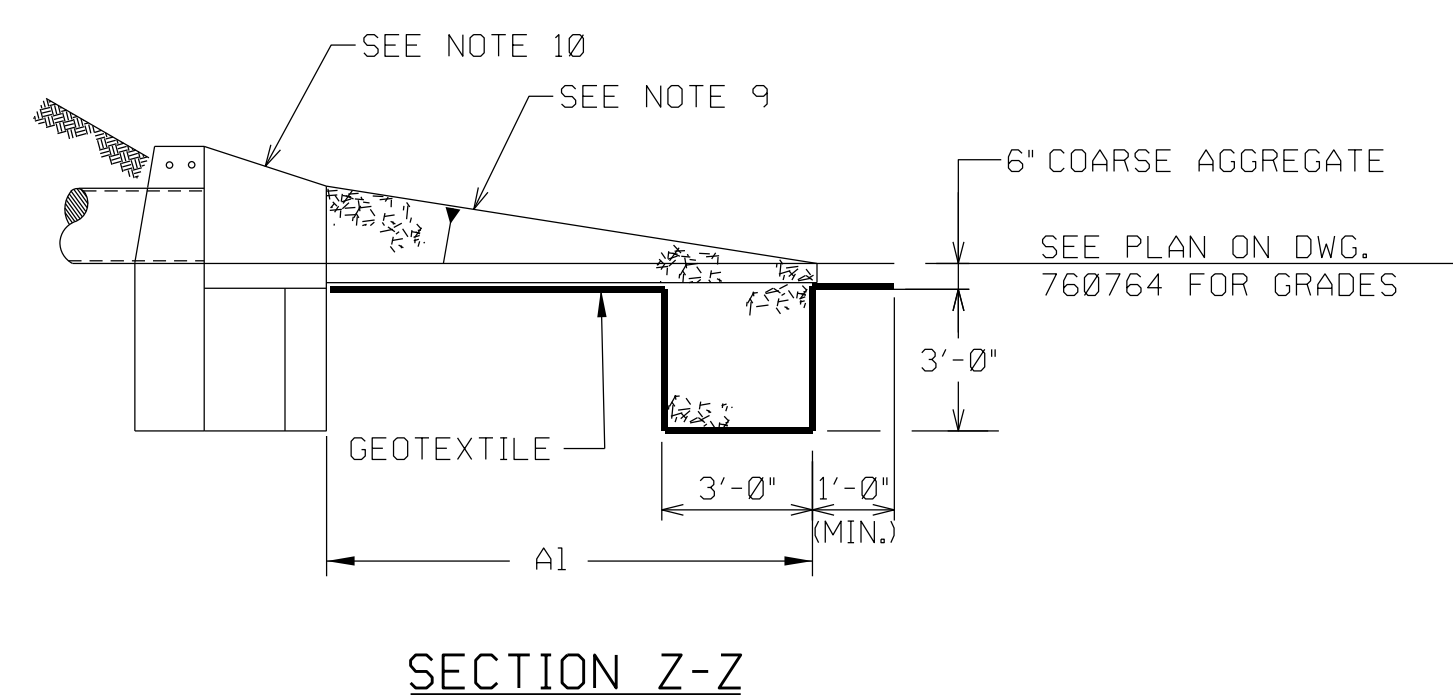
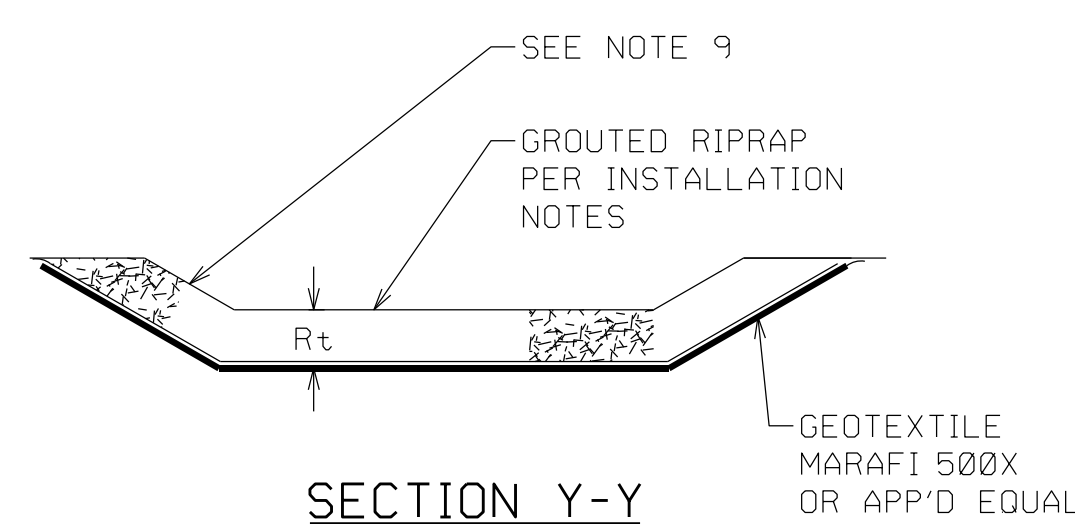


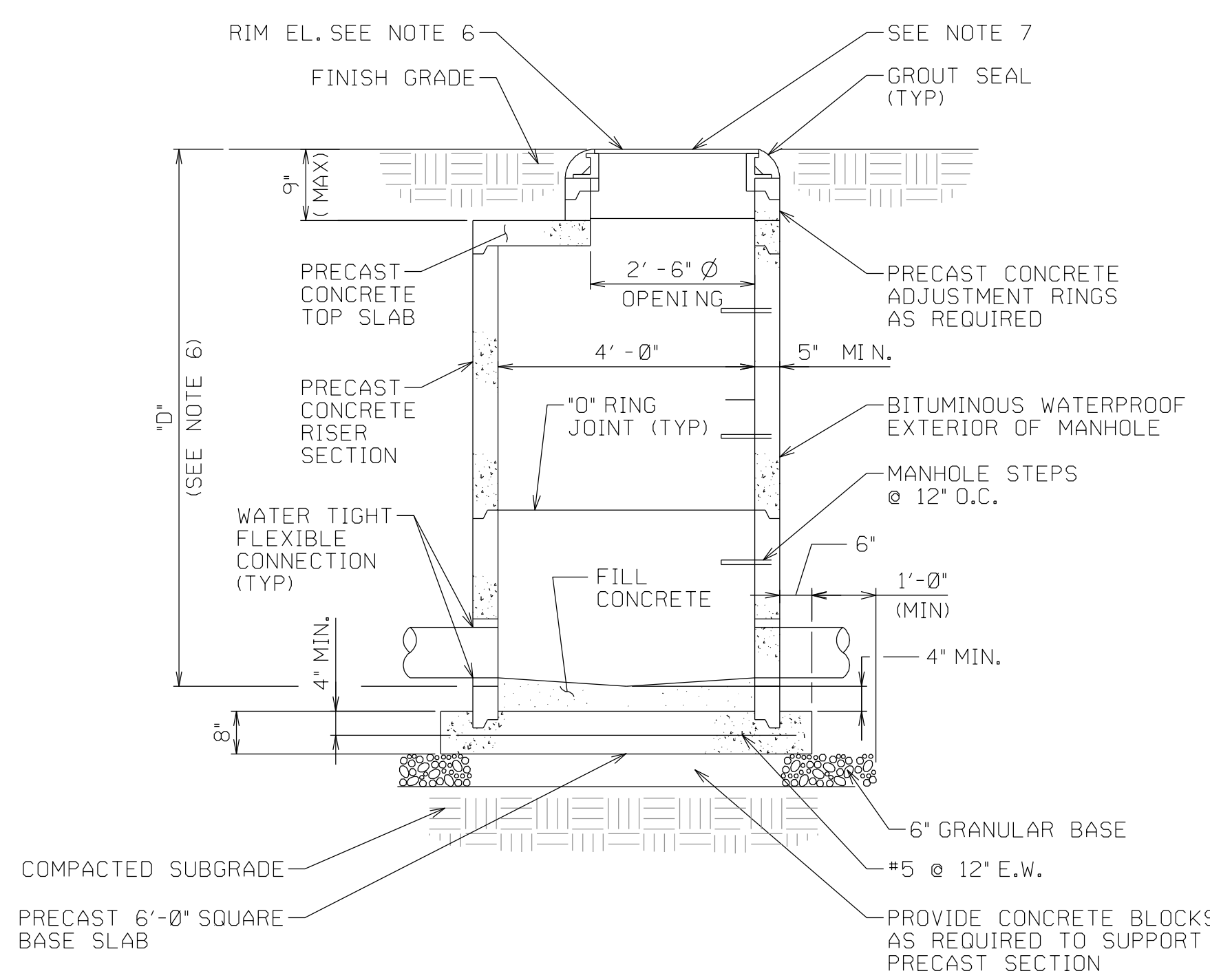
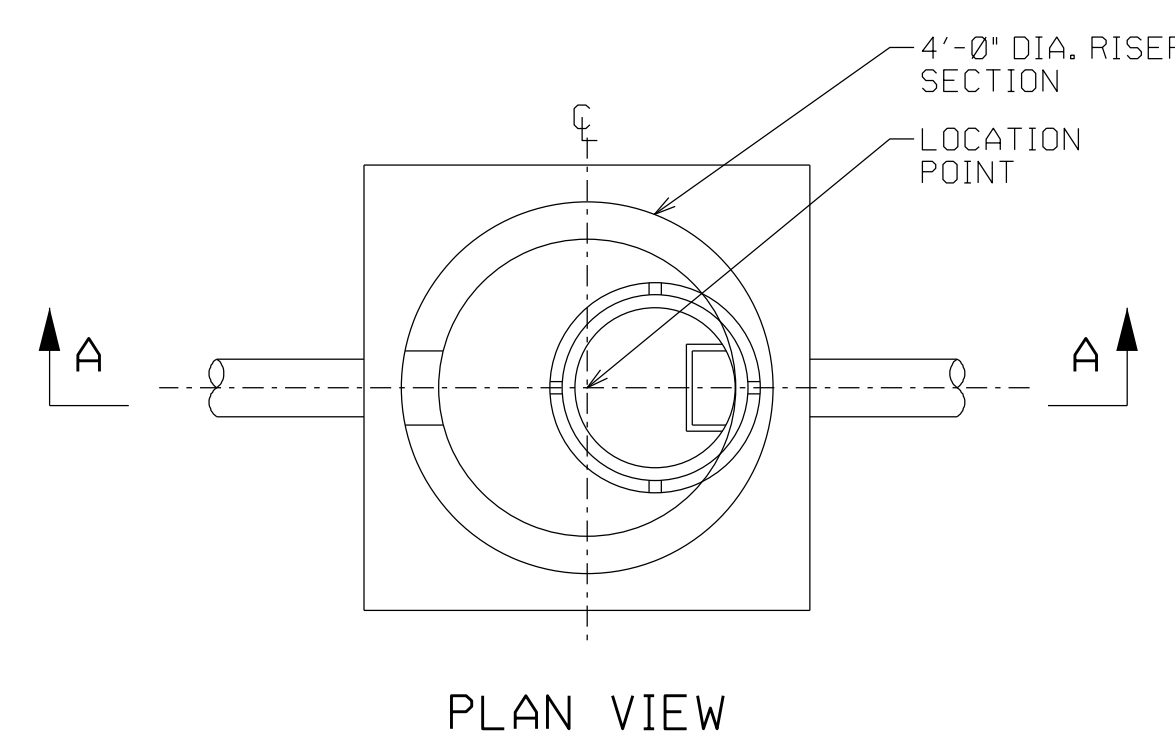
INSTALLATION NOTES:

1. BED THE BASE COURSE OF STONE WELL INTO THE GROUND WITH EDGES IN CONTACT WITH THE EXCAVATED BED LINED WITH FILTER FABRIC. ENSURE FILTER FABRIC HAS A MINIMUM OVERLAP OF 2 FEET AND IS SECURED WITH NAILS (2 INCH LONG WITH WASHERS) OR PINS (U-SHAPED WITH 9 INCH LEGS).
2. BED AND PLACE EACH SUCCEEDING COURSE IN EVEN CONTACT WITH THE PRECEDING COURSE USING SPALLS AND SMALL STONES TO FILL ANY OPEN JOINTS AND VOIDS IN THE RIPRAP. ENSURE THE FINISHED SURFACE PRESENTS AN EVEN, TIGHT SURFACE, TRUE TO THE LINE AND GRADES OF THE TYPICAL SECTIONS.
3. PREVENT EARTH, SAND OR FOREIGN MATERIAL FROM FILLING THE SPACES BETWEEN STONE.
4. AFTER STONES ARE IN PLACE; WET THEM THOROUGHLY, FILL THE SPACES BETWEEN THEM WITH GROUT AND PACK.
5. SWEEP THE SURFACE WITH A STIFF BROOM AFTER GROUTING.
6. GROUT SHALL MEET THE REQUIREMENTS OF ASTM C150 OR ASTM C595 FOR HYDRAULIC CEMENT AND BE PROVIDED WITH A CONSISTENCY THAT WILL FLOW INTO AND FILL ALL VOIDS.
7. DO NOT PLACE GROUT WHEN AIR TEMPERATURE IS BELOW 35 DEGREES F AND PROTECT FROM RAPID DRYING FOR AT LEAST 3 DAYS AFTER PLACEMENT.
8. APRON SIDE SLOPES NOT TO BE INSTALLED FOR RA*1 AND RA*2.
9. FOR HEADWALL DETAIL SEE THIS SHEET.
10. FOR HEADWALL DETAIL SEE THIS SHEET.



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE D50 (IN)	THICK. Rt (IN)	LENGTH A1 (FT)	INITIAL WIDTH A1w (FT)	TERMINAL WIDTH A2w (FT)
RA*1	12	6	12	8.0	3.00	12.25
RA*2	12	6	12	8.0	3.00	12.25
RA*3	15	6	12	10.0	3.75	13.00
RA*4	8	6	12	2.00	2.00	19.00

RIP-RAP APRON DETAIL
NOT TO SCALE

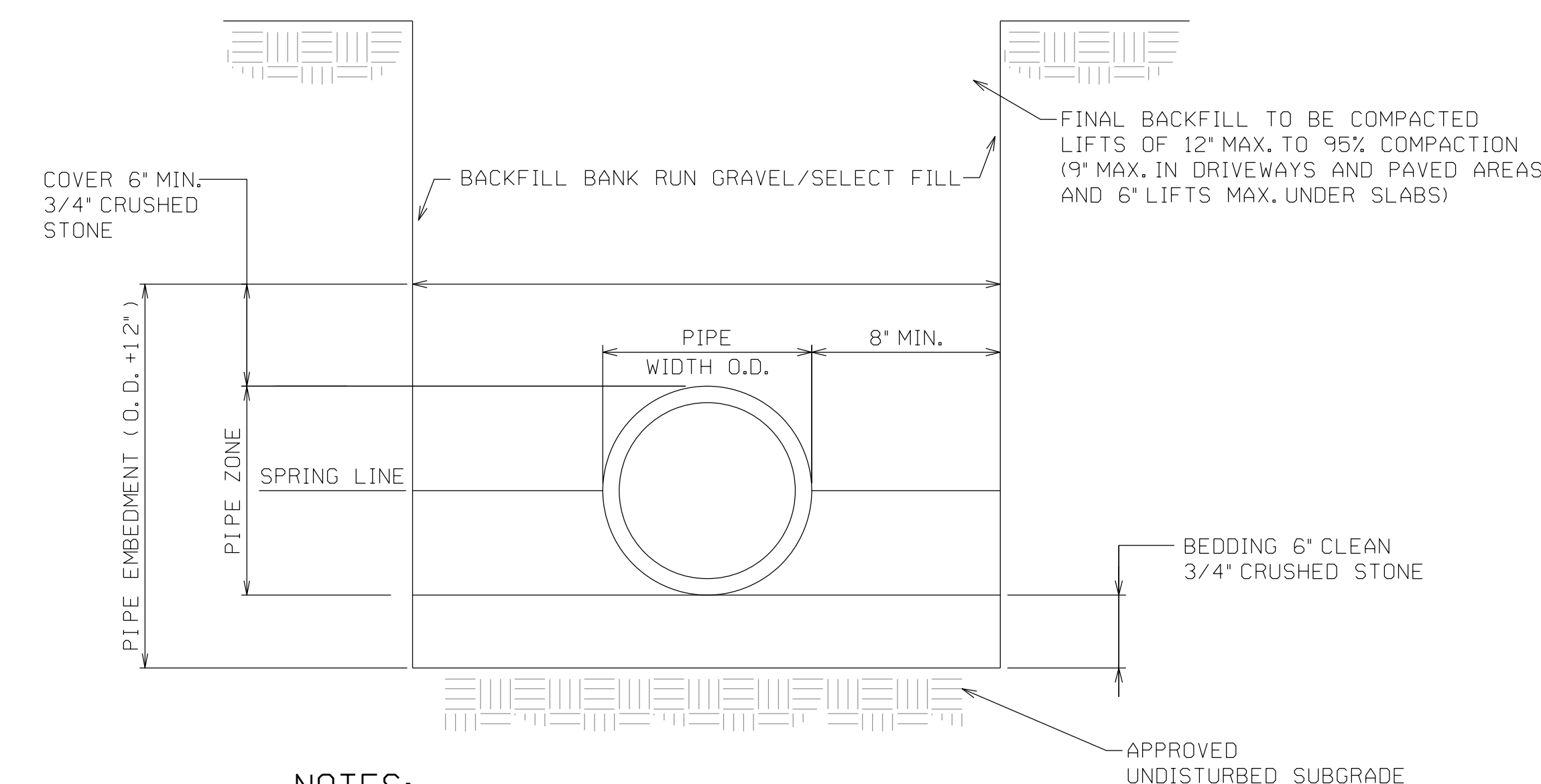


SECTION A-A

MANHOLE NOTES:

1. OPENINGS IN WALLS FOR PIPE SHALL BE MADE CLEANLY WITHOUT PERCUSSION TO MAXIMUM DIAMETER OF O.D. + 3". THE SPACE BETWEEN PIPE AND WALL SHALL THEN BE FILLED WITH GROUT, OR AN APPROVED JOINT INSERT ASSEMBLY.
2. WHEN LIFTING THE PRE-CAST MANHOLE, A BAR SHALL BE PLACED HORIZONTALLY THROUGH THE LIFTING HOLES, PROVIDED AT THE TIME OF MANUFACTURE. THE LIFTING DEVICES SHALL BE PLACED ONLY ON THAT BAR. THE BAR AND HOLES SHALL BE AS APPROVED BY THE ENGINEER. THE BAR HOLES SHALL BE FILLED WITH GROUT AFTER MANHOLE IS IN POSITION.
3. REINFORCING AND THICKNESS SHOWN MAY VARY DUE TO LOADING. PRECASTER RESPONSIBLE FOR DESIGN OF REINFORCING AND THICKNESS TO MEET H20 LOADS.
4. MANHOLE STEPS SHALL MEET THE REQUIREMENTS OF ASTM C478.
5. PROVIDE ONE OF THE FOLLOWING FOR MANHOLE STEPS OR AN APPROVED EQUAL.
 - A- CAMPBELL FOUNDRY CO. CAST IRON PATTERN NO. 2680
 - B- M.A. INDUSTRIES STEEL REINFORCED COPOLYMER POLY-PROPYLENE PS2-PE MANHOLE STEP
 - C- LANE INTERNATIONAL COPOLYMER POLY-PROPYLENE P-14938 MANHOLE STEP.
6. SEE SCHEDULE ON DWG. 760764 FOR NUMBER OF MANHOLES, REQUIRED DEPTHS (D) AND RIM ELEVATIONS.
7. FRAME & SOLID LID FOR MANHOLES S.M.-1 THRU S.M.-4 AND S.M.-8 SHALL BE NEENAH HEAVY DUTY R-1557 OR APPROVED EQUAL. GRATED LIDS SHALL BE PROVIDED FOR MANHOLES S.M.-5 THRU S.M.-7 AND S.M.-9. FOR LETTERING USE 3/4" WIDE CAST LETTERS. TOP OF LETTERS TO BE FLUSH WITH SURFACE OF CASTING. SIZE 1/4" X 5/8" X 3/8" LETTERS. USE 'D' FOR STORM SEWER MANHOLES. FRAME AND LID.
8. PRECAST SECTIONS SHALL BE SEALED BY A RUBBER O-RING GASKET IN ACCORDANCE WITH ASTM DESIGNATION C-443.
9. PRECAST CONSTRUCTION SHALL BE IN ACCORDANCE WITH PSE&G GENERAL SPEC. NO. 13-CIVIL06. *PRECAST CONCRETE UNDERGROUND UTILITY, DRAINAGE & MISCELLANEOUS STRUCTURES FOR SWITCHING AND SUBSTATIONS.

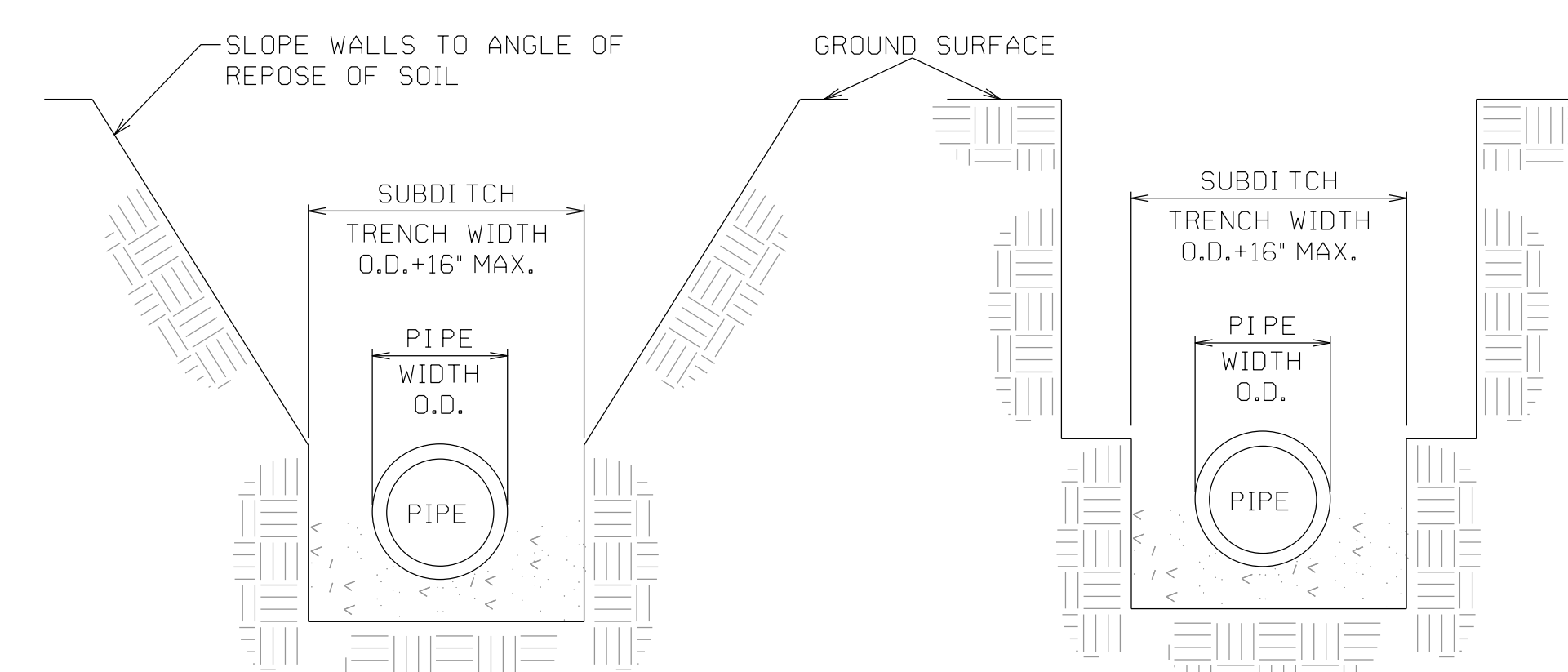
STORM SEWER MANHOLE DETAIL
NOT TO SCALE



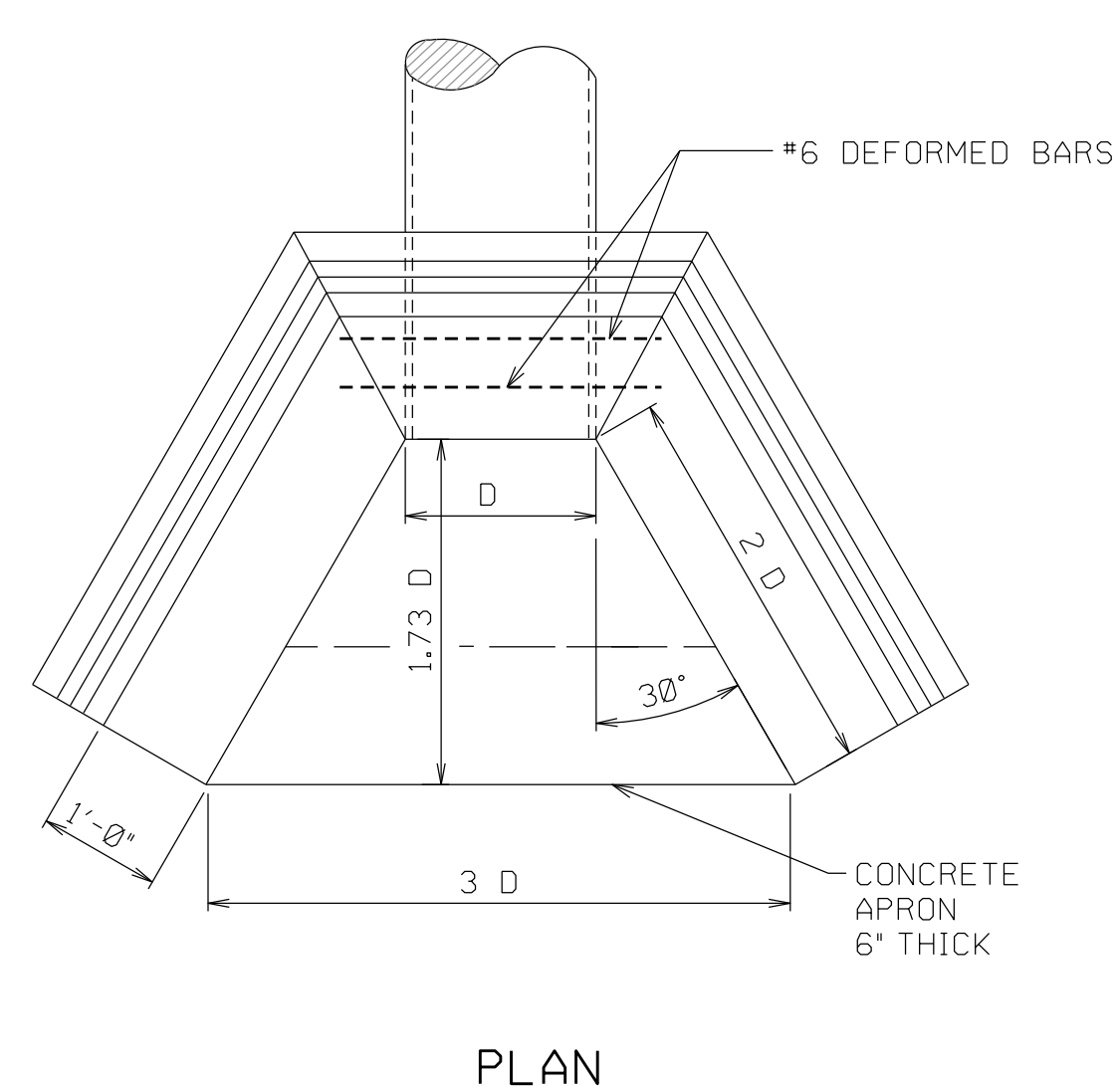
NOTES:

1. WORK SHALL BE IN ACCORDANCE WITH PSE&G SPEC. 15-CIVIL 15, 'EXCAVATION AND TRENCHING FOR SWITCHING AND SUBSTATIONS'
2. PIPE EMBEDMENT SHALL BE 3/4' CLEAN CRUSHED STONE.
3. WHERE SUBGRADE IS UNACCEPTABLE FOUNDATION SHALL BE REQUIRED AS SPECIFIED BY THE ENGINEER.
4. TYPICAL CONCRETE FOUNDATION IS SHOWN BELOW.
5. ENTIRE TRENCH WIDTH SHALL BE BACKFILLED AS SPECIFIED IN THE TRENCH DETAIL ABOVE.
6. FOR WIDE TRENCHES (GREATER THAN 6" PIPE DIA.) SEE TYPICAL SUBDITCH TRENCH DETAIL BELOW.

PIPE BEDDING DETAIL
NOT TO SCALE

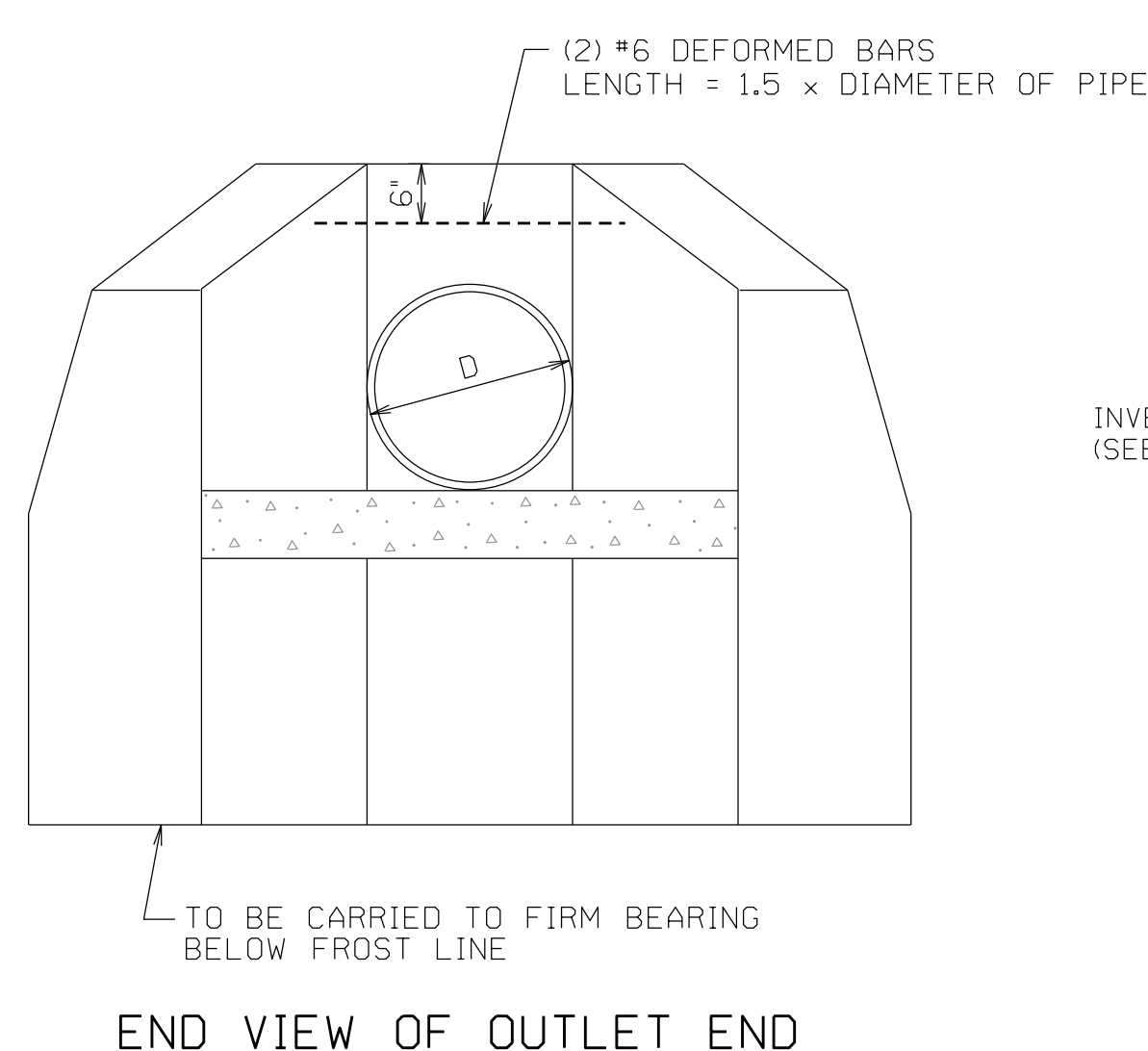


TYP. SUBDITCH TRENCH DETAIL FOR WIDE TRENCHES
NOT TO SCALE

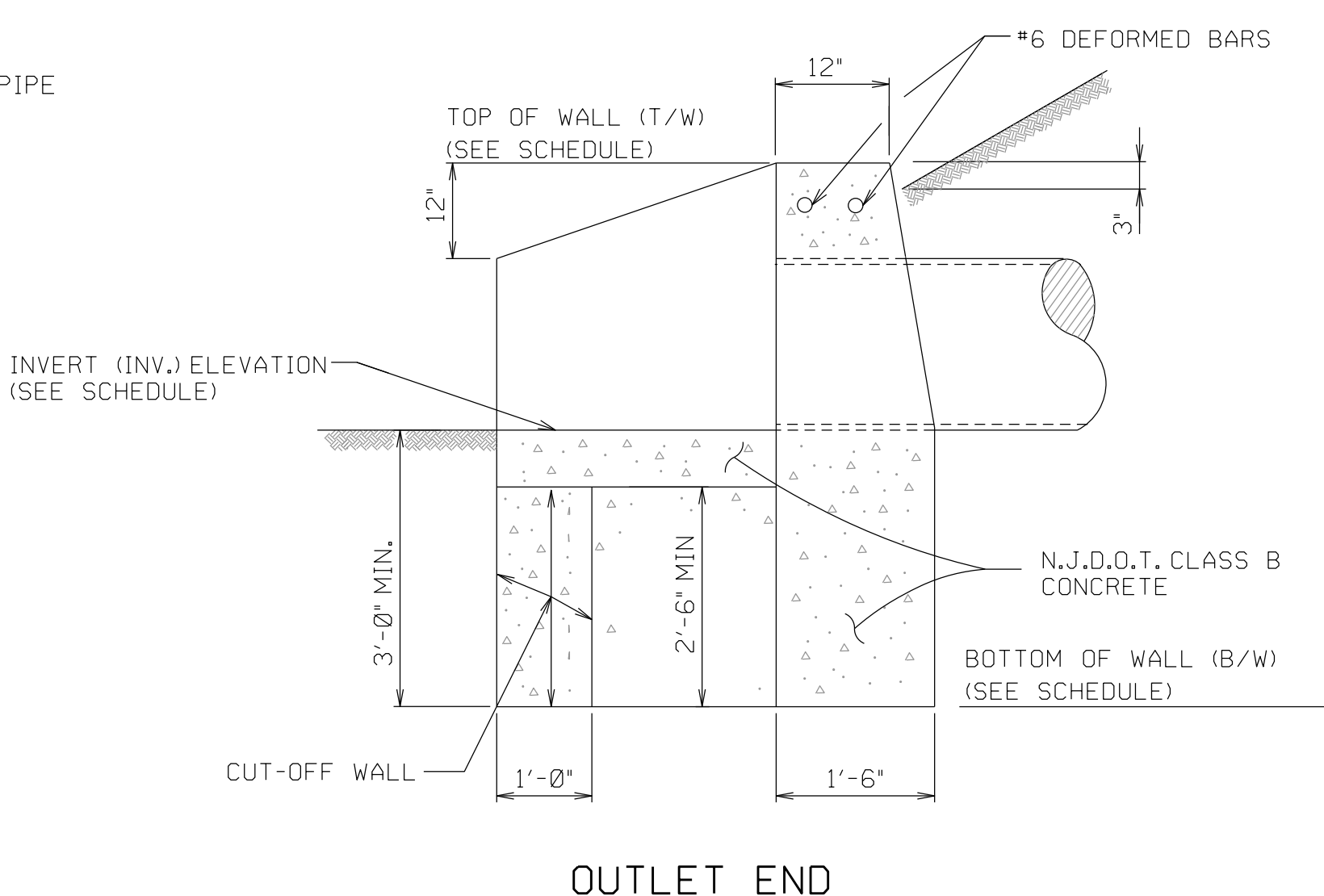


HEADWALL NOTES:

1. ALL EDGES TO BE CHAMFERED 1 INCH.
2. EXPOSED PORTIONS OF WALL TO BE RUBBED AND FLOATED.
3. FOR RIPRAP OUTLET PROTECTION SEE DETAIL THIS SHEET.
4. APRONS SHALL BE 6" THICK CONCRETE AND FLAT AT OUTLET ENDS.
5. ALL CONCRETE SHALL BE N.J. D.O.T. CLASS 'B' WITH A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS.
6. PRECAST CONSTRUCTION SHALL BE IN ACCORDANCE WITH PSE&G GENERAL SPEC. NO. 13-CIVIL06, 'PRECAST CONCRETE UNDERGROUND UTILITY, DRAINAGE & MISCELLANEOUS STRUCTURES FOR SWITCHING AND SUBSTATIONS'.



CONCRETE HEADWALL AND APRON DETAIL
NOT TO SCALE



HEADWALL SCHEDULE				
NO.	PIPE SIZE	T/W	B/W	INV.
HW-1&2	12"	57'-0"	52'-0"	55'-0"
HW-3	15"	55'-6"	50'-6"	53'-6"
HW-4	8"	55'-2"	50'-6"	53'-6"

NOT FOR CONSTRUCTION

SARGENT & LUNDY
 PROJECT NO. 13739-103
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AREA ELEV.: 6422

GENERAL NOTES

USE PRINTS OF LATEST REVISION ONLY. DO NOT SCALE - USE DIMENSIONS ONLY. FOR LIST OF REFERENCE DRAWINGS SEE DRAWING NO 760764. THIS DRAWING SUPERSEDES NONE. THIS DRAWING IS SHEET NO 1 OF 1 SHEETS.

EUGENE R. PORZIO
 N.J. PROFESSIONAL ENGINEER
 L.I.C. NO. 34431
 C.O.A. 24627971100

NO	DATE	DESCRIPTION	DWN	CKD	EXD	APD
REVISION						
LAWNSIDE SUBSTATION 69/13KV SUBSTATION DRAINAGE DETAILS SHEET 1						
PUBLIC SERVICE ELECTRIC AND GAS COMPANY ELECTRIC DELIVERY COMPANY - ASSET RELIABILITY, NEWARK N.J.						
DRAWN: I. INTJ. CHECKED: G. PORZIO SCALE: NONE						
DATE: 02/24/2020 EXAMINED: _____						
WBS/SD: 5.92002J01021 APPROVED: _____						
SARGENT & LUNDY						
760765 A - 0						