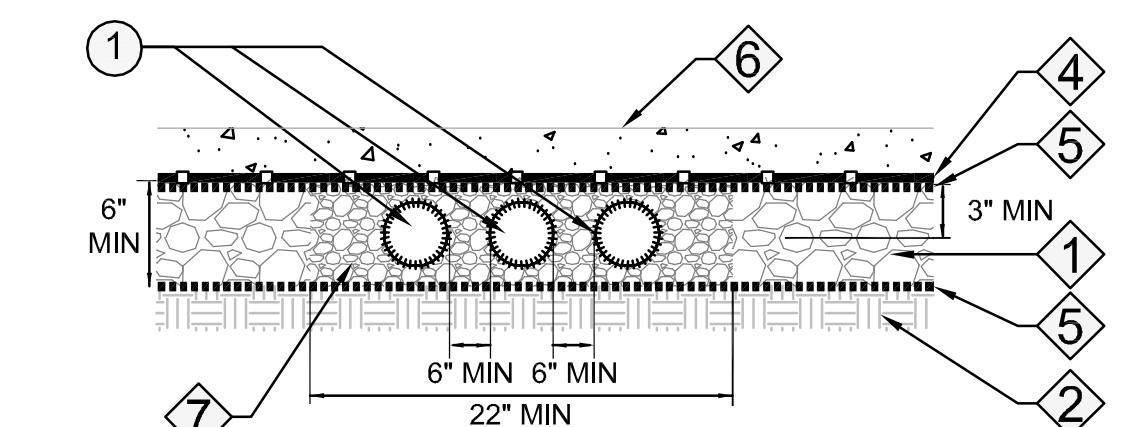
- 2" SCH. 40 PVC PIPE
 - 2" SCH. 40 PVC 0.02" SLOTTED PIPE SCREEN WITH END CAP
 - EXTENT OF VAPOR BARRIER LINER COVERAGE
(SEE ENV-3 AND ENV-4 FOR CONSTRUCTION DETAILS)
 - VAPOR MITIGATION ZONE
 - METHANE GAS SENSOR
 - VMS MONITORING PORT
(LOCATION CAN MOVE WITHIN CELL IF CURRENT LOCATION INTERFERES WITH SITE OPERATIONS)



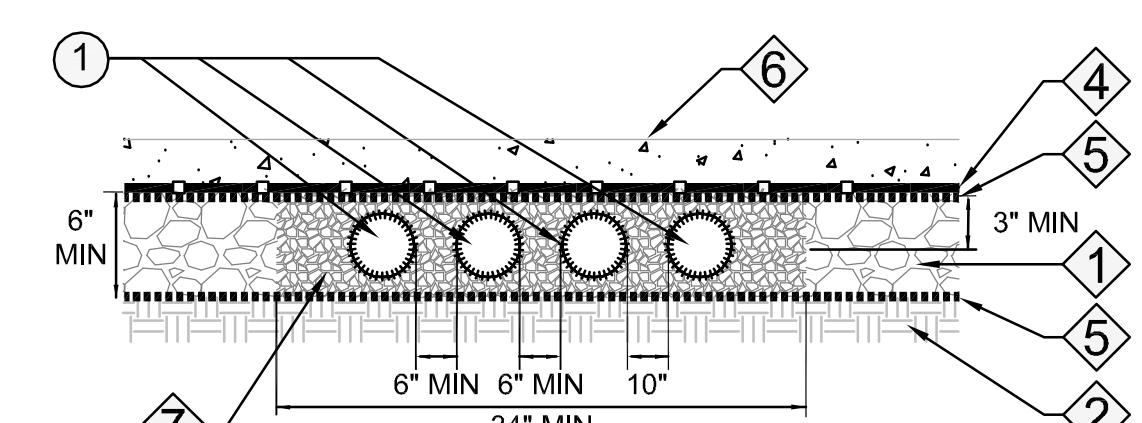
TYPICAL SINGLE 2" PIPE SECTION



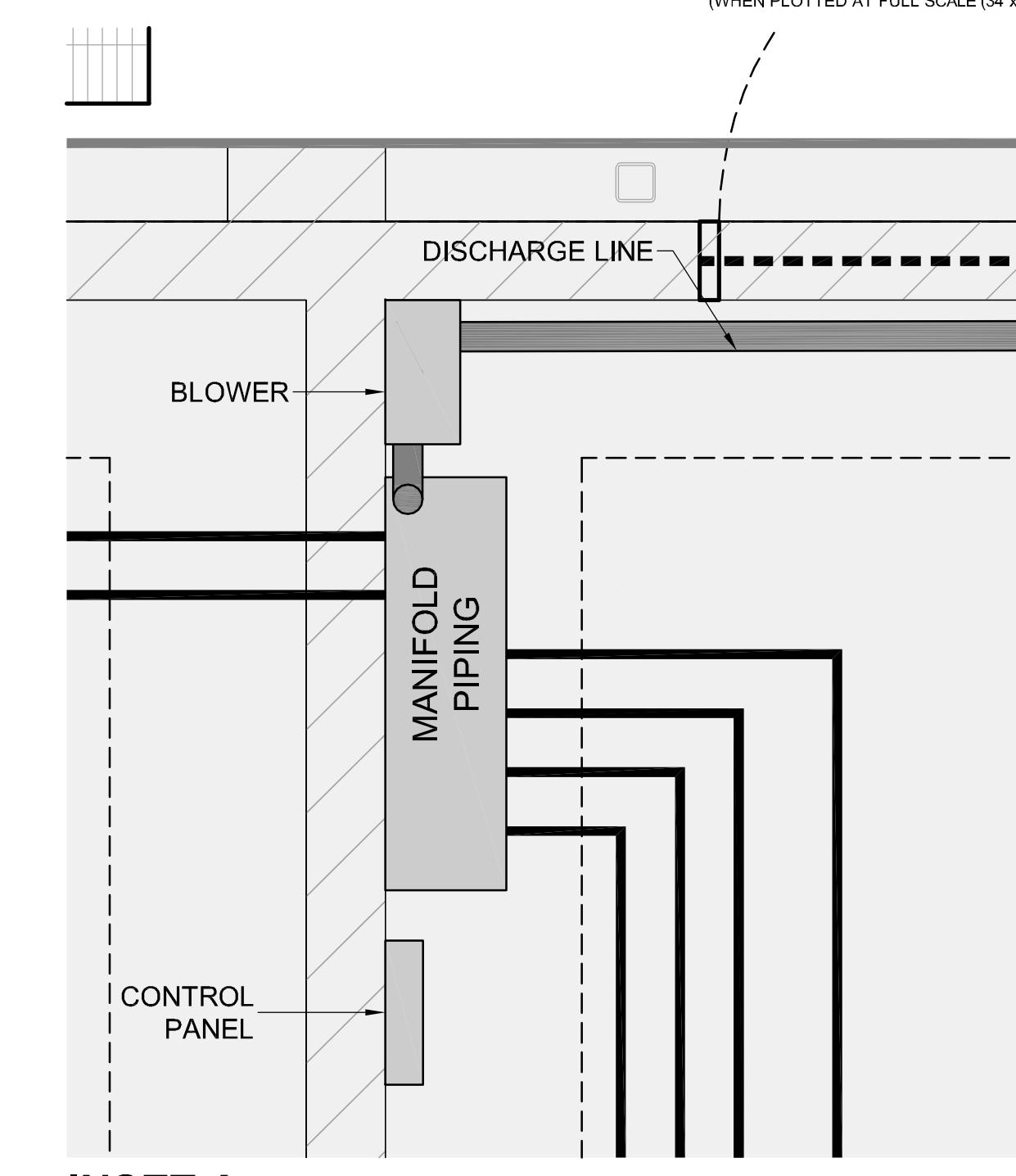
TYPICAL DOUBLE 2" PIPE SECTION



TYPICAL TRIPLE 2" PIPE SECTION



TYPICAL QUAD 2" PIPE SECTION



INSET A

DRAFT

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VAPOR MITIGATION SYSTEM TYPICAL SECTIONS

ENGINEER STAMP

A large grid consisting of 10 vertical lines and 10 horizontal lines, creating a total of 90 equal-sized squares. The grid is positioned in the center of the page.

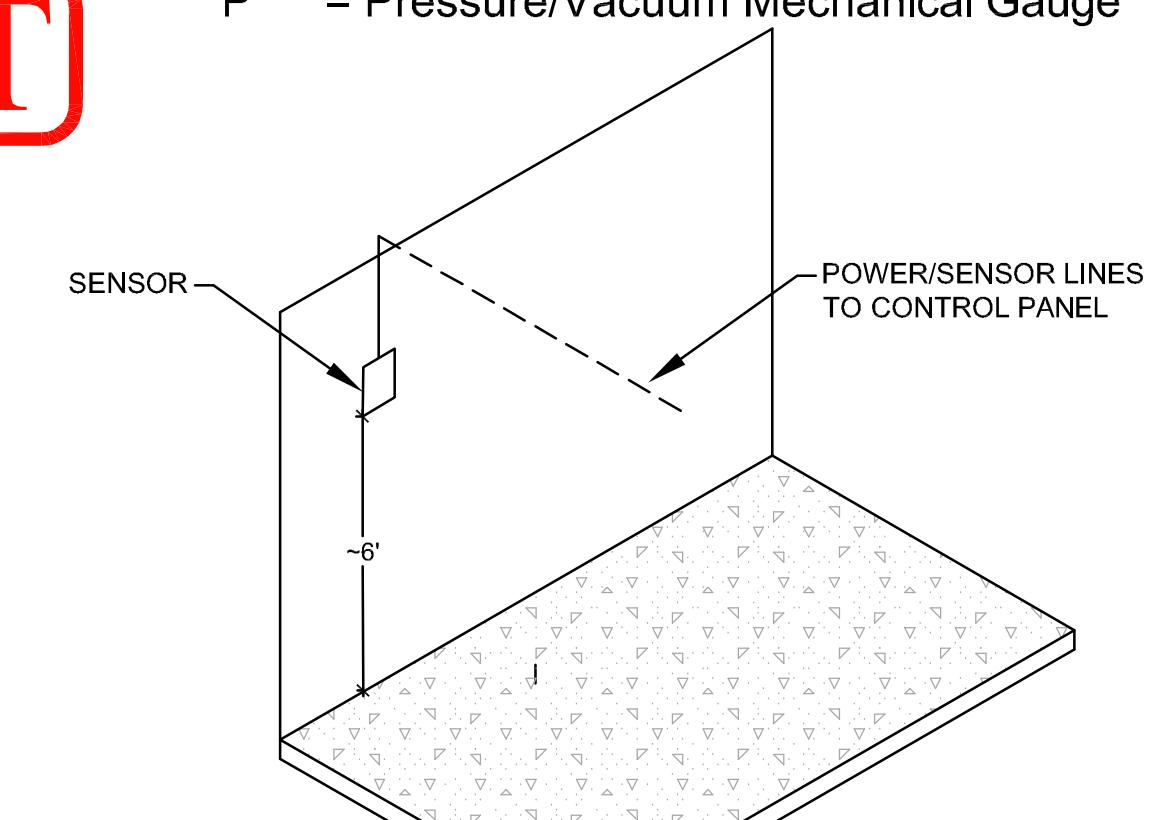
STERICYCLE VAPOR MITIGATION SYSTEM

PIPING SCHEDULE

- 1 = 2" Sch 40 PVC Pipe
2 = 2" Sch 40 Sweep 90 Elbow
3 = 2" Sch 40 Tee (SSS)
4 = 2" Sch 40 Coupler (SS)
5 = 2" Sch 40 Screen Section (20 slot well screen)
② 6 = 2" Sch 40 Cap (S)
7 = 2" Sch 40 45 Elbow
8 = 2" Sch 40 Female Adapter (S x FPT)
9 = 2" GS Pipe (MPT x MPT ends)
10 = 2" Brass Gate valve
11 = 2" GS Coupler (FPT x FPT)
12 = 2" GS Tee (All FPT)
13 = 2" x 3" GS Reducer Bushing (FPT x MPT)
14 = 3" GS Pipe (MPT ends)
15 = 2" GS Close Nipple
16 = 1/4" Brass Sample Port (MPT x Ball Valve x Hose
Barb with 2" GS Tee with Reducers from 2" to
1/4")(VMS Manifold Sampling Ports can be used for
Measuring Air Flow Velocity and Vacuum Levels)
17 = 3" GS Couplers
18 = 2" GS 90 Elbow (FPT)
19 = 2" PVC Swing Check Valve
20 = 2" GS Plug (MPT)
21 = 2" GS 6" Nipples (MPT x MPT)
22 = 3" GS 90° Elbow
23 = 3" GS Close Nipple
24 = Rotron EN404AR72ML (208-230/460 VAC 3PH,
60Hz, 1.0 HP)
25 = 1 1/2" x 2" GS Bell Reducer (FPT x FPT)
26 = 1 1/2" GS Close Nipple (MPT ends)
27 = 3" GS 45° Elbow
28 = 2" GS Union (FPT)
29 = 1/4" Electronic Vacuum Transducer (MPT with 2" to
1/4" Reducer Bushing)
30 = 1/4" Mechanical Vacuum Gauge (Dwyer Model
SGX-D7522N 0-60" WC Vacuum, Brass 1/4" (MPT
with 2" to 1/4" Reducer Bushing)
31 = 2" GS Pipe Sized for Blower Separation (MPT ends)

ABBREVIATIONS

- VML = Vapor Mitigation Line
VMS = Vapor Mitigation System
S = Socket
FPT = Female Iron Pipe Thread
MPT = Male Iron Pipe Thread
GS = Galvanized Steel
EV = Electronic Vacuum Transducer
P = Pressure/Vacuum Mechanical Gauge

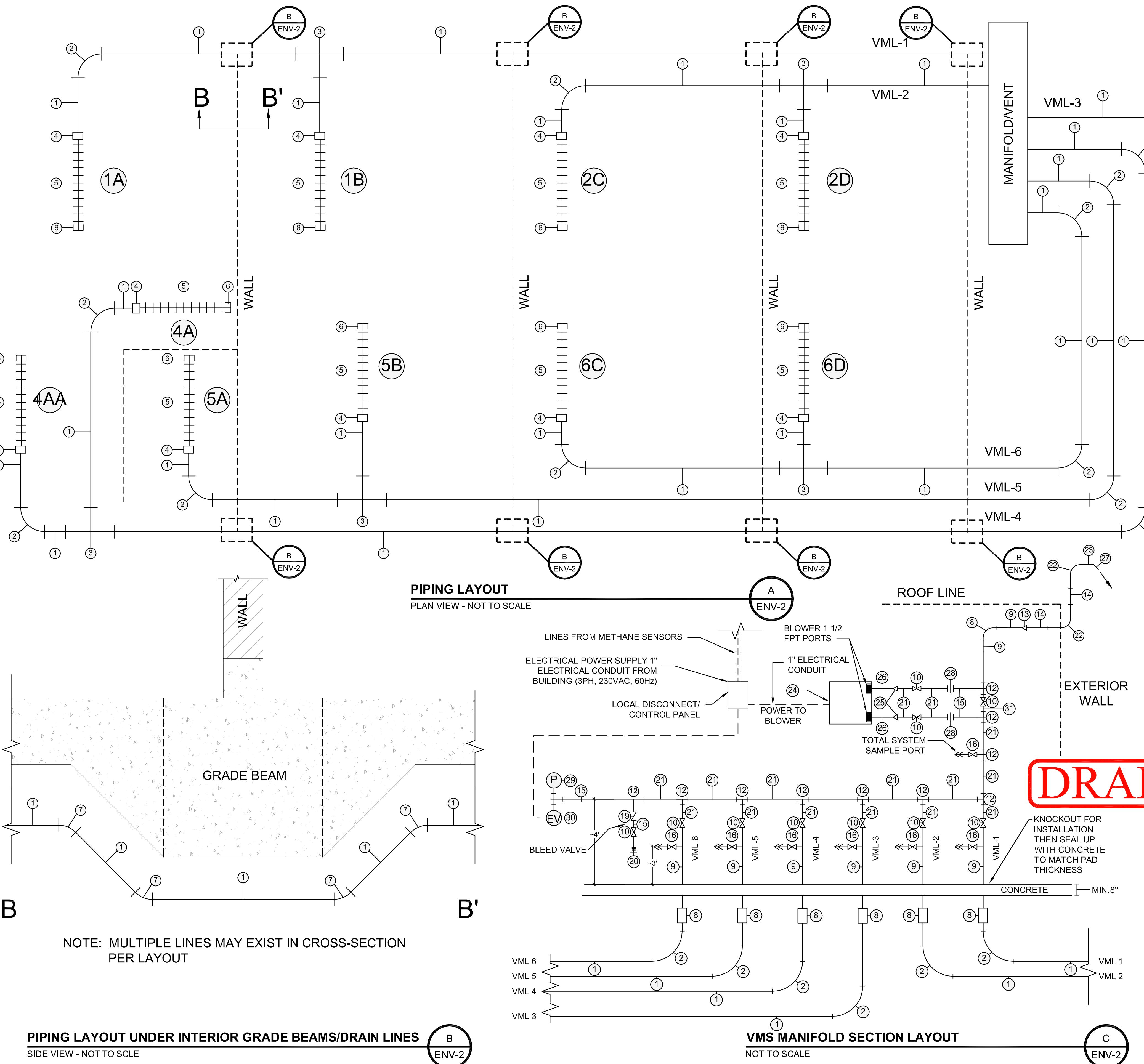


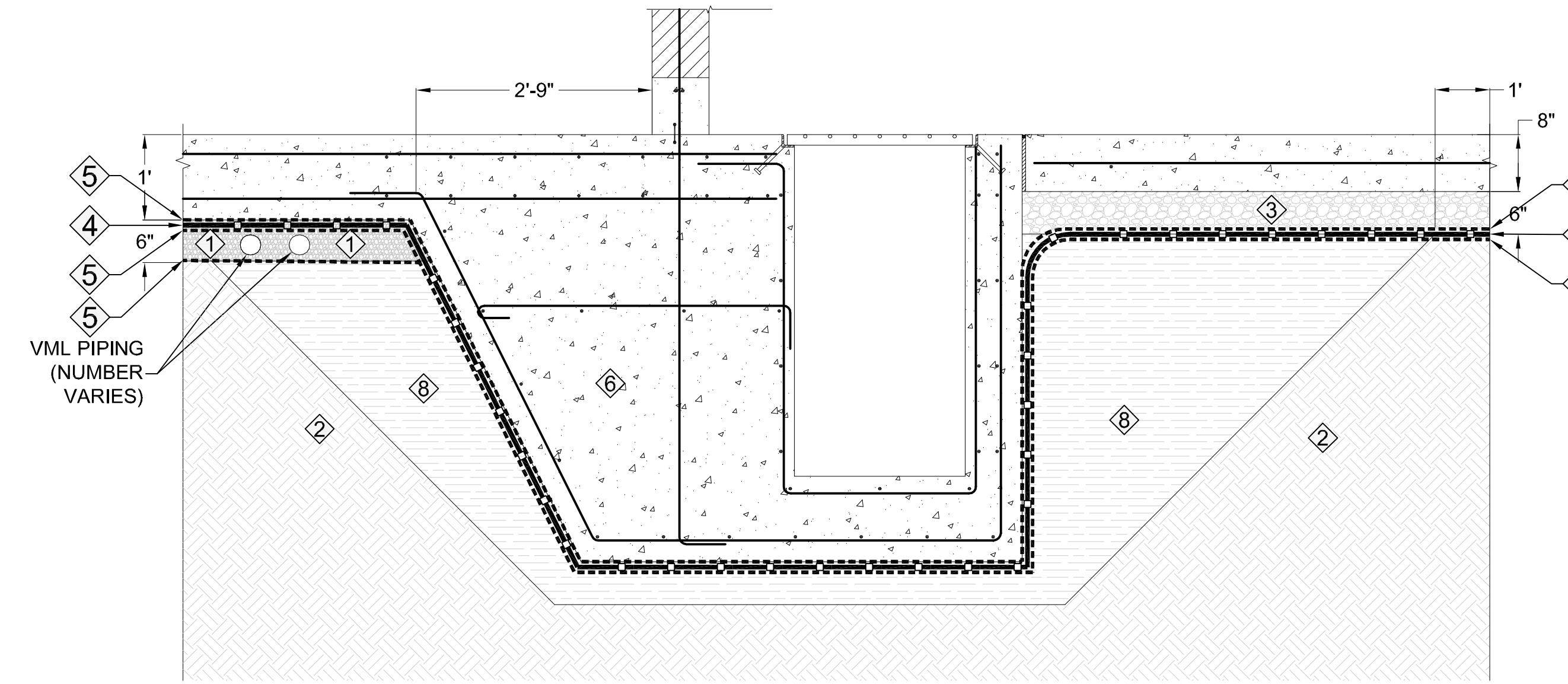
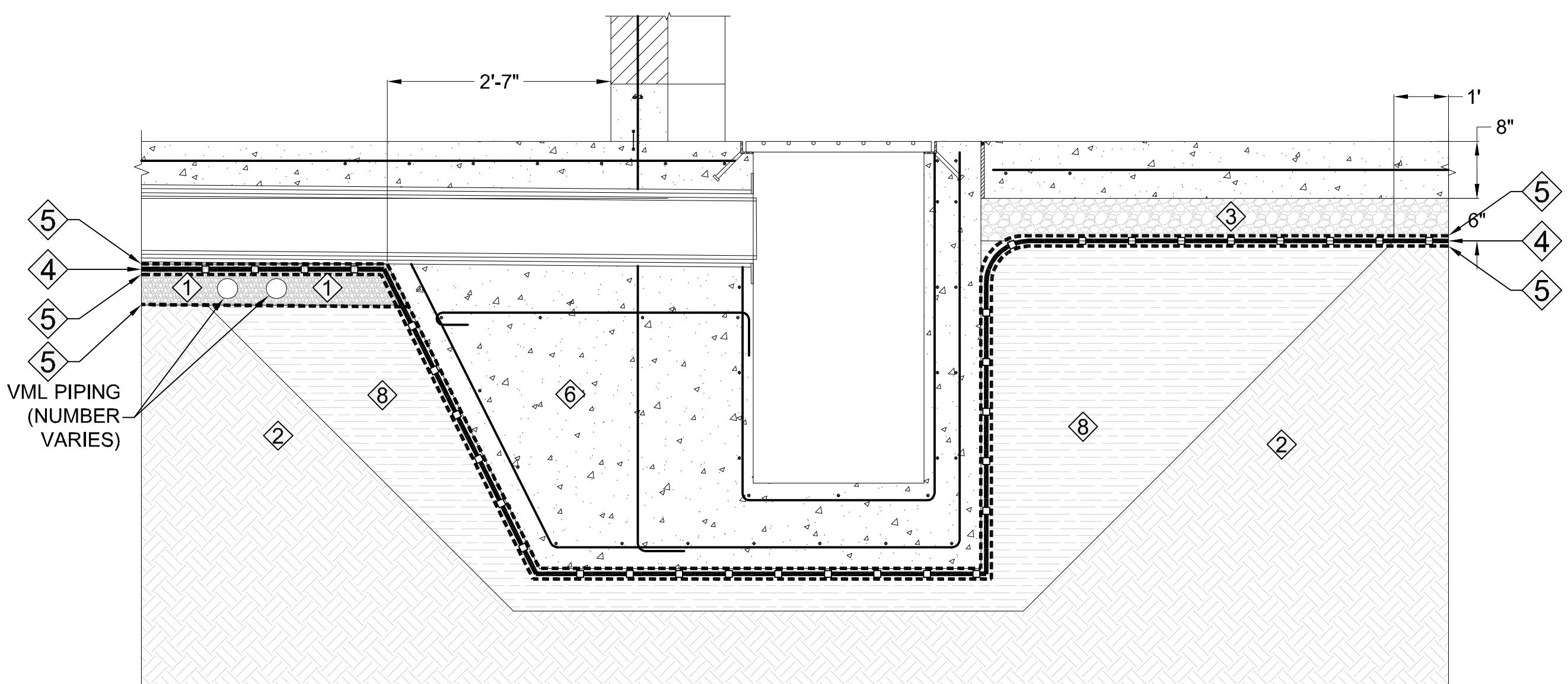
VMS MANIFOLD SECTION LAYOUT

PIPING LAYOUT UNDER INTERIOR GRADE BEAMS/DRAIN LINE

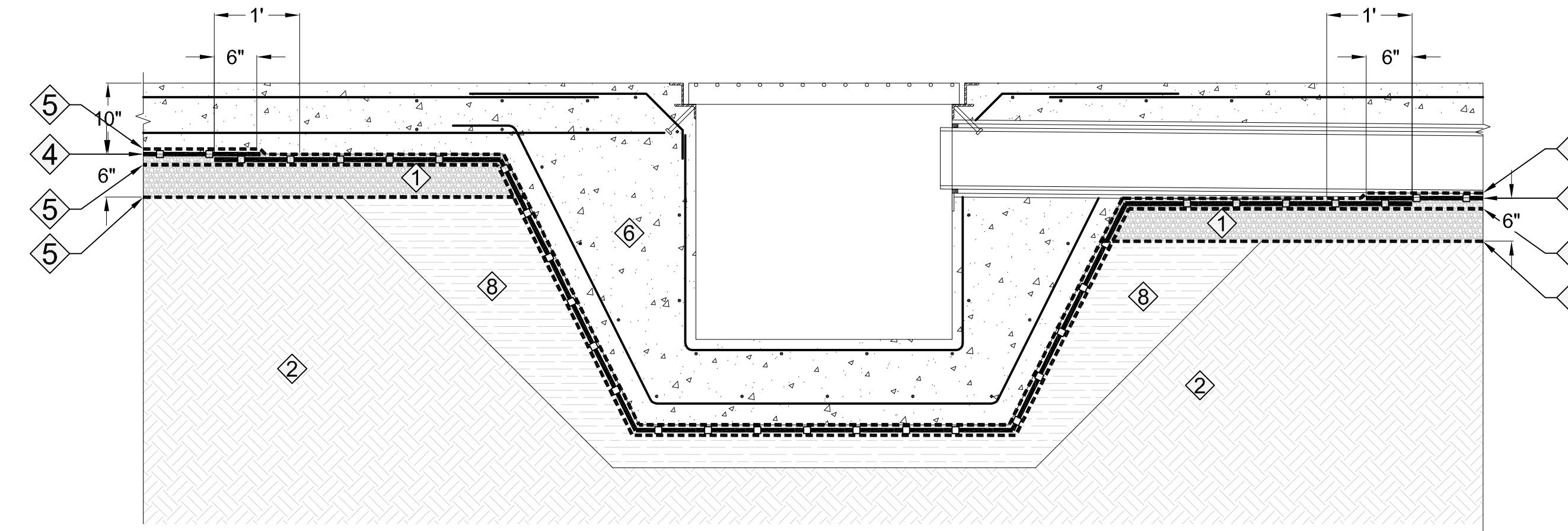
SIDE VIEW - NOT TO SCALE

**NOTE: MULTIPLE LINES MAY EXIST IN CROSS-SECTION
PER LAYOUT**

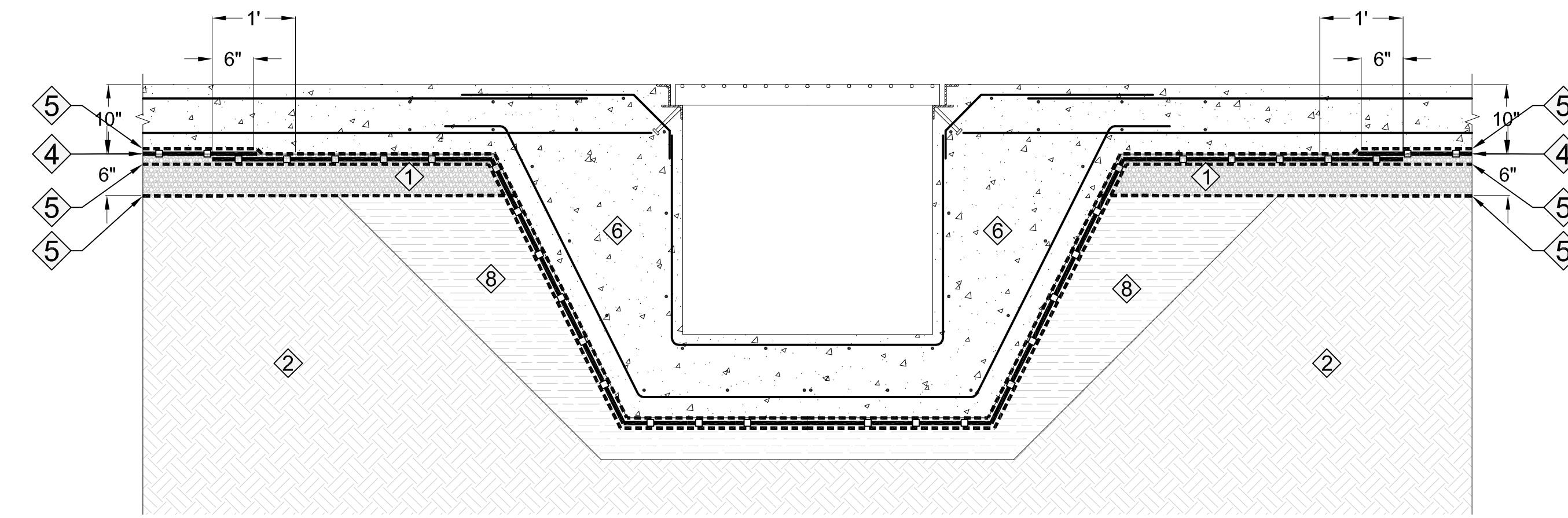




CONCRETE TRENCH DRAIN AT LAB PACK A
NTS ENV-3



TRENCH AT LAB PACK C
NTS ENV-3



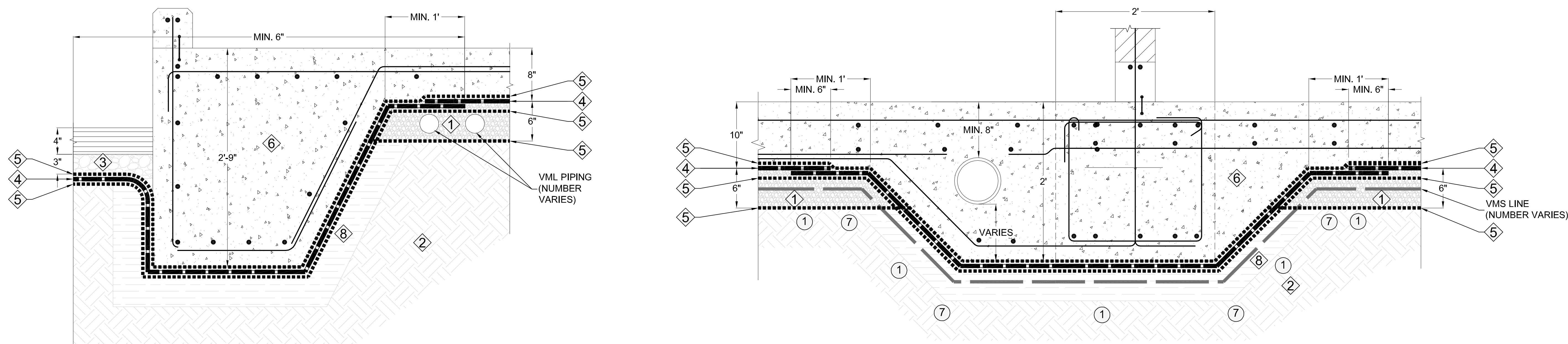
TRENCH AT LAB PACK WITHOUT OVERFLOW LINE D
NTS ENV-3

STERICYCLE VAPOR MITIGATION SYSTEM

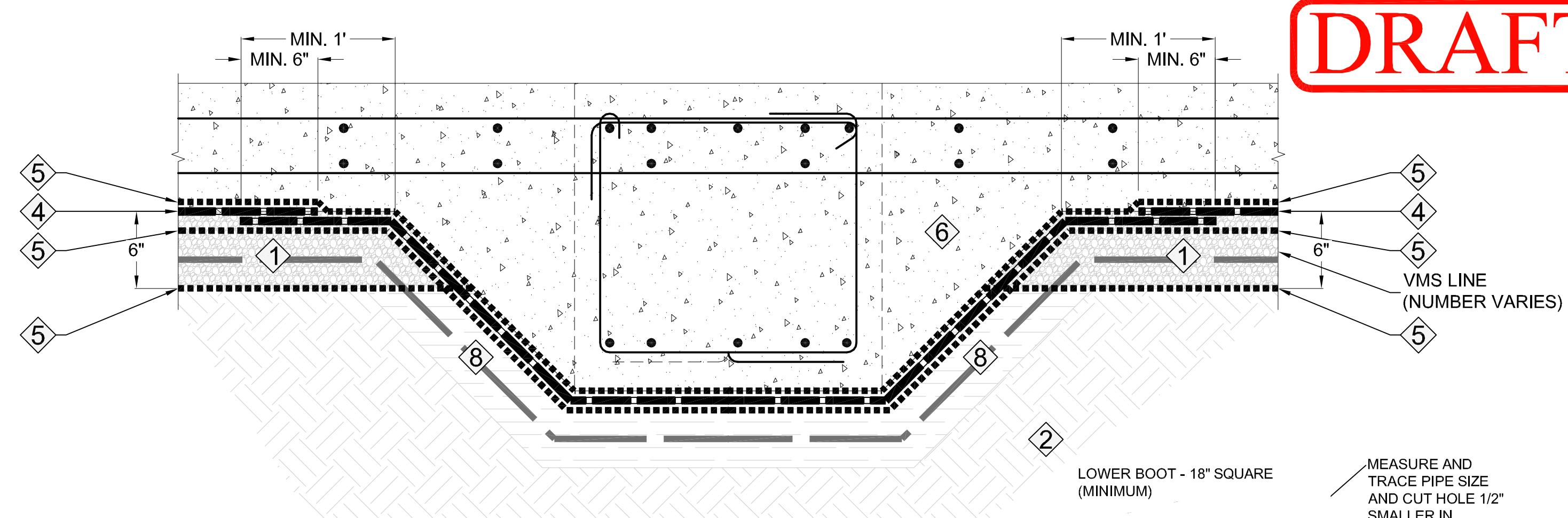
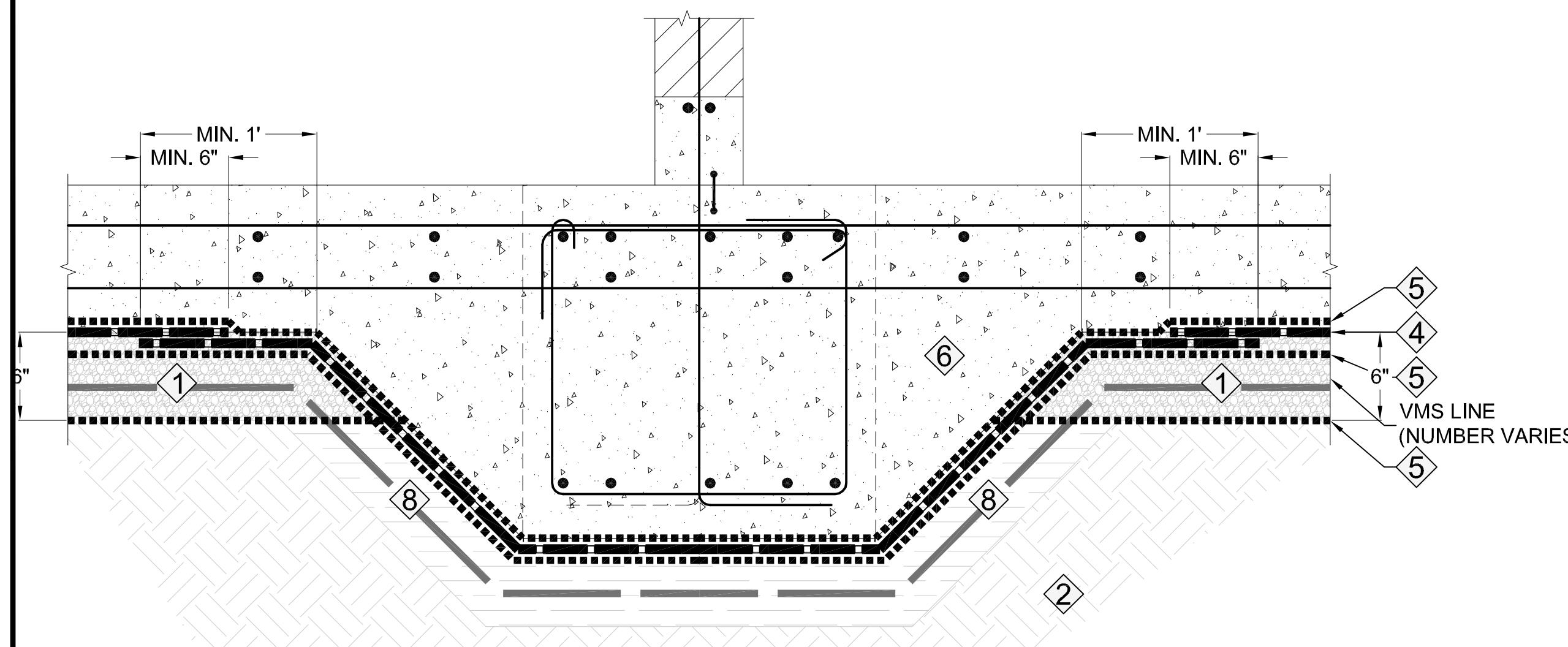
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PROJECT NO.	0100480050.00003
SHEET	ENV-3
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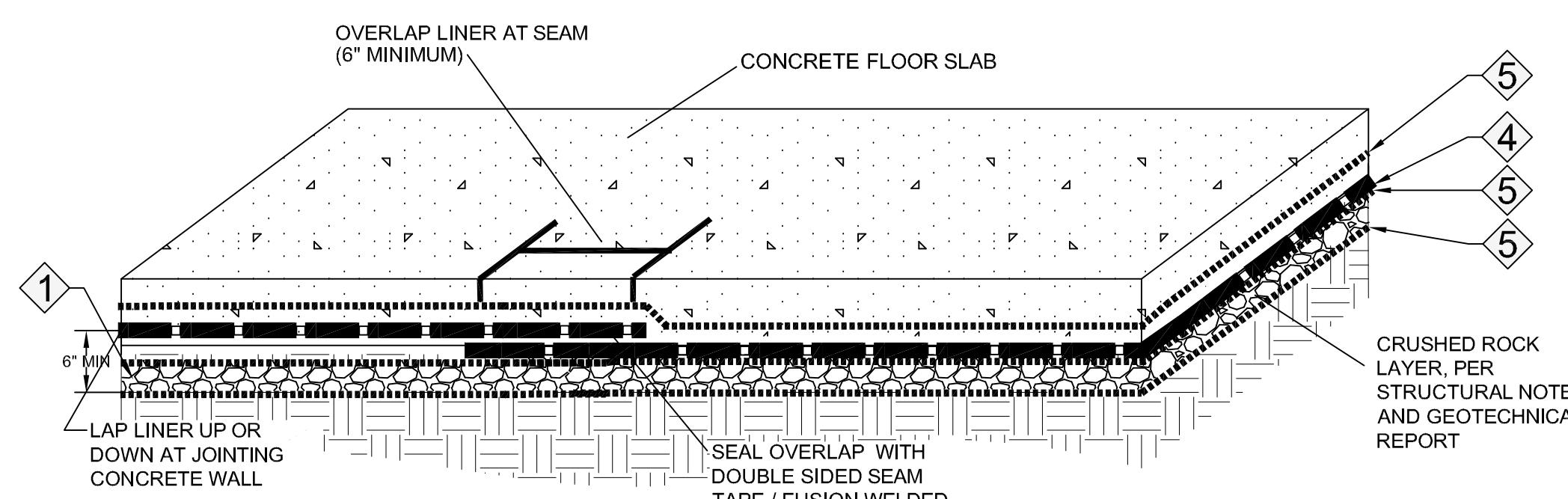
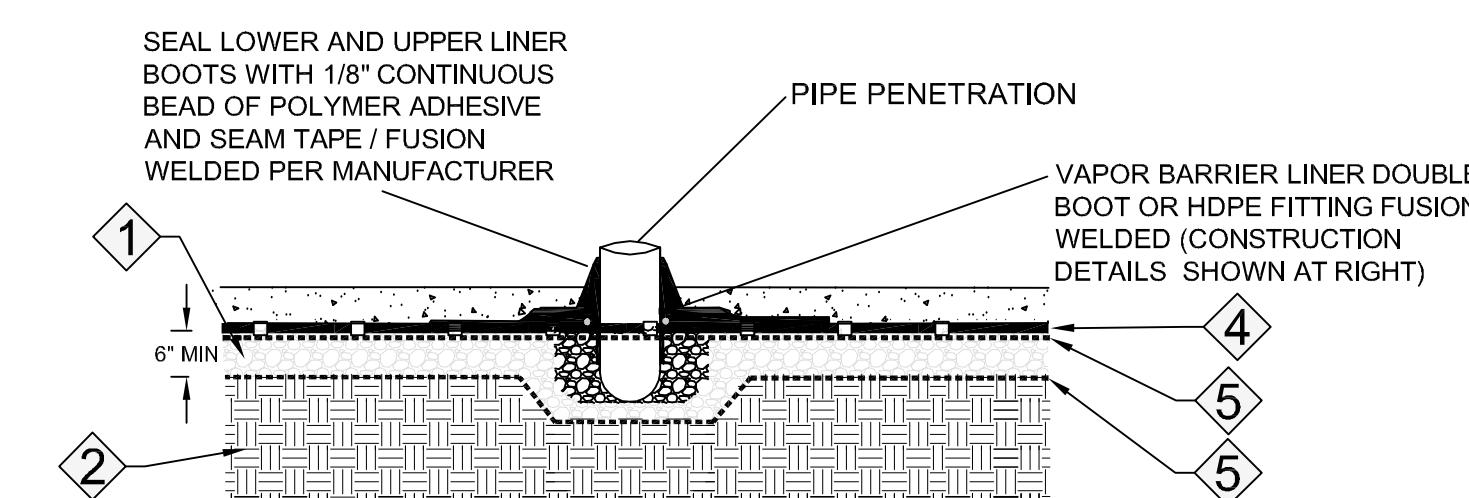
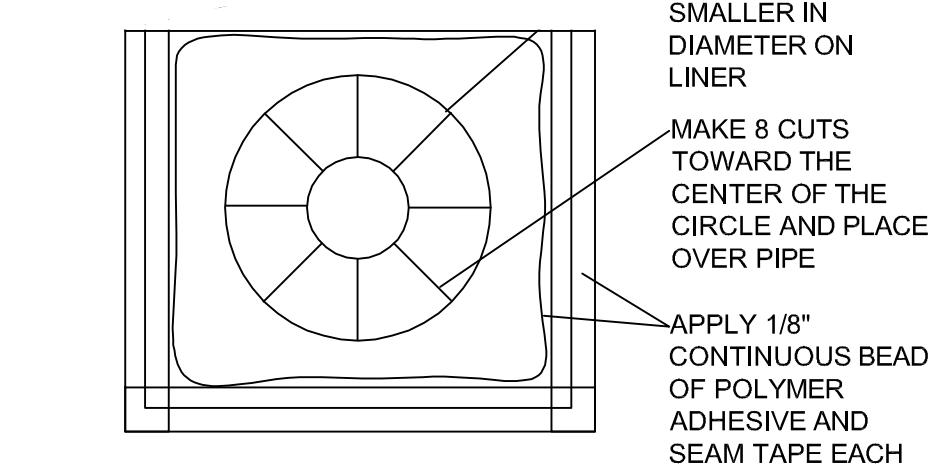
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VAPOR MITIGATION SYSTEM

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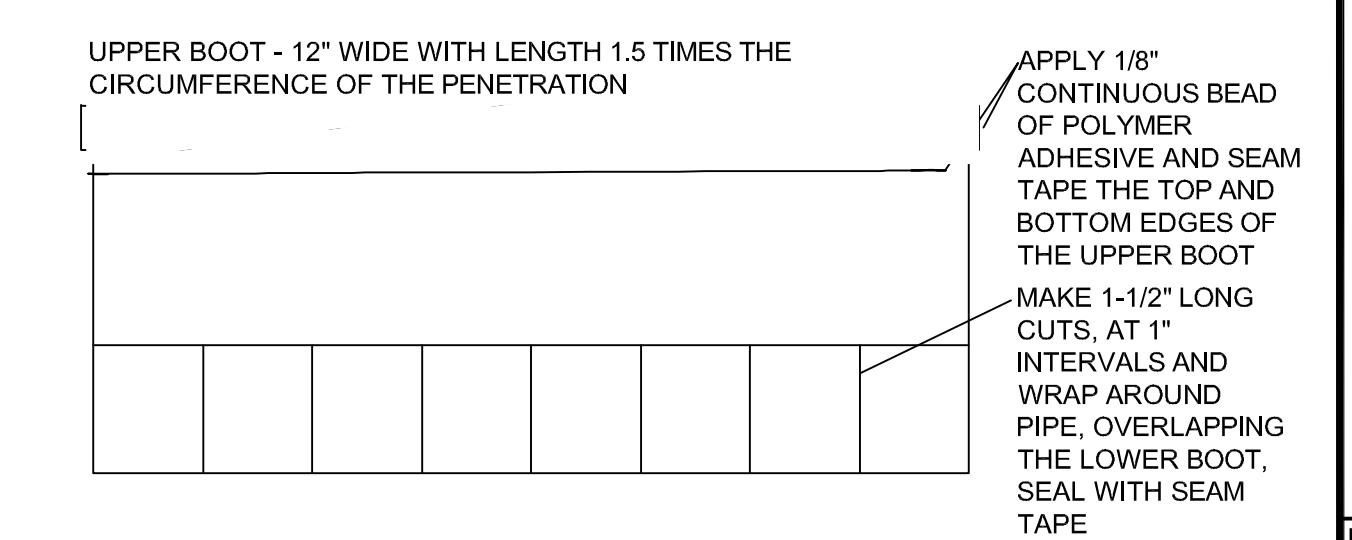
 EXTERIOR CONCRETE GRADE BEAM
NTS
ENV-4

 INTERIOR CONCRETE GRADE BEAM
NTS
ENV-4

 INTERIOR CONCRETE GRADE BEAM
NTS
ENV-4

 INTERIOR CONCRETE GRADE BEAM
NTS
ENV-4

 VAPOR BARRIER BELOW SLAB
NTS
ENV-4

 TYPICAL VAPOR BARRIER SEALING WITH PENETRATION
NTS
ENV-4


PLAN VIEW AROUND PENETRATION

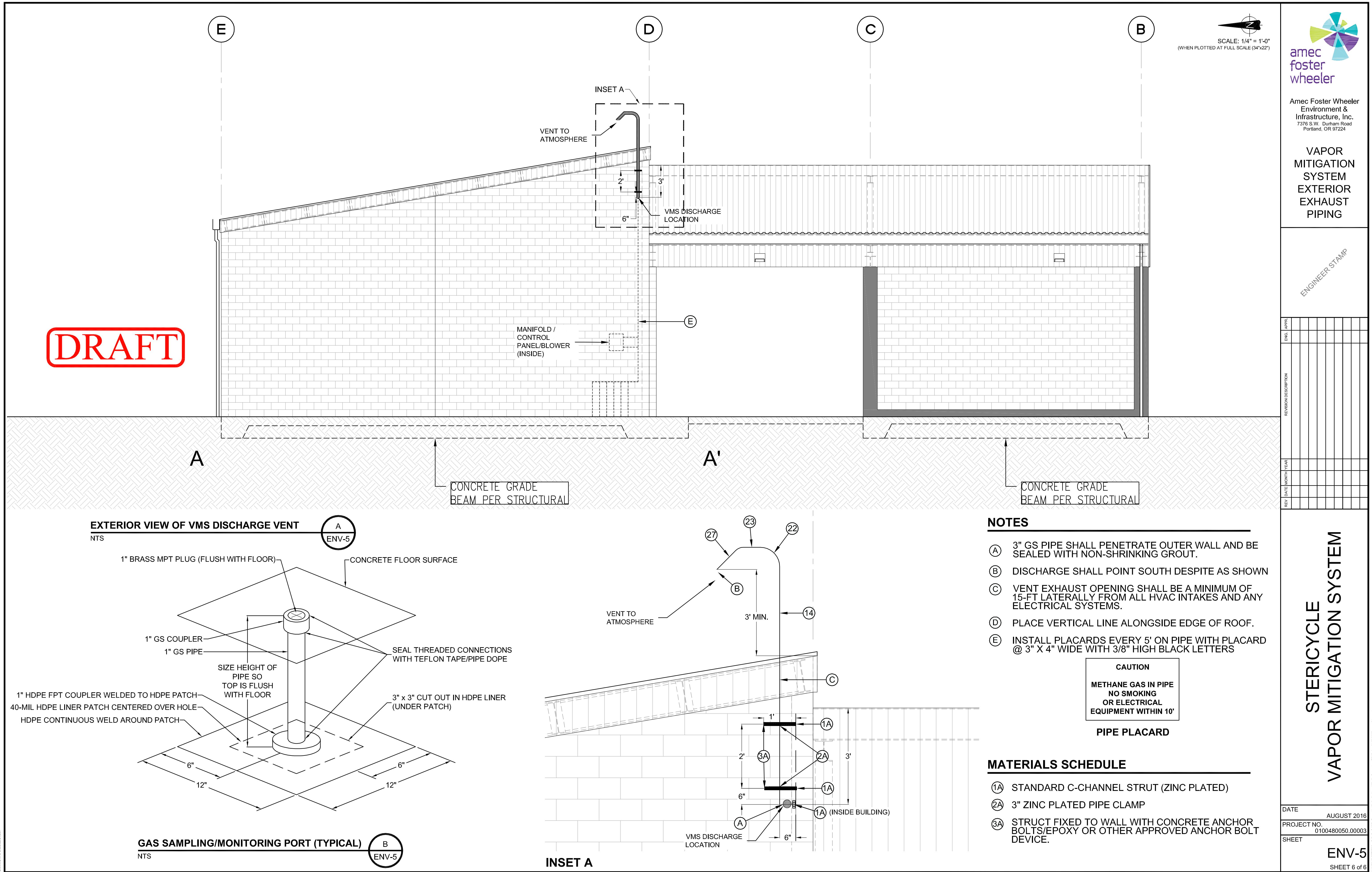
UPPER BOOT - 12" WIDE WITH LENGTH 1.5 TIMES THE CIRCUMFERENCE OF THE PENETRATION



NOTE: USE MANUFACTURER HDPE PENETRATION FOR FUSION WELDING, AS REQUIRED BY MANUFACTURER INSTALLATION REQUIREMENTS

 VAPOR BARRIER LINER DOUBLE BOOT CONSTRUCTION
NTS
ENV-4

 DATE AUGUST 2016
PROJECT NO. 0100480050.000003
SHEET ENV-4
SHEET 5 of 6



REVISION DESCRIPTION	ENG APPR.

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