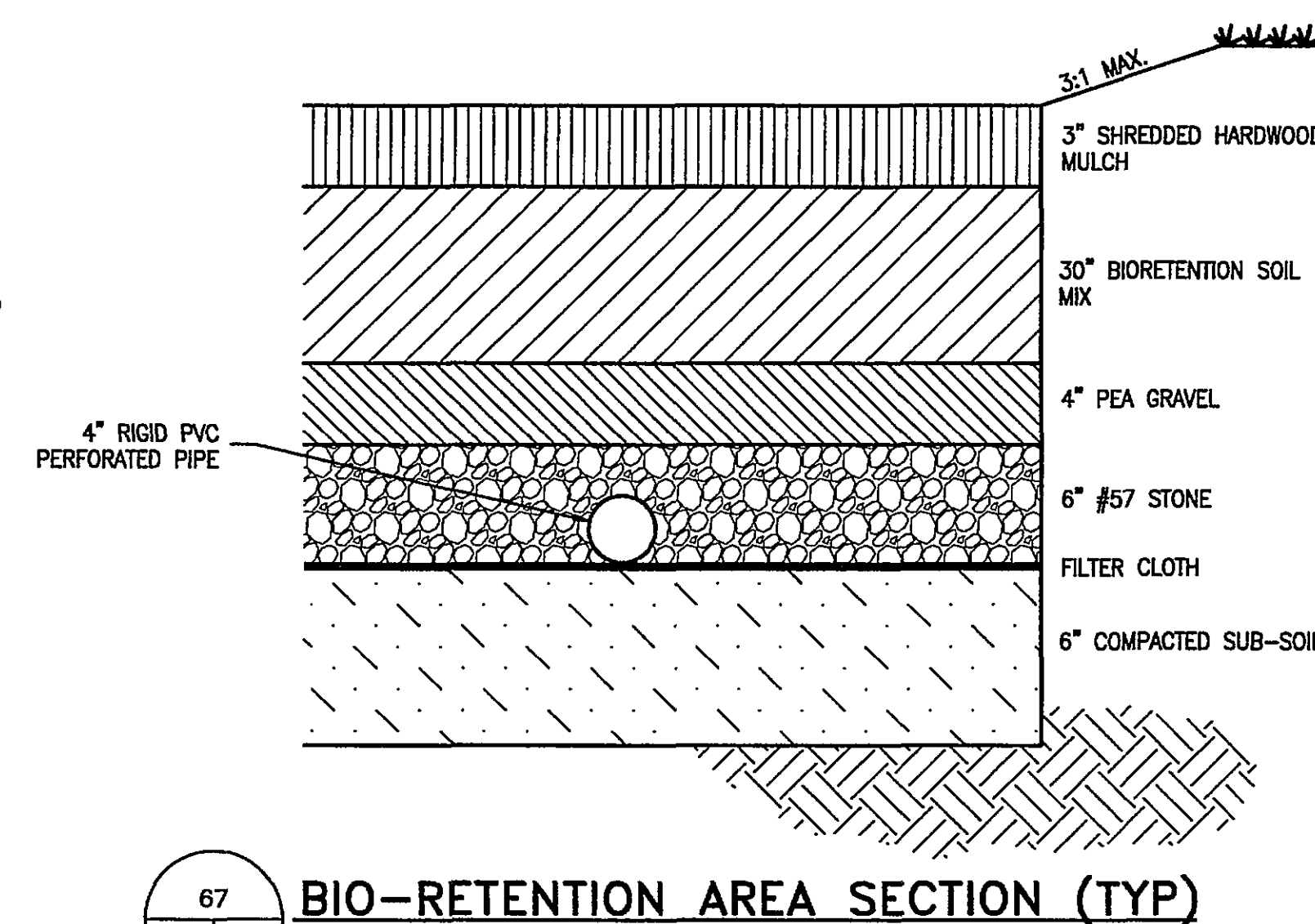
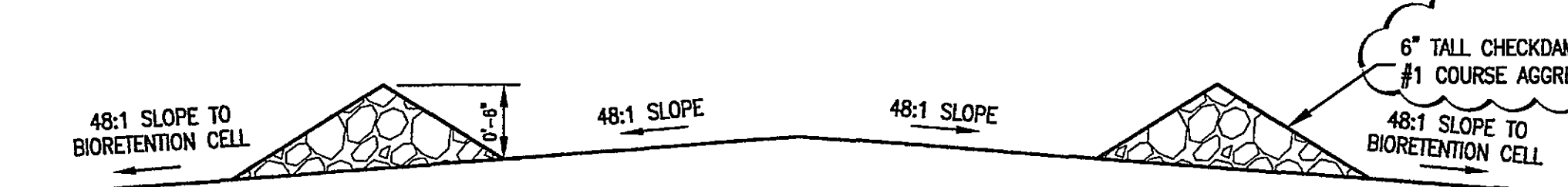
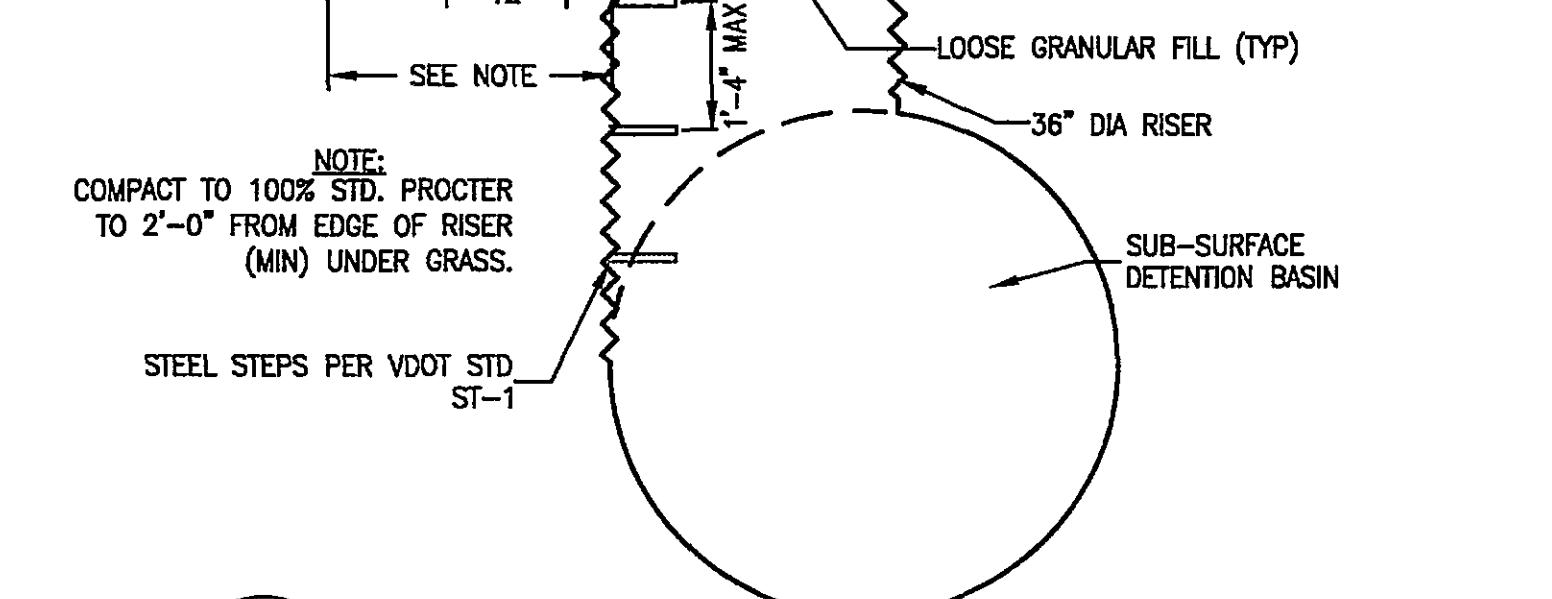


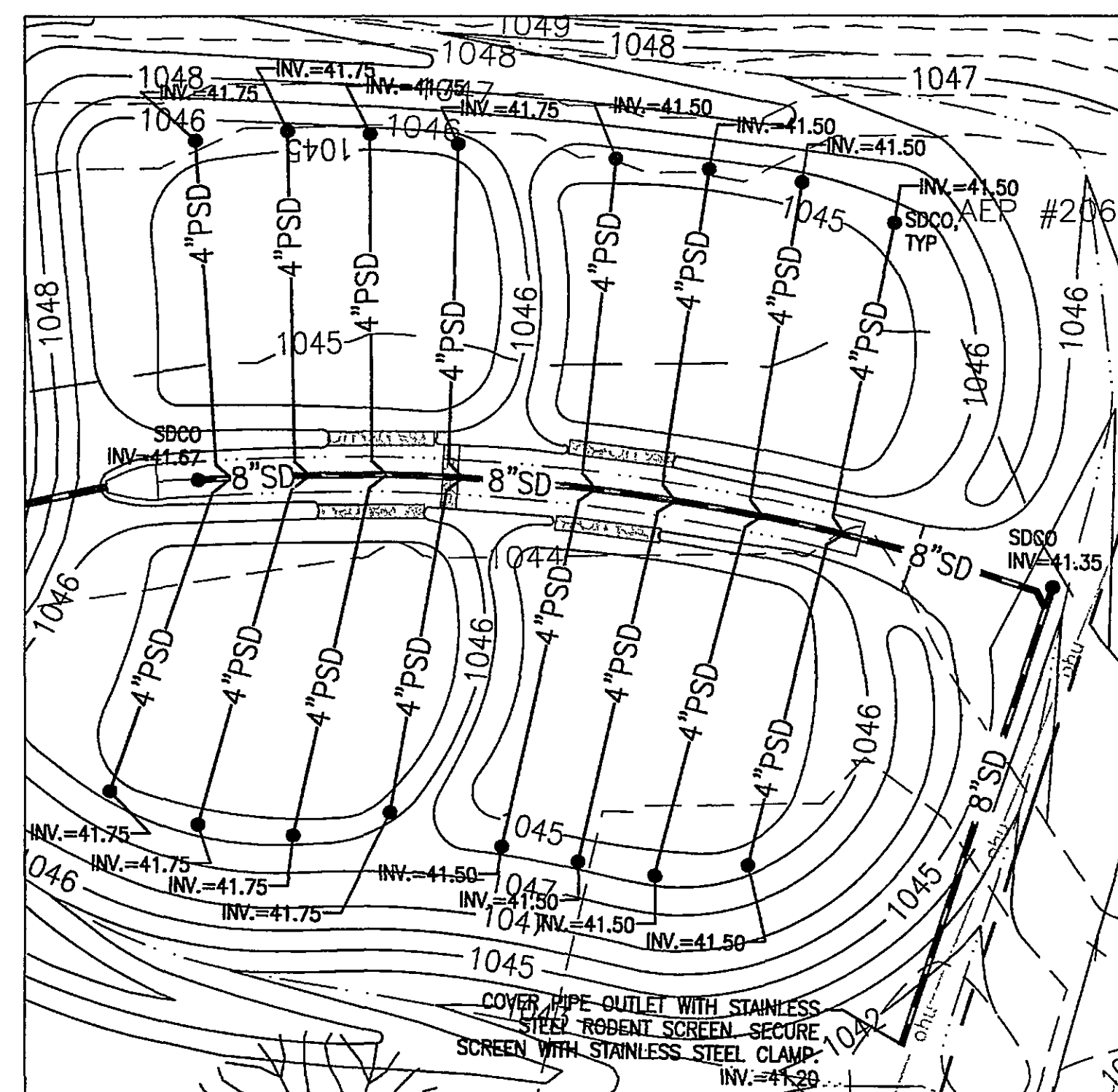


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Technical drawing showing a cross-section and plan view of a storm drain installation. The cross-section (top) shows a 4" DIA MH-1 with a "STORM" cast in the lid, set in a bed of non-shrink grout. The plan view (bottom) shows the storm drain with a 4" diameter opening, a 12" diameter concrete collar, and a 15" diameter concrete collar. Labels include: SET IN BED OF NON-SHRINK GROUT, PAVEMENT, 4" DIA MH-1 WITH "STORM" CAST IN LID, 2'-2", 4", 15", CAST-IN-PLACE CONC COLLAR, and WRAP RISER WITH BUILDING FELT PRIOR TO POURING CONC COLLAR.



69 BIORETENTION SWALE TYPICAL SECTIONS



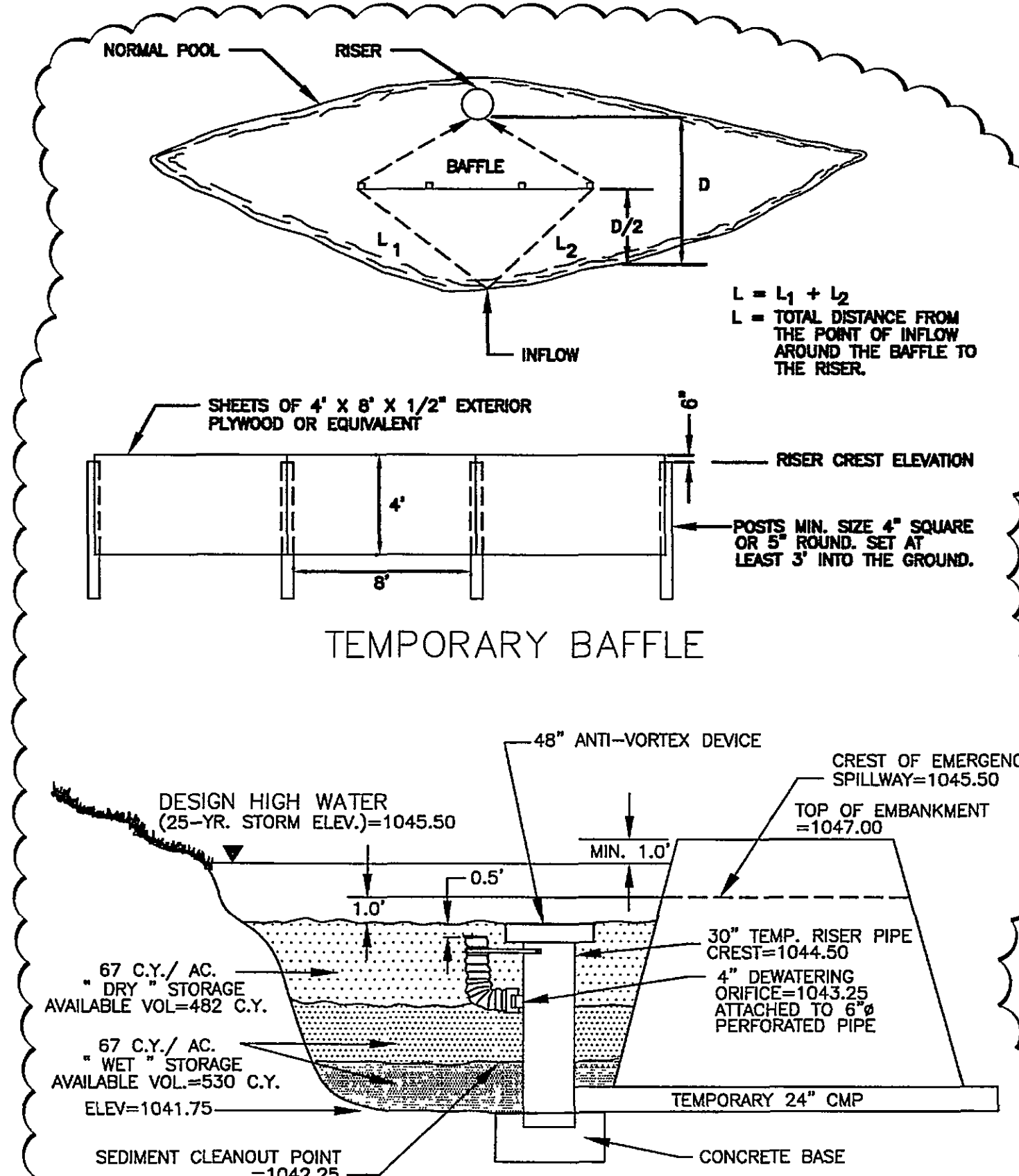
60

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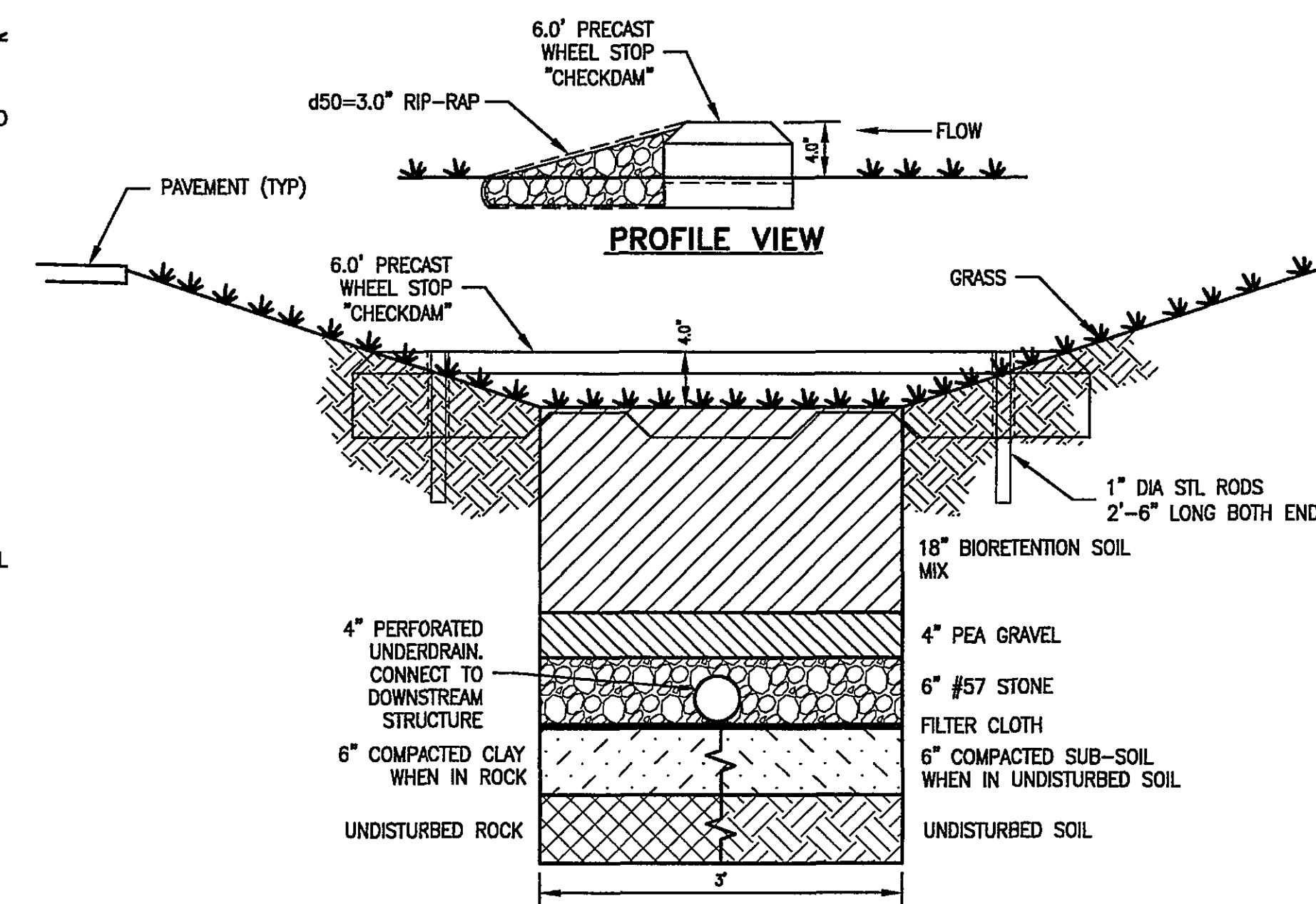
BIO-R

SCALE: 1"=2"

LEGEND:
PSD PERFORATED STORM DRAIN, RIGID, (NON-CORRUGATED PVC)
SD NON-PERFORATED STORM DRAIN (NON-CORRUGATED PVC)
SDCO STORM DRAIN CLEANOUT, INVERTS SHALL BE BASED UPON
DETAIL 67 THIS SHEET



TEMPORARY SEDIMENT BASIN OUTLET DETAIL



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SET IN BED OF NON-SHRINK GROUT

2'-2"

4' DIA DI-1 or MH-1

4"

12"

5"

1'-4" MAX

SEE NOTE

CAST-IN-PLACE CONC COLLAR

WRAP RISER WITH BUILDING FELT PRIOR TO POURING CONC COLLAR

LOOSE GRANULAR FILL (TYP)

36" DIA RISER

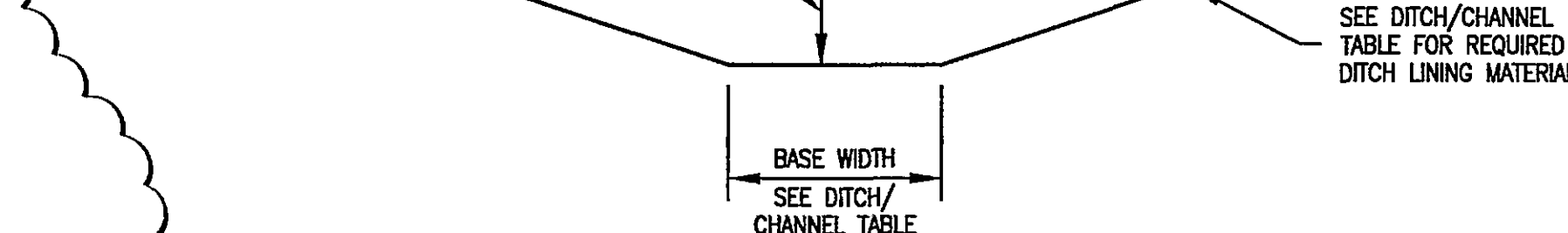
SUB-SURFACE DETENTION BASIN

NOTE:
COMPACT TO 100% STD. PROCTER
TO 2'-0" FROM EDGE OF RISER
(MIN) UNDER GRASS.

STEEL STEPS PER VDOT STD

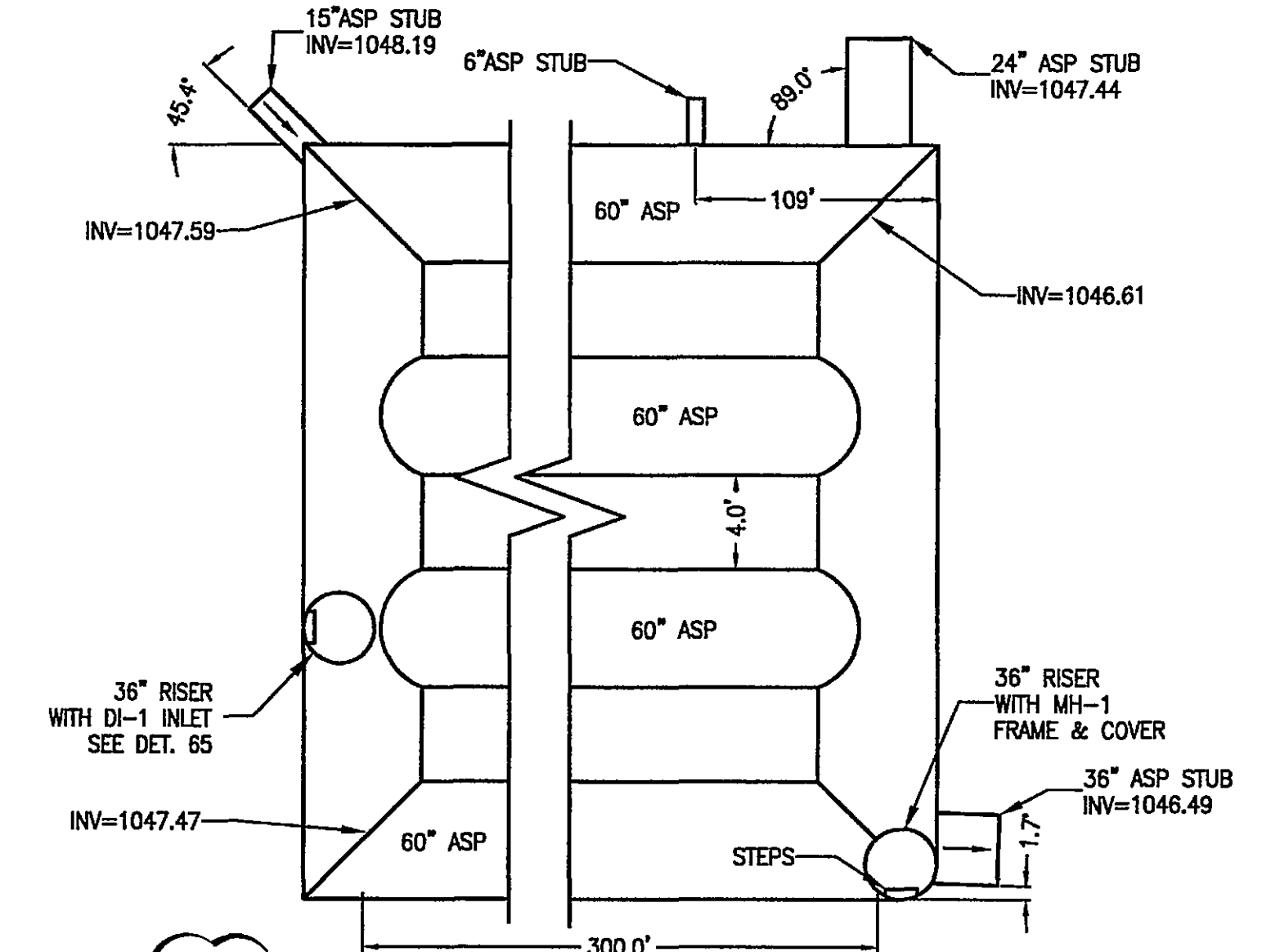
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DITCH/CHANNEL LOCATION	BASE WIDTH	LEFT SIDE MAX SLOPE	RIGHT SIDE MAX SLOPE	Q-2 CFS	Q-2 MAX F.T/S	Q-10 CFS	Q-10 MAX F.T/S	D-10 MAX F.T	MIN. DEPTH-FT	FLOW REGIME	CHANNEL LINING
SWALE "A"	3.00'	3:1 (max)	3:1 (max)	2.28	1.74	3.07	1.91	0.39	0.89	SUB-CRITICAL	GRASS
SWALE "B"	3.00'	3:1 (max)	3:1 (max)	0.86	1.51	1.18	1.68	0.20	0.70	SUB-CRITICAL	GRASS
SWALE "C"	3.00'	3:1 (max)	3:1 (max)	1.27	1.58	1.73	1.74	0.26	0.76	SUB-CRITICAL	GRASS
SWALE "D"	3.00'	3:1 (max)	3:1 (max)	2.05	1.69	2.79	1.85	0.37	0.87	SUB-CRITICAL	GRASS
SWALE "E"	3.00'	3:1 (max)	3:1 (max)	1.41	2.12	1.92	2.34	0.22	0.72	SUB-CRITICAL	GRASS
SWALE "F"	3.00'	3:1 (max)	3:1 (max)	1.37	1.97	1.86	2.18	0.23	0.73	SUB-CRITICAL	GRASS
SWALE "G"	3.00'	3:1 (max)	3:1 (max)	0.50	1.33	0.69	1.46	0.14	0.64	SUB-CRITICAL	GRASS
SWALE "H" (FIRST 100')	3.00'	3:1 (max)	3:1 (max)	2.03	3.57	2.75	3.95	0.19	1.19	SUPER-CRITICAL	EC-2
SWALE "H" (LAST 130')	3.00'	3:1 (max)	3:1 (max)	2.03	2.53	2.75	3.73	0.58	1.08	SUB-CRITICAL	GRASS
SWALE "I"	3.00'	3:1 (max)	3:1 (max)	0.29	1.45	0.40	1.84	0.08	1.08	SUPER-CRITICAL	EC-2
SWALE "J"	0.00'	3:1 (max)	3:1 (max)	2.24	3.34	3.05	3.60	0.58	1.08	SUB-CRITICAL	EC-2
DITCH "K"	8.00'	3:1 (max)	3:1 (max)	3.20	3.16	5.70	3.65	0.72	1.72	SUPER-CRITICAL	EC-2

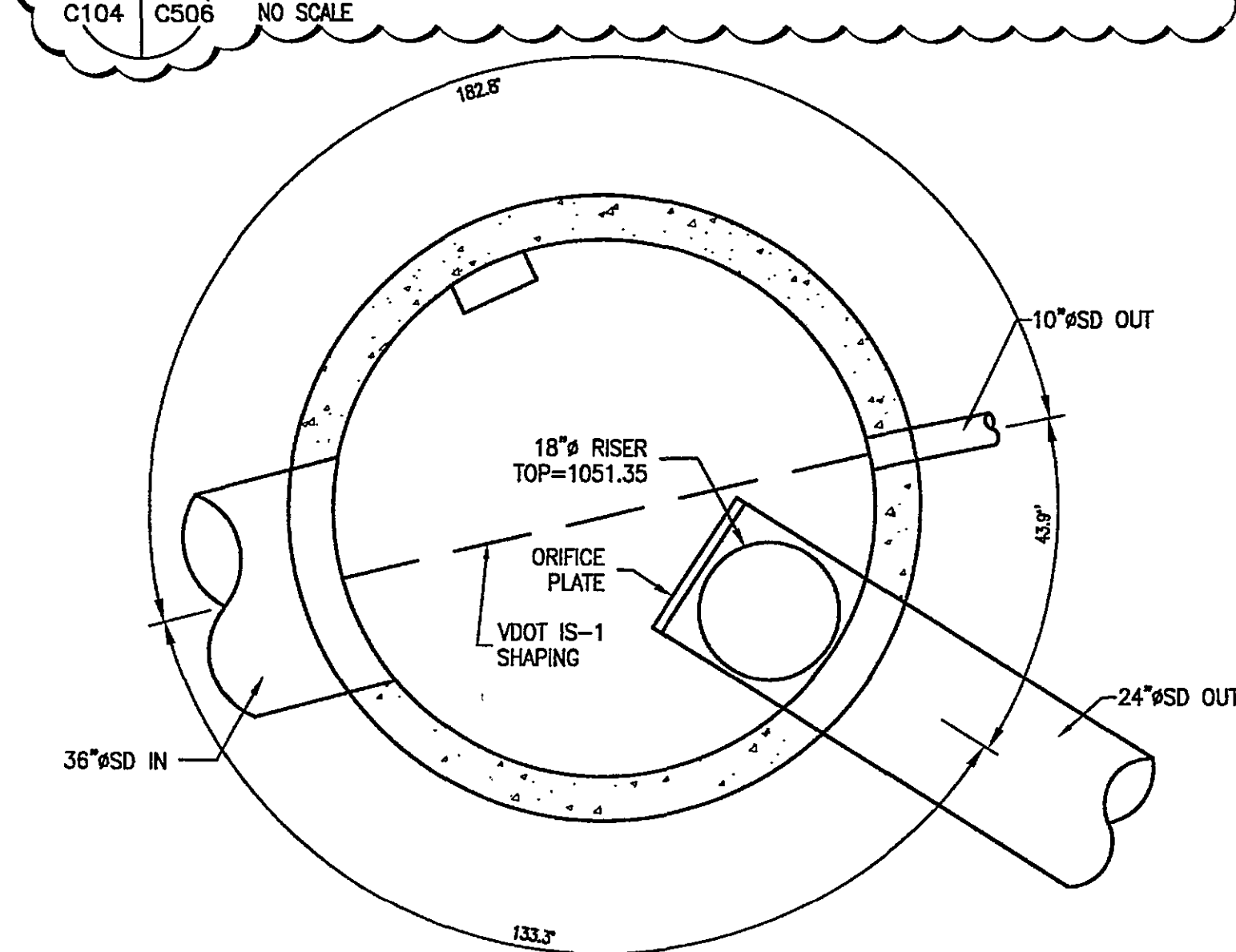


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DITC
NO SCALE



SUB-SURFACE DETENTION BASIN LAYOUT

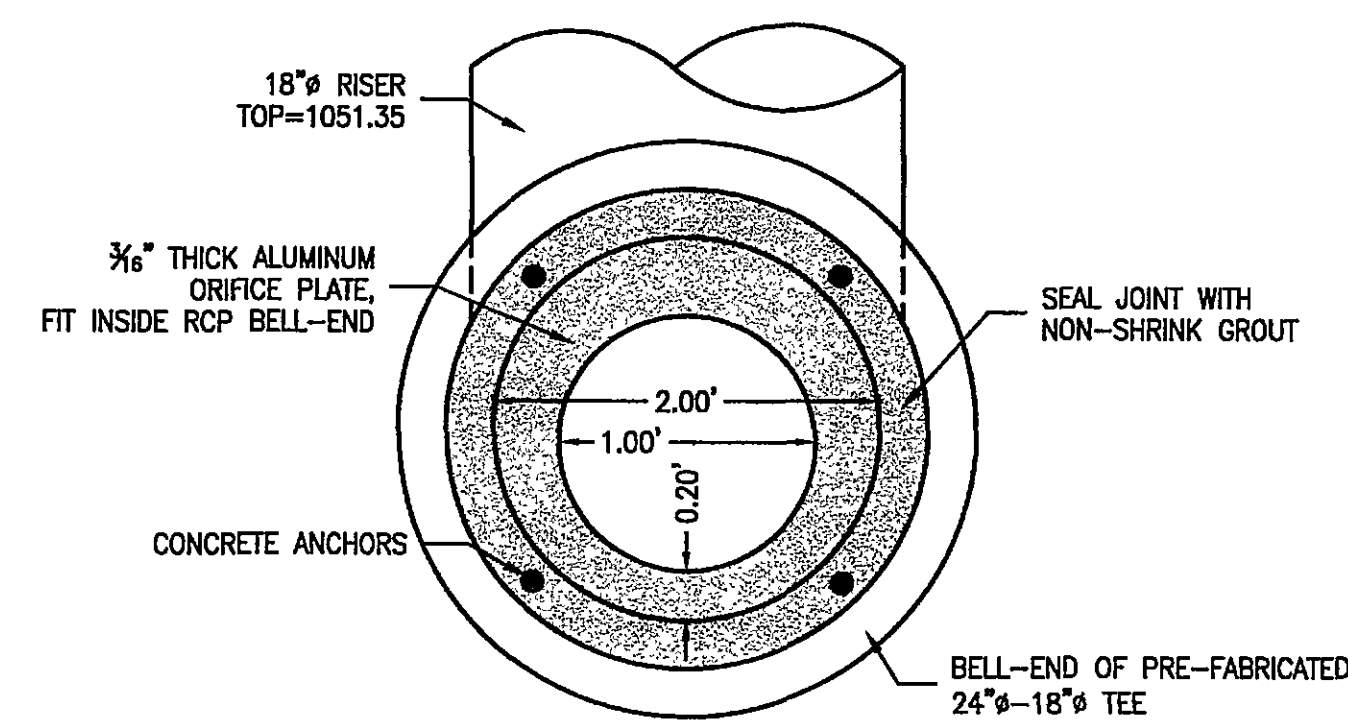


Technical drawing of a bridge pier cross-section. The drawing includes the following dimensions and components:

- TOP=1053.05**: Elevation of the top of the pier.
- VDOT STD STEPS**: Standard steps on the pier face.
- Q25=1051.97**: Elevation of the top of the first concrete layer.
- Q10=1050.82**: Elevation of the top of the second concrete layer.
- Q2=1049.17**: Elevation of the top of the third concrete layer.
- WQV=1047.60**: Elevation of the top of the fourth concrete layer.
- 18" RISER TOP=1051.35**: Elevation of the top of the 18-inch riser.
- 1'-4" MAX**: Maximum height of the riser.
- 7'-0" DIA**: Diameter of the pier.
- 8"**: Thickness of the pier wall.
- 3" DIA (SEE NOTE 3)**: Diameter of the reinforcement bar.
- PRE-FAB. 24"x-18" TEE**: Prefabricated tee section.
- 12.0" CRIFICE INV.=1047.60 SEE DETAIL 61**: Crifice opening with invert elevation.
- 24"SD OUT INV.=1047.40**: Invert elevation of the 24-inch standard depth outlet.
- 10"SD OUT INV.=1046.25**: Invert elevation of the 10-inch standard depth outlet.
- 36"SD IN INV.=1046.36**: Invert elevation of the 36-inch standard depth inlet.
- VDOT IS-1 SHAPING**: Shaping of the pier face.
- PROVIDE SOLID CMU BLOCKING TO SUPPORT CONCRETE TEE**: Requirement for solid concrete masonry unit blocking.

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TEST STATISTICS FOR EFFECTS AND LOCATION:



STR
NO SCALE