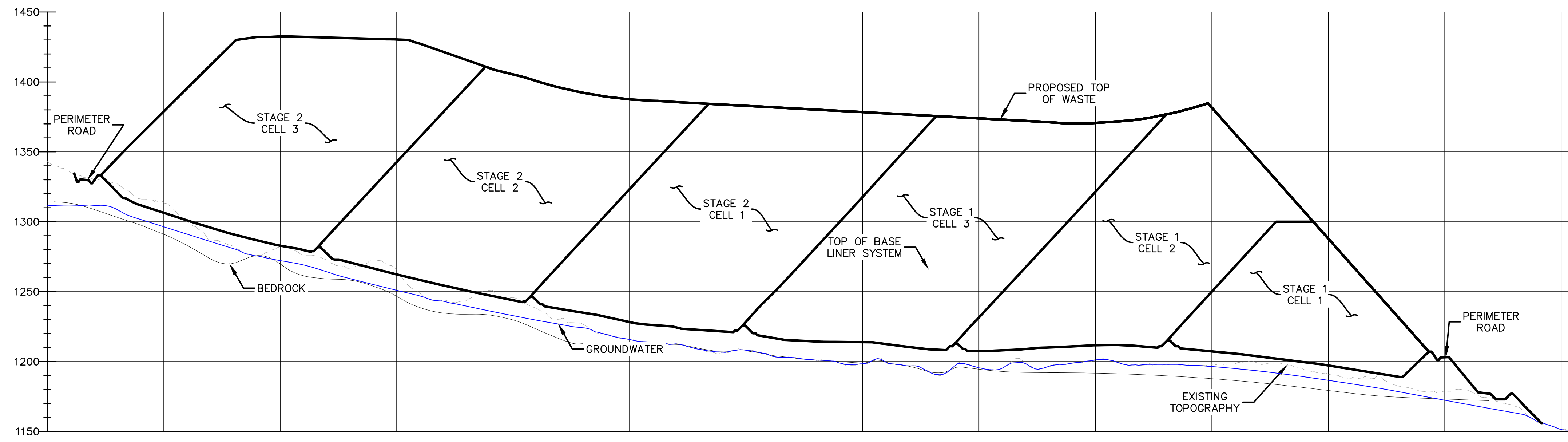
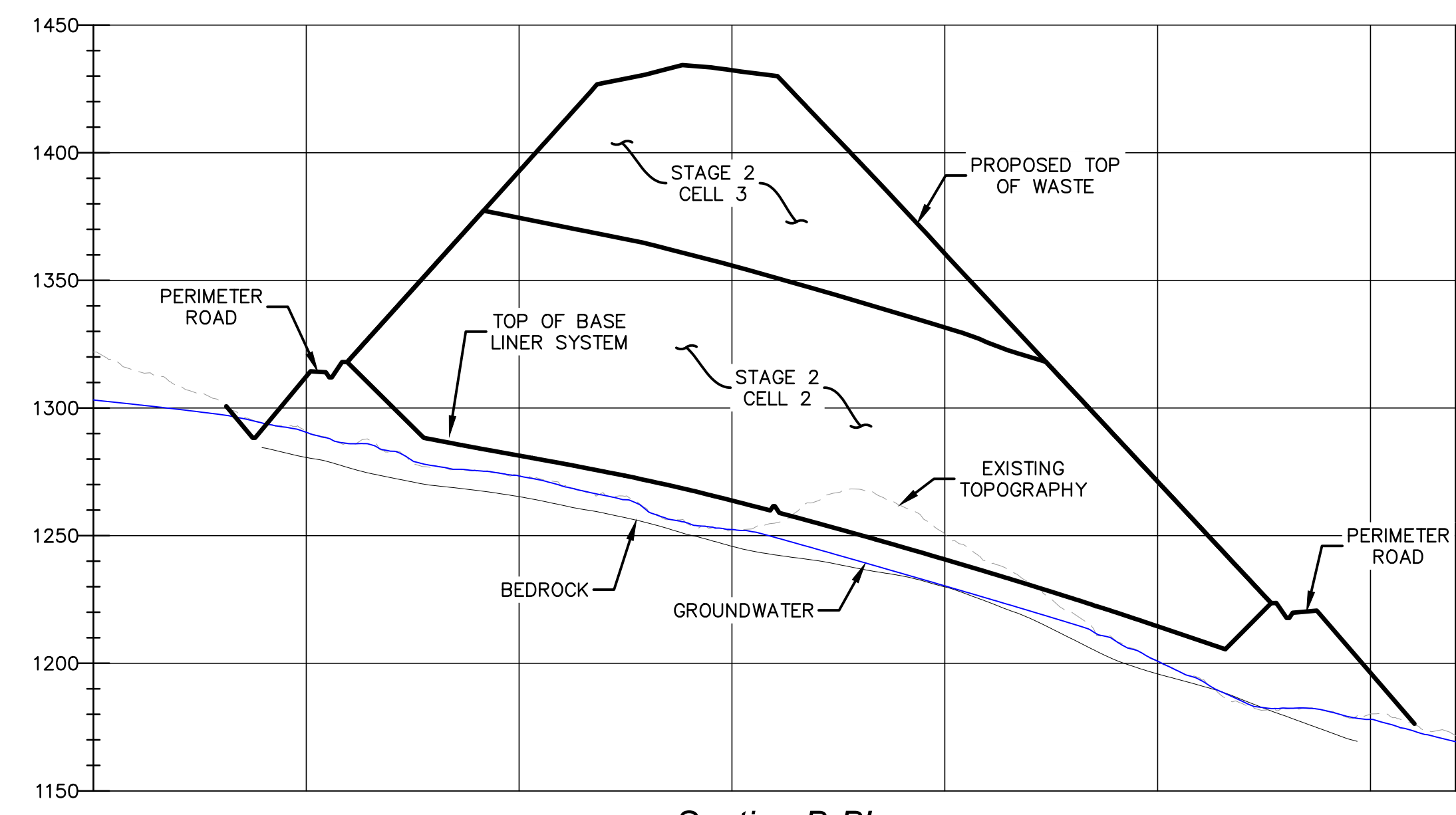


<b>Granite State Landfill, LLC</b> Dalton, New Hampshire Permitting Plan Set		date: October 2023	designed by: ATR/NUM/STF/AJS
project no: 1101		drawn by: ATR/NUM/STF	approved by: AJS
checked by: AJS		scale: 0 120' 240' Scale: 1" = 120'	
drawing no. <b>XS-1</b>		no.	
sheet: 20 of 50		revision	
date		by	

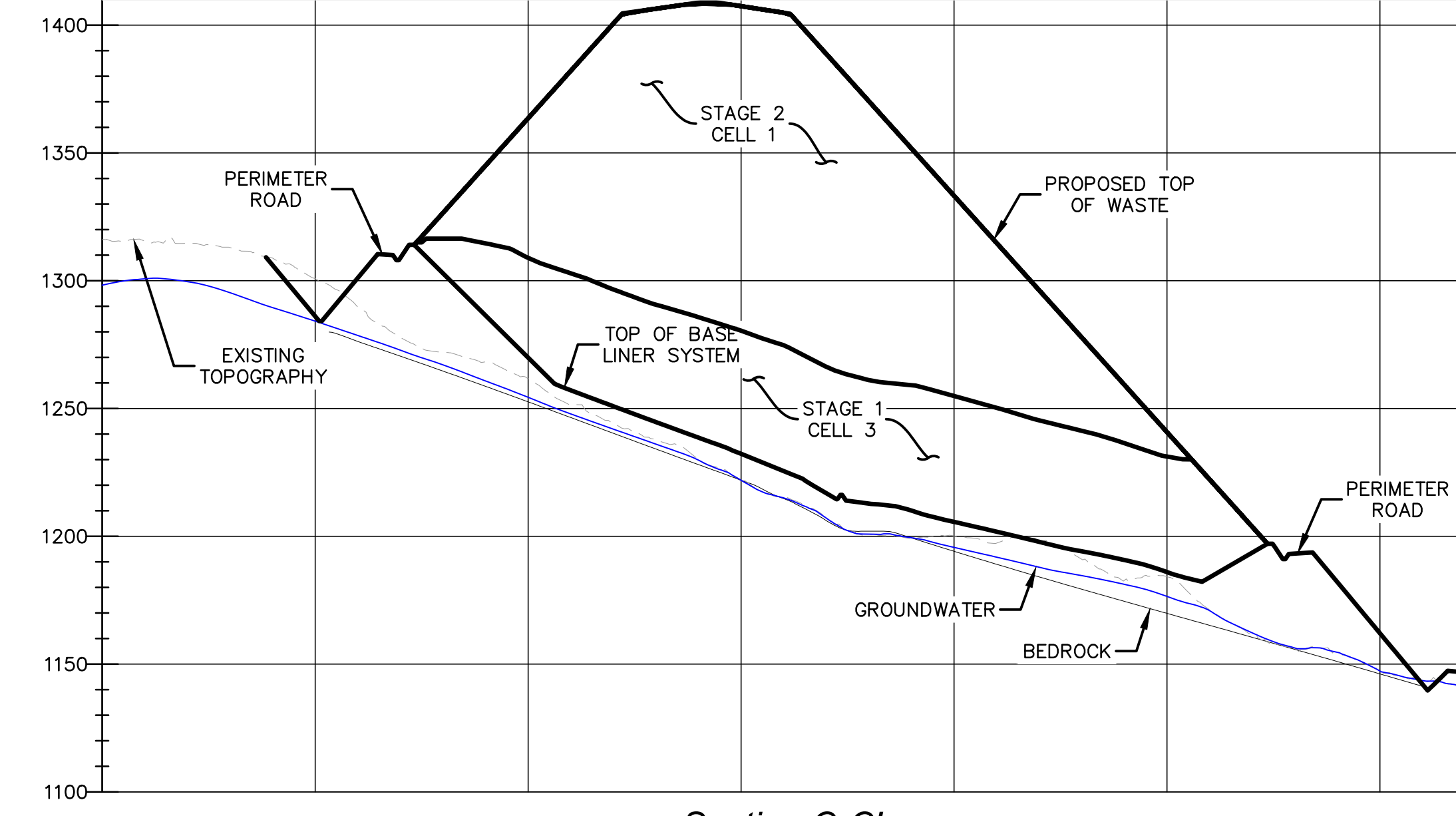
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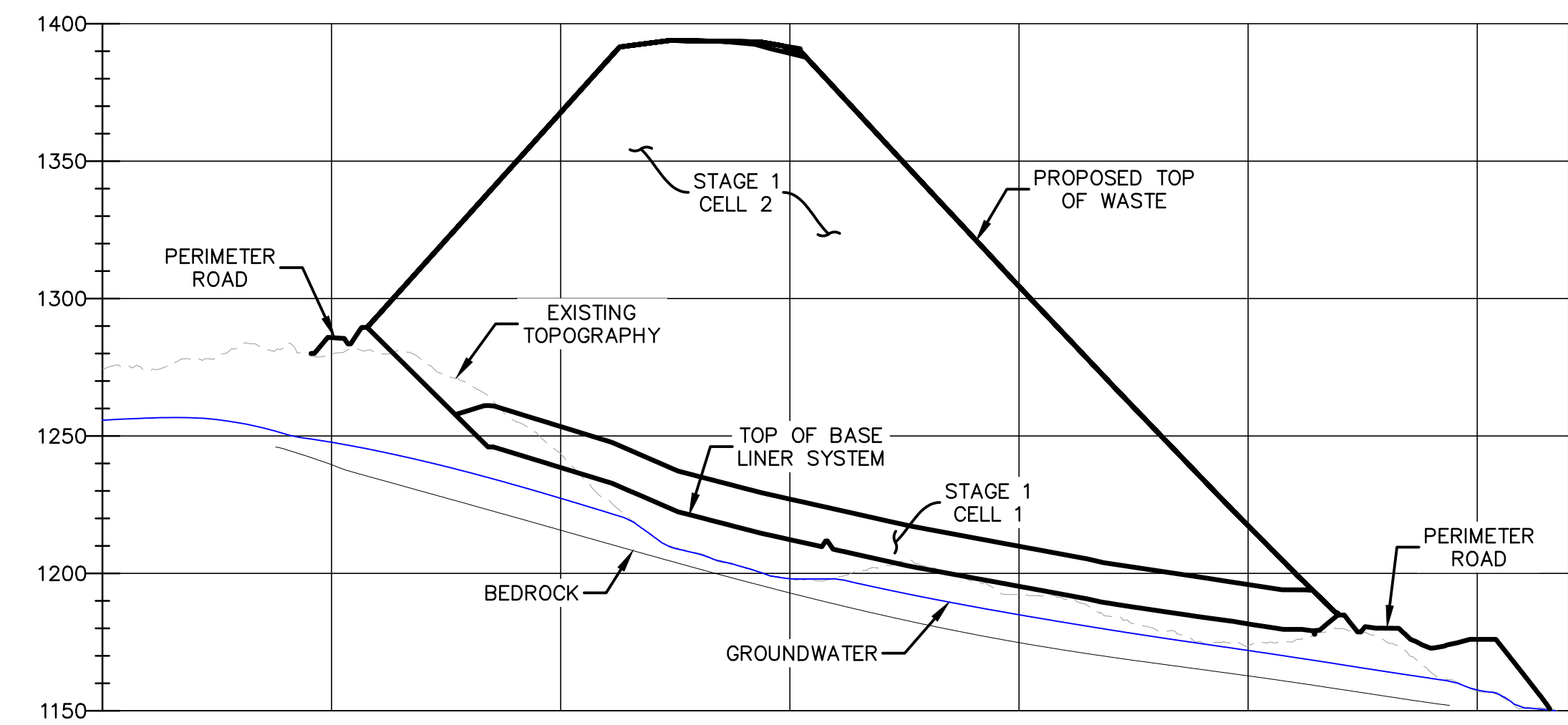
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 Horizontal: 1" = 150'  
 Vertical: 1" = 50'



**Section B-B'**  
 Horizontal: 1" = 150'  
 Vertical: 1" = 50'



**Section C-C'**  
 Horizontal: 1" = 150'  
 Vertical: 1" = 50'



**Section D-D'**  
 Horizontal: 1" = 150'  
 Vertical: 1" = 50'

no.	revision	date	by

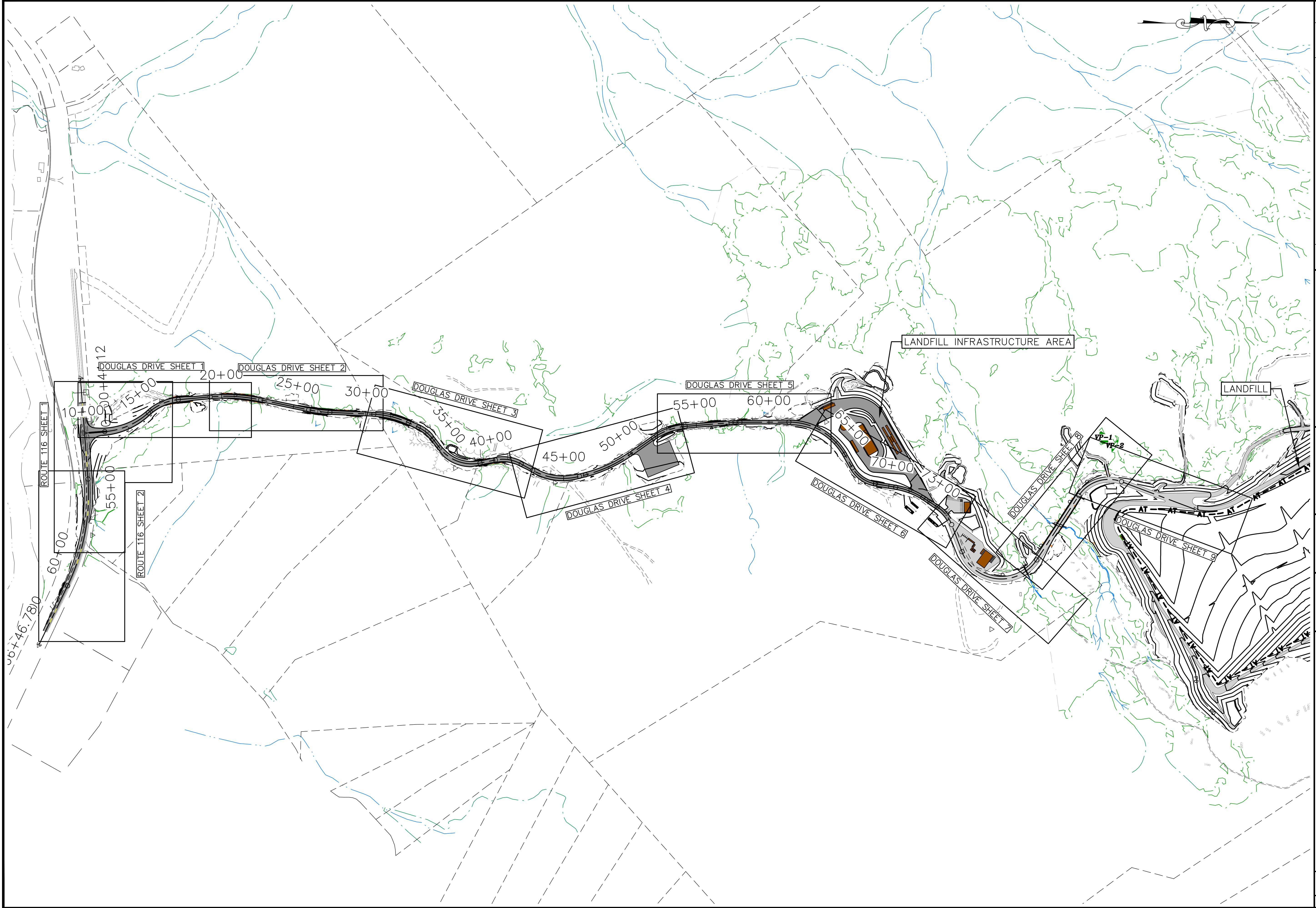
**CMA ENGINEERS**  
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date:	October 2023	designed by:	ATRN/JM/STF/AJS
project no.:	1101	drawn by:	ATRN/JM/STF
checked by:	AJS	approved by:	AJS

scale: 1" = 150'  
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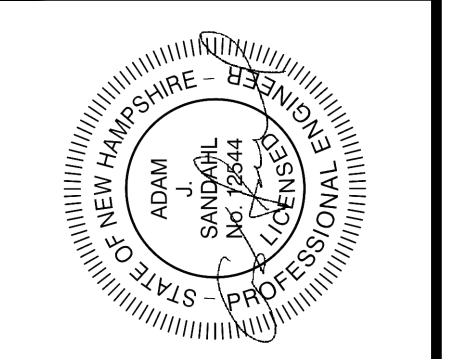
Granite State Landfill, LLC  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Landfill Cross Sections  
 Sheet 2

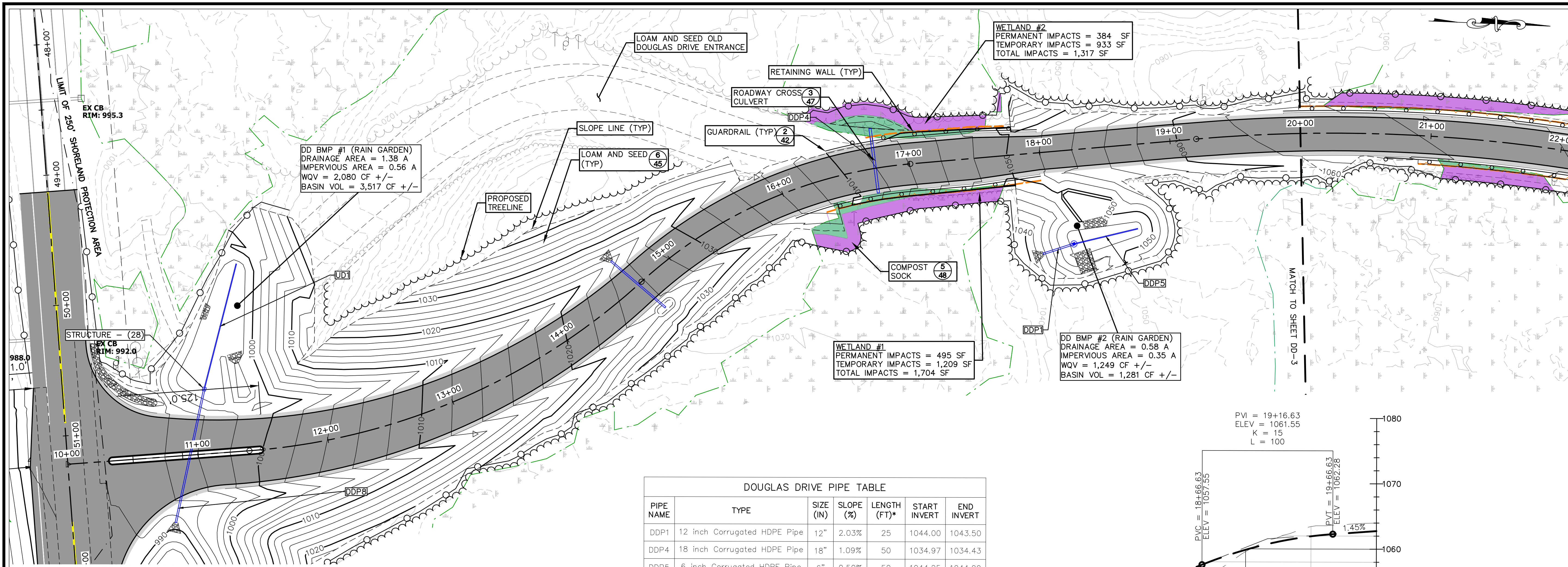
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<p><b>Granite State Landfill, LLC</b>          Dalton, New Hampshire          Permitting Plan Set</p>		<p>date: October 2023          project no: 1101          checked by: AJS</p>	<p>designed by: ATR/JM/MSTF/AJS          drawn by: ATR/JM/MSTF          approved by: AJS</p>	<p>scale: 1" = 300'          0 300' 600'</p>
<p>Douglas Drive          Overall Site Plan</p>		<p>drawing no.  <b>DD-1</b></p>		
<p>sheet: 22 of 50</p>		<p>no. revision date by</p>		

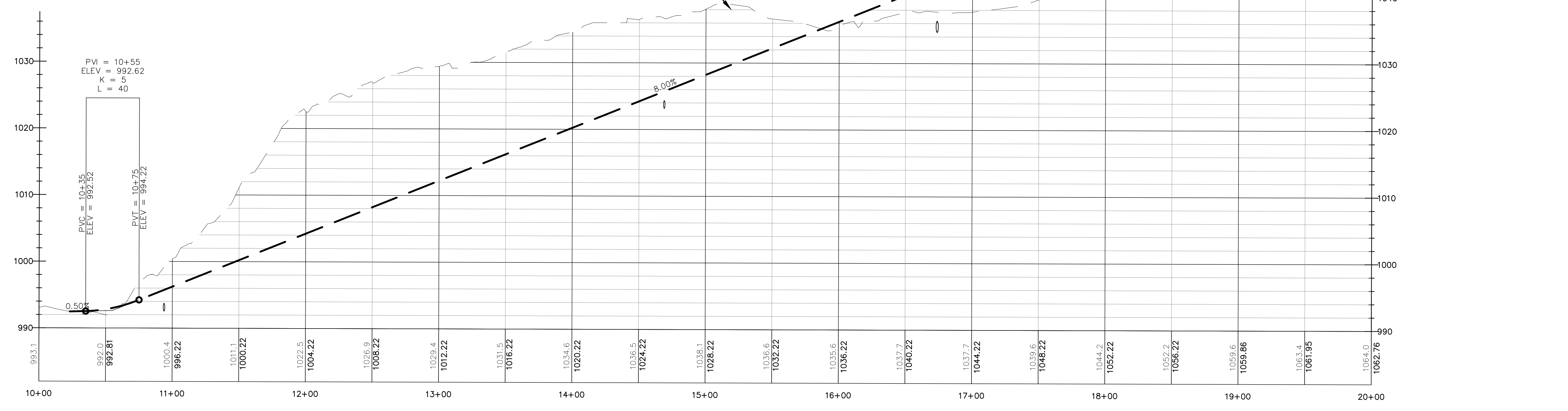
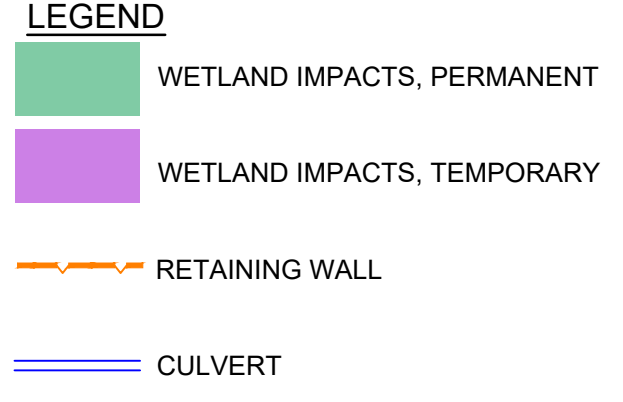
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DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP1	12 inch Corrugated HDPE Pipe	12"	2.03%	25	1044.00	1043.50
DDP4	18 inch Corrugated HDPE Pipe	18"	1.09%	50	1034.97	1034.43
DDP5	6 inch Corrugated HDPE Pipe	6"	0.50%	50	1044.25	1044.00
DDP8	12 inch Corrugated HDPE Pipe	12"	3.11%	104	994.25	991.00
UD1	6 inch Corrugated HDPE Pipe	6"	0.51%	99	994.75	994.25



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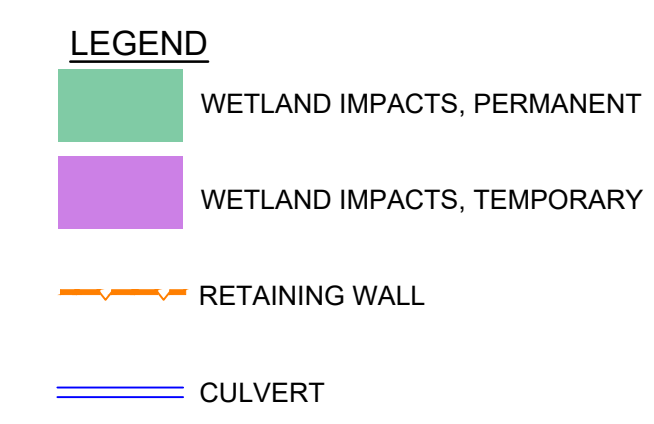
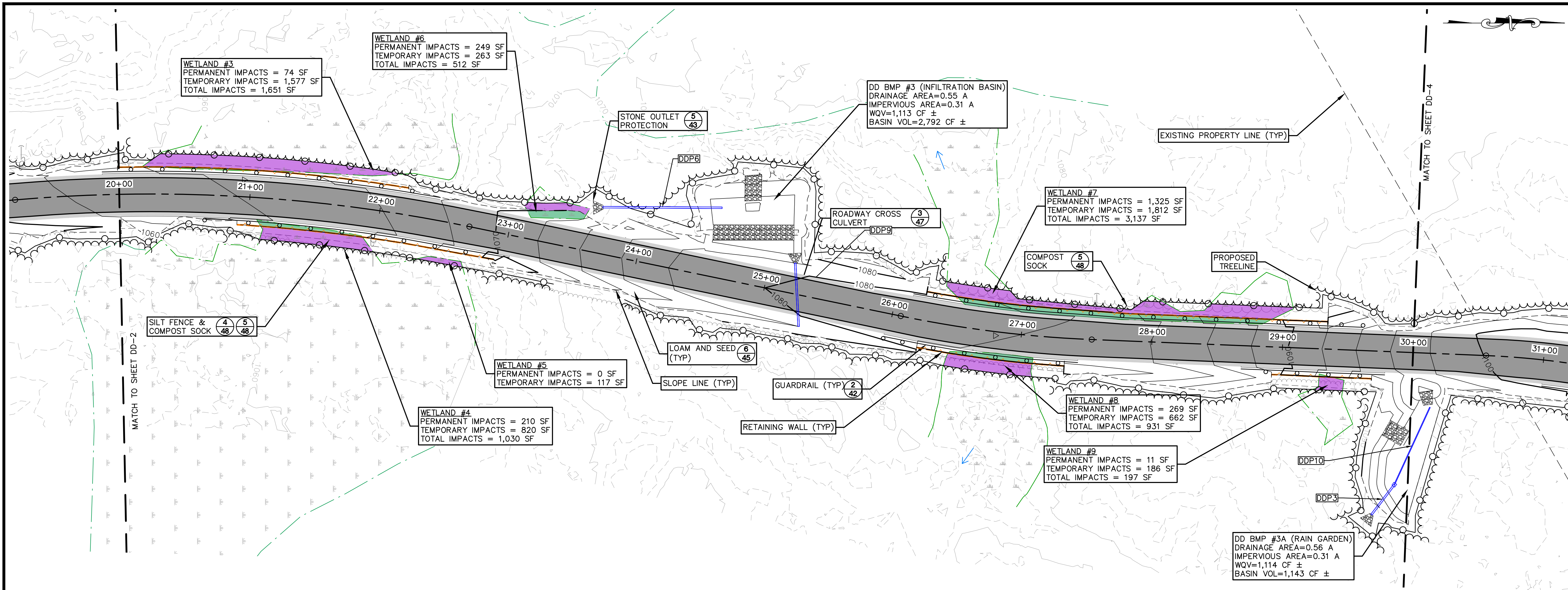
Granite State Landfill, LLC  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Douglas Drive  
 Plan and Profile Sheet 1

designed by: ATR/NUMSTF/AJS  
 drawn by: ATR/NUMSTF  
 checked by: AJS  
 approved by: AJS

date: October 2023  
 project no: 1101

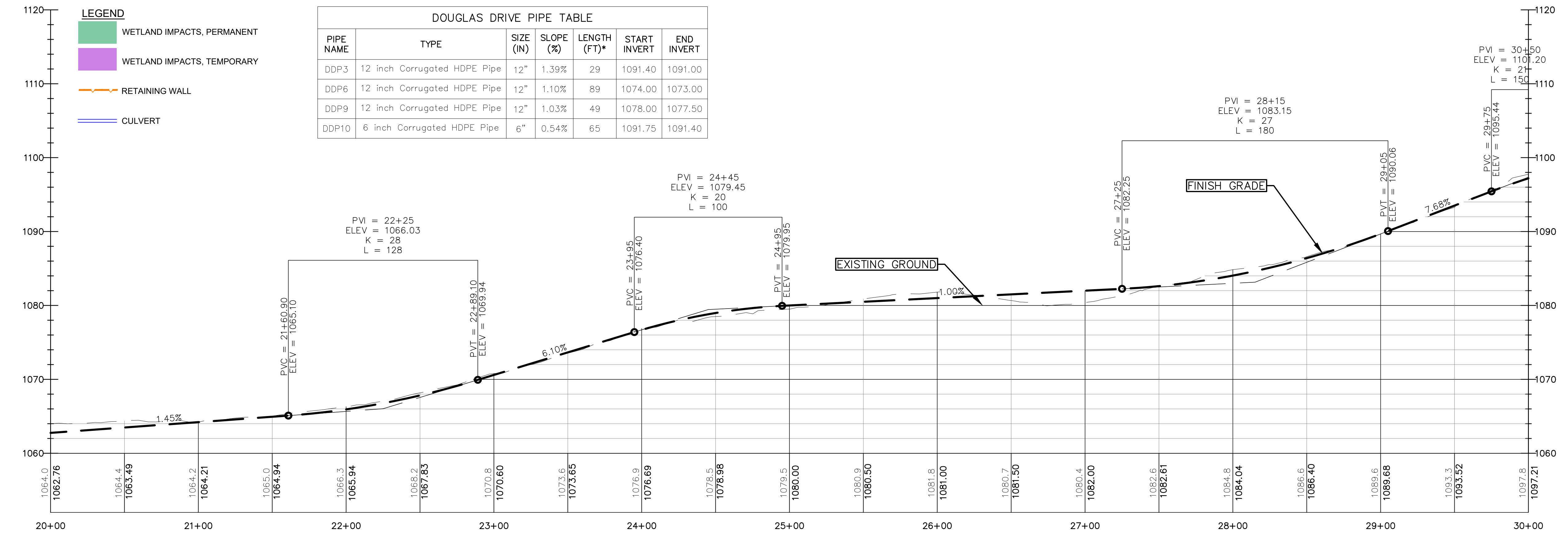
scale: 1" = 40' H / 4' V

drawing no: DD-2  
 sheet: 23 of 50



**DOUGLAS DRIVE PIPE TABLE**

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP3	12 inch Corrugated HDPE Pipe	12"	1.39%	29	1091.40	1091.00
DDP6	12 inch Corrugated HDPE Pipe	12"	1.10%	89	1074.00	1073.00
DDP9	12 inch Corrugated HDPE Pipe	12"	1.03%	49	1078.00	1077.50
DDP10	6 inch Corrugated HDPE Pipe	6"	0.54%	65	1091.75	1091.40



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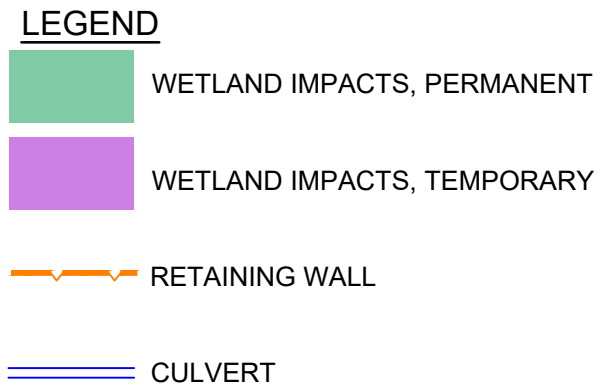
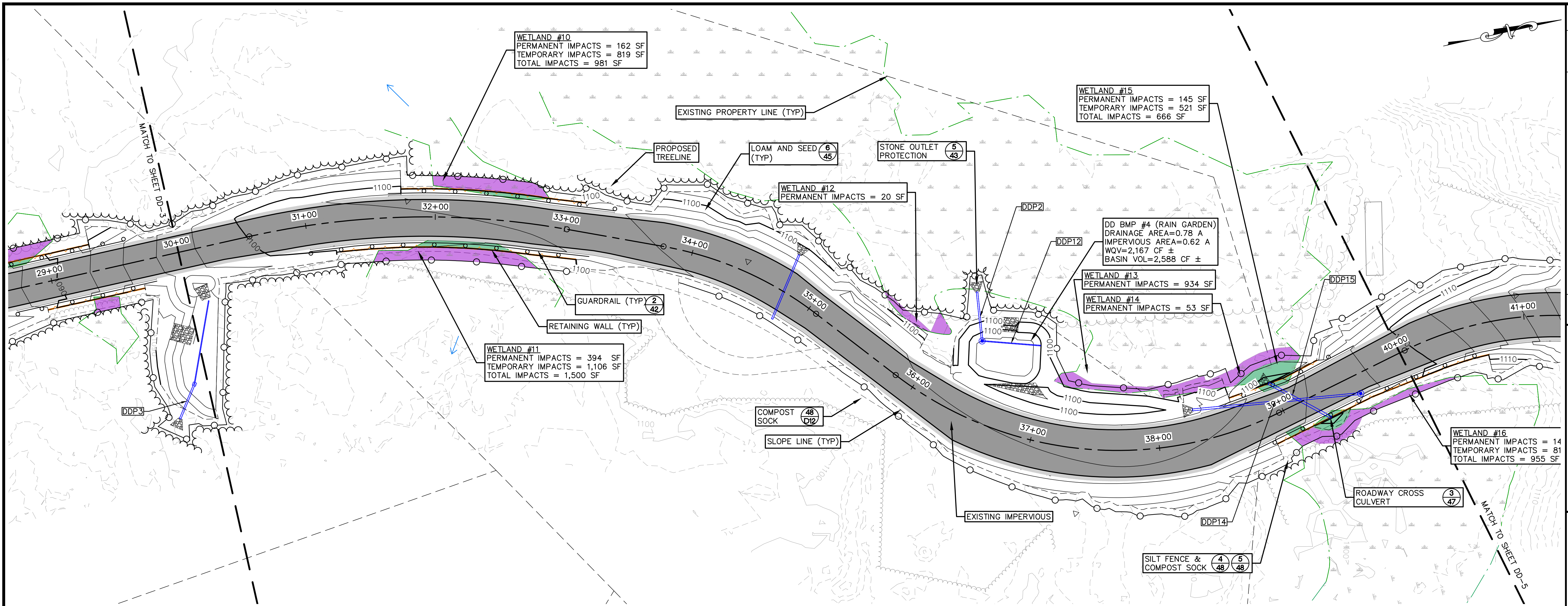
**Granite State Landfill, LLC**  
Dalton, New Hampshire  
Permitting Plan Set  
Douglas Drive  
Plan and Profile Sheet 2

designed by: ATR/JM/SF/AJS  
drawn by: ATR/JM/SF  
checked by: AJS  
approved by: AJS

date: October 2023  
project no: 1101

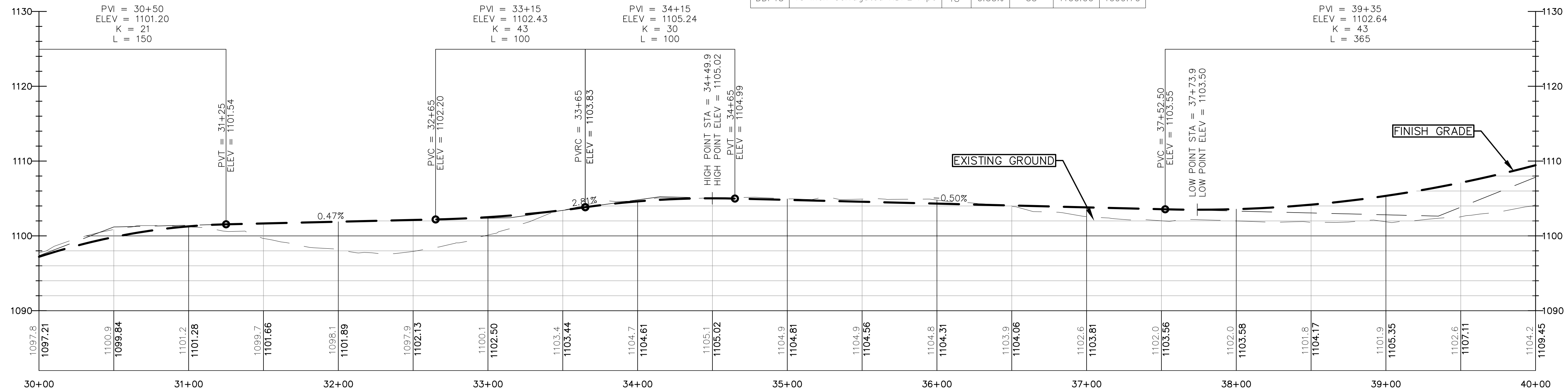
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drawing no: **DD-3**  
sheet: 24 of 50



**DOUGLAS DRIVE PIPE TABLE**

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP2	12 inch Corrugated HDPE Pipe	12"	0.66%	38	1097.00	1096.75
DDP12	6 inch Corrugated HDPE Pipe	6"	0.55%	45	1097.25	1097.00
DDP14	15 inch Corrugated HDPE Pipe	15"	1.95%	128	1104.00	1101.50
DDP15	18 inch Corrugated HDPE Pipe	18"	0.55%	55	1100.00	1099.70



Granite State Landfill, LLC  
Dalton, New Hampshire  
Permitting Plan Set  
Douglas Drive  
Plan and Profile Sheet 3

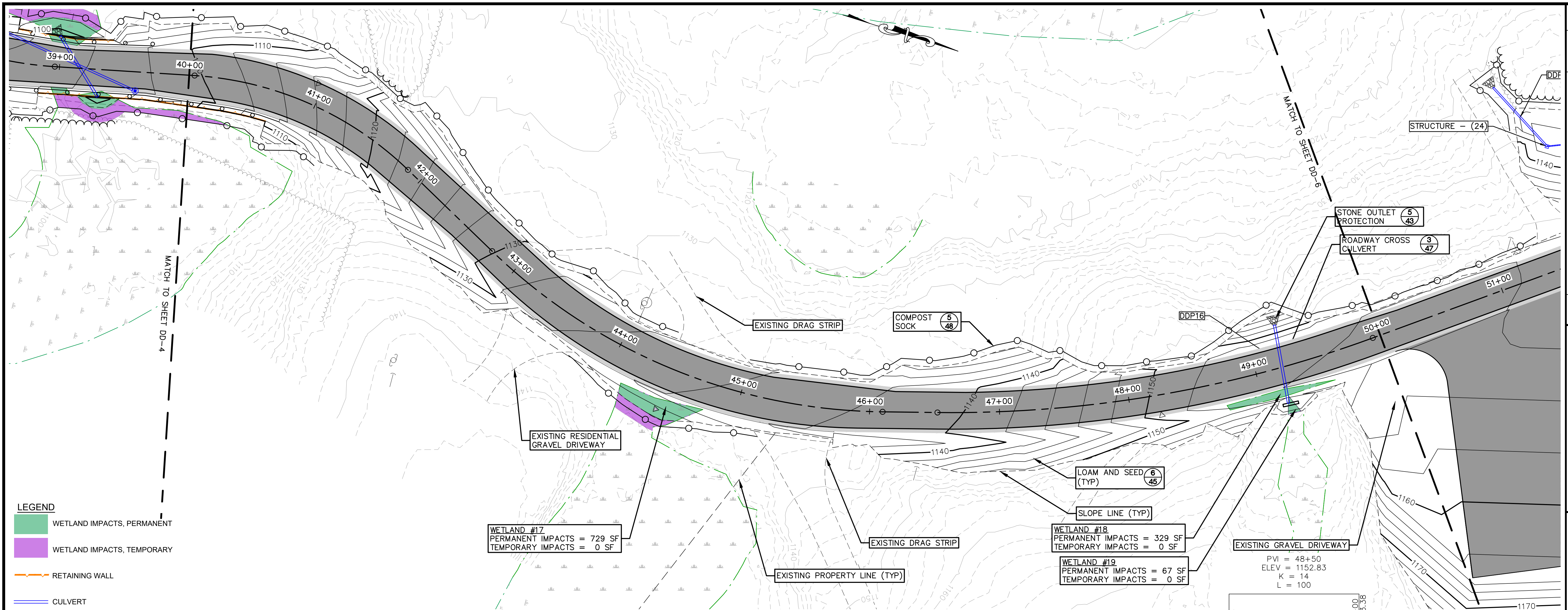
designed by: ATR/JM/STF/AJS  
drawn by: ATR/JM/STF  
checked by: AJS  
approved by: AJS

date: October 2023  
project no: 1101

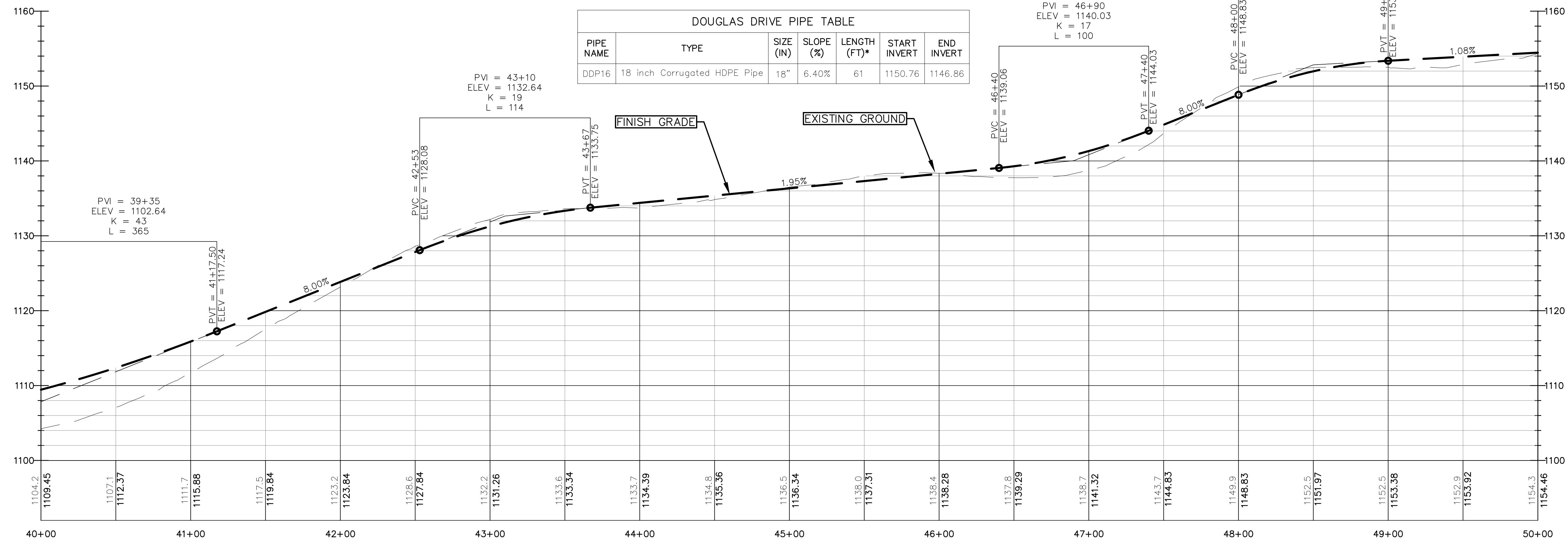
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drawing no: DD-4  
sheet: 25 of 50

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- LEGEND**
- WETLAND IMPACTS, PERMANENT
  - WETLAND IMPACTS, TEMPORARY
  - RETAINING WALL
  - CULVERT



**DOUGLAS DRIVE PIPE TABLE**

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP16	18 inch Corrugated HDPE Pipe	18"	6.40%	61	1150.76	1146.86

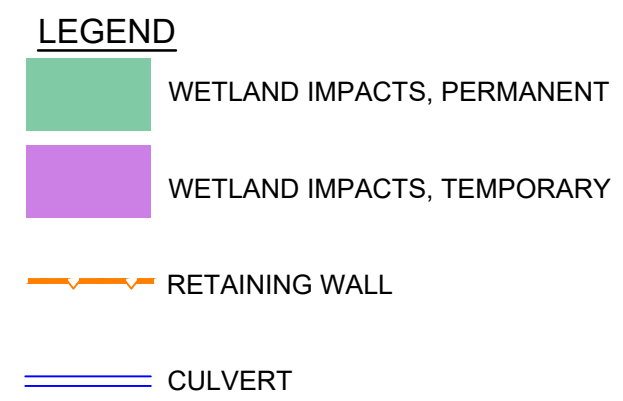
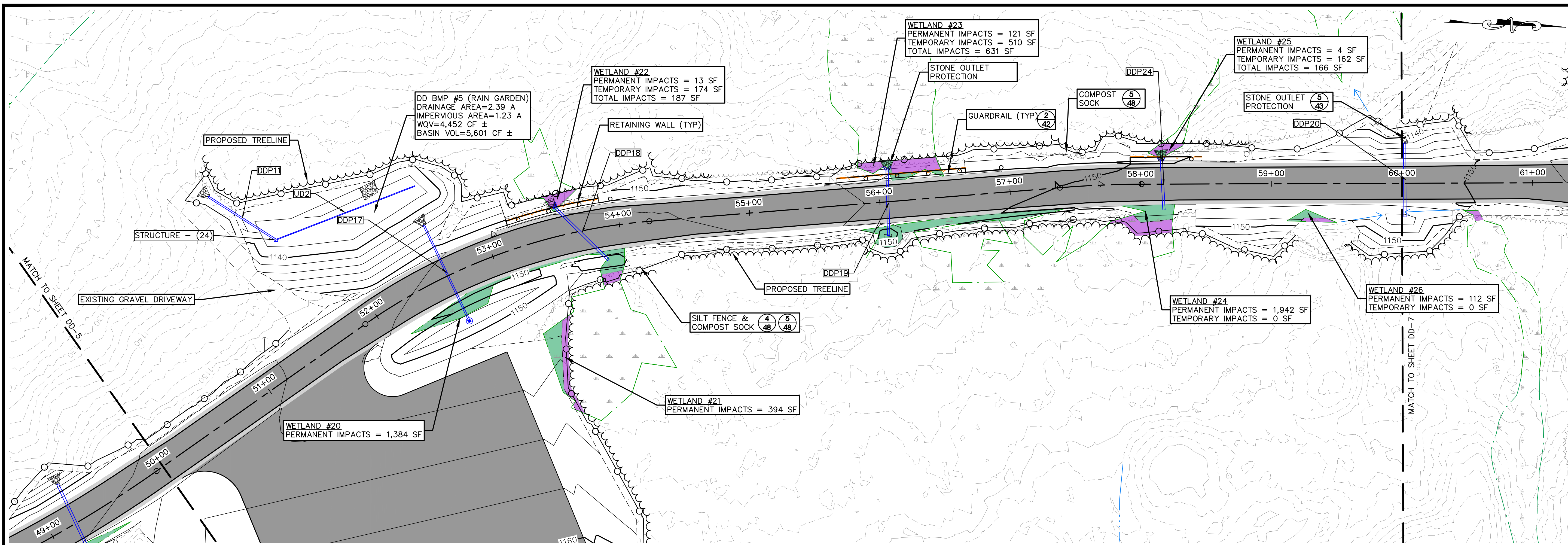
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K = 43  
L = 365

PVI = 43+10  
ELEV = 1132.64  
K = 19  
L = 114

PVI = 46+90  
ELEV = 1140.03  
K = 17  
L = 100

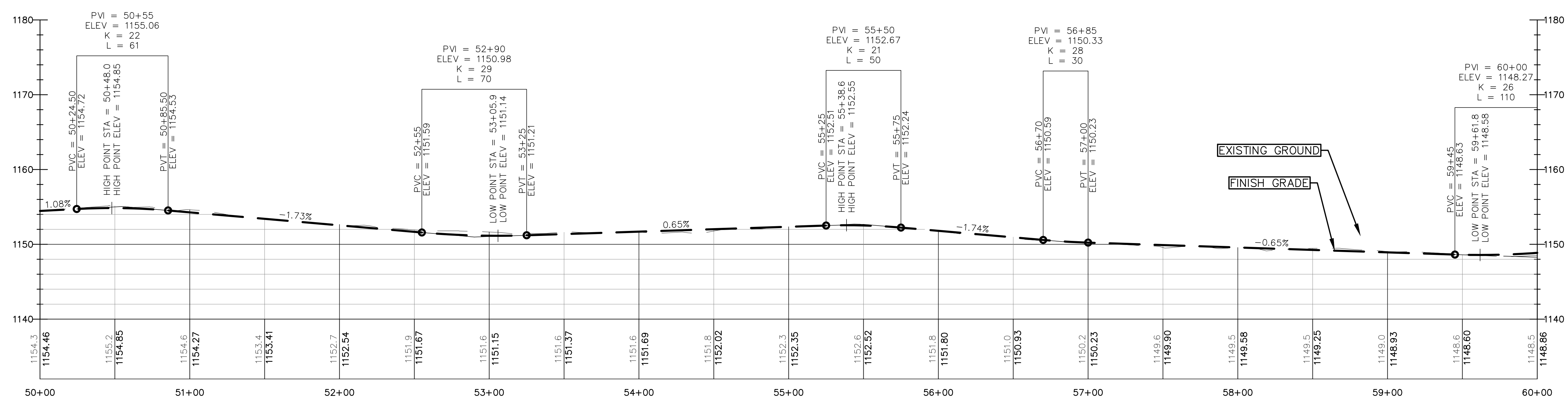
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							no.	
							revision	
							date	
							by	
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<p>designed by: ATR/NUMSTF/AJS</p> <p>drawn by: ATR/NUMSTF</p> <p>checked by: AJS</p> <p>approved by: AJS</p>								
<p>date: October 2023</p> <p>project no: 1101</p>								
<p>Scale: 1" = 40' H / 4' V</p>								
<p><b>Granite State Landfill, LLC</b></p> <p><b>Dalton, New Hampshire</b></p> <p><b>Permitting Plan Set</b></p>								
<p><b>Douglas Drive</b></p> <p><b>Plan and Profile Sheet 4</b></p>								
drawing no:								
<b>DD-5</b>								
sheet: 26 of 50								



**DOUGLAS DRIVE PIPE TABLE**

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP11	12 inch Corrugated HDPE Pipe	12"	0.49%	61	1133.20	1132.90
DDP17	12 inch Corrugated HDPE Pipe	12"	6.18%	81	1147.00	1142.00
DDP18	18 inch Corrugated HDPE Pipe	18"	2.41%	58	1149.00	1147.60
DDP19	18 inch Corrugated HDPE Pipe	18"	1.12%	51	1148.57	1148.00
DDP24	18 inch Corrugated HDPE Pipe	18"	2.60%	38	1148.00	1147.00
UD2	6 inch Corrugated HDPE Pipe	6"	0.48%	114	1133.75	1133.20



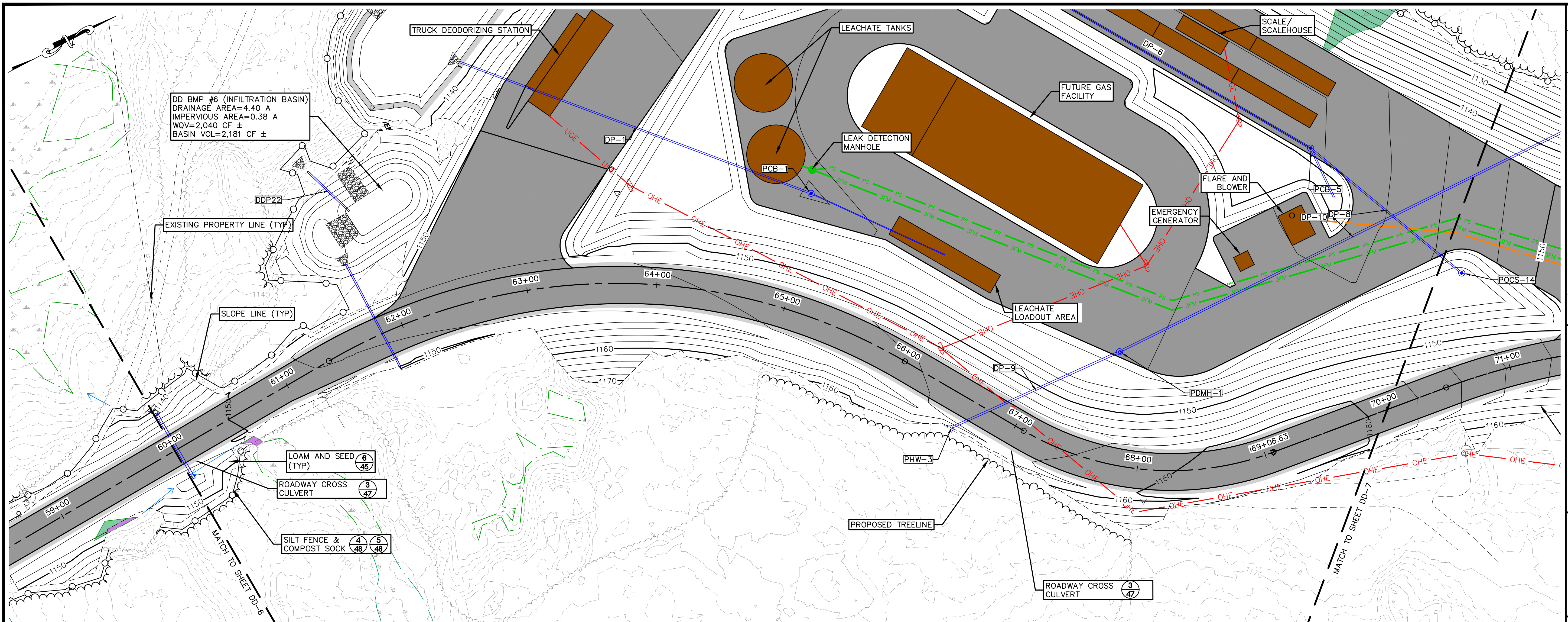
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**Granite State Landfill, LLC**  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Douglas Drive  
 Plan and Profile Sheet 5

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 drawn by: ATR/NUM/STF  
 approved by: AJS  
 date: October 2023  
 project no: 1101  
 checked by: AJS  
 scale: 1" = 40' H / 1" V

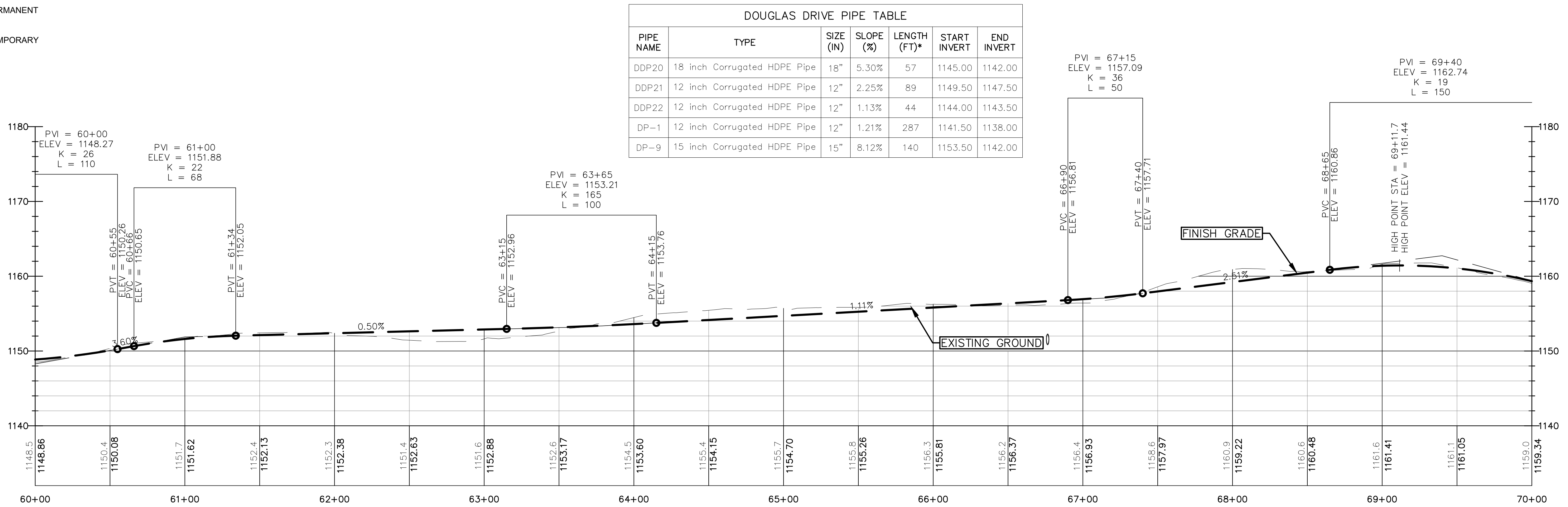
drawing no: **DD-6**  
 sheet: 27 of 50





**LEGEND**

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT



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**Granite State Landfill, LLC**  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Douglas Drive  
 Plan and Profile Sheet 6

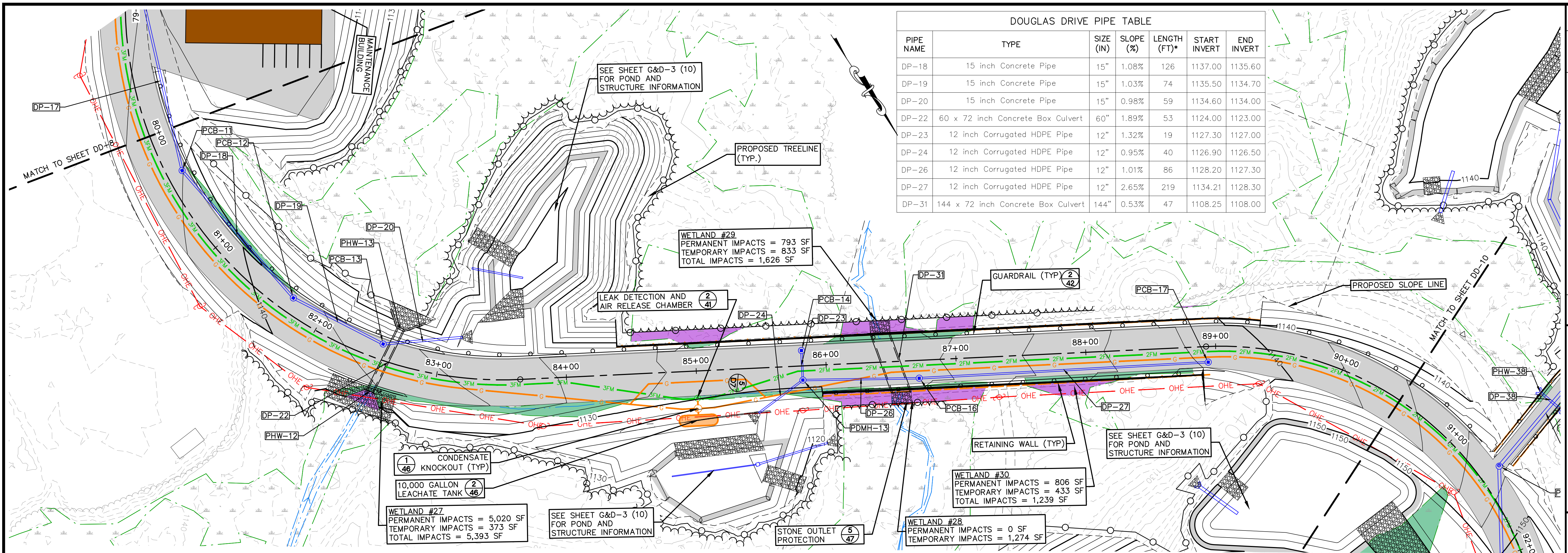
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 drawn by: ATR/JM/STF  
 checked by: AJS  
 approved by: AJS

date: October 2023  
 project no: 1101

scale: 1" = 40' H / 4" V

drawing no: DD-7  
 sheet: 28 of 50





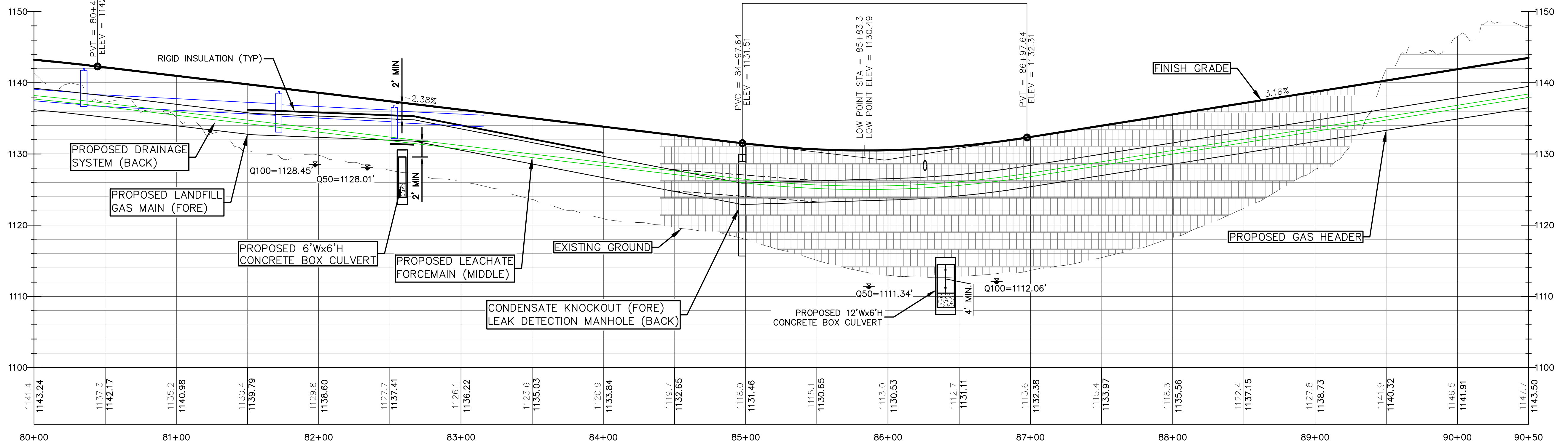
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DP-18	15 inch Concrete Pipe	15"	1.08%	126	1137.00	1135.60
DP-19	15 inch Concrete Pipe	15"	1.03%	74	1135.50	1134.70
DP-20	15 inch Concrete Pipe	15"	0.98%	59	1134.60	1134.00
DP-22	60 x 72 inch Concrete Box Culvert	60"	1.89%	53	1124.00	1123.00
DP-23	12 inch Corrugated HDPE Pipe	12"	1.32%	19	1127.30	1127.00
DP-24	12 inch Corrugated HDPE Pipe	12"	0.95%	40	1126.90	1126.50
DP-26	12 inch Corrugated HDPE Pipe	12"	1.01%	86	1128.20	1127.30
DP-27	12 inch Corrugated HDPE Pipe	12"	2.65%	219	1134.21	1128.30
DP-31	144 x 72 inch Concrete Box Culvert	144"	0.53%	47	1108.25	1108.00

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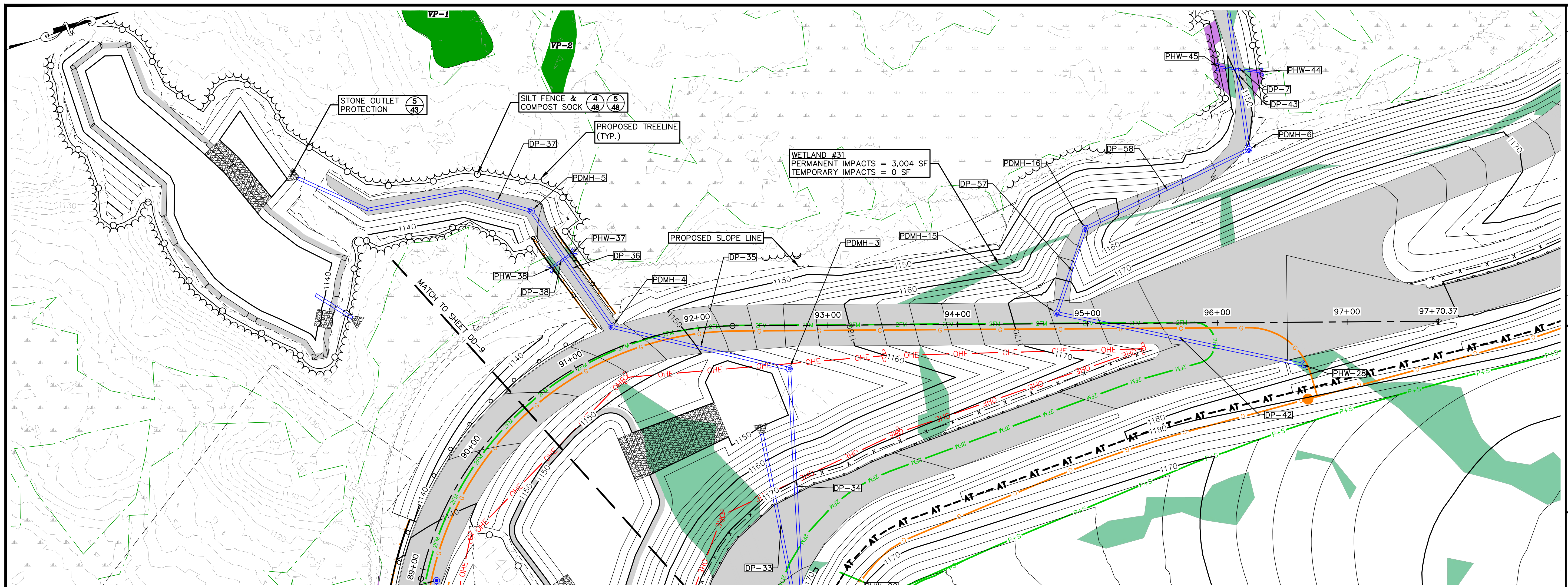
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**LEGEND**

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

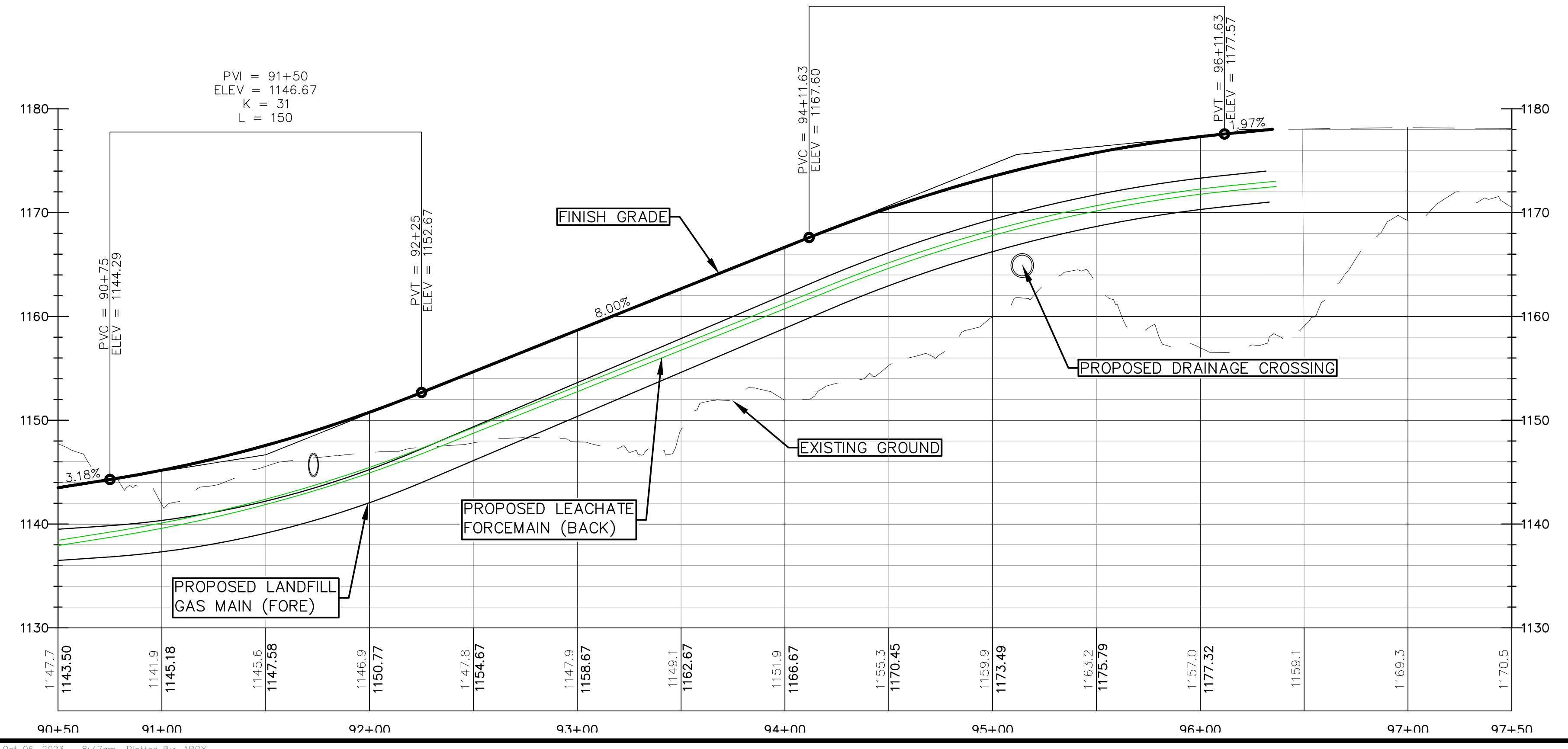


<p><b>CMA ENGINEERS</b>        CIVIL/ENVIRONMENTAL/STRUCTURAL        Portsmouth, NH Manchester, NH Portland, ME        603/431-6196 603/627-0708 207/641-4223        cmaengineers.com</p>	
<p>designed by: ATR/JM/SJF/AJS        drawn by: ATR/JM/SJF        checked by: AJS        approved by: AJS</p>	
<p>date: October 2023        project no: 1101        checked by: AJS</p>	
<p>scale: 1" = 40' H / 4' V</p>	
<p>Granite State Landfill, LLC        Dalton, New Hampshire        Permitting Plan Set        Douglas Drive        Plan and Profile Sheet 8</p>	
<p>drawing no: DD-9        sheet: 30 of 50</p>	



PVI = 95+11.63  
 ELEV = 1175.60  
 K = 33  
 L = 200

DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DP-7	12 inch Corrugated HDPE Pipe	12"	1.58%	32	1145.50	1145.00
DP-33	24 inch Corrugated HDPE Pipe	24"	12.00%	143	1169.00	1152.00
DP-34	24 inch Corrugated HDPE Pipe	24"	12.13%	181	1169.00	1147.00
DP-35	24 inch Corrugated HDPE Pipe	24"	2.14%	136	1147.00	1144.00
DP-36	24 inch Corrugated HDPE Pipe	24"	1.01%	105	1144.00	1142.90
DP-38	15 inch Corrugated HDPE Pipe	15"	1.26%	20	1137.75	1137.50
DP-42	24 inch Corrugated HDPE Pipe	24"	7.19%	192	1175.00	1161.12
DP-43	24 inch Corrugated HDPE Pipe	24"	0.52%	111	1147.20	1146.60
DP-55	24 inch Corrugated HDPE Pipe	24"	1.51%	31	1137.25	1136.75
DP-57	24 inch Corrugated HDPE Pipe	24"	10.25%	65	1161.12	1154.06
DP-58	24 inch Corrugated HDPE Pipe	24"	4.90%	136	1154.06	1147.20



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 revision \_\_\_\_\_  
 date \_\_\_\_\_  
 by \_\_\_\_\_

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 drawn by: ATR/JM/STF  
 approved by: AJS  
 date: October 2023  
 project no: 1101  
 checked by: AJS

scale: 1" = 40' H / 4" V

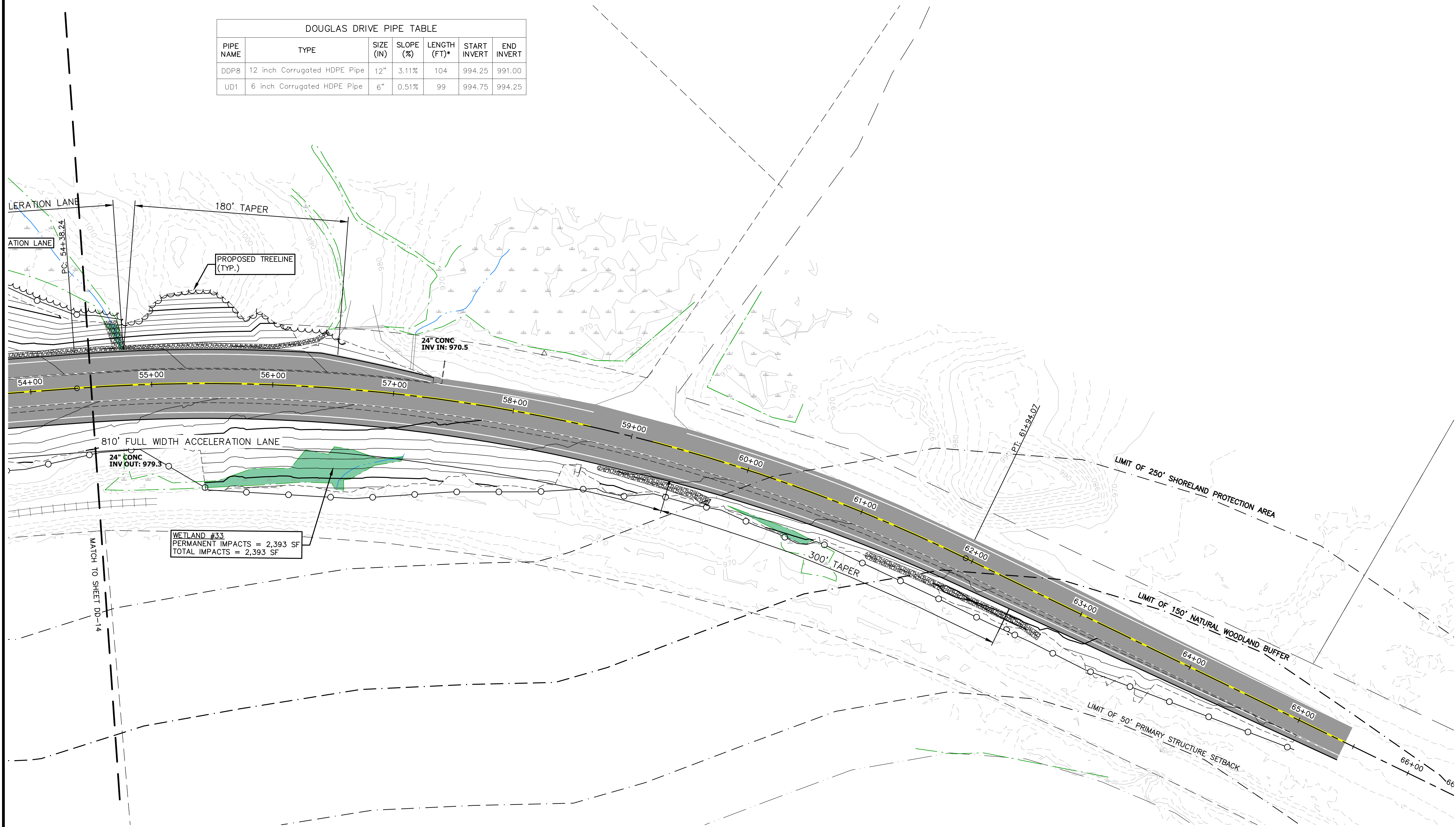
Granite State Landfill, LLC  
 Dalton, New Hampshire  
 Permitting Plan Set

Douglas Drive  
 Plan and Profile Sheet 9

drawing no: DD-10  
 sheet: 31 of 50

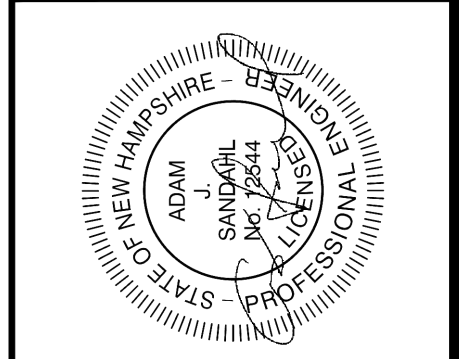


DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP8	12 inch Corrugated HDPE Pipe	12"	3.11%	104	994.25	991.00
UD1	6 inch Corrugated HDPE Pipe	6"	0.51%	99	994.75	994.25



no.	revision	date	by

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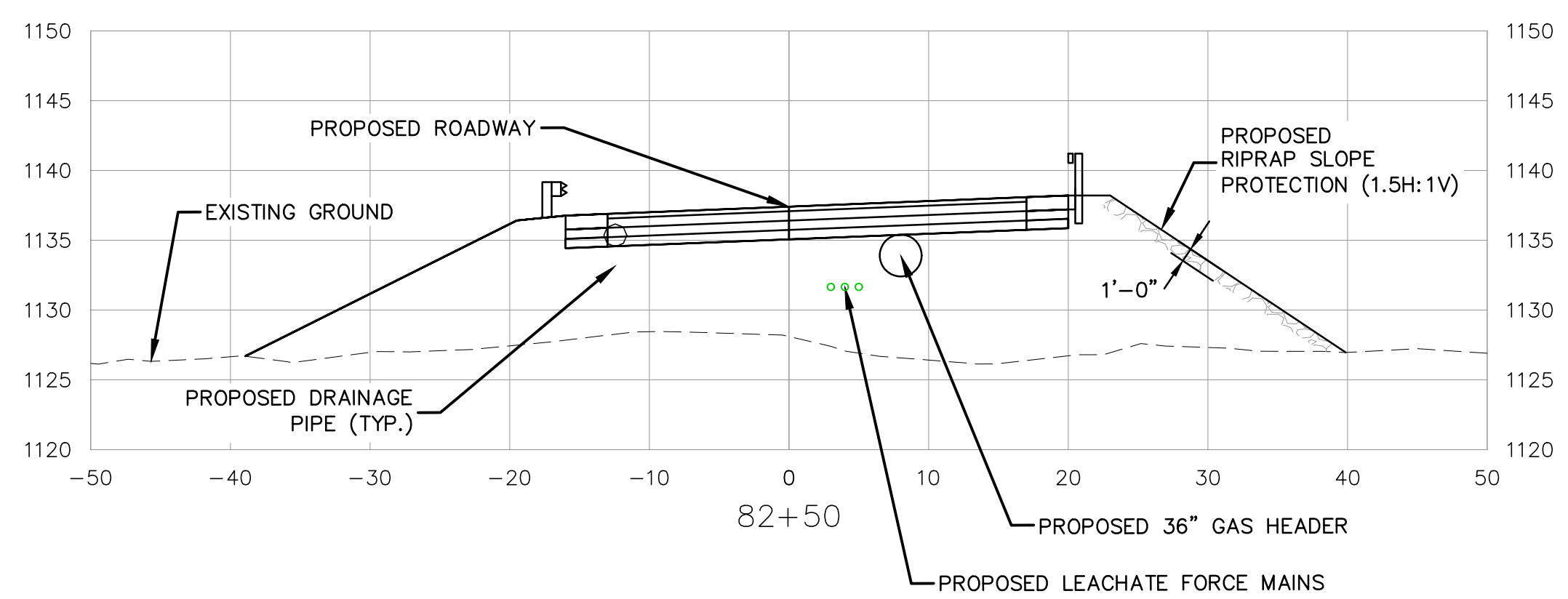
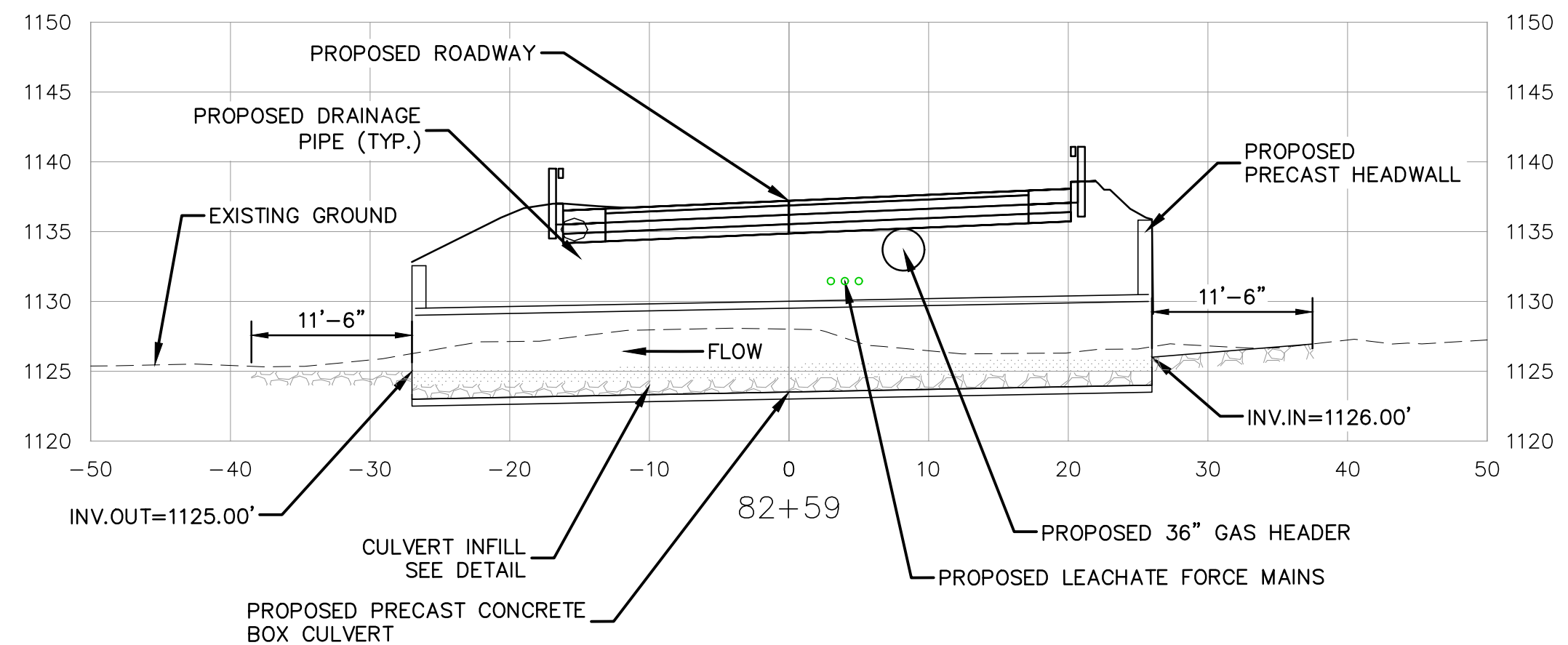
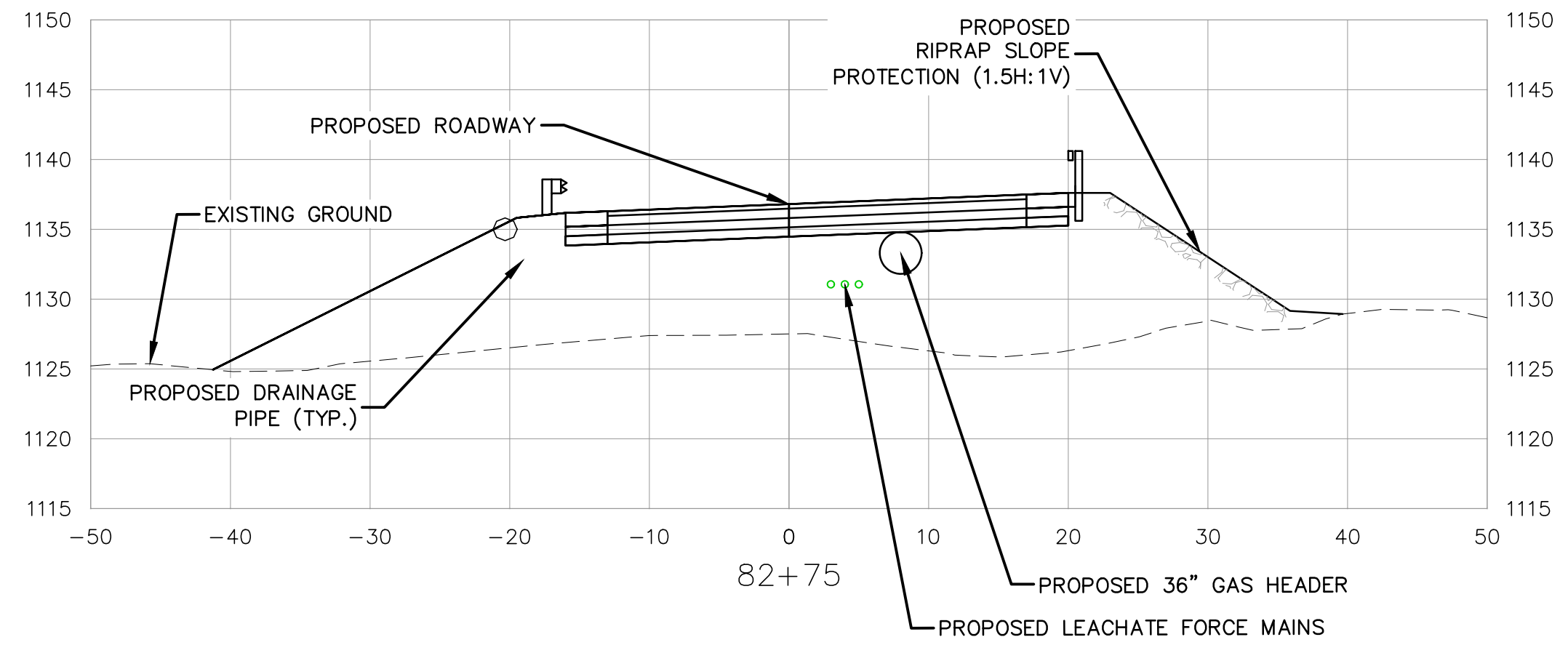
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project no.:	1101	drawn by:	ATRJUM/STF
checked by:	AJS	approved by:	AJS

scale: 1" = 40'  
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Granite State Landfill, LLC  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Douglas Drive  
 Route 116 Plan Sheet 2

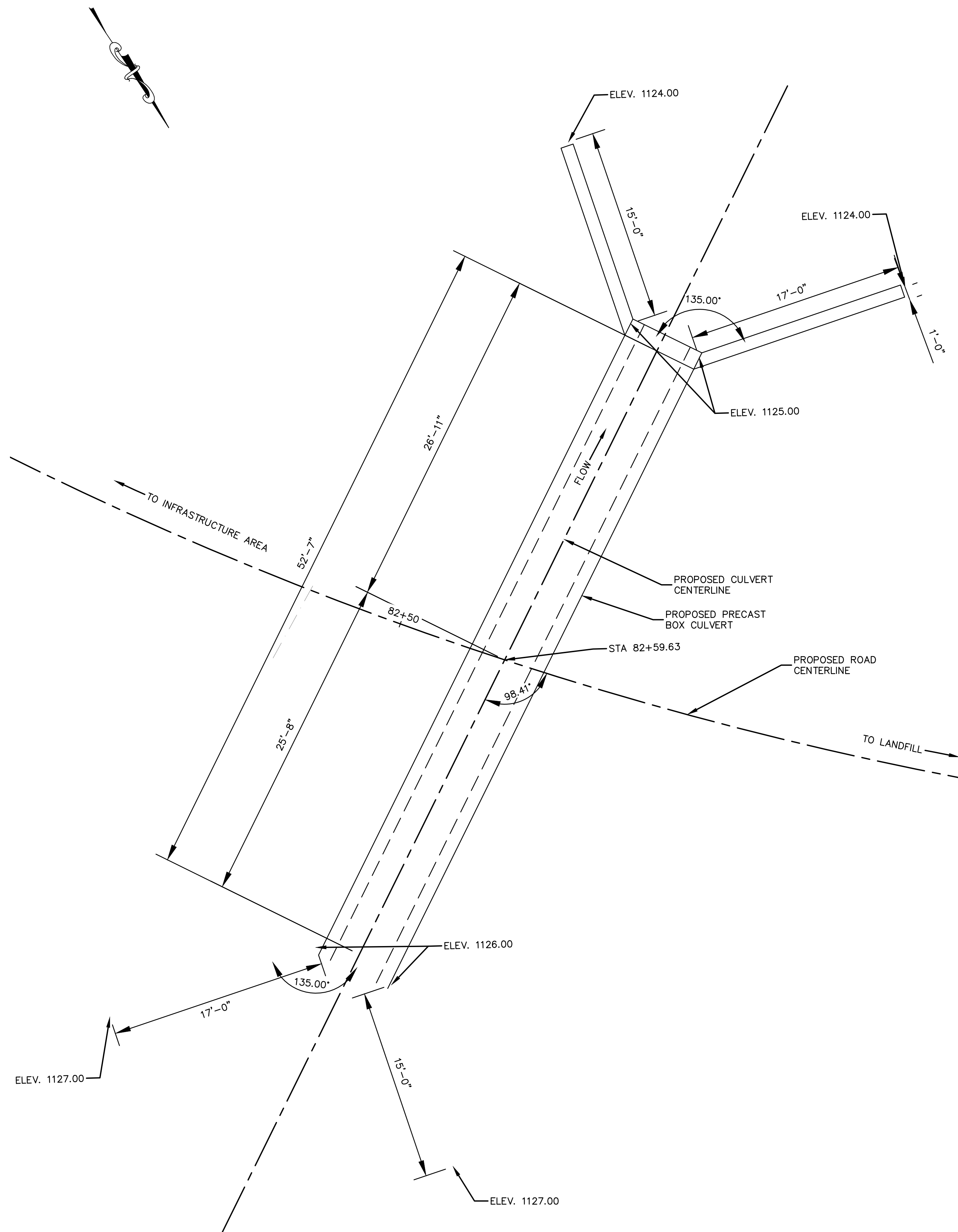
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**Roadway Sections**

Scale: 1" = 10'

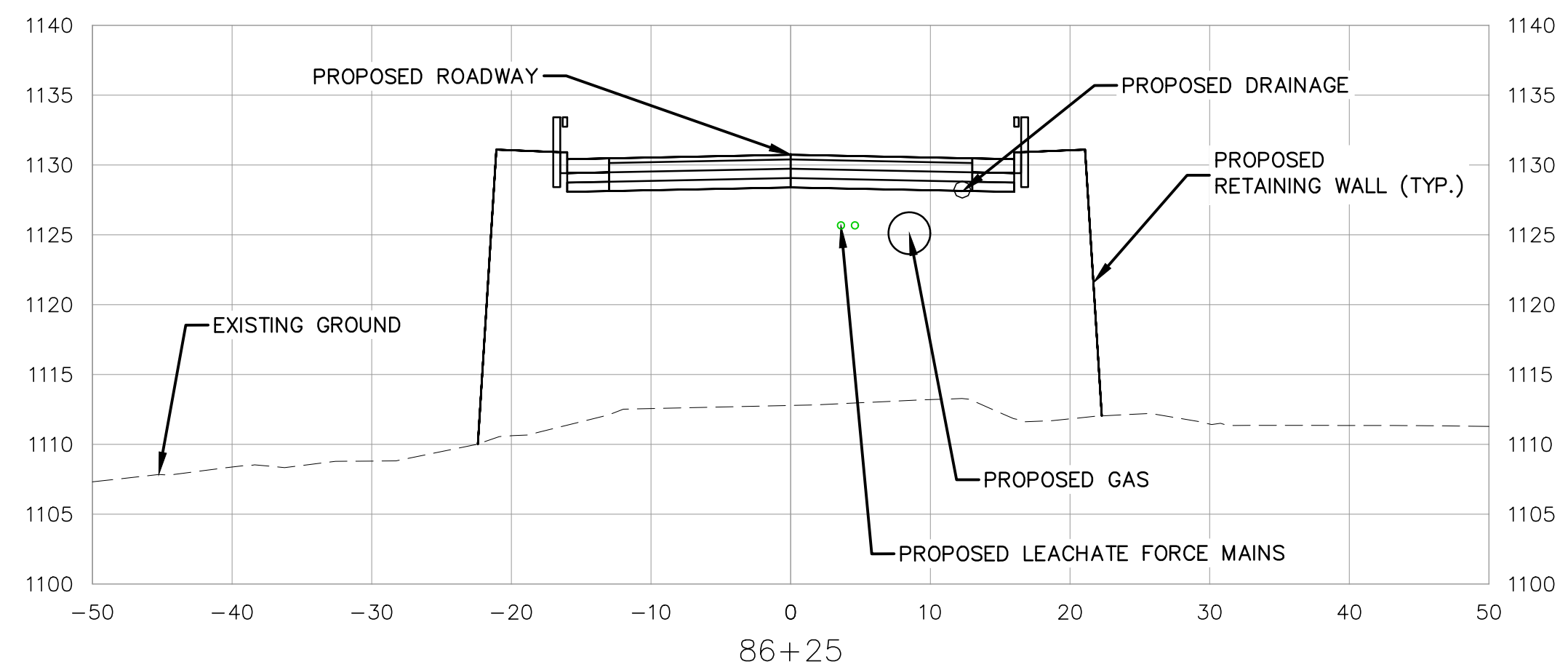
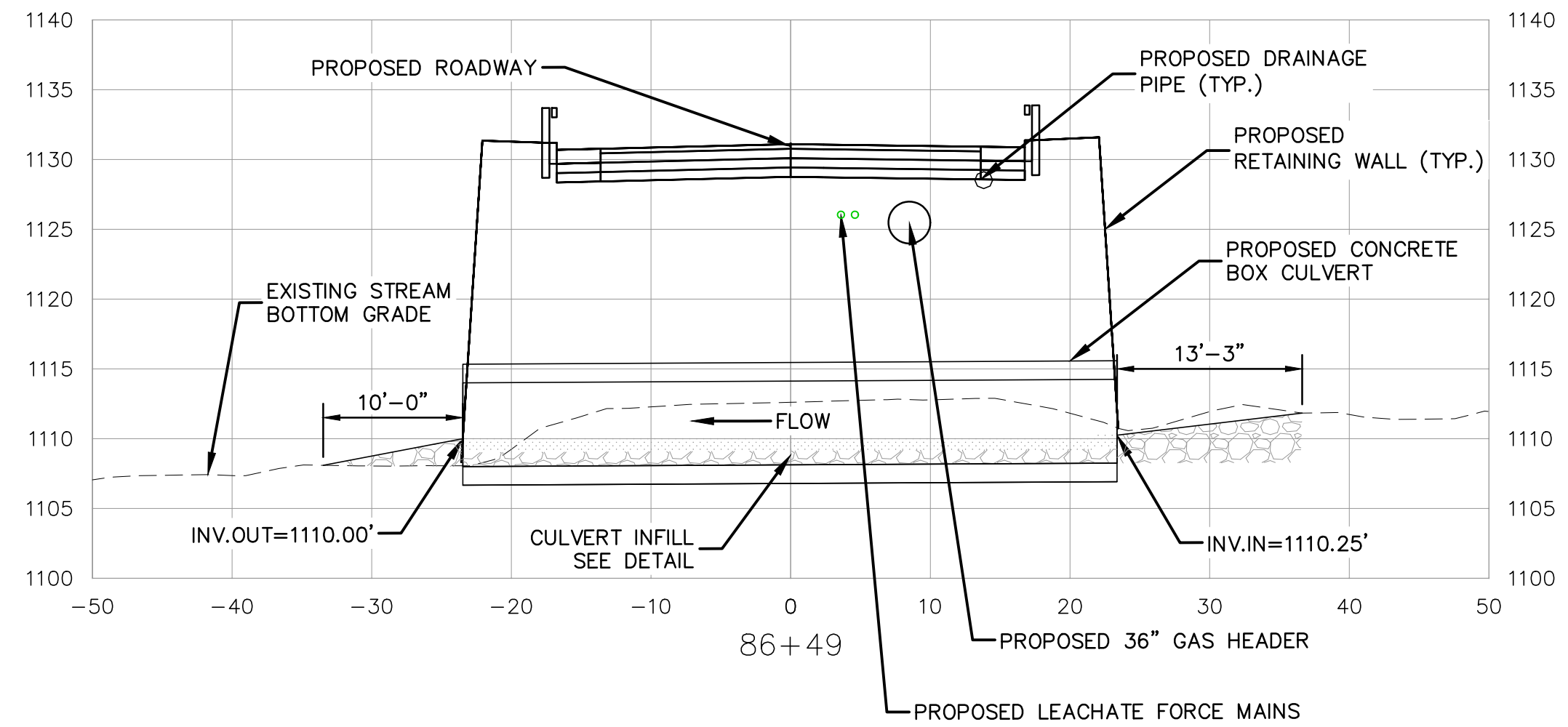
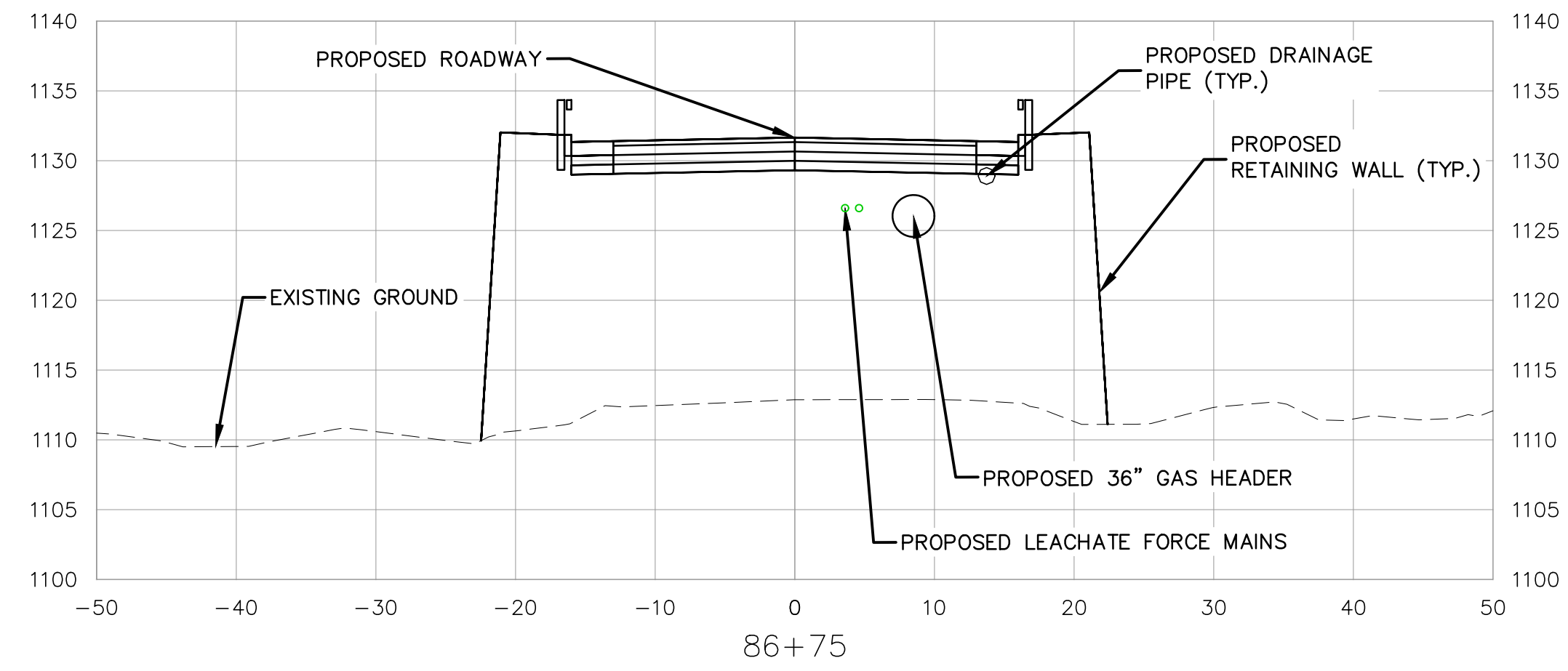


**Culvert Layout Plan**

Scale: 1" = 5'

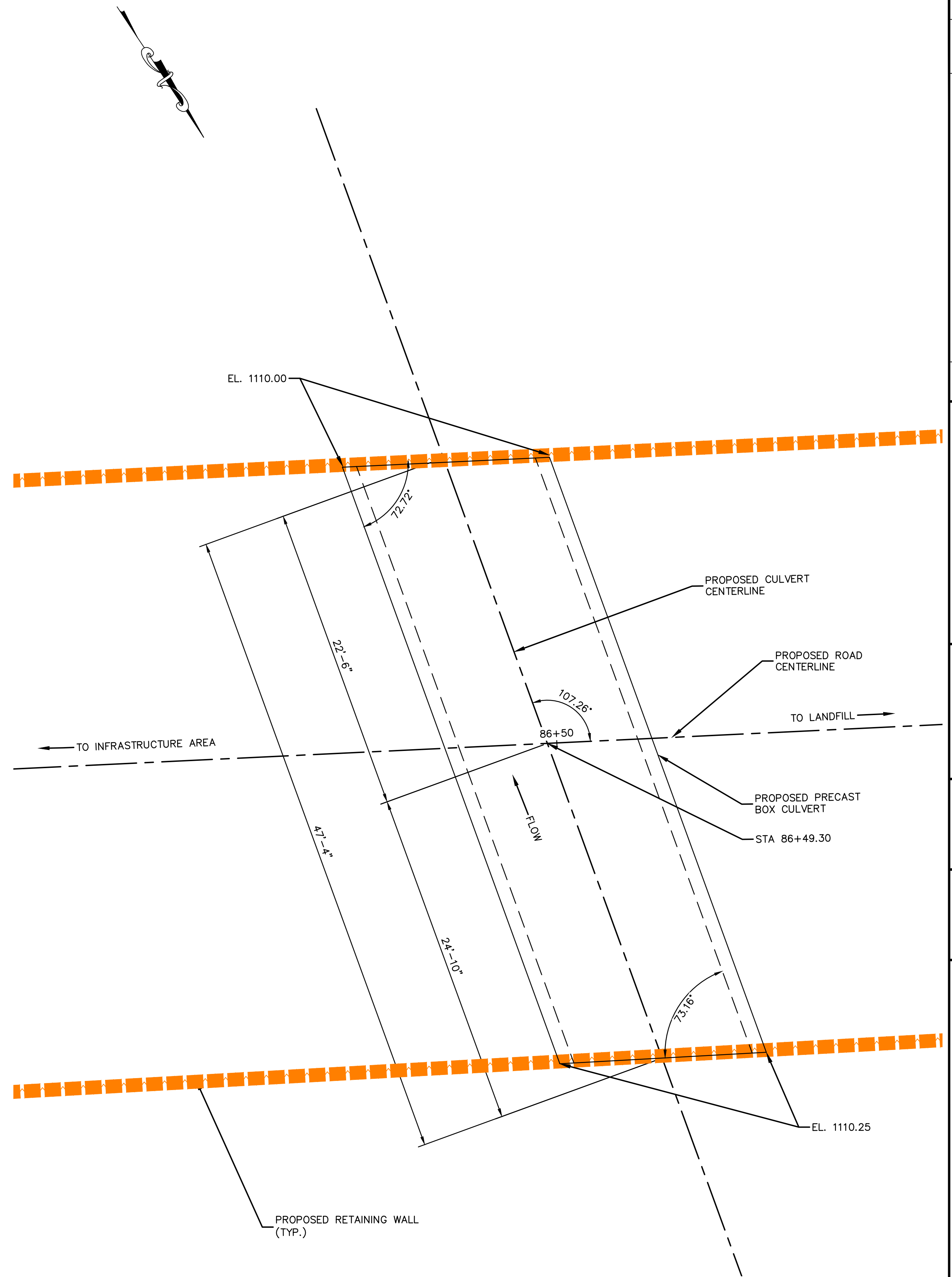
<p>CIVIL/ENVIRONMENTAL/STRUCTURAL ENGINEERS          Portsmouth, NH • Manchester, NH • Portland, ME          603/431-6196 • 603/627-0708 • 207/641-4223          c m a e n g i n e e r s . c o m</p>	
designed by: ATR/JM/STF/AJS	date: October 2023
drawn by: ATR/JM/STF	project no.: 1101
approved by: AJS	checked by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4' V	
Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	
Roadway Sections and Culvert Layout Plan 2	
drawing no. <b>DD-14</b>	
sheet: 35 of 50	





**Roadway Sections**

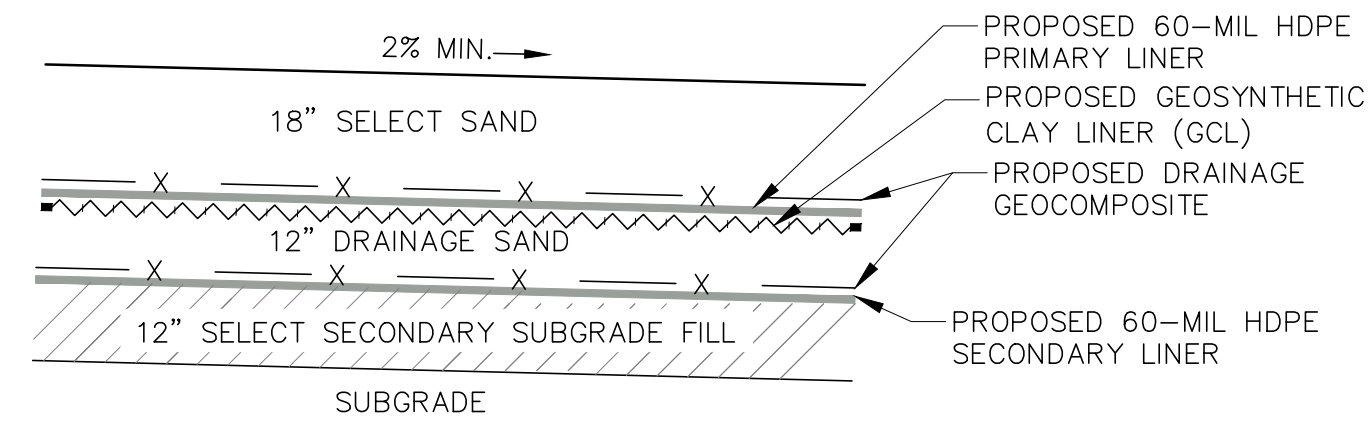
Scale: 1" = 10'



**Culvert Layout Plan**

Scale: 1" = 5'

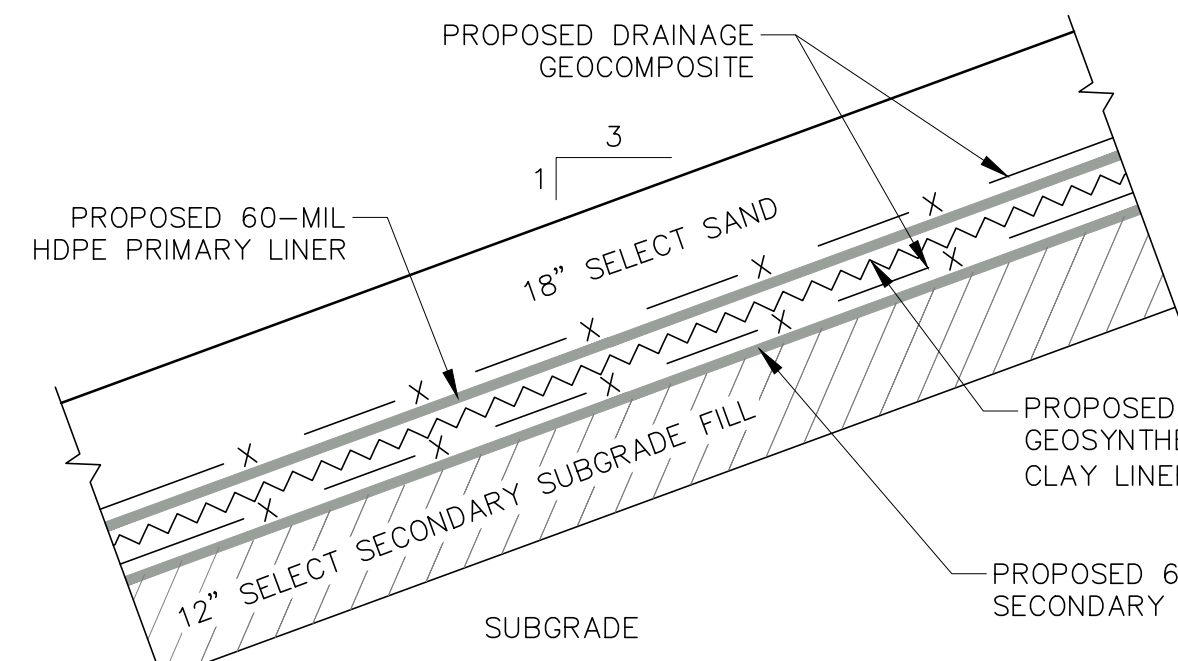
<p>CIVIL/ENVIRONMENTAL/STRUCTURAL          Portsmouth, NH • Manchester, NH • Portland, ME          603/431-6196 • 603/627-0708 • 207/641-4223          c m a e n g i n e e r s . c o m</p>	
designed by: ATR/JM/STF/AJS	drawn by: ATR/JM/STF
date: October 2023	checked by: AJS
project no.: 1101	approved by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4' V	
<b>Granite State Landfill, LLC</b> <b>Dalton, New Hampshire</b> <b>Permitting Plan Set</b> <b>Roadway Sections and</b> <b>Culvert Layout Plan 3</b>	
drawing no. <b>DD-15</b>	
sheet: 36 of 50	



**Typical Liner Section (Base Areas)**

Not to Scale

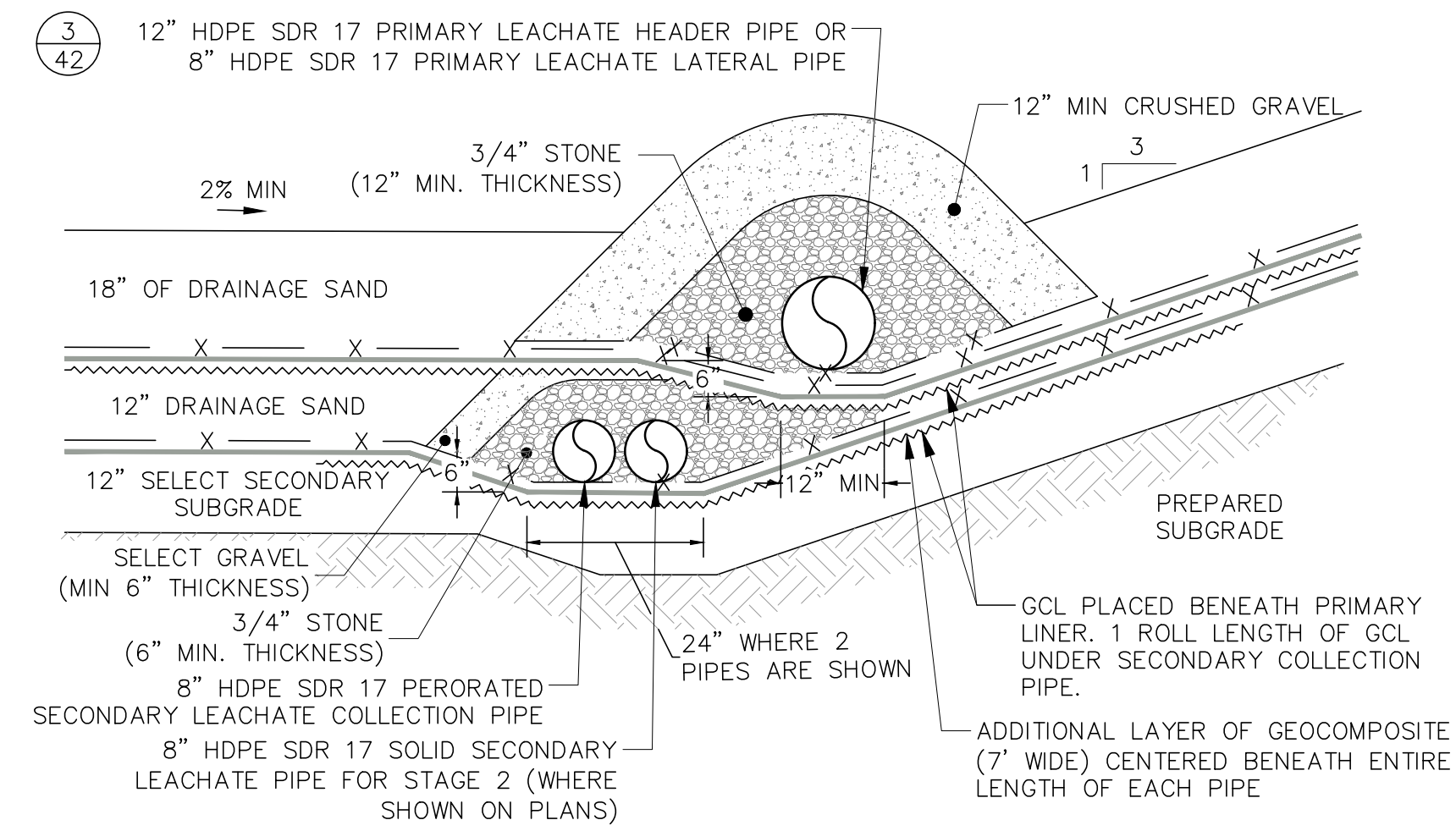
1



**Typical Liner Section (Slope Areas)**

Not to Scale

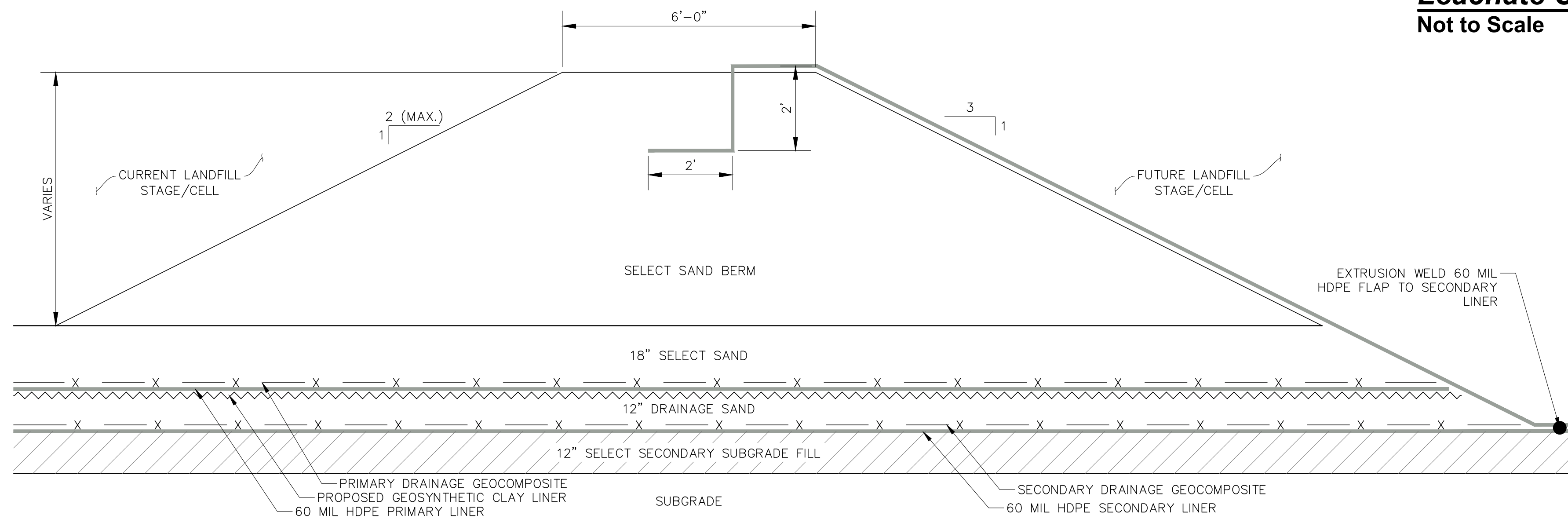
2



**Leachate Collection Pipe**

Not to Scale

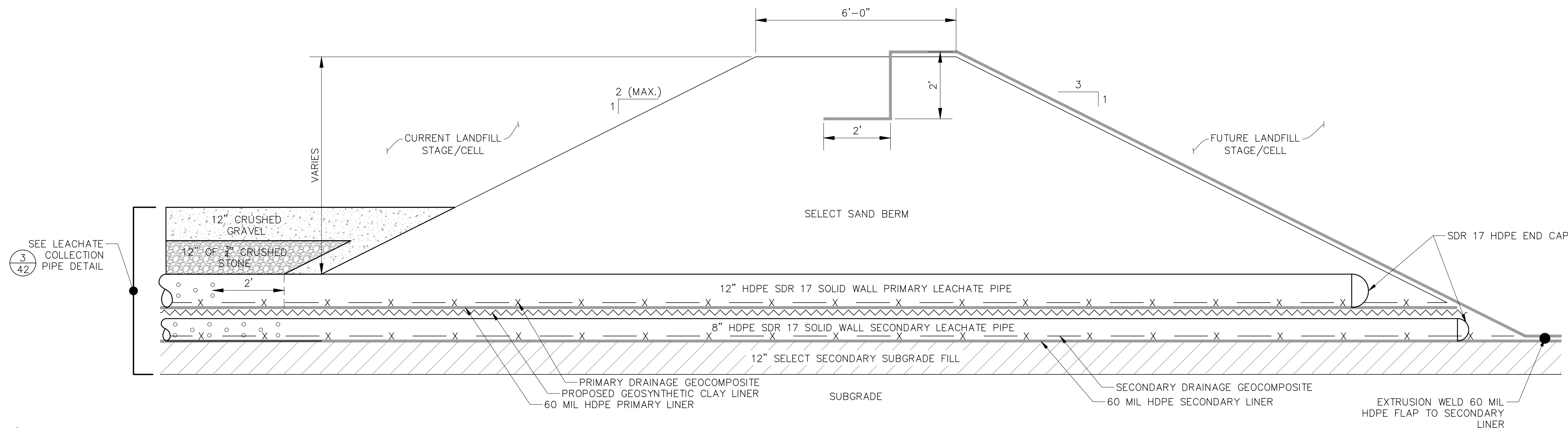
3



**Cell Diversion Berm**

Not to Scale

4



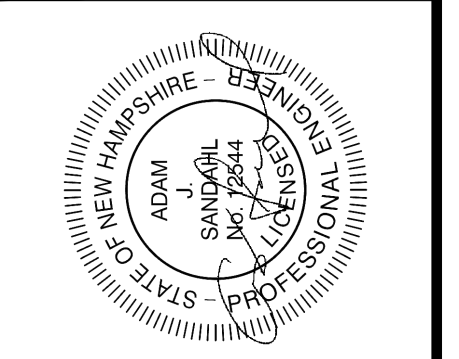
**Cell Diversion Berm - Pipe Penetration**

Not to Scale

5

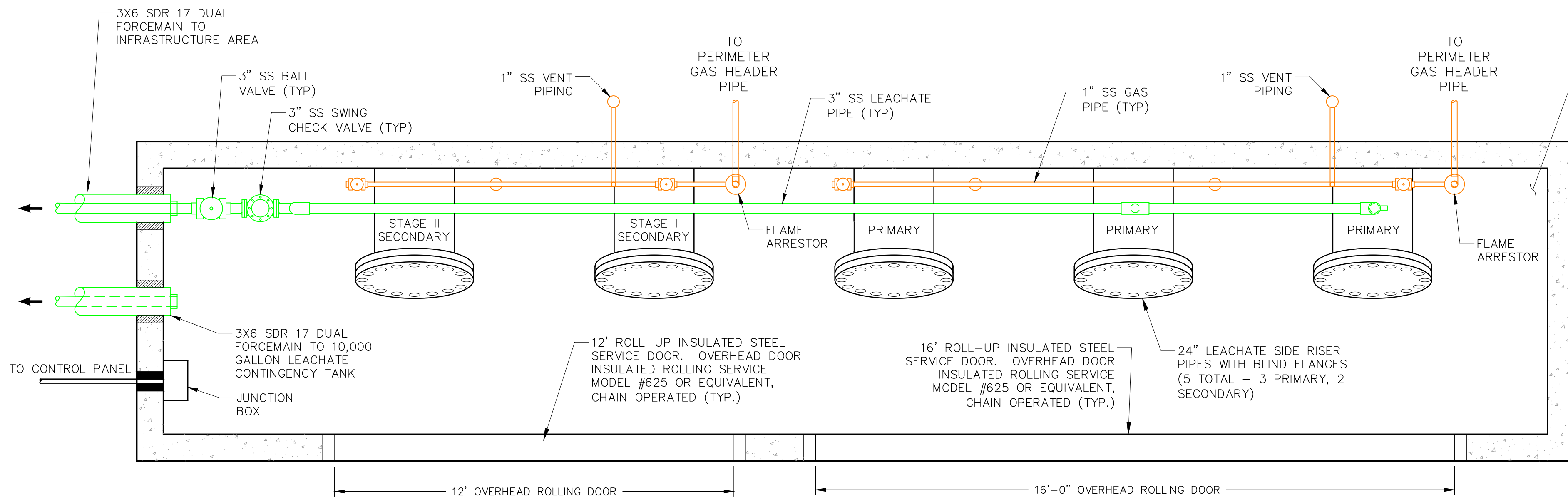
no.	revision	date	by

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date:	October 2023	designed by:	ATRIUM/STF/AJS
project no.:	1101	drawn by:	ATRIUM/STF
checked by:	AJS	approved by:	AJS
scale:			

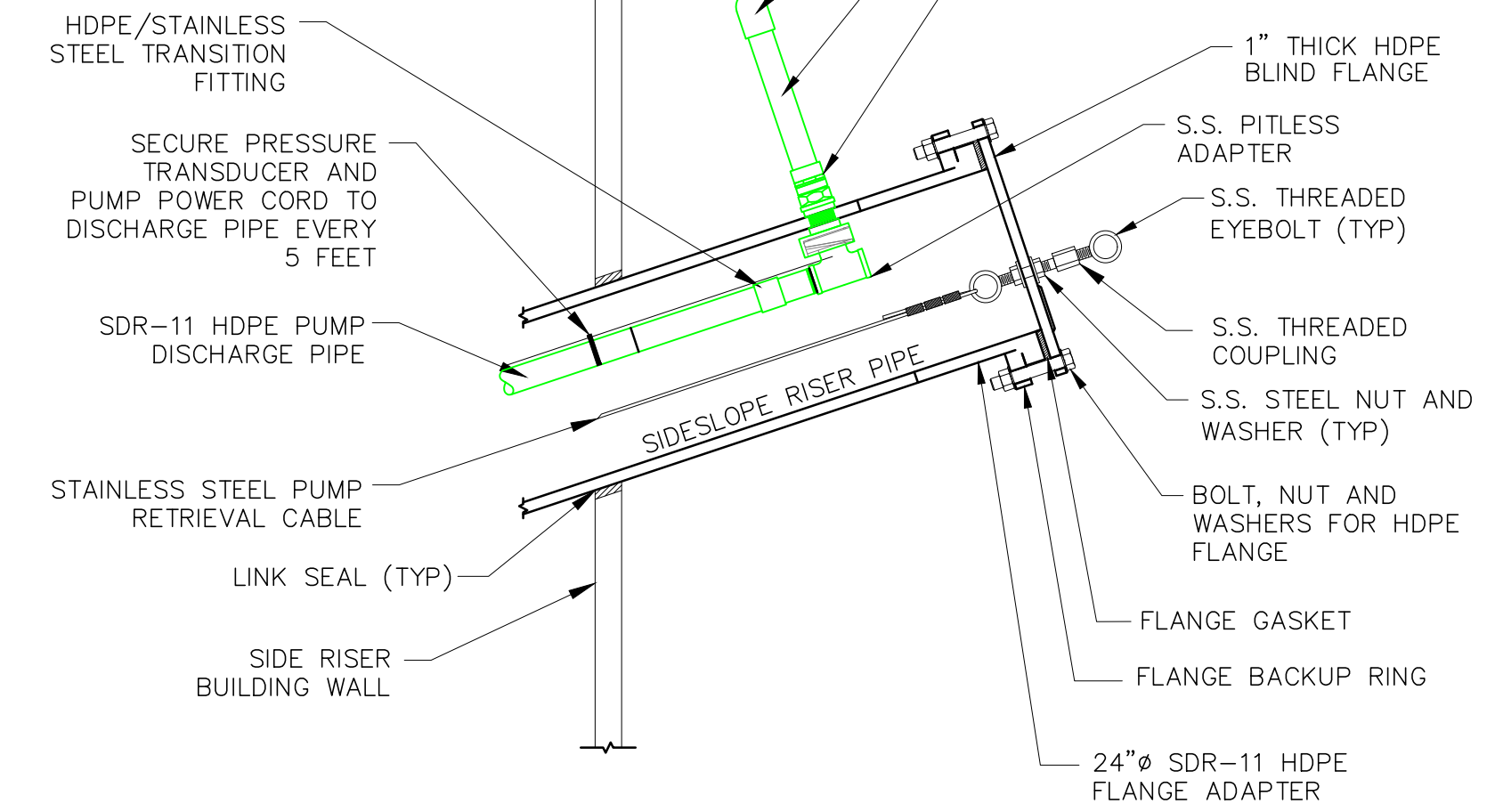
Granite State Landfill, LLC  
 Dalton, New Hampshire  
 Permitting Plan Set  
 Landfill Details



**NOTE:**  
TWO COATS OF SIKAGARD 62 SHALL BE APPLIED TO ALL CONCRETE SURFACES INSIDE THE PUMP STATION. CONCRETE SURFACE TO BE COATED SHALL BE DRY, FREE OF SURFACE VOIDS, HONEYCOMBED CONCRETE, CRACKS, MORTAR SMEARS, DIRT, AND FORM RELEASE AGENTS. SURFACE DEFECTS SUCH AS CRACKS, HOLES, OR CAVITIES SHALL BE FILLED AND FINISHED FLUSH WITH A PORTLAND CEMENT GROUT OR CONCRETE. VOIDS IN SURFACES ARE TO BE FILLED TO CREATE A SMOOTH, SLIGHTLY POROUS SURFACE. CLEAN ALL SURFACES TO REMOVE DIRT, MUD, DEBRIS, DUST, LAITANCE, ETC.

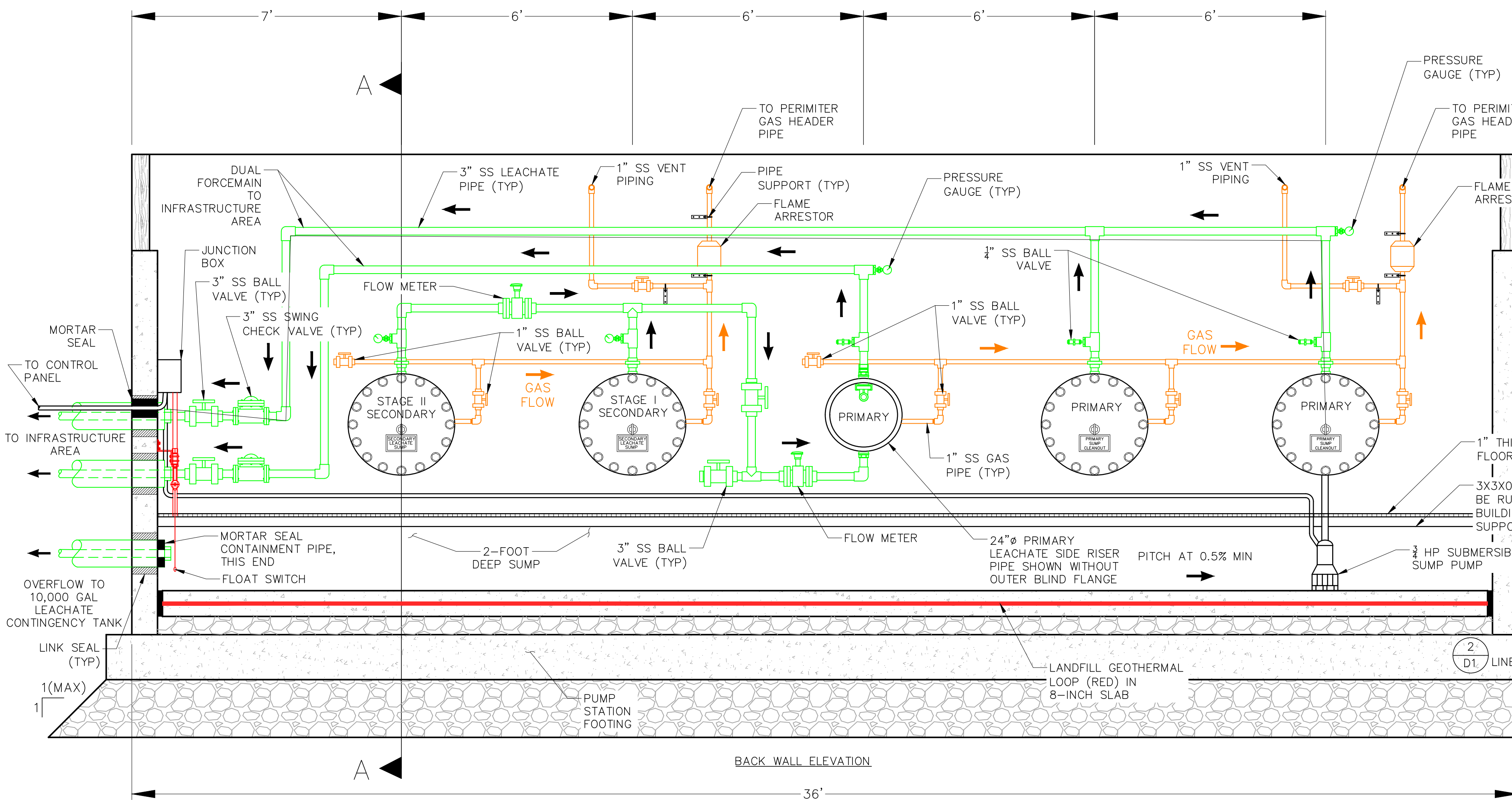
TOP ELEVATION

CONTRACTOR TO INSTALL PROCESS FLOW DIAGRAM FOR VALVES AND PIPING AND SECURELY ATTACH TO VAULT WALL. DIAGRAM IS TO SUMMARIZE FUNCTION AND PURPOSE OF ALL VALVES AND METERS AND INDICATED FLOW DIRECTION.

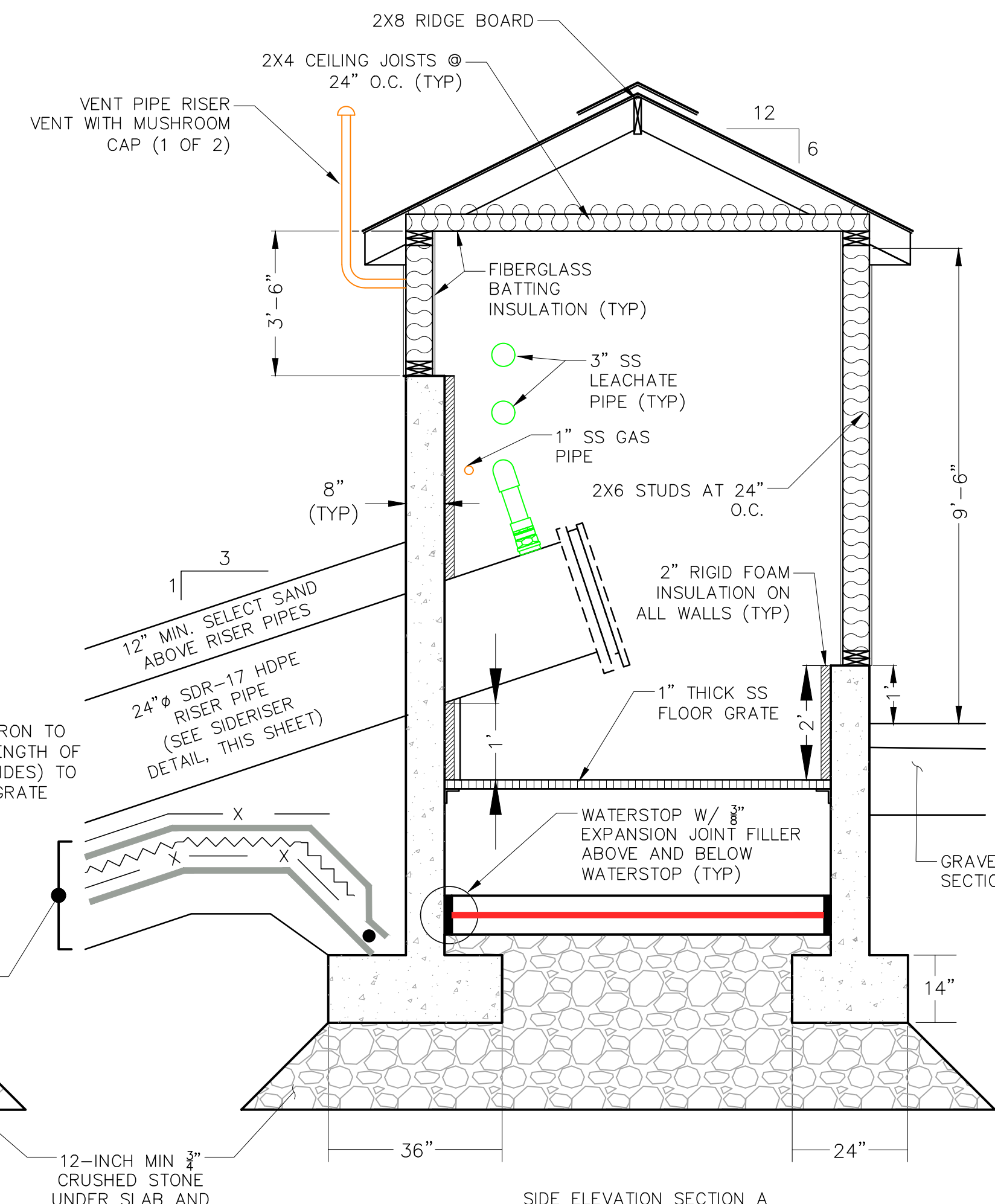


**NOTE:**  
CONTRACTOR SHALL PROVIDE AN ENGRAVED STAINLESS STEEL LABEL ON THE TOP OF EACH RISER THAT SHOWS THE TOTAL LENGTH OF THE SIDE RISER PIPE ALONG THE INVERT.

SIDERISER DETAIL



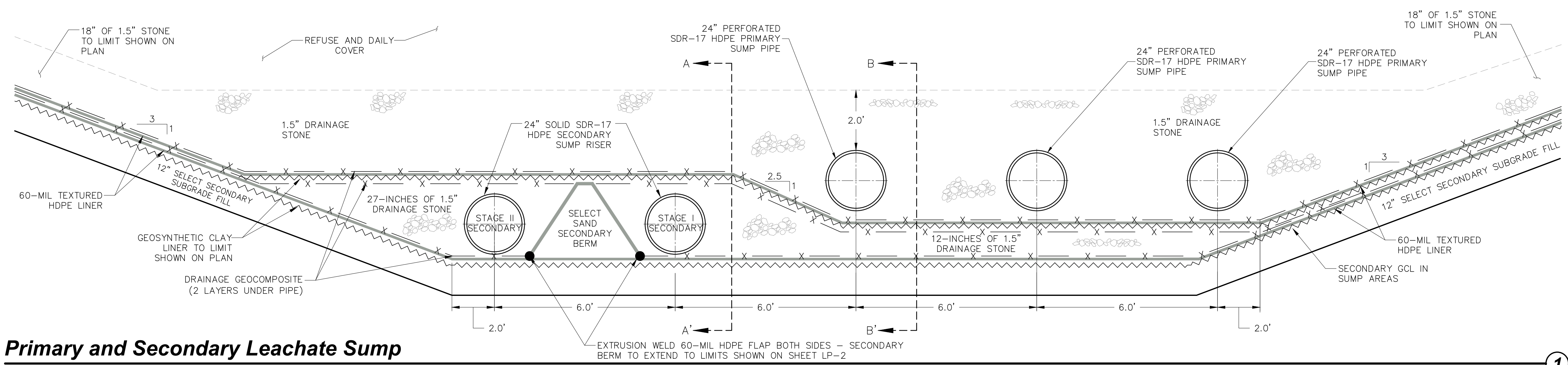
**NOTE:** ALL PIPING, VALVES, AND FITTINGS TO BE 316L SS. 1" SS GAS PIPE IS DEPICTED ON THIS PLAN IN ORANGE AND 3" SS LEACHATE PIPE IS DEPICTED IN GREEN.



**Pump Station Layout**  
Not to Scale

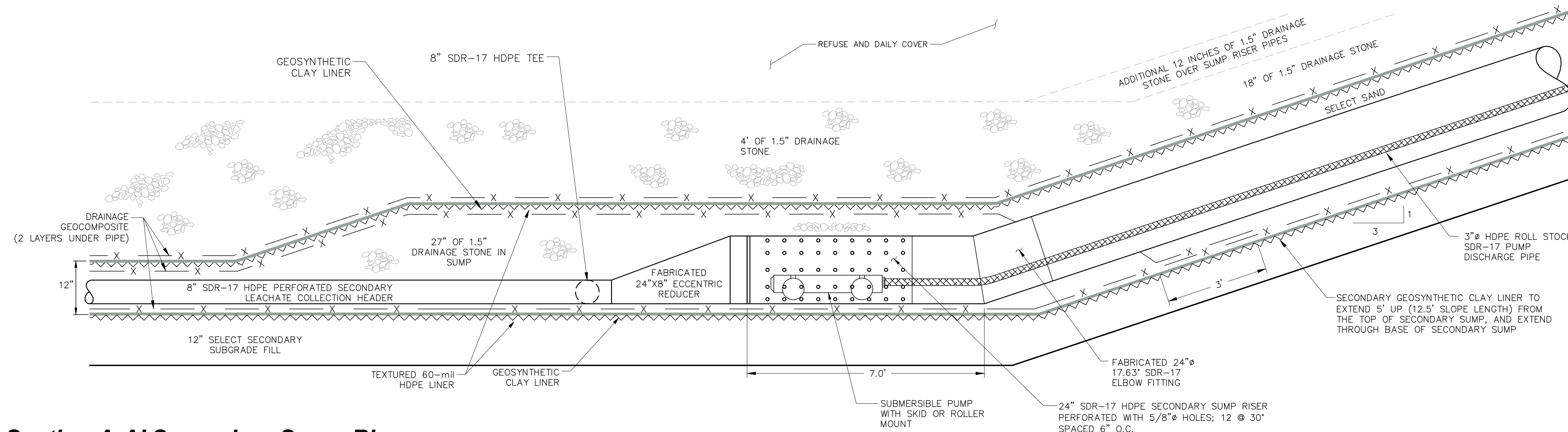
1

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<p>designed by: ATR/NUMST/FAJS</p> <p>drawn by: ATR/NUMST</p> <p>checked by: AJS</p> <p>approved by: AJS</p> <p>scale:</p>	<p>date: October 2023</p> <p>project no: 1101</p>
<p>Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set</p>	
<p>Leachate Details 1</p>	
<p>drawing no: D-2</p> <p>sheet: 38 of 50</p>	



**Primary and Secondary Leachate Sump**  
Not to Scale

1

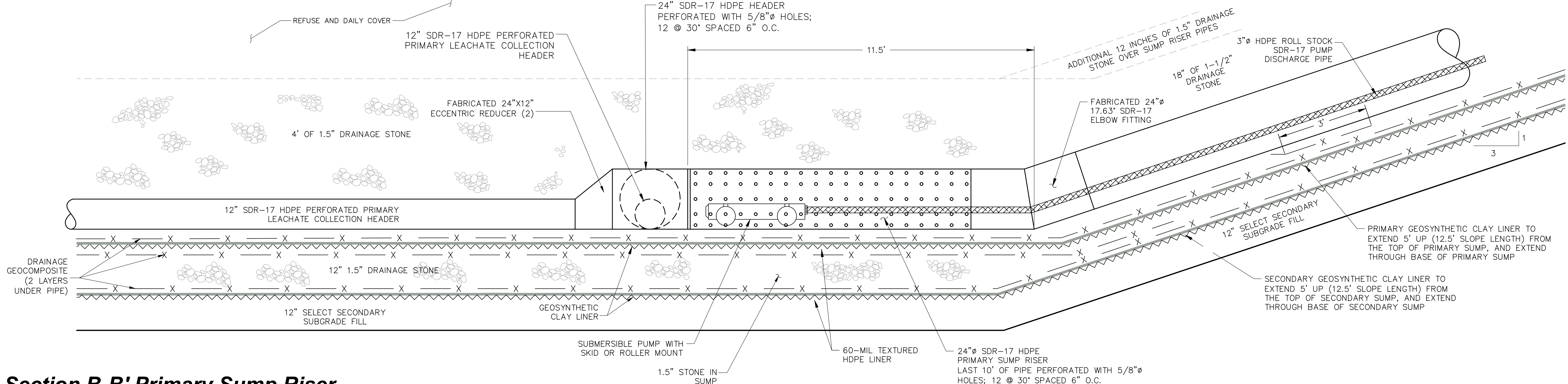


**Notes**

1. PIPE CONNECTIONS TO 24"Ø RISER PIPES SHALL BE MADE USING SIDE FUSION WELDING TECHNIQUES OR ELECTROFUSION BRANCH SADDLE FITTINGS. EXTRUSION WELDING IS NOT PERMITTED.
2. ALL EXPOSED ENDS OF DRAINAGE GEOCOMPOSITE SHALL BE COVERED WITH AN END CAP STRIP OF GEOTEXTILE HEAT BONDED ON THE TOP SIDE OF THE DRAINAGE GEOCOMPOSITE. END CAP STRIP SHALL BE THE SAME MATERIAL PROVIDED ON THE DRAINAGE GEOCOMPOSITE.

**Section A-A' Secondary Sump Riser**  
Not to Scale

2

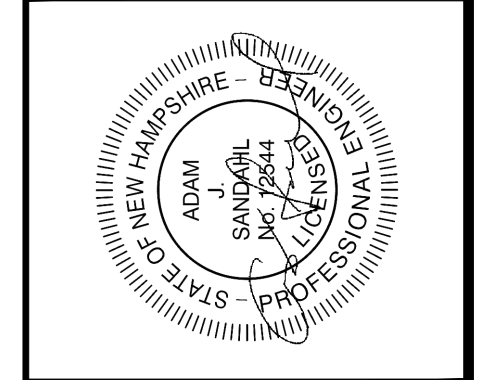


**Section B-B' Primary Sump Riser**  
Not to Scale

3

no.	revision	date	by

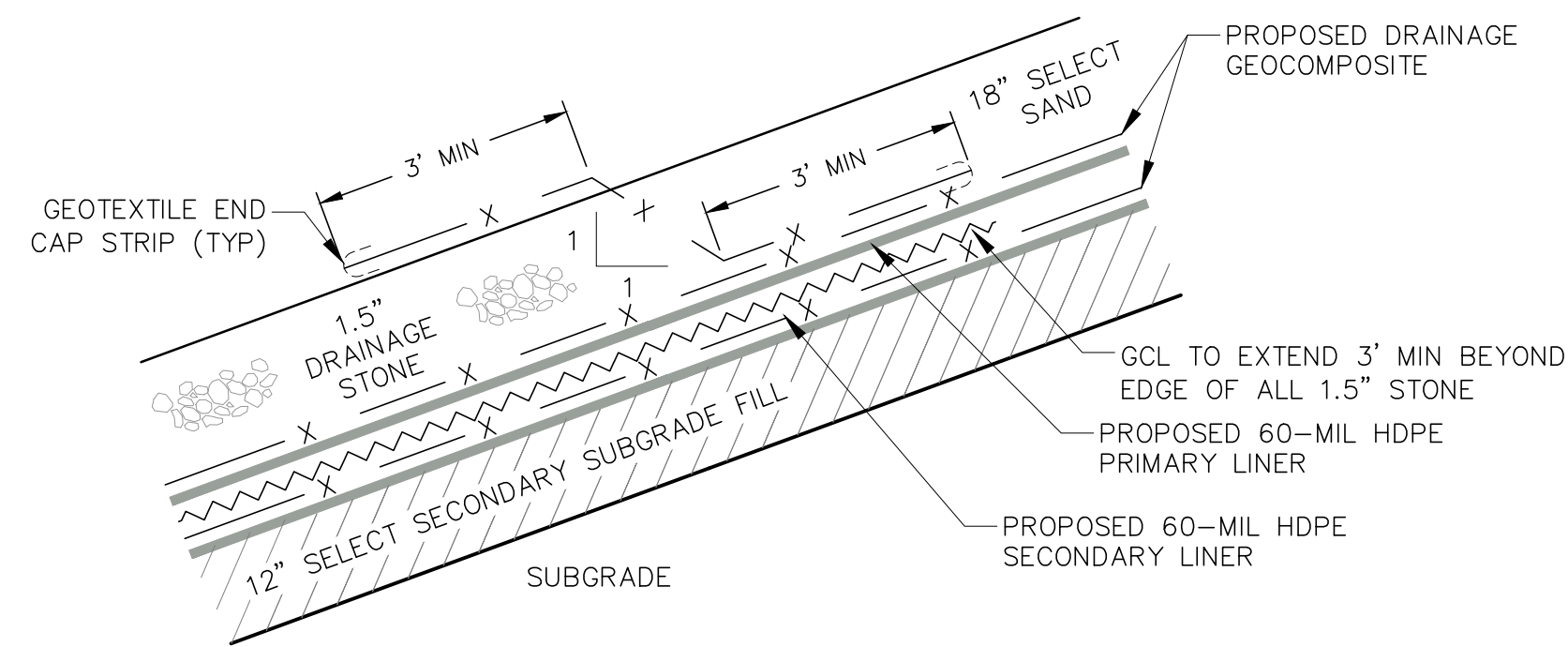
**CMA ENGINEERS**  
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date: October 2023	project no: 1101	checked by: AJS	

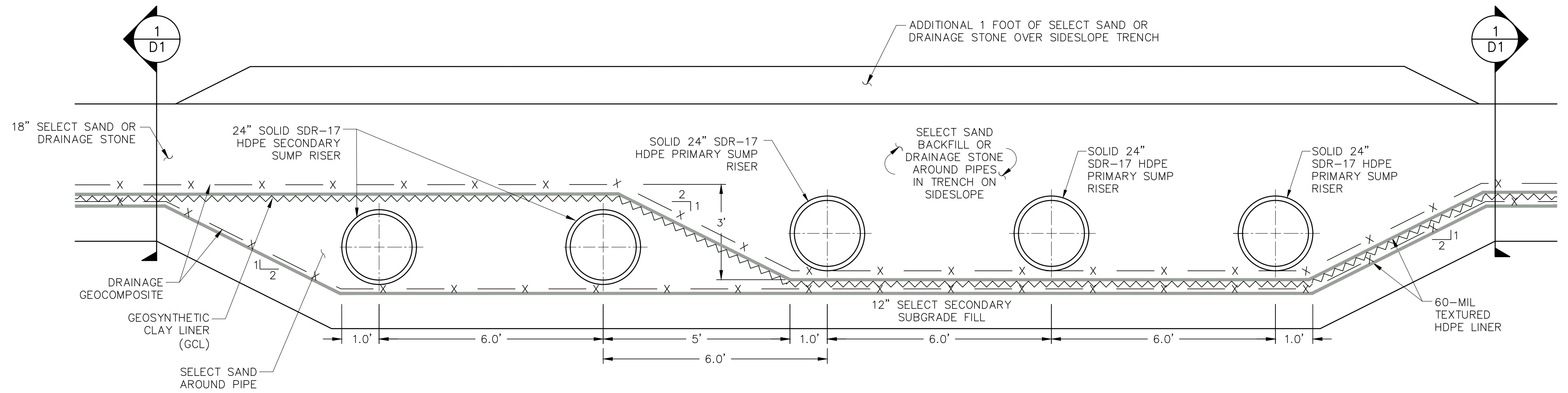
**Granite State Landfill, LLC**  
Dalton, New Hampshire  
Permitting Plan Set  
Leachate Details 2

drawing no. D-3
sheet: 39 of 50



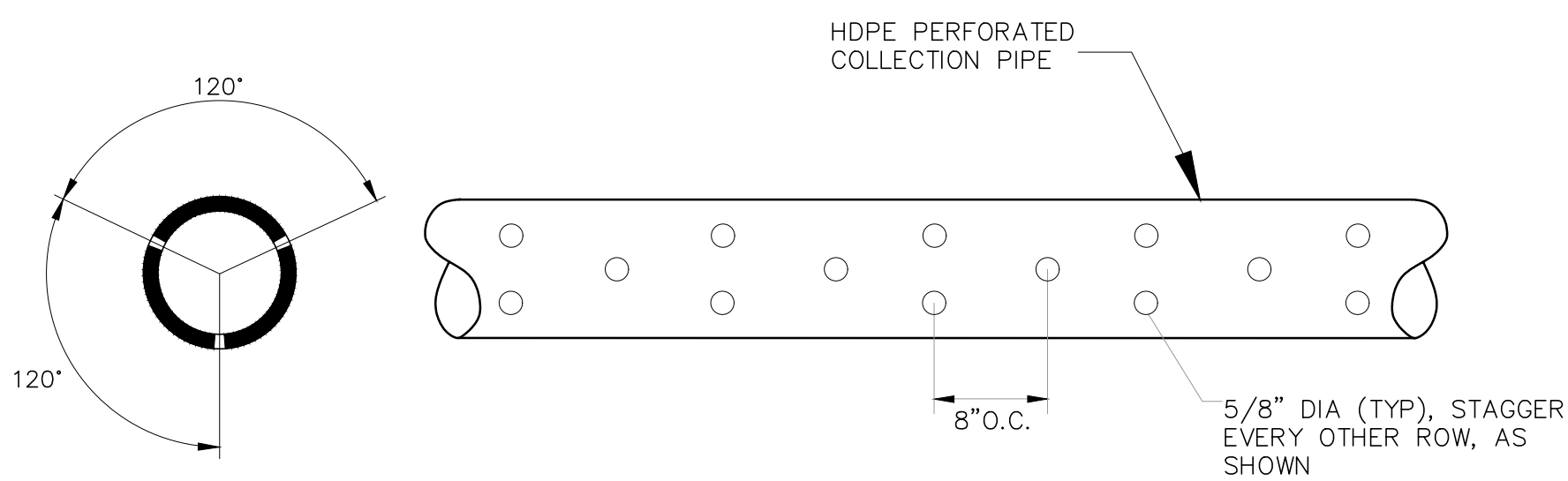
**Stone/Sand Transition**  
Not to Scale

1



**Side Slope Sump Riser Section**  
Not to Scale

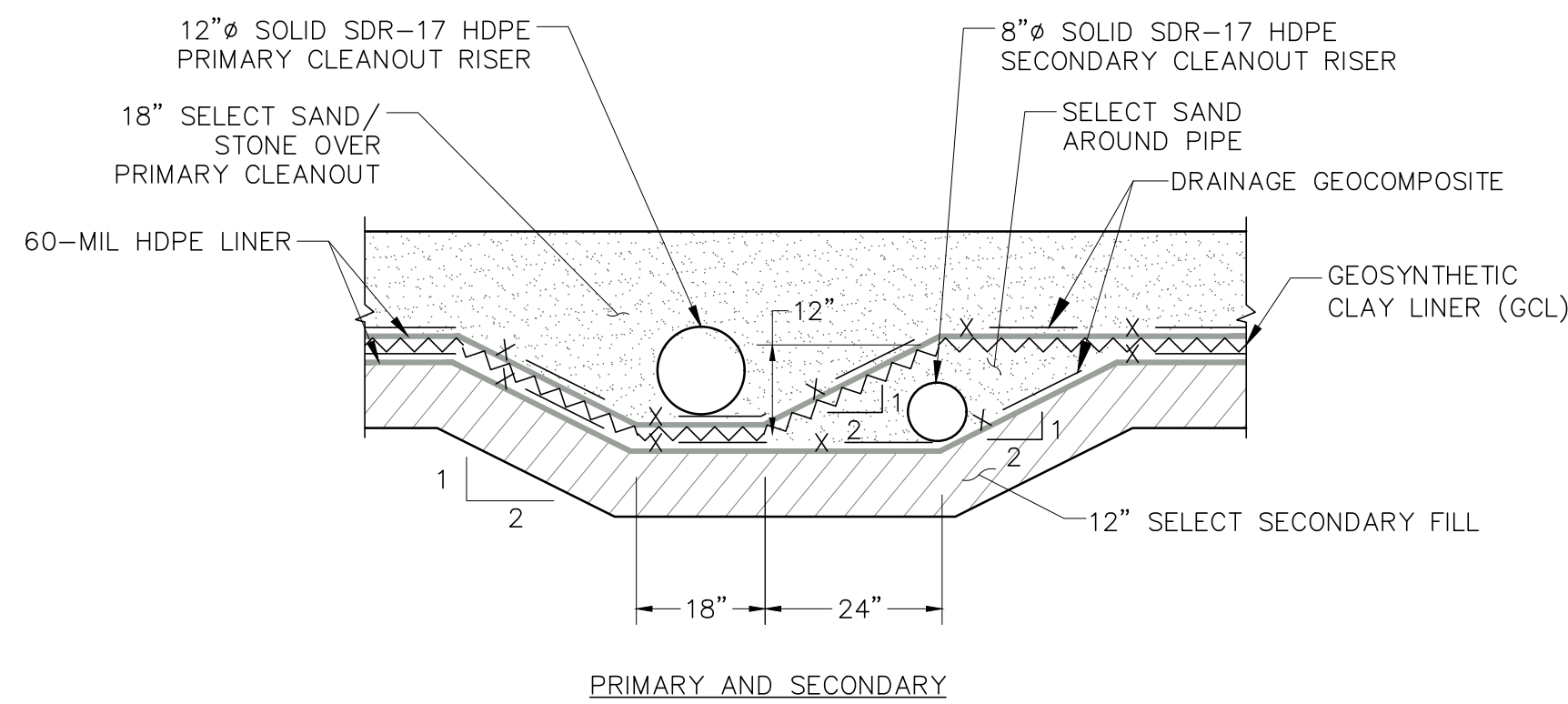
2



- NOTES:
1. PRIMARY LEACHATE HEADER COLLECTION PIPE INSIDE LANDFILL SHALL BE 12" DIA. HDPE SDR 17.
  2. PRIMARY LATERAL LEACHATE COLLECTION PIPE INSIDE LANDFILL SHALL BE 8" DIA. HDPE SDR 17.
  3. SECONDARY LEACHATE COLLECTION PIPE INSIDE LANDFILL SHALL BE 8" DIA HDPE SDR 17.
  4. PRIMARY AND SECONDARY CLEANOUT/VENT PIPES ARE NON-PERFORATED.

**Perforated Collection Pipe**  
Not to Scale

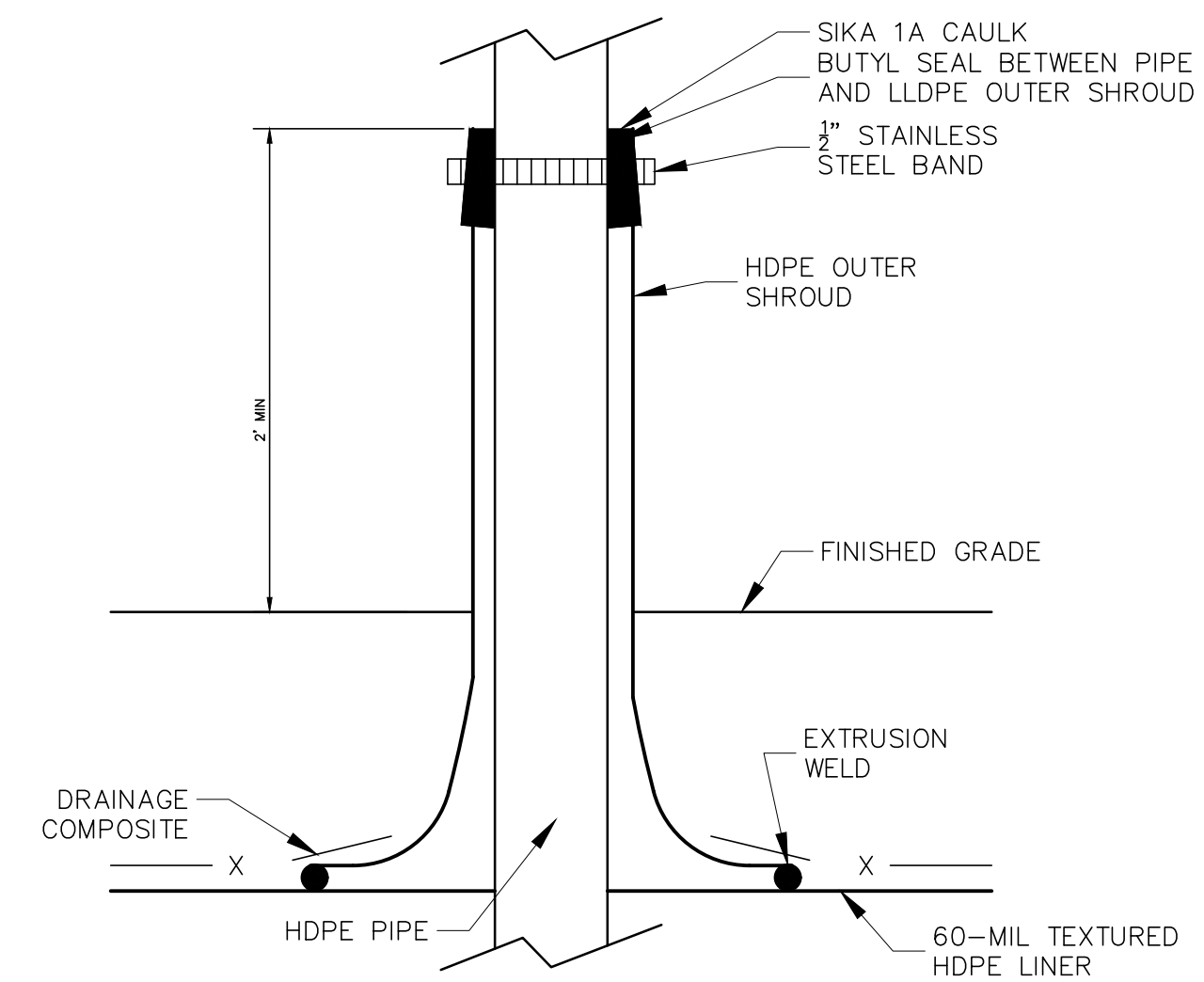
3



- NOTES:
1. CLEANOUTS SHALL EXTEND 24" ABOVE FINISHED GRADE AND PROVIDED WITH SDR 17 HDPE FLANGE ADAPTER & LAP JOINT FLANGE.
  2. SEE BOOT REQUIREMENTS FOR SECONDARY CLEANOUT AT ANCHOR TRENCH THIS SHEET.

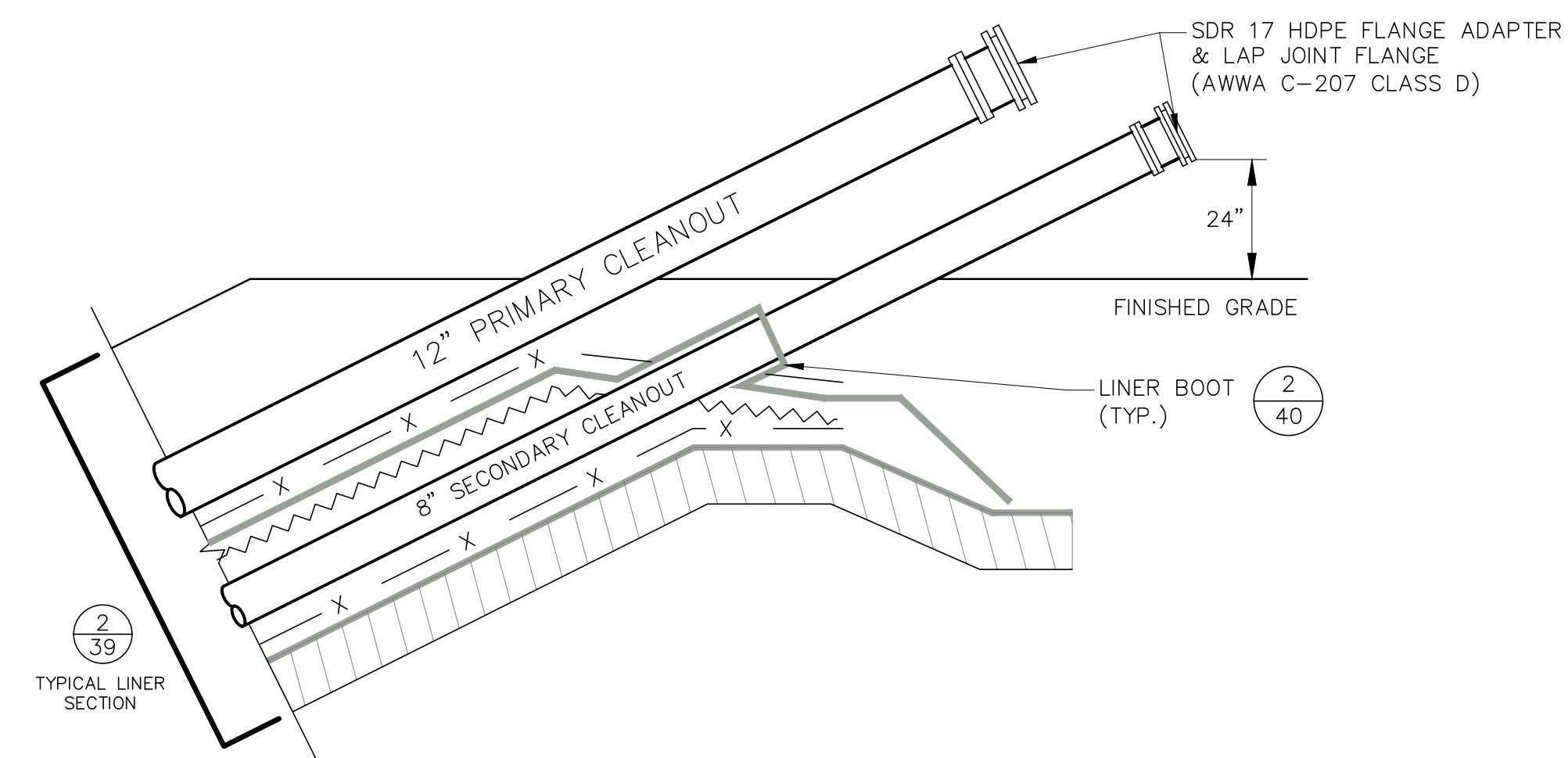
**Cleanout Cross Section**  
Not to Scale

4



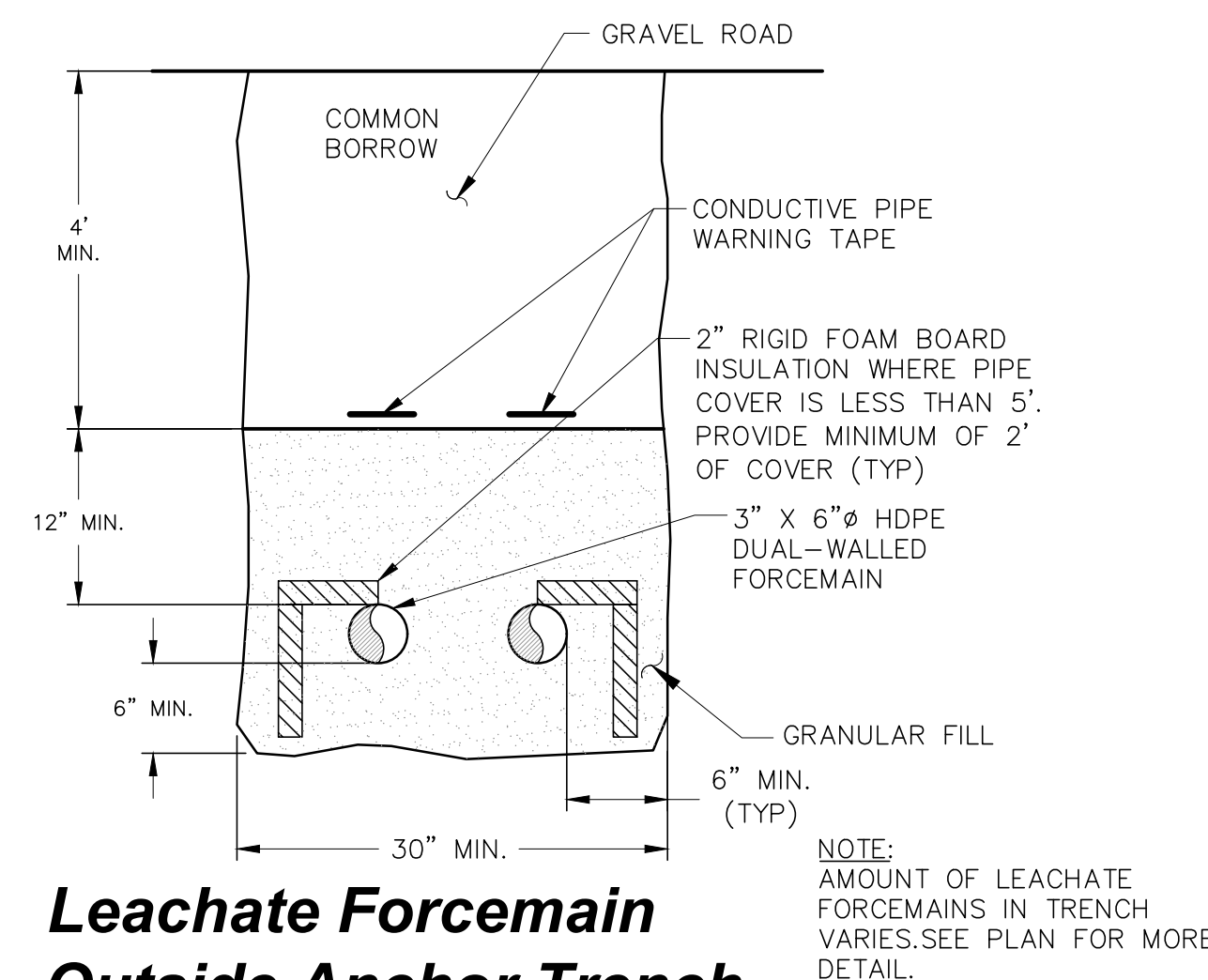
**Typical Boot Detail**  
Not to Scale

5



**Primary & Secondary Cleanout Riser**  
Not to Scale

6



**Leachate Forcemain Outside Anchor Trench**  
Not to Scale

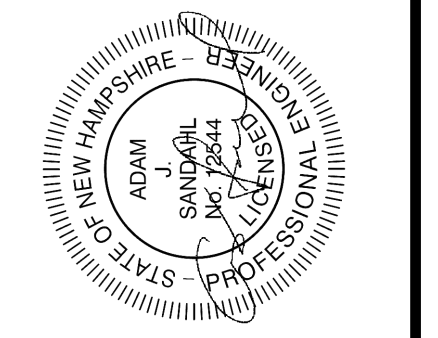
7

no.	revision	date	by

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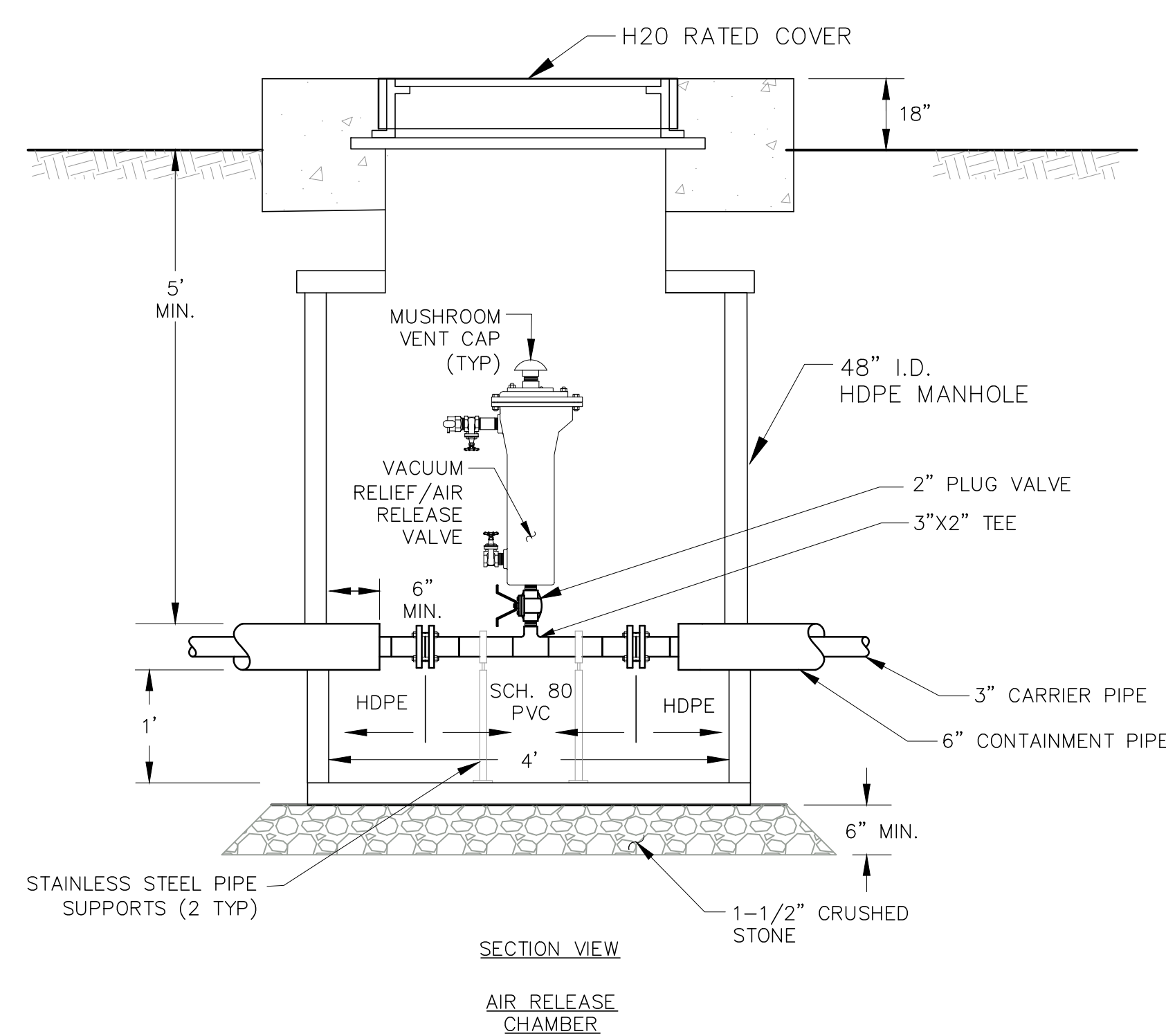
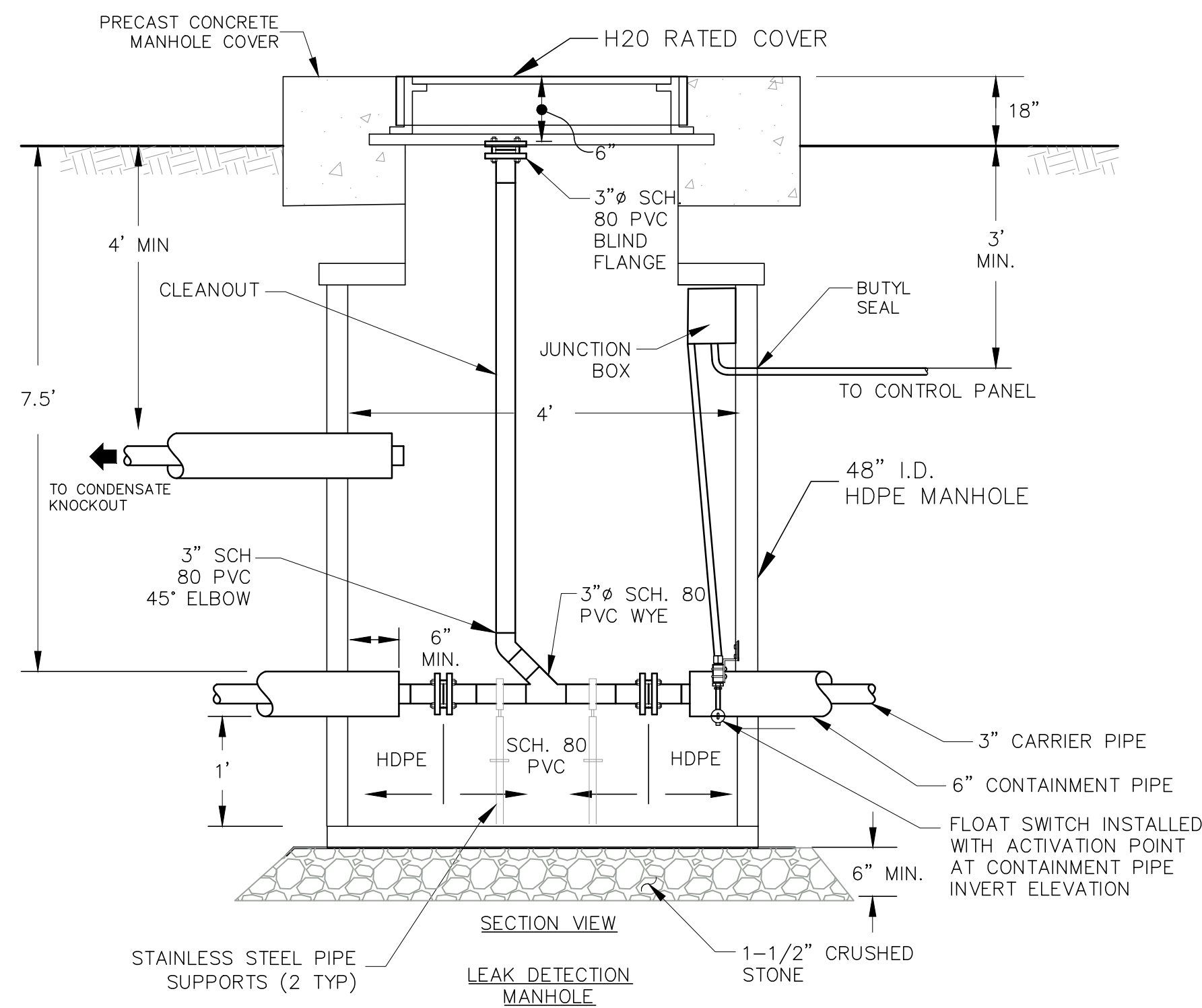
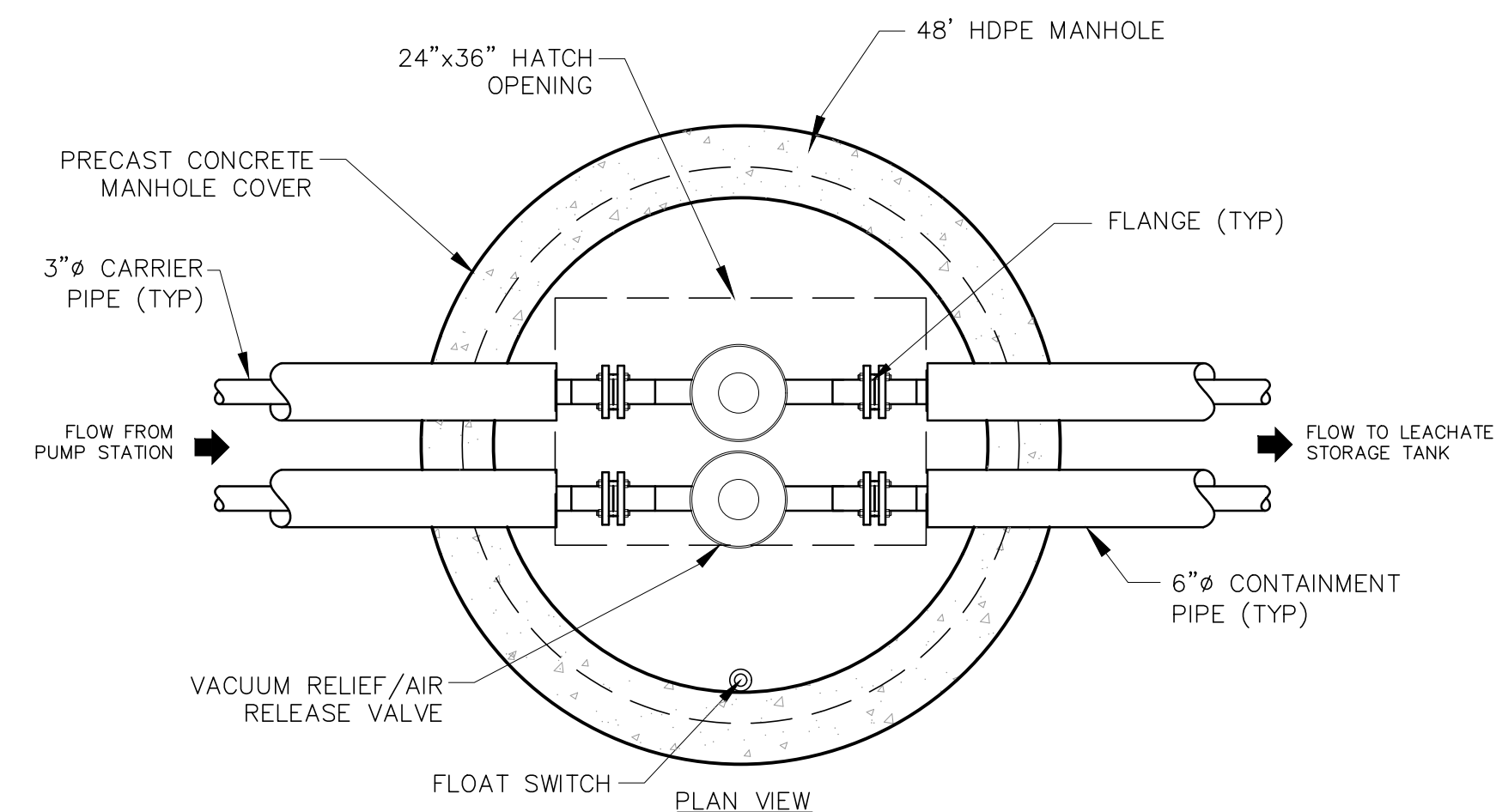
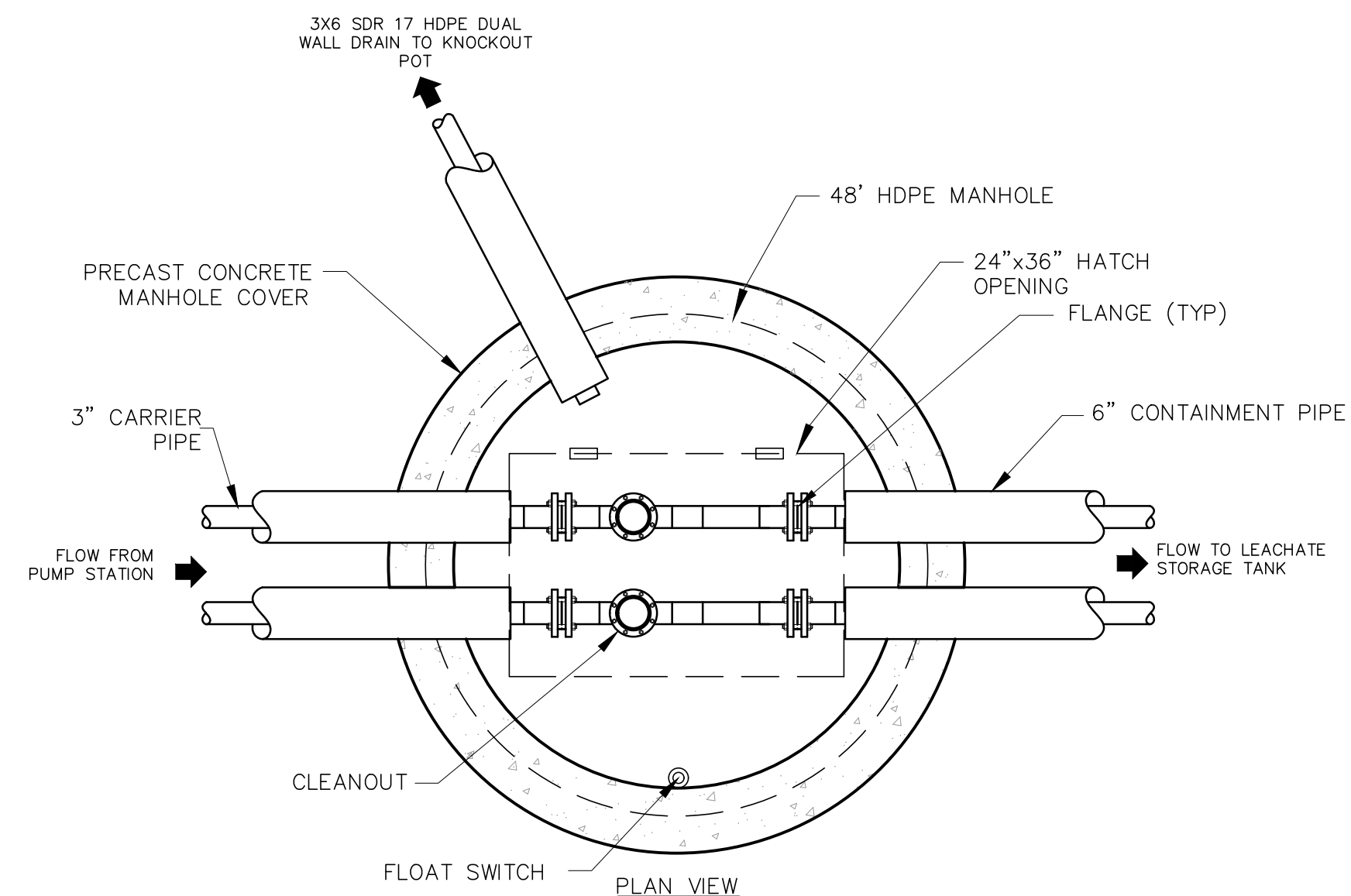


designed by:	ATR/NUMSTF/AJS
drawn by:	ATR/NUMSTF
checked by:	AJS
approved by:	AJS
date:	October 2023
project no.:	1101
scale:	

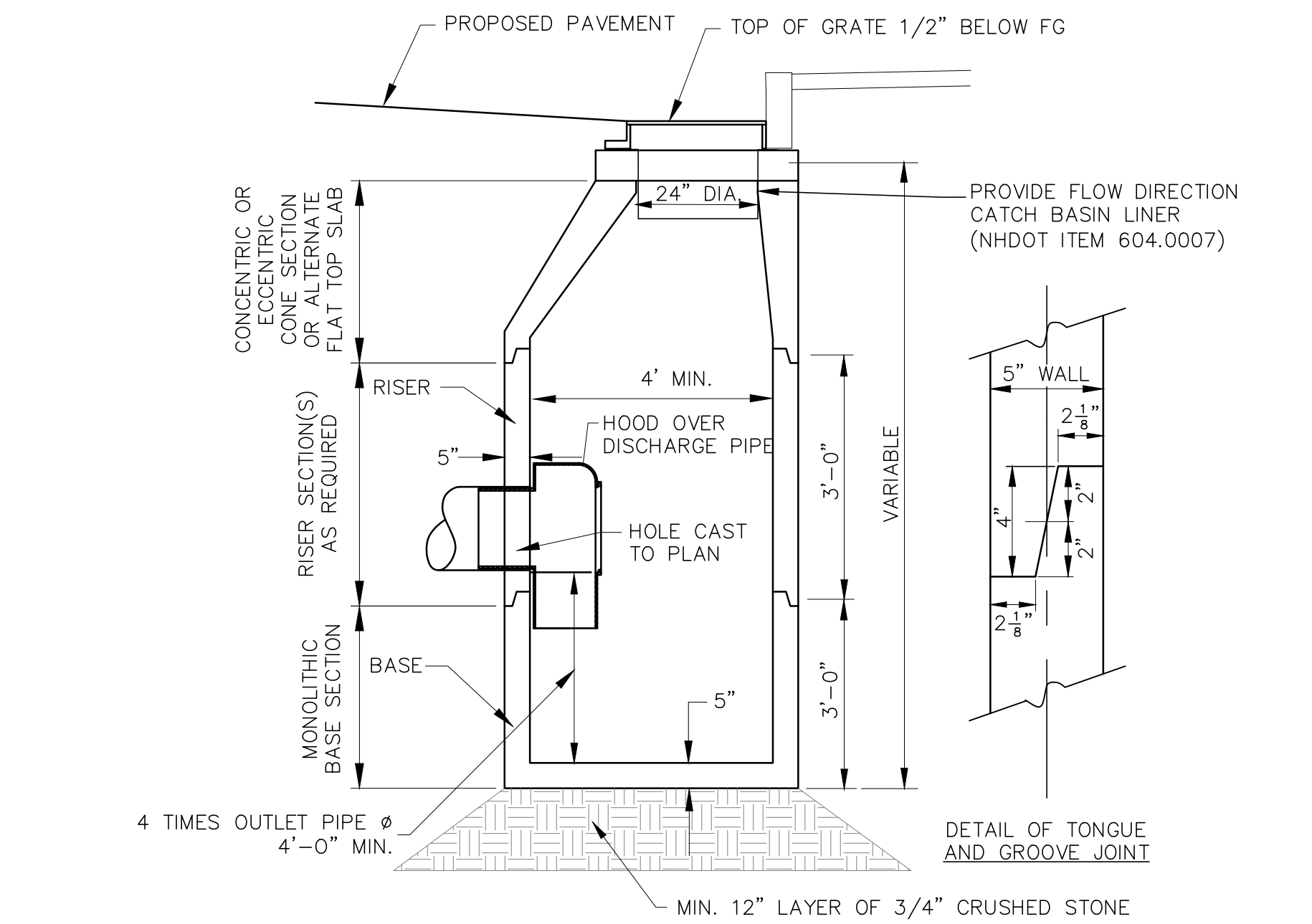
**Granite State Landfill, LLC**  
Dalton, New Hampshire

Permitting Plan Set

Leachate Details 3



PROVIDE NH STANDARD TYPE B CAST IRON FRAME AND GRATE. HEIGHT OF FRAME TO BE 4 INCHES. USE BLIND FLANGES AT CURBSIDE LOCATIONS.

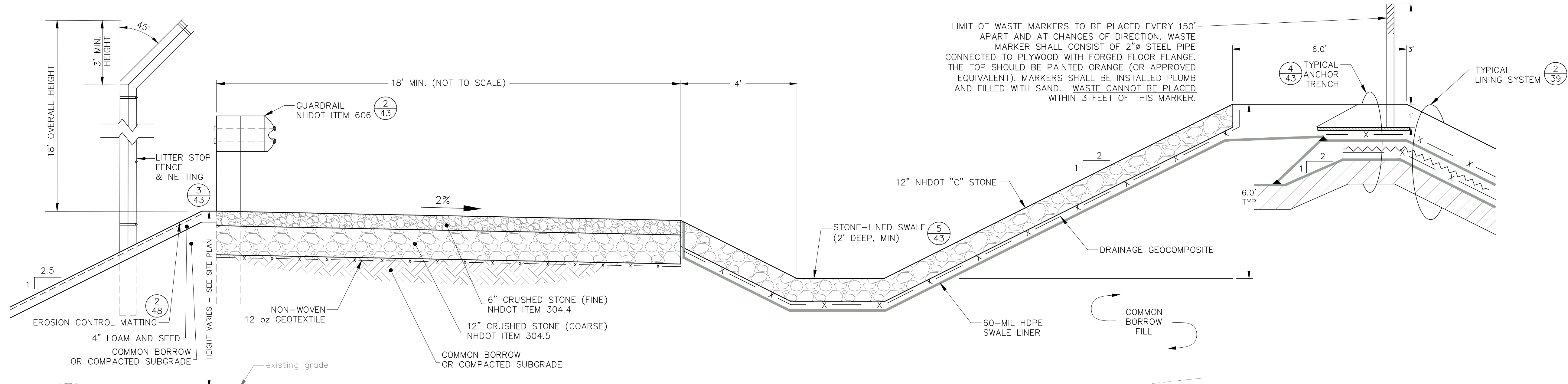


**Deep Sump Catch Basin Detail**  
Not to Scale 1

- GENERAL LEAK DETECTION AND AIR RELEASE CHAMBER NOTES:**
- ASSUME CLASS 1 DIVISION 1 GROUP D ATMOSPHERE IN ALL BELOW-GRADE STRUCTURES, INCLUDING MANHOLES AND VALVE BOXES.
  - FLOAT SWITCH CIRCUITS SHALL BE INTRINSICALLY SAFE.
  - CONTRACTOR SHALL PROVIDE SUPPORTS AND RESTRAINTS AS REQUIRED TO SECURE THE PIPE SYSTEM IN THE MANHOLES.
  - PROVIDE FULL-FACE VITON GASKET FOR ALL FLANGE CONNECTIONS.
  - CONTAINMENT PIPES ARE TO BE LEFT OPEN-ENDED IN MANHOLES UNLESS OTHERWISE NOTED.
  - FORCE MAIN PIPING SHALL BE SDR-17 CARRIER PIPE WITHIN SDR-17 CONTAINMENT PIPE UNLESS OTHERWISE NOTED.
  - MANHOLES SHALL BE 48" I.D., DR21 PE 4710 HDPE SOLID WALL MANHOLES.
  - ALL SECTIONS OF THE MANHOLE SHALL BE WELDED TOGETHER AND WATER TIGHT.
  - PIPE STUBS SHALL BE WELDED TO THE MANHOLE AND BE WATER TIGHT.
  - OFF-ROAD MANHOLES:
    - RIM ELEVATION SHALL BE 1.5-FT ABOVE FINISHED GRADE.
    - COVERS SHALL BE A FLAT, HDPE, HINGED COVER, LOCKABLE, AND WITH STAINLESS STEEL HARDWARE.
    - NOTED MANHOLES WILL BE DESIGNATED AS LEAK DETECTION MANHOLES AND THE INLET PIPE FROM THE SECONDARY LEACHATE SELECTION SYSTEM SHALL BE FABRICATED PER THE DETAIL ON THIS SHEET.
    - FALL PROTECTION GRATING IN LEAK DETECTION MANHOLES SHALL INCLUDE A 2-FT DIA. HOLE IN THE GRATING TO ALLOW FOR A BUCKET TO BE LOWERED INTO THE MANHOLE BELOW THE PIPING FROM THE LANDFILL.

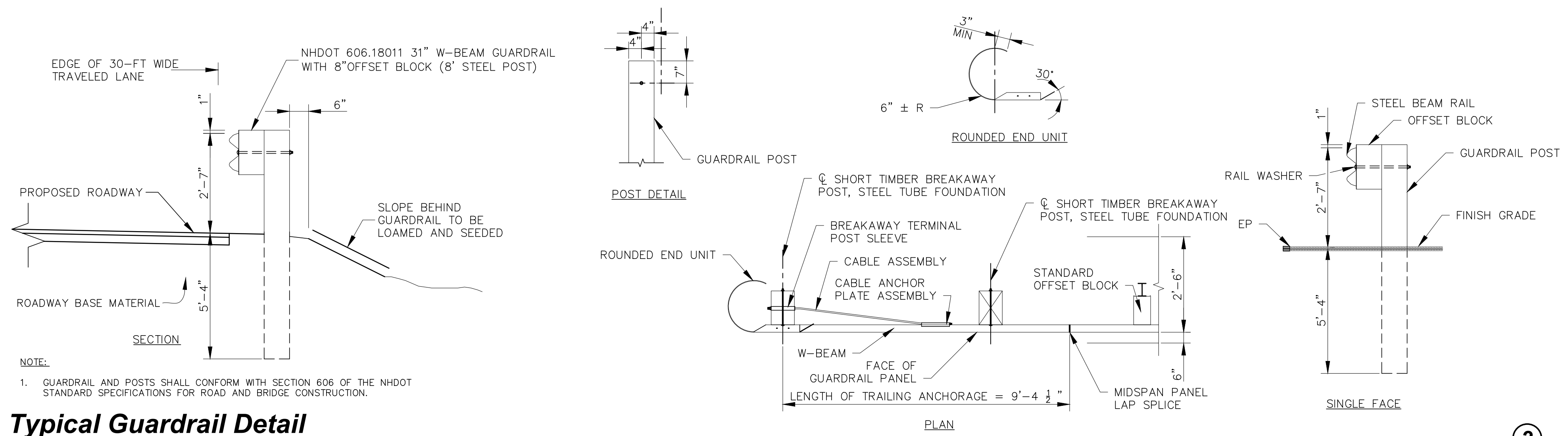
**Forcemain Leak Detection and Air Release Chambers**  
Not to Scale 2

no.	revision	date	by
designed by:	ATR/NJMSTF/AJS	checked by:	AJS
drawn by:	ATR/NJMSTF	approved by:	AJS
date:	October 2023	project no.:	1101
scale:			
<b>Granite State Landfill, LLC</b> Dalton, New Hampshire Permitting Plan Set		<b>Leachate</b> Details 4	
drawing no. <b>D-5</b>			
sheet: 41 of 50			



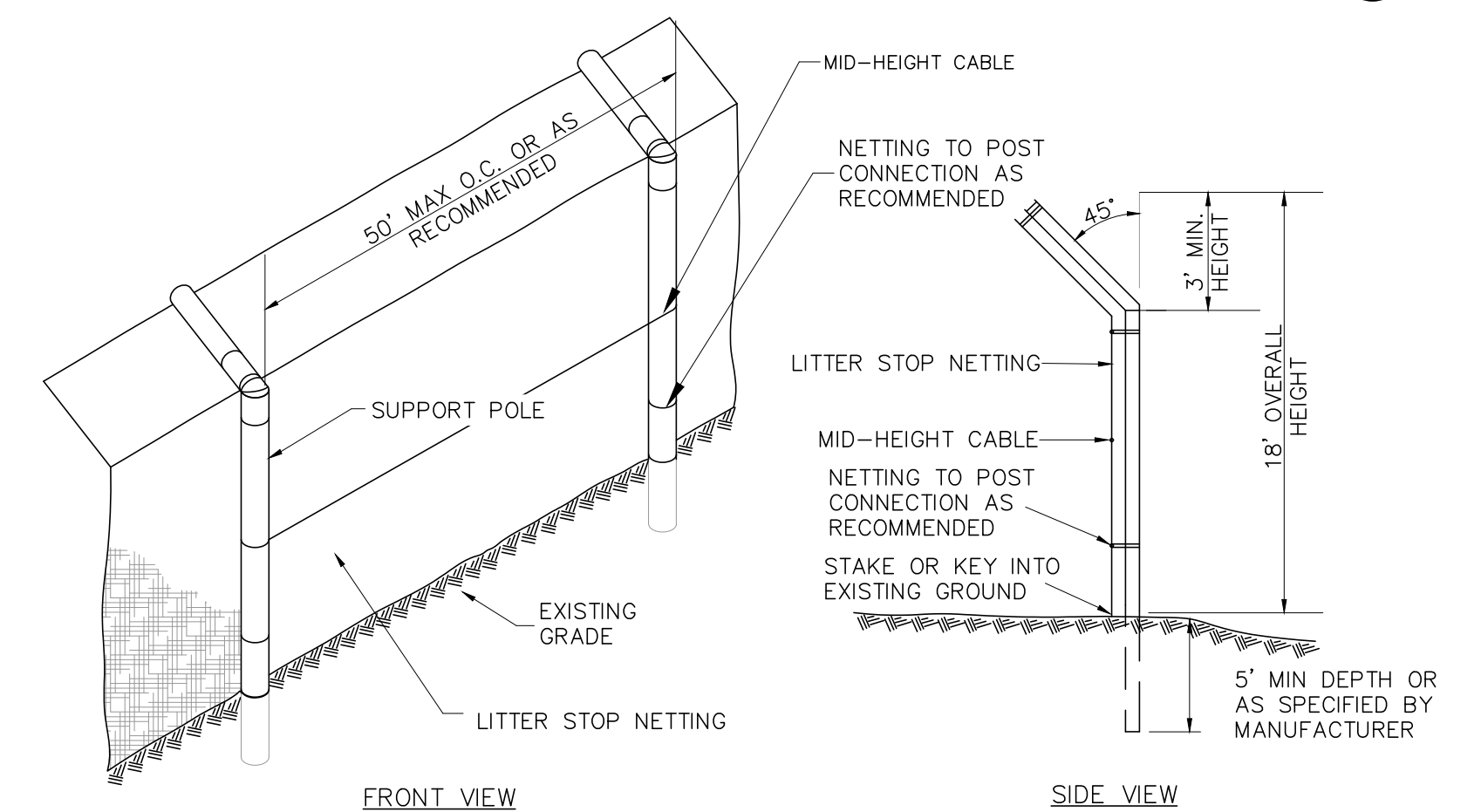
**Typical Landfill Berm & Roadway**  
Not to Scale

1



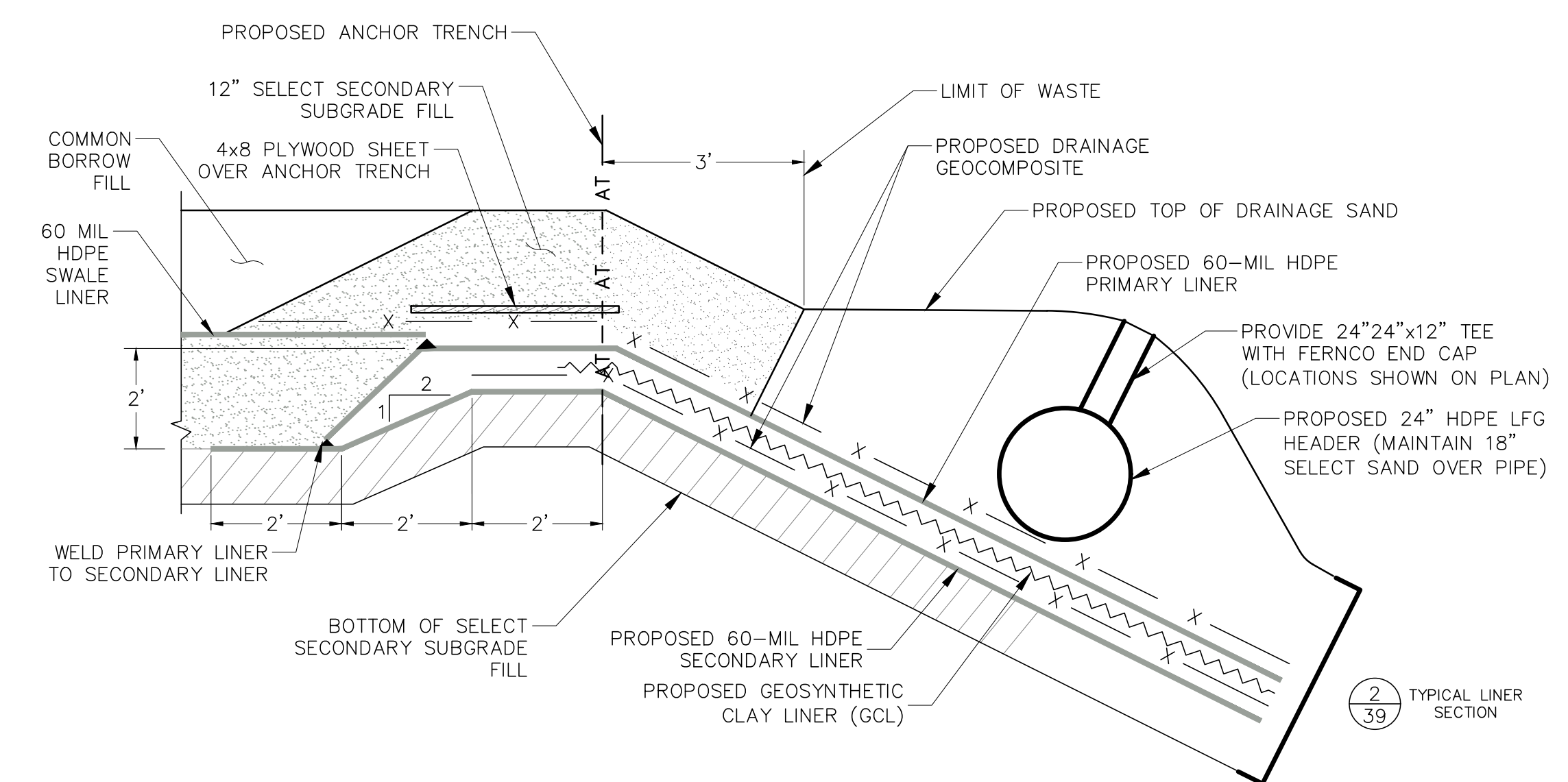
**Typical Guardrail Detail**  
Not to Scale

2



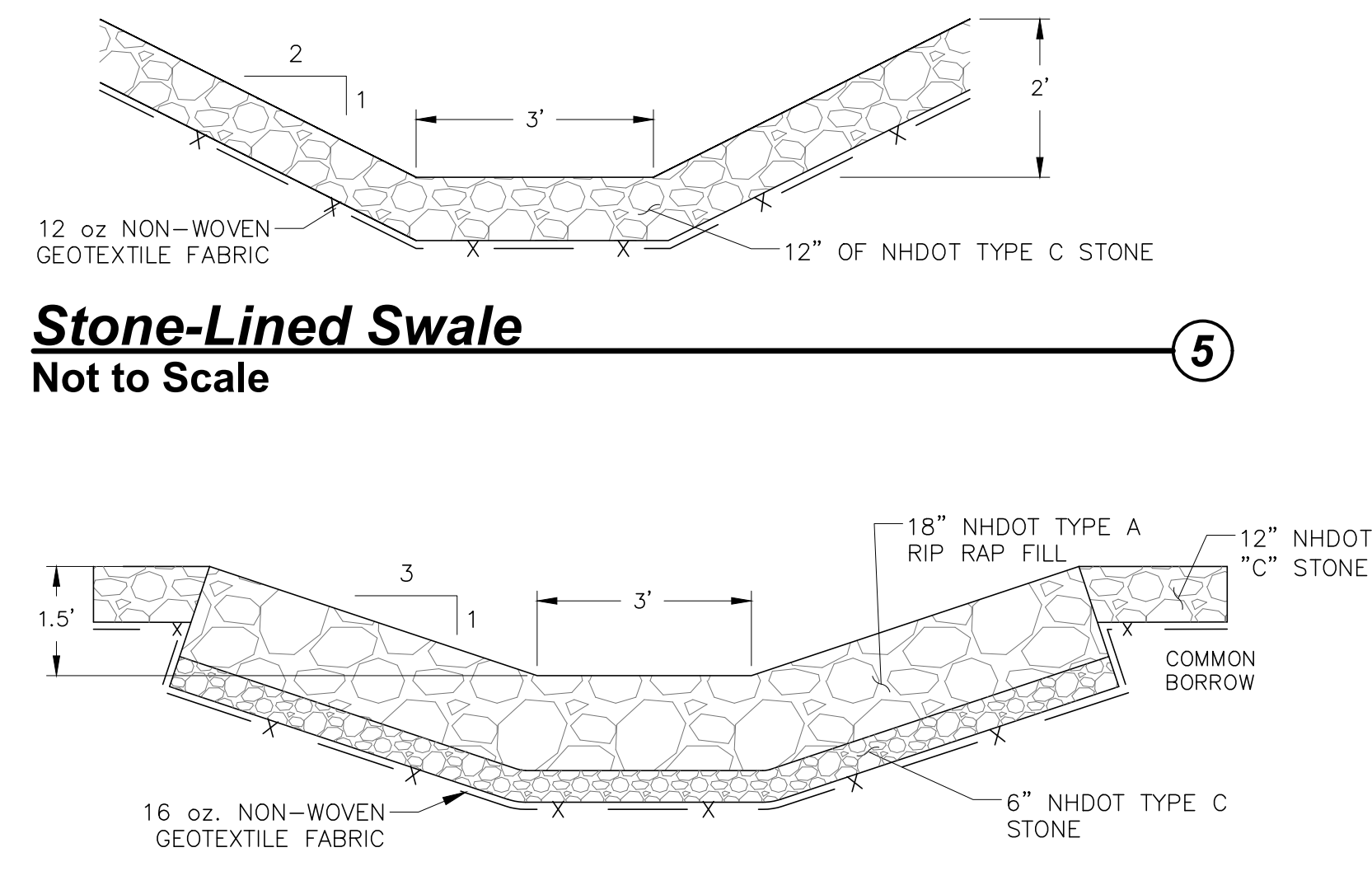
**Litter Fence**  
Not to Scale

3



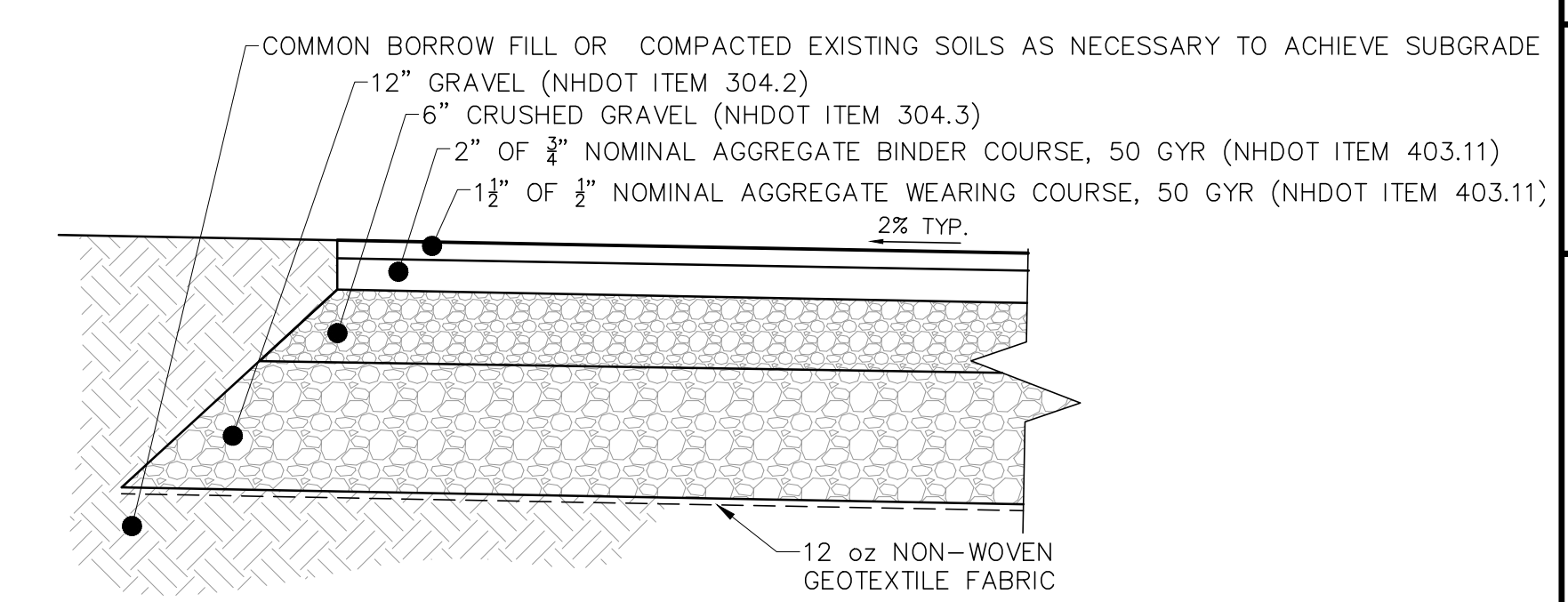
**Typical Anchor Trench**  
Not to Scale

4



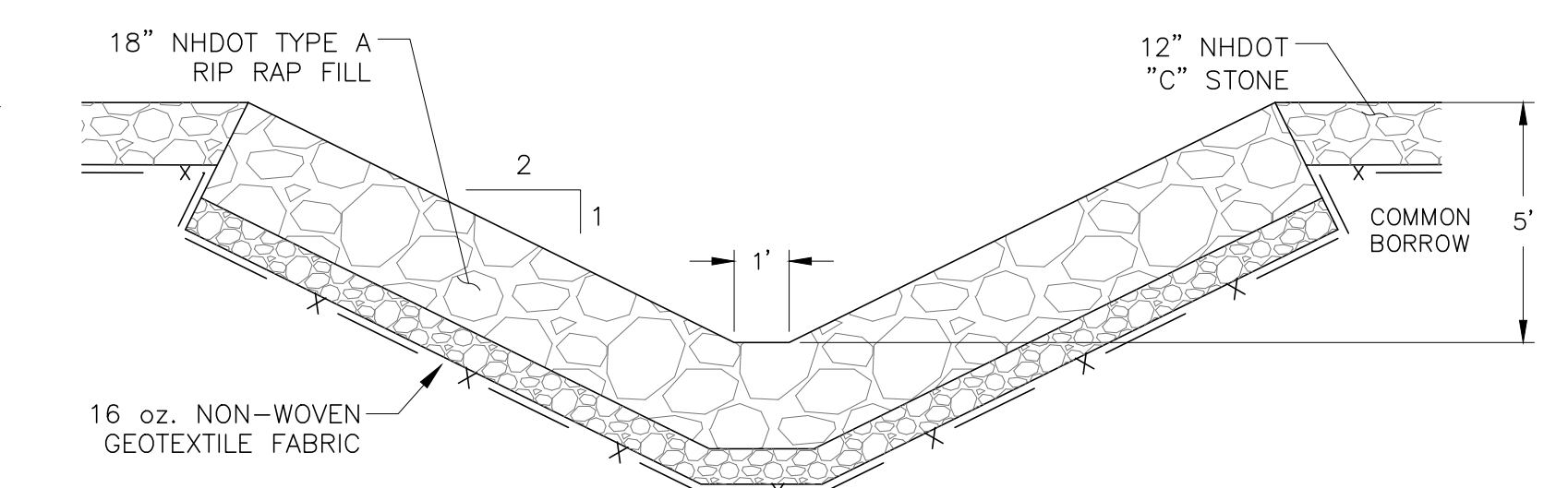
**Typical Dropchute Section**  
Not to Scale

5



**General Pavement Section**  
Not to Scale

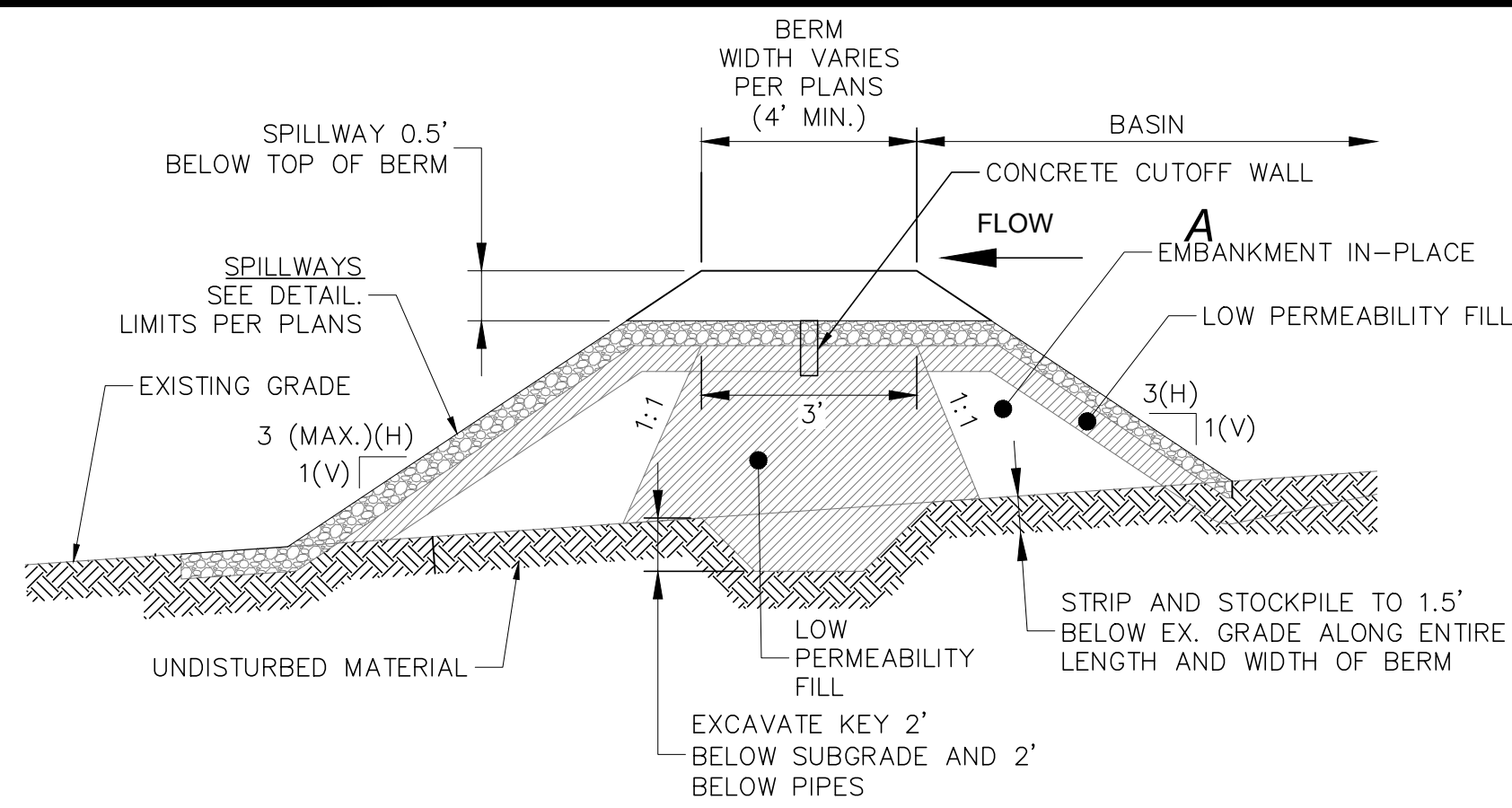
7



**Plunge Pool Detail**  
Not to Scale

8

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<p>designed by: ATR/JM/MSTF/AJS</p> <p>drawn by: ATR/JM/MSTF</p> <p>approved by: AJS</p> <p>scale:</p>	<p>date: October 2023</p> <p>project no.:</p> <p>1101</p> <p>checked by: AJS</p>	<p>Granite State Landfill, LLC Dalton, New Hampshire</p> <p>Permitting Plan Set</p> <p>Site Details</p> <p>drawing no. D-6</p> <p>sheet: 42 of 50</p>



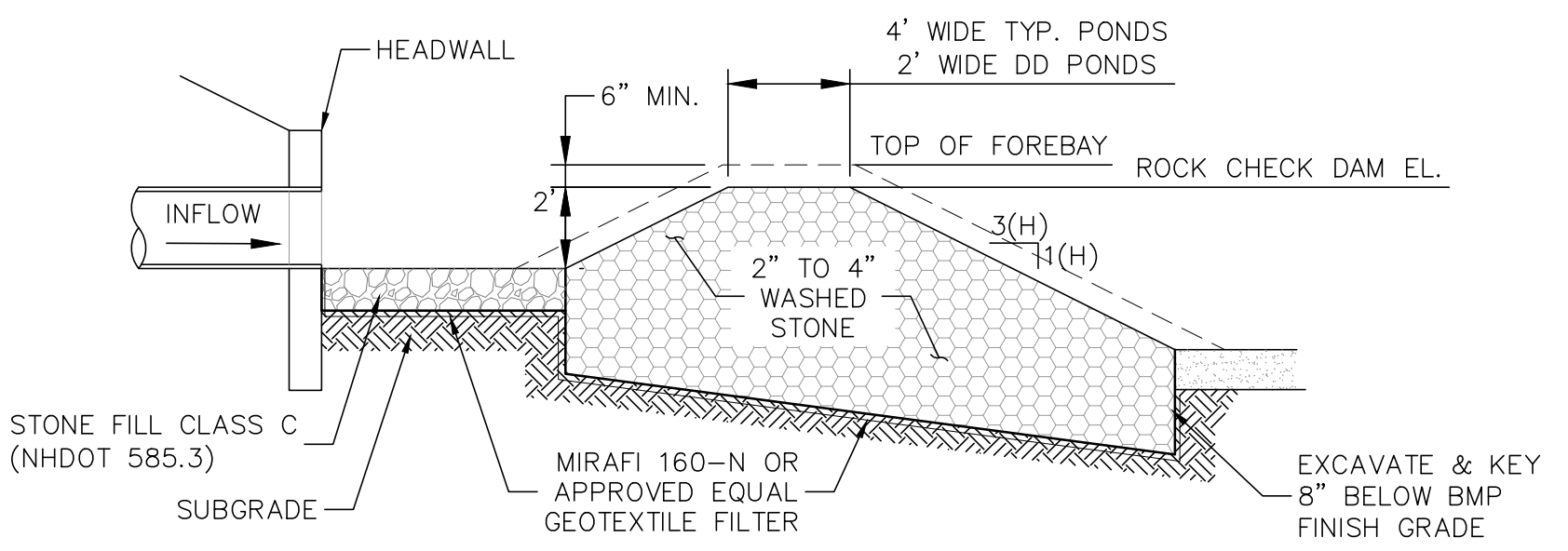
LOCATION	MATERIAL	NHDOT SPEC #	LOOSE LIFT THICKNESS (IN)	COMPACTION REQUIREMENTS (% MDD) <sup>1</sup>
EMBANKMENT	NATIVE SOIL <sup>2</sup>	203.6	12 (MAX)	92% <sup>3</sup>
LOAM COVER	BORROW <sup>2</sup>	646.51	4 (MIN)	80%
IMP. CORE	LOW PERMEABILITY	203.53	6 (MAX)	95% <sup>3</sup>

- NOTES:
- MDD: MAXIMUM DRY DENSITY.
  - ACCEPTABLE TO ENGINEER.
  - COMPACT TO TEST AVERAGE OF 92%, NO TEST LESS THAN 90.
  - BERM MATERIAL, CORE DIMENSIONS, AND PLACEMENT SPECIFICATIONS ARE PRELIMINARY AND NOT FOR CONSTRUCTION. FINAL DESIGN BY OTHERS.

LOW PERMEABILITY FILL	
SIEVE SIZE	% PASSING
3 IN	100
#4	80-100
#40	60-90
#100	40-60
#200	25-45

**Stormwater Dam/Berm Detail**  
Not to Scale

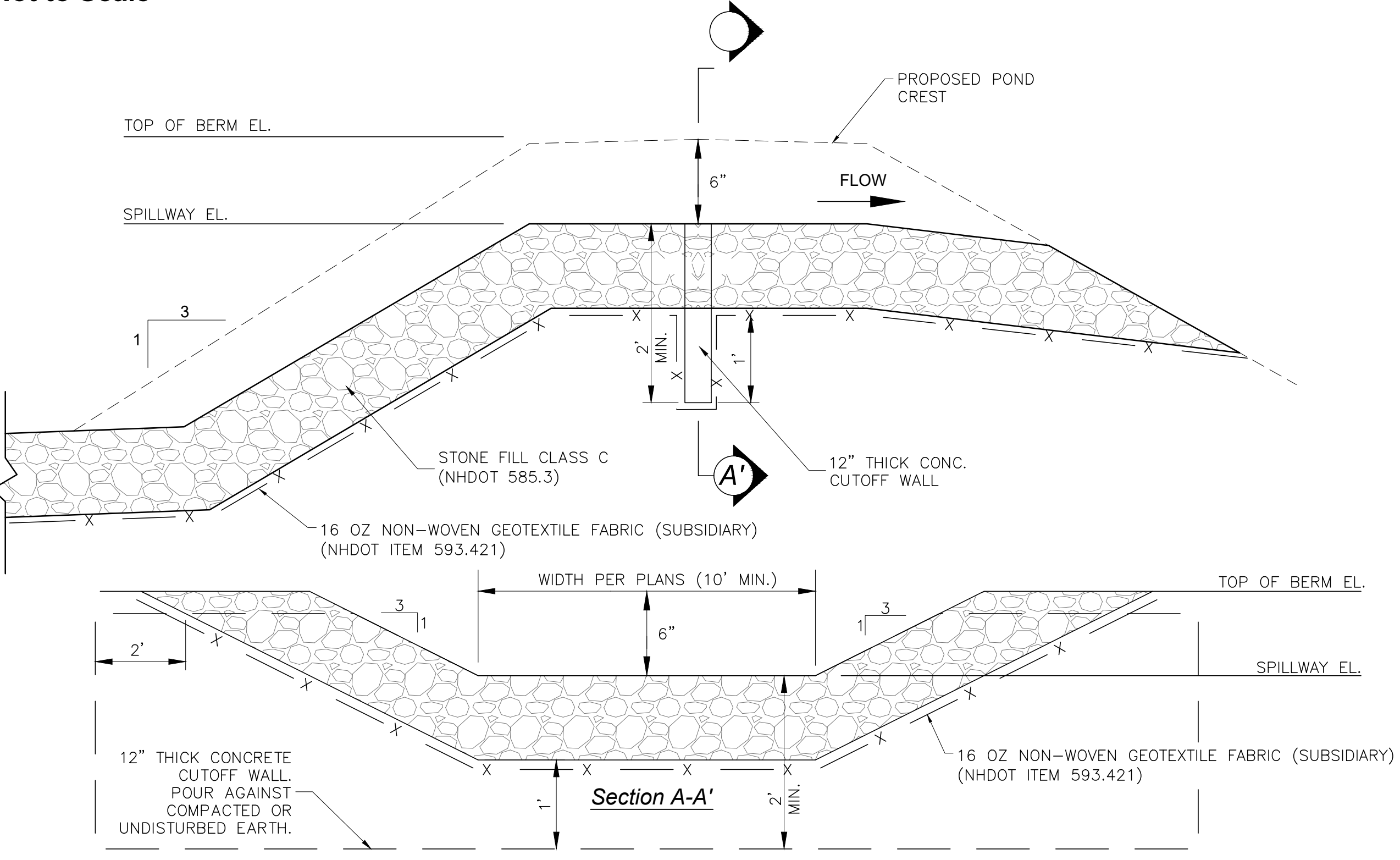
1



Forebay	Rock Check Dam	Floor of Pond
3	1122.00	1120.00
5	1134.00	1132.00
6	1126.00	1124.00
7	1142.00	1140.00
8	1150.00	1148.00
9	1177.00	1175.00
10	1212.00	1210.00
11	1144.00	1142.00
12	1139.00	1137.00
13	1167.00	1165.00
DD1	998.00	996.00
DD2	1049.00	1047.00
DD3	1077.25	1075.25
DD3A	1096.00	1094.00
DD4	1100.00	1098.00
DD5	-	1147.00
DD6	1147.00	1145.00

**Rock Check Dam for Forebay BMP Outlet**  
Not to Scale

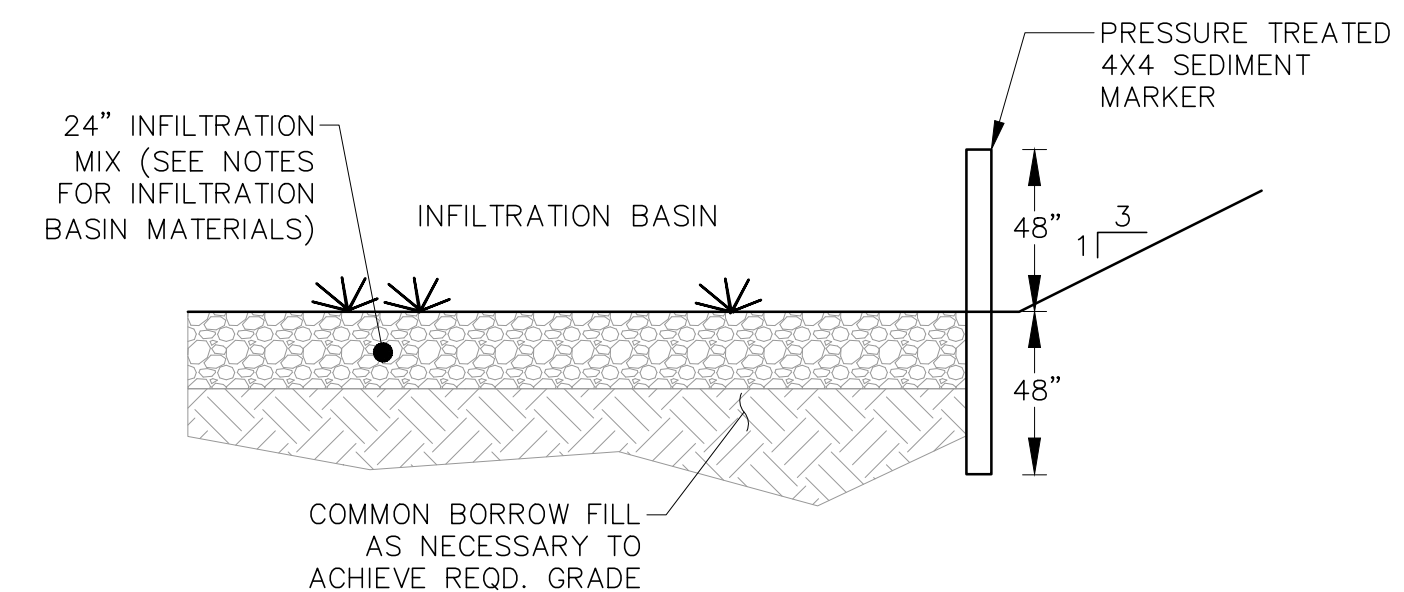
2



POND	Top of Berm	Spillway	Floor of Pond
1	1138.00	1137.50	1135.00
2	1111.00	1110.50	1106.00
3	1122.00	1121.50	1115.00
4	1142.00	1141.50	1139.00
5	1134.00	1133.50	1129.75
6	1126.00	1125.50	1124.00
7	1142.00	1141.50	1139.00
8	1150.00	1149.50	1145.00
9	1177.00	1176.50	1173.00
10	1211.00	1210.50	1207.00
11	1144.00	1143.50	1141.00
12	1136.00	1135.50	1134.00
13	1167.00	1166.50	1163.00
DD1	999.00	998.50	997.50
DD1A	988.00	987.50	985.00
DD2	1049.00	1048.50	1047.00
DD3	1077.25	1076.75	1074.25
DD3A	1096.00	1095.50	1094.50
DD4	1101.00	1100.50	1100.00
DD5	1139.00	1138.50	1137.00
DD6	1148.00	1147.50	1144.00

**Spillway Detail**  
Not to Scale

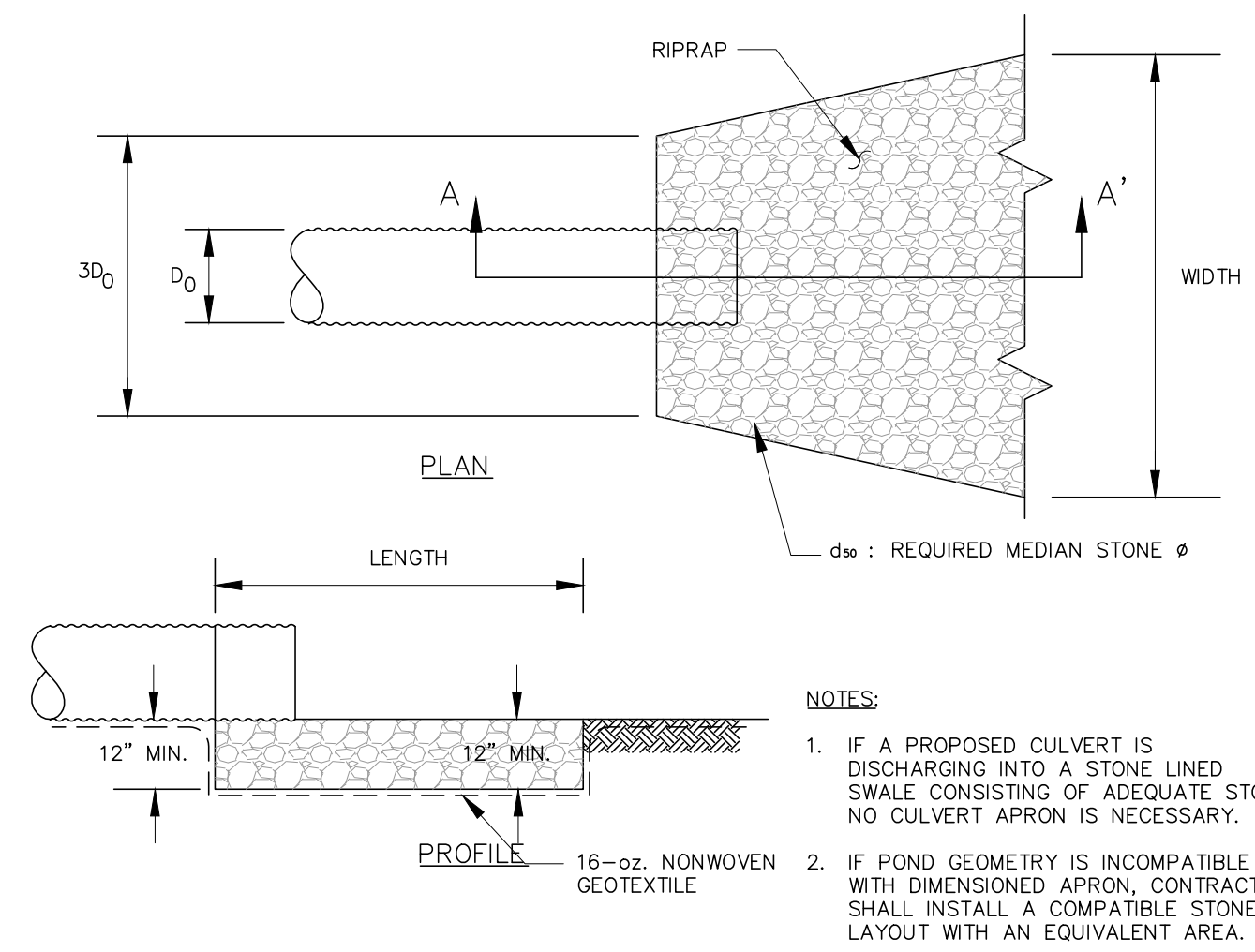
4



- INFILTRATION BASIN NOTES:**  
INFILTRATION BASINS SHALL CONFORM TO THE REQUIREMENTS ON Env-Wq 1508.06, AS SUMMARIZED BELOW:
- THE VOLUME OF THE PRACTICE SHALL BE LARGE ENOUGH TO COMPLETELY DRAIN THE WATER QUALITY VOLUME WITHIN 72 HOURS.
  - THE SEASONAL HIGH WATER TABLE (SHWT) AND BEDROCK SHALL BE AT LEAST 3 FEET BELOW THE BOTTOM OF THE PRACTICE.
  - THE PERIMETER OF THE BASIN SHALL BE CURVILINEAR.
  - SIDE SLOPES SHALL BE NO STEEPER THAN 3H:1V OR FLATTER THAN 20H:1V AND THE BASIN FLOOR SHALL BE FLAT (0% SLOPE).
  - THE BASIN FLOOR SHALL BE PREPARED WITH 24-INCHES OF AN APPROVED ENGINEERED MIX THAT WILL:
    - INFILTRATE STORMWATER AT A RATE OF 5 IN/HOUR (AFTER APPLYING A FACTOR OF SAFETY OF 2)
    - SUPPORT GRASS TURF THAT CAN SURVIVE INUNDATION FOR UP TO 72 HOURS AND STILL PROVIDE A DENSE, VIGOROUS TURF LAYER
    - BE PLANTED WITH NATIVE TREES HAVING A CANOPY DIAMETER APPROXIMATELY 6' IN DIAMETER EACH, AND PLANTED DENSELY ENOUGH TO SHADE THE POND FLOOR.
  - WOODY VEGETATION ON AND NEAR EMBANKMENTS SHALL BE REMOVED.
  - IF AN INFILTRATION SYSTEM DOES NOT DRAIN WITHIN 72 HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY.

**Stormwater Pond/Infiltration Basin**  
Not to Scale

3



Location	Pipe Size (ft)	Length (ft)	Width (ft)
DD1-OUT	1	12	15
DD2-OUT	1	10	13
DD3-OUT	1	7	10
DD3A-OUT	1	10	13
DD4-OUT	1	10	13
DD5-OUT	1	13	16
DD6-OUT	1	7	10
POND-2-OUT	2	14	20
POND-3-OUT	2	16	22
POND-4-OUT	1	9	12
POND-5-OUT	1	14	17
POND-6-OUT	1	8	11
POND-7-OUT	2	22	28
POND-8-OUT	2	19	25
POND-9-OUT	2	22	28
POND-10-OUT	2	17	23

POND-11-OUT	2	27	33
POND-12-OUT	2	14	20
POND-13-OUT	2	14	20
DD-1A-IN	1	17	20
FOREBAY-DD6-IN	1	12	15
POND-2-IN	1.25	39	43
DP-10	1.25	10	14
FOREBAY-3-IN	1.25	21	25
POND-4-IN	1	11	14
FOREBAY-5-IN	1.25	18	21
FOREBAY-6-IN	1	13	16
FOREBAY-7-IN	2	27	33
FOREBAY-8-IN	2	27	33
FOREBAY-9-IN	2	23	29
FOREBAY-11-IN	2	28	34
FOREBAY-12-IN	2	37	43
FOREBAY-13-IN	2	36	42

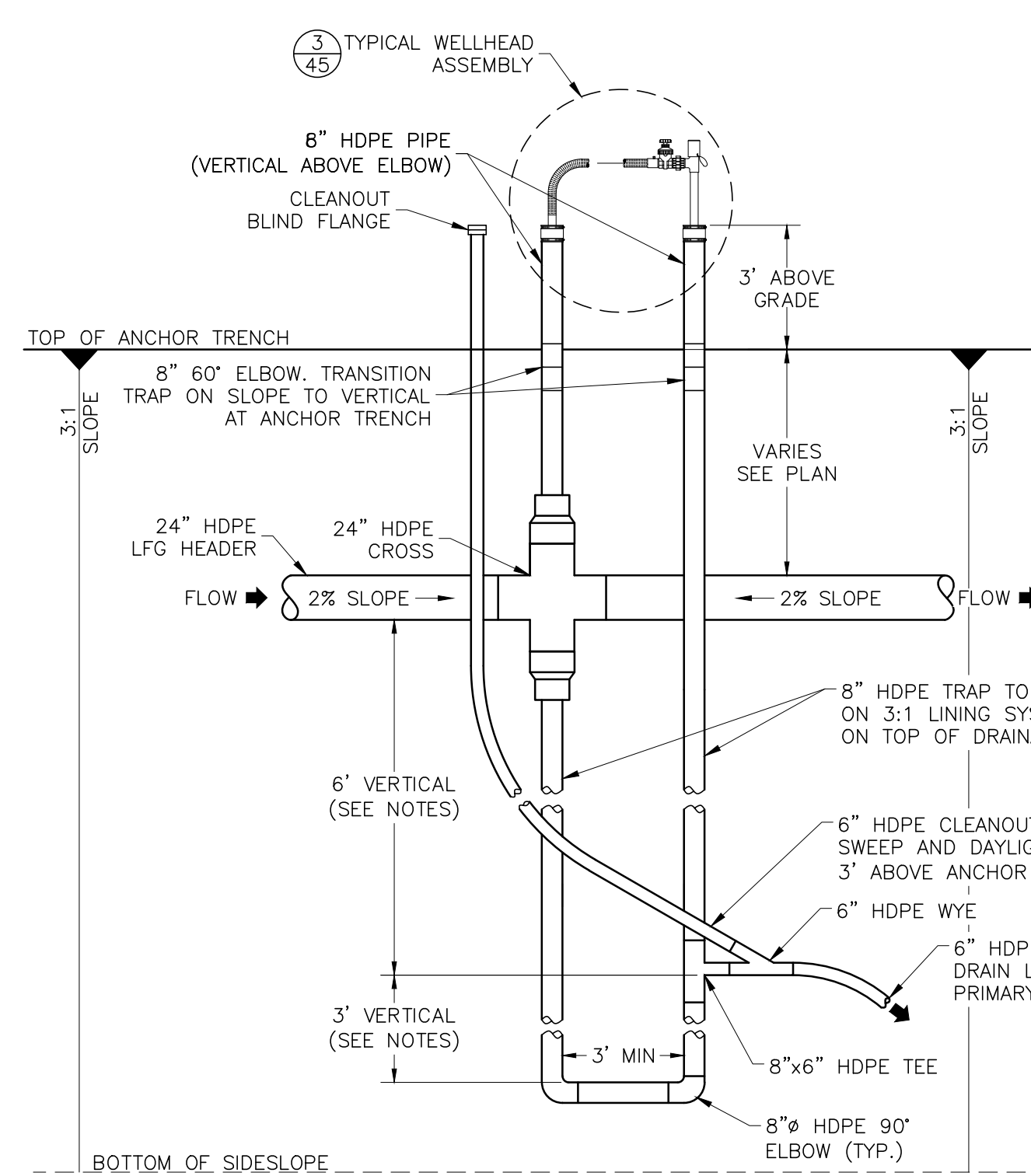
**Stone Outlet Protection**  
Not to Scale

5

		CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 Manchester, NH 603/627-0708 Portland, ME 207/651-4223	c m a e n g i n e e r s . c o m
designed by: ATR/JM/STF/AJS	drawn by: ATR/JM/STF	approved by: AJS	scale: AJS
date: October 2023	project no: 1101	checked by: AJS	drawing no: D-7
Granite State Landfill, LLC Dalton, New Hampshire		Permitting Plan Set	Stormwater Details 1
sheet: 43 of 50		revision:	no.



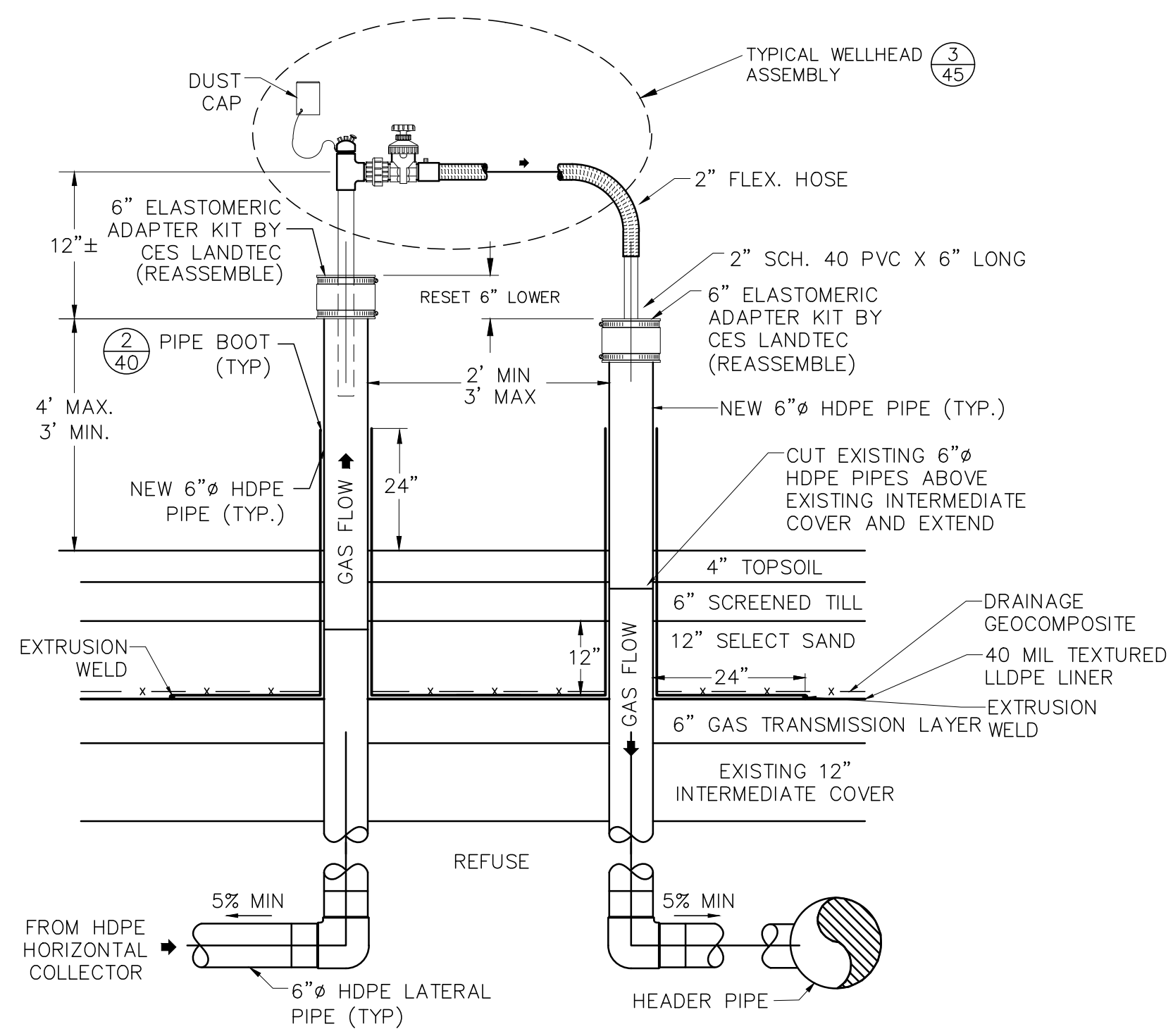




- NOTES:
1. ALL CONNECTIONS ARE TO BE BUTT FUSION-WELDED UNLESS ALTERNATIVE APPROVED BY THE ENGINEER.
  2. THE TRAP SHALL BE PLACED ON THE 3:1 SIDESLOPE LINING SYSTEM ON TOP OF THE GEOCOMPOSITE.
  3. THE TRAP SHALL RESIST VERTICAL 100" OF WATER COLUMN (SYSTEM VACUUM). CONTRACTOR SHALL CONFIRM LENGTHS OF PIPE TO CONSTRUCT TRAP ON 3:1 SLOPE.
  4. 24" OF SAND OR CRUSHED STONE SHALL BE PLACED OVER THE TRAP PIPING.
  5. WELLHEAD STICKUP SHALL BE VERTICAL. CLEANOUT SHALL REMAIN 3:1 SLOPE.
  6. CONTRACTOR SHALL FILL TRAP WITH WATER PRIOR TO PLACING TRAP IN SERVICE.
  7. ALL HDPE PIPING SHALL BE SDR 17.

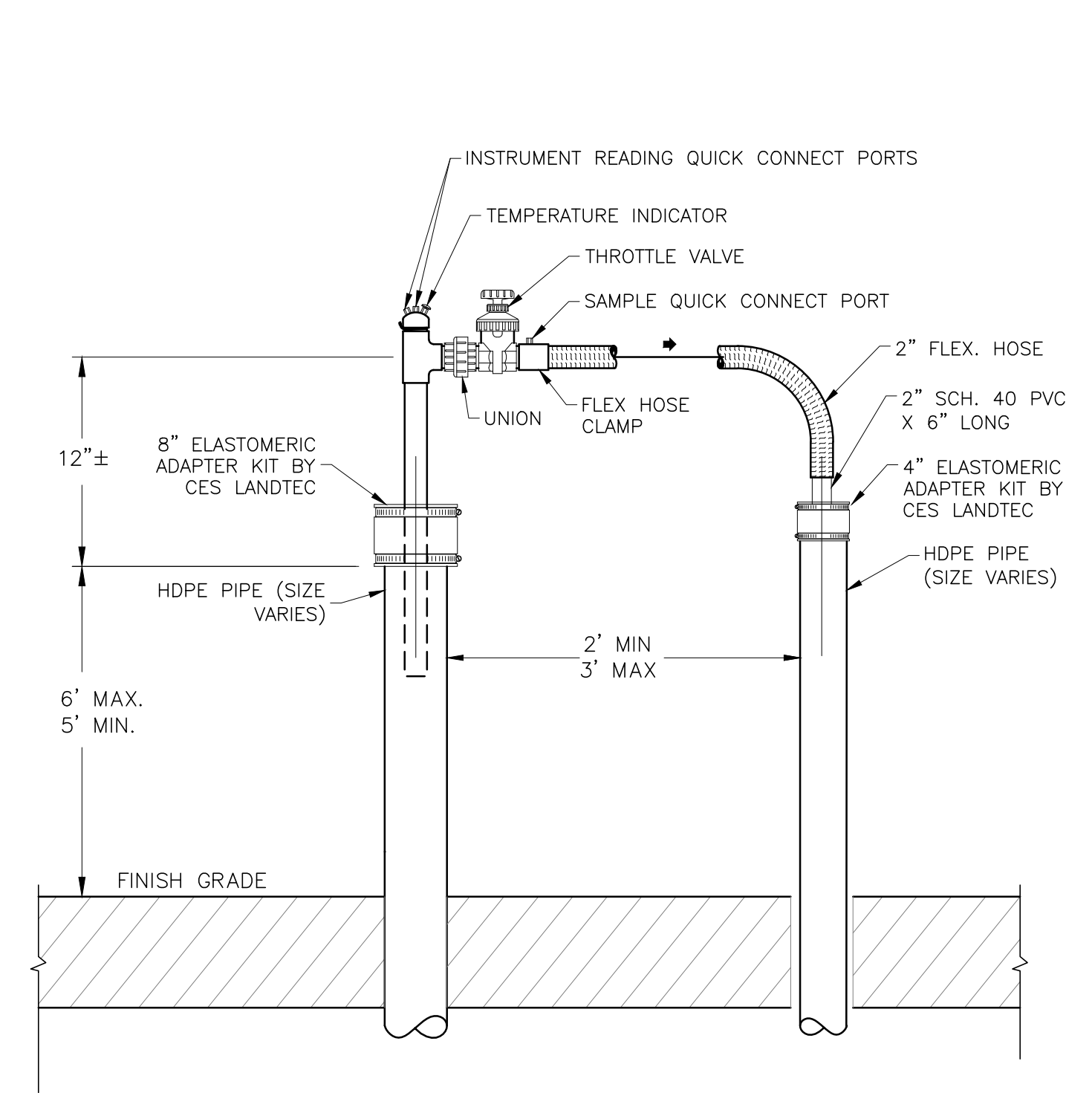
**Condensate Trap**  
Not to Scale

1



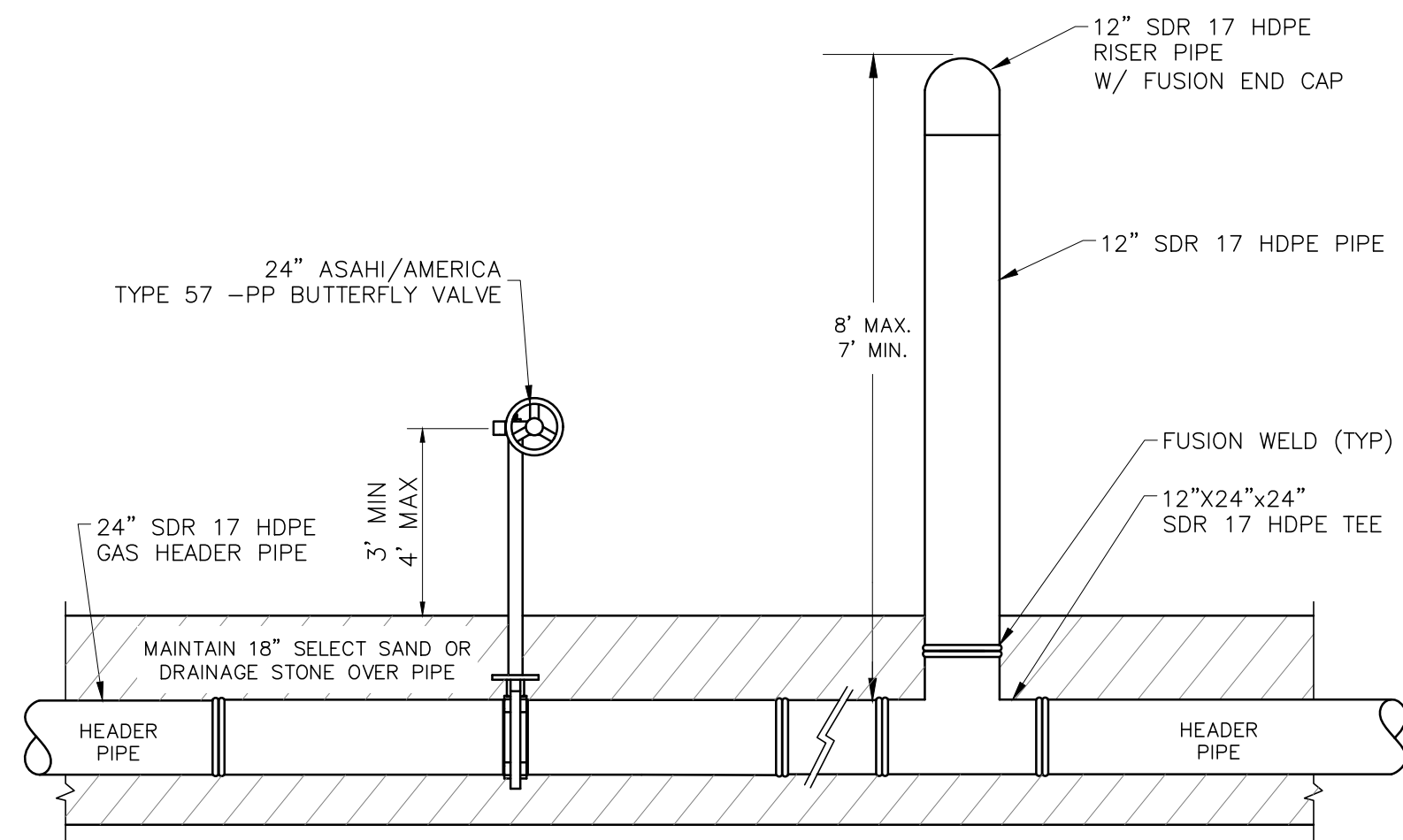
**Horizontal Gas Collection Wellhead**  
Not to Scale

2



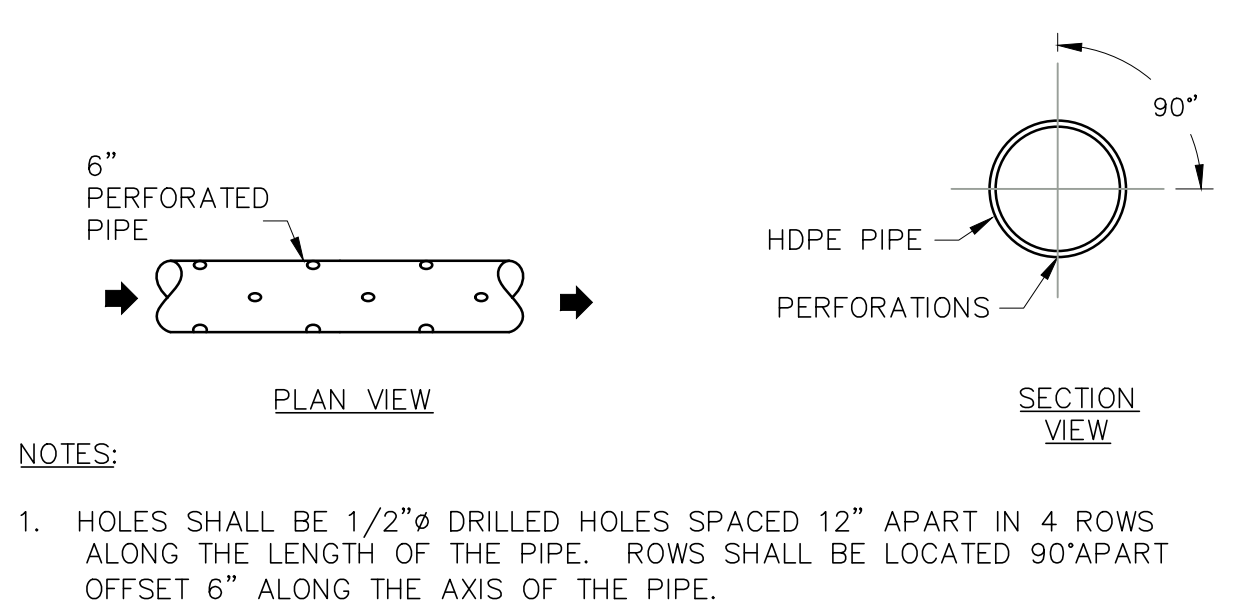
**Typical Wellhead Assembly**  
Not to Scale

3



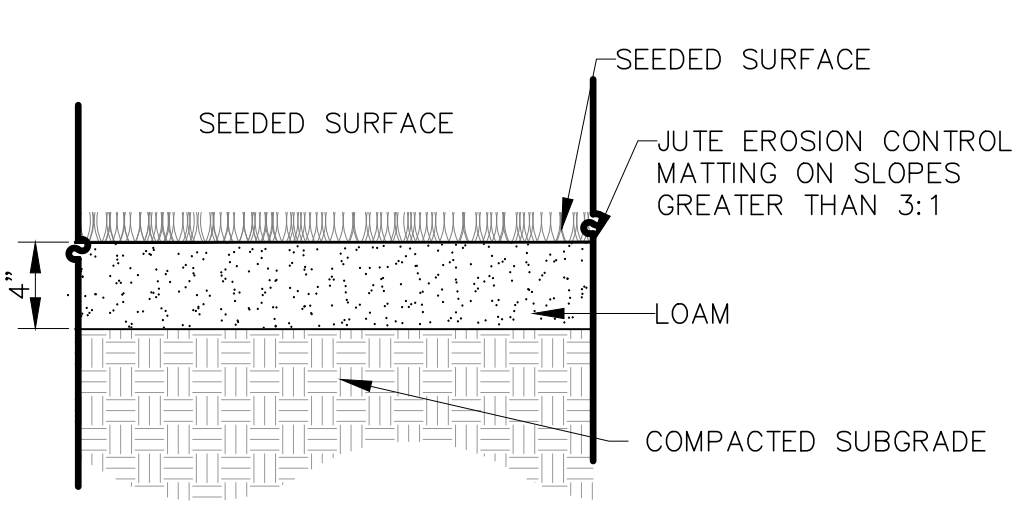
**Flow Control Valve and Vertical Gas Riser**  
Not to Scale

4



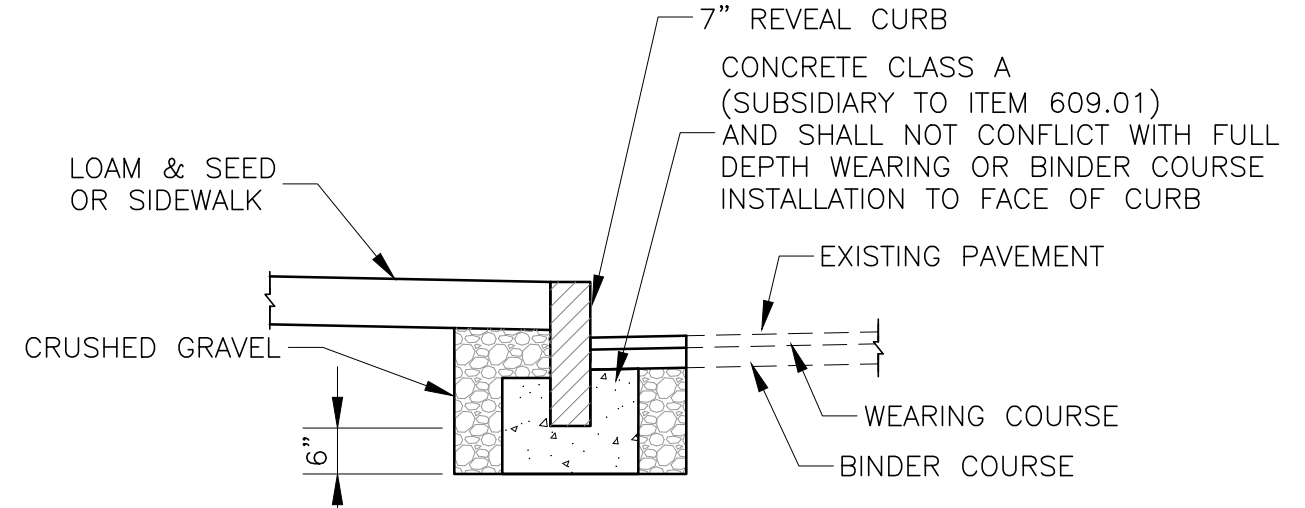
**Typical Perforated Gas Pipe**  
Not to Scale

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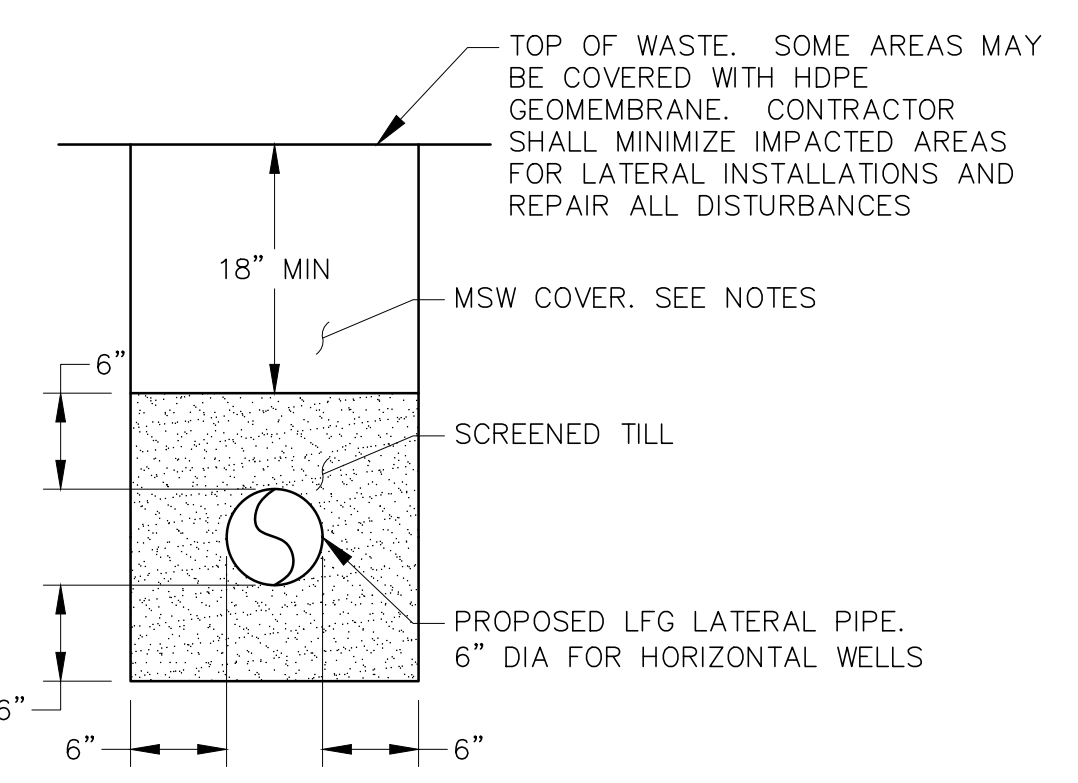
**Loam and Seed**  
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6



**Concrete Curb Backing Detail**  
Not to Scale

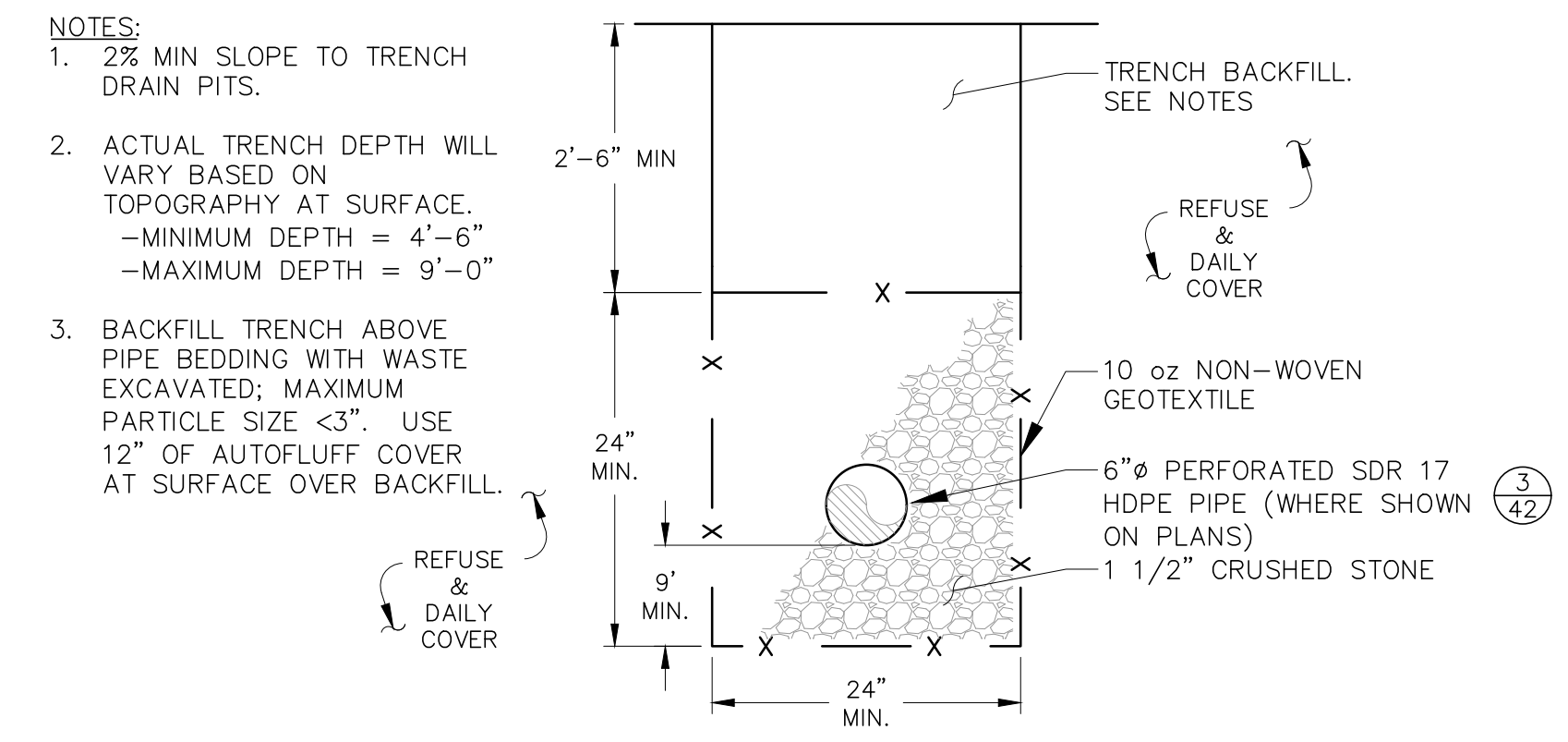
7



- NOTES:
1. 24" MIN COVER FOR LATERALS
  2. 5% MIN SLOPE
  3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.

**Gas Lateral**  
Not to Scale

8

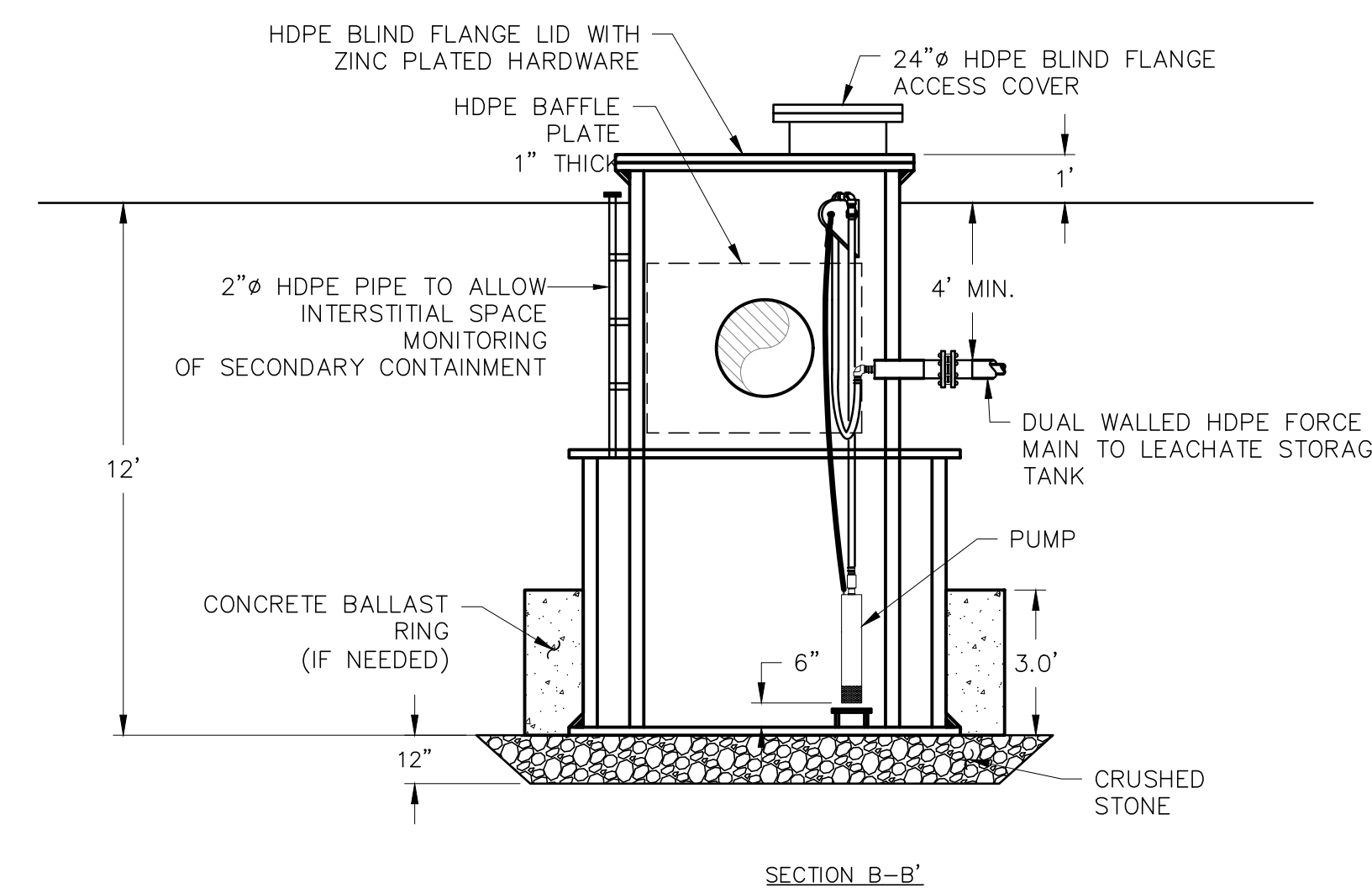
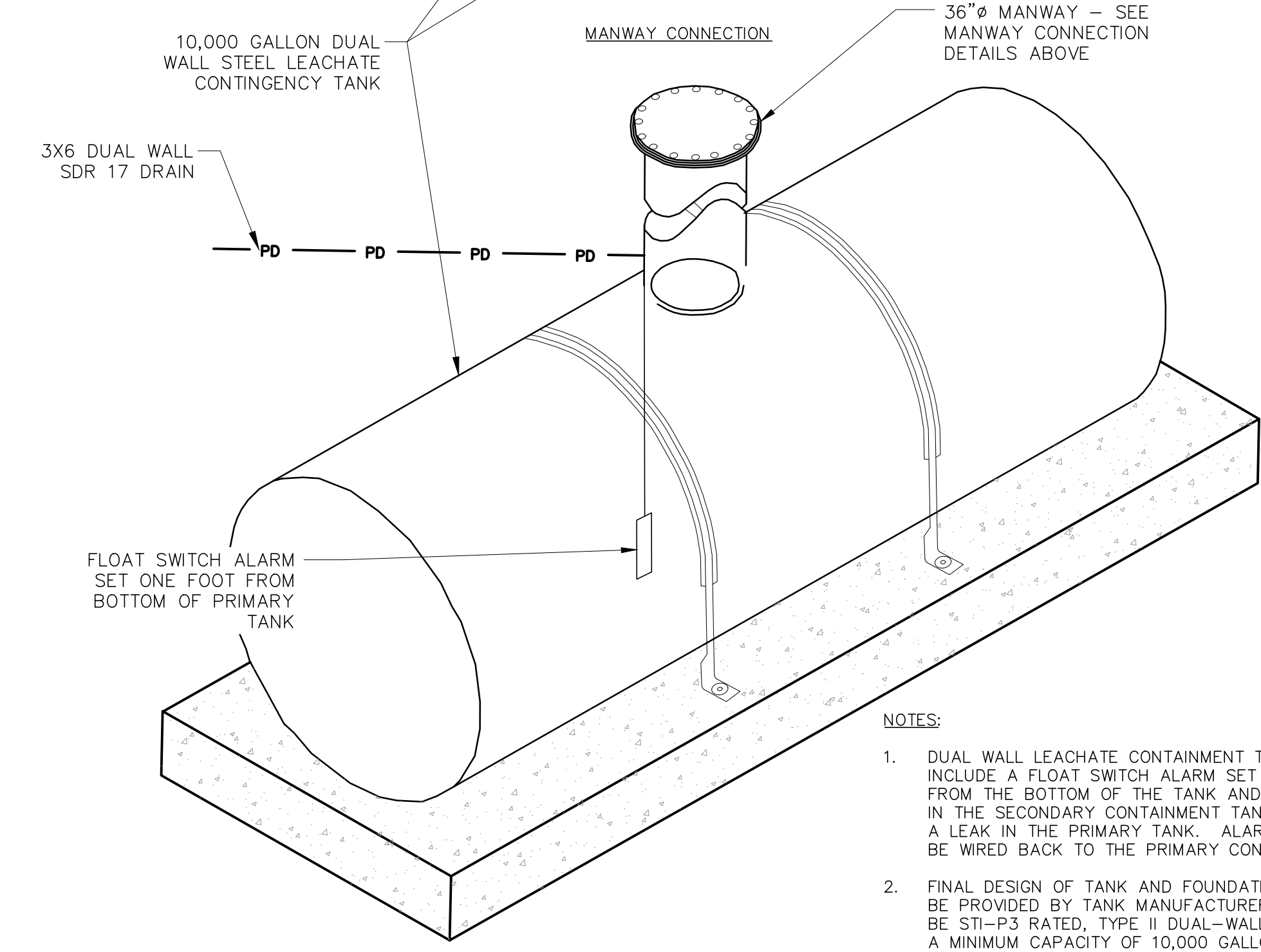
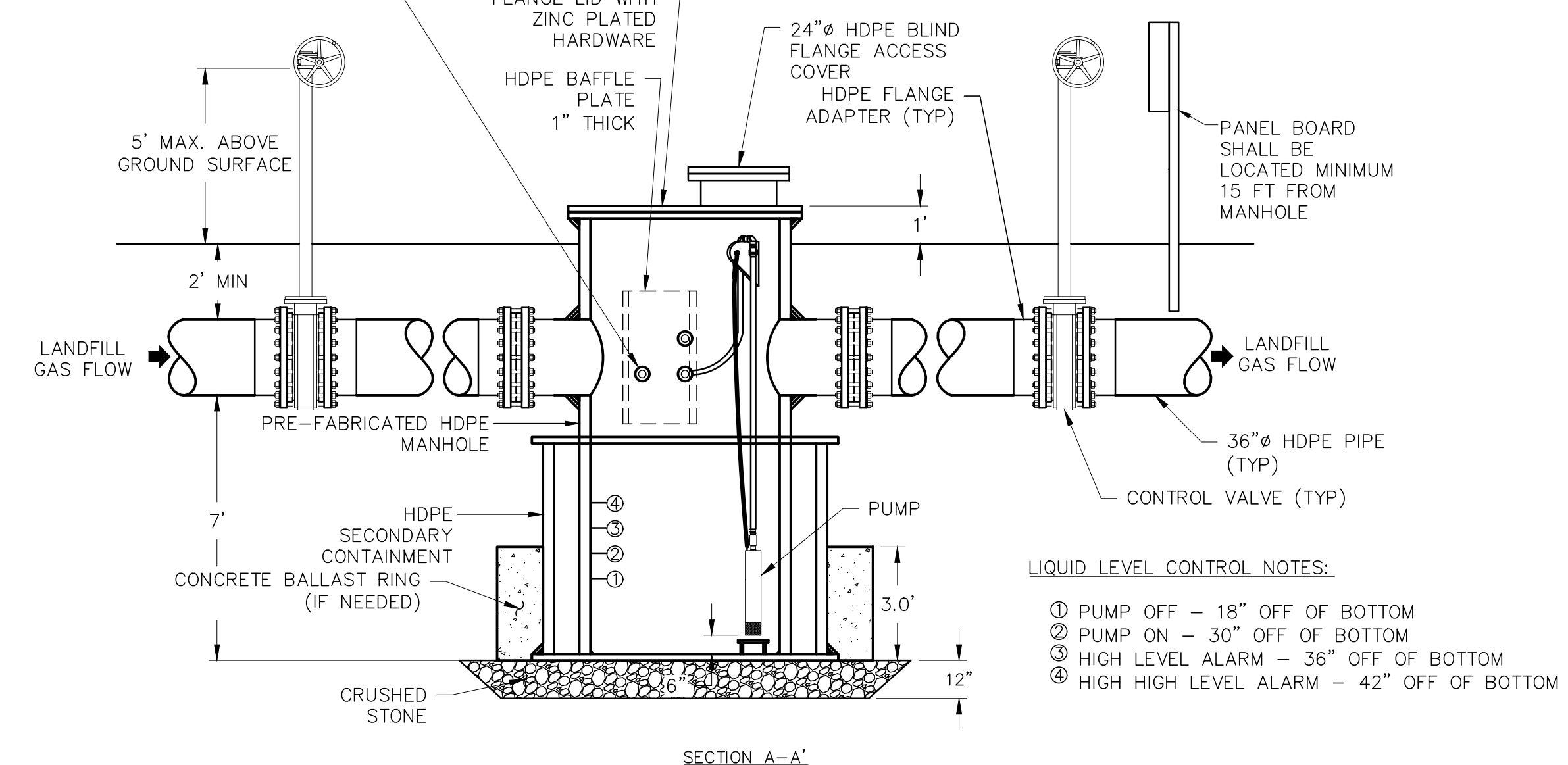
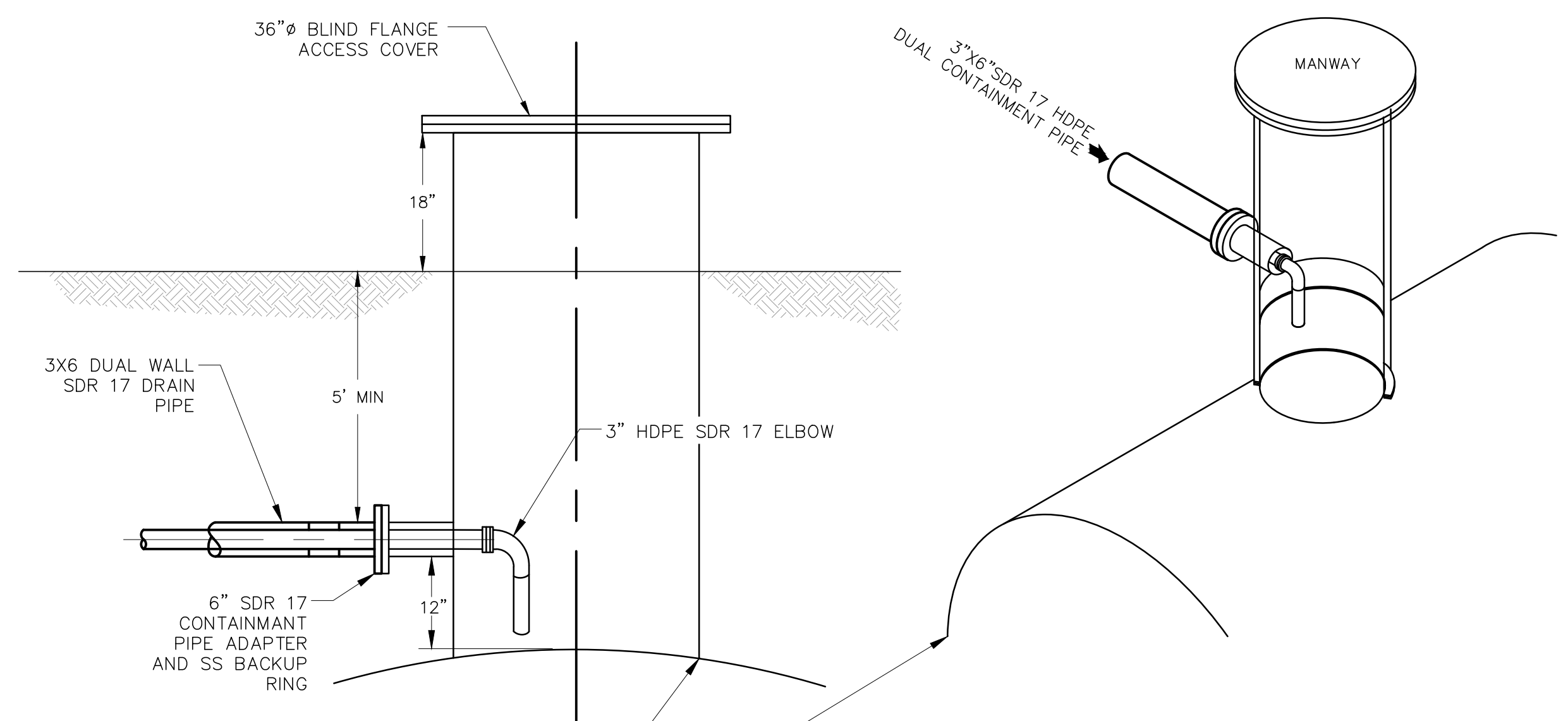
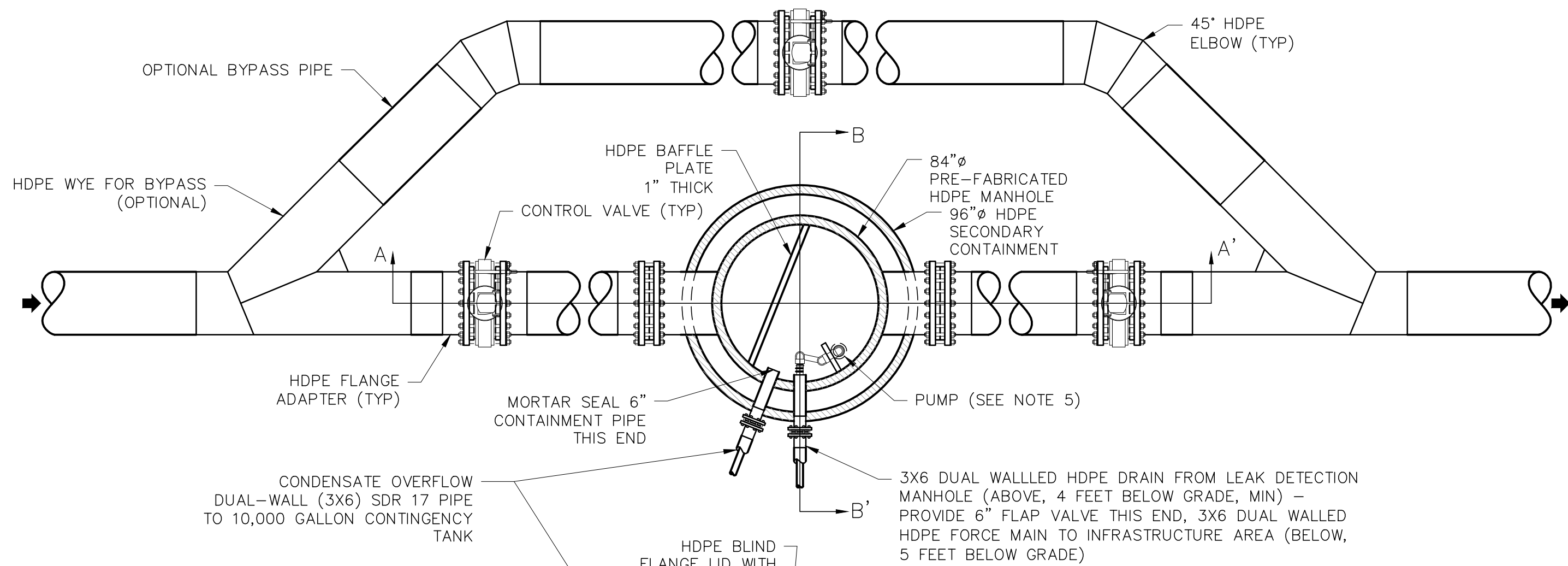


- NOTES:
1. 2% MIN SLOPE TO TRENCH DRAIN PITS.
  2. ACTUAL TRENCH DEPTH WILL VARY BASED ON TOPOGRAPHY AT SURFACE. -MINIMUM DEPTH = 4'-6" -MAXIMUM DEPTH = 9'-0"
  3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.

**Horizontal Gas Collection Well**  
Not to Scale

9

		CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 Manchester, NH 603/627-0708 Portland, ME 207/641-4223	c m a e n g i n e e r s . c o m
designed by: ATR/NUMSTF/AJS	drawn by: ATR/NUMSTF	approved by: AJS	scale: as shown
date: October 2023	project no: 1101	checked by: AJS	no.
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**LIQUID LEVEL CONTROL NOTES:**

- ① PUMP OFF - 18" OFF OF BOTTOM
- ② PUMP ON - 30" OFF OF BOTTOM
- ③ HIGH LEVEL ALARM - 36" OFF OF BOTTOM
- ④ HIGH HIGH LEVEL ALARM - 42" OFF OF BOTTOM

- NOTES:**
1. CONDENSATE KNOCKOUT DESIGN CONFIGURATION IS SUBJECT TO CHANGE BASED ON CONSULTATION WITH HDPE MANHOLE MANUFACTURER. SHOP DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
  2. CONDENSATE KNOCKOUT SHALL HAVE AN OSHA APPROVED CONFINED SPACE SIGN ATTACHED TO THE TOP OF THE COVER. SIGN SHALL BE 14" WIDE BY 10" HIGH, AND SHALL HAVE UV-RESISTANT PAINT ON AN ALUMINUM BASE. SIGN SHALL READ "DANGER, CONFINED SPACE, HAZARDOUS ATMOSPHERE, ENTER BY PERMIT ONLY."
  3. CONDENSATE KNOCKOUT IS A CLASS 1 DIVISION 1 GROUP D CLASSIFIED SPACE. ELECTRICAL EQUIPMENT SHALL BE EXPLOSION-PROOF AND INTRINSICALLY-SAFE. CONDUIT SEALS SHALL BE PROVIDED ON ALL ELECTRICAL CONDUIT.
  4. PUMP SHALL BE EPG COMPANIES SUREPUMP SERIES 2 MODEL 2-5 0.50 HP VERTICAL PUMP OR APPROVED EQUIVALENT. PUMP SHALL BE EXPLOSION PROOF RATED.
  5. PUMP CONTROLS SHALL COMPENSATE FOR SYSTEM VACUUM.

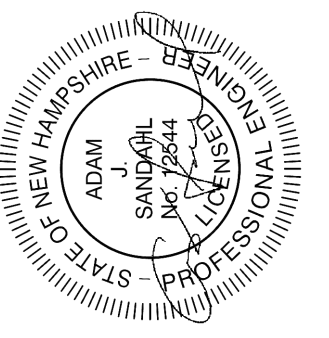
- NOTES:**
1. DUAL WALL LEACHATE CONTAINMENT TANK SHALL INCLUDE A FLOAT SWITCH ALARM SET AT ONE FOOT FROM THE BOTTOM OF THE TANK AND AN ALARM SET IN THE SECONDARY CONTAINMENT TANK TO ALARM OF A LEAK IN THE PRIMARY TANK. ALARM SYSTEM SHALL BE WIRED BACK TO THE PRIMARY CONTROL PANEL.
  2. FINAL DESIGN OF TANK AND FOUNDATION SYSTEM TO BE PROVIDED BY TANK MANUFACTURER. TANK SHALL BE ST1-P3 RATED, TYPE II DUAL-WALLED STEEL WITH A MINIMUM CAPACITY OF 10,000 GALLONS. RISER SECTIONS SHALL BE 36-INCHES IN DIAMETER AND CONNECTED TO THE TANK WITH A WATERTIGHT, FLANGED CONNECTION.
  3. TANK INTERIOR TO BE COATED WITH SHERWIN WILLIAMS CORROCOTE II ULTRALINER (A TWO-COMPONENT, SOLVENT-FREE POLYURETHANE RESIN)

**Condensate Knockout Detail - Provided by Sanborn Head & Associates**  
Not to Scale

**10,000 Gallon Dual Wall Steel Leachate Contingency Tank**  
Not to Scale

no.	revision	date	by

**CMA ENGINEERS**  
 CIVIL/ENVIRONMENTAL/STRUCTURAL  
 Portsmouth, NH 603/431-6196  
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 Portland, ME 207/641-4223  
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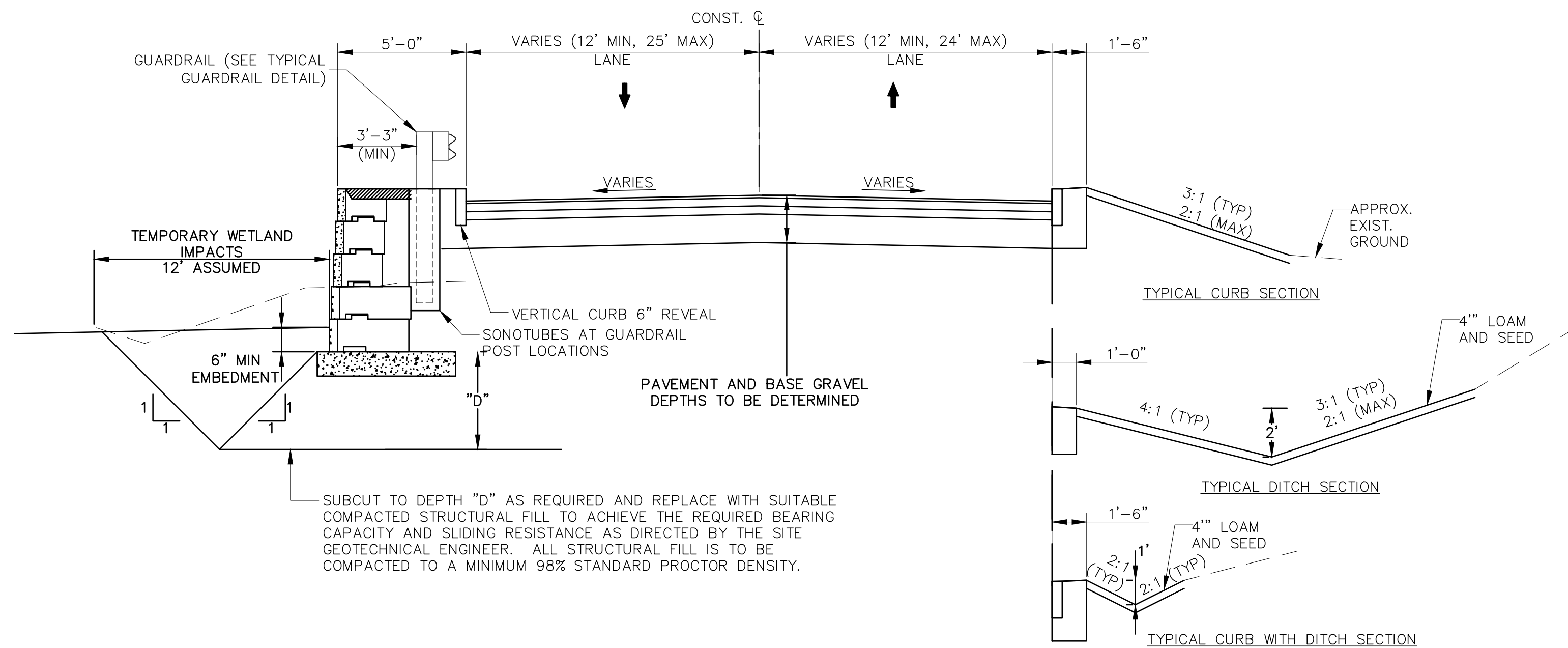


designed by: ATRNJMSTF/AJS	drawn by: ATRNJMSTF	approved by: AJS	scale:
date: October 2023	project no: 1101	checked by: AJS	

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 Dalton, New Hampshire  
 Permitting Plan Set

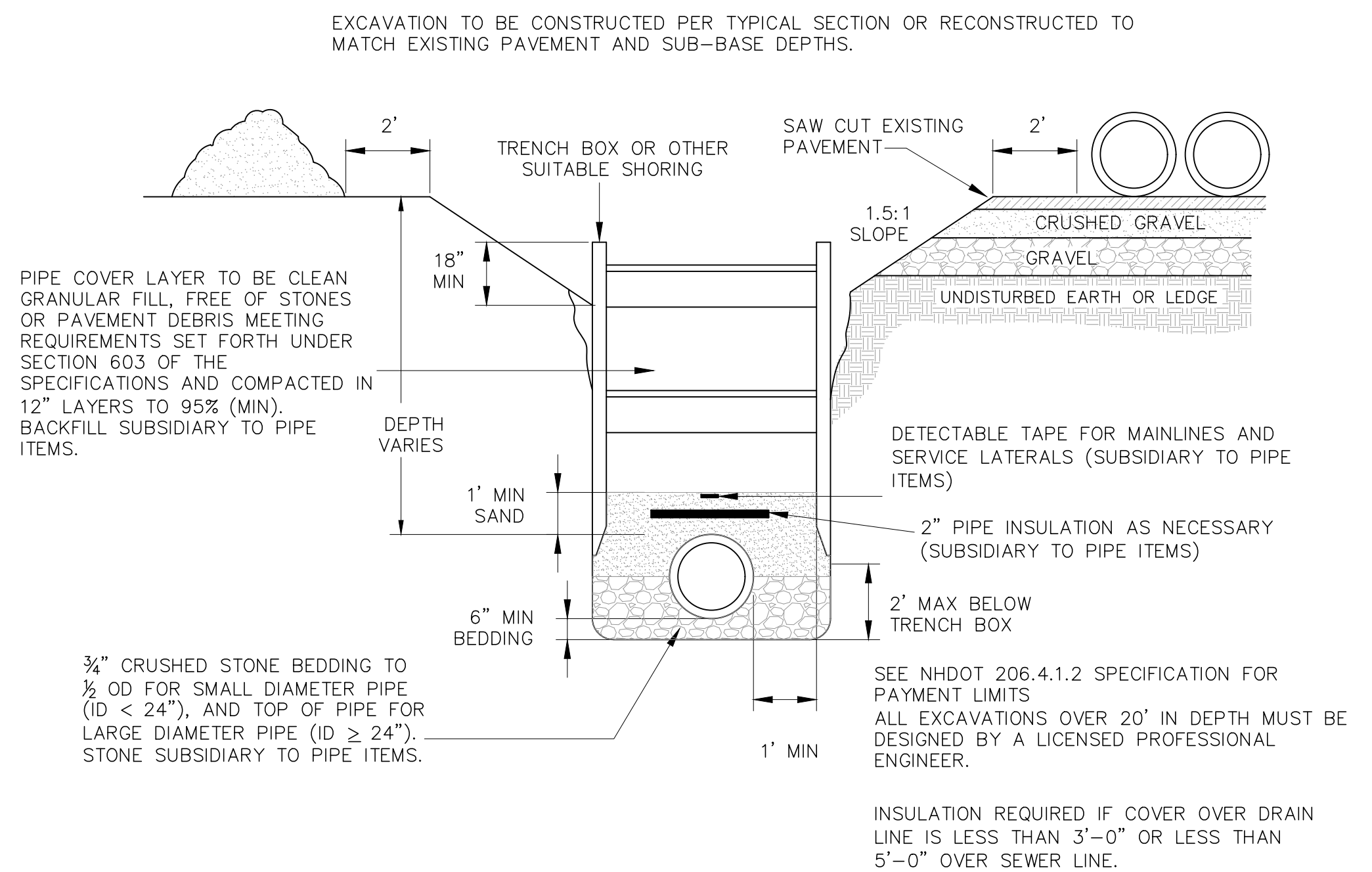
**Landfill Gas Details 2**

drawing no: <b>D-10</b>
sheet: 46 of 50



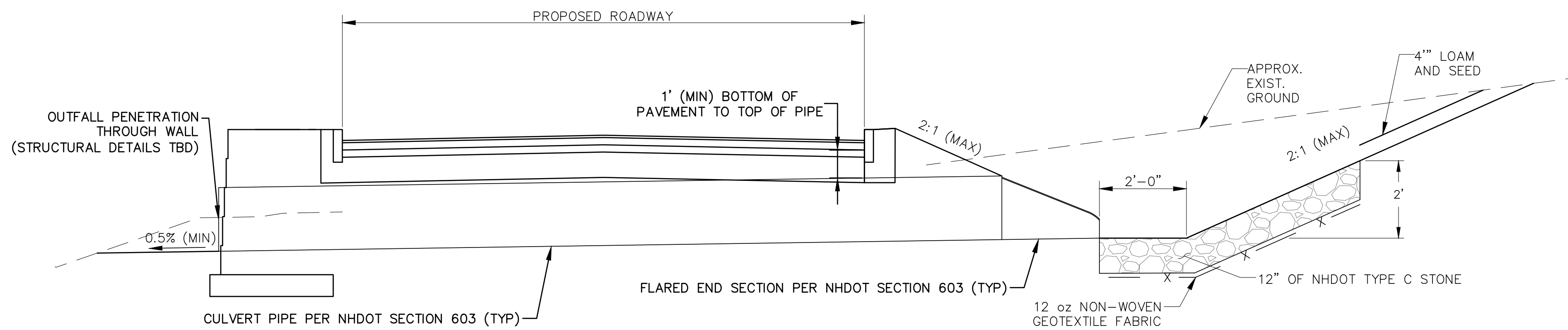
**Douglas Drive Typical Section**  
Not to Scale

1



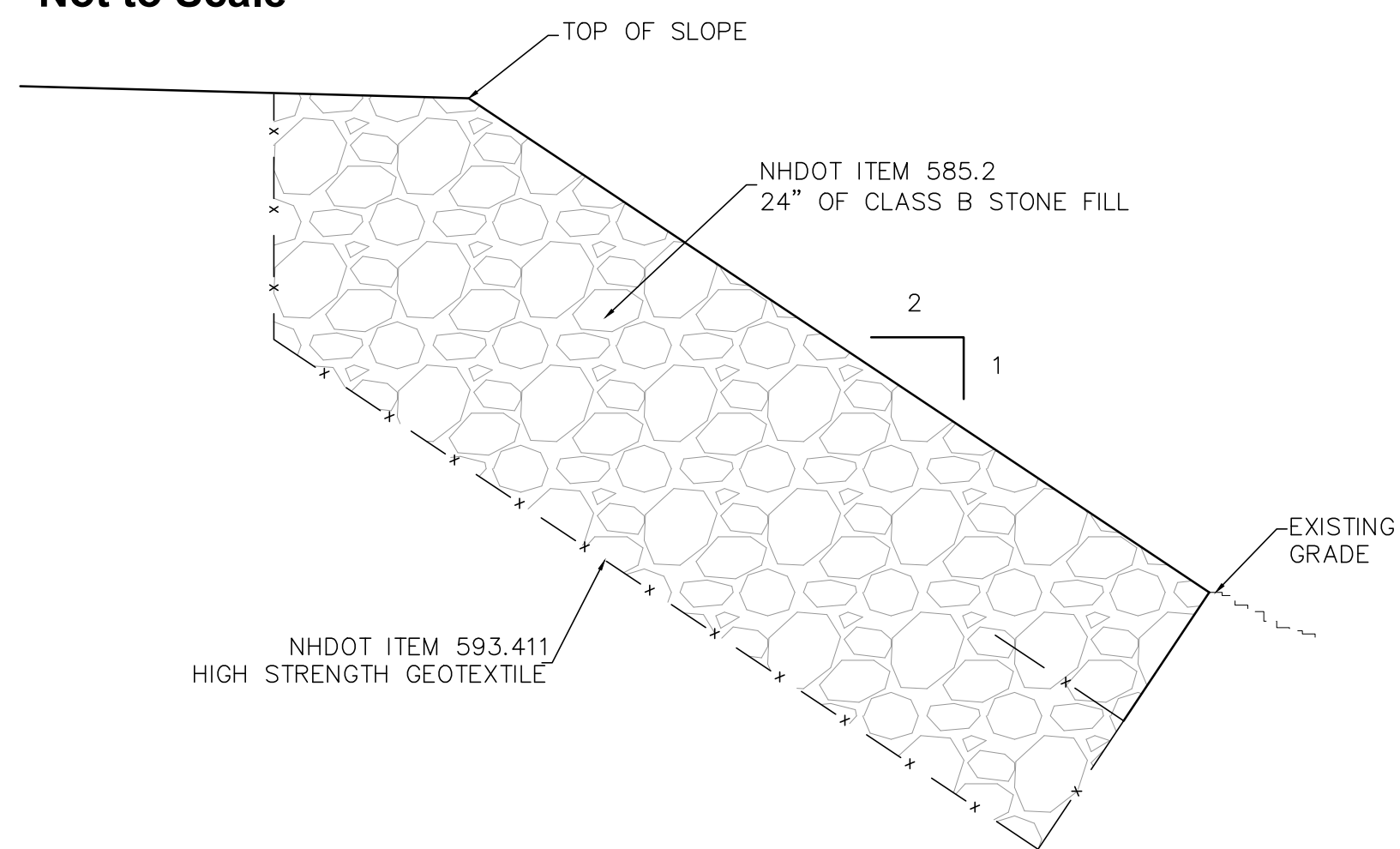
**Storm Drain Pipe Installation**  
Not to Scale

2



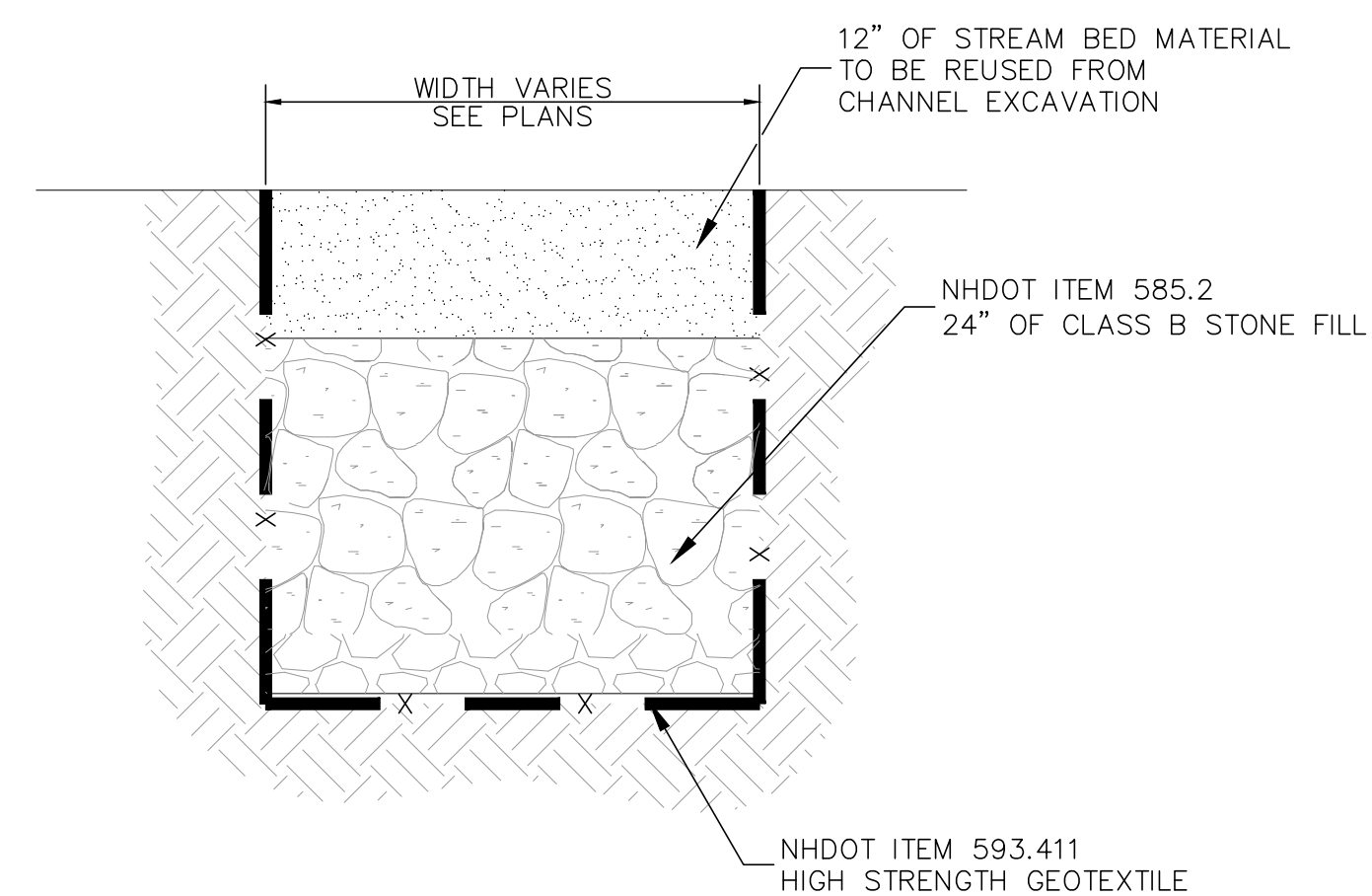
**Roadway Cross Culvert Detail**  
Not to Scale

3



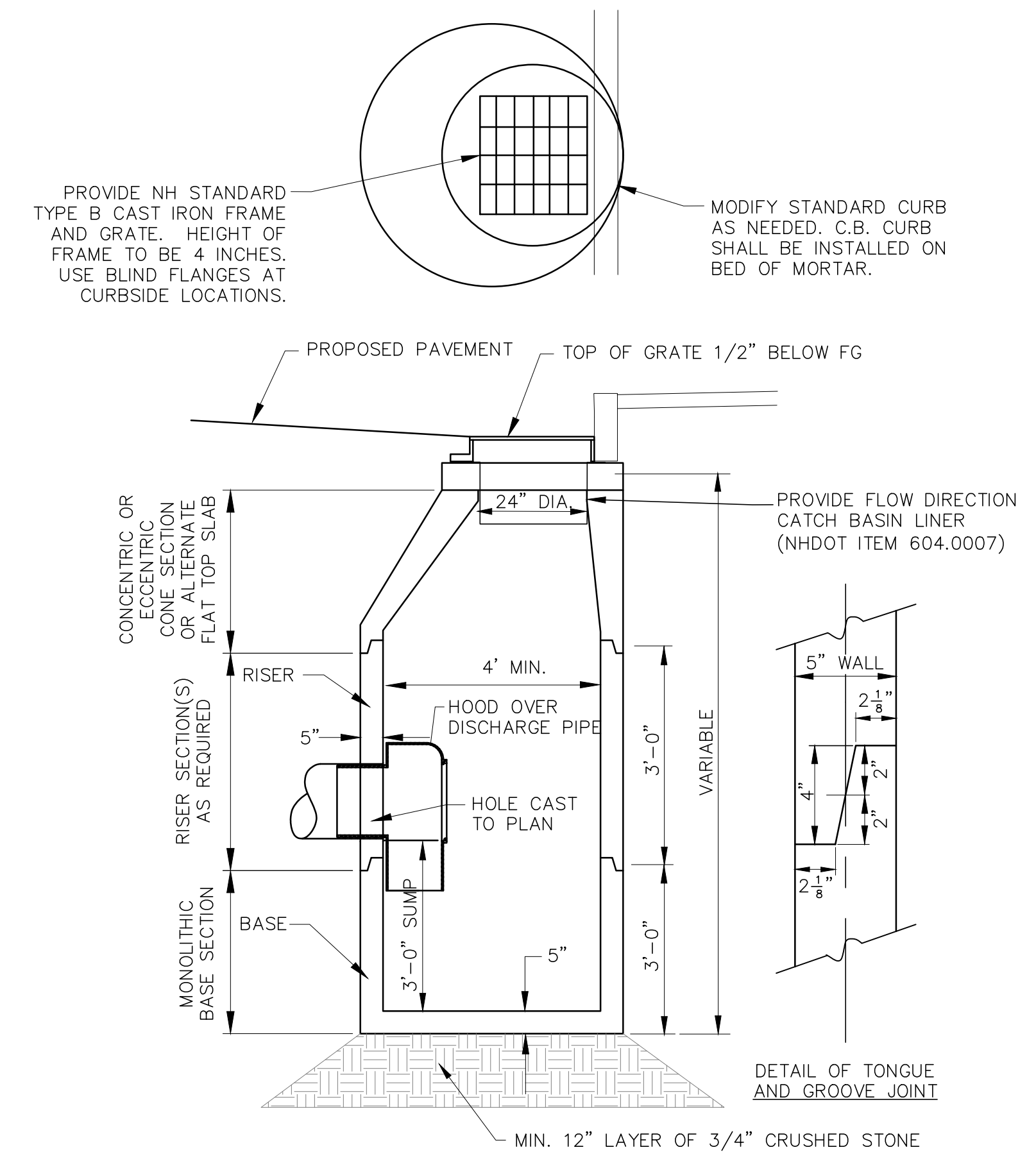
**Slope Protection Detail**  
Not to Scale

5



**Culvert Infill Detail**  
Not to Scale

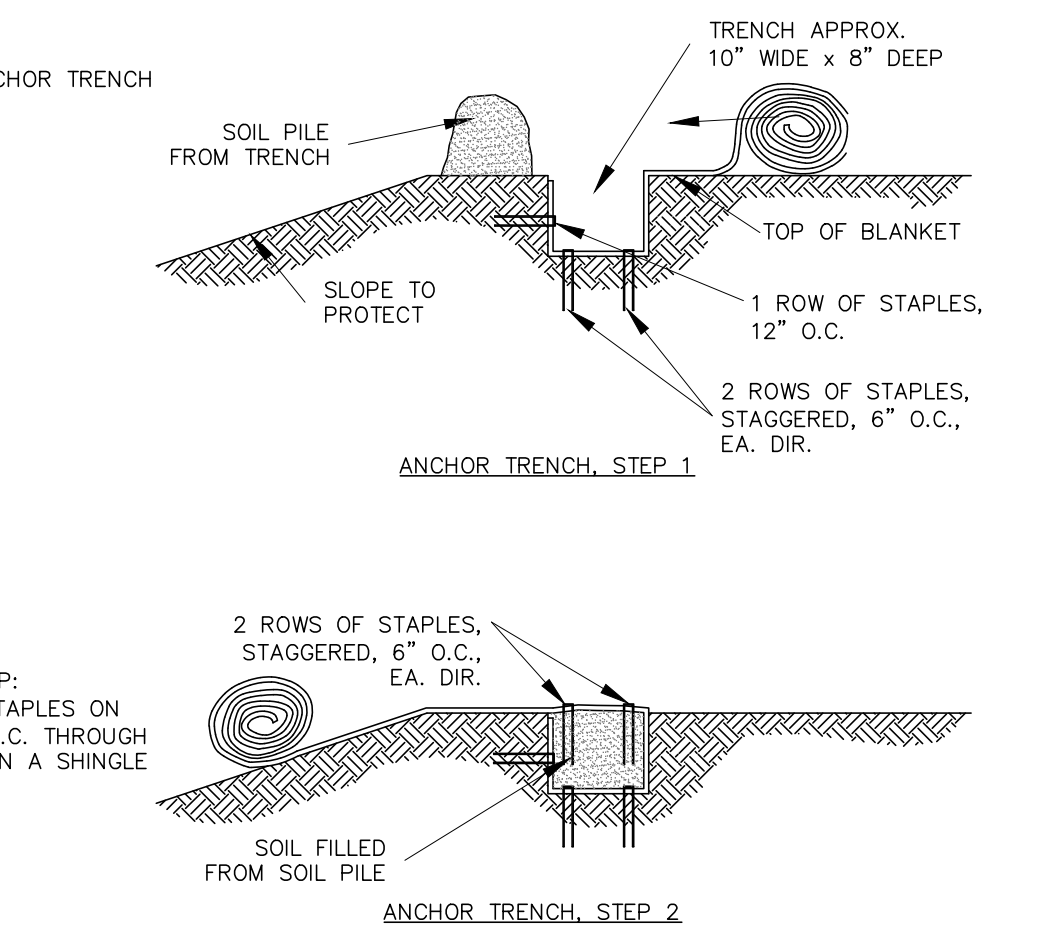
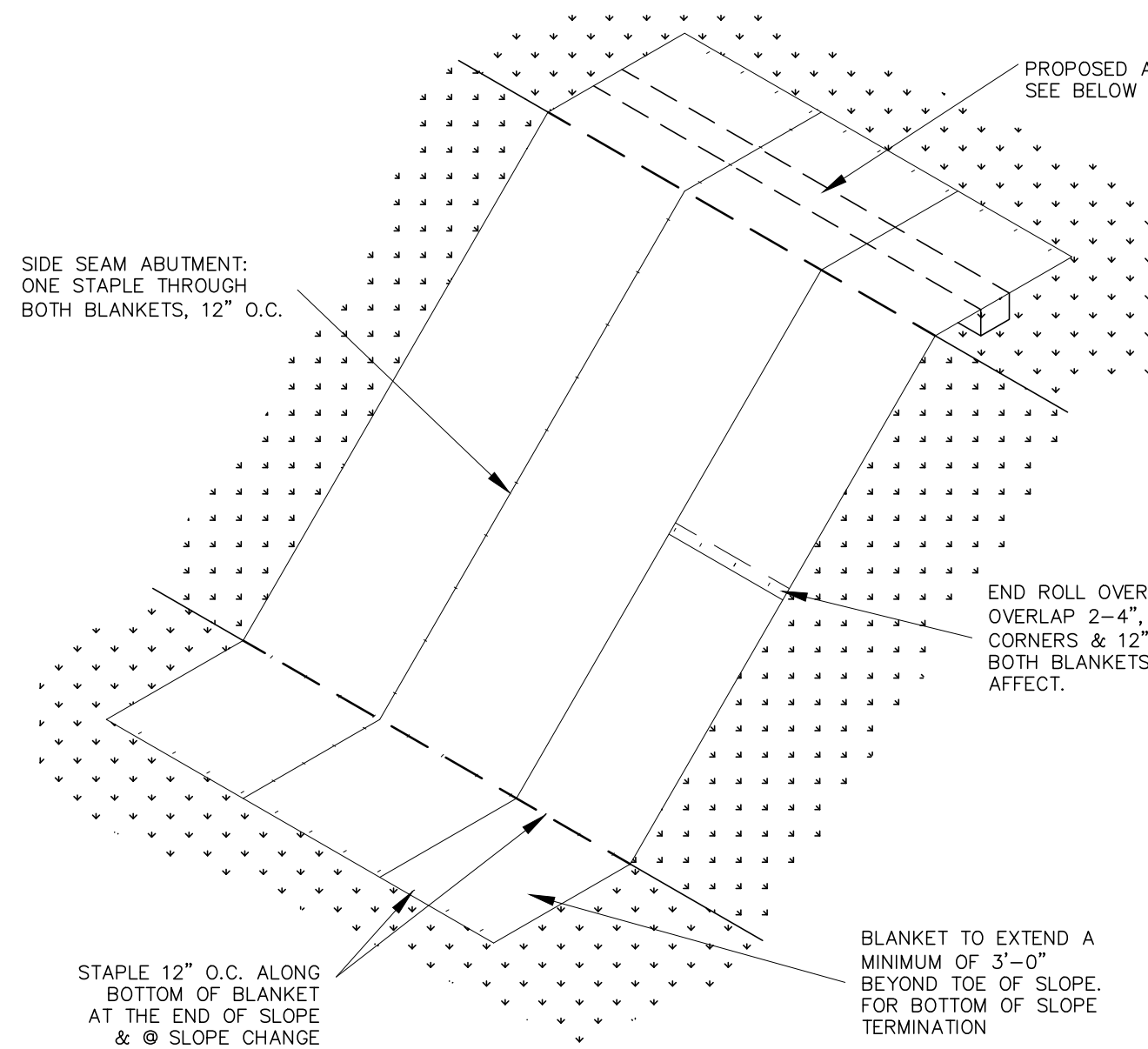
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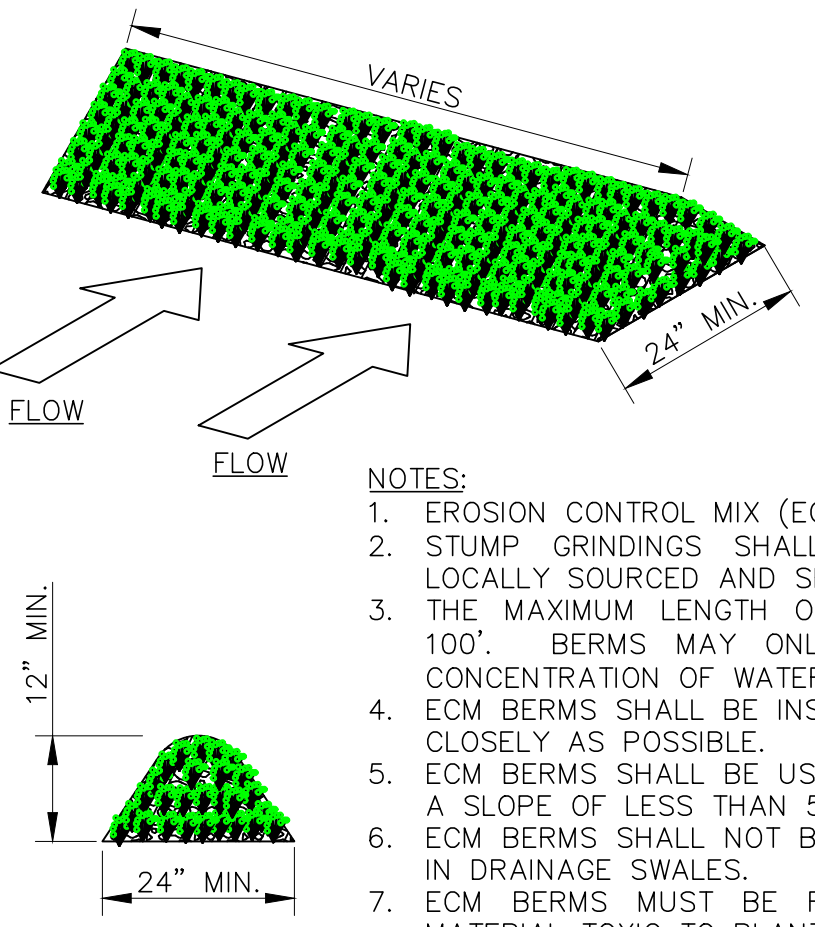
**Catch Basin Detail**  
Not to Scale

4

designated by:	ATR/NJM/STF/AJS	date:	October 2023
drawn by:	ATR/NJM/STF	project no.:	1101
approved by:	AJS	checked by:	AJS
scale:			
Granite State Landfill, LLC Dalton, New Hampshire		Permitting Plan Set	
Roadway Details		drawing no. D-11	
sheet:	47	of	50
CMA ENGINEERS CIVIL/ENVIRONMENTAL/STRUCTURAL	Portsmouth NH 603/431-6196	Manchester, NH 603/627-0708	Portland, ME 207/641-4223
c m a e n g i n e e r s . c o m	no.	revision	date



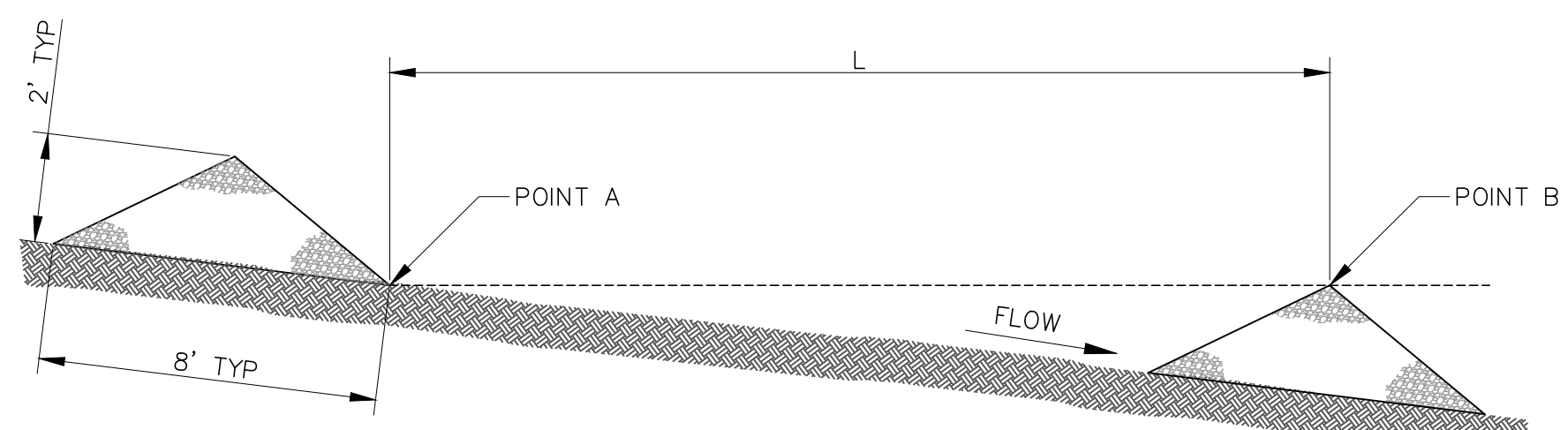
- NOTES:**
- EROSION CONTROL BLANKETS ARE TO BE INSTALLED FOR SLOPES GREATER THAN 3H:1V.
  - EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUIVALENT WHICH MUST CONSIST OF ALL NATURAL MATERIAL WITH NO PHOTOSYNTHETIC THREAD. BLANKETS SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.



- NOTES:**
- EROSION CONTROL MIX (ECM) BERMS SHALL CONFORM TO Env-Wq 1506.05.
  - STUMP GRINDINGS SHALL BE GENERATED FROM THE PROJECT SITE OR LOCALLY SOURCED AND SHOULD BE VOID OF INVASIVE SPECIES.
  - THE MAXIMUM LENGTH OF SLOPE ABOVE THE EROSION CONTROL BERM IS 100'. BERMS MAY ONLY BE UTILIZED IN AREAS WHERE THERE IS NO CONCENTRATION OF WATER.
  - ECM BERMS SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE.
  - ECM BERMS SHALL BE USED ONLY IF THE AREA UPSLOPE OF THE BERM HAS A SLOPE OF LESS THAN 5%.
  - ECM BERMS SHALL NOT BE INSTALLED IN LIVE STREAMS OR AS CHECK DAMS IN DRAINAGE SWALES.
  - ECM BERMS MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH.
  - THE ORGANIC MATTER CONTENT SHOULD BE BETWEEN 25% AND 65% BASED ON DRY WEIGHT THAT IS FIBROUS AND ELONGATED SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR EQUIVALENT MANUFACTURED PRODUCTS AND NOT COMPRISED OF WOOD CHIPS, BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS.
  - THE MIX SHOULD NOT CONTAIN SILTS, CLAYS OR FINE SAND, HAVE A pH BETWEEN 5.0 AND 8.0, AND HAVE A PARTICLE SIZE BY WEIGHT OF 100% PASSING A 3-INCH SCREEN, 90 TO 100% PASSING A 1-INCH SCREEN, 70 TO 100% PASSING A 0.75-INCH SCREEN, AND 40 TO 75% PASSING A 0.25-INCH SCREEN.

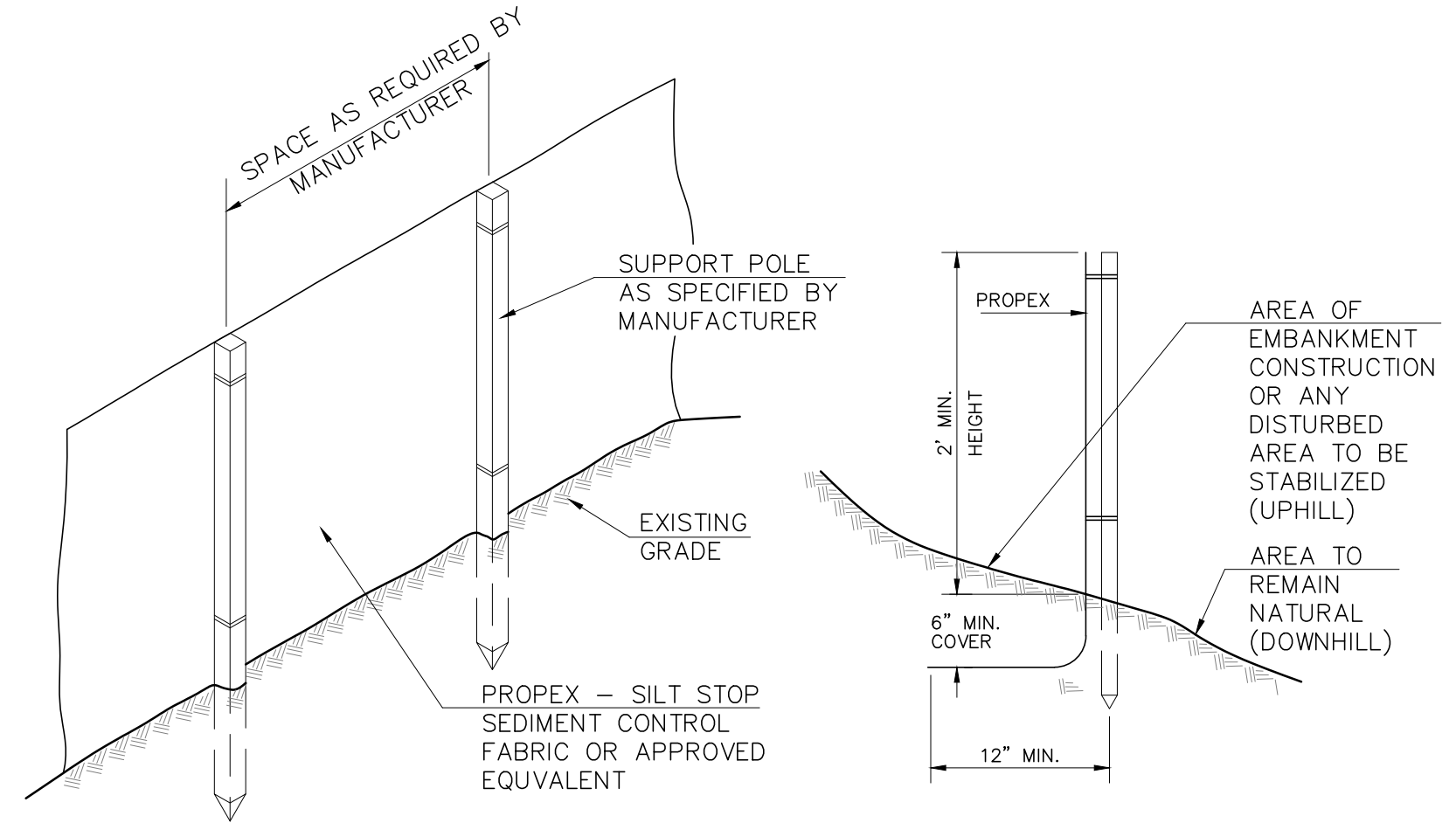
**Erosion Control Blanket Slope Detail**  
Not to Scale

**Erosion Control Mix (ECM) Berm**  
Not to Scale



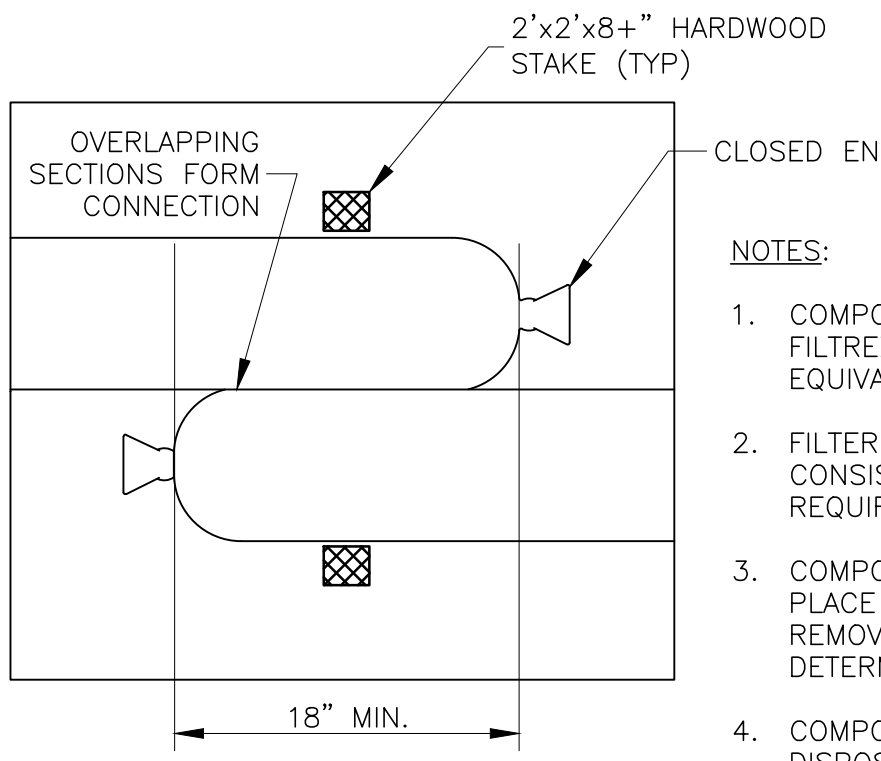
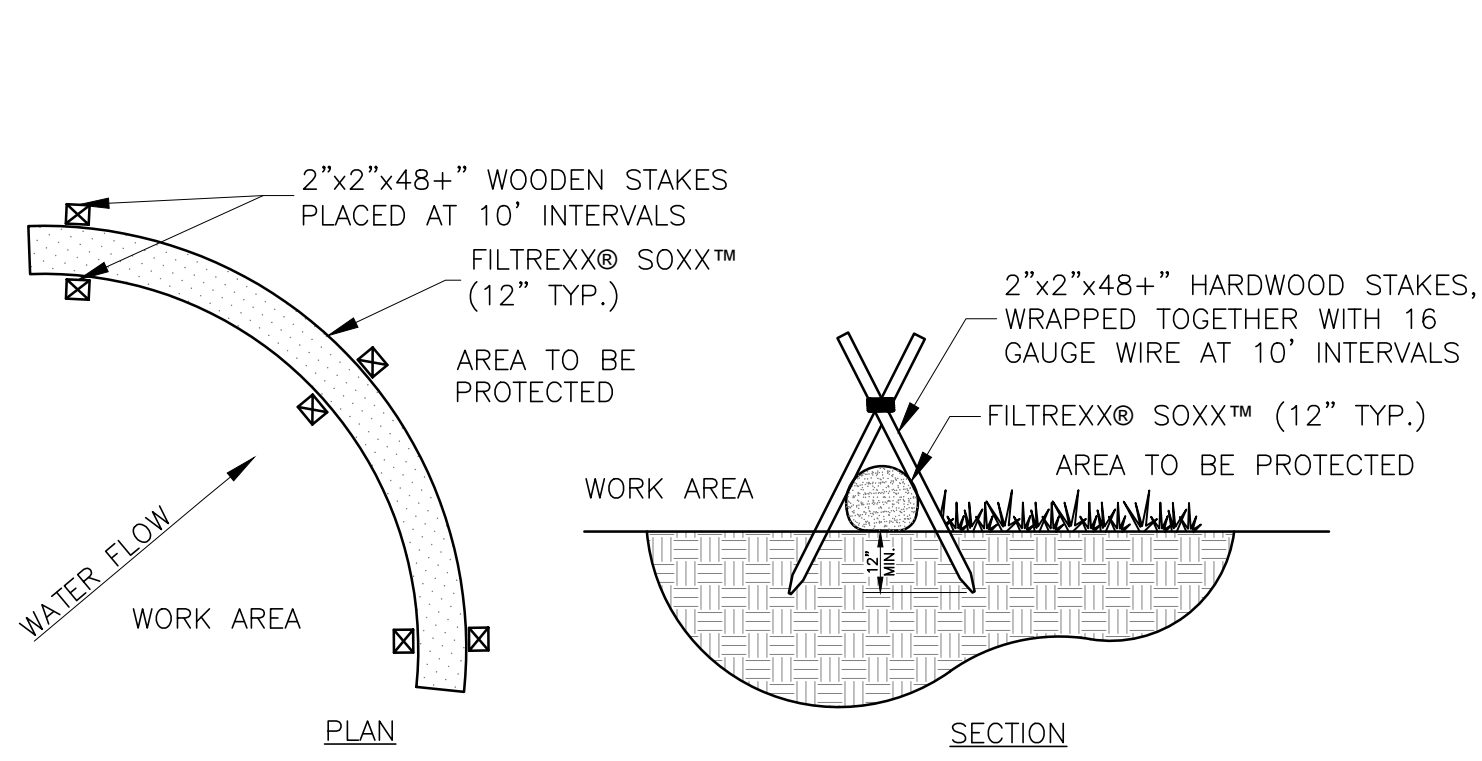
- NOTES:**
- CRUSHED STONE SHALL BE KEYED INTO THE BANKS OF THE CHANNEL.
  - FOR ACTIVE DRAINAGE OUTFLOW CHECK DAMS SHALL BE PLACED IN SERIES (100-FOOT MIN) ALONG FLOW LINE TO RETAIN SEDIMENTS.
  - THE MAXIMUM HEIGHT OF THE STONE CHECK DAM SHALL NOT EXCEED 2 FEET.
  - STONE CHECK DAMS SHALL BE CHECKED AFTER EACH RAINFALL AND REPAIRED IMMEDIATELY.
  - THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM DAM (POINT A ELEVATION = POINT B ELEVATION).

**Stone Check Dam**  
Not to Scale



- NOTE:**
- AT A MINIMUM, SILT FENCE IS TO BE INSTALLED TO PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS AND PLANTINGS ADJACENT TO THE WORK.

**Silt Fence**  
Not to Scale



- NOTES:**
- COMPOST SOCKS SHALL BE FILTREXX SILT SOCKS, OR APPROVED EQUIVALENT.
  - FILTER MEDIA SHALL BE CONSISTENT WITH PRODUCT REQUIREMENTS.
  - COMPOST SOCKS TO REMAIN IN PLACE UNTIL SITE IS STABILIZED. REMOVAL OF THE SOCKS SHALL BE DETERMINED BY THE ENGINEER.
  - COMPOST AND SOCKS TO BE DISPOSED AT AN ON-SITE LOCATION DESIGNATED BY THE OWNER.

**Compost Sock**  
Not to Scale

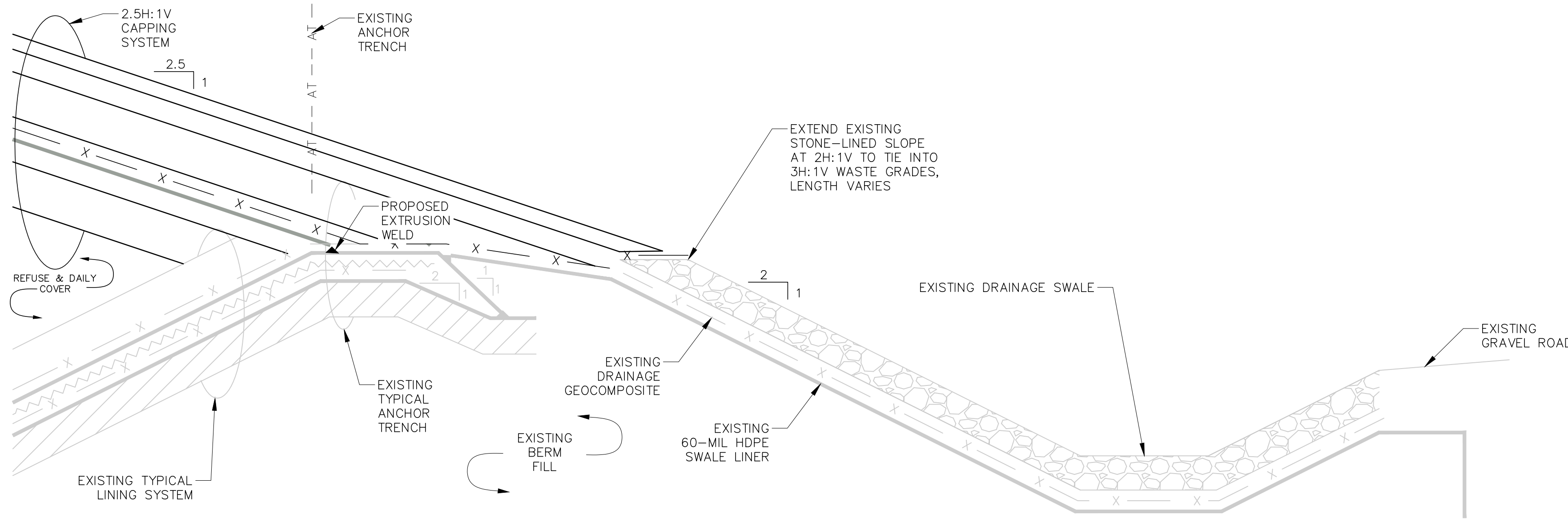
**Erosion Control Notes**

- PRIOR TO CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHALL BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHALL NOT BE LEFT EXPOSED DURING THE WINTER MONTHS. PERIMETER CONTROLS, INCLUDING SILT FENCE, COMPOST SOCK, ECM BERMS, STORMWATER PONDS, AND INFILTRATION BASINS SHALL BE INSTALLED PRIOR TO ROUGH GRADING OF THE SITE.
- THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR-3800 RELATIVE TO INVASIVE SPECIES.
- ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
- ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, OR LONGER THAN TWO WEEKS AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION, SHALL BE MACHINE HAY MULCHED AND SEEDED AT THE RATE OF 2 TONS PER ACRE. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT SHALL NOT EXCEED 5-ACRES AT ANY ONE TIME UNLESS AN Aot-APPROVED ENVIRONMENTAL MONITOR (EM) IS UTILIZED. THE EM SHALL COMPLETE REQUIRED INSPECTIONS AND REPORTING IN COMPLIANCE WITH SECTION ENV-WQ 1505(D) OF THE Aot RULES.
- AVOID USE OF UNDISTURBED AREAS WHENEVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING AND FUTURE ROADS.
- SILT FENCE, COMPOST SOCK, AND ECM BERMS SHALL BE INSTALLED & MAINTAINED WHERE SHOWN AND ADDITIONAL SILT FENCE AND COMPOST SOCK ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. IT SHOULD BE MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE CLEAN EXCESS SURFACE WATER. THE SILT FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
- EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5-IN OF RAINFALL.
- ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4 INCHES OF LOAM PLACED, BEFORE BEING SEEDED AND MULCHED UNLESS OTHERWISE SHOWN. EROSION CONTROL MATTING SHALL BE PLACED ON ALL SLOPES STEEPER THAN 3:1 AND WITHIN GRASS LINED SWALES AS SHOWN.
- AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF IN AN ON SITE LOCATION DESIGNATED BY THE OWNER.
- BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY.
- SILT FENCES SHALL BE MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE FABRIC KEYED INTO THE GROUND (SEE DETAIL). POSTS SHALL BE OF WOOD OR STEEL.
- THE EROSION CONTROL DEVICES SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THE SPECIFICATIONS REPRESENT THE MINIMUM REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY AND ALL MEASURES AS REQUIRED BY THE ENGINEER TO EFFECTIVELY PREVENT MIGRATION OF SEDIMENT FROM THE WORK AREA.
- ALL SLOPES AND DISTURBED AREAS TO BE SEEDED SHALL COMPLY WITH THE NHDES SECTION 644 WF SEED TYPE 45.
- LIME SHALL CONFORM TO NHDOT SPECIFICATIONS, DIV. 600, SEC. 642 "LIMESTONE". LIMESTONE SHALL BE APPLIED BY EITHER THE DRY OR HYDRAULIC METHOD AS DESCRIBED IN NHDOT DIV 600, SEC. 644.2.5. THE AMOUNT OF LIMESTONE APPLIED SHOULD BE BASED ON EVALUATION OF SOIL TESTS CONDUCTED BY THE CONTRACTOR. THE MINIMUM RATE OF 2 TONS PER ACRE OR 100 LBS PER SQ. FT. SHALL BE APPLIED IF REQUIRED.
- FERTILIZER TO BE USED MUST BE THE EQUIVALENT OF A 15-15-15 MIXTURE AND SHALL BE REVIEWED BY THE ENGINEER. FERTILIZER SHALL CONFORM TO NHDOT SPECIFICATIONS DIV. 600, SEC. 643 "FERTILIZER FOR GRASSES." KINDS AND AMOUNTS OF FERTILIZER SHOULD BE BASED ON EVALUATION OF SOIL TESTS CONDUCTED BY THE CONTRACTOR. THE MINIMUM AMOUNTS APPLIED SHALL BE AS FOLLOWS:  
  
NITROGEN (N) 150 LBS PER ACRE OR 1.1 LBS PER 1000 S.F.  
PHOSPHATE (P O ) 100 LBS PER ACRE OR 2.2 LBS PER 1000 S.F.  
POTASH (K O) 100 LBS PER ACRE OR 2.2 LBS PER 1000 S.F.  
  
(NOTE: THIS IS THE EQUIVALENT OF 500 LBS PER ACRE OF 10-20-20 FERTILIZER OR 1000 LBS PER ACRE OF 5-10-10)
- ALL PROPOSED SWALES MUST BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL ROADWAYS TO BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
-BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;  
-A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;  
-A MINIMUM OF 3-IN OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR  
-EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

**Winter Construction Notes:**

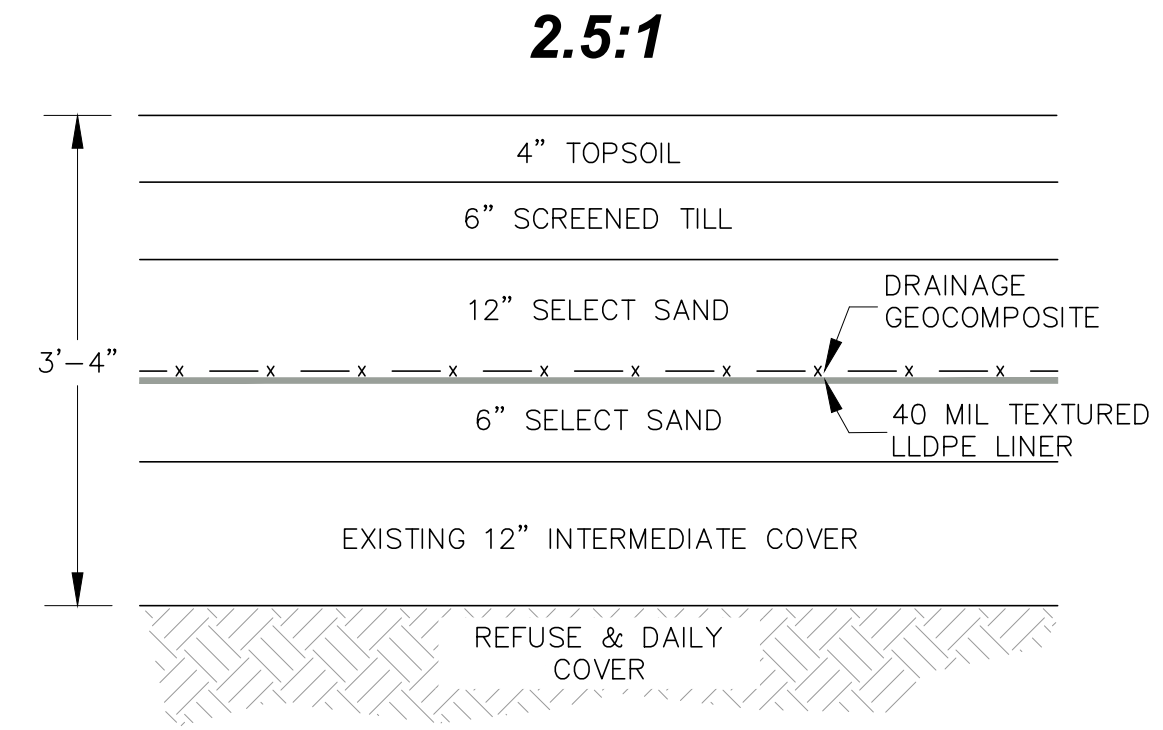
- ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

		date revision no.
CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth NH 603/431-6196 Manchester, NH 603/627-0708 Portland, ME 207/641-4223		c m a e n g i n e e r s . c o m
designed by: ATR/NUMSTF/AJS	drawn by: ATR/NUMSTF	approved by: AJS
date: October 2023	project no: 1101	checked by: AJS
Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Erosion Control Details		
drawing no. <b>D-12</b>		
sheet: 48 of 50		



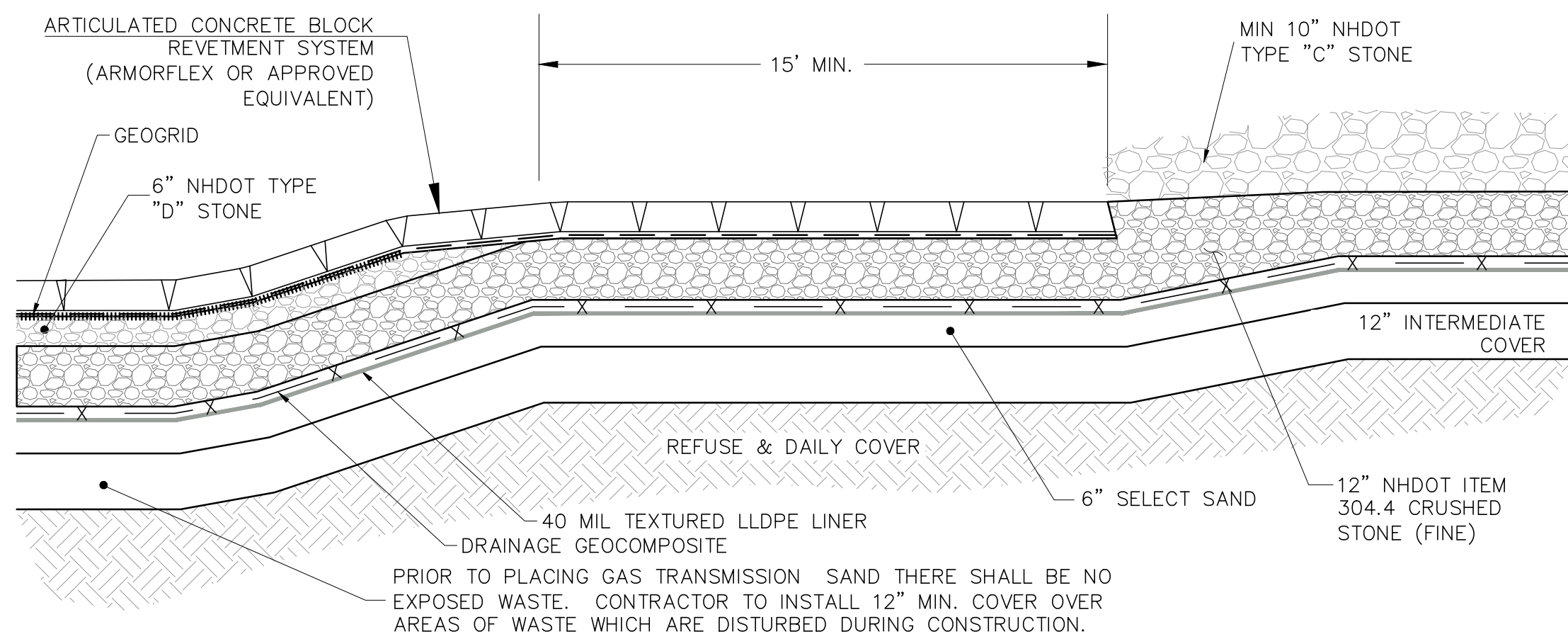
**Capping System Tie-in at Anchor Trench**  
Not to Scale

①



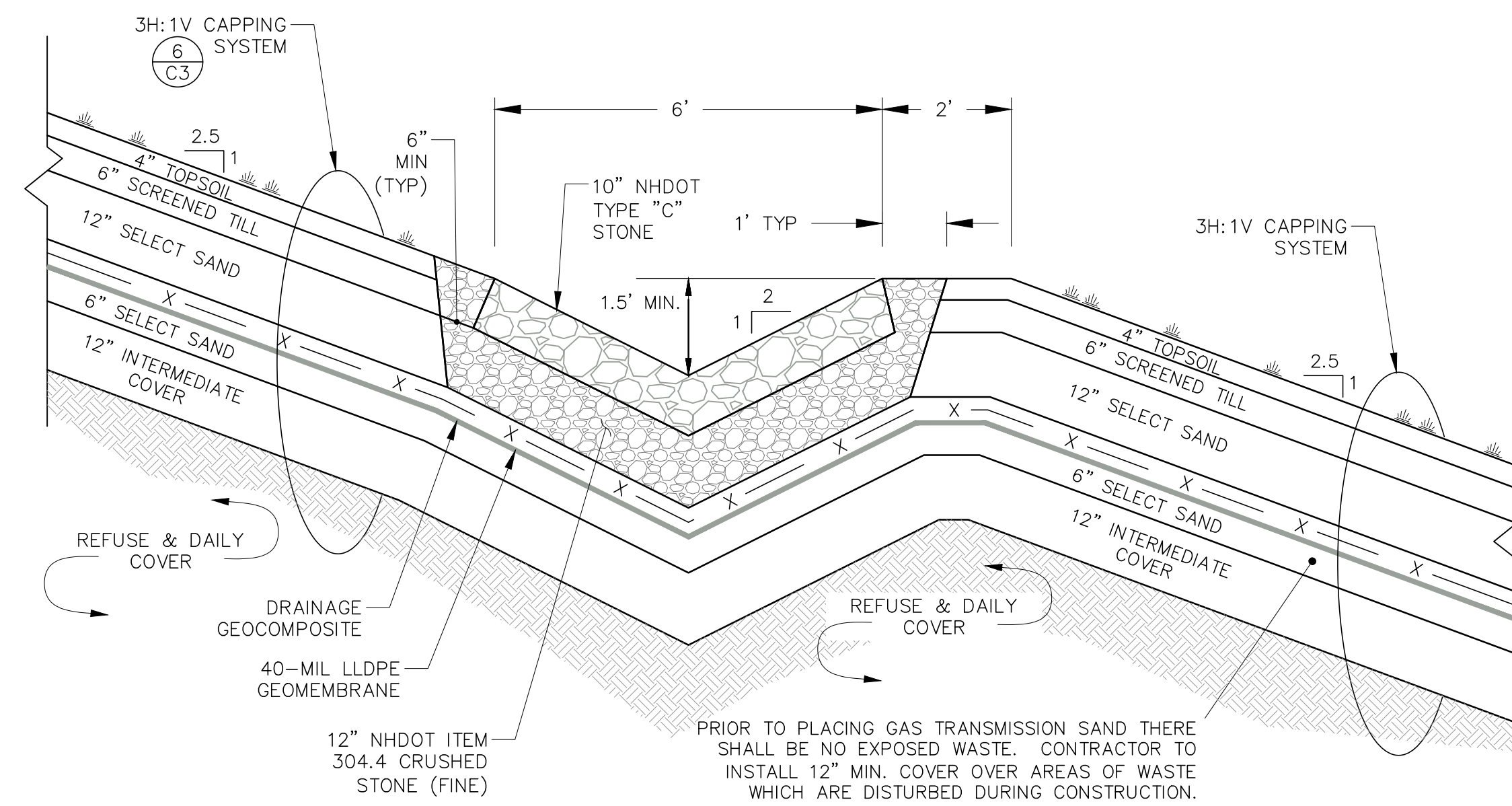
**Capping System Sections**  
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②



**Drainage Bench Outlet Into Dropchute**  
Not to Scale

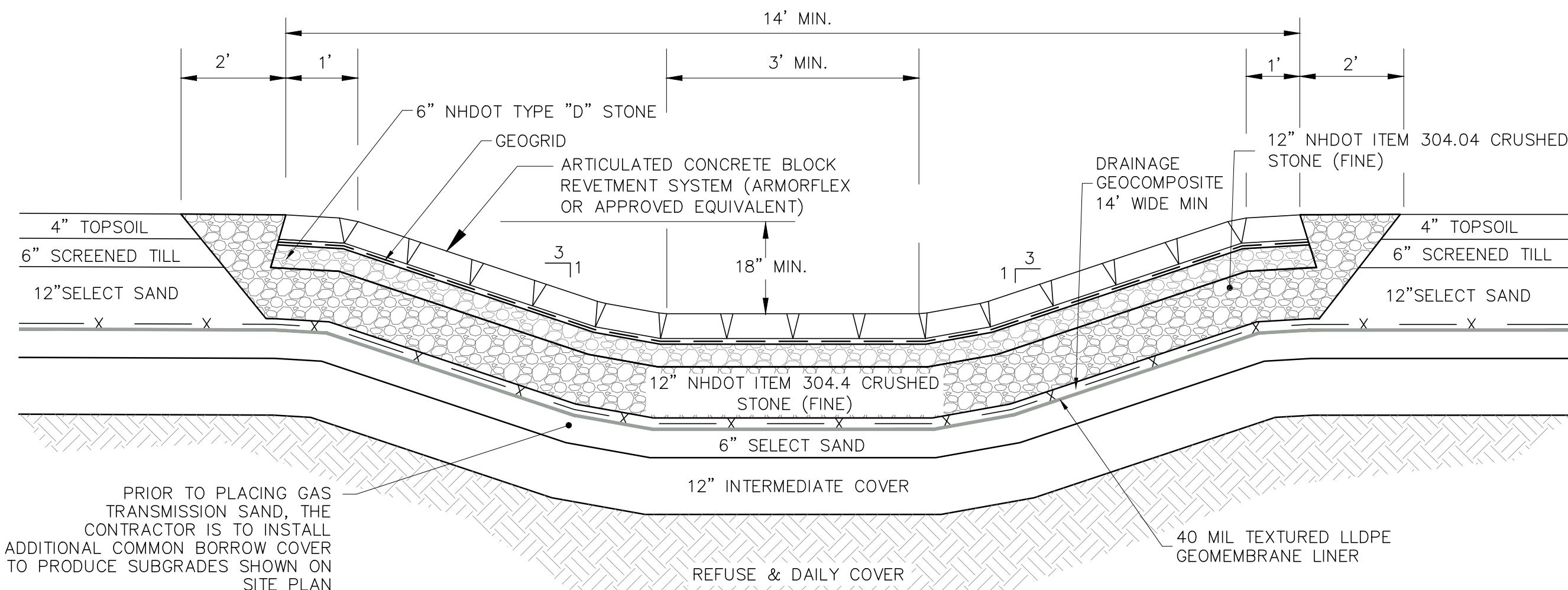
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**Drainage Bench**  
Not to Scale

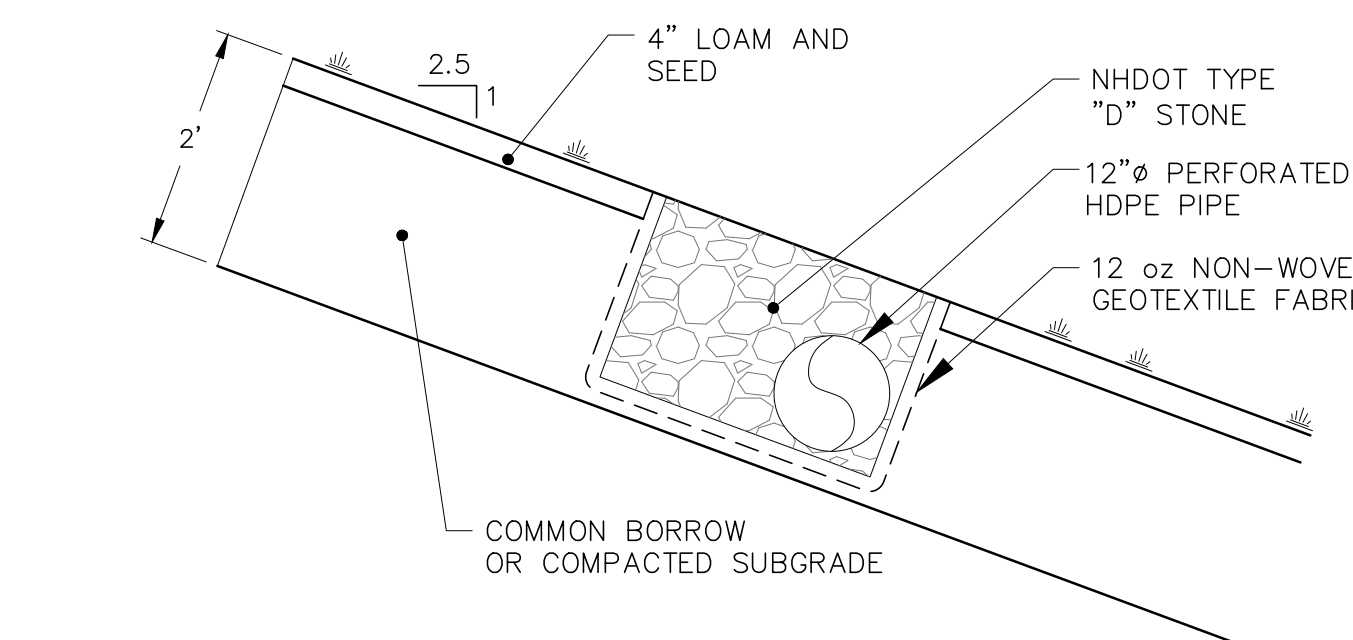
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- NOTES:
1. DRAINAGE BENCHES SHALL BE NEWLY CONSTRUCTED AT THE SPACING SHOWN ON THE PLANS AT A MINIMUM 3% SLOPE.
  2. EXISTING INTERMEDIATE COVER THICKNESS AT SWALES ARE APPROXIMATE AND NOT VERIFIED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND RELOCATING INTERMEDIATE COVER (AS NECESSARY) TO ACHIEVE REQUIRED BENCH DEPTH AND CROSS SECTION.



**Typical Dropchute Section**  
Not to Scale

⑤



**Side Slope Stormwater Collection Trench**  
Not to Scale

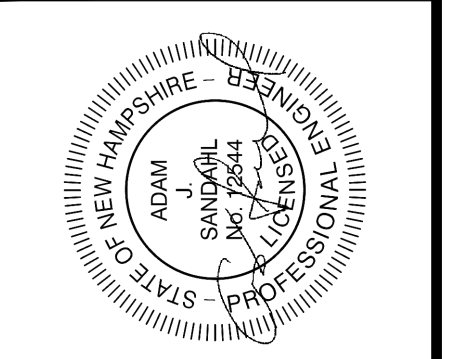
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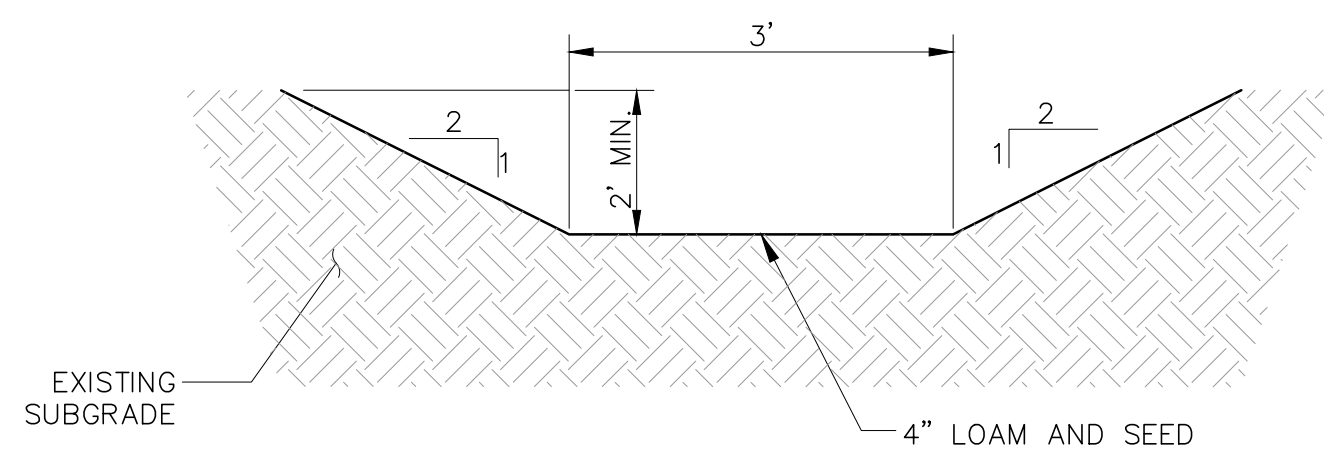
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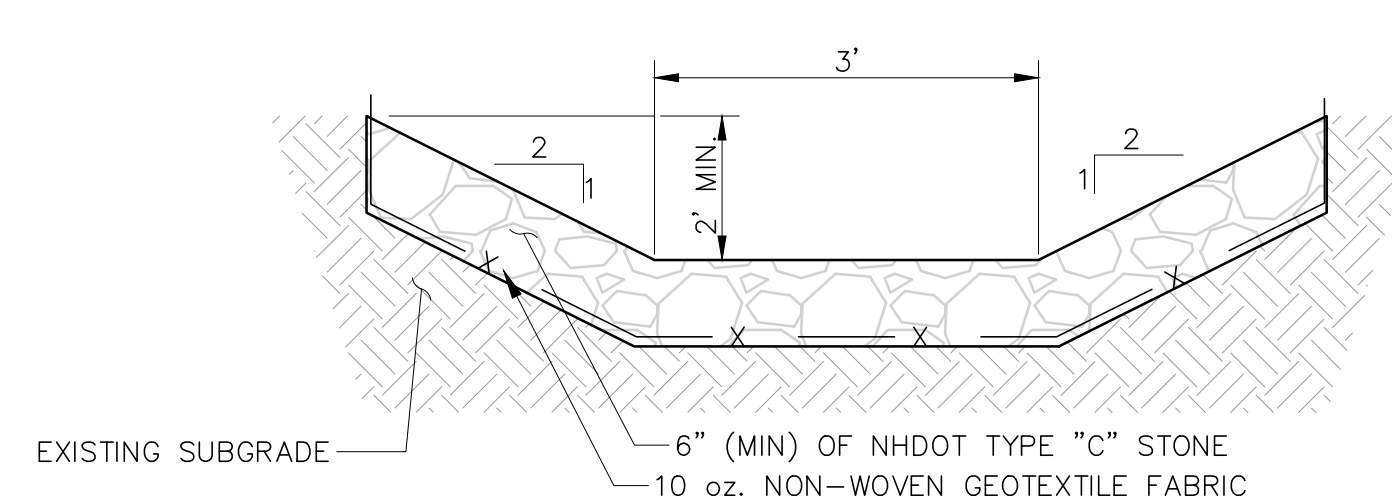
designed by: ATR/NUMSTF/AJS	drawn by: ATR/NUMSTF	approved by: AJS
date: October 2023	project no.: 1101	checked by: AJS
scale:		

Granite State Landfill, LLC  
Dalton, New Hampshire  
Permitting Plan Set

Closure  
Details



GRASS-LINED SWALE



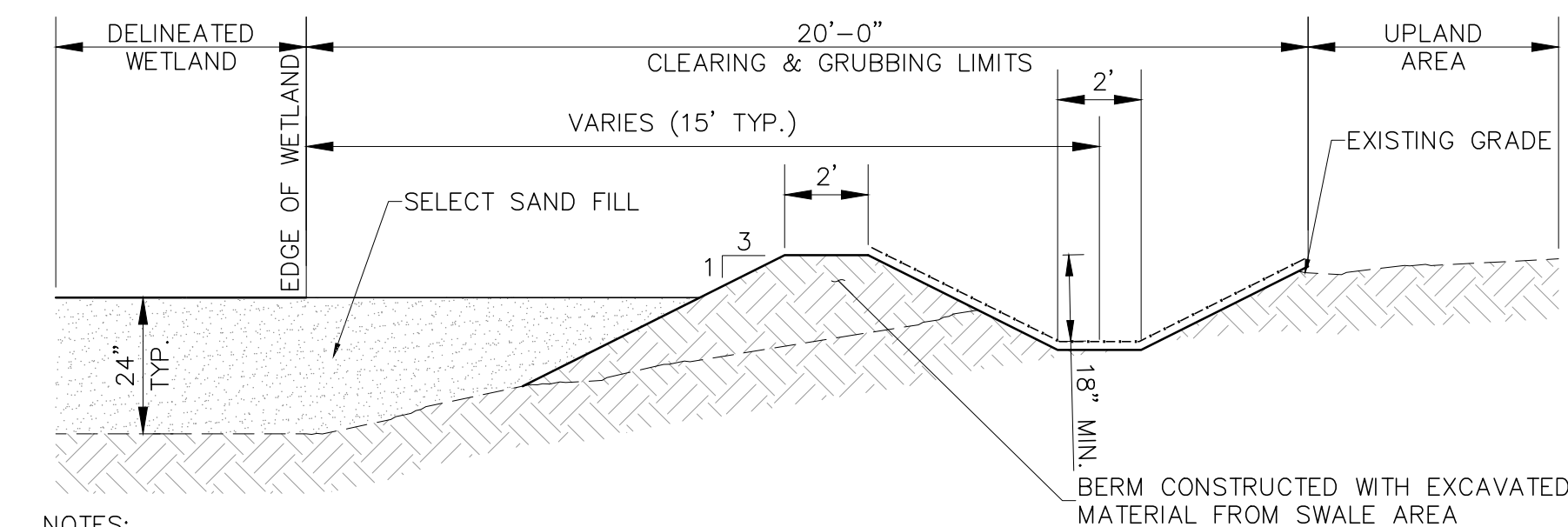
STONE-LINED SWALE

NOTES:

1. GRASS-LINED SWALE SHALL BE USED IN AREAS WHERE SWALE SLOPE <5%.
2. GRASS-LINED SWALES MUST INCLUDE A LAYER OF EROSION CONTROL MATTING DESIGNED TO ACCOMMODATE CHANNEL FLOW (NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUIVALENT).

**Cut Swale**  
Not to Scale

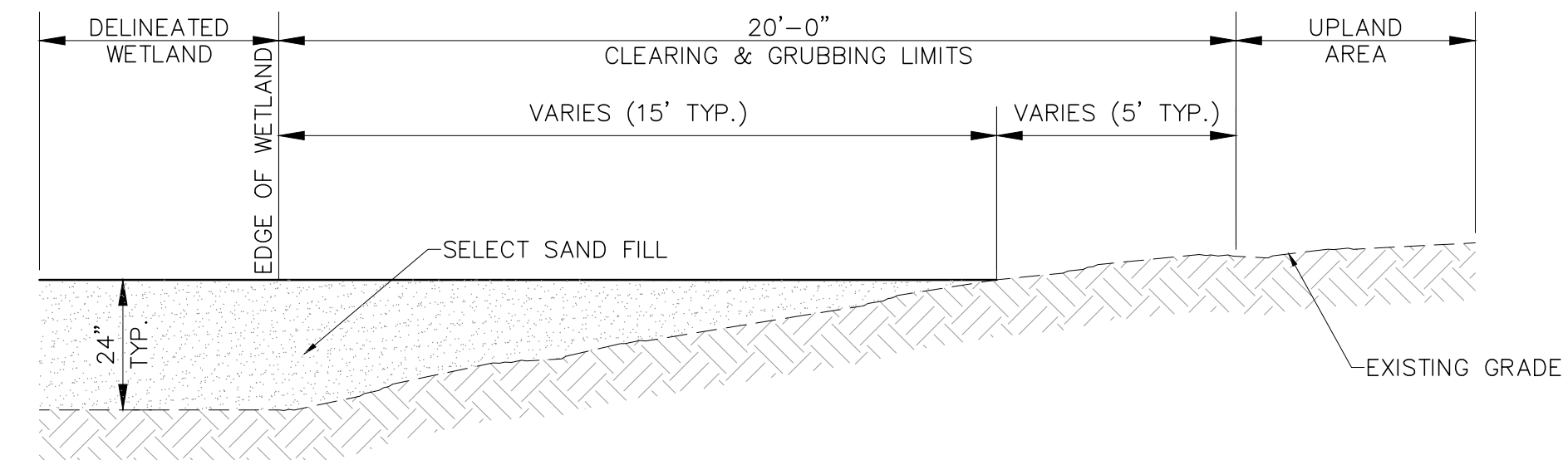
1



NOTES:

1. CONTRACTOR MAY UTILIZE EXISTING SOILS FROM EXCAVATING THE ADJACENT STORMWATER SWALE TO CONSTRUCT THE BERM AS APPROVED BY THE ENGINEER.
2. SWALES DISCHARGE INTO STORMWATER PONDS.

EDGE WITH SURFACE WATER DIVERSION SWALE (WHERE DIRECTED BY ENGINEER)



NOTES:

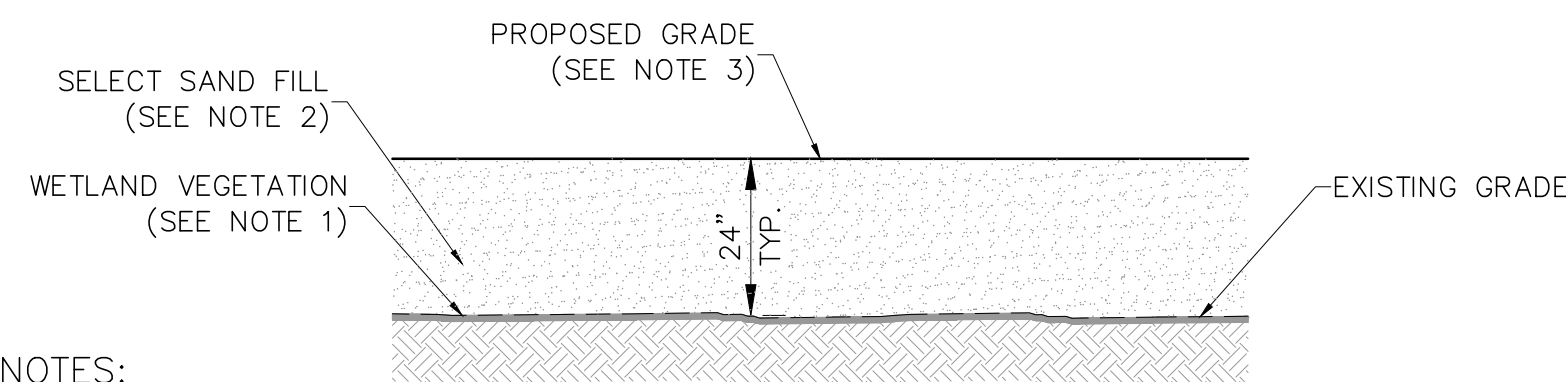
1. SELECT SAND FILL AT EDGE TO BE GRADED TO BLEND INTO EXISTING UPLAND.

EDGE WITHOUT SWALE

**Wetland Edge Treatment Detail**  
Not to Scale

3

SELECT SAND	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#4	60-100
#10	40-95
#40	10-50
#100	0-20
#200	0-6



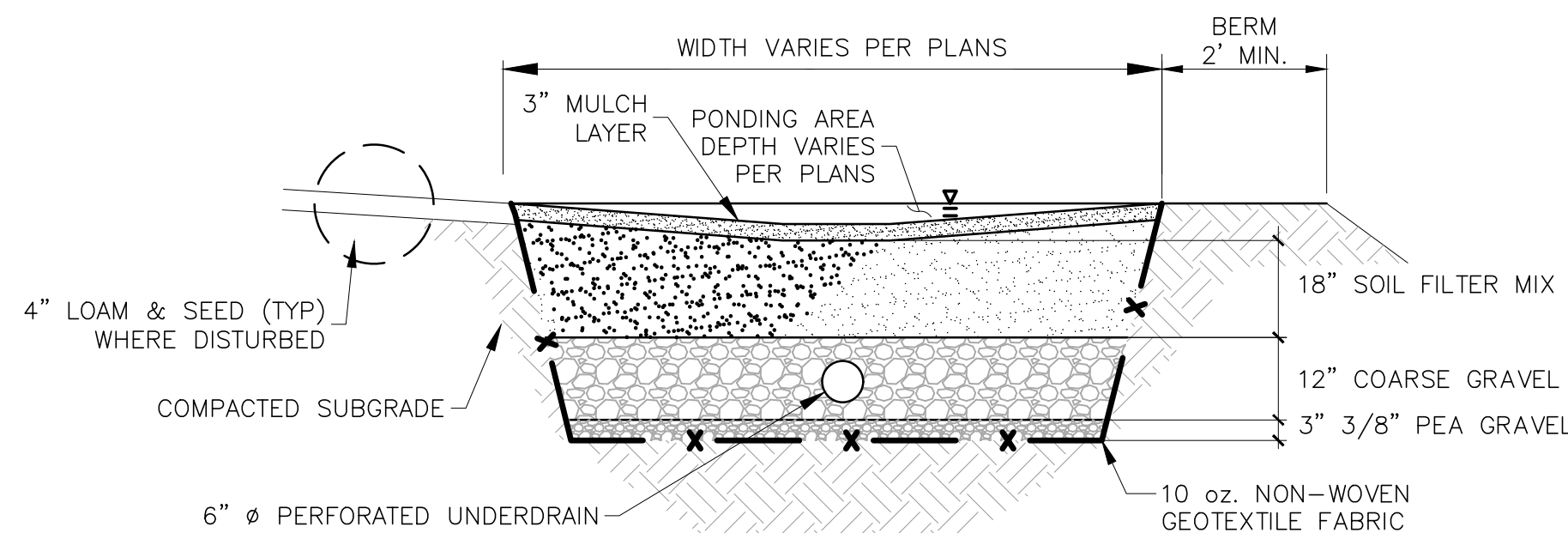
NOTES:

1. WETLAND VEGETATION AND HYDRIC SOILS SHALL BE REMOVED PRIOR TO THE PLACEMENT OF SAND.
2. SELECT SAND FILL TO BE PLACED AN AVERAGE DEPTH OF 2 FEET ABOVE THE EXSTING GRADE AFTER VEGETATION REMOVAL OR SEASONAL HIGH WATER TABLE, WHICHEVER IS HIGHER.
3. PROPOSED GRADE SHALL RECEIVE NO TYPE OF SURFACE TREATMENT. IT IS INTENDED THAT THE FILLED WETLAND AREAS SHALL REMAIN VEGETATION FREE.

**Wetland Fill Typical Section**  
Not to Scale

2

BIORETENTION FILTER MEDIA			
COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20 TO 30	200	<5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20 TO 30	200	<5
LOAMY COARSE SAND	70 TO 80	10	85 TO 100
		20	70 TO 100
		60	15 TO 40
		200	8 TO 15

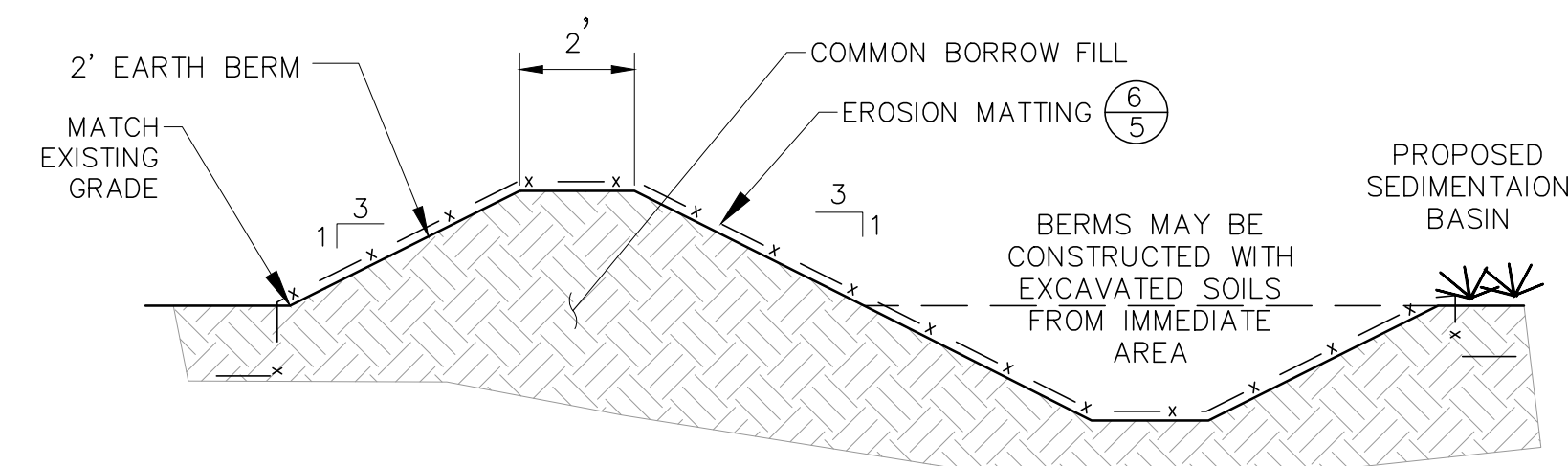


NOTES:

1. PLANTING DESIGN: ONLY NATIVE, NON-INVASIVE SPECIES SHALL BE USED. VEGETATION SHALL HAVE A RANDOM AND NATURAL PLANT LAYOUT. NO WOODY VEGETATION SHALL GROW NEAR INFLOW LOCATIONS. ONLY FACULTATIVE WETLAND SPECIES SHALL BE PLANTED OVER THE FILTER MEDIA. TREES OR LARGE SHRUBS SHALL BE PROVIDED ALONG THE PERIMETER. A TREE CANOPY SHALL BE ESTABLISHED WITH AN UNDERSTORY OF SHRUBS AND HERBACEOUS PLANTS. VEGETATION SHALL BE DROUGHT TOLERANT.

**Bioretention System (Rain Garden)**  
Not to Scale

4

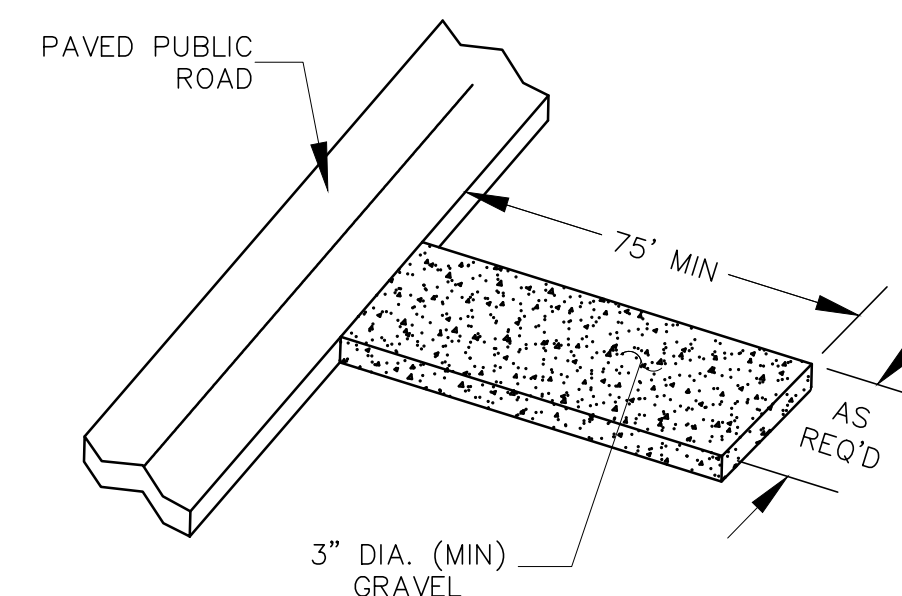


NOTES:

1. THIS TEMPORARY SEDIMENTATION BASIN DETAIL IS PROVIDED AS A CONTINGENCY IN THE EVENT THE ENGINEER DETERMINES THAT ADDITIONAL EROSION CONTROLS ARE WARRANTED.
2. CONTRACTOR MAY UTILIZE EXISTING SOILS FROM EXCAVATING THE SEDIMENTATION BASIN TO CONSTRUCT THE BASIN IF APPROVED BY THE ENGINEER. THE DETAIL ABOVE, DEPICTS UTILIZING SOILS IMMEDIATELY ADJACENT TO THE PROPOSED BERM LOCATION.

**Temporary Sedimentation Basin Berm**  
Not to Scale

5



**Stabilized Construction Entrance**  
Not to Scale

6

CONSTRUCTION SPECIFICATIONS:

1. STONE SIZE - USE 3" STONE (MIN)
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 75 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH RAIN.

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Granite State Landfill, LLC Dalton, New Hampshire		Permitting Plan Set		Wetland Filling Details		
drawing no. D-14						
sheet: 50 of 50						