Dallas Area Municipal Authority (DAMA)

Municipal Separate Storm Sewer System (MS4)

Pollutant Reduction Plan (PRP)

for

Chesapeake Bay (Appendix D)

2019 – 2024 MS4 Permit

Original Submission September 2017

Revised: August 2026
Revision #: 9

ARRO Project No.: 00011138.10

DALLAS AREA MUNICIPAL AUTHORITY
101 Memorial Highway
Shavertown, PA 18708

ARRO
108 West Airport Road
Lititz, PA 17543

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1. Introduction

The Dallas Area Municipal Authority (DAMA) consists of Dallas Borough, Dallas Township, and Kingston Township in Luzerne County which were classified as small Municipal Separate Storm Sewer Systems (MS4s) based upon the 2010 U.S. Census urbanized area data. The Pennsylvania Department of Environmental Protection (PA DEP) has notified Dallas Borough, Dallas Township, and Kingston Township that they are required to apply for coverage under a National Pollutant Discharge Elimination System (NPDES) MS4 permit. The requirements for Dallas Borough, Dallas Township and Kingston Township are defined by the PA DEP Municipal MS4 Requirements Table as:

MS4 Name	NPDES ID	Individual Permit Required?	Reason	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Luzerne County						
Dallas Borough	PAG132234	No		Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
Dallas Township	PAI132232	No		Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
Kingston Township	PAG132218	No		Susquehanna River	Appendix A-Metals (4a), Appendix C-PCB (4a)	Mercury (5)
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	

PA DEP has published the Pollutant Aggregation Suggestions for MS4 Requirements Table; per the aggregation instructions, the aggregate total required reduction may be analyzed and Best Management Practices (BMPs) may be implemented in the identified watersheds, tributary to the same Hydrologic Unit Code (HUC) 12 watershed. The aggregated requirements for the DAMA municipalities are as follows:

MS4 Name	Permit Number	HUC 12 Name	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)
Luzerne County				
Dallas Borough	PAG132234	City of Wilkes-Barre-Susquehanna River, Toby Creek	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
Dallas Township	PAI132232	City of Wilkes-Barre-Susquehanna River, Toby Creek	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients
Kingston Township	PAG132218	City of Wilkes-Barre-Susquehanna River, Warrior Creek-Susquehanna River	Susquehanna River	Appendix A-Metals, Appendix C-PCB
		City of Wilkes-Barre-Susquehanna River, Toby Creek, Warrior Creek-Susquehanna River	Chesapeake Bay Nutrients/Sediment	Appendix D-Siltation/Nutrients

This joint municipal Pollutant Reduction Plan (PRP) has been developed to satisfy the aggregated requirements, as put forward by the PA DEP, of Chesapeake Bay Pollutant Reduction Plan.

2. Public Participation

DAMA's original PRP was approved by DEP in 2018 and was revised in 2024 to include additional projects. Information regarding the previously proposed PRP projects and why they were determined to be infeasible can be found in Attachment F. DAMA encouraged a plan that included public participation and buy in. The PRP was

advertised for public review and comment for a period of 45 days in the local paper on DATE; a copy of the advertisement can be found in Attachment A.I.

A copy of the complete draft PRP was posted on the DAMA website as well as each individual municipal website prior to the public notice. A hard copy was also made available at the DAMA and municipal offices, as well as the library during normal business hours. Written comments regarding the plan were received by DAMA from DATE through DATE; a copy of all written comments are provided in Attachment A.II. The revised PRP was announced as available for review during the DATE public meeting. DAMA accepted public comments on the PRP during the DATE public meeting; a summary of comments received is provided in Attachment A.III.

A record of consideration for all timely comments received is provided in Attachment A.IV. This PRP reflects careful planning of DAMA with respect to the impaired waters of the Commonwealth, local flooding, erosion problems, and the financial impact to the residents.

3. Mapping

In accordance with PA DEP guidelines for development of the PRP, DAMA has completed mapping of the regulated MS4 Storm Sewersheds; the required mapping is provided in Attachment B. Mapping includes the collection and conveyance to regulated outfalls, identified outlets and outfalls, potential BMPs, and waters of the Commonwealth within the DAMA PRP planning area. The 2018 PRP included the parsing of state roadways. The 2024 PRP has been revised to parse state roadways, NPDES permitted facilities, and portions of the planning area that do not interact with the DAMA MS4. A map outlining parsed areas has been provided in Attachment B. A web version of the mapping may be viewed at the following URL: https://damaonline.maps.arcgis.com/apps/instant/basic/index.html?appid=32117ccff5d046c2806e864602a13a8a

4. Pollutants of Concern

DAMA, in accordance with the PA DEP Municipal requirements table and the impaired waters mapping provided herein, is subject to an aggregation of Appendix D of the MS4 permit.

Appendix D – Chesapeake Bay

Appendix D is the requirement for development of a Chesapeake Bay Pollutant Reduction Plan (CBPRP). In accordance with the PRP guidelines, the goal of the CBPRP is for the following reductions:

- 3% reduction of Total Nitrogen (TN)
- 5% reduction of Total Phosphorous (TP)
- 10% reduction of Sediment (TSS)

Furthermore, the PA DEP PRP instructions state: “Permittees are encouraged to select appropriate BMPs to achieve the 10% sediment loading reduction objective, as it is expected that, overall, within the Bay watershed, the TP (5%) and TN (3%) goals will be

achieved when a 10% reduction in sediment is achieved." The PRP has been prepared to meet the required 10% reduction of sediment.

5. Existing Loading for Pollutants of Concern

Pollutant loadings were calculated using the Model My Watershed methodology; the calculated pollutant loadings for each watershed are provided in Attachment C. The calculations are summarized below:

Appendix D – Chesapeake Bay

Watershed/Municipality	PA DEP Land Loading		
	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
Dallas Borough	644	177	333,465
Dallas Township	1,603	415	745,295
Kingston Township	1,200	340	686,362
Chesapeake Bay/Toby Creek Total	**3,447**	**932**	**1,765,122**
Required Reduction Percent	3%	5%	10%
Required Reduction (lbs/yr)	**103.41**	**46.6**	**176,512.2**

A. Existing BMP Load Reductions

Based upon the mapping provided in Attachment B, DAMA has identified existing BMPs that would reduce the existing pollutant loading. DAMA parsed state and NPDES permitted facilities from calculations; additional information on parsed areas can be found in Attachment C. Attachment E provides a summary of the existing BMPs within each municipality, along with the PA DEP permit number, if available, and approximate date of installation. The percentage of pollutant reduction for each BMP was determined based upon DEPs NPDES Stormwater discharge from small MS4 BMP effectiveness value table. The existing loading for TSS, TP, and TN was re-calculated for each storm sewer shed accounting for the pollutant load reduction from the existing BMPs. BMP reductions and an updated pollutant reduction goal is summarized below and in Attachment E:

Dalla Area Municipal Authority Base Pollutant Loading with Existing BMPs Summary:

Watershed	Municipality	PA DEP Land Loading		
		TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
Chesapeake Bay/Toby Creek	Dallas Borough	644	177	333,465
	Dallas Borough BMP Reductions	6.93	3.74	8,763.27
	Dallas Borough Total Loading	**637.07**	**173.26**	**324,701.73**
	Dallas Township	1,603	415	745,295
	Dallas Township BMP Reductions	25.21	9.9	29,329.39
	Dallas Township Total Loading	**1,577.79**	**405.1**	**715,965.61**
	Kingston Township	1,200	340	686,362
	Kingston Township BMP Reductions	12.05	6.65	14,121.74
	Kingston Township Total Loading	**1,187.95**	**333.35**	**672,240.26**
		4,368.74	*911.71*	*1,712,907.6*
		3%	5%	10%
		131.06	**45.59**	**171,290.76**

6. Selected BMPs

DAMA developed a Selected BMP concept plan to identify potential BMPs to be implemented. Projects that were previously identified by DAMA and found to be infeasible during the current permit cycle can be found in Attachment F. The associated pollutant loading reductions for each BMP were calculated and are provided in Attachment F along with a summary description of the Selected BMPs evaluated. The percentage of pollutant reduction provided by each BMP was determined based on the PADEP BMP Effectiveness Value table. BMP efficiency percentages are based upon information available at the time of PRP development and will be confirmed in the PRP Final Report due to DEP at the end of the MS4 permit cycle. DAMA evaluated the following factors in selection of the BMPs to be implemented to achieve the required pollutant load reduction. These factors included:

- Overall BMP cost
- Availability of grant funding
- Feasibility of project
- Local flooding and erosion problems
- Drainage areas associated with identified waterways
- Consistency with Economic Development initiatives

Based upon the above factors, DAMA chose the Selected BMPs to be implemented under the MS4 permit from 2018 – 2023. The Selected BMP locations are identified in Attachment B. The Selected BMP pollutant reductions are summarized below. More information regarding the Selected BMPs can be found in Attachment G.

Watershed	Pollutant Reduction		
	TN (lbs./yr.)	TP (lbs./yr.)	TSS (lbs./yr.)
Chesapeake Bay/Toby Creek	34.12	9.78	190,335.3
Required Reduction	**131.06**	**45.59**	**171,290.76**
Surplus Reduction	*+96.94*	*+35.81*	*-19,044.54*

Summary of PRP Planning

Municipality	TSS	TN	TP
Kingston Township	67224.03	35.64	16.67
Dallas Borough	32470.17	19.11	8.66
Dallas Township	71582.79	47.33	20.25
Total	**171,276.99**	**102.08**	**45.58**
BMP Retro Fit Reductions	46,585.34	34.12	9.78
Stream Restoration	143,750.00		
Total Reduction	**190,335.3**		

7. Funding Mechanism

DAMA, through the planning phase, evaluated the cost associated with the selected plan; the Selected BMP implementation cost is summarized below:

BMP ID	BMP Description	Estimated Project Total
P1	Wet Pond/Wetland	$125,000
P2	Wet Pond/Wetland	$125,000
P3	Rain Garden	$100,000
P4	Wet Pond/Wetland	$125,000
B1	Dry Extended Detention Basin	$80,000
B7	Dry Extended Detention Basin	$100,000
B16	Dry Extended Detention Basin	$75,000
B33	Dry Extended Detention Basin	$100,000
B34	Dry Extended Detention Basin	$60,000
B35	Dry Extended Detention Basin	$75,000
B41	Dry Extended Detention Basin	$20,000
B45	Dry Extended Detention Basin	$50,000
B51	Dry Extended Detention Basin	$100,000
B71	Dry Extended Detention Basin	$95,000
B72	Dry Extended Detention Basin	$75,000
B74	Dry Extended Detention Basin	$95,000
B79	Dry Extended Detention Basin	$95,000
B80	Dry Extended Detention Basin	$95,000
SR17	Stream Restoration	$200,000
SR21	Stream Restoration	$100,000
Total		**$1,890,000**

The required funding identified above will be funded through the municipal stormwater fees. The stormwater fee is based upon the amount of impervious surface on a property. DAMA will also pursue relevant grant opportunities as they arise.

8. Responsible Parties for Operation and Maintenance (O&M) of BMPs

The member municipalities and DAMA are the responsible parties for O&M of proposed BMPs. Specific requirements for the BMP are identified below:

<u>BMP-P1 Wet Ponds and Wetlands:</u>

Location: Dallas Borough Park (Luzerne Ave.)

Responsible Party: DAMA

O&M Activities:

-During the first growing season or until established, vegetation should be inspected every 2 to 3 weeks.
-Inspections should occur at least 4 times per year and after major storms (greater than 2 inches in 24 hours) or rapid ice breakup.
-Inspections should access the vegetation, erosion, flow channelization, bank stability, inlet/outlet conditions, embankment, and sediment/debris accumulation.
-The pond drain should also be inspected and tested 4 times per year. Problems should be corrected as soon as possible.

-Wet Pond and buffer vegetation may need support (watering, weeding, mulching, replanting, etc.) during the first 3 years.
-Undesirable species should be carefully removed and desirable replacements planted if necessary. Vegetation should maintain at least an 85 percent cover of the emergent vegetation zone and buffer area.
-Sediment should be removed from the forebay before it occupies 50 percent of the forebay, typically every 5 to 10 years.

BMP-P2 Wet Ponds and Wetlands:

Location:	Lackawanna Ave.
Responsible Party:	DAMA
O&M Activities:	-During the first growing season or until established, vegetation should be inspected every 2 to 3 weeks. -Inspections should occur at least 4 times per year and after major storms (greater than 2 inches in 24 hours) or rapid ice breakup. -Inspections should access the vegetation, erosion, flow channelization, bank stability, inlet/outlet conditions, embankment, and sediment/debris accumulation. -The pond drain should also be inspected and tested 4 times per year. Problems should be corrected as soon as possible. -Wet Pond and buffer vegetation may need support (watering, weeding, mulching, replanting, etc.) during the first 3 years. -Undesirable species should be carefully removed and desirable replacements planted if necessary. Vegetation should maintain at least an 85 percent cover of the emergent vegetation zone and buffer area. -Sediment should be removed from the forebay before it occupies 50 percent of the forebay, typically every 5 to 10 years.

BMP-P3 Rain Garden:

Location:	Dallas Township Park
Responsible Party:	DAMA

O&M Activities:	-Pruning and weeding while vegetation is being established. -Remove detritus and cut down perennial plantings. -Spread mulch along areas of erosion and replace mulch for whole area as needed. -Complete inspection of the restored corridor a minimum of twice a year. -Complete restoration and/or selective vegetation management as needed based upon inspections.

BMP-P4 Wet Pond/Wetland:

Location:	Dallas Nature Playground
Responsible Party:	DAMA
O&M Activities:	-During the first growing season or until established, vegetation should be inspected every 2 to 3 weeks. -Inspections should occur at least 4 times per year and after major storms (greater than 2 inches in 24 hours) or rapid ice breakup. -Inspections should access the vegetation, erosion, flow channelization, bank stability, inlet/outlet conditions, embankment, and sediment/debris accumulation. -The pond drain should also be inspected and tested 4 times per year. Problems should be corrected as soon as possible. -Wet Pond and buffer vegetation may need support (watering, weeding, mulching, replanting, etc.) during the first 3 years. -Undesirable species should be carefully removed and desirable replacements planted if necessary. Vegetation should maintain at least an 85 percent cover of the emergent vegetation zone and buffer area. -Sediment should be removed from the forebay before it occupies 50 percent of the forebay, typically every 5 to 10 years.

BMP-B1 Dry Extended Detention Basin:

Location:	Irem Golf Course Ridgeway Dr.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation).

-Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed.
-Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
-Inspect for litter; remove prior to mowing.
-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B7 Dry Extended Detention Basin:

Location: Misericordia University Tennis Courts

Responsible Party: DAMA

O&M Activities:
-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation).
-Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed.
-Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
-Inspect for litter; remove prior to mowing.
-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.

-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B16 Dry Extended Detention Basin:

Location:	474 Yalick Rd.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B33 Dry Extended Detention Basin:

Location:	Lincoln St.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed.

-Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
-Inspect for litter; remove prior to mowing.
-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B34 Dry Extended Detention Basin:

Location: Roosevelt St.

Responsible Party: DAMA

O&M Activities:
-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation).
-Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed.
-Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
-Inspect for litter; remove prior to mowing.
-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall).

Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B35 Dry Extended Detention Basin:

Location:	Lincoln St.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B41 Dry Extended Detention Basin:

Location:	Wedgewood Wy.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing.

-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B45 Dry Extended Detention Basin:

Location:	Masonic Dr.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B51 Dry Extended Detention Basin:

Location:	474 Yalick Rd.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

<u>BMP-B71 Dry Extended Detention Basin:</u>

Location:	Wakefield Rd.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed.

-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B72 Dry Extended Detention Basin:

Location: Alfred Rd.

Responsible Party: DAMA

O&M Activities:

-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation).
-Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed.
-Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
-Inspect for litter; remove prior to mowing.
-Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed.
-Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
-Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.
-Plant alternative grass species in the event of unsuccessful establishment.
-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B74 Dry Extended Detention Basin:

Location: Ivy Dr.

Responsible Party: DAMA

O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

<u>BMP-B79 Dry Extended Detention Basin:</u>

Location:	Lantern Hill Rd.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment.

-Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming.
-Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-B80 Dry Extended Detention Basin:

Location:	Lantern Hill Rd.
Responsible Party:	DAMA
O&M Activities:	-Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when >3 inches at any spot or covering vegetation). -Inspect vegetation on side slopes for erosion and formation of rills and gullies, correct as needed. -Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade. -Inspect for litter; remove prior to mowing. -Remove invasive plants as needed or carefully apply selected herbicide to invasive plants as needed. -Inspect for uniformity in cross-section and longitudinal slope, correct as needed. -Inspect basin inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed. -Plant alternative grass species in the event of unsuccessful establishment. -Reseed bare areas; install appropriate erosion control measures when native soil is exposed, or erosion channels are forming. -Mow and trim vegetation 1-2 times per year outside of the growing season (i.e., only mow in early spring or late fall). Mower height should be set between 8-12 inches. Mow only when basin is dry to avoid rutting.

BMP-SR17 Stream Restoration:

Location:	Dallas Township Park
Responsible Party:	DAMA
O&M Activities:	-Maintenance is necessary every quarter to ensure proper functionality of the stream. -Any structure that is expected to receive and/or trap debris and sediment shall be thoroughly inspected for excessive

debris and clogging. Inspections shall be conducted at a minimum four (4) times per year or immediately following any storm creating greater than one (1) inch of water.
-During the regular inspections the ford stream crossing should be thoroughly inspected for erosion. Erosion should be repaired immediately with native stream bed material or in some cases riprap to ensure proper flow rate.
-Vehicles shall not be parked or driven on the streambed and care shall be taken to avoid excessive compaction by mower if applicable.
-Sediment removed from the site shall be disposed of properly, and any areas that were disturbed shall be stabilized and revegetated immediately.
-Care shall be taken to prevent compaction of in situ soils to promote healthy vegetation growth and to encourage infiltration.
-Inspect the stream and floodplain after runoff events and make sure the stream returns to average water levels within 72 hours.
-Also inspect for damage to erosion control measures, signs of water contamination/spills, and slope stability.
-Upkeep of vegetation including mowing and/or trimming shall be performed as necessary to sustain the system. All detritus shall be removed from the basin.

- ·Fertilizers and pesticides shall not be used in maintaining the vegetation.
- ·All vegetated areas shall be inspected every year for any erosion.
- ·All vegetated areas shall be inspected every year for unwanted growth of exotic and/or invasive species.
- ·Vegetative cover shall be maintained at a minimum of ninety-five (95) percent. Vegetation shall be reestablished if vegetative cover has been reduced by ten (10) percent.

-If during inspection there are invasive species present, methods to control or reduce them include the following:

- ·Mowing should occur twice each growing season, mowing height should be set between eight and twelve inches.
- ·Remove the plants immediately and replace with native plants as needed.

-An inspection checklist shall be included in the maintenance and shall be completed at a minimum once every year.
-Regular inspection of the stream shall occur to assure proper implementation of BMP’s. Operation and maintenance plans shall be inspected by a qualified person,

which may include the landowner or owner's designee (including the municipality for dedicated and owned facilities).

BMP-SR21 Stream Restoration:

Location: Overbrook Ave.

Responsible Party: DAMA

O&M Activities:

-Maintenance is necessary every quarter to ensure proper functionality of the stream.
-Any structure that is expected to receive and/or trap debris and sediment shall be thoroughly inspected for excessive debris and clogging. Inspections shall be conducted at a minimum four (4) times per year or immediately following any storm creating greater than one (1) inch of water.
-During the regular inspections the ford stream crossing should be thoroughly inspected for erosion. Erosion should be repaired immediately with native stream bed material or in some cases riprap to ensure proper flow rate.
-Vehicles shall not be parked or driven on the streambed and care shall be taken to avoid excessive compaction by mower if applicable.
-Sediment removed from the site shall be disposed of properly, and any areas that were disturbed shall be stabilized and revegetated immediately.
-Care shall be taken to prevent compaction of in situ soils to promote healthy vegetation growth and to encourage infiltration.
-Inspect the stream and floodplain after runoff events and make sure the stream returns to average water levels within 72 hours.
-Also inspect for damage to erosion control measures, signs of water contamination/spills, and slope stability.
-Upkeep of vegetation including mowing and/or trimming shall be performed as necessary to sustain the system. All detritus shall be removed from the basin.

- Fertilizers and pesticides shall not be used in maintaining the vegetation.
- All vegetated areas shall be inspected every year for any erosion.
- All vegetated areas shall be inspected every year for unwanted growth of exotic and/or invasive species.
- Vegetative cover shall be maintained at a minimum of ninety-five (95) percent. Vegetation shall be reestablished if vegetative cover has been reduced by ten (10) percent.

-If during inspection there are invasive species present, methods to control or reduce them include the following:
- ·Mowing should occur twice each growing season, mowing height should be set between eight and twelve inches.
- ·Remove the plants immediately and replace with native plants as needed.

-An inspection checklist shall be included in the maintenance and shall be completed at a minimum once every year.
-Regular inspection of the stream shall occur to assure proper implementation of BMP's. Operation and maintenance plans shall be inspected by a qualified person, which may include the landowner or owner's designee (including the municipality for dedicated and owned facilities).

9. PRP Implementation Schedule

Task	Implementation Date
MS4 Permit Authorization	August 1, 2019
BMP-P1	Constructed Fall 2021
BMP-P2	Constructed Fall 2021
BMP-P3	Estimated Summer 2025
BMP-P4	Constructed Fall 2020
BMP-B1	Constructed June 2023
BMP-B7	Constructed June 2023
BMP-B16	Constructed June 2023
BMP-B33	Constructed June 2023
BMP-B34	Constructed June 2023
BMP-B35	Constructed June 2023
BMP-B41	Constructed August 2022

BMP-B45	Constructed June 2023
BMP-B51	Constructed June 2023
BMP-B71	Constructed June 2023
BMP-B72	Constructed June 2023
BMP-B74	Constructed June 2023
BMP-B79	Constructed June 2023
BMP-B80	Constructed June 2023
BMP-SR17	Estimated Summer 2026
BMP-SR21	Constructed Summer 2026
MS4 Permit Expiration	March 15, 2023
PRP Project Implementation Deadline	July 30, 2024

ATTACHMENT A: Public Notice Documentation

I. PRP ADVERTISEMENT

II. WRITTEN PUBLIC COMMENTS

III. PUBLIC MEETING COMMENTS

IV. RECORD OF CONSIDERATION OF ALL TIMELY COMMENTS RECEIVED

From: Fred Rosencrans <frosencrans@kingstontownship.com>
Sent: Thursday, February 5, 2026 11:38 AM
To: Jim Reino <jreino@damaonline.org>
Cc: Tracey Carr <tcarr@dallasborough.org>; Thomas Baseski <tbaseski@dallasTwp.org>
Subject: RE: MS4 PRP Update

Jim,

I don't want to cause 100 emails over this, but I see comments/questions from Denise Williams dated June 30, 2025 and ARRO's response dated July 1st, 2025 regarding Kingston Township, having a separate and different watershed requirement for our permit under HUC12 (Toby Creek). ARRO indicates "they are not 100% sure why Kingston Township is different from Dallas Borough and Dallas Township". This simple answer is; since Kingston Township is geographically located closer and within the Susquehanna River basin (Warrior Creek and Susquehanna River), we are required to comply with an additional MS4 permit condition for pollution control measures for this area, including PCB's, Metals and Mercury under our MS4 permit.

Dallas Borough and Dallas Township are outside of the required permit pollution control reporting requirements and geographic region for the Susquehanna River and Warrior Creek for **Appendix A- Metals (4a) and Appendix C- PCB (4) and Mercury (5)**. This was discussed during our meeting with DAMA (Tom Mayka) and PA DEP during our MS4 permit review last year.

Thanks again.

Fred J. Rosencrans

Township Manager

Kingston Township

180 East Center Street

Shavertown, PA 18708-1514

Phone: (570) 696-3809

Fax: (570) 696-3411

Cell: (570) 899-3903

E-Mail: frosencrans@kingstontownship.com

From: Caloia, Raphael
Sent on: Tuesday, July 1, 2025 8:56:57 AM
To: Thomas Mayka; Rosenberger, Jeb; Bush, Amanda
Subject: RE: [External] Questions - Amended CBPRP

Good morning Tom,

All three townships are within the same HUC12 (Toby Creek) but for some reason Pollutant Aggregation Suggestions for MS4 Municipal Requirements Table & The Stormwater Management Municipal Requirements table. I have included a link to both documents below. I am not 100% sure on why Kingston Township is different than Dallas Borough and Dallas Township but since DEP breaks it out differently that is what we have to use on the PRP.

Just let me know if you have any questions.

https://files.dep.state.pa.us/water/bpnpsm/StormwaterManagement/MunicipalStormwater/PRP_TMDL_Plans/Pollutant%20Aggregation%20Suggestions%20for%20MS4%20Municipal%20Requirements%20Table.pdf

https://files.dep.state.pa.us/water/bpnpsm/stormwatermanagement/municipalstormwater/municipal_ms4_requirements_table.pdf

Thank you,

Raphael W. Caloia
GIS Analyst II

ARRO Consulting, Inc.
108 West Airport Road
Lititz, PA 17543
O: 717.205.4541
raphael.caloia@arroconsulting.com
arroconsulting.com | LinkedIn



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From: Thomas Mayka <tmayka@damaonline.org>
Sent: Tuesday, July 1, 2025 7:53 AM
To: Rosenberger, Jeb <jeb.rosenberger@arroconsulting.com>; Bush, Amanda <amanda.bush@arroconsulting.com>; Caloia, Raphael

<raphael.caloia@arroconsulting.com>
Subject: FW: [External] Questions - Amended CBPRP

We had a public meeting yesterday regarding the PRP. These are some questions that are being asked regarding it.

From: Denise Williams <deniselwilliams317@gmail.com>
Sent: Monday, June 30, 2025 8:27 PM
To: Thomas Mayka <tmayka@damaonline.org>
Subject: Questions - Amended CBPRP

Dear Mr. Mayka,

I attended the meeting at the Dallas Township Municipal Bldg. today. Thank you for the presentation.

I was reading through the amended CBPRP posted on the Kingston Twp. website.

I have two questions:

1. I note that the HUC 12 Name differs for Kington Twp. Kingston Twp. includes Toby's Creek, Warrior Creek and Susquehanna River - whereas- Dallas Twp. & Dallas Borough don't. They just have Toby's Creek. Why the difference? and - how does Warrior Creek come into play for Kingston Twp and not Dallas Boro & Twp.?

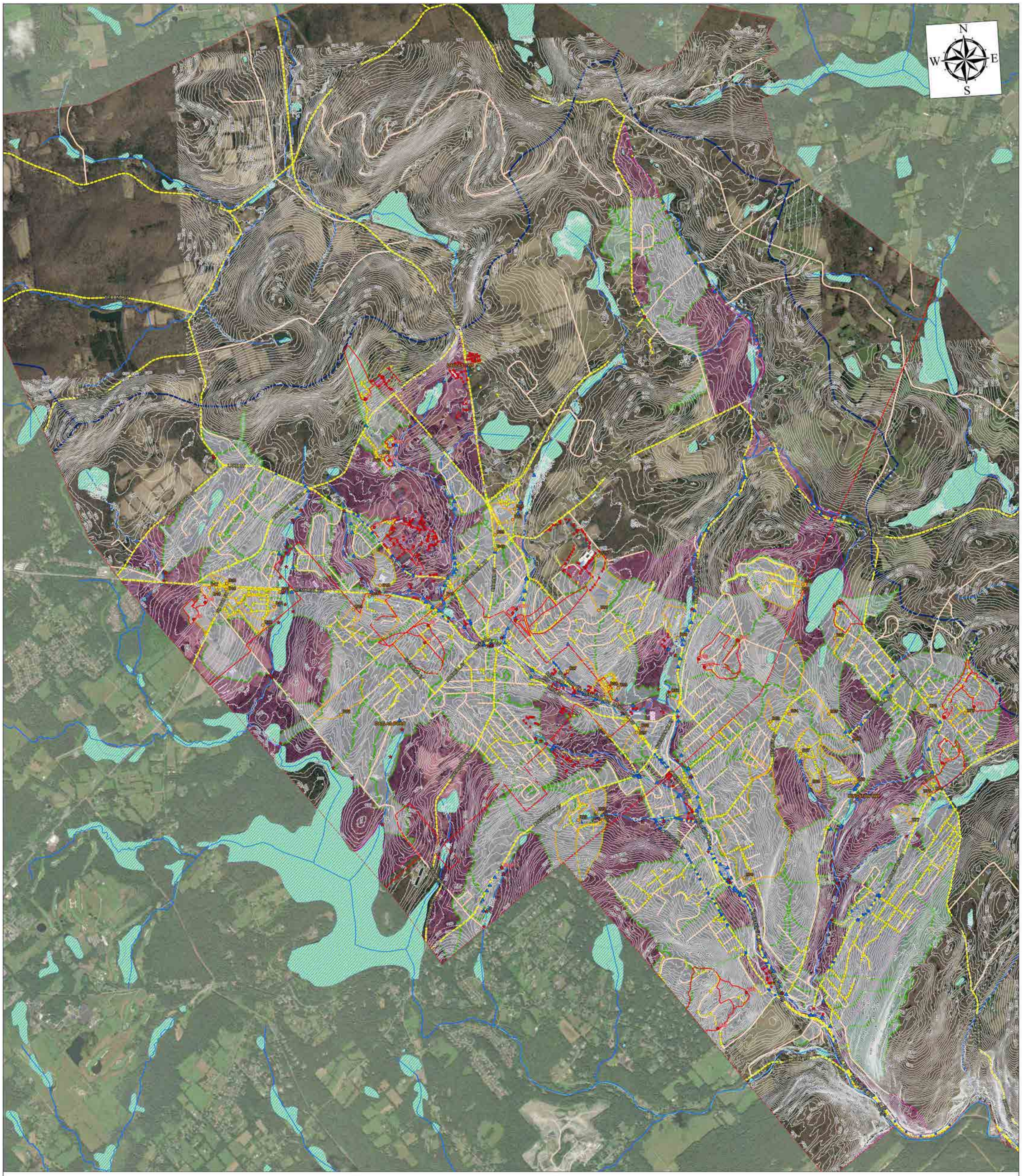
2. I note that under "improvement" for Kingston Twp. it includes(PCB, Metals & Mercury). These are not noted for Dallas Twp.. & Dallas Borough. Why is that?

Apologies if you did review this during the meeting. We were late due to going to the wrong location.

Sincerely,

Denise Williams
100 N. Pioneer Ave.
Shavertown, PA 18708
570-817-0086

ATTACHMENT B: Map – DAMA MS4 Conveyance System



Legend:

- Alternative PRP BMPs
- Existing BMP
- Selected PRP BMPs
- Outfall
- Inlet (Catch Basin)
- Outlet Structure
- Manhole
- Swale
- StormwaterPipe
- Municipality Owned Roads
- Pa State Roads
- Contour Lines 10ft
- NHD Streams
- NHD Waterbodies
- NWI Wetlands
- HUC12 Watershed
- Municipal Boundaires
- Subsewershed
- Exsiting BMP
- Selected PRP Project
- 2010 Census Urbanized Areas
- Subwatershed

Pollutant Reduction Plan Map

Dallas Area Municipal Authority

Dallas Borough, Dallas Township & Kingston Township
Luzerne County, PA

0 2,500 5,000 Feet

1:15,000

Date Produced/Author:
7/27/2026 RWC
Projection/Coordinate System:
WGS 1984 Web Mercator Auxiliary Sphere
Data Source:
Municipal Boundaires:
Outlet:
Inlet:
StormwaterPipe:
Swale:
HUC12 Watershed:
Pa State Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
NHD Waterbodies:
NHD Streams:
NWI Wetlands:
2010 Census Urbanized Areas: Source: U.S. Census Bureau
PEMAImagery2018_WEB:
World Imagery: Vantor

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Legend:

- Exsiting BMP
- Selected PRP BMPs
- Outfall
- Swale
- Department of Transportation
- Municipal
- Private
- Municipality Owned Roads
- Pa State Roads
- Contour Lines 10ft
- NHD Streams
- NHD Waterbodies
- NWI Wetlands
- HUC12 Watershed
- Municipal Boundaires
- Subwatershed

Pollutant Reduction Plan Map

Dallas Area Municipal Authority

Dallas Borough
Luzerne County, PA

0 1,000 2,000 Feet

1:4,000

Date Produced/Author:
7/22/2026 RWC
Projection/Coordinate System:
NAD 1983 StatePlane Pennsylvania North FIPS 3701 Feet
Data Source:
Outfall:
Inlet:
StormwaterPipe:
Swale:
BMP:
State Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
NHD Waterbodies:
NHD Streams:
NWI Wetlands:
Municipal Boundaires:
HUC12 Watershed:
PEMAImagery2019_WEB:
World Imagery: Microsoft, Vantor

ARRO

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Legend:

- Exsiting BMP
- Selected PRP BMPs
- Outfall
- Inlet (Catch Basin)
- Outlet Structure
- Manhole
- Swale
- Department of Transportation
- Municipal
- Private
- Municipality Owned Rcads
- Pa State Roads
- Contour Lines 10ft
- NHD Streams
- NHD Waterbodies
- NWI Wetlands
- HUC12 Watershed
- Municipal Boundaires
- Subwatershed

Pollutant Reduction Plan Map

Dallas Area Municipal Authority

Dallas Township
Luzerne County, PA

0 1,500 3,000 Feet

1:7,500

Date Produced/Author:
7/22/2026 RWC
Projection/Coordinate System:
NAD 1983 StatePlane Pennsylvania North FIPS 3701 Feet
Data Source:
Outfall:
Inlet:
StormwaterPipe:
Swale:
BMP:
State Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
NHD Waterbodies:
NHD Streams:
NWI Wetlands:
Municipal Boundaires:
HUC12 Watershed:
PEMAImagery2019_WEB:
World Imagery: Vantor

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N
W E
S

Legend:

- Exsiting BMP
- Selected PRP BMPs
- Outfall
- Inlet (Catch Basin)
- Outlet Structure
- Manhole
- Swale
- Department of Transportation
- Municipal
- Private
- Municipality Owned Roads
- Pa State Roads
- Contour Lines 10ft
- NHD Streams
- NHD Waterbodies
- NWI Wetlands
- HUC12 Watershed
- Municipal Boundaires
- Subwatershed

Outfall
Owned By
- Department of Transportation
- Municipal
- Private
- State Owned Roads
- Municipality Owned Roads

- StormwaterPipe
- Swale

Best Management Practice (BMP)
- Existing BMP
- Selected PRP BMPs
- Outfall
- Contour Lines 10ft
- Parsed Area
- Parcels

BMPDAsPRPPlanningArea
- Existing BMP Drianage Area
- Proposed PRP BMP Drainage Area
- Municipality Owned Roads
- NHD Waterbodies
- NHD Streams
- NWI Wetlands
- 2010 Urbanized Area

Pollutant Reduction Plan Map

Dallas Area Municipal Authority

Kingston Township
Luzerne County, PA

0 1,500 3,000 Feet

1:6,500

Date Produced/Author:
7/27/2026 RWC
Projection/Coordinate System:
NAD 1983 StatePlane Pennsylvania North FIPS 3701 Feet
Data Source:
Outfall:
Inlet:
StormwaterPipe:
Swale:
BMP:
State Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
NHD Waterbodies:
NHD Streams:
NWI Wetlands:
Municipal Boundaires:
HUC12 Watershed:
PEMAImagery2019_WEB:
World Imagery: Vantor

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ATTACHMENT C: Parsing

Legend:

- Pa State Roads
- Contour Lines 10ft
- Municipality Owned Roads
- NHD Streams
- NHD Waterbodies
- NWI Wetlands
- Parsed Area
- Subwatersheds
- Municipal Boundaires

PRP Parsing Comparison Map

Dallas Area Municipal Authority

Dallas Borough, Dallas Township & Kingston Township
Luzerne County, PA

0 2,500 5,000 Feet

1:10,000

Date Produced/Author:
7/22/2026 RWC
Projection/Coordinate System:
NAD 1983 2011 StatePlane Pennsylvania North FIPS 3701 Ft US
Data Source:
Pa State Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
Municipality Owned Roads: Pennsylvania Department of Transportation
NHD Waterbodies:
NHD Streams:
NWI Wetlands:
Municipal Boundaires:
World Imagery: Vantor

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Parsing Justification

Area ID	Municipality	Detailed Justification	Total Acres
1	Kingston Township	Flows to stream without interacting with the municipal MS4.	2.96
2	Dallas Towsnhip	Within 300ft of stream and does not touch municipal MS4.	13.92
3	Dallas Township	Flows to stream without interacting with the municipal MS4.	134.96
4	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	138.13
5	Kingston Township	Flows to a state MS4 which discharges without interacting with municipal MS4.	54.75
6	Kingston Township	Within 300ft of stream and does not touch municipal MS4.	252.28
7	Kingston Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	67.18
8	Kingston Township	No Municipal roads channel run-off to this area. It does not interact with MS4.	169.88
9	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	318.75
10	Kingston Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	58.27
11	Kingston Township	Within 300ft of stream and does not touch municipal MS4.	4.78
12	Kingston Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	78.07
13	Dallas Township	This area flows into the lake that sorrounds it. The road to the noth east has a swale on the side that captures flow.	42.67
14	Kingston Township	Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	4.91
15	Kingston Township	Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	4.26
16	Kingston Township	Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	12.00
17	Dallas Township	Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	7.45
18	Kingston Township	Flows to state MS4 without interactiong with Municipal MS4 then drains to state outfall.	1.11
19	Dallas Borough	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	119.87
20	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	10.97
21	Kingston Township	Flows to state MS4 without interactiong with Municipal MS4 then drains to state outfall.	17.24
22	Kingston Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	63.94
23	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	366.89
24	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream. Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	18.14
26	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream. Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	41.77
27	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream. Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	469.20
28	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	75.51
29	Dallas Township	Private property that flows directly into the stream without touching the Municipal MS4 and with no Municipal water flowing through it.	9.89
30	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	39.81
31	Dallas Borough	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	32.89
32	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	2.89
33	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	17.84
34	Dallas Township	Flows to stream without interacting with the municipal MS4 and is within 300 ft of stream.	30.69

Parsing Landcover

Area ID	Municipality	Total Acres	Open Water	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay/Past	Wetland	Open Land
1	Kingston Township	2.96		1.06	1.43		0.47			
2	Dallas Towsnhip	13.92		6.02			0.67	7.22		
3	Dallas Township	134.96		10.27	0.27		84.16	12.27	27.99	
4	Dallas Township	138.13		20.43	1.61		90.27	11.37	14.44	
5	Kingston Township	54.75		21.10	10.98		22.45			0.21
6	Kingston Township	252.28	0.22	68.95	9.75	0.22	163.94	5.04	4.16	
7	Kingston Township	67.18		49.87	12.20	2.11	3.00			
8	Kingston Township	169.88		44.66	5.58	1.78	115.42		2.43	
9	Dallas Township	318.75	1.18	59.76	0.67		197.88	41.77	17.37	0.13
10	Kingston Township	58.27	1.06	7.20			48.73	0.06	0.89	0.33
11	Kingston Township	4.78		1.90			2.33		0.55	
12	Kingston Township	78.07		17.89	0.40		56.75	1.92	1.11	
13	Dallas Township	42.67	2.29	1.59			37.21		0.97	0.60
14	Kingston Township	4.91		0.05	1.44	3.42				
15	Kingston Township	4.26		3.34	0.92					
16	Kingston Township	12.00		10.40	0.29		1.09	0.22		
17	Dallas Township	7.45		4.58	2.06	0.80				
18	Kingston Township	1.11		1.11						
19	Dallas Borough	119.87		90.05	15.32	2.77	8.40		3.34	
20	Dallas Township	10.97		5.55	0.09		5.33			
21	Kingston Township	17.24		6.72	0.03		10.50			
22	Kingston Township	63.94		37.54	0.44		20.13	5.83		
23	Dallas Township	366.89	0.02	96.76	9.79		162.53	60.40	37.38	
24	Dallas Township	18.14		4.05	4.26	4.43	1.69		3.71	
26	Dallas Township	41.77		12.32	3.73		22.35		3.37	
27	Dallas Township	469.20		274.21	67.91	9.20	105.40		12.48	
28	Dallas Township	75.51		9.90	2.27		57.16	0.44	5.73	
29	Dallas Township	9.89		3.39	5.17	1.32				
30	Dallas Township	39.81		26.61	2.17		10.76		0.26	
31	Dallas Borough	32.89	1.60	5.69	6.34	2.87	9.21		7.17	
32	Dallas Township	2.89		2.33	0.41			0.16		
33	Dallas Township	17.84		10.10	0.22		5.73	1.78		
34	Dallas Township	30.69		17.33	0.02		13.12	0.22		

ATTACHMENT D: Existing Pollutants of Concern

Dallas Borough Landcover Calculations

Model My Watershed OUTPUT DATA

Source	Area	Sediment	Tot N	Tot P
Units	*acres*	*tons/year*	*lbs/year*	*lbs/year*
Hay/Past	2,688.9	17.0	2,636.3	1,335.3
Cropland	4.9	1.1	20.5	5.7
Forest	11,044.4	6.9	1,144.6	79.4
Wetland	881.5	0.5	348.8	19.8
Disturbed	0.0	0.0	0.0	0.0
Turfgrass	0.0	0.0	0.0	0.0
Open_Land	98.8	2.5	95.0	9.5
Bare_Rock	177.8	0.0	83.8	2.9
Sandy_Areas	0.0	0.0	0.0	0.0
Unpaved_Road	0.0	0.0	0.0	0.0
Ld_Mixed	5,644.4	36.1	1,853.5	198.0
Md_Mixed	1,646.9	55.5	2,373.5	243.4
Hd_Mixed	669.1	22.6	966.0	99.0
Ld_Residential	0.0	0.0	0.0	0.0
Md_Residential	0.0	0.0	0.0	0.0
Hd_Residential	0.0	0.0	0.0	0.0
Farm Animals		0.0	983.0	232.6
Tile Drainage		0.0	0.0	0.0
Stream Bank		3,747.6	6,319.5	2,919.4
Groundwater		0.0	125,524.7	1,637.9
Point Source		0.0	0.0	0.0
Septic Systems		0.0	5,230.0	0.0
Totals	*22,856.8*	*3,890.0*	*147,579.3*	*6,783.0*

STREAM LENGTHS* **KM*** **FEET**

			Sed lb/ft	*TN lb/ft*	*TP lb/ft*
Total Length	64.8	212598.4	35.3	0.03	0.01
Ag Streams	4.25	13943.6			
Non-Ag Streams	60.55	198654.9			

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

FARM ANIMAL DATA

TYPE*	NUMBER*	AVG WT KG	TOTAL KG	TOTAL AEU	KG N/AEU/DAY	KG P/AEU/DAY	TOTAL N/DAY	TOTAL P/DAY
Chickens, Broilers	20	0.9	18	0.018	1.07	0.3	0.01926	0.0054
Chickens, Layers	0	1.8	0	0	0.85	0.29	0	0
Cows, Beef	23	360	8280	8.28	0.31	0.09	2.5668	0.7452
Cows, Dairy	31	640	19840	19.84	0.44	0.07	8.7296	1.3888
Horses	28	500	14000	14	0.28	0.06	3.92	0.84
Pigs/Hogs/Swine	8	61	488	0.488	0.48	0.15	0.23424	0.0732
Sheep	33	50	1650	1.65	0.37	0.1	0.6105	0.165
Turkeys	0	6.8	0	0	0.59	0.2	0	0

Daily Totals	16.08	3.22
Poultry Totals	0.02	0.01
Livestock Totals	16.06	3.21
Poultry Fraction	0.0012	0.0017
Livestock Fraction	0.9988	0.9983

* These values can be obtained from the "Animal" tab in the "Analyze" section of a Model My Watershed run

MMW NLCD Land Cover Categories for Watershed (from "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)
Open Water	1.69	417.28
Perennial Ice/Snow	0	-
Developed, Open Space	13.85	3,419.75
Developed, Low Intensity	9.01	2,224.69
Developed, Medium Intensity	6.67	1,646.91
Developed, High Intensity	2.71	669.14
Barren Land (Rock/Sand/Clay)	0.72	177.78
Deciduous Forest	28.85	7,123.46
Evergreen Forest	1.38	340.74
Mixed Forest	13.71	3,385.19
Shrub/Scrub	0.79	195.06
Grassland/Herbaceous	0.4	98.77
Pasture/Hay	10.89	2,688.89
Cultivated Crops	0.02	4.94
Woody Wetlands	3.23	797.53
Emergent Herbaceous Wetlands	0.34	83.95
Totals	*92.57*	*22,856.79*

Pollutant Load Conversion from Metric to Standard Units (from "Model" csv file)

SOURCE	SEDIMENT (kg)	TOTAL N (kg)	TOTAL P (kg)	SEDIMENT (tons)	TOTAL N (lbs)	TOTAL P (lbs)
Hay/Pasture	15464.6	1195.6	605.6	17.0	2636.3	1335.3
Cropland	1021.1	9.3	2.6	1.1	20.5	5.7
Wooded Areas	6290.1	519.1	36.0	6.9	1144.6	79.4
Wetlands	456.2	158.2	9.0	0.5	348.8	19.8
Open Land	2296.3	43.1	4.3	2.5	95.0	9.5
Barren Areas	45.3	38.0	1.3	0.0	83.8	2.9
Low-Density Mixed	12918.1	331.3	35.4	14.2	730.5	78.1
Medium-Density Mixed	50298.7	1076.4	110.4	55.5	2373.5	243.4
High-Density Mixed	20472.8	438.1	44.9	22.6	966.0	99.0
Low-Density Open Space	19860.4	509.3	54.4	21.9	1123.0	120.0
Farm Animals	0.0	445.8	105.5	0.0	983.0	232.6
Stream Bank Erosion	3399212.0	2866.0	1324.0	3747.6	6319.5	2919.4
Subsurface Flow	0.0	56927.3	742.8	0.0	125524.7	1637.9
Point Sources	0.0	0.0	0.0	0.0	0.0	0.0
Septic Systems	0.0	2371.9	0.0	0.0	5230.0	0.0
Totals	*3,528,335.6*	*66,929.4*	*3,076.2*	*3,890.0*	*147,579.3*	*6,783.0*

Note: The information below is only used for allocation of "urban" loads within a larger watershed boundary

MMW NLCD Land Cover Categories for Urban Area (from second, smaller "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)	TN (lb/yr)	TP (lb/yr)	Sediment (lb/yr)
Open Water	0.01	2.47			
Perennial Ice/Snow	0	-			
Developed, Open Space	0.94	232.10	148.54	41.78	88,602.12
Developed, Low Intensity	1.17	288.89	184.89	52.00	110,281.36
Developed, Medium Intensity	0.31	76.54	153.85	31.38	56,616.90
Developed, High Intensity	0.08	19.75	44.84	10.27	20,282.16
Barren Land (Rock/Sand/Clay)	0	-	0.00	0.00	0.00
Deciduous Forest	0.49	120.99	37.51	13.31	29,907.88
Evergreen Forest	0.02	4.94	1.53	0.54	1,220.73
Mixed Forest	0.23	56.79	17.60	6.25	14,038.39
Shrub/Scrub	0	-	0.00	0.00	0.00
Grassland/Herbaceous	0	-	0.00	0.00	0.00
Pasture/Hay	0.11	27.16	42.10	18.74	7,024.35
Cultivated Crops	0	-	0.00	0.00	0.00
Woody Wetlands	0.08	19.75	12.05	2.37	4,880.66
Emergent Herbaceous Wetlands	0.01	2.47	1.51	0.30	610.08
Totals	*3.44*	*849.38*	*644.42*	*176.94*	*333,464.63*

(Note: The values below only pertain to the smaller target area)

STREAM LENGTHS **KM*** **FEET**

Total Length	4.1	13451.4
Ag Streams	0.03	98.4
Non-Ag Streams	4.07	13353.0

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

Dallas Borough Total Loading

	Entire Watershed			Urban Area*		
	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)
Initial MMW Loads	7,779,980	147,579	6,783	333,465	644	177
Loads Removed w/Existing Urban BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Urban BMPs	-	-	-	-	-	-
Loads Removed w/Existing Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Existing Floodplain Restoration BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Floodplain Restoration BMPs	-	-	-	-	-	-
Total Loads Removed	-	-	-	-	-	-
New Reduced Load	7,779,980	147,579	6,783	333,465	644	177
Percent Reduction (0-100)	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Total Baseline Load (1)	7,779,980	147,579	6,783	333,465	644	177
Total Loads Removed from Baseline (2)	-	-	-	-	-	-
Percent Reduction from Baseline Load	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*

Dallas Borough Landcover Loading Rates

Look-Up Table for MMW Loading Rates
Watershed: Toby Creek
Year: 2025
Source File: User Specified

Section 2: Landcover Loading Rates Look-Up Table

TOTAL WATERSHED ANNUAL LOADS

ANNUAL LAND USE LOADING RATES (lbs/acre)

MapShed Land Use Categories	Source	Area	Sediment	Total Nitrogen	Total Phosphorus		SEDIMENT: From Land Use	SEDIMENT: From Stream Banks ①	SEDIMENT: TOTAL SEDIMENT LOADING RATE		NITROGEN: From Land Use	NITROGEN: From Stream Banks ①	NITROGEN: From Farm Animals ②	NITROGEN: TOTAL NITROGEN LOADING RATE		PHOSPHORUS: From Land Use	PHOSPHORUS: From Stream Banks ①	PHOSPHORUS: From Farm Animals ②	PHOSPHORUS: TOTAL PHOSPHORUS LOADING RATE	
	Units	*Acres*	*Tons*	*Pounds*	*Pounds*		lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre	
	Source	*area_ac*	*sediment_tons*	*TN_lbs*	*TP_lbs*	*Colum*	*TSS_LoadRateLa*	*TSS_LoadRateBa*	*TSS_LoadRate_lbPerAc*	*Colum*	*TN_LoadRateLa*	*TN_LoadRateBa*	*TN_LoadRateAi*	*TN_LoadRate_lbPerAcP*	*Column6*	*TP_LoadRateLand*	*TP_LoadRateBanks*	*TP_LoadRateAnimal*	*TP_LoadRate_lbPerAcA*	
	Hay/Past	2,688.89	17.05	2,636.30	1,335.35		12.68	255.29	**267.97**		0.98	0.22	0.36	**1.56**		0.50	0.10	0.09	**0.69**	Hay/Past
	Cropland	4.94	1.13	20.51	5.73		455.93	255.29	**711.22**		4.15	0.22	0.36	**4.73**		1.16	0.10	0.09	**1.35**	Cropland
	Forest	11,044.44	6.93	1,144.62	79.38		1.26	255.29	**256.55**		0.10	0.22	n/a	**0.32**		0.01	0.10	n/a	**0.11**	Forest
	Wetland	44.44	0.50	348.83	19.85		22.63	255.29	**277.92**		7.85	0.22	n/a	**8.07**		0.45	0.10	n/a	**0.55**	Wetland
	Disturbed	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Disturbed
	Turfgrass	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Turfgrass
	Open_Land	98.77	2.53	95.04	9.48		51.27	255.29	**306.56**		0.96	0.22	n/a	**1.18**		0.10	0.10	n/a	**0.20**	Open_Land
	Bare_Rock	177.78	0.05	83.79	2.87		0.56	255.29	**255.85**		0.47	0.22	n/a	**0.69**		0.02	0.10	n/a	**0.12**	Bare_Rock
	Sandy_Areas	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Sandy_Areas
	Unpaved_Road	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Unpaved_Road
	Ld_Mixed	5,644.44	36.14	1,853.52	198.01		12.80	378.29	**391.09**		0.33	0.31	n/a	**0.64**		0.04	0.15	n/a	**0.19**	Ld_Mixed
	Md_Mixed	1,646.91	55.45	2,373.46	243.43		67.34	681.68	**749.02**		1.44	0.59	n/a	**2.03**		0.15	0.27	n/a	**0.42**	Md_Mixed
	Hd_Mixed	669.14	22.57	966.01	99.00		67.46	968.67	**1,036.13**		1.44	0.85	n/a	**2.29**		0.15	0.38	n/a	**0.53**	Hd_Mixed
	Ld_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Ld_Residential
	Md_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Md_Residential
	Hd_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Hd_Residential
							Tons * 2000 lbs/ton acres of a land use		Sum of previous two sources		Tons * 2000 lbs/ton acres of a land use			Sum of previous three sources		Tons * 2000 lbs/ton acres of a land use			Sum of previous three sources	

Addt'l Sources	Source	Sediment	Total Nitrogen	Total Phosphorus
	Units	*Tons*	*Pounds*	*Pounds*
	Farm Animals	0.00	982.99	232.63
	Tile Drainage	0.00	0.00	0.00
	Stream Bank ①	3,747.63	6,319.53	2,919.42
	Groundwater	0.00	125,524.70	1,637.87
	Point Source	0.00	0.00	0.00
	Septic Systems	0.00	5,230.04	0.00

Notes:

① - Separate worksheets are used to calculate and apportion the loading rates from the Stream Bank source loads (for sediment, total nitrogen, and total phosphorus) from the MMW Output file into each land use category, using methodology provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP).

② - A separate worksheet is used to calculate and apportion the "Total Nitrogen" and "Total Phosphorus" loading rates from the Farm Animals source load from the MMW Output file into the two agricultural land uses, Hay/Pasture and Cropland, based on area weighting. The methodology was provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP). Additionally, since the Farm Animals source loads do not apply to other land use catergories, the values in those cells are "n/a".

Groundwater	0.0	125,524.7	1,637.9
Point Source	0.0	0.0	0.0
Septic Systems	0.0	5,230.0	0.0

Dallas Township Landcover Calculations

Model My Watershed OUTPUT DATA

Source	Area	Sediment	Tot N	Tot P
Units	*acres*	*tons/year*	*lbs/year*	*lbs/year*
Hay/Past	2,688.9	17.0	2,636.3	1,335.3
Cropland	4.9	1.1	20.5	5.7
Forest	11,044.4	6.9	1,144.6	79.4
Wetland	44.4	0.5	348.8	19.8
Disturbed	0.0	0.0	0.0	0.0
Turfgrass	0.0	0.0	0.0	0.0
Open_Land	98.8	2.5	95.0	9.5
Bare_Rock	177.8	0.0	83.8	2.9
Sandy_Areas	0.0	0.0	0.0	0.0
Unpaved_Road	0.0	0.0	0.0	0.0
Ld_Mixed	5,644.4	36.1	1,853.5	198.0
Md_Mixed	1,646.9	55.5	2,373.5	243.4
Hd_Mixed	669.1	22.6	966.0	99.0
Ld_Residential	0.0	0.0	0.0	0.0
Md_Residential	0.0	0.0	0.0	0.0
Hd_Residential	0.0	0.0	0.0	0.0
Farm Animals		0.0	983.0	232.6
Tile Drainage		0.0	0.0	0.0
Stream Bank		3,747.6	6,319.5	2,919.4
Groundwater		0.0	125,524.7	1,637.9
Point Source		0.0	0.0	0.0
Septic Systems		0.0	5,230.0	0.0
Totals	*22,019.8*	*3,890.0*	*147,579.3*	*6,783.0*

STREAM LENGTHS* **KM*** **FEET**

			Sed lb/ft	*TN lb/ft*	*TP lb/ft*
Total Length	64.8	212598.4	35.3	0.03	0.01
Ag Streams	4.25	13943.6			
Non-Ag Streams	60.55	198654.9			

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

FARM ANIMAL DATA

TYPE*	NUMBER*	AVG WT KG	TOTAL KG	TOTAL AEU	KG N/AEU/DAY	KG P/AEU/DAY	TOTAL N/DAY	TOTAL P/DAY
Chickens, Broilers	20	0.9	18	0.018	1.07	0.3	0.01926	0.0054
Chickens, Layers	0	1.8	0	0	0.85	0.29	0	0
Cows, Beef	23	360	8280	8.28	0.31	0.09	2.5668	0.7452
Cows, Dairy	31	640	19840	19.84	0.44	0.07	8.7296	1.3888
Horses	28	500	14000	14	0.28	0.06	3.92	0.84
Pigs/Hogs/Swine	8	61	488	0.488	0.48	0.15	0.23424	0.0732
Sheep	33	50	1650	1.65	0.37	0.1	0.6105	0.165
Turkeys	0	6.8	0	0	0.59	0.2	0	0
					Daily Totals		16.08	3.22
					Poultry Totals		0.02	0.01
					Livestock Totals		16.06	3.21
					Poultry Fraction		0.0012	0.0017
					Livestock Fraction		0.9988	0.9983

* These values can be obtained from the "Animal" tab in the "Analyze" section of a Model My Watershed run

MMW NLCD Land Cover Categories for Watershed (from "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)
Open Water	1.69	417.28
Perennial Ice/Snow	0	-
Developed, Open Space	13.85	3,419.75
Developed, Low Intensity	9.01	2,224.69
Developed, Medium Intensity	6.67	1,646.91
Developed, High Intensity	2.71	669.14
Barren Land (Rock/Sand/Clay)	0.72	177.78
Deciduous Forest	28.85	7,123.46
Evergreen Forest	1.38	340.74
Mixed Forest	13.71	3,385.19
Shrub/Scrub	0.79	195.06
Grassland/Herbaceous	0.4	98.77
Pasture/Hay	10.89	2,688.89
Cultivated Crops	0.02	4.94
Woody Wetlands	0.17	41.98
Emergent Herbaceous Wetlands	0.01	2.47
Totals	*89.18*	*22,019.75*

Pollutant Load Conversion from Metric to Standard Units (from "Model" csv file)

SOURCE	SEDIMENT (kg)	TOTAL N (kg)	TOTAL P (kg)	SEDIMENT (tons)	TOTAL N (lbs)	TOTAL P (lbs)
Hay/Pasture	15464.6	1195.6	605.6	17.0	2636.3	1335.3
Cropland	1021.1	9.3	2.6	1.1	20.5	5.7
Wooded Areas	6290.1	519.1	36.0	6.9	1144.6	79.4
Wetlands	456.2	158.2	9.0	0.5	348.8	19.8
Open Land	2296.3	43.1	4.3	2.5	95.0	9.5
Barren Areas	45.3	38.0	1.3	0.0	83.8	2.9
Low-Density Mixed	12918.1	331.3	35.4	14.2	730.5	78.1
Medium-Density Mixed	50298.7	1076.4	110.4	55.5	2373.5	243.4
High-Density Mixed	20472.8	438.1	44.9	22.6	966.0	99.0
Low-Density Open Space	19860.4	509.3	54.4	21.9	1123.0	120.0
Farm Animals	0.0	445.8	105.5	0.0	983.0	232.6
Stream Bank Erosion	3399212.0	2866.0	1324.0	3747.6	6319.5	2919.4
Subsurface Flow	0.0	56927.3	742.8	0.0	125524.7	1637.9
Point Sources	0.0	0.0	0.0	0.0	0.0	0.0
Septic Systems	0.0	2371.9	0.0	0.0	5230.0	0.0
Totals	*3,528,335.6*	*66,929.4*	*3,076.2*	*3,890.0*	*147,579.3*	*6,783.0*

Note: The information below is only used for allocation of "urban" loads within a larger watershed boundary

MMW NLCD Land Cover Categories for Urban Area (from second, smaller "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)	TN (lb/yr)	TP (lb/yr)	Sediment (lb/yr)
Open Water	0.01	2.47			
Perennial Ice/Snow	0	-			
Developed, Open Space	2.48	612.35	391.90	116.35	239,483.60
Developed, Low Intensity	2.53	624.69	399.80	118.69	244,311.90
Developed, Medium Intensity	0.58	143.21	290.72	60.15	107,267.25
Developed, High Intensity	0.06	14.81	33.93	7.85	15,350.12
Barren Land (Rock/Sand/Clay)	0	-	0.00	0.00	0.00
Deciduous Forest	1.52	375.31	120.10	41.28	96,284.24
Evergreen Forest	0.01	2.47	0.79	0.27	633.45
Mixed Forest	0.24	59.26	18.96	6.52	15,202.77
Shrub/Scrub	0	-	0.00	0.00	0.00
Grassland/Herbaceous	0	-	0.00	0.00	0.00
Pasture/Hay	0.28	69.14	107.85	47.70	18,526.50
Cultivated Crops	0	-	0.00	0.00	0.00
Woody Wetlands	0.12	29.63	239.11	16.30	8,234.79
Emergent Herbaceous Wetlands	0	-	0.00	0.00	0.00
Totals	*7.82*	*1,930.86*	*1,603.16*	*415.11*	*745,294.63*

(Note: The values below only pertain to the smaller target area)

STREAM LENGTHS **KM*** **FEET**

Total Length	9.54	31299.2
Ag Streams	0.65	2132.5
Non-Ag Streams	8.89	29166.7

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

Dallas Township Total Loading

	Entire Watershed			Urban Area*		
	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)
Initial MMW Loads	7,779,980	147,579	6,783	745,295	1,603	415
Loads Removed w/Existing Urban BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Urban BMPs	-	-	-	-	-	-
Loads Removed w/Existing Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Existing Floodplain Restoration BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Floodplain Restoration BMPs	-	-	-	-	-	-
Total Loads Removed	-	-	-	-	-	-
New Reduced Load	7,779,980	147,579	6,783	745,295	1,603	415
Percent Reduction (0-100)	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Total Baseline Load (1)	7,779,980	147,579	6,783	745,295	1,603	415
Total Loads Removed from Baseline (2)	-	-	-	-	-	-
Percent Reduction from Baseline Load	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*

Dallas Township Landcover Loading Rates

Look-Up Table for MMW Loading Rates
Watershed: User Specified
Year: User Specified
Source File: User Specified

Section 2: Landcover Loading Rates Look-Up Table

TOTAL WATERSHED ANNUAL LOADS

ANNUAL LAND USE LOADING RATES (lbs/acre)

	Source	Area	Sediment	Total Nitrogen	Total Phosphorus		SEDIMENT: From Land Use	SEDIMENT: From Stream Banks ①	SEDIMENT: TOTAL SEDIMENT LOADING RATE		NITROGEN: From Land Use	NITROGEN: From Stream Banks ①	NITROGEN: From Farm Animals ②	NITROGEN: TOTAL NITROGEN LOADING RATE		PHOSPHORUS: From Land Use	PHOSPHORUS: From Stream Banks ①	PHOSPHORUS: From Farm Animals ②	PHOSPHORUS: TOTAL PHOSPHORUS LOADING RATE	
	Units	*Acres*	*Tons*	*Pounds*	*Pounds*		lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre	
	Source	*area_ac*	*sediment_tons*	*TN_lbs*	*TP_lbs*	*Colum*	*TSS_LoadRateLa*	*TSS_LoadRateBa*	*TSS_LoadRate_lbPerAc*	*Colum*	*TN_LoadRateLa*	*TN_LoadRateBa*	*TN_LoadRateAi*	*TN_LoadRate_lbPerAcP*	*Column6*	*TP_LoadRateLand*	*TP_LoadRateBanks*	*TP_LoadRateAnimal*	*TP_LoadRate_lbPerAcA*	
MapShed Land Use Categories	Hay/Past	2,688.89	17.05	2,636.30	1,335.35		12.68	245.94	**258.62**		0.98	0.21	0.36	**1.55**		0.50	0.10	0.09	**0.69**	Hay/Past
	Cropland	4.94	1.13	20.51	5.73		455.93	245.94	**701.88**		4.15	0.21	0.36	**4.72**		1.16	0.10	0.09	**1.35**	Cropland
	Forest	11,044.44	6.93	1,144.62	79.38		1.26	245.94	**247.20**		0.10	0.21	n/a	**0.31**		0.01	0.10	n/a	**0.11**	Forest
	Wetland	881.48	0.50	348.83	19.85		1.14	245.94	**247.08**		0.40	0.21	n/a	**0.61**		0.02	0.10	n/a	**0.12**	Wetland
	Disturbed	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Disturbed
	Turfgrass	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Turfgrass
	Open_Land	98.77	2.53	95.04	9.48		51.27	245.94	**297.21**		0.96	0.21	n/a	**1.17**		0.10	0.10	n/a	**0.20**	Open_Land
	Bare_Rock	177.78	0.05	83.79	2.87		0.56	245.94	**246.50**		0.47	0.21	n/a	**0.68**		0.02	0.10	n/a	**0.12**	Bare_Rock
	Sandy_Areas	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Sandy_Areas
	Unpaved_Road	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Unpaved_Road
	Ld_Mixed	5,644.44	36.14	1,853.52	198.01		12.80	368.94	**381.74**		0.33	0.31	n/a	**0.64**		0.04	0.14	n/a	**0.18**	Ld_Mixed
	Md_Mixed	1,646.91	55.45	2,373.46	243.43		67.34	672.33	**739.67**		1.44	0.57	n/a	**2.01**		0.15	0.26	n/a	**0.41**	Md_Mixed
	Hd_Mixed	669.14	22.57	966.01	99.00		67.46	959.32	**1,026.78**		1.44	0.83	n/a	**2.27**		0.15	0.37	n/a	**0.52**	Hd_Mixed
	Ld_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Ld_Residential
	Md_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Md_Residential
	Hd_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Hd_Residential
							Tons * 2000 lbs/ton / acres of a land use		Sum of previous two sources		Tons * 2000 lbs/ton / acres of a land use			Sum of previous three sources		Tons * 2000 lbs/ton / acres of a land use			Sum of previous three sources	

Addt'l Sources	Source	Sediment	Total Nitrogen	Total Phosphorus
	Units	*Tons*	*Pounds*	*Pounds*
	Farm Animals	0.00	982.99	232.63
	Tile Drainage	0.00	0.00	0.00
	Stream Bank ①	3,747.63	6,319.53	2,919.42
	Groundwater	0.00	125,524.70	1,637.87
	Point Source	0.00	0.00	0.00
	Septic Systems	0.00	5,230.04	0.00

Notes:

① - Separate worksheets are used to calculate and apportion the loading rates from the Stream Bank source loads (for sediment, total nitrogen, and total phosphorus) from the MMW Output file into each land use category, using methodology provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP).

② - A separate worksheet is used to calculate and apportion the "Total Nitrogen" and "Total Phosphorus" loading rates from the Farm Animals source load from the MMW Output file into the two agricultural land uses, Hay/Pasture and Cropland, based on area weighting. The methodology was provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP). Additionally, since the Farm Animals source loads do not apply to other land use catergories, the values in those cells are "n/a".

Groundwater	0.0	125,524.7	1,637.9
Point Source	0.0	0.0	0.0
Septic Systems	0.0	5,230.0	0.0

Kingston Township Landcover Calculations

Model My Watershed OUTPUT DATA

Source	Area	Sediment	Tot N	Tot P
Units	*acres*	*tons/year*	*lbs/year*	*lbs/year*
Hay/Past	2,688.9	17.0	2,636.3	1,335.3
Cropland	4.9	1.1	20.5	5.7
Forest	11,044.4	6.9	1,144.6	79.4
Wetland	881.5	0.5	348.8	19.8
Disturbed	0.0	0.0	0.0	0.0
Turfgrass	0.0	0.0	0.0	0.0
Open_Land	98.8	2.5	95.0	9.5
Bare_Rock	177.8	0.0	83.8	2.9
Sandy_Areas	0.0	0.0	0.0	0.0
Unpaved_Road	0.0	0.0	0.0	0.0
Ld_Mixed	5,644.4	36.1	1,853.5	198.0
Md_Mixed	1,646.9	55.5	2,373.5	243.4
Hd_Mixed	669.1	22.6	966.0	99.0
Ld_Residential	0.0	0.0	0.0	0.0
Md_Residential	0.0	0.0	0.0	0.0
Hd_Residential	0.0	0.0	0.0	0.0
Farm Animals		0.0	983.0	232.6
Tile Drainage		0.0	0.0	0.0
Stream Bank		3,747.6	6,319.5	2,919.4
Groundwater		0.0	125,524.7	1,637.9
Point Source		0.0	0.0	0.0
Septic Systems		0.0	5,230.0	0.0
Totals	*22,856.8*	*3,890.0*	*147,579.3*	*6,783.0*

STREAM LENGTHS* **KM*** **FEET**

			Sed lb/ft	*TN lb/ft*	*TP lb/ft*
Total Length	64.8	212598.4	35.3	0.03	0.01
Ag Streams	4.25	13943.6			
Non-Ag Streams	60.55	198654.9			

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

FARM ANIMAL DATA

TYPE*	NUMBER*	AVG WT KG	TOTAL KG	TOTAL AEU	KG N/AEU/DAY	KG P/AEU/DAY	TOTAL N/DAY	TOTAL P/DAY
Chickens, Broilers	20	0.9	18	0.018	1.07	0.3	0.01926	0.0054
Chickens, Layers	0	1.8	0	0	0.85	0.29	0	0
Cows, Beef	23	360	8280	8.28	0.31	0.09	2.5668	0.7452
Cows, Dairy	31	640	19840	19.84	0.44	0.07	8.7296	1.3888
Horses	28	500	14000	14	0.28	0.06	3.92	0.84
Pigs/Hogs/Swine	8	61	488	0.488	0.48	0.15	0.23424	0.0732
Sheep	33	50	1650	1.65	0.37	0.1	0.6105	0.165
Turkeys	0	6.8	0	0	0.59	0.2	0	0
					Daily Totals		16.08	3.22
					Poultry Totals		0.02	0.01
					Livestock Totals		16.06	3.21
					Poultry Fraction		0.0012	0.0017
					Livestock Fraction		0.9988	0.9983

* These values can be obtained from the "Animal" tab in the "Analyze" section of a Model My Watershed run

MMW NLCD Land Cover Categories for Watershed (from "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)
Open Water	1.69	417.28
Perennial Ice/Snow	0	-
Developed, Open Space	13.85	3,419.75
Developed, Low Intensity	9.01	2,224.69
Developed, Medium Intensity	6.67	1,646.91
Developed, High Intensity	2.71	669.14
Barren Land (Rock/Sand/Clay)	0.72	177.78
Deciduous Forest	28.85	7,123.46
Evergreen Forest	1.38	340.74
Mixed Forest	13.71	3,385.19
Shrub/Scrub	0.79	195.06
Grassland/Herbaceous	0.4	98.77
Pasture/Hay	10.89	2,688.89
Cultivated Crops	0.02	4.94
Woody Wetlands	3.23	797.53
Emergent Herbaceous Wetlands	0.34	83.95
Totals	*92.57*	*22,856.79*

Pollutant Load Conversion from Metric to Standard Units (from "Model" csv file)

SOURCE	SEDIMENT (kg)	TOTAL N (kg)	TOTAL P (kg)	SEDIMENT (tons)	TOTAL N (lbs)	TOTAL P (lbs)
Hay/Pasture	15464.6	1195.6	605.6	17.0	2636.3	1335.3
Cropland	1021.1	9.3	2.6	1.1	20.5	5.7
Wooded Areas	6290.1	519.1	36.0	6.9	1144.6	79.4
Wetlands	456.2	158.2	9.0	0.5	348.8	19.8
Open Land	2296.3	43.1	4.3	2.5	95.0	9.5
Barren Areas	45.3	38.0	1.3	0.0	83.8	2.9
Low-Density Mixed	12918.1	331.3	35.4	14.2	730.5	78.1
Medium-Density Mixed	50298.7	1076.4	110.4	55.5	2373.5	243.4
High-Density Mixed	20472.8	438.1	44.9	22.6	966.0	99.0
Low-Density Open Space	19860.4	509.3	54.4	21.9	1123.0	120.0
Farm Animals	0.0	445.8	105.5	0.0	983.0	232.6
Stream Bank Erosion	3399212.0	2866.0	1324.0	3747.6	6319.5	2919.4
Subsurface Flow	0.0	56927.3	742.8	0.0	125524.7	1637.9
Point Sources	0.0	0.0	0.0	0.0	0.0	0.0
Septic Systems	0.0	2371.9	0.0	0.0	5230.0	0.0
Totals	*3,528,335.6*	*66,929.4*	*3,076.2*	*3,890.0*	*147,579.3*	*6,783.0*

Note: The information below is only used for allocation of "urban" loads within a larger watershed boundary

MMW NLCD Land Cover Categories for Urban Area (from second, smaller "Analyze" csv file)

TYPE	AREA (km^2)	AREA (acres)	TN (lb/yr)	TP (lb/yr)	Sediment (lb/yr)
Open Water	0	-			
Perennial Ice/Snow	0	-			
Developed, Open Space	2.47	609.88	390.32	109.78	232,816.21
Developed, Low Intensity	2.36	582.72	372.94	104.89	222,447.87
Developed, Medium Intensity	0.38	93.83	188.59	38.47	69,401.36
Developed, High Intensity	0.03	7.41	16.81	3.85	7,605.81
Barren Land (Rock/Sand/Clay)	0	-	0.00	0.00	0.00
Deciduous Forest	2.05	506.17	156.91	55.68	125,124.82
Evergreen Forest	0.01	2.47	0.77	0.27	610.36
Mixed Forest	0.25	61.73	19.14	6.79	15,259.12
Shrub/Scrub	0	-	0.00	0.00	0.00
Grassland/Herbaceous	0	-	0.00	0.00	0.00
Pasture/Hay	0.1	24.69	38.27	17.04	6,385.77
Cultivated Crops	0	-	0.00	0.00	0.00
Woody Wetlands	0.11	27.16	16.57	3.26	6,710.90
Emergent Herbaceous Wetlands	0	-	0.00	0.00	0.00
Totals	*7.76*	*1,916.05*	*1,200.32*	*340.02*	*686,362.23*

(Note: The values below only pertain to the smaller target area)

STREAM LENGTHS **KM*** **FEET**

Total Length	8.75	28707.4
Ag Streams	0.14	459.3
Non-Ag Streams	8.61	28248.0

* These values can be obtained from the "Stream" tab in the "Analyze" section of a Model My Watershed run

Kingston Township Total Loading

	Entire Watershed			Urban Area*		
	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	Sediment (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)
Initial MMW Loads	7,779,980	147,579	6,783	686,362	1,200	340
Loads Removed w/Existing Urban BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Urban BMPs	-	-	-	-	-	-
Loads Removed w/Existing Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Agricultural BMPs	-	-	-	-	-	-
Loads Removed w/Existing Floodplain Restoration BMPs	-	-	-	-	-	-
Loads Removed w/Proposed Floodplain Restoration BMPs	-	-	-	-	-	-
Total Loads Removed	-	-	-	-	-	-
New Reduced Load	7,779,980	147,579	6,783	686,362	1,200	340
Percent Reduction (0-100)	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Total Baseline Load (1)	7,779,980	147,579	6,783	686,362	1,200	340
Total Loads Removed from Baseline (2)	-	-	-	-	-	-
Percent Reduction from Baseline Load	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*

Kingston Township Landcover Loading Rates

Look-Up Table for MMW Loading Rates
Watershed: Toby Creek
Year: 2025
Source File: User Specified

Section 2: Landcover Loading Rates Look-Up Table

TOTAL WATERSHED ANNUAL LOADS

ANNUAL LAND USE LOADING RATES (lbs/acre)

MapShed Land Use Categories	Source	Area	Sediment	Total Nitrogen	Total Phosphorus		SEDIMENT: From Land Use	SEDIMENT: From Stream Banks ①	SEDIMENT: TOTAL SEDIMENT LOADING RATE		NITROGEN: From Land Use	NITROGEN: From Stream Banks ①	NITROGEN: From Farm Animals ②	NITROGEN: TOTAL NITROGEN LOADING RATE		PHOSPHORUS: From Land Use	PHOSPHORUS: From Stream Banks ①	PHOSPHORUS: From Farm Animals ②	PHOSPHORUS: TOTAL PHOSPHORUS LOADING RATE	
	Units	*Acres*	*Tons*	*Pounds*	*Pounds*		lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre		lbs/acre	lbs/acre	lbs/acre	lbs/acre	
	Source	*area_ac*	*sediment_tons*	*TN_lbs*	*TP_lbs*	*Colum*	*TSS_LoadRateLa*	*TSS_LoadRateBa*	*TSS_LoadRate_lbPerAc*	*Colum*	*TN_LoadRateLa*	*TN_LoadRateBa*	*TN_LoadRateAi*	*TN_LoadRate_lbPerAcP*	*Column6*	*TP_LoadRateLand*	*TP_LoadRateBanks*	*TP_LoadRateAnimal*	*TP_LoadRate_lbPerAcA*	
	Hay/Past	2,688.89	17.05	2,636.30	1,335.35		12.68	245.94	**258.62**		0.98	0.21	0.36	**1.55**		0.50	0.10	0.09	**0.69**	Hay/Past
	Cropland	4.94	1.13	20.51	5.73		455.93	245.94	**701.88**		4.15	0.21	0.36	**4.72**		1.16	0.10	0.09	**1.35**	Cropland
	Forest	11,044.44	6.93	1,144.62	79.38		1.26	245.94	**247.20**		0.10	0.21	n/a	**0.31**		0.01	0.10	n/a	**0.11**	Forest
	Wetland	881.48	0.50	348.83	19.85		1.14	245.94	**247.08**		0.40	0.21	n/a	**0.61**		0.02	0.10	n/a	**0.12**	Wetland
	Disturbed	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Disturbed
	Turfgrass	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Turfgrass
	Open_Land	98.77	2.53	95.04	9.48		51.27	245.94	**297.21**		0.96	0.21	n/a	**1.17**		0.10	0.10	n/a	**0.20**	Open_Land
	Bare_Rock	177.78	0.05	83.79	2.87		0.56	245.94	**246.50**		0.47	0.21	n/a	**0.68**		0.02	0.10	n/a	**0.12**	Bare_Rock
	Sandy_Areas	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Sandy_Areas
	Unpaved_Road	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Unpaved_Road
	Ld_Mixed	5,644.44	36.14	1,853.52	198.01		12.80	368.94	**381.74**		0.33	0.31	n/a	**0.64**		0.04	0.14	n/a	**0.18**	Ld_Mixed
	Md_Mixed	1,646.91	55.45	2,373.46	243.43		67.34	672.33	**739.67**		1.44	0.57	n/a	**2.01**		0.15	0.26	n/a	**0.41**	Md_Mixed
	Hd_Mixed	669.14	22.57	966.01	99.00		67.46	959.32	**1,026.78**		1.44	0.83	n/a	**2.27**		0.15	0.37	n/a	**0.52**	Hd_Mixed
	Ld_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Ld_Residential
	Md_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Md_Residential
	Hd_Residential	0.00	0.00	0.00	0.00		0.00	0.00	**0.00**		0.00	0.00	n/a	**0.00**		0.00	0.00	n/a	**0.00**	Hd_Residential
							Tons * 2000 lbs/ton acres of a land use		Sum of previous two sources		Tons * 2000 lbs/ton acres of a land use			Sum of previous three sources		Tons * 2000 lbs/ton acres of a land use			Sum of previous three sources	

Addt'l Sources	Source	Sediment	Total Nitrogen	Total Phosphorus
	Units	*Tons*	*Pounds*	*Pounds*
	Farm Animals	0.00	982.99	232.63
	Tile Drainage	0.00	0.00	0.00
	Stream Bank ①	3,747.63	6,319.53	2,919.42
	Groundwater	0.00	125,524.70	1,637.87
	Point Source	0.00	0.00	0.00
	Septic Systems	0.00	5,230.04	0.00

Notes:

① - Separate worksheets are used to calculate and apportion the loading rates from the Stream Bank source loads (for sediment, total nitrogen, and total phosphorus) from the MMW Output file into each land use category, using methodology provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP).

② - A separate worksheet is used to calculate and apportion the "Total Nitrogen" and "Total Phosphorus" loading rates from the Farm Animals source load from the MMW Output file into the two agricultural land uses, Hay/Pasture and Cropland, based on area weighting. The methodology was provided by Dr. Barry Evans (Pennsylvania State University), the author of MapShed, and with concurrence from Mr. Bill Brown (PADEP). Additionally, since the Farm Animals source loads do not apply to other land use catergories, the values in those cells are "n/a".

Groundwater	0.0	125,524.7	1,637.9
Point Source	0.0	0.0	0.0
Septic Systems	0.0	5,230.0	0.0

ATTACHMENT E: Existing BMP Pollutant Reductions

Dallas Borough Exisiting BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
B14	Wet Pond/Wetland	7.74	5.66	3.56	3.39	0.00	0.00	11630.70	25.45	5.94	60%	20%	45%	6978.42	5.09	2.67
B15	Dry Detention Basin	3.45	0.00	0.00	1.51	0.00	0.00	1691.25	2.68	0.79	10%	5%	10%	169.13	0.13	0.08
B27	Dry Detention Basin	8.55	2.60	3.86	0.00	0.00	0.00	9148.58	19.45	4.61	10%	5%	10%	914.86	0.97	0.46
B58	Dry Detention Basin	0.76	0.44	0.00	0.00	0.00	0.00	615.38	1.37	0.32	10%	5%	10%	61.54	0.07	0.03
B59	Dry Detention Basin	0.33	0.09	0.00	0.00	0.00	0.00	192.24	0.39	0.10	10%	5%	10%	19.22	0.02	0.01
B82	Dry Detention Basin	4.52	0.05	0.00	14.21	3.58	0.00	6201.04	12.95	4.87	10%	5%	10%	620.10	0.65	0.49
														8763.27	6.93	3.74

Dallas Township Existing BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
B1	Dry Detention Basin	6.89	2.38	0.00	5.29	0.00	0.00	5833.85	10.93	2.89	10%	5%	10%	583.38	0.55	0.29
B10	Dry Detention Basin	10.56	2.45	0.22	0.00	0.00	0.00	6194.18	12.24	3.15	10%	5%	10%	619.42	0.61	0.32
B13	Dry Detention Basin	2.43	2.08	2.04	0.00	0.00	0.00	4616.71	10.44	2.41	10%	5%	10%	461.67	0.52	0.24
B14	Wetpond	1.95	2.21	0.00	4.22	0.00	0.00	3499.32	7.08	1.76	60%	20%	45%	2099.59	1.42	0.79
B16	Dry Detention Basin	2.21	0.09	0.00	0.00	0.00	0.00	935.06	1.61	0.46	10%	5%	10%	93.51	0.08	0.05
B17	DryExtended	0.81	1.19	0.00	0.00	0.00	0.00	1205.91	2.93	0.65	60%	20%	20%	723.55	0.59	0.13
B18	Dry Detention Basin	0.51	1.36	0.00	0.00	0.00	0.00	1216.24	3.08	0.67	10%	5%	10%	121.62	0.15	0.07
B19	Dry Detention Basin	6.08	2.06	0.65	0.00	4.75	0.00	5871.34	16.98	5.64	10%	5%	10%	587.13	0.85	0.56
B20	DryExtended	1.11	1.16	0.22	0.00	0.00	0.00	1535.97	3.58	0.82	60%	20%	20%	921.58	0.72	0.16
B21	Dry Detention Basin	1.27	10.45	0.22	0.02	0.00	0.00	8553.10	22.53	4.75	10%	5%	10%	855.31	1.13	0.47
B22	Dry Detention Basin	1.75	2.72	0.00	0.18	0.00	0.00	2764.66	6.69	1.49	10%	5%	10%	276.47	0.33	0.15
B23	Wetpond	8.22	0.87	0.00	12.59	0.00	0.45	7220.84	14.71	3.56	60%	20%	45%	4332.51	2.94	1.60
B24	Dry Detention Basin	6.61	0.20	0.00	3.53	0.00	0.03	3651.32	6.03	1.75	10%	5%	10%	365.13	0.30	0.17
B25	Dry Detention Basin	3.01	0.00	0.00	4.04	0.00	0.38	2318.83	6.31	1.23	10%	5%	10%	231.88	0.32	0.12
B26	Dry Detention Basin	2.46	0.84	0.00	0.00	0.00	0.00	1586.53	3.27	0.82	10%	5%	10%	158.65	0.16	0.08
B27	Dry Detention Basin	2.42	0.04	0.00	0.00	0.00	0.00	975.11	1.63	0.48	10%	5%	10%	97.51	0.08	0.05
B28	DryExtended	4.11	5.82	2.30	0.00	0.00	0.00	8347.95	19.71	4.44	60%	20%	20%	5008.77	3.94	0.89
B29	DryExtended	7.03	1.07	0.00	1.45	0.00	0.00	3920.56	7.13	1.94	60%	20%	20%	2352.34	1.43	0.39
B30	Dry Detention Basin	8.68	4.34	0.00	5.28	0.10	0.00	8030.02	16.22	4.12	10%	5%	10%	803.00	0.81	0.41
B33	Dry Detention Basin	11.27	3.45	0.00	0.12	0.00	0.00	7027.67	14.27	3.61	10%	5%	10%	702.77	0.71	0.36
B34	Dry Detention Basin	4.51	1.76	0.00	0.76	0.00	0.00	3279.83	6.71	1.68	10%	5%	10%	327.98	0.34	0.17
B35	Dry Detention Basin	4.89	0.39	0.00	1.00	0.00	0.00	2457.46	4.23	1.20	10%	5%	10%	245.75	0.21	0.12
B38	Dry Detention Basin	0.41	1.08	0.34	0.00	0.00	0.00	1327.24	3.25	0.71	10%	5%	10%	132.72	0.16	0.07
B39	Dry Detention Basin	0.29	1.08	0.00	0.00	0.00	0.00	919.56	2.37	0.51	10%	5%	10%	91.96	0.12	0.05
B40	Dry Detention Basin	0.37	0.60	0.00	0.00	0.00	0.00	591.21	1.45	0.32	10%	5%	10%	59.12	0.07	0.03
B41	Dry Detention Basin	1.10	0.12	0.00	0.00	0.00	0.00	518.34	0.94	0.26	10%	5%	10%	51.83	0.05	0.03
B41T	Treated Remainder from 42							466.51	0.89	0.23	10%	5%	10%	46.65	0.04	0.02
B42	Dry Detention Basin	1.04	0.81	0.00	0.00	0.00	0.00	1011.99	2.31	0.54	10%	5%	10%	101.20	0.12	0.05
B42T	Treated Remainder from 43							910.79	2.19	0.48	10%	5%	10%	91.08	0.22	0.05
B43	Dry Detention Basin	0.83	1.27	0.00	0.00	0.00	0.00	1273.60	3.10	0.69	10%	5%	10%	127.36	0.16	0.07
B45	Dry Detention Basin	0.88	0.81	0.00	0.00	0.00	0.00	948.77	2.20	0.51	10%	5%	10%	94.88	0.11	0.05
B51	Dry Detention Basin	1.32	1.38	0.22	0.00	1.53	0.00	2187.78	6.54	2.00	10%	5%	10%	218.78	0.33	0.20
B55	Dry Detention Basin	0.00	0.66	0.22	0.00	0.00	0.00	719.41	1.84	0.39	10%	5%	10%	71.94	0.09	0.04
B56	Dry Detention Basin	0.05	1.04	0.37	0.00	0.00	0.00	1181.08	2.99	0.64	10%	5%	10%	118.11	0.15	0.06
B58	DryExtended	0.39	1.53	0.00	0.00	0.00	0.00	1294.89	3.35	0.71	60%	20%	20%	776.94	0.67	0.14
B59	DryExtended	1.10	0.58	0.00	0.01	0.00	0.00	863.08	1.88	0.45	60%	20%	20%	517.85	0.38	0.09
B60	DryExtended	3.16	2.77	1.87	2.15	0.00	0.24	5866.47	14.56	3.12	60%	20%	20%	3519.88	2.91	0.62
B7	Dry Detention Basin	2.31	3.44	0.89	0.00	0.00	0.00	4401.67	10.50	2.35	10%	5%	10%	440.17	0.52	0.24
B81	Dry Detention Basin	1.49	4.24	3.28	0.00	0.00	0.00	7153.70	17.07	3.80	10%	5%	10%	715.37	0.85	0.38
B83	Dry Detention Basin	4.45	1.97	0.00	0.00	0.00	0.00	3217.60	6.85	1.67	10%	5%	10%	321.76	0.34	0.17
														29467.12	25.48	9.97

Kingston Township Existing BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
B23	Wetpond	0.00	0.00	0.00	4.78	0.00	0.00	1181.07	1.48	0.53	60%	20%	45%	708.64	0.30	0.24
B24	Dry Detention Basin	0.00	0.00	0.00	13.70	0.00	0.00	3387.13	4.25	1.51	10%	5%	10%	338.71	0.21	0.15
B31	Dry Detention Basin	8.97	1.55	0.00	0.00	0.06	0.48	4704.41	9.24	2.35	10%	5%	10%	470.44	0.46	0.23
B32	Dry Detention Basin	11.81	1.41	0.00	0.41	0.00	0.00	5652.53	10.52	2.75	10%	5%	10%	565.25	0.53	0.27
B62	Dry Detention Basin	7.84	0.24	0.00	8.53	1.03	0.00	5546.51	9.74	3.16	10%	5%	10%	554.65	0.49	0.32
B63	Dry Detention Basin	1.35	0.01	0.00	1.65	0.00	0.00	927.06	1.39	0.43	10%	5%	10%	92.71	0.07	0.04
B64	Dry Detention Basin	0.34	0.73	0.00	0.00	0.00	0.00	670.99	1.69	0.36	10%	5%	10%	67.10	0.08	0.04
B65	Dry Detention Basin	1.85	0.00	0.00	3.57	0.00	0.00	1588.72	2.29	0.73	10%	5%	10%	158.87	0.11	0.07
B66	Dry Detention Basin	4.70	0.00	0.00	4.22	0.00	0.00	2835.05	4.31	1.31	10%	5%	10%	283.51	0.22	0.13
B67	Dry Detention Basin	10.23	1.83	0.00	0.16	0.02	0.00	5303.32	10.31	2.62	10%	5%	10%	530.33	0.52	0.26
B68	Dry Detention Basin	10.23	0.61	0.00	0.07	0.17	0.00	4418.41	8.06	2.21	10%	5%	10%	441.84	0.40	0.22
B69	Dry Detention Basin	5.72	6.94	0.00	0.00	0.00	0.00	7314.18	17.60	3.87	10%	5%	10%	731.42	0.88	0.39
B70	Dry Detention Basin	1.11	1.10	0.00	0.00	0.00	0.00	1233.31	2.91	0.65	10%	5%	10%	123.33	0.15	0.06
B71	Dry Detention Basin	7.24	0.58	0.00	0.00	0.00	0.00	3195.49	5.81	1.54	10%	5%	10%	319.55	0.29	0.15
B72	Dry Detention Basin	9.00	1.00	0.00	9.43	0.00	0.00	6504.32	10.69	3.07	10%	5%	10%	650.43	0.53	0.31
B73	Wetpond	1.93	1.05	0.00	0.00	0.00	0.00	1514.24	3.35	0.78	60%	20%	45%	908.54	0.67	0.35
B74	Dry Detention Basin	7.55	0.22	0.00	0.00	0.00	0.00	3049.06	5.28	1.45	10%	5%	10%	304.91	0.26	0.15
B75	Dry Detention Basin	1.10	1.15	0.00	0.00	0.00	0.00	1269.78	3.01	0.67	10%	5%	10%	126.98	0.15	0.07
B76	Dry Detention Basin	12.86	2.26	0.00	0.00	0.00	0.00	6581.23	12.78	3.24	10%	5%	10%	658.12	0.64	0.32
B77	Dry Detention Basin	1.06	1.72	0.63	0.00	0.00	0.00	2324.68	5.57	1.22	10%	5%	10%	232.47	0.28	0.12
B78	Dry Detention Basin	59.22	4.75	0.00	49.48	0.00	0.00	38349.25	62.78	18.05	10%	5%	10%	3834.92	3.14	1.80
B79	Dry Detention Basin	12.17	0.00	0.00	0.00	0.00	0.00	4644.69	7.79	2.19	10%	5%	10%	464.47	0.39	0.22
B80	Dry Detention Basin	31.86	0.94	0.00	10.89	0.00	0.00	15545.49	25.65	7.32	10%	5%	10%	1554.55	1.28	0.73
														14121.74	12.05	6.66

Existing and Proposed BMP Responsible Party

BMP ID	Detailed ID	Design Era	Latitude	Longitude	Municipality	Responsible Party
B1	Dry detention basin for Masonic Village	BEFORE 2006	41.357752	-75.975702	DT	DAMA
B7	Dry detention basin for Misericordia Tennis Courts	BEFORE 2006	41.346645	-75.975603	DT	DAMA
B10	Dry detention basin for Payne Printery	BEFORE 2006	41.341652	-75.975368	DT	DT
B13	Dry detention basin for Country Club Shopping Center	BEFORE 2006	41.346552	-75.959739	DT	DT
B14	Wet Pond for Twin Stacks Center	BEFORE 2006	41.340725	-75.976641	DB	DB
B15	Dry detention basin for Marlington Ave Subdivision	BEFORE 2006	41.339699	-75.978605	DB	DB
B16	Dry detention basin for St. Paul's Lutheran Church	BEFORE 2006	41.34117	-75.995471	DT	DAMA
B17	Extended dry detention basin for Steve Shannon Tire & Auto	AFTER 2006	41.342397	-75.994937	DT	DT
B18	Dry detention basin for Dollar General	BEFORE 2006	41.342131	-75.994051	DT	DT
B19	Dry detention basin for Luzerne Bank	BEFORE 2006	41.342128	-75.993012	DT	DT
B20	Extended dry detention basin for Turkey Hill Mini Market	AFTER 2006	41.342635	-75.992874	DT	DT
B21	Dry detention basin for Yalick Farms	BEFORE 2006	41.340405	-75.987649	DT	DT
B22	Dry detention basin for Yalick Farms	BEFORE 2006	41.33886	-75.989053	DT	DT
B23	Wet Pond for Overbrook Farms	BEFORE 2006	41.320399	-75.95446	DT	DT
B24	Dry detention basin for Overbrook Farms	BEFORE 2006	41.320267	-75.951648	DT	DT
B25	Dry detention basin for Overbrook Farms	BEFORE 2006	41.320984	-75.952313	DT	DT
B26	Dry detention basin for A&A Auto	BEFORE 2006	41.327584	-75.947135	DT	DT
B27	Dry detention basin behind Monro Muffler Brake	BEFORE 2006	41.333231	-75.954557	DB	DB
B28	Extended dry detention basin for DSD Baseball Field	AFTER 2006	41.342955	-75.950188	DT	DT
B29	Dry detention basin for Saddle Ridge	BEFORE 2006	41.339425	-75.927376	DT	DT
B30	Dry detention basin for Saddle Ridge	BEFORE 2006	41.33862	-75.927015	DT	DT
B31	Dry detention basin for Woodbine Rd Subdivision	BEFORE 2006	41.337378	-75.923587	KT	KT
B32	Dry detention basin for Woodbine Rd Subdivision	BEFORE 2006	41.334618	-75.92378	KT	KT
B33	Dry detention basin for Ondish Hills	BEFORE 2006	41.333544	-75.939487	DT	DAMA
B34	Dry detention basin for Ondish Hills	BEFORE 2006	41.334959	-75.934884	DT	DAMA
B35	Dry detention basin for Ondish Hills	BEFORE 2006	41.332832	-75.938869	DT	DAMA
B38	Dry detention basin for Country Club Shopping Center	BEFORE 2006	41.347439	-75.959422	DT	DT
B39	Dry detention basin for CH Waltz	BEFORE 2006	41.34534	-75.961846	DT	DT
B40	Dry detention basin for Dallas Fire & Ambulance	BEFORE 2006	41.344083	-75.961877	DT	DT
B41	Dry detention basin for Masonic Village	BEFORE 2006	41.3523	-75.973454	DT	DAMA
B42	Dry detention basin for Masonic Village	BEFORE 2006	41.3525	-75.974108	DT	DT
B43	Dry detention basin for Masonic Village	BEFORE 2006	41.352799	-75.97436	DT	DT
B45	Dry detention basin for Masonic Village	BEFORE 2006	41.353645	-75.972851	DT	DAMA
B51	Dry detention basin for St. Paul's Lutheran Church	BEFORE 2006	41.340748	-75.997998	DT	DAMA
B55	Underground dry detention basin for Connors	BEFORE 2006	41.327919	-75.946752	DT	DT
B56	Dry detention basin for Parker Self Storage	BEFORE 2006	41.33077	-75.943041	DT	DT
B58	Extended dry detention basin for Dorchester Development and Geisinger Medical Facility	AFTER 2006	41.33168	-75.949985	DB	DB
B59	Extended dry detention basin for Dorchester Development and Geisinger Medical Facility	AFTER 2006	41.331527	-75.948897	DT	DT
B60	Extended dry detetnion basin for Pulverman	AFTER 2006	41.335522	-75.941696	DT	DT
B62	Dry detention basin for Ondish Rd Subdivision	BEFORE 2006	41.334246	-75.928256	KT	KT
B63	Dry detention basin for Kingston Township municipal building	BEFORE 2006	41.32781	-75.931732	KT	KT
B64	Rain garden for Kingston Township PW Garage	AFTER 2006	41.328347	-75.929533	KT	KT
B65	Dry detention basin on E Center St	BEFORE 2006	41.32809	-75.92502	KT	KT
B66	Dry detention basin on Harris Hill Rd	BEFORE 2006	41.325603	-75.922632	KT	KT
B67	Dry detention basin for Echo Valley MHP	BEFORE 2006	41.324886	-75.928519	KT	KT
B68	Dry detention basin for Echo Valley MHP	BEFORE 2006	41.322169	-75.927583	KT	KT
B69	Dry detention basin for Echo Valley MHP	BEFORE 2006	41.322106	-75.922412	KT	KT
B70	Dry detention basin for The Church of Jesus Christ	BEFORE 2006	41.328022	-75.913663	KT	KT
B71	Dry detention basin for Windsor Farms	BEFORE 2006	41.327255	-75.911829	KT	DAMA
B72	Dry detention basin for Windsor Farms	BEFORE 2006	41.327964	-75.908333	KT	DAMA
B73	Wet Pond for Sunrise Estates	BEFORE 2006	41.327457	-75.909452	KT	KT
B74	Dry detention basin for Subdivision on Ivy Dr	BEFORE 2006	41.323309	-75.912386	KT	DAMA
B75	Dry detention basin for Cross Creek Community Church and SUNOCO	BEFORE 2006	41.320648	-75.914155	KT	KT
B76	Dry detention basin for Cross Creek Community Church and SUNOCO	BEFORE 2006	41.320897	-75.913604	KT	KT
B77	Dry detention basin for Back Mountain Harvest Assembly	BEFORE 2006	41.318327	-75.916501	KT	KT
B78	Dry detention basin near Division St	BEFORE 2006	41.314309	-75.935855	KT	KT
B79	Dry detention basin for Lantern Hill subdivision	BEFORE 2006	41.304648	-75.936467	KT	DAMA
B80	Dry detention basin for Lantern Hill subdivision	BEFORE 2006	41.301737	-75.939983	KT	DAMA
B81	Extended dry detention basin for DSD High School	AFTER 2006	41.338296	-75.95055	DT	DT
B82	Dry detention basin for Homes at the end of Howard Dr	BEFORE 2006	41.330748	-75.980768	DB	DB
B83	Dry detention basin for Yalick Farms	BEFORE 2006	41.34163	-75.986857	DT	DT
P1	Wet pond/wetlands at Luzerne and Susquehanna Avenues	AFTER 2006	41.33646	-75.97069	DB	DAMA
P2	Wet pond/wetlands at Lackawanna Avenue	AFTER 2006	41.337966	-75.970239	DB	DAMA
P3	Rain garden at Dallas Township Park	AFTER 2006	41.338569	-75.960706	DT	DAMA
P4	Wet pond/wetland at Dallas Nature Playground	AFTER 2006	41.337893	-75.960169	DT	DAMA
P26	Bioswale at Hemlock Street	AFTER 2006	41.326467	-75.942527	DT	DAMA

Abbriviation	Full Name
DAMA	Dallas Area Municpal Authority
DT	Dallas Township
DB	Dallas Borough
KT	Kingston Township

Permit No.: _____

Report No.: _____

II. Dry Detention BMPs: _____

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is destroyed or unsafe	
☐ BMP appears to have significant implementation flaws compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, areas not draining to BMP as intended, etc.)	
☐ BMP discharge volume does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal low flow: ☐ Yes ☐ No

Inflow Type					
☐ Open channel ☐ Storm Pipe ☐ Curb cut ☐ Flume/ swale ☐ Other:					
Inflow conditions	Ponding	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems				

Comments: _____

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow): ☐ Yes ☐ No

Energy dissipation present at end of primary outlet: ☐ Yes ☐ No

Outlet structure (check all that apply)	☐ Emergency spillway ☐ Riser ☐ Weir ☐ Inlet				
	☐ Culvert ☐ Underdrain ☐ Other:				
	☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets)				
	☐ Anti-vortex device ☐ Hydrobrake Plate ☐ Riser Debris ☐ Debris apron				
Outlet Features (check all that apply)	Erosion at outlet	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Depth of flow/ight	☐ None	☐ Mild	☐ Moderate	☐ Severe
Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____ ☐ Other _____				
Outlet Conditions (actions BMP)	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Obstructions	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other: _____	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Permit No. _____

Report No. _____

Basin / Embankment	Type	☐ N/A ☐ Overflow ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other:
	Function	Sediment Settling: ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from contaminant to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Herbaceous ☐ Mulched turf ___ % Trees ___ % Shrubs 10 % Herbaceous 10 % Turf ☐ Nuisance plant species ☐ Native species ☐ Non-Native species ☐ Wetland species ☐ Invasives
	Plant cover	☐ No Mowing ☐ Periodic Mowing ☐ Mowed to ___ ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody vegetation is not planted or established on embankments or within 15 feet of the emergency overflow	Answer: ☐ Yes ☐ No
Structure	Berm is at least 10 ft. wide	☐ Yes ☐ No
	Berm has only 3:1 (H:V) side slopes or has baffles to lengthen flow path	☐ Yes ☐ No
	Embankments are less than 10 ft high with slopes no steeper than 3:1	☐ Yes ☐ No
	Berm erosion	☐ None ☐ Minor (<5% of berm affected) ☐ Moderate (~10% affected) ☐ Severe (>15% affected)
	Berm erosion	☐ No structural damage ☐ Minor berm slumps, channel erosion ☐ Moderate risk of failure ☐ Piping / Failure
Trash	☐ None ☐ Minimal amount ☐ Moderate amount requiring removal ☐ Severe	
Sediment / Water Quality	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/clogging	
	Ponding depth: ___ ft	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollutant (color, sheen, etc.)	☐ Yes ☐ No
	Evidence of mosquitos?	☐ Yes ☐ No

Comments: _____



Figure 1-B1 Basin Bottom



Figure 3-81 add



Figure 3-B1-Outlet



Figure 4-B1-Overview



Figure 6 B1 Sediment Pond(s)

Permit No.: _____

Report No.: _____

II. Dye Dilution Basis: _____

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is dangerous or unsafe	
☐ BMP appears to have significant implementation flaws compared to plans, resulting in reduced effectiveness	
☐ Drainage area shows floods, debris, erosion, water not entering as BMP as intended, etc.)	
☐ BMP maintenance volume does not match plans	
☑ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal pool depth: ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Storm Flow ☑ Closed Pipe ☐ Curb cut ☐ Flumes apron ☐ Other
Inflow condition	Inlet Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Inlet Clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural Problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments: _____

Outlet

Maintenance access provided (free from debris, primary outlet, and emergency overflow)? ☐ Yes ☐ No

Energy dissipation present at end of primary outlet? ☐ Yes ☐ No

Outlet structure (check all that apply)	☑ Conveyed by inlet ☐ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other:
Outlet Features (check all that apply)	☐ SAA ☐ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Weep Drains ☐ Energy dissipation
Outlet Structure Conditions	Erosion at outlet: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Outlet Clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Signs of leakage: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Outlet Drainage	☑ Surface water ☐ BMP ☐ Storm Sewer ☐ Other:
Outlet Condition (outside BMP)	Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Trash: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Sedimentation: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Other: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments: _____

Permit No.: _____

Report No.: _____

Basin Delineation	Type	☐ N/A ☒ Flumes ☐ Vegetated Channel ☐ Riprap Channel ☐ Vegetated Berm Weir ☐ Other:
	Function	Sediment Settling: ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment Ripples: ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow path perpendicular to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (Attach all that apply)	☐ Trees ☐ Shrubs ☒ Grasses/perennials ☐ Managed turf ___ %Trees ___ %Shrubs 15 %Herbaceous 85 %Turf ☐ Mulches plan ☒ Native Species ☐ Non-Native species ☐ Weeds Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☒ Mowed turf ☐ Large Areas of Bare Soil ☒ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or cotton 10%
	Woody Vegetation is not planted or encroached on embankments or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Berm is at least 10 ft wide ☒ Yes ☐ No	
	Basin has no 2:1 UW slide or has ballast to weather flow path ☒ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Berm erosion	☒ None ☐ Mild (<5% of berm affected) ☐ Moderate (5-10% affected) ☐ Severe (>10% affected)
	Berm cracking	☒ No cracks or damage ☐ Minor cracks along internal mulches ☐ Moderate cracks or holes ☐ Rank Failure
Trash	☐ None ☒ Minimal amount ☐ Moderate amount (evidence of littering) ☐ Severe	
Sediment Water Quality	☒ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/clogging	
	Ponding depth: 1 in	
	Algae present?	☐ Yes ☒ No
	Turbid?	☐ Yes ☒ No
	Evidence of pollution? (color, sheen, etc.)	☐ Yes ☒ No
	Evidence of mosquitos?	☐ Yes ☒ No
Comments	Need to keep Flow Channel to Pond Clear of Debris and Vegetation. Grass needs to be cleared as well.	



Figure 1 B7 Nurmesi kõik



Figure 2-B7 Outfall



Figure 3-87 Outfall



Figure 4 WF Overview



Figure 8 B7 South tank

5/9/24

Permit No.: _____

Report No.: _____

8. Dry Detention Basin BIL - S. Park Lake Shore

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant accumulation likely compared to plans resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not entering in BMP as planned, etc.)	
☐ BMP stormwater volume does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow is not bypassing at normal peak depth ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Sheet Flow ☑ Culvert Pipe ☐ Curb cut ☐ Yard/Lawn drain ☐ Other
Inflow conditions	Wall Erosion ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Inlet clogging ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments: 2 pipes with 1 inflow location. Could likely take advantage of expanded inside

Outlet

Discharge outlet structure passes low flow (weir, primary outlet, and emergency overflow)? ☑ Yes ☐ No

Energy dissipation present at end of primary outlet? ☐ Yes ☐ No ☐ n/a (Submerged)

Outlet structure (check all that apply)	☑ Emergency spillway ☐ Weir ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other:
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack (inspect to ensure not primary weir low flow outlet) ☐ Anti-vortex device ☐ Permanent Pool ☐ Inlet Dome ☑ Internal system
Outlet Structure Conditions	Erosion at outlet ☑ None ☐ Mild ☐ Moderate ☐ Severe Outlet Clogging ☑ None ☐ Mild ☐ Moderate ☐ Severe Structural problems ☑ None ☐ Mild ☐ Moderate ☐ Severe Signs of leakage ☑ None ☐ Mild ☐ Moderate ☐ Severe
Outlet Discharge	☐ Curbside outlet ☐ Inlet ☐ Storm Sewer ☐ Other: n/a - covered
Outlet Conditions (outside BMP)	Erosion ☑ None ☐ Mild ☐ Moderate ☐ Severe Trash ☑ None ☐ Mild ☐ Moderate ☐ Severe Sedimentation ☑ None ☐ Mild ☐ Moderate ☐ Severe Other: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments:

Permit No.: _____

Report No.: _____

Basin		
Perimeter/Inlet	Type	☐ N/A ☐ Fixed ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other:
	Function	Sediment trapping: ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Distance from perimeter to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Forbs/Herbs ☐ Managed turf ___ %Trees ___ %Shrubs ___ %Herbaceous ___ %Turf ☐ Mix (no one type) ☐ Native Species ☐ Non-native species ☐ Wetland Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periodic Mowing ☐ Mowed Turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Density Vegetation is not planted or maintained on embankments or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min. 3:1 L:W ratio or has baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Basin erosion	☐ None ☐ Minor (<10% of bank affected) ☐ Moderate (>10% affected) ☐ Severe (>30% affected)
	Berm condition	☐ No structural damage ☐ Minor (rock scour, channelization) ☐ Moderate (rills or failure) ☐ Berm Failure
Upper Sediment	☐ None ☐ Minor sediment ☐ Moderate (minor clean-up immediate) ☐ Severe	
	☐ No trash/litter ☐ Minor (accept.) ☐ Moderate (maintain) ☐ Severe (not acceptable)	
Water Quality	Standing depth: _____ ft	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollutants? (color, sheen, etc.)	☐ Yes ☐ No
	Evidence of mosquitoes?	☐ Yes ☐ No
Comments		



Figure 1 B19 North Inlet



Figure 3-B10 Outfall



Figure 2-B19 Outlet



Figure 4 B16 Overview



Figure 3-P10: South inlet

Wednesday 9/27/24

2008-PM-BMPWalk 30819

Permit No.: _____

Report No.: _____

B. Dry Detention Basin 635 Empire St

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws (designed to BMP resulting in reduced effectiveness)	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sediment volume does not match plans	
☐ BMP appears to be mostly OK	

Inlet

Inflow is not submerged at normal pool depth ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Sheet Flow ☑ Culvert Pipe ☐ Curb cut ☐ Plunge pool ☐ Other
Inflow conditions	Inlet Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Inlet Clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe
Comments	Pipe looks like it needs to be cleaned out [illegible]

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ No

Energy dissipation present at end of primary outlet? ☐ Yes ☐ No

Outlet structure (check all that apply)	☐ Emergency Spillway ☐ Weir ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Weep Holes ☑ Riprap apron
Outlet Structure Conditions	Erosion at outlet: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Outlet Clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Signs of leakage: ☑ None ☐ Mild ☐ Moderate ☐ Severe
Outlet Discharge	☐ Flowing water ☐ BMP ☐ Above Basin ☐ Other
Outlet Conditions (pertains BMP)	Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Trash: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Sedimentation: ☑ None ☐ Mild ☐ Moderate ☐ Severe
	Other: ☑ None ☐ Mild ☐ Moderate ☐ Severe
Comments	

Permit No.: _____

Report No.: _____

Type	☐ BGA ☑ Flumpy ☐ Vegetated riverrun ☐ Riffle riverrun ☐ Vegetated Rip Rap ☐ Other _____	
Function	Sediment holding Pollutant/nutrient uptake Sediment flow from contributing area to BMP	☑ None ☐ Mild ☐ Moderate ☐ Severe ☑ None ☐ Mild ☐ Moderate ☐ Severe ☑ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation — Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Forbs ☐ Managed turf ___% Trees ___% Shrubs ___% Herbaceous ___% Turf ☑ Mulches (type) _____ ☑ Native Species ☐ Non-Native species ☐ Weeds/ Invasives ☐ Invasives	
Vegetation — Plant cover	☐ No Mowing ☐ Periodic Mowing ☑ Mowed Turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%	
Vegetation	Woody Vegetation is not planted in unsuitable environments or within 25 feet of the emergency overflow spillway ☑ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☑ Yes ☐ No	
	Basin has min. 3:1 LW ratio or has baffles to lengthen flow path ☑ Yes ☐ N/A	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☑ Yes ☐ No	
Structure — Basin erosion	☑ None ☐ Minor (<10% of basin affected) ☐ Moderate (>10% affected) ☐ Severe (>50% affected)	
Structure — Basin structure	☑ No structural damage ☐ Minor (rock, wires, chicken wire) ☐ Moderate (ash of fallen) ☐ Major Failure	
Trash	☑ None ☐ Moderate/Some ☐ Moderate (some trash/debris) ☐ Severe	
Sediment	☑ No Deposition ☐ Minor Deposition ☐ Moderate Deposition ☐ Severe Deposition/Clogging	
Water Quality	Ponding depth _____ ft.	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollution? (color, smell, etc.)	☐ Yes ☐ No
	Evidence of mosquitoes?	☐ Yes ☐ No

Comments: _____



Figure 1 BBB Artist



Figure 2-B33 Outlet



Figure 5-B13 Overview



Figure 4-B32 Sediment Footing

Permit No.: _____

Report No.: _____

8. Dry Detention Basin BMP Records to K7

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP soil/storage volume does not match plans	
☑ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal pool depth: ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Weir Flow ☑ Closed Pipe ☐ Curb cut ☐ Ramp apron ☐ Other				
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: [illegible]

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ No

Energy dissipation present at exit of primary outlet? ☐ Yes ☑ No

Outlet structure (check all that apply)	☐ Emergency spillway ☑ Riser ☐ Weir ☐ Inlet				
	☐ Channel ☐ Underdrain ☐ Other				
Outlet Features (check all that apply)	☐ RCA ☑ Trash rack (should be present for primary and low flow outlets)				
	☐ Anti-vortex device ☐ Perforated Pipe ☐ Reel Drain ☐ Ramp apron				
Outlet Structure Conditions	Erosion at outlet	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe
Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☑ Storm Sewer _____ ☐ Other _____				
Outfall Conditions (outside BMP)	Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Other _____	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Permit No.: _____

Report No.: _____

Basin

Instream	Type	☐ N/A ☒ Flowing ☐ Vegetated channel ☒ Riprap channel ☐ Vegetated filter strip ☐ Other _____
	Erosion	sediment buildup Phytoremediation system Sediment flow from phytotreatment to BMP	☒ None ☐ Mild ☐ Moderate ☐ Severe ☒ None ☐ Mild ☐ Moderate ☐ Severe ☒ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Perennials ☒ Managed turf % Trees ____ % Shrubs ____ % Ornamentals 100 % Turf ☐ Meadow plan ☒ Native species ☐ Non-Native species ☐ Wetland species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowing ☒ Mowed turf ☐ Large Areas of Bare Soil ☒ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody vegetation is not planted or established on embankments or within 20 feet of the emergency overflow spillway ☒ Yes ☐ No	
Obstacle	Basin is at least 10 ft. wide ☒ Yes ☐ No	
	Basin has min 2:1 L:W ratio or has baffles to lengthen flow path ☒ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☒ Yes ☐ No	
	Bank erosion	☒ None ☐ Minor (<15% of bank affected) ☐ Moderate (15-50% affected) ☐ Severe (>50% affected)
	Bank structure	☒ No structural damage ☐ Minor (Large slumps, common scours) ☐ Moderate (Risk of failure) ☐ Bank Failure
Trash	☒ None ☐ Measurable amount ☐ Moderate amount blocking inlet/outlet ☐ Severe	
Sediment	☒ No Deposition ☐ Minor (Rare/few) ☐ Moderate deposition ☐ Severe deposition/clogging	
Water Quality	Ponding depth _____ in Algae present? ☐ Yes ☒ No Turbid? ☐ Yes ☒ No Evidence of pollution? (odor, sheen, etc.) ☐ Yes ☒ No Evidence of mosquitos? ☐ Yes ☒ No	

Comments: _____



Figure 1 (Site visit)



Figure 5 B34 Outlet



Figure 5 834 Overview



Figure 4-B34: Settlement Driveway

Permit No.: _____

Report No.: _____

II. Dry Detention Basin

BMP Overview	Comments
☐ BMP could not be located (if marked)	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is restricted or unsafe	
☐ BMP appears to have significant unpermitted fills, changes to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not flowing to BMP as intended, etc.)	
☐ BMP maintenance returns does not match plans	
☑ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal conditions ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Storm Drain ☐ Culvert Pipe ☐ Swale exit ☐ Pipe(s) across ☑ Other: Curb Cut
Inflow conditions	Inlet Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe Inlet clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe Structural problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments: Curb Cut - Inlet

Outlet

Structure at outlet should be present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ N/A

Energy Dissipation present at low flow outlet? ☐ Yes ☑ No

Outlet structures (check all that apply)	☐ Emergency spillway ☐ Weir ☐ Weir ☐ Weir ☐ Channel ☐ Undefined ☐ Other:
Outlet Features (check all that apply)	☐ N/A ☑ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Reinforced Pipe ☐ Baffle / Vane ☐ Pipe to open
Outlet Structure Conditions	Grates at outlet: ☑ None ☐ Mild ☐ Moderate ☐ Severe Outlet Clogging: ☑ None ☐ Mild ☐ Moderate ☐ Severe Structural problems: ☑ None ☐ Mild ☐ Moderate ☐ Severe Signs of leakage: ☑ None ☐ Mild ☐ Moderate ☐ Severe
Outlet Discharge	☐ Surface water ☐ MS4 ☐ Storm Sewer ☐ Other: N/A
Outlet Conditions (outside BMP)	Erosion: ☑ None ☐ Mild ☐ Moderate ☐ Severe Trash: ☑ None ☐ Mild ☐ Moderate ☐ Severe Sedimentation: ☑ None ☐ Mild ☐ Moderate ☐ Severe Other: ☑ None ☐ Mild ☐ Moderate ☐ Severe

Comments: _____

Permit No.: _____

Report No.: _____

Bank Protection	Type	☐ N/A ☐ Riprap ☐ Vegetated Gabion ☐ Riprap Gabion ☐ Vegetated Rip-rap ☐ Other: _____
	Condition	Sediment buildup ☐ None ☐ Mild ☐ Moderate ☐ Severe Preferential routes ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from construction to BMP ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type cover at Risk reach	☐ Trees ☐ Shrubs ☐ Grasses/Forbs ☐ Managed turf %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ☐ Mature, old ☐ ☐ Native Species ☐ Non-Native species ☐ Weed Species ☐ Invasive
	Plant Cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted in embankment or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Riprap is at least 10 ft. wide ☐ Yes ☐ No	
	Riprap has not had 1 ft. (+/-) of settlement or has shifted from original flow path ☐ Yes ☐ No	
	Embankments are free from rills or gullies greater than 6 inches deep with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (>10% affected) ☐ Severe (>25% affected)
	Bank structure	☐ No structure damage ☐ Minor (bank design changed somewhat) ☐ Moderate (risk of failure) ☐ Bank Failure
Trash	☐ None ☐ Minor amount ☐ Moderate amount (creating minor risk) ☐ Severe	
Sediment	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition (creating risk)	
Water Quality	Parking depth: ____ in Algae present? ☐ Yes ☐ No Type(s)? ☐ Yes ☐ No Evidence of pollution? (color, sheen, etc.) ☐ Yes ☐ No Evidence of poor aeration? ☐ Yes ☐ No	

Comments: _____



Figure 1 BSI-Online



Figure 2 Mill Room Bottom



Figure 2 RR Basin Bottom (2)



Figure 4 B35 Overview



Figure 5-E8-Salmasi Inn Channel



Figure 8-035 Southeast Inlet Channel (3)

Monday Main PK Store

Permit No.: _____

Report No.: _____

B. Dry Detention Basin: BMP Main Valley Wetpond Way

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☑ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws unrelated to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not entering BMP as intended, etc.)	
☐ BMP maintenance reform does not match plans	
☑ BMP requires to be visually OK	

Inlet

Inflow is not submerged at normal pool level: ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Sheet Flow ☑ Curb Inlet ☐ Storm drain ☐ Other				
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: Large Debris at inlet will be removed

Outlet

Maintenance outlet structure is meant for low flows, primary spillway, and emergency overflow? ☑ Yes ☐ No

Is any standing water present at inlet or outlet? ☐ Yes ☑ No

Outlet structure (check all that apply)	☑ Emergency spillway ☐ Weir ☐ Weir ☐ Other				
	☐ Channel ☐ Underdrain ☐ Other: _____				
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets)				
	☐ Anti-Vortex device ☐ Perforated Pipe ☐ Weir Notch ☐ Spring open				
Outlet Structure Conditions	Erosion at outlet	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe
Outlet Damage	☑ Surface water ☐ Pipe ☐ BMP: _____ ☐ Storm sewer: _____ ☐ Other: _____				
Outlet Conditions (outside BMP)	Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Vandalism	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Other: _____	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Permit No.: _____

Permit No.: _____

Name		
Embankment	Type	☐ N/A ☐ Earthen ☐ Vegetated riprap ☐ Rubble riprap ☐ Vegetated filter strip ☐ Other: _____
	Erosion	Sediment outflow: ☐ None ☐ Mild ☐ Moderate ☐ Severe Permanent bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from permanent to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type and % of Mat (apply)	☐ Trees ☐ Shrubs ☐ Ground/Herbaceous ☐ Managed Turf ____% Trees ____% Shrubs ____% Herbaceous ____% Turf ☐ Mowing plan ☐ Native Species ☐ Non-Native species ☐ Weed Control ☐ Irrigation
	Plant Issues	☐ No Missing ☐ Periphery Missing ☒ Missing Lot ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted or established on embankments or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Berm is at least 10 ft. wide ☒ Yes ☐ No	
	Berm has 3:1 (H:V) or less inside or less outside slopes ☒ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☒ Yes ☐ No	
	Bank erosion	☒ None ☐ Minor (<20% of bank affected) ☐ Moderate (<15% affected) ☐ Severe (>20% affected)
	Bank structure	☐ No structural damage ☐ Minor (some voids, channel erosion) ☐ Moderate (risk of failure) ☐ Severe Failure
Outlet	☐ None ☐ Monumented ☐ Modified outlet blocking inlet/outlet ☐ Severe	
Sediment	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/no storage	
Water Quality	Pooling depth: _____ in	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollution? (oils, trash, silt)	☐ Yes ☐ No
	Evidence of mosquitos?	☐ Yes ☐ No
Comments:		



Figure 1 (left) Artist



Figure 4-841 Outfall and Manhole



Figure 9.841 Outfall



Figure 4.4#1 Overview

Monday March 24, 2014

2008-PW-SCM00016 - SCM19

Permit No.: _____

Report No.: _____

h Dry Detention Basin [illegible]

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is overgrown or unsafe	
☐ BMP appears to have significant maintenance items required to prevent resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP size/storage volume does not match plans	
☑ BMP appears to be visually OK	

Soils

Inflow is not submerged at normal pool depth ☑ Yes ☐ No

Inflow Type	☐ Open channel ☐ Storm Pipe ☑ Grassy Swale ☐ Curb cut ☐ Riprap apron ☐ Other:				
Inflow conditions	Visible Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Visible clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: Muddy debris marks in the channel at pipe exit. Visible flow path

Outlet

Drainage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ No

Energy dissipation present at low or primary outlet? ☐ Yes ☑ No

Outlet structure (check all that apply): ☑ Emergency spillway ☐ Weir ☐ Weir ☐ Pipe ☐ Grassed ☑ Undefined ☐ Other

Outlet Features (check all that apply): ☐ N/A ☐ Trash Rack (should be present for primary and low flow outlet) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Weir Dams ☐ Riprap apron

Outlet Structure Conditions					
	Evidence of outfall	☐ None	☑ Mild	☐ Moderate	☐ Severe
	Outfall Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☐ None	☐ Mild	☐ Moderate	☐ Severe

Outfall Discharge: ☐ Surface water [illegible] ☐ Well [illegible] ☐ Storm Sewer [illegible] ☐ Other: [illegible]

Outfall Conditions (outside BMP)					
	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other:	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: [illegible]

Permit No.: _____

Report No.: _____

Basin:		
Watercourse	Type	☐ RA ☐ Cienega ☐ Vegetated channel ☐ Flume channel ☐ Vegetated flow zone ☐ Other: _____
	Erosion	Sediment loading: ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from catchment to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type present at this site	☐ Trees ☐ Shrubs ☐ Grasses/herbs ☐ Managed turf ____ %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ☐ Mulches plus ☐ Native species ☐ Non-native species ☐ Wetland species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periodic Mowing ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>75%) ☐ Plant cover not uniform or below 70%
	Woody vegetation is not planted or established on embankments or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Berm has not (1) Widened or has rutted to brighter low color ☐ Yes ☐ No	
	Embankments are less than 15 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion: ☐ None ☐ Minor (<10% of bank affected) ☐ Moderate (<10% affected) ☐ Severe (>25% affected) Bank erosion: ☐ No structural damage ☐ Minor (some damage, maintenance) ☐ Moderate (25% of failure) ☐ Major Failure	
Debris	☐ None ☐ Minor amount ☐ Moderate amount (some clogging) ☐ Severe	
Sediment	☐ No Deposition ☐ Minor Deposition ☐ Moderate deposition ☐ Severe deposition (>25%)	
Water Quality	Ponding depth: ____ in Algae present? ☐ Yes ☐ No Turbid? ☐ Yes ☐ No Evidence of pollution? (oils, slicks, etc.) ☐ Yes ☐ No Evidence of dumping? ☐ Yes ☐ No	

Comments: _____



Figure 1-845 Outfit and Mount



Figure 3-4(E)-1(b)



Figure 3 BB Gun



Figure 4.BSE Outhouse

MMP-PM-RIVERSIDE-00019

Permit No.: _____

Report No.: _____

B. Dry Detention Basin (DB)

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation issues compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sizing/drainage values does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal pool depth: ☐ Yes ☐ No

Inflow Type	☐ Open channel ☐ Sheet Flow ☐ Culvert Pipe ☐ Curb cut ☐ Riprap apron ☐ Other:				
Inflow conditions	rock erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	rock clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☐ Yes ☐ No

Energy dissipation present at exit of primary outlet? ☐ Yes ☐ No

Outlet structure (check all that apply)	☐ Emergency spillway ☐ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other: _____				
Outlet Features (Check all that apply)	☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Weir Opening ☐ Riprap apron				
Outlet Structure Conditions	Erosion at outlet	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☐ None	☐ Mild	☐ Moderate	☐ Severe
Outfall Discharge	☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____ ☐ Other _____				
Outfall Conditions (outside BMP)	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other: _____	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Permit No.: _____

Report No.: _____

Basin

Pretreatment	Type	☐ N/A ☐ Forebay ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other _____
	Function	Sediment buildup ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from pretreatment to BMP ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Forbs/Herbs ☐ Managed turf _____ %Trees _____ %Shrubs _____ %Herbaceous _____ %Turf ☐ Mitigation plan ☐ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted or established on embankments or within 20 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min 2:1 L:W ratio or has baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (>5% affected) ☐ Severe (>25% affected)
	Bank structure	☐ No structural damage ☐ Minor (bank slump, riprap eroded) ☐ Moderate risk of failure ☐ Bank Failure
Trash	☐ None ☐ Minor accumulation ☐ Monitoring and/or trash/debris removal ☐ Severe	
Sediment/ Water Quality	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/clogging	
	Ponding depth _____ in	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollution? (oils, sheen, etc.)	☐ Yes ☐ No
	Evidence of clogging?	☐ Yes ☐ No
Comments		



Figure 1-B3 Northeast bird



Figure 2-301 Outfall



Figure 6 861 Outfall (2)



Figure 4: B51 Outfall



Figure 9-BB1 Overview



Figure 8-001-West field

Permit No.: _____

Report No.: _____

B. Dry Detention Basin

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP size/storage volume does not match plans	
☑ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal pool depth: ☐ Yes ☐ No

Inflow Type	☐ Open channel ☐ Storm Pipe ☐ Culvert Pipe ☐ Curb cut ☐ Trench drain ☐ Other
Inflow conditions	Visible Erosion: ☐ None ☐ Mild ☐ Moderate ☐ Severe
	Visible clogging: ☐ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems: ☐ None ☐ Mild ☐ Moderate ☐ Severe

Comments: [illegible]

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ No

Energy dissipation present at end of primary outlet? ☐ Yes ☑ No

Outlet structure (check all that apply)	☐ Emergency spillway ☐ Riser ☐ Weir ☐ Inlet ☐ Orifice ☐ Underdrain ☐ Other	
Outlet materials (check all that apply)	☐ N/A ☐ Trash rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Riser Dome ☐ Pipeing apron	
Outlet Structure Conditions	Erosion at outlet	☑ None ☐ Mild ☐ Moderate ☐ Severe
	Outlet Clogging	☑ None ☐ Mild ☐ Moderate ☐ Severe
	Structural problems	☐ None ☐ Mild ☐ Moderate ☐ Severe
	Signs of leakage	☐ None ☐ Mild ☐ Moderate ☐ Severe
Outlet Discharge	☐ Surface water ☐ BMP ☑ Storm Sewer ☐ Other [illegible]	
Outfall Conditions (outside BMP)	Erosion	☑ None ☐ Mild ☐ Moderate ☐ Severe
	Trash	☑ None ☐ Mild ☐ Moderate ☐ Severe
	Sedimentation	☑ None ☐ Mild ☐ Moderate ☐ Severe
	Other _____	☐ None ☐ Mild ☐ Moderate ☐ Severe

Comments:

Permit No.: _____

Report No.: _____

Basin		
Pretreatment	Type	☐ N/A ☐ Forebay ☐ Vegetated channel ☐ Rubble channel ☐ Vegetated filter strip ☐ Other _____
	Function	Sediment trapping ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment free flow from pretreatment to BMP ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type present at mid-point	☐ Trees ☐ Shrubs ☐ Grasses/Perennials ☐ Managed turf ____ %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ☐ Mulches only ☐ Native Species ☐ Non-Native species ☐ Weeds ☐ Species ☐ Invasive
	Plant form	☐ No Mowing ☐ Periodic Mowing ☐ Mowed Turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted in embankments or within 25 feet of the emergency overflow pathway ☐ Yes ☐ No	
Grading	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min. 0.1 % Weirs or bio-baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Basin erosion	☐ None ☐ Minor (<10% of basin affected) ☐ Moderate (>10% affected) ☐ Severe (>20% affected)
	Basin structural	☐ No structural damage ☐ Minor (form damage, cosmetic erosion) ☐ Moderate (risk of failure) ☐ Basin Failure
Trash	☐ None ☐ Minor amounts ☐ Moderate amounts (Mowing controlled) ☐ Severe	
Sediment	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/filling	
Water Quality	Forecast depth: ____ in Algae present? ☐ Yes ☐ No Toxins? ☐ Yes ☐ No Evidence of pollutant (color, odors, etc.) ☐ Yes ☐ No Evidence of mosquitoes? ☐ Yes ☐ No	
Comments		



Figure 1 871-Outlet



Figure 2-871-end



Figure 9-671 sheet (2)



Figure 4-B71 Overview



Figure 8-171 Settlement Pressure

2020 PA-BCWRRSS - 020518

Permit No.: _____

Report No.: _____

B. Dry Detention Basin (DD)

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant maintenance item(s) present to affect resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP stormwater volume does not match plans	
☑ BMP appears to be visually OK	

BMA					
Inflow is not submerged at normal pool depth: ☑ Yes ☐ No					
Inflow Type: ☑ Open Channel ☐ Storm Pipe ☑ Closed Pipe ☐ Curb cut ☐ Flume/ditch ☐ Other					
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
Comments: Inlet pipe is covered in debris and sediment					

Outlet					
Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☑ Yes ☐ No					
Energy dissipation present at end of primary outlet? ☐ Yes ☐ No Yes (See Photo)					
Outlet structures (check all that apply)	☑ Emergency spillway ☐ Riser ☐ Weir ☐ Inlet				
	☐ Channel ☐ Outlet pipe ☑ Other Concrete Headwall				
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets)				
	☐ Anti-vortex device ☐ Perforated Pipe ☐ Flow Dome ☐ Flow(s) within				
Outlet Structure Conditions	Erosion at outlet	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe
Outlet Damage	☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____				
	☐ Other _____				
Outlet Cleanliness (outside BMP)	Debris	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☑ Mild	☐ Moderate	☐ Severe
	Sediment/debris	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other	☑ None	☐ Mild	☐ Moderate	☐ Severe
Comments: Trash, leaves, and debris at outlet.					

Permit No. _____

Report No. _____

Basin Entrainment	Type	☐ N/A ☒ Floodplain ☐ Vegetated channel ☐ Ramp channel ☐ Vegetated filter strip ☐ Other
	Features	Sediment overlay: ☒ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass: ☒ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from construction to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Forbs/Herbs ☒ Managed turf %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ☐ Mulched plot ☐ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted or established on embankments or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Berm has min. 2 ft. W area at top surface to enlarge flow path ☐ Yes ☐ No	
	Embankments are less than 15 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (>10% affected) ☐ Severe (>25% affected)
	Bank erosion	☐ No structural damage ☐ Minor (bank sloughing, channel incision) ☐ Moderate (risk of failure) ☐ Bank Failure
Trash	☐ None ☐ Minor scattered ☐ Moderate or piles forming ☐ Severe	
Sediment	☐ No Deposition ☐ Minor Deposition ☐ Moderate deposition ☐ Severe accumulation	
Water Quality	Pooling depth: ____ in Algae present? ☐ Yes ☐ No Turbid? ☐ Yes ☐ No Evidence of pollutants (oils, trash, etc.) ☐ Yes ☐ No Evidence of pollution? ☐ Yes ☐ No	
Comments		



Figure 1-872-Overview



Figure 3-872 Mallard Hen



Figure 5-872-MH (Rivest Inlet and Channel)



Figure 4: 872 Cornell and Chestnut



Figure 9-872-Open



Figure 8 B72 Outcrop



Figure 7 BV2-Southeast Inlet Channel

Wetland Water

Permit No.: _____

Report No.: _____

8. Dry Detention Basin _____

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is destroyed or unsafe	
☐ BMP appears to have significant accumulated flows compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sediment/trash volume does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow is not submerged at normal pool level? ☐ Yes ☐ No

Inflow Type ☐ Open channel ☐ Sheet Flow ☐ Closed Pipe ☐ Curb cut ☐ Roof drain ☐ Other

Inflow conditions					
	Inlet Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Outlet

Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)? ☐ Yes ☐ No

Energy dissipation present at end of primary outlet? ☐ Yes ☐ No

Outlet structures (check all that apply): ☐ Emergency spillway ☐ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other _____

Outlet Features (check all that apply): ☐ N/A ☐ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Riser Dome ☐ Reverse slope

Outlet Structure Conditions					
	Erosion at outlet	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☐ None	☐ Mild	☐ Moderate	☐ Severe

Outfall Discharge: ☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____ ☐ Other _____

Outlet Conditions (upstream BMP)					
	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Vegetation	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other _____	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

[illegible] 6/2015

Permit No.: _____

Report No.: _____

Basin

Pretreatment	Type	☐ N/A ☑ Forebay ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other
	Function	Sediment buildup: ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Backward flow from pretreatment to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Ornamental/exotic ☐ Managed turf ____ %Trees ____ %Shrubs ____ %Herbaceous [illegible] %Turf ☐ Mulched only ☑ Native Species ☐ Non-Native species ☐ Wetland species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Ordinary Mowed ☑ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>10%) ☐ Plant cover not uniform or below 10%
	Woody Vegetation is not planted or established on embankments or within 20 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min 2:1 L:W ratio or has baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Berm erosion: ☑ None ☐ Minor (<5% of berm affected) ☐ Moderate (>15% affected) ☐ Severe (>25% affected)	
	Berm structure: ☑ No structural damage ☐ Minor (bare slump, crosion present) ☐ Moderate (risk of failure) ☐ Bank Failure	
Trash	☐ None ☐ Minor accumulation ☐ Moderate accumulation (blocking inlet/outlet) ☐ Severe	
Sediment	☐ No Degradation ☑ Minor degradation ☐ Moderate degradation ☐ Severe degradation/clogging	
Water Quality	Pooling depth: ____ in Algae present? ☐ Yes ☐ No Turbid? ☐ Yes ☐ No Evidence of pollution? (oils, grease, etc.) ☐ Yes ☐ No Evidence of mosquitoes? ☐ Yes ☐ No	
Comments:	[illegible]	



Figure 1 031 Outlet



Figure 2-B74-Overview



Figure 5-B74: Basin Bottom



Figure 3-874-6882



Figure 5-874 Overview (2)



Figure 6 BM-Segment Pondtop

Monday Week IX 2019

2020-PW-BCWWEEVa 07/19

Permit No.: _____

Report No.: _____

i Constructed Wetland D'Ya Garden Hill

BMP Overview	Comments
☐ BMP would not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant design flaws resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sign/design volume does not match plans	
☑ BMP appears to be visually OK.	

Inlet

Inflow Type	☐ Open channel ☐ Sheet Flow ☐ Closed Pipe ☐ Curb cut ☐ Riprap apron ☐ Other				
Inflow conditions	Inlet Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
Forebay	Present at all major inflow points? ☐ Yes ☐ No				
	Berms present to maintain sediment depth? ☐ Yes ☐ No				
	Sediment buildup	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Pretreatment bypass	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sediment flow from pretreatment to BMP	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Outlet

Outlet structures (check all that apply)	☑ Emergency spillway ☐ Pipe ☐ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☑ Other: Curb cut				
	Are outlet orifices at least 0.5 inches in diameter and protected from clogging? ☐ Yes ☐ No				
Outlet Structure Conditions	Erosion at outlet	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Is Outlet located in "Open Water" area of CW? ☐ Yes ☑ No				
Outlet Discharge	☐ Receiving water _____ ☐ BMP _____ ☐ Storm Sewer _____ ☑ Other _____				
Outlet Conditions (outside BMP)	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other	☐ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Permit No.: _____

Report No.: _____

Wetland		
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Emergent/ herbaceous ☐ Managed turf ☐ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive ____% Trees ____% Shrubs ____% Herbaceous ____% Turf ____% Wetland Species ☐ Mulch/no plant
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Plant health	☐ Healthy/ Established ☐ Lightly stressed ☐ Stressed ☐ Dead
	Zones of Vegetation Present (check all that apply):	☐ Open Water (Wet – 6 ft. deep) ☐ Emergent (up to 18 in deep) ☐ Low Marsh (portion of emergent 6 – 8 inches deep) ☐ High Marsh (portion of emergent up to 6 in deep) ☐ Unwanted Storage (periodic inundation during storm events) ☐ Buffer (area outside mac water elevation)
Structure	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (~5% affected) ☐ Severe (>25% affected)
	Side slopes	☐ 5:1 ☐ 4:1 ☐ 3:1 ☐ Steeper than 3:1
	Bank stability	☐ No structural damage ☐ Minor (bank slump, channel erosion) ☐ Moderate (risk of failure) ☐ Bank Failure
	Are safety hazards present for any areas deeper than 4 feet? ☐ Yes ☐ No	
Trash	☐ None ☐ Moderate/ Some ☐ Dominate and/or making inundation ☐ Severe	
Water Quality	Is water present at time of inspection? ☐ Yes ☐ No *(there should be a permanent water surface in deeper areas)*	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollution? (odor, sheen, etc)	☐ Yes ☐ No
	Evidence of mosquitos?	☐ Yes ☐ No

Comments: _____



Figure 1-079-Basin Bottom



Figure 3-87b Mouth oWet Channel



Figure 8: B79 Outfall



Figure 4.8 North Main Channel

Permit No.: _____

Report No.: _____

1. Constructed Wetland _____

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant design flaws resulting in reduced effectiveness	
☐ Drainage area issues (trash debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sediment/storage volume does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow Type	☐ Open channel ☐ Sheet Flow ☐ Closed Pipe ☐ Curb cut ☐ Riprap apron ☐ Other:				
Inflow conditions	Inlet Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
Forebay	Present at all major inflow points? ☐ Yes ☐ No				
	Marker present to indicate sediment depth? ☐ Yes ☐ No				
	Sediment buildup	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Permanent pool	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sediment flow from pretreatment to BMP	☐ None	☐ Mild	☐ Moderate	☐ Severe
Comments					

Outlet

Outlet structures (check all that apply)	☐ Emergency spillway ☐ Pipe ☐ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other:				
Are outlet orifices at least 3 inches in diameter and protected from clogging? ☐ Yes ☐ No					
Outlet Structure Conditions	Erosion at outlet	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☐ None	☐ Mild	☐ Moderate	☐ Severe
Is Outlet located in "Open Water" area of CW? ☐ Yes ☐ No					
Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☐ Storm sewer _____ ☐ Other _____				
Outlet Conditions (outside BMP)	Erosion	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☐ None	☐ Mild	☐ Moderate	☐ Severe
	Other: _____	☐ None	☐ Mild	☐ Moderate	☐ Severe
Comments					

Permit No.: _____

Report No.: _____

Wetland		
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Perennials ☐ Managed turf ☐ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive ____ %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ____ % Wetland Species ☐ Mulched plots
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed (all) ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Plant health	☐ Healthy/Undisturbed ☐ Slightly stressed ☐ Stressed ☐ Dead
	Zones of Vegetation Present (check all that apply)	☐ Open Water (18in – 6 ft. deep) ☐ Emergent (up to 18 in deep) ☐ Low Marsh (portion of emergent 6 – 9 inches deep) ☐ High Marsh (portion of emergent up to 6 in deep) ☐ Transitional Slopes (periodic inundation during storm events) ☐ Buffer (area outside max water elevation)
Structure	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (~10% affected) ☐ Severe (>25% affected)
	Side slopes	☐ 5:1 ☐ 4:1 ☐ 3:1 ☐ Steeper than 3:1
	Bank structure	☐ No structural damage ☐ Minor (bank slump, channel erosion) ☐ Moderate (risk of failure) ☐ Bank Failure
	Are salty leachate streams or any areas denser than it had?	☐ Yes ☐ No
Trash	☐ None ☐ Manufactured ☐ Moderate and/or blocking channel ☐ Severe	
Water Quality	Is water present at time of inspection?	☐ Yes ☐ No
	(there should be a permanent water surface in deeper areas)	
	Algae present?	☐ Yes ☐ No
	Turbid?	☐ Yes ☐ No
	Evidence of pollution? (oils, sheen, etc)	☐ Yes ☐ No
	Evidence of misuse?	☐ Yes ☐ No

Comments: _____



Figure 1 BBD Basal Bottom



Figure 3: BBD (mid



Figure 3-888-Outfall



Figure 4-BMP Outfall Channel



Figure 3-880-Outlet



Figure 6: BBO Overview

SMO FM-BIOWER16 6/2016

Permit No.: _____

Report No.: _____

0 Wet Pond N1 Lakeview Apts

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws based on plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP maintenance review does not match plans	
☐ BMP appears to be visually OK	

Inlet

Inflow Type	☐ Open Channel ☐ Sheet Flow ☑ Closed Pipe ☐ Curb cut ☐ Flume open ☐ Other				
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: [illegible]

Outlet

Outlet structure (check all that apply)	☑ Emergency spillway ☑ Pipe ☐ Weir ☑ Weir ☐ Weir				
	☐ Channel ☐ Instream ☐ Other:				
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack ☐ Anti-vortex device ☐ Perforated Pipe				
	☐ Riser Basin ☐ Riprap apron				
Outlet Structure Conditions	Erosion at outlet	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe

Is Outlet located in "Open Water" area of Constructed Wetland? ☑ Yes ☐ No

Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____				
	☐ Other				
Outlet Conditions (compare BMP)	Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Other	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments:

Permit No.: _____

Report No.: _____

Basin		
Postconstruct	Type	☐ BA ☐ Forebay ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated flow strip ☐ Other
	Condition	Sediment buildup: ☐ None ☐ Mild ☐ Moderate ☐ Severe Postconstruct bypass: ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from preconstruct to BMP: ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/forbs/annuals ☐ Managed turf %Trees ____ %Shrubs ____ %Herbaceous ____ %Turf ☐ Matches plan ☐ Native species ☐ Non-native species ☐ Wetland species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed full ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted or established on embankments or within 15 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min 3:1 L:W ratio or has baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion	☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (>5% affected) ☐ Severe (>25% affected)
	Bank structure	☐ No structural damage ☐ Minor (some slump / rotational erosion) ☐ Moderate (risk of failure) ☐ Bank Failure
Trash/ Sediment	☐ None ☐ Minor amount(s) ☐ Moderate amount blocking inlet/outlet ☐ Severe ☐ No Vegetation ☐ Minor Infestation ☐ Moderate Infestation ☐ Severe Infestation/Loss	
Water Quality	Pooling depth: ____ ft Algae present? ☐ Yes ☐ No Turbid? ☐ Yes ☐ No Evidence of pollution? (odor, sheen, etc) ☐ Yes ☐ No Evidence of mosquitos? ☐ Yes ☐ No	
Comments		



Figure 1 (P1 title)



Figure 3.P1 Cyclist



Figure 9 P1 Outlet Vault and Overflow



Figure 4-11 Overview



Figure 5-P1 Overview (2)

2000 FM-BCW0031e 8/2019

Permit No.: _____

Report No.: _____

6. Wet Pond [illegible]

BMP Overview	Comments
☐ BMP could not be located for inspection	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant impoundment loss, berm or plans resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP stormwater volume does not match plans	
☐ BMP appears to be mostly OK	

Inlet

Inflow Type	☐ Open channel ☐ Sheet Flow ☑ Closed Pipe ☐ Curb cut ☐ Riprap apron ☐ Other				
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: _____

Outlet

Outlet structure (check all that apply)	☑ Emergency spillway ☑ Pipe ☐ Weir ☐ Valve ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other:				
Outlet Features (check all that apply)	☐ N/A ☐ Trash Rack ☐ Anti-vortex device ☐ Perforated Pipe ☐ Weir Shrink ☐ Riprap apron				
Outlet Structure Conditions	Erosion at outfall	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe

Is Outlet located in "Open Water" zone of Guidelines Wetland? ☑ Yes ☐ No

Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☑ Storm Sewer _____ ☐ Other				
Outlet Conditions (outside BMP)	Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Sedimentation	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Other:	☑ None	☐ Mild	☐ Moderate	☐ Severe

Comments: [illegible]

Permit No.: _____

Report No.: _____

Basin		
Perennial	Type	☐ N/A ☐ Pumping ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other:
	Function	Sediment buildup ☒ None ☐ Mild ☐ Moderate ☐ Severe Pollutant(s) buildup ☒ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from pretreatment to BMP ☒ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Perennials ☐ Managed turf % Trees ____ % Shrubs ____ % Herbaceous ____ % Turf ☒ Mulches plant ☒ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Regularly Mowed ☒ Mowed turf ☐ Large Areas of Bare Soil ☒ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below (70%
	Woody Vegetation is not planted or established on embankments or within 25 feet of the emergency overflow walkway ☐ Yes ☐ No	
Erosion	Basin is at least 10 ft. wide ☐ Yes ☐ No	
	Basin has min 3:1 L:W ratio or has baffles to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 10 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion	☒ None ☐ Minor (<5% of bank affected) ☐ Moderate (>15% affected) ☐ Severe (>25% affected)
	Bank structure	☒ No structural damage ☐ Minor (bank slump, localized erosion) ☐ Moderate (risk of failure) ☐ Bank Failure
Trash/ Sediment	☒ None ☐ Minor accretion ☐ Moderate and/or blocking inlet/outlet ☐ Severe ☐ No Deposition ☒ Minor deposition ☐ Moderate deposition ☐ Severe deposition/clogging	
Water Quality	Ponding depth 2 ½ in	
	Algae present?	☐ Yes ☒ No
	Turbid?	☐ Yes ☒ No
	Evidence of pollution? (odor, sheen, etc)	☐ Yes ☒ No
	Evidence of mosquitos?	☐ Yes ☒ No
Comments:		



Figure 1 (p2 title)



Figure 2-F2-Chassi



Figure 3 Pit Overview



Figure 4-P2 Overview (3)

3800-FM-BCW0531a 6/2019

Permit No.: _____

Report No.: _____

B. Dry Detention Basin

BMP Overview	Comments
☐ BMP could not be located by inspector	
☐ BMP appears to have been removed from site	
☐ BMP appears to have been modified resulting in reduced effectiveness	
☐ Access to BMP is obstructed or unsafe	
☐ BMP appears to have significant implementation flaws compared to plans, resulting in reduced effectiveness	
☐ Drainage area issues (trash, debris, erosion, water not draining to BMP as intended, etc.)	
☐ BMP sediment storage volume does not match plans	
☑ BMP appears to be visually OK	

Inlet					
Inflow is not concentrated at normal rain event	☑ Yes ☐ No				
Inflow Type	☐ Open Channel ☐ Sheet Flow ☑ Closed Pipe ☐ Curb cut ☐ Flume apron ☐ Other				
Inflow conditions	Inlet Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Inlet clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
Comments:					

Outlet					
Multistage outlet structure present (low flow outlet, primary outlet, and emergency overflow)?	☑ Yes ☐ No				
Energy dissipation present at end of primary outlet?	☐ Yes ☐ No				
Outlet structures (Check all that apply)	☑ Emergency spillway ☑ Riser ☐ Weir ☐ Inlet ☐ Channel ☐ Underdrain ☐ Other				
Outlet Features (check all that apply)	☑ NA ☐ Trash Rack (should be present for primary and low flow outlets) ☐ Anti-vortex device ☐ Perforated Pipe ☐ Riser Drain ☐ Flume apron				
Outlet Structure Conditions	Erosion at outlet	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Outlet Clogging	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Structural problems	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Signs of leakage	☑ None	☐ Mild	☐ Moderate	☐ Severe
Outlet Discharge	☐ Surface water _____ ☐ BMP _____ ☐ Storm Sewer _____ ☐ Other				
Outlet Conditions (outside BMP)	Erosion	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Trash	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Sediment/debris	☑ None	☐ Mild	☐ Moderate	☐ Severe
	Other _____	☑ None	☐ Mild	☐ Moderate	☐ Severe
Comments:					

Permit No.: _____

Report No.: _____

Swale		
Pretreatment	Type	☐ N/A ☐ Forebay ☐ Vegetated channel ☐ Riprap channel ☐ Vegetated filter strip ☐ Other: _____
	Function	Sediment buildup ☐ None ☐ Mild ☐ Moderate ☐ Severe Pretreatment bypass ☐ None ☐ Mild ☐ Moderate ☐ Severe Sediment flow from pretreatment to BMP ☐ None ☐ Mild ☐ Moderate ☐ Severe
Vegetation	Type (check all that apply)	☐ Trees ☐ Shrubs ☐ Grasses/Perennials ☐ Managed turf _____ %Trees _____ %Shrubs _____ %Herbaceous _____ %Turf ☐ Matches plan ☐ Native Species ☐ Non-Native species ☐ Wetland Species ☐ Invasive
	Plant cover	☐ No Mowing ☐ Periphery Mowed ☐ Mowed turf ☐ Large Areas of Bare Soil ☐ Uniform Plant Cover (>70%) ☐ Plant cover not uniform or below 70%
	Woody Vegetation is not planted in easements or within 25 feet of the emergency overflow spillway ☐ Yes ☐ No	
Structure	Berm is at least 10 ft. wide ☐ Yes ☐ No	
	Berm has min 3:1 L:W ratio or has baffle to lengthen flow path ☐ Yes ☐ No	
	Embankments are less than 15 ft high with slopes no steeper than 3:1 ☐ Yes ☐ No	
	Bank erosion ☐ None ☐ Minor (<5% of bank affected) ☐ Moderate (>10% affected) ☐ Severe (>20% affected)	
	Bank structure ☐ No structural damage ☐ Minor (rank slump, channel erosion) ☐ Moderate (risk of failure) ☐ Bank Failure	
Trash	☐ None ☐ Moderate amount ☐ Moderate amount blocking inlet/pipe ☐ Severe	
Sediment	☐ No Deposition ☐ Minor deposition ☐ Moderate deposition ☐ Severe deposition/clogged	
Water Quality	Ponding depth _____ in Algae present? ☐ Yes ☐ No Turbid? ☐ Yes ☐ No Evidence of pollution? (color, sheen, etc.) ☐ Yes ☐ No Evidence of mosquitos? ☐ Yes ☐ No	
Comments: _____		



Figure 1 Pit Basin Bottom



Figure 8 (a) (iii)



Figure 3-PH-Outfall



Figure 4: Pit Outfall Channel



Figure 5-P4 Outlet



Figure 6-PA Overview

ATTACHMENT F: Proposed BMP Pollutant Reductions

Dallas Borough Proposed BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
P1	Wet Pond/Wetland	7.74	5.66	3.56	3.39	0.00	0.00	11630.70	25.45	5.94	60%	20%	45%	6978.42	5.09	2.67
P2	Wet Pond/Wetland	3.45	0.00	0.00	1.51	0.00	0.00	1691.25	2.68	0.79	60%	20%	45%	169.13	0.13	0.08
														7147.54	5.22	2.75

Dallas Township Proposed BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
B1	Dry Extended Detention Basin	6.89	2.38	0.00	5.29	0.00	0.00	5833.85	10.93	2.89	50%	20%	20%	2916.92	1.64	0.29
B16	Dry Extended Detention Basin	2.21	0.09	0.00	0.00	0.00	0.00	935.06	1.61	0.46	50%	20%	20%	467.53	0.24	0.05
B33	Dry Extended Detention Basin	11.27	3.45	0.00	0.12	0.00	0.00	7027.67	14.27	3.61	50%	20%	20%	3513.83	2.14	0.36
B34	Dry Extended Detention Basin	4.51	1.76	0.00	0.76	0.00	0.00	3279.83	6.71	1.68	50%	20%	20%	1639.92	1.01	0.17
B35	Dry Extended Detention Basin	4.89	0.39	0.00	1.00	0.00	0.00	2457.46	4.23	1.20	50%	20%	20%	1228.73	0.63	0.12
B41	Dry Extended Detention Basin	1.10	0.12	0.00	0.00	0.00	0.00	518.34	0.94	0.26	50%	20%	20%	259.17	0.14	0.03
B41T	Treated Remainder from 42							466.51	0.89	0.23	50%	20%	20%	233.25	0.13	0.02
B45	Dry Extended Detention Basin	0.88	0.81	0.00	0.00	0.00	0.00	948.77	2.20	0.51	50%	20%	20%	474.38	0.33	0.05
B51	Dry Extended Detention Basin	1.32	1.38	0.22	0.00	1.53	0.00	2187.78	6.54	2.00	50%	20%	20%	1093.89	0.98	0.20
B7	Dry Extended Detention Basin	2.31	3.44	0.89	0.00	0.00	0.00	4401.67	10.50	2.35	50%	20%	20%	2200.84	1.57	0.24
P3	Rain Garden	0.94	0.00	0.00	0.00	0.00	0.00	368.09	0.60	0.18	80%	70%	75%	294.47	0.42	0.13
P4	Wet Pond/Wetland	7.34	0.09	0.00	0.16	0.00	0.00	2980.42	4.94	1.45	60%	20%	45%	1788.25	0.99	0.65
P4S	Bioswale	19.99	1.01	0.00	0.00	0.00	0.00	8571.35	14.84	4.22	80%	70%	75%	6857.08	10.39	3.17
														22968.28	20.62	5.47

Kingston Township Proposed BMP Calculations

NAME	BMP Type	LD_Mixed	MD_Mixed	HD_Mixed	Forrest	Hay_Past	Wetlands	TSS_Total	TN_Total	TP_Total	TSS Effectiveness	TN Effectiveness	TP Effectiveness	TSS Reduction	TN Reduction	TP Reduction
B31	Dry Extended Detentio	8.97	1.55	0.00	0.00	0.06	0.48	4704.41	9.24	2.35	50%	15%	10%	2352.20	1.39	0.23
B71	Dry Extended Detentio	7.24	0.58	0.00	0.00	0.00	0.00	3195.49	5.81	1.54	50%	15%	10%	1597.74	0.87	0.15
B72	Dry Extended Detentio	9.00	1.00	0.00	9.43	0.00	0.00	6504.32	10.69	3.07	50%	15%	10%	3252.16	1.60	0.31
B74	Dry Extended Detentio	7.55	0.22	0.00	0.00	0.00	0.00	3049.06	5.28	1.45	50%	15%	10%	1524.53	0.79	0.15
B76	Dry Extended Detentio	12.86	2.26	0.00	0.00	0.00	0.00	6581.23	12.78	3.24	50%	15%	10%	3290.62	1.92	0.32
B79	Dry Extended Detentio	12.17	0.00	0.00	0.00	0.00	0.00	4644.69	7.79	2.19	50%	15%	10%	2322.34	1.17	0.22
B80	Dry Extended Detentio	31.86	0.94	0.00	10.89	0.00	0.00	15545.49	25.65	7.32	50%	15%	10%	7772.74	3.85	0.73
														22112.34	11.58	2.12

BMP ID	BMP Type	2018 PRP TSS Reduction (lbs/yr)	Project Notes
B7	Dry Extended Detention Basin	3,759.72	
B8	Dry Extended Detention Basin	6,206.61	BMP would provide less credits than previously estimated due to parsing
B13	Dry Extended Detention Basin	3,046.30	
B38	Dry Extended Detention Basin	288.82	Not cost effective for credit provided- moved to Alternative Project list
B63	Dry Extended Detention Basin	808.46	Not cost effective for credit provided- moved to Alternative Project list
B75	Dry Extended Detention Basin	8,757.54	Easement acquisition and utility positioning issues - moved to Alternative Project list
B79	Dry Extended Detention Basin	6,066.03	
B80	Dry Extended Detention Basin	7,572.33	
P1	Dry Extended Detention Basin	12,453.12	
P2	Dry Extended Detention Basin	3,760.33	
P3	Dry Extended Detention Basin	1,628.37	
P4	Dry Extended Detention Basin	12,566.03	
P5	Vegetated Open Channel	13,228.31	DEP not accepting of alternative methods proposed; project no longer needed to fullfil requirement for current permit cycle
P6	Vegetated Open Channel	19,743.81	Determined Water of the Commonwealth by DEP therefore cannot complete BMP project here
P7	Dry Extended Detention Basin	222.81	Project is no longer needed to fulfill permit requirement during current permit cycle
P8	Vegetated Open Channel	881.21	Project is no longer needed to fulfill permit requirement during current permit cycle
P9	Foreset Buffer	251.91	Same location as BMP-SR9
P11	Forest Buffer	899.66	Golf course - cannot install buffer in fairway
P13	Dry Extended Detention Basin	18,224.19	Owner request to stop work immediately
P14	Dry Extended Detention Basin	8,003.99	Permitting issues due to wetlands at outfall
P15	Forest Buffer	2,535.82	Same location as BMP-SR15
P18	Permeable Pavement	510.70	Project is no longer needed to fulfill permit requirement during current permit cycle
P19	Dry Extended Detention Basin	526.94	Project is no longer needed to fulfill permit requirement during current permit cycle
P20	Dry Extended Detention Basin	337.58	Project is no longer needed to fulfill permit requirement during current permit cycle
P21	Dry Extended Detention Basin	2,760.02	Project is no longer needed to fulfill permit requirement during current permit cycle
P22	Vegetated Open Channel	17,461.90	Cannot install proposed BMP at this location due to open channels throughout neighborhood
P23	Vegetated Open Channel	4,975.02	Land acquisition issues - moved to Alternative Project list
P24	Vegetated Open Channel	12,977.02	Cannot install proposed BMP at this location due to open channels throughout neighborhood
SB9	Stream Restoration	15,708.00	Established floodplain, buffer, and streambanks look healthy; no reason to perform stream restoration
SB10	Stream Restoration	17,952.00	Project is no longer needed to fulfill permit requirement during current permit cycle
SB11	Stream Restoration	14,810.40	Buffer would be nearly impossible without significant changes to golf course
SB12	Stream Restoration	17,952.00	
SB15	Stream Restoration	62,832.00	Significantly close to neighboring homes with no room for a buffer. Owners and access will also be an issue.
SB16	Stream Restoration	17,503.00	Wetland/lowland drainage area rather than a stream; restoration would certainly disturb healthy, existing wetlands while modifying what appears to be only an intermittent stream.
SB17	Stream Restoration	67,320.00	

Project is Included in 2024 PRP Selected Project List

Project is Not Included in 2024 PRP Selected Project List

ATTACHMENT F: BMP P1 & P2 Plans

Basin Drainage Area
BMPs P1 & P2

Dallas Area Municipal Authority

Luzern County, PA



Legend

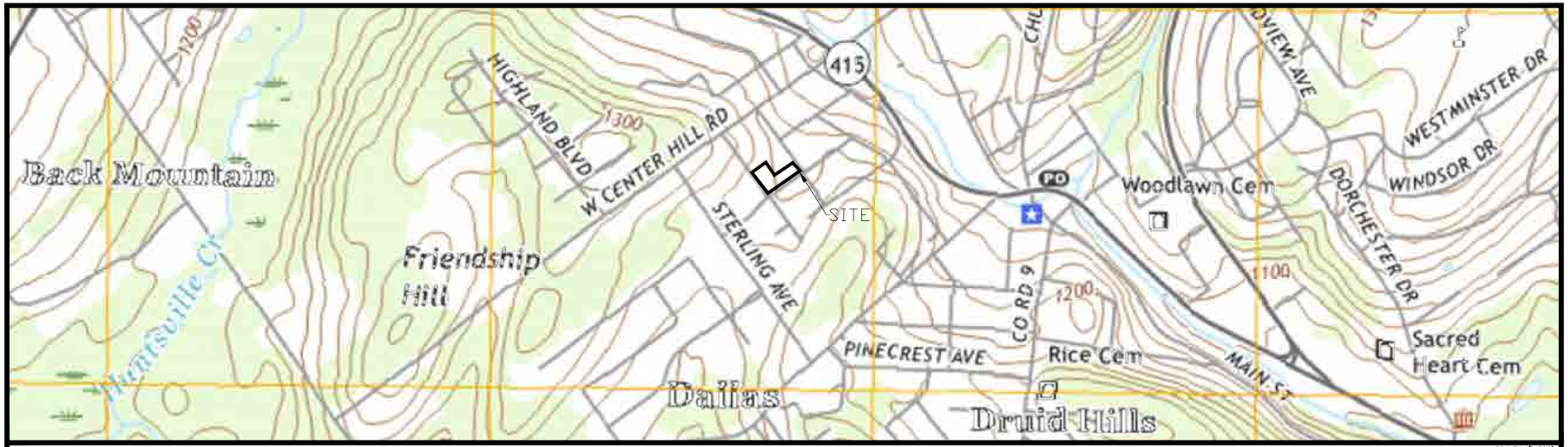
- Existing BMP
- Selected PRP BMPs
- PA Historic Streams
- Parcel Area
- Outfall
- Outlet
- Inlet
- Manhole
- Headwall
- EndWall
- StormwaterPipe
- Swale
- BMP
- Contour Lines 10ft
- Pa State Roads
- Municipal Boundaries
- HUC12 Watershed
- Existing BMP Drainage Area
- Proposed PRP BMP Drainage Area
- Municipality Owned Roads
- NHD Waterbodies
- NHD Streams
- NWI Wetlands
- 2010 Urbanized Area

0 350 700 Feet

1:8,000

CONSTRUCTION PLANS
FOR
DALLAS AREA MUNICIPAL AUTHORITY
SUSQUEHANNA AVENUE WET POND

DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA



SCALE: 1"=500'

LOCATION MAP

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING FEATURES AND REMOVALS PLAN
3	GRADING & DRAINAGE PLAN
4	STORM SEWER PROFILES AND SPECIAL STRUCTURES
5	EROSION AND SEDIMENTATION CONTROL PLAN
6	CONSTRUCTION DETAILS

SITE & ADJACENT PROPERTY OWNER'S LIST		
PARCEL No.	OWNER OF RECORD	DEED BK, PG
11-D8SW4-003-012	BOROUGH OF DALLAS (SITE)	DEED BOOK 2041, PAGE 307
11-D8SW4-003-013	BOROUGH OF DALLAS (SITE)	DEED BOOK 2041, PAGE 307
11-D8SW4-002-009	DALLAS BORO PLAYGROUND (SITE)	DEED NOT FOND
11-D8SW4-003-011	ROBBINS, MEGHAN	DEED BOOK 3009, PAGE 38690

OWNER:
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708-9603

UTILITY USER LIST
ACT NUMBER 287 OF 1974 AS AMENDED

DALLAS BOROUGH
25 MAIN ST
DALLAS, PA 18612
CONTACT: TRACEY CARR, MANAGER
PHONE: (570) 675-1389
EMAIL: TCARR@DALLASBOROUGH.ORG

DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708
CONTACT: THOMAS MAYKA
PHONE: (570) 696-1133 x309
EMAIL: TMAYKA@DAMAONLINE.ORG

UGI UTL WILKES BARRE
511 E NORTHAMPTON ST
WILKES BARRE, PA 18702
PHONE: (800) 276-2722

SUEZ WATER PENNSYLVANIA INC
4636 SOMERTON ROAD
TREVOSE, PA 19053
PHONE: (888) 299-7292

Pennsylvania 811
ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20192043215 WAS PLACED FOR DESIGN PURPOSES.

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NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
DATE ##/##/2###

FINAL CONSTRUCTION PLANS

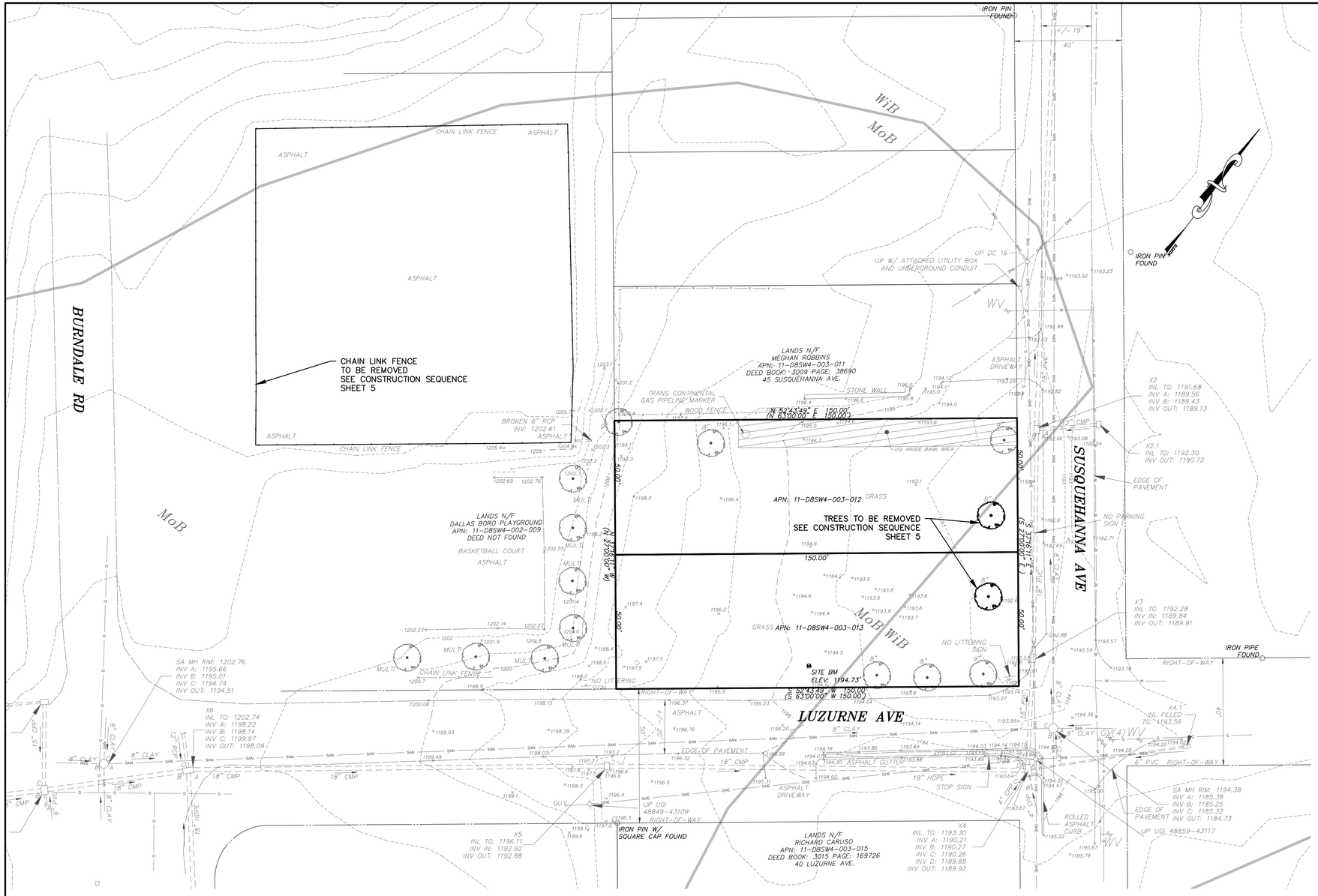
SUSQUEHANNA AVENUE WET POND
KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

COVER SHEET

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DESIGNED BY	DRAWING
DP	COV-1
CHECKED BY	
ZHR	
DRAWN BY	SHEET
DP	1
DATE	OF 6
08/4/2020	
SCALE	
1" = 10'	
PROJ. NO.	
DAMA00006	

F8



GENERAL DEMOLITION NOTES

1. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS IDENTIFIED BY THE CONTRACTOR SHALL BE REPORTED TO THE ENGINEER IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF ACTIVITY.
2. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS AND OTHER FEDERAL, STATE, AND LOCAL REGULATIONS, TO ENSURE THE PUBLIC AND CONTRACTOR SAFETY.
3. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
   - A. ENSURE COPIES OF ALL PERMITS AND APPROVALS ARE ON SITE FOR REVIEW.
   - B. THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
   - C. ALL EXISTING UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE, SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
   - D. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING DEMOLITION ACTIVITIES.
   - E. FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND RELOCATION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   - F. COORDINATE WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT OF THE AFFECTED PARTIES.
   - G. A COMPLETE INSPECTION FOR CONTAMINANTS, BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL, SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS SOLELY THE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
4. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES AND ANY OTHER IMPROVEMENTS TO REMAIN ON OR OFF SITE.
5. IN ABSENCE OF SPECIFIC SPECIFICATION, THE CONTRACTOR SHALL PERFORM EARTH MOVING ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S GEOTECHNICAL ENGINEER.
6. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
7. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH: THE "MANUAL ON UNIFORM TRAFFIC CONTROL," AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHT-OF-WAYS.
8. CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
9. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
10. USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
11. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
12. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
13. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL; THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
14. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL OFFSITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND LAWS.
15. THE CONTRACTOR SHALL COORDINATE SERVICE SHUTOFF AND DISCONNECT/REMOVAL PROCEDURES WITH EACH RESPECTIVE UTILITY COMPANY FOR THE EXISTING UTILITIES SHOWN TO BE REMOVED.
16. THE DEMOLITION PLAN IS NOT INTENDED TO SHOW EROSION CONTROL MEASURES. FOR SUCH GUIDELINES AND DETAILS, SEE THE EROSION AND SEDIMENT CONTROL PLAN AND DETAILS.

LEGEND

EXISTING		EXISTING	
	TRACT BOUNDARY		WOODED LIMITS
	PROPERTY LINE		TREES
	RIGHT-OF-WAY		STORM SEWER
	EASEMENT		SANITARY SEWER
	EDGE OF PAVEMENT	W	POTABLE WATER
	CURB	G	NATURAL GAS
	SIDEWALK	E	ELECTRIC
	BUILDINGS	OH	TELEPHONE LINE
	CONCRETE MONUMENTS	T	SOIL ID'S
	IRON PINS	AbA	SOIL TYPE LINES
	FENCE LINE		
	LIGHT POLES		
	UTILITY POLES		
	SIGNS		
102	INTERMEDIATE CONTOURS		
100	INDEX CONTOURS		
× 102.6	SPOT ELEVATIONS		

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	VEGETATION TBR
TEXT	FEATURE TBR
TEXT	DEMO NOTE
	BUILDING TBR
	IMPERVIOUS TBR

Pennsylvania 811 — ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20192043215 WAS PLACED FOR DESIGN PURPOSES.

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
##/##/2### DATE

FINAL CONSTRUCTION PLANS

SUSQUEHANNA AVENUE WET POND
KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

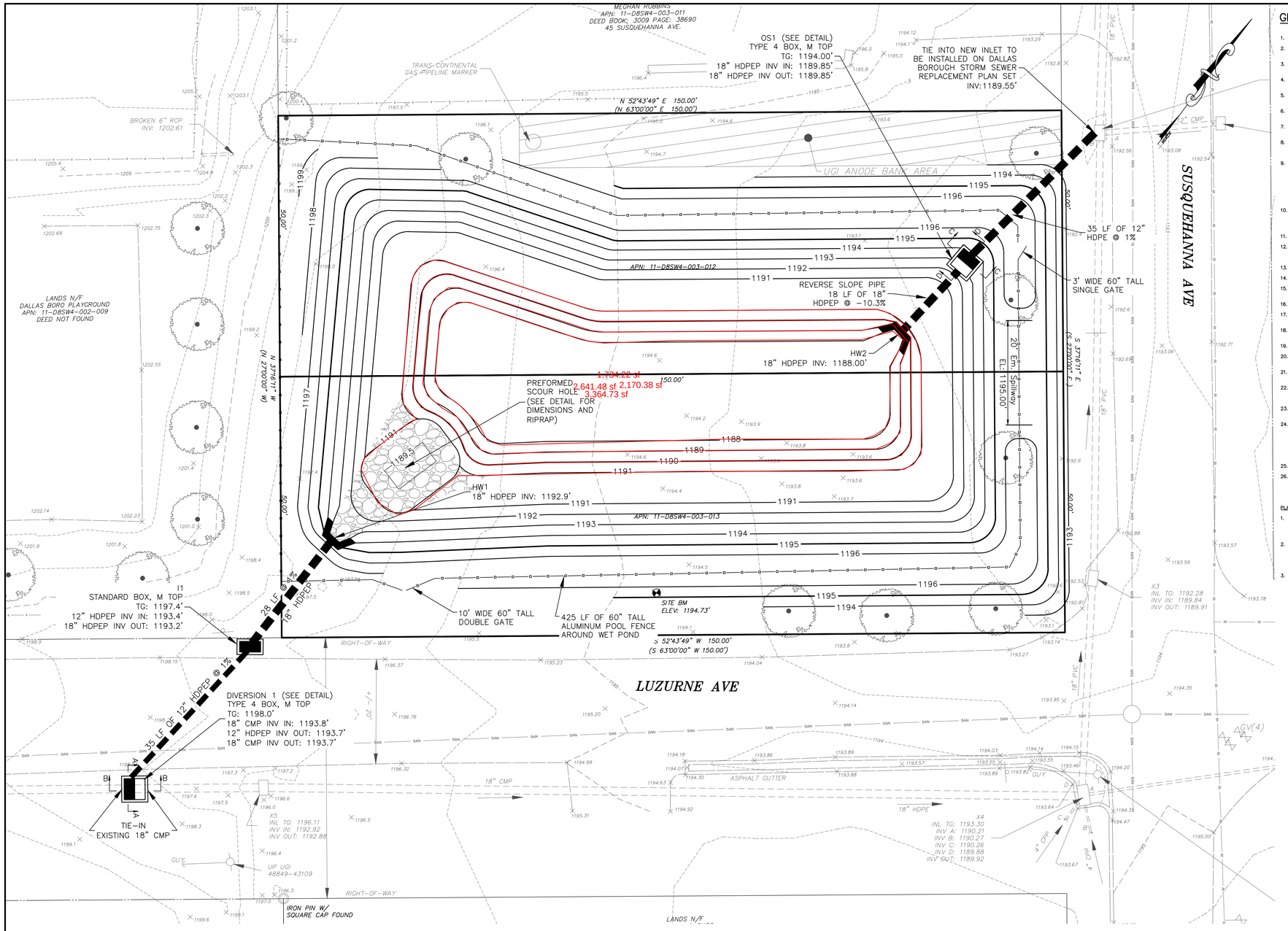
EXISTING FEATURES AND REMOVALS PLAN

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DESIGNED BY	DP
CHECKED BY	ZHR
DRAWN BY	DP
DATE	08/4/2020
SCALE	1" = 20'
PROJ. NO.	DAMA00006
DRAWING	DEM-1
SHEET	2 OF 6

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GRADING NOTES

1. VERTICAL DATUM IS NAVD 1988 AND ESTABLISHED BY OBSERVATIONS REFERENCED TO THE NGS CORS NETWORK.
2. THE MINIMUM SLOPE IN GRASSED AREAS SHALL NOT BE LESS THAN 2% AND THE MINIMUM IN PAVED AREAS SHOULD NOT BE LESS THAN 1%.
3. RUNOFF FROM IMPERVIOUS AREAS SHALL NOT BE DIRECTED INTO THE SANITARY SEWER OR ONTO ADJACENT PROPERTIES. WHERE POSSIBLE, RUNOFF SHALL BE DIRECTED TO THE NEAREST PUBLIC RIGHT-OF-WAY OR STORM WATER CONVEYANCE SYSTEM.
4. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
5. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE / RECORD PLAN WILL SUPERSEDE IN ALL CASES. THE ENGINEER OF RECORD MUST BE IMMEDIATELY NOTIFIED IN WRITING OF ANY CONFLICTS.
6. THE CONTRACTOR SHALL BE REQUIRED TO SECURE ALL NECESSARY PERMITS (INCLUDING DEP, ETC.) FOR ALL OFF-SITE HAUL AND/OR BORROW SITES. CONTRACTOR SHALL SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING WORK.
7. EXISTING INLETS AND STORM SEWER SHOWN TO BE FILLED W/DEBRIS SHALL BE CLEANED AND FLUSHED. NEW INLETS AND PIPES SHALL BE CHECKED FOR SILT/DEBRIS AFTER CONSTRUCTION AND FLUSHED/CLEANED IF NECESSARY.
8. DEPTH OF EXISTING UTILITIES IN PORTIONS OF THE SITE ARE UNKNOWN. WHERE EXISTING UTILITIES ARE TO REMAIN AND ARE FOUND TO HAVE INADEQUATE GROUND COVER AFTER FINAL PROPOSED GRADES HAVE BEEN ESTABLISHED, THE DESIGN ENGINEER SHALL BE CONTACTED IMMEDIATELY AND PRIOR TO FURTHER CONSTRUCTION ACTIVITIES IN THE AREA OF SAID CONFLICT.
9. ALL DESIGNERS AND CONTRACTORS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED TO COMPLY WITH THE REQUIREMENTS OF PENNSYLVANIA ACT 287, LOCATION OF EXISTING AND PROPOSED UNDERGROUND UTILITIES AND FACILITIES SHOWN ON THE DRAWINGS HAVE BEEN DEVELOPED FROM INFORMATION MADE AVAILABLE. COMPLETENESS AND ACCURACY OF LOCATION AND DEPTH OF UTILITIES AND FACILITIES CANNOT BE GUARANTEED. THE CONTRACTOR IS TO VERIFY THE DEPTH AND LOCATION OF ALL UTILITIES AND FACILITIES BEFORE THE START OF WORK. UTILIZE HAND EXCAVATION AS REQUIRED. WORK IS ALSO TO BE DONE IN ACCORDANCE WITH THE STANDARDS OF THE UTILITY COMPANIES WHOSE FACILITIES ARE IN THE PROXIMITY OF THE WORK. OTHER UTILITIES MAY BE REQUIREMENTS OF PENNSYLVANIA ACT 38 (1991), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION.
10. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE AND LOCAL CODES, AND ALL REGULATIONS APPURTENANT TO THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. ALL WORK SHALL BE DONE IN ACCORDANCE WITH PROJECT SPECIFICATIONS INCLUDING CURRENT APPLICABLE STANDARDS AND REQUIREMENTS. WHERE ANY STANDARDS SEEM IN CONFLICT WITH THESE DRAWINGS, NOTIFY THE CONSTRUCTION MANAGER FOR DIRECTION PRIOR TO PROCEEDING WITH WORK.
11. CONTRACTORS SHALL HAVE ALL REQUIRED SUBMITTAL APPROVALS PRIOR TO BEGINNING WORK OR ORDERING MATERIALS.
12. CONTRACTORS SHALL VERIFY ALL DIMENSIONS, INVERTS, ELEVATIONS, AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH THE WORK. VARIATIONS BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED PRIOR TO PROCEEDING WITH THE WORK.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY, PROCEDURES, MEANS AND METHODS, SEQUENCING, AND COORDINATION.
14. ALL WORK SHALL BE PERFORMED BY QUALIFIED, EXPERIENCED PERSONNEL.
15. CONTRACTOR SHALL NOTIFY THE OWNER OF PREEXISTING CONDITIONS OF DETERIORATION IN AREAS OF WORK THAT ARE UNCOVERED OR EXPOSED DURING THE WORK.
16. FIELD CHANGES REQUIRE PRIOR ENGINEERING REVIEW AND WRITTEN CONFIRMATION.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR TO ANY SIDEWALKS, LAWN, TREES, PAVING, AND OTHER IMPROVEMENTS DISTURBED OR DAMAGED BY DEMOLITION ACTIVITIES PROPOSED HEREIN.
18. CONTRACTOR SHALL PROVIDE PROPER TEMPORARY BRACING AND SHORING OF ALL CONSTRUCTION TO REMAIN OR DEMOLITION WORK IN PROGRESS.
19. CONTRACTOR SHALL PROVIDE LAYOUT, LINE AND GRADE UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES WITHIN THE DRAWINGS, SPECIFICATIONS, CODES OR STANDARDS FOR CORRECTIVE ACTION PRIOR TO START OF WORK.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH LOCAL, PENNDOT & OSHA REGULATIONS.
22. CONTRACTOR SHALL PROVIDE PROTECTION FOR EXISTING UTILITIES UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY UTILITY LINE INTERRUPTION AT NO ADDITIONAL CONTRACT COST. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION AND SUPPORT FOR ALL UTILITIES EXPOSED DURING THE WORK TO INSURE AGAINST DAMAGE AT NO ADDITIONAL COST.
23. CONTRACTOR SHALL PROVIDE TEMPORARY DEWATERING OF EXCAVATIONS THROUGHOUT THE DURATION OF CONTRACT AT NO ADDITIONAL COST.
24. EXISTING UTILITIES SHOWN ARE BASED ON AVAILABLE DATA. DUE TO THE POTENTIAL LACK OF COMPLETE OR ACCURATE DATA REGARDING EXISTING ONSITE AND OFFSITE UTILITIES, THE CONTRACTOR SHALL ASSESS AVAILABLE DATA, SHALL REQUEST UTILITY COMPANY MARKOUTS, SHALL COORDINATE WITH AFFECTED UTILITY COMPANIES, AND SHALL DIG TEST PITS AT ALL PROPOSED UTILITY CROSSING LOCATIONS SO THAT ELEVATIONS CAN BE TAKEN TO ASSESS POTENTIAL CONFLICTING PIPES/UTILITIES PRIOR TO ANY PROPOSED UTILITY CONSTRUCTION. IF UNEXPECTED UTILITY LOCATIONS OR ELEVATIONS OR PIPE CONFLICTS ARE ENCOUNTERED DURING CONSTRUCTION, OR IF TEST PITS REVEAL POTENTIAL CONFLICT, ENGINEER SHALL BE NOTIFIED SO THAT ELEVATIONS AND LOCATIONS (WHERE NECESSARY) OF AFFECTED UTILITIES CAN BE OBTAINED TO FACILITATE NECESSARY DESIGN ADJUSTMENTS.
25. REMOVAL OF EXISTING UTILITIES SHALL BE COORDINATED WITH THE AUTHORITY AND APPROPRIATE UTILITY COMPANIES.
26. UNLESS SPECIFIED ELSEWHERE IN THE PLANS OR A MANUAL OF TECHNICAL SPECIFICATIONS FOR THE PROJECT, ALL TOPSOIL TO BE USED ON SITE, WHETHER STOCKPILED FROM EXISTING ON SITE SOILS OR IMPORTED MATERIAL, SHALL MEET THE MINIMUM QUALITY STANDARDS FOR TOPSOIL AS STIPULATED IN THE PADOT SPECIFICATIONS, MANUAL 408, SECTION 802. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SAMPLES TO A QUALIFIED MATERIALS LABORATORY FOR ANALYSIS AND FOR PROVIDING THE RESULTS TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL BEFORE PLACING ANY TOPSOIL.

PLACEMENT OF FILL NOTES:

1. BACKFILLING, TO THE SUBGRADE ELEVATION, SHALL BE DONE IN LAYERS OF SIX (6) TO EIGHT (8) INCHES AND EACH LAYER SHALL BE THOROUGHLY TAMPED BY AN APPROVED MECHANICAL TAMPER TO A MINIMUM DENSITY OF 95% AT OPTIMUM MOISTURE AS DETERMINED BY ASTM D-698 OR AASHTO T-99 WITH SUITABLE BACKFILL MATERIAL. BACKFILLING OR TAMPING WITH TRENCHING MACHINES IS PROHIBITED.
2. THE FILL MATERIAL SHALL CONTAIN THE PROPER MOISTURE CONTENT TO OBTAIN THE REQUIRED COMPACTION. WETTING OR DRYING OF THE MATERIAL OR ANY OTHER MANIPULATION SHALL BE REQUIRED TO SECURE UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER. IF THE MATERIAL IS TOO WET TO PERMIT PROPER COMPACTION, ALL WORK ON PORTIONS THUS AFFECTED SHALL BE DELAYED UNTIL THE WET MATERIAL HAS EITHER DRIED TO THE MOISTURE CONTENT OR HAS BEEN REMOVED. A LAYER OF FILL SHALL NOT BE ADDED UNTIL THE PREVIOUS LAYER HAS ATTAINED THE REQUIRED PERCENT COMPACTION.
3. SUITABLE BACKFILL MATERIAL IS MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER, FROZEN MATERIAL OR LARGE ROCKS OR STONES WITH A DIAMETER OF GREATER THAN ONE-HALF THE THICKNESS OF THE COMPACTED LAYERS BEING PLACED. IN ADDITION, BACKFILL MATERIAL SHALL NOT CONTAIN VEGETATION, MASSES OF ROOTS, INDIVIDUAL ROOTS, CINDERS, ASHES, REFUSE, BOULDERS, AND ANY OTHER MATERIAL WHICH IN THE OPINION OF THE ENGINEER, IS UNSUITABLE.

OPERATION & MAINTENANCE

THE DALLAS AREA MUNICIPAL AUTHORITY, ITS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF THE WET POND AND RELATED ITEMS INCLUDING DIVERSION 1, INLET I1, AND FENCING TO BE INSTALLED WITHIN THIS PLAN. ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN THE APPROVED DESIGN CONDITIONS. FACILITIES SHALL BE INSPECTED QUARTERLY AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, A DETAILED INSPECTION BY A QUALIFIED INSPECTOR SHALL OCCUR AT LEAST ANNUALLY. MONTHLY MONITORING FOR THE FIRST YEAR AFTER THE SITE HAS BEEN STABILIZED IS RECOMMENDED. IF RESTORATION ACTIVITIES ARE REQUIRED, A SCHEDULE INDICATING THE DATE WHEN THE RESTORATION ACTIVITIES WILL BE STARTED AND COMPLETED SHALL BE COMPLETED. INSPECTIONS SHALL, AT A MINIMUM, INCLUDE:

- INSPECTING FOR DAMAGE TO THE FACILITY.
- INSPECTING EMBANKMENT AND EMERGENCY SPILLWAY FOR EROSION, SEEPS OR LEAKS, FAILURE OF SLOPE PROTECTION OR RIPRAP AND ADEQUATE GROUND COVER.
- ENSURE THE EMERGENCY SPILLWAY IS CLEAR OF OBSTRUCTIONS AND DEBRIS.
- NOTE SIGNS OF HYDROCARBON BUILD-UP AND ADDRESS APPROPRIATELY.
- MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES.
- ENSURE INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND OPERATIONAL.
- INSPECT OUTFALLS FOR RIPRAP FAILURES AND SLOPE EROSION.
- INSPECT FACILITIES FOR UNDESIRABLE VEGETATIVE OR WOODY GROWTH.

OBSTRUCTIONS AND DEBRIS

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CLEARED OF ALL DEBRIS AND LITTER ON A REGULAR BASIS AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, FLOATING DEBRIS SHALL BE REMOVED, AND THE FACILITY SHALL BE INSPECTED FOR VISIBLE POLLUTION OR SHORELINE PROBLEMS. ERODED CHANNELS OR AREAS OF EXCESSIVE EROSION NEAR THE FACILITY SHALL BE BACKFILLED AND STABILIZED IMMEDIATELY.

SEDIMENT ACCUMULATION

MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES. REMOVE SEDIMENT IF STORAGE VOLUMES HAVE BEEN REDUCED SIGNIFICANTLY OR THE POOLS BECOME STAGNANT. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES ON A REGULAR BASIS (EVERY 5 TO 10 YEARS FOR WET POND FACILITIES) AND SHALL EITHER BE REMOVED FROM THE SITE OR DISPOSED OF ON-SITE AT AN APPROVED DISPOSAL AREA. MAINTENANCE OF CATCH BASINS AND INLETS IS BEST DONE MONTHLY WITH A VACUUM TRUCK. ALL COLLECTED WASTE MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT, THE OWNER SHALL ACQUIRE THE APPROPRIATE EARTH DISTURBANCE PERMITS FROM THE MUNICIPALITY AND/OR THE CONSERVATION DISTRICT.

CONSTRUCTED WETLANDS

DURING THE FIRST GROWING SEASON, INSPECT VEGETATION EVERY 2 TO 3 WEEKS. ADDITIONALLY, DURING THE FIRST 2 YEARS, INSPECT THE REPLACEMENT WETLAND 4 TIMES PER YEAR, AFTER STORMS WITH OVER 2 INCHES OF RAINFALL IN A 24 HOUR PERIOD, AND AFTER RAPID ICE BREAKUP, AS PART OF THE INSPECTIONS, ASSESS THE VEGETATION GROWTH, EROSION, BANK STABILITY CONDITIONS, AND SEDIMENT AND DEBRIS ACCUMULATIONS. REMOVE UNDESIRABLE PLANTS AND WEEDS. REPAIR EROSION AND REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER 2 YEARS, INSPECT THE REPLACEMENT WETLANDS TWICE ANNUALLY, AFTER STORMS WITH OVER 2 INCHES OF RAINFALL IN A 24 HOUR PERIOD, AND AFTER RAPID ICE BREAKUP.

VEGETATED AREAS

VEGETATED AREAS SHALL BE MAINTAINED WITH A MINIMUM UNIFORM VEGETATIVE 70% PERENNIAL VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. VEGETATED AREAS THAT WASH OUT MUST BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. AN ANCHORING METHOD SHOULD THEN BE USED TO HOLD SEED AND MULCH IN PLACE; THIS IS ESPECIALLY IMPORTANT AROUND WATER COURSES, IN SWALES, IN AREAS OF CONCENTRATED FLOWS, AND ON STEEP SLOPES.

WET POND

DURING THE FIRST GROWING SEASON, INSPECT VEGETATION EVERY 2 TO 3 WEEKS. DURING THE FIRST 2 YEARS, INSPECT THE RETENTION BASINS 4 TIMES PER YEAR, AFTER STORMS WITH OVER 2 INCHES OF RAINFALL IN A 24 HOUR PERIOD, AND AFTER RAPID ICE BREAKUP. AS PART OF THE INSPECTIONS, ASSESS THE VEGETATION GROWTH, EROSION, BANK STABILITY CONDITIONS, SEDIMENT AND DEBRIS ACCUMULATIONS, AND INLET AND OUTLET CONDITIONS. REMOVE UNDESIRABLE PLANTS AND WEEDS. REPAIR EROSION AND REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER 2 YEARS, INSPECT THE RETENTION PONDS TWICE ANNUALLY, AFTER STORMS WITH OVER 2 INCHES OF RAINFALL IN A 24 HOUR PERIOD, AND AFTER RAPID ICE BREAKUP. REMOVE SEDIMENT FROM THE FOREBAY BEFORE THE SEDIMENT FILLS 50% OF THE FOREBAY OR EVERY 5 TO 10 YEARS, WHICHEVER COMES FIRST. BASIN STRUCTURES (BASIN BOTTOMS, TRASH RACKS, OUTLET STRUCTURES, RIPRAP, INLETS, GABION STRUCTURES) EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1 INCH.

TO DEWATER RETENTION BASINS

- PUMP WATER OVER THE EMBANKMENT TO THE OUTLET
- OPEN THE DEWATERING VALVE

OUTLET STRUCTURE:

- DURING LOW WATER CONDITIONS, CONCRETE SPILLWAY STRUCTURES SHALL BE INSPECTED TO DETERMINE IF WATER IS PASSING THROUGH ANY JOINTS OR OTHER STRUCTURE CONTACTS AND TO IDENTIFY ANY CRACKS, SPALLING, BROKEN OR LOOSE SECTIONS. ANY CRACKED, SPALLED, BROKEN OR LOOSE SECTIONS SHALL BE CLEANED AND REFILLED WITH AN APPROPRIATE CONCRETE PATCHING MATERIAL. A PROFESSIONAL ENGINEER SHALL BE CONSULTED TO REPAIR EXTENSIVE LEAKAGE, SPALLS OR FRACTURES.
- ANY REPAIRS MADE TO THE PRINCIPAL SPILLWAY (RISER OR BARREL) SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER. VERTICAL TRENCHING TO EXPOSE THE BARREL SHALL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. THE TRENCH SIDE SLOPES SHALL BE STEPPED BACK AT A 2:1 SLOPE, MINIMUM.

EARTH EMBANKMENT:

- ALL ANIMAL BURROWS SHALL BE BACKFILLED AND COMPACTED AND BURROWING ANIMALS SHALL BE REMOVED FROM THE AREA.
- ALL TREES, WOODY VEGETATION, AND OTHER DEEP-ROOTED GROWTH, INCLUDING STUMPS AND ASSOCIATED ROOT SYSTEMS, SHALL BE REMOVED FROM THE EMBANKMENT TOE AND ABUTMENT CONTACTS. THE ROOT SYSTEMS SHALL BE EXTRACTED AND THE EXCAVATED VOLUME REPLACED AND COMPACTED WITH MATERIAL SIMILAR TO THE SURROUNDING AREA. ALL SEEDLINGS SHALL BE REMOVED AT THE FIRST OPPORTUNITY. SIMILARLY, ANY VINE COVER AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT TO ALLOW FOR INSPECTIONS.

FOR ADDITIONAL INFORMATION REGARDING MAINTENANCE OF SPECIFIC STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES, SEE THE PENNSYLVANIA HANDBOOK OF BEST MANAGEMENT PRACTICES FOR DEVELOPING AREAS.

LEGEND

EXISTING		PROPOSED
	TRACT BOUNDARY	
	PROPERTY LINE	
	RIGHT-OF-WAY	
	EASEMENT	
	EDGE OF PAVEMENT	
	CURB	
	SIDEWALK	
	BUILDINGS	
	CONCRETE MONUMENTS	
	IRON PINS	
X	FENCE LINE	

EXISTING		PROPOSED
	UTILITY POLES	
	SIGNS	
102	INTERMEDIATE CONTOURS	102
100	INDEX CONTOURS	100
X 102.6	SPOT ELEVATIONS	X 102.64
	WOODED LIMITS	
	STORM SEWER	
	SANITARY SEWER	
WV	POTABLE WATER	WV

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 inch = 10 ft.

STORM SEWER NOTES

1. ALL STORM CONVEYANCE PIPE SHALL BE SMOOTH LINED CORRUGATED POLYETHYLENE PIPE (HDPEP) ASTM F 2306 WITH SMOOTH LINED INTERIOR, ADS N12 ST 1B, OR APPROVED EQUAL UNLESS OTHERWISE SPECIFIED. ALL ROOF LEADERS SHALL BE SCHEDULE 40 PVC.
2. ALL WET POND EMBANKMENTS SHALL BE PLACED IN 8 INCH MAXIMUM LIFTS TO A MINIMUM 95% DRY DENSITY. PRIOR TO PROCEEDING TO THE NEXT LIFT, COMPACTION SHALL BE CHECKED BY A GEOTECHNICAL ENGINEER APPROVED BY THE AUTHORITY WHO SHALL PROVIDE THE AUTHORITY WITH A WRITTEN REPORT. COMPACTION TESTS SHALL BE PERFORMED USING THE MODIFIED PROCTOR METHOD IN ACCORDANCE WITH ASTM D-1577-07. COMPACTION TESTS SHALL BE RUN ON THE LEADING AND TRAILING EDGE AS WELL AS THE TOP OF THE BERM.
3. ANTI-SEEP COLLARS SHALL BE INSTALLED AROUND THE PIPE BARREL WITHIN THE NORMAL SATURATION ZONE OF THE DETENTION BASIN BERMS. THE ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE PIPE BARRELS SHALL BE WATERTIGHT. THE ANTI-SEEP COLLARS SHALL EXTEND A MINIMUM OF TWO FEET BEYOND THE OUTSIDE OF THE PRINCIPAL PIPE BARREL. THE MAXIMUM SPACING BETWEEN COLLARS SHALL BE FOURTEEN (14) TIMES THE MINIMUM PROJECTION OF THE COLLAR MEASURED PERPENDICULAR TO THE PIPE. A MINIMUM OF TWO (2) ANTI-SEEP COLLARS SHALL BE INSTALLED ON EACH OUTLET PIPE.
4. IF A CONFLICT ARISES DURING THE INSTALLATION OF ANY PART OF THE STORM SEWER SYSTEM THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY IN WRITING.

Pennsylvania811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20192043215 WAS PLACED FOR DESIGN PURPOSES.

NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
##/##/2### DATE

FINAL CONSTRUCTION PLANS

SUSQUEHANNA AVENUE WET POND
KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

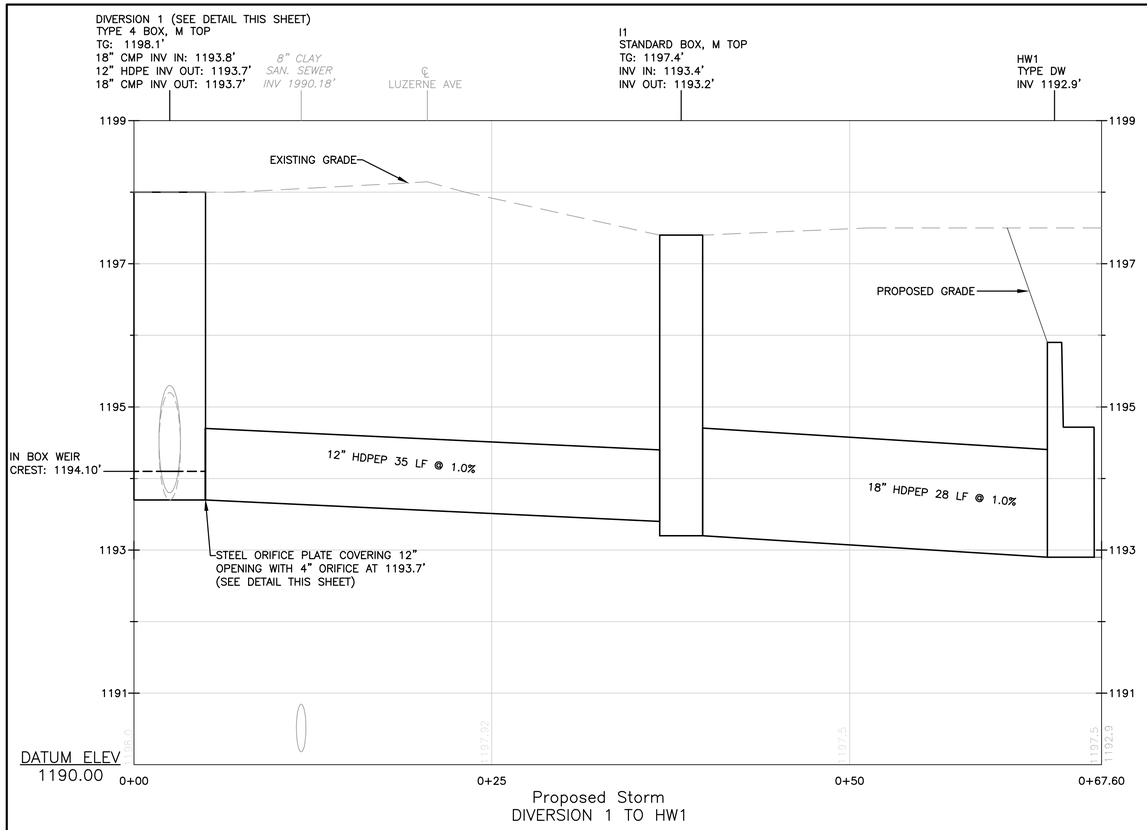
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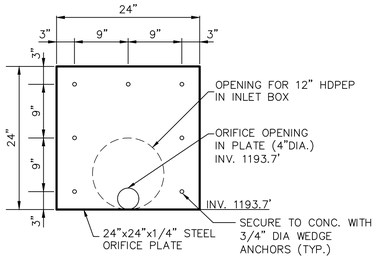
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DATE	08/4/2020
SCALE	1" = 10'
PROJ. NO.	DAMA00006
DRAWING	GRD-1
SHEET	3 OF 6

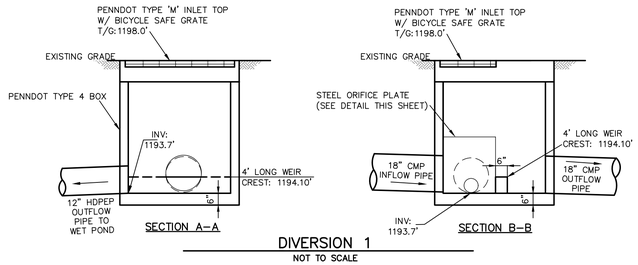
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Proposed Storm
DIVERSION 1 TO HW1



ORIFICE PLATE DETAIL
NOT TO SCALE



DIVERSION 1
NOT TO SCALE

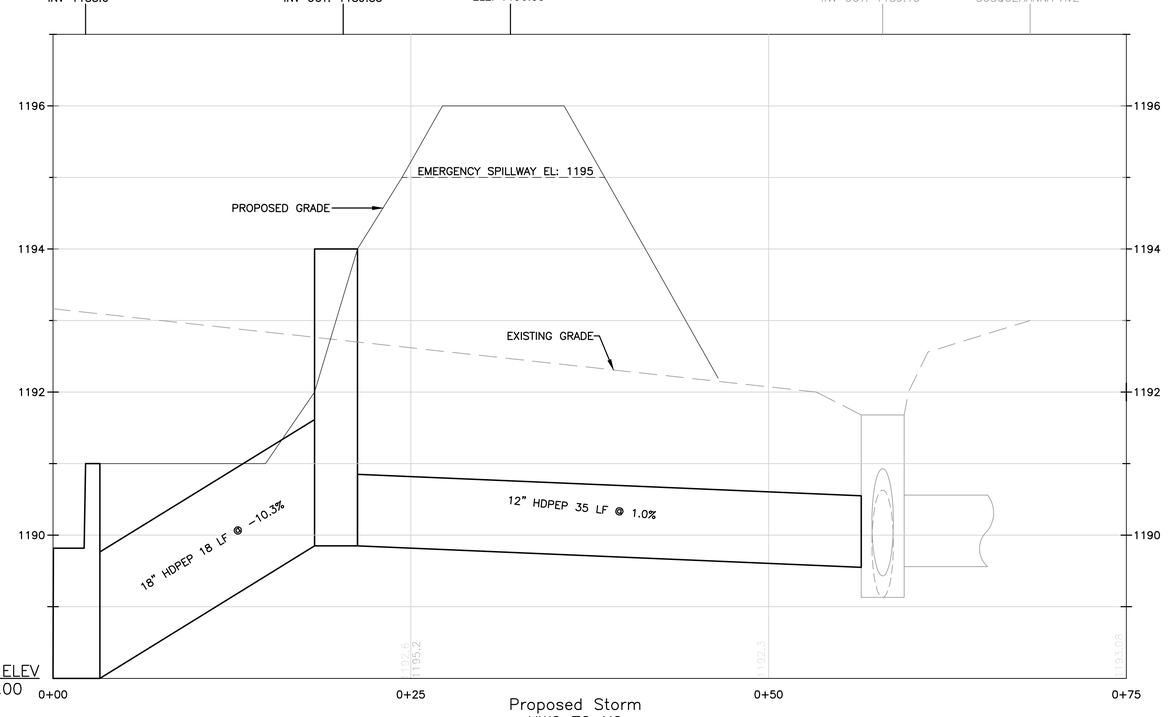
OS1 (SEE DETAIL THIS SHEET)
TYPE 4 BOX M TOP
TG: 1194.00'
INV IN: 1189.85'
INV OUT: 1189.85'

HW2
TYPE DW
INV 1188.0'

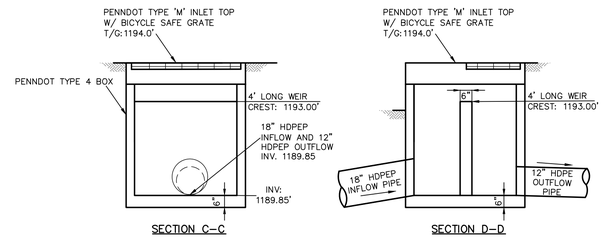
TOP OF BERM
ELE. 1196.00

X2
INL TG: 1191.68'
12" CMP INV A: 1189.56'
18" PVC INV B: 1189.43'
12" HDPEP INV: 1189.55'
INV OUT: 1189.13

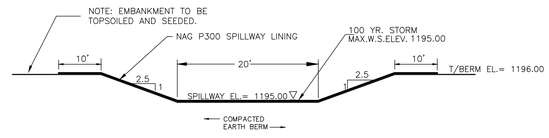
℄ SUSQUEHANNA AVE



Proposed Storm
HW2 TO X2

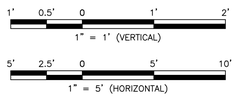


OS 1 POND OUTLET STRUCTURE
NOT TO SCALE



BASIN BERM TO BE PLACED IN 8" LIFTS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM D-1557 PRIOR TO PROCEEDING TO NEXT LIFT, COMPACTION SHALL BE CHECKED BY CONTRACTOR'S ENGINEER.

DETENTION BASIN EMERGENCY SPILLWAY
NOT TO SCALE



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FINAL CONSTRUCTION PLANS

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KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

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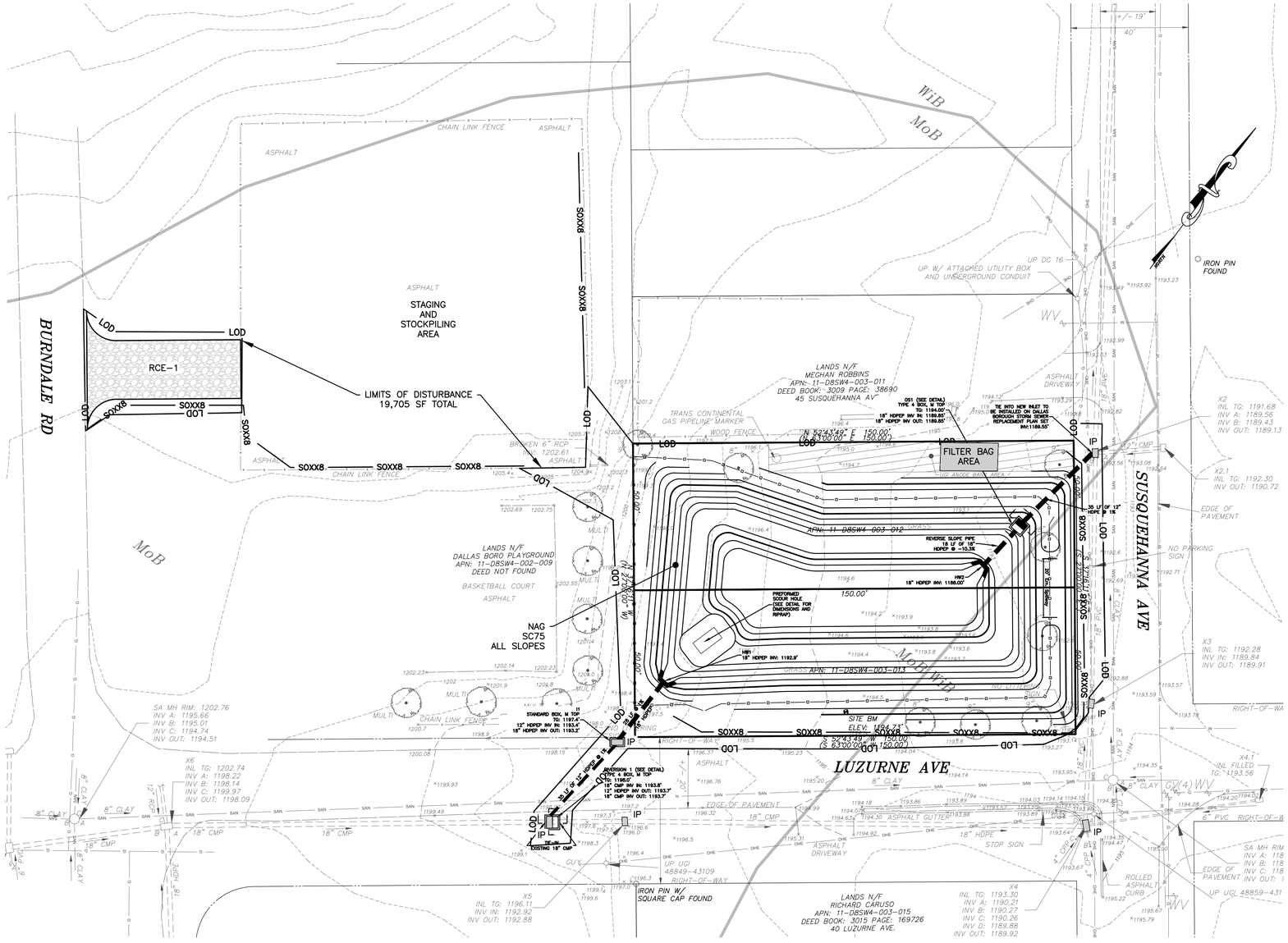
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SHEET	4 OF 6

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FILE NAME: 04-PROF.dwg
LAST SAVED DATE AND TIME: 12 Aug 2020, 2:36PM
LAST SAVE BY: dpetrik

F11



PROPOSED E&S CONTROLS

- 8" SILT SOXX — SOXX8
- ROCK CONSTRUCTION ENTRANCE — RCE-1
- INLET PROTECTION DEVICE — IP
- LIMIT OF DISTURBANCE — LOD
- PUMPED WATER FILTER BAG AREA

CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER TO A PRE-CONSTRUCITON MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY TO NOR EXIT DIRECTLY FROM SITE ONTO SUSQUEHANNA AVE OR LUZERNE AVE OTHER THAN AS DESCRIBED BELOW.
2. INSTALL INLET PROTECTION DEVICES IN EXISTING STORM STRUCTURES X2, X3, X4, X5, AND INSTALL ROCK CONSTRUCTION ENTRANCE RCE-1.
3. REMOVE FENCE AS NEEDED IN ORDER TO PROVIDE ACCESS TO ASPHALT PAD FROM RCE-1 AND BURNDALE AVE AS WELL AS FROM ASPHALT PAD TO SITE. ASPHALT PAD TO BE USED FOR CONTRACTOR STAGING AND STOCKPILE AREA
4. INSTALL 8" SILTSOXX IN LAWN AREAS AND ON ASPHALT PAD ALONG FENCE LINE TO CONTAIN SEDIMENTS AND PREVENT SEDIMENTATION ON BASKETBALL COURTS AND NEIGHBORING PROPERTY
5. CLEAR AND GRUB SITE ACCORDING TO DEMO PLAN, STRIP AND STOCKPILE TOPSOIL
6. EXCAVATE AND BERM WET POND AREA, EXCESS CUT MATERIAL SHALL BE REMOVED FROM SITE. GROUNDWATER ENCOUNTERED SHALL BE PUMPED THROUGH SEDIMENT FILTER BAG
7. INSTALL STRUCTURES AND PIPING FROM PROPOSED HEADWALL HW2 TO OUTLET STRUCTURE 1 (OS1) AND TIE IN OUTLET PIPE AT NEW PRECAST CONCRETE STORM INLET PROPOSED ON DALLAS BOROUGH STORM SEWER REPLACEMENT PLANS BY OTHERS ON SUSQUEHANNA AVENUE
8. SEED WET POND AREA AND BERM AND STABILIZE WITH EROSION CONTROL BLANKETS (NAG S75 OR APPROVED EQUAL)
9. AFTER SEED HAS BEGUN TO GERMINATE, INSTALL NEW STORM SEWER, STRUCTURES, RIPRAP, AND PREFORMED SCOUR HOLE FROM PROPOSED ENDWALL HW1 TO DIVERSION 1 TIE-IN TO EXISTING 18" CMP. LUZERNE AVE MAY BE ACCESSED FROM THE SITE FOR THIS CONSTRUCTION.
10. RESTORE PAVING ON LUZERNE AVE
11. REMOVE REMAINING FENCE AROUND ASPHALT PAD AND RESTORE LAWN TO CONSTRUCTION ENTRANCE, STABILIZE WITH TOPSOIL, SEED, AND EROSION CONTROL BLANKETS (NAG S75 OR APPROVED EQUAL)

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

Pennsylvania 811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20192043215 WAS PLACED FOR DESIGN PURPOSES.

NO.	REVISIONS	BY	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
##/##/2###
DATE

FINAL CONSTRUCTION PLANS

SUSQUEHANNA AVENUE WET POND
KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

EROSION AND SEDIMENTATION CONTROL PLAN

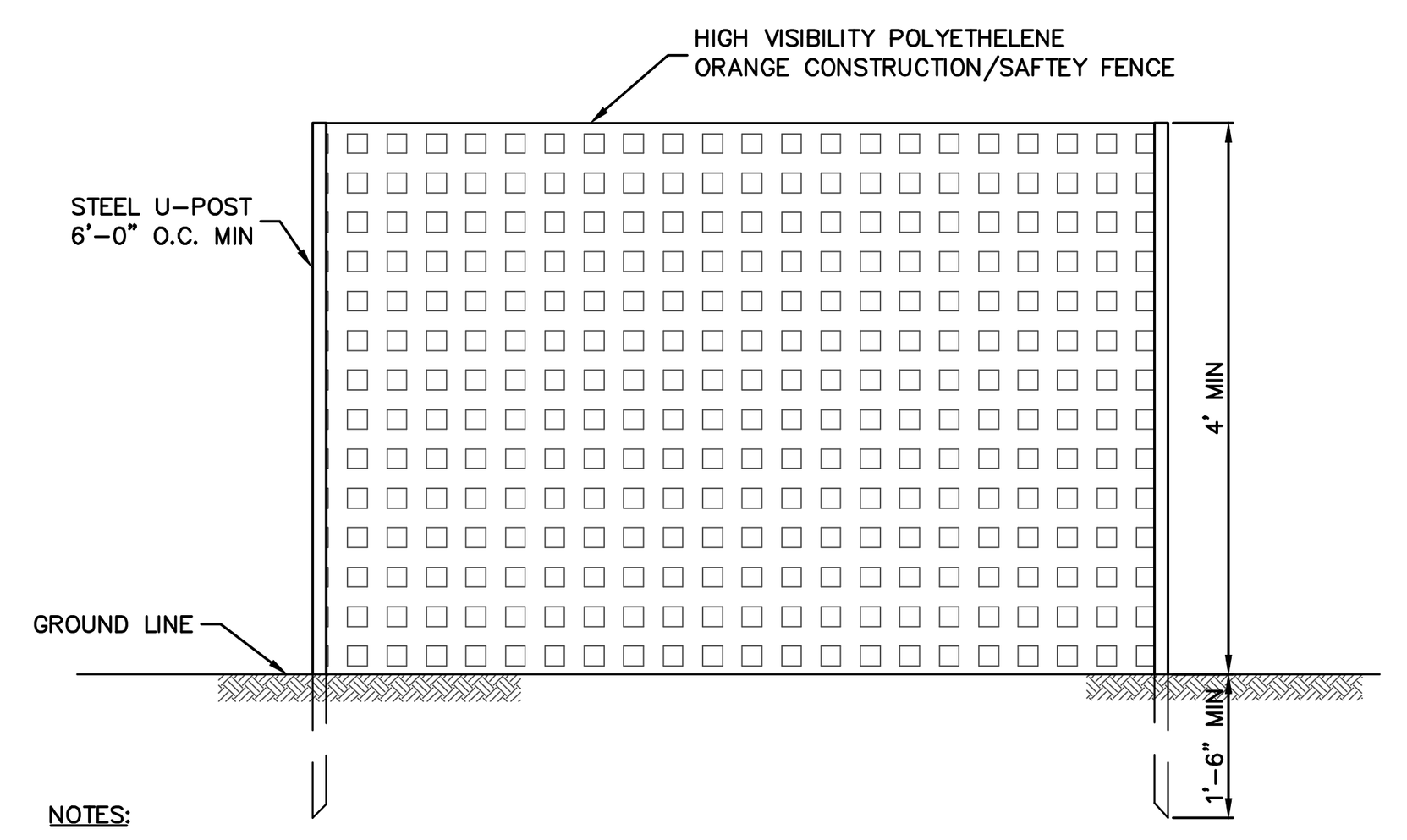
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DRAWN BY: DP	SHEET: 5
DATE: 08/4/2020	OF 6
SCALE: 1" = 20'	
PROJ. NO.: DAMA00006	

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PROJECT INFORMATION:
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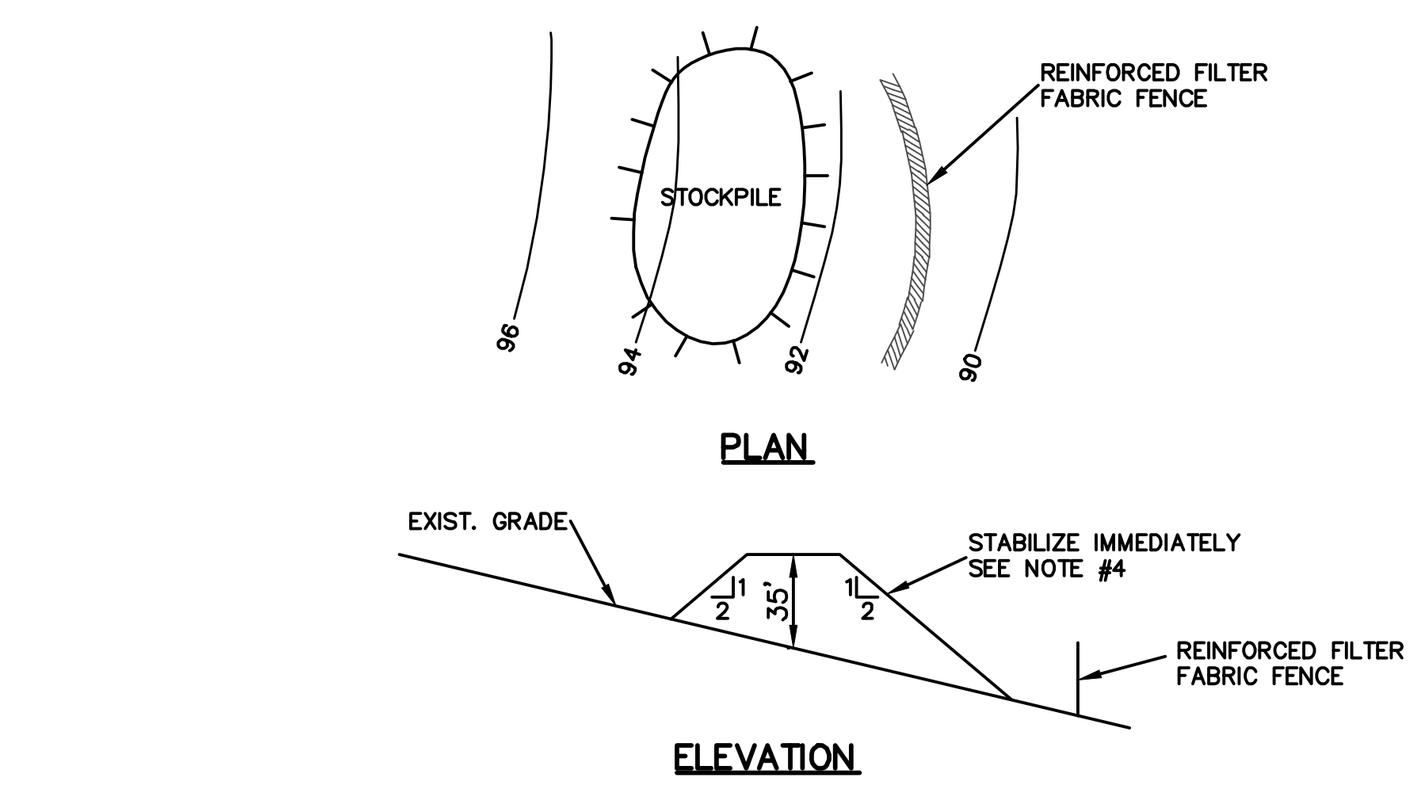


NOTES:

1. CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCE ALONG LIMIT OF DISTURBANCE BOUNDARY PRIOR TO THE START OF ANY EARTHMOVING.
2. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN FENCE THOUGHOUT ENTIRE DURATION OF THE PROJECT.

ORANGE CONSTRUCTION FENCE TREE PROTECTION FENCE

NOT TO SCALE

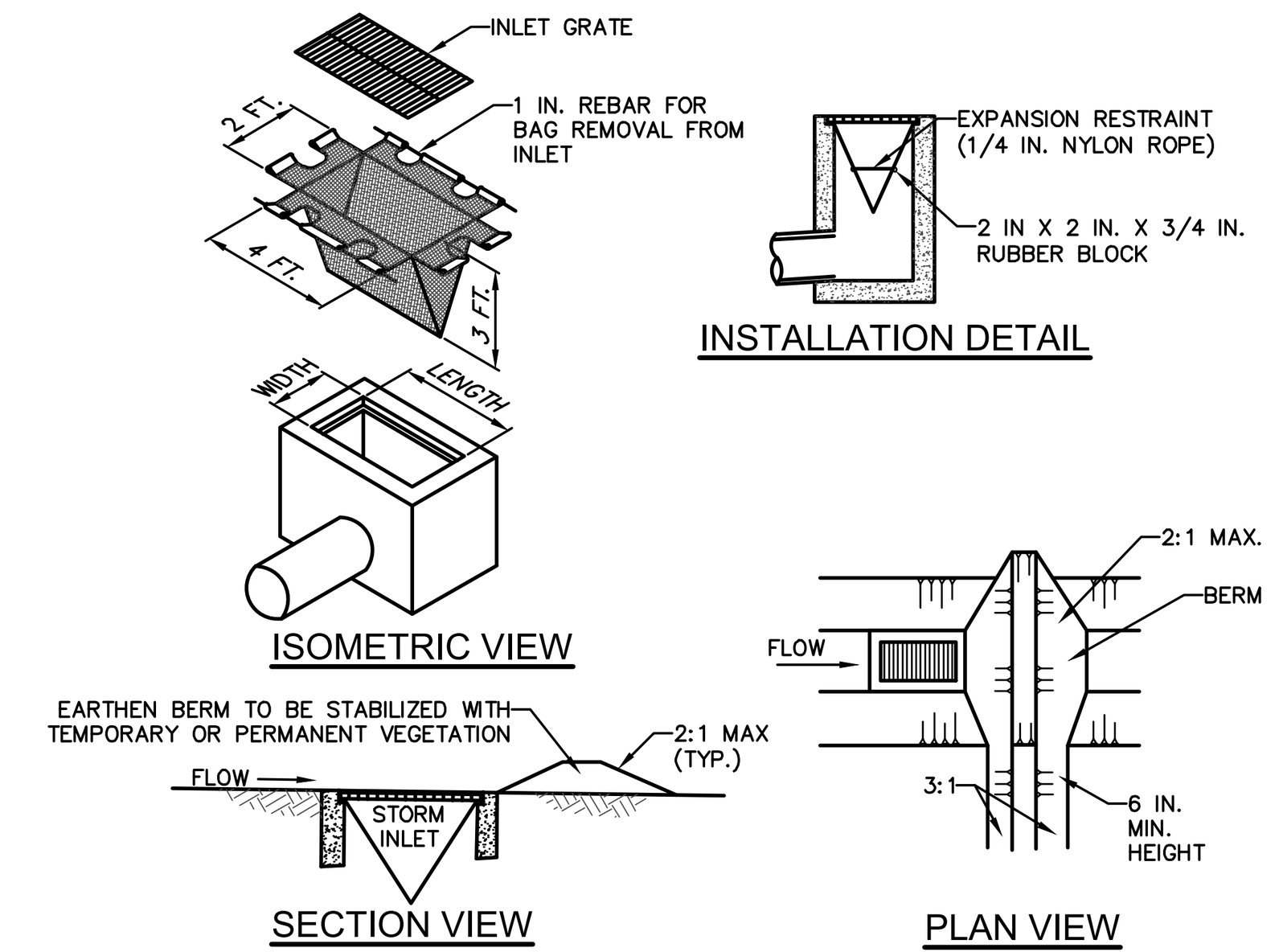


NOTES:

1. INSTALL SILT FENCE DOWNSLOPE OF AREA OF STOCKPILE.
2. PLACE STOCKPILE IN AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.
3. FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FT. SIDE SLOPES SHOULD NOT BE STEEPER THAN 2(H):1(V).
4. SEED IMMEDIATELY WITH TEMPORARY SEEDING PENNDOT FORMULA "D OR "E". IF MATERIAL IS NOT TO BE USED WITHIN 20 DAYS. FOLLOW "PERMANENT SEEDING, FERTILIZATION SCHEDULE & SPECIFICATIONS."

MATERIAL STOCKPILE AND MAINTENANCE

NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

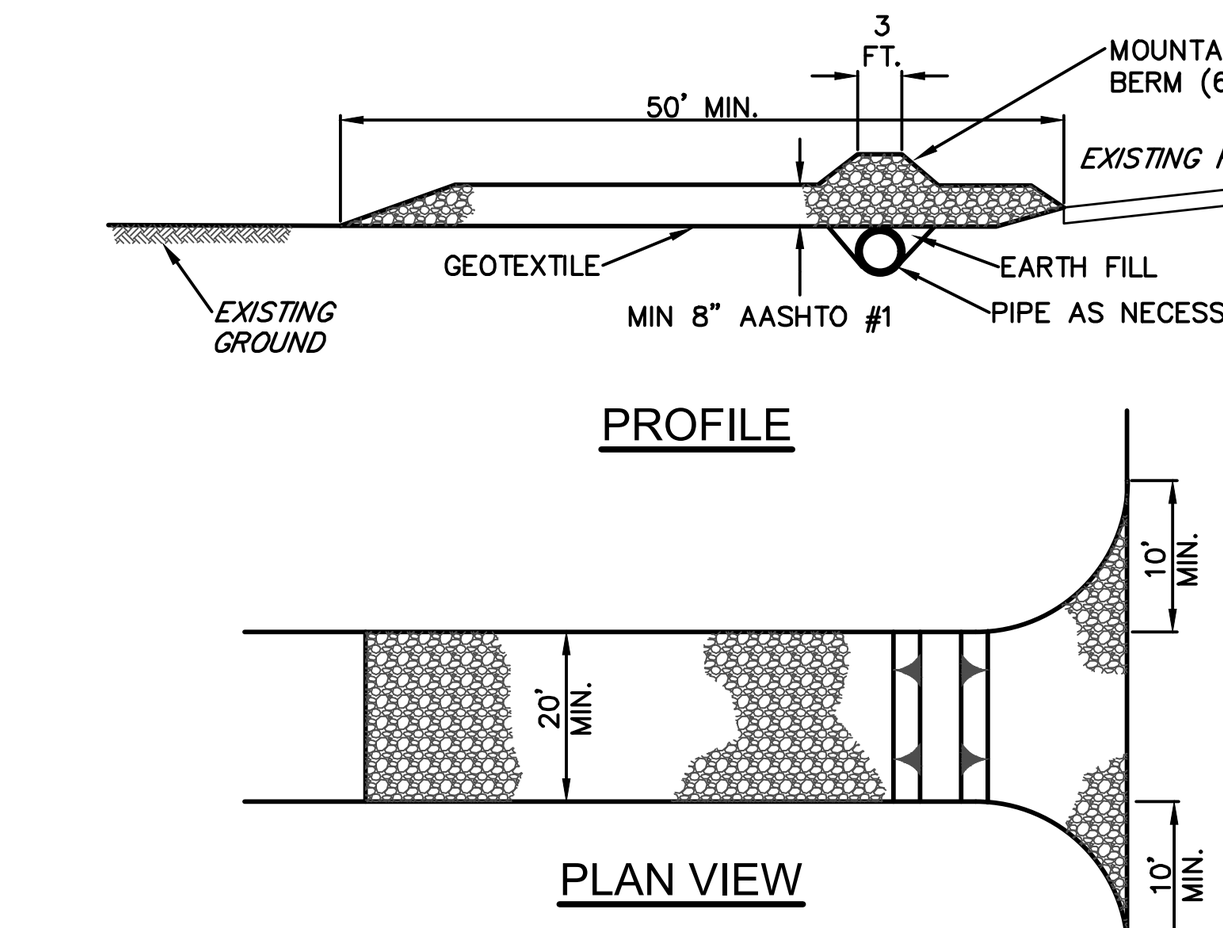
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16 FILTER BAG INLET PROTECTION - TYPE M INLET

NOT TO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

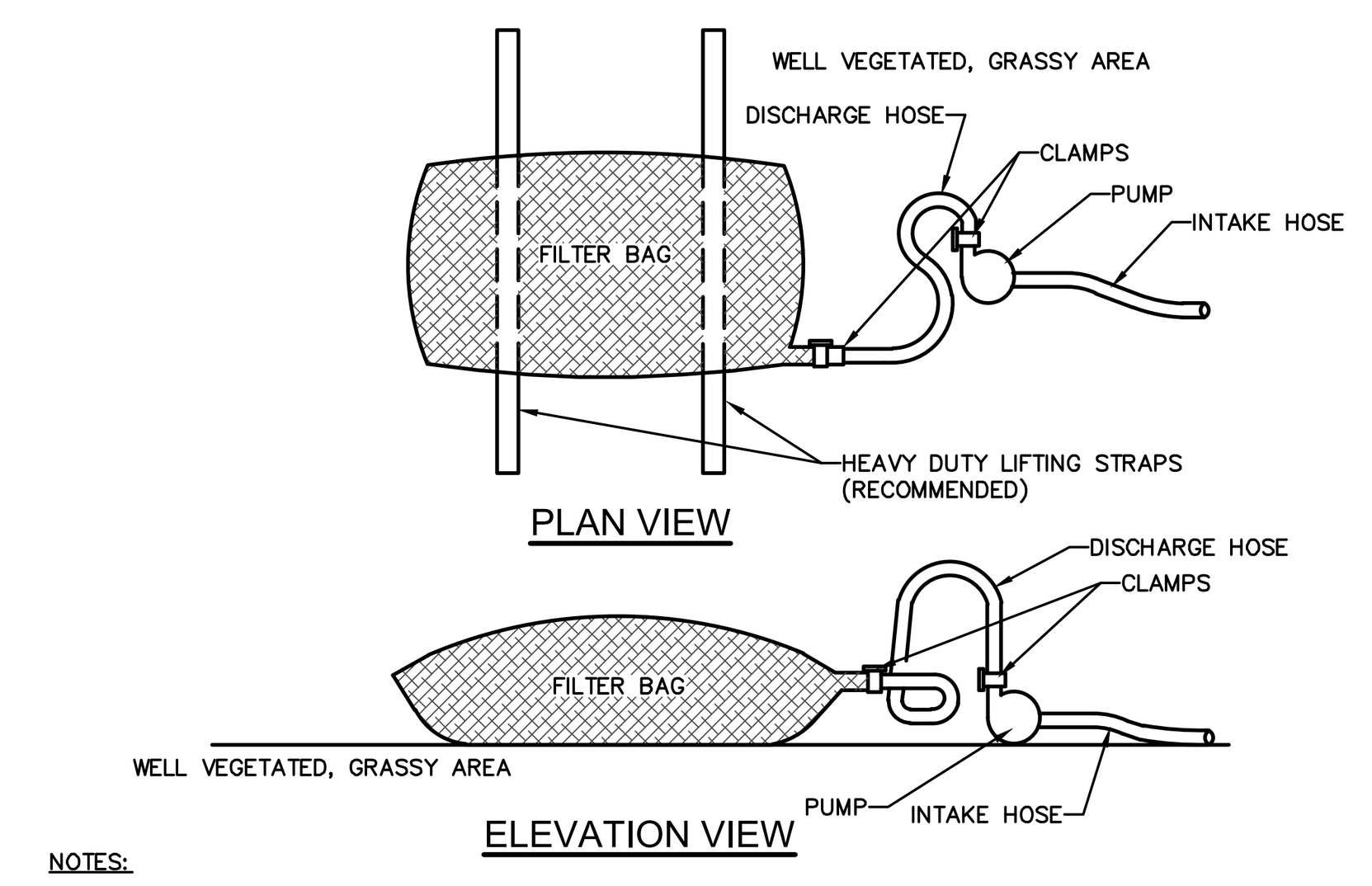
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

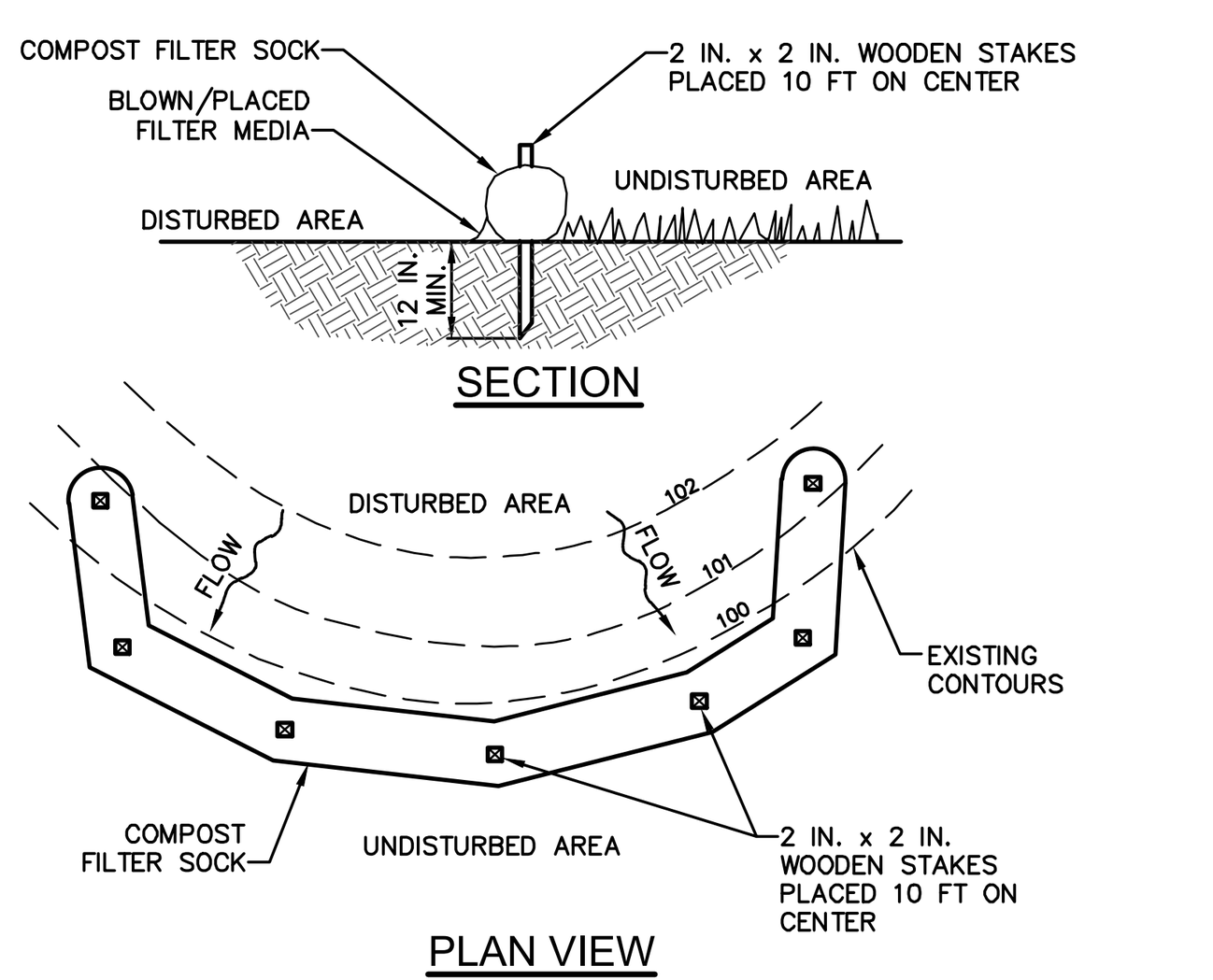
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16 PUMPED WATER FILTER BAG

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

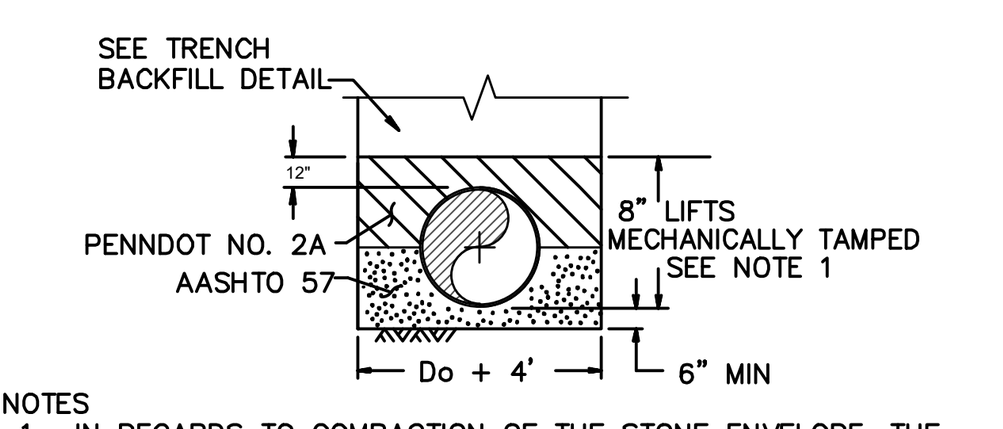
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

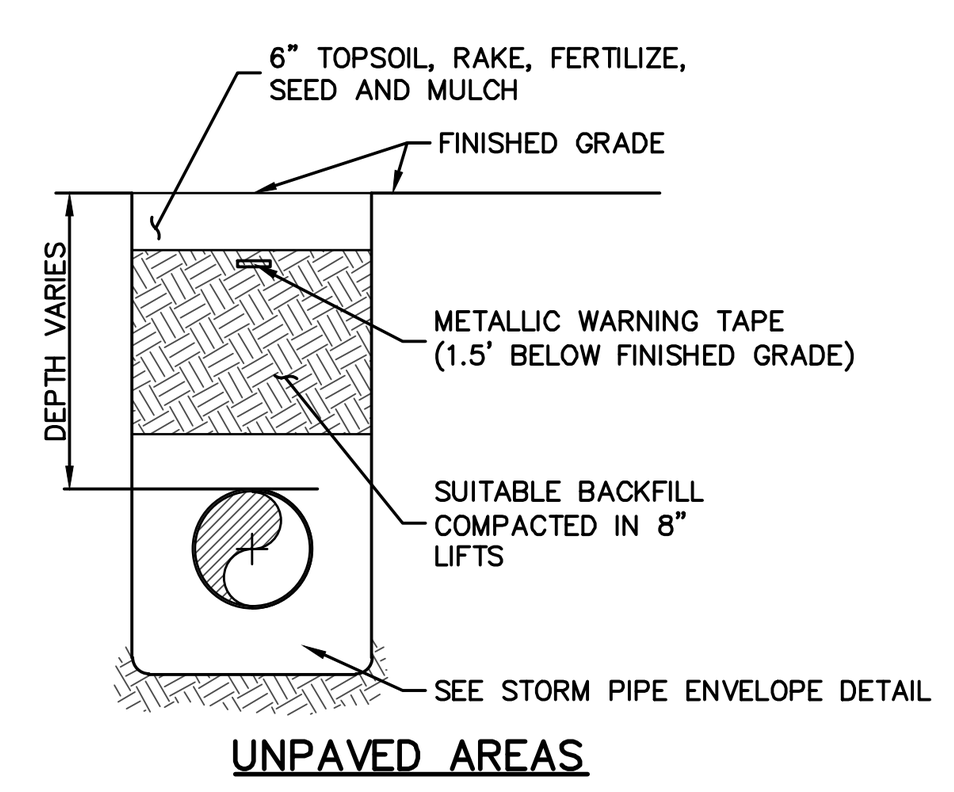
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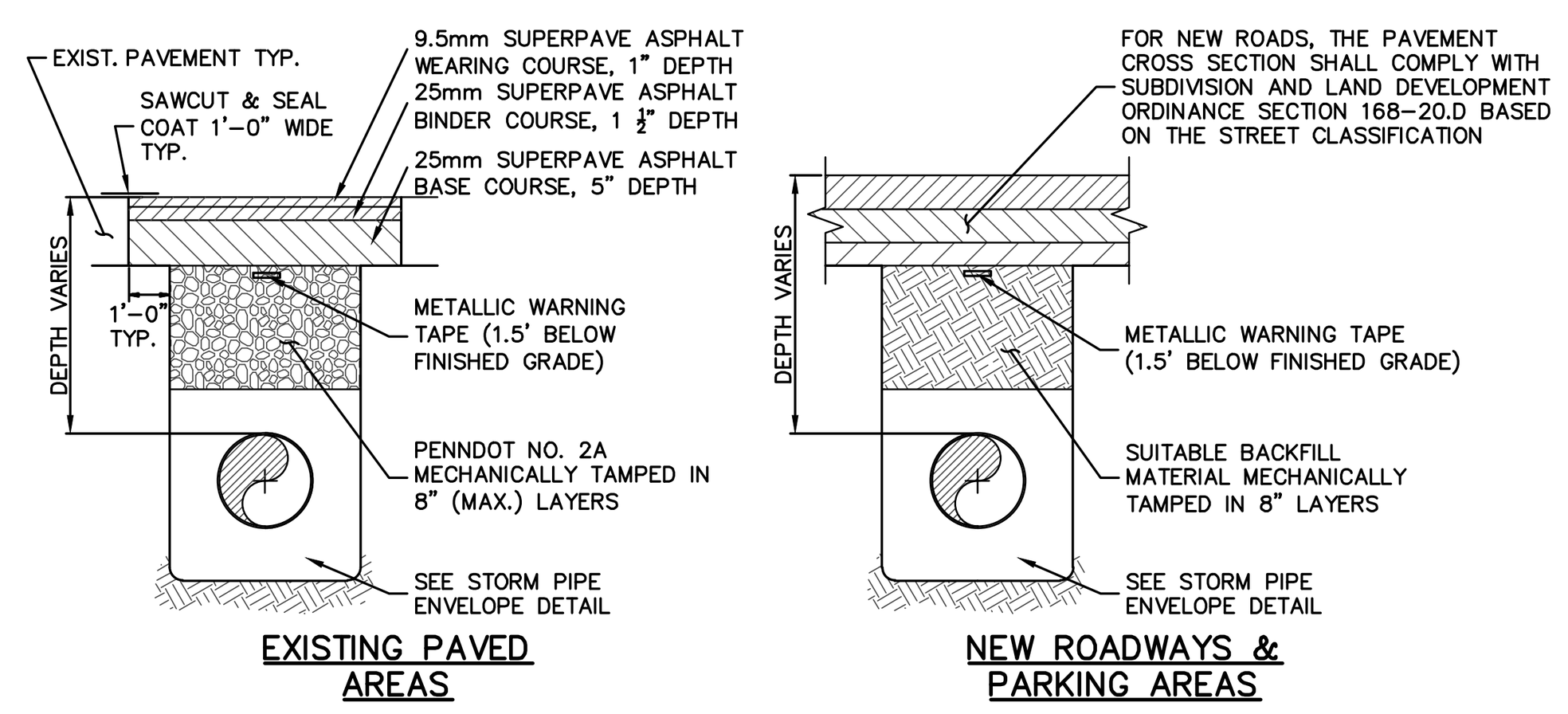
NOTES

1. IN REGARDS TO COMPACTION OF THE STONE ENVELOPE, THE TOWNSHIP, TOWNSHIP ENGINEER OR TOWNSHIP INSPECTOR HAS THE RIGHT TO REQUIRE COMPACTION TESTING OF THE STONE ENVELOPE AND/OR THE SUITABLE BACKFILL AT THE DEVELOPERS/OWNERS EXPENSE. COMPACTION TESTING SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, LATEST EDITION.
2. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.
3. Do = OUTSIDE DIAMETER OF THE PIPE IN FEET.

STORM PIPE ENVELOPE



UNPAVED AREAS



PROCEDURES/SPECIFICATIONS FOR PERMANENT PAVEMENT RESTORATION OF EXISTING PAVED AREAS

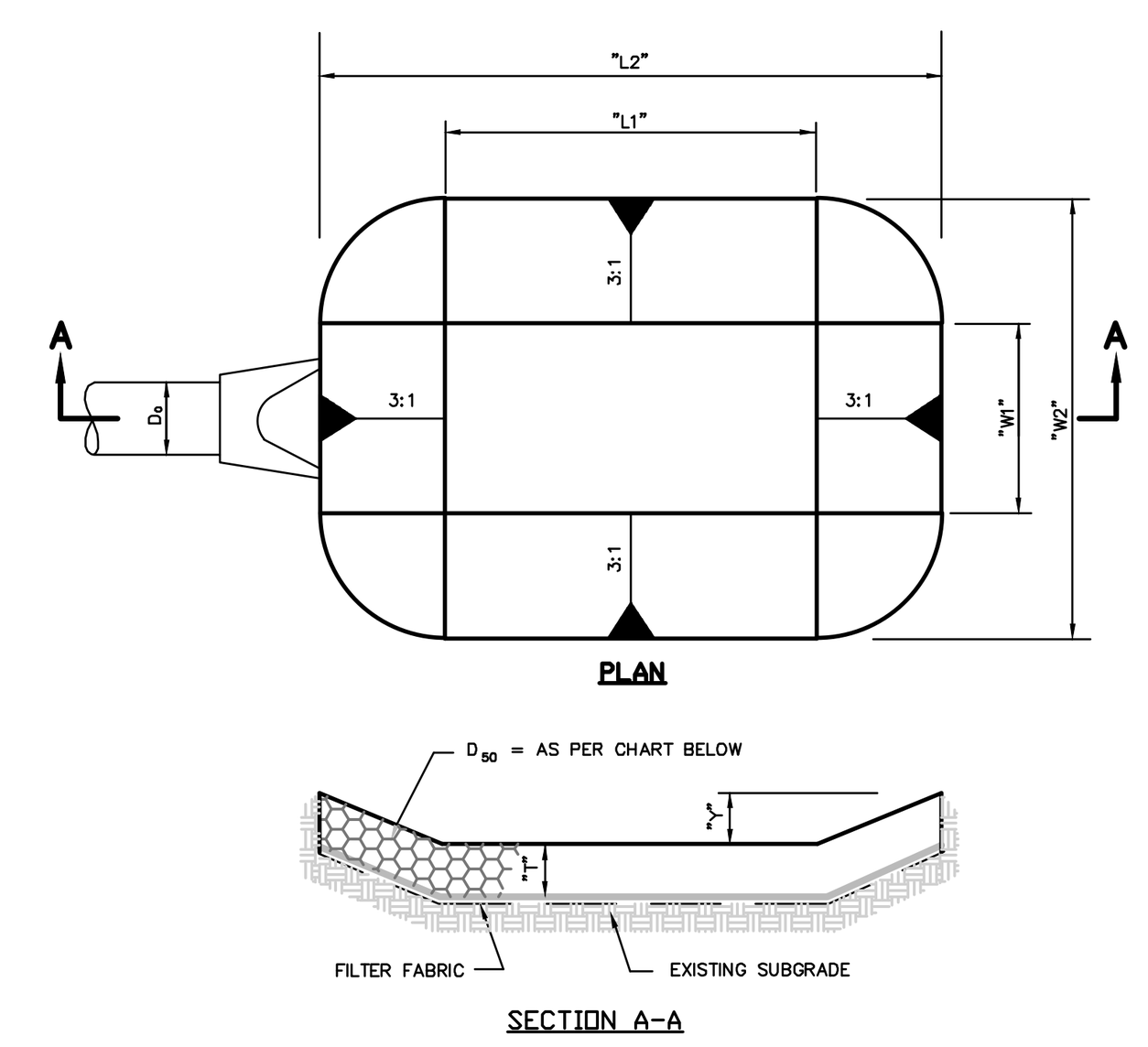
1. PERMANENT PAVEMENT RESTORATION SHALL BE INSTALLED AFTER A 90 DAY TEMPORARY RESTORATION CONSISTING OF A MINIMUM OF 2 INCHES OF BITUMINOUS BINDER MATERIAL (OR COLD BITUMINOUS IF APPROVED BY THE TOWNSHIP) ON A MINIMUM OF 8 INCHES OF STONE BASE (PENNDOT 2A). AFTER 90 DAYS BUT BEFORE 120 DAYS, THE TEMPORARY RESTORATION SHALL BE REMOVED AD PERMANENT RESTORATION INSTALLED. THE 1-FOOT CUTBACK INTO THE EXISTING PAVEMENT SHALL BE SAWCUT AND WILL BE DONE AT THE TIME OF PERMANENT RESTORATION, NOT AT TEMPORARY RESTORATION.
2. IN REGARDS TO THE PERMANENT RESTORATION BASE COURSE, THE DEPTH SHALL BE A MINIMUM 5" OR A DEPTH EQUAL TO THE EXISTING PAVEMENT DEPTH.
3. IN NO CASE SHALL THE TOTAL DEPTH OF THE (3) PERMANENT ASPHALT COURSES BE LESS THAN THE EXISTING PAVEMENT DEPTH, INCLUDING EXISTING STONE BASE.

NOTES:

1. IN REGARDS TO TRENCH COMPACTION, THE TOWNSHIP, TOWNSHIP ENGINEER OR TOWNSHIP INSPECTOR HAS THE RIGHT TO REQUIRE COMPACTION TESTING OF THE AGGREGATE OR SUITABLE BACKS AT THE DEVELOPER'S/OWNER'S EXPENSE. COMPACTION TESTING SHALL BE IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION.
2. SUITABLE BACKFILL SHALL BE MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER,FROZEN MATERIAL OR LARGE STONE WITH A DIAMETER GREATER THAN ONE-HALF THE THICKNESS OF THE COMPACTED LAYER BEING PLACED.
3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
4. NO SLAG MATERIAL PERMITTED.
5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

PIPE ENVELOPE / TRENCH BACKFILL / RESTORATION

NOT TO SCALE

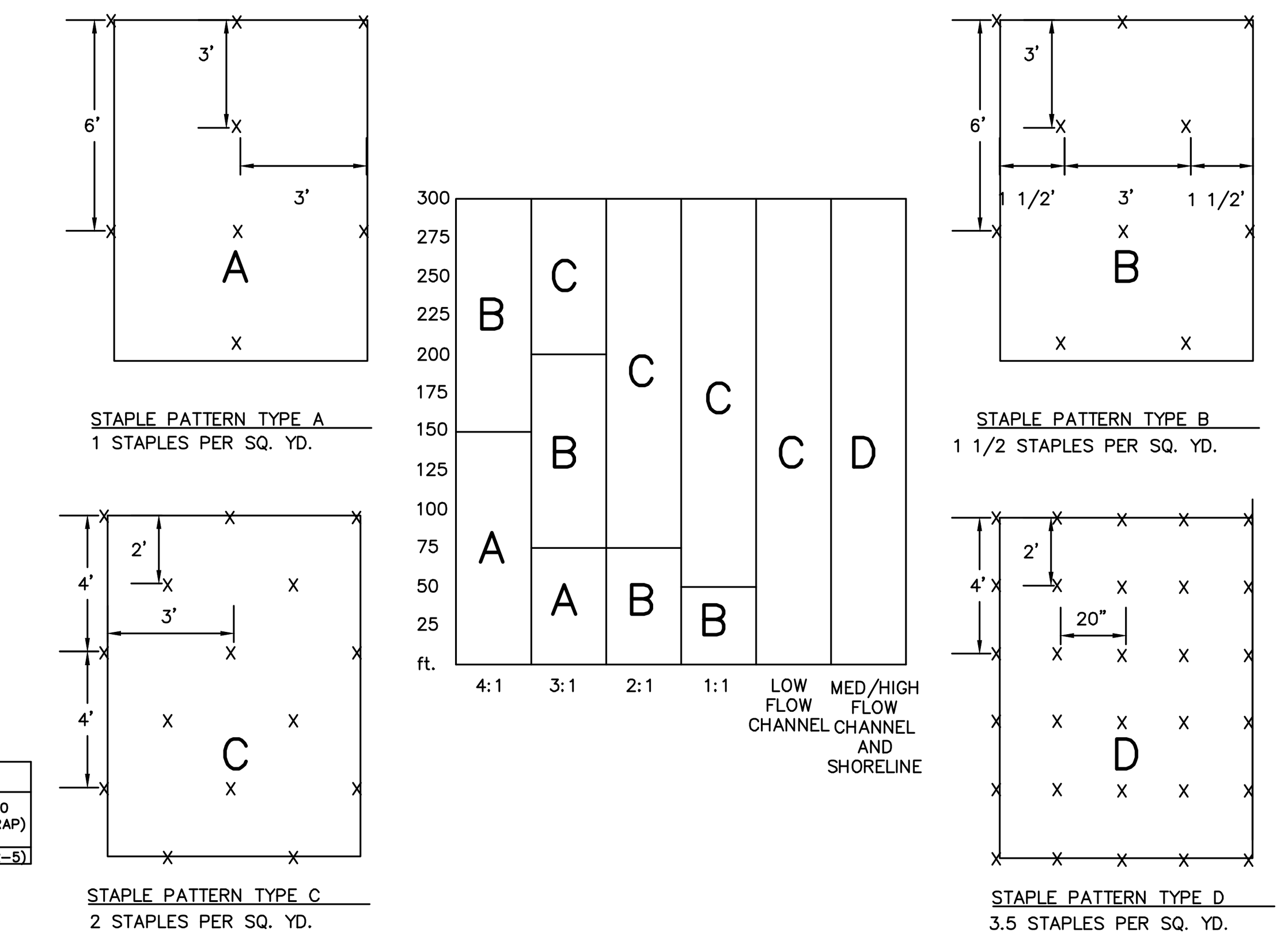


PREFORMED SCOUR HOLE DIMENSIONS										
OUTLET NO.	OUTLET DIA. D_o	BOTTOM LENGTH L1	OVERALL LENGTH L2	(Ft.) BOTTOM WIDTH W1	(Ft.) OVERALL WIDTH W2	(Ft.) DEPTH Y	T (RENO MATTRESS)	T (RIPRAP)	d50 (RENO MATTRESS)	d50 (RIPRAP)
HW-1	18"	9'	18'	4.5'	13.5'	1.5'	10"	18"	6"(R-4)	9"(R-5)

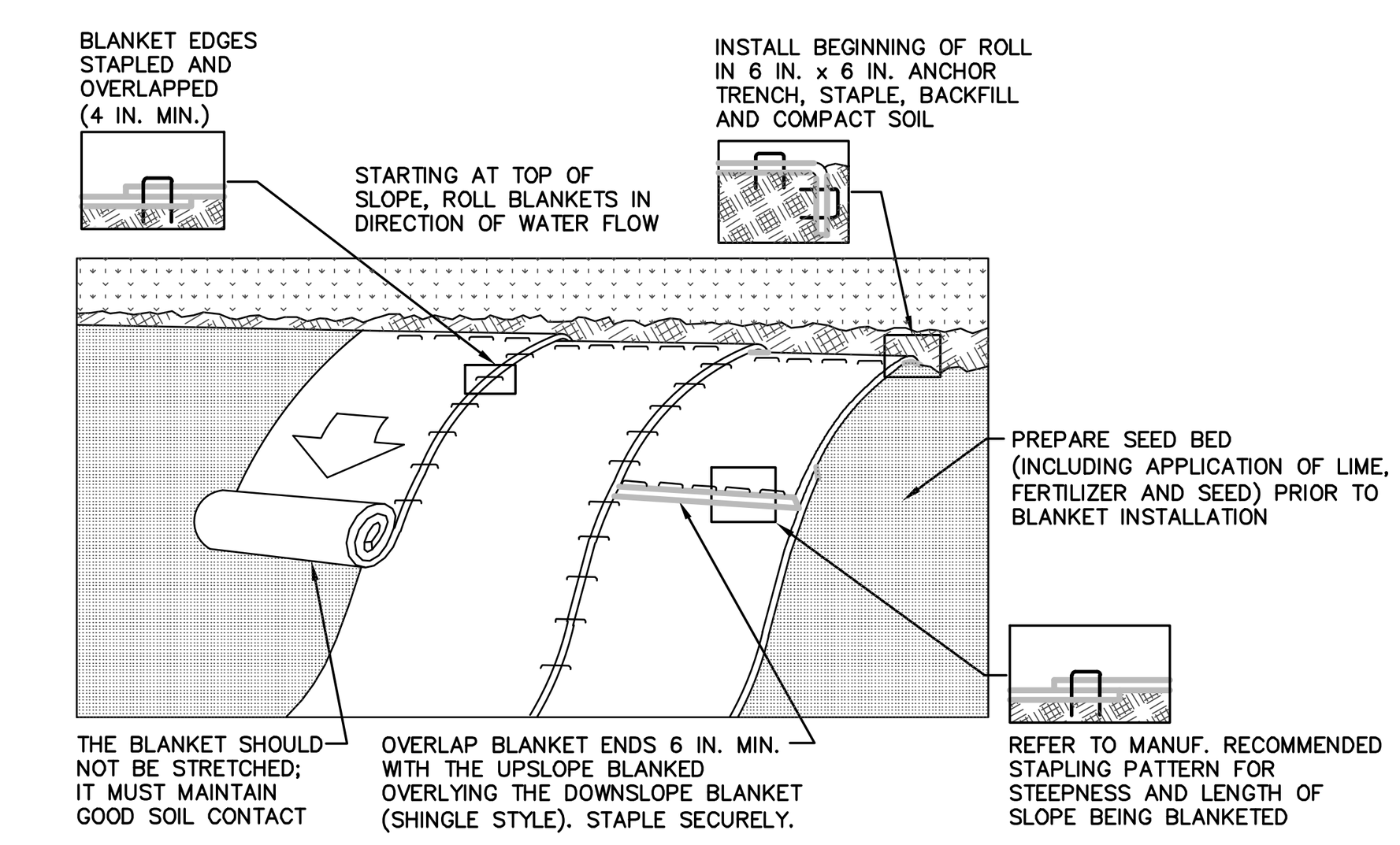
NOTE:
PREFORMED SCOUR HOLES CAN BE CONSTRUCTED OF RENO MATTRESSES, OR RIPRAP, SEE PREFORMED SCOUR HOLE CHART FOR REQUIRED THICKNESS AND MEDIAN STONE SIZE FOR EACH. RENO MATTRESS TO BE PVC COATED, GALVANIZED BASKETS FILLED WITH 4" to 7" ANGULAR BLOCK SHAPED ROCK BASKETS TO BE TIGHTLY WIRED TOGETHER. GABIONS CAN BE SUBSTITUTED FOR RENO MATTRESSES IF THE PREFORMED SCOUR HOLE THICKNESS DICTATES.

TYPICAL PREFORMED SCOUR HOLE DETAIL

NOT TO SCALE



NORTH AMERICAN GREEN STAPLE PATTERNS



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1 EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24"	12" 18" 24"	12" 18" 24"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting			HDPE biaxial net Continuously wound Fusion-welded junctures 3/4" X 3/4" Max. aperture size		
Outer Filtration Mesh			Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) 3/16" Max. aperture size		

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

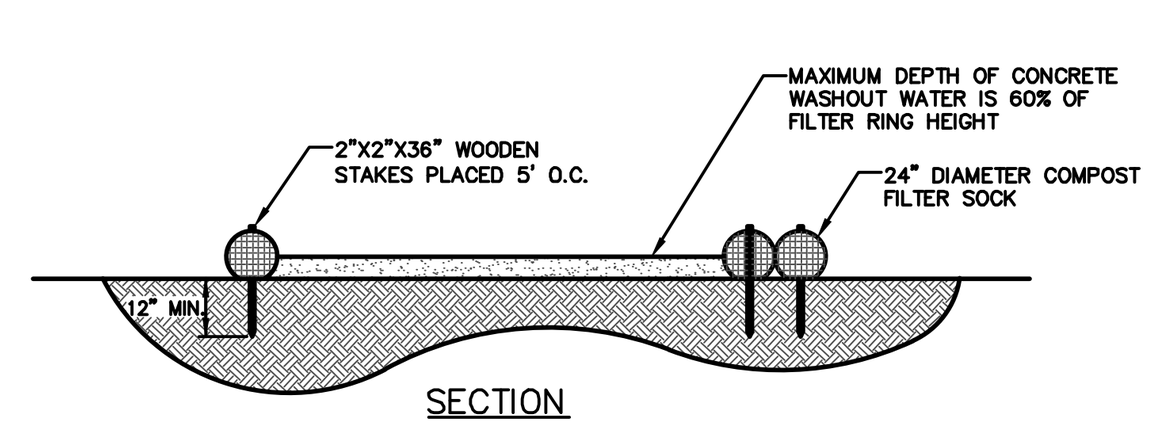
Filtrexx & JMD

Compost should be a well decomposed, weed-free organic matter derived from agriculture, food, stump grindings, and yard or wood/bark organic matter sources. The compost should be aerobically composted. The compost should possess no objectionable odors and should be reasonably free (<1% by dry weight) of man-made foreign matter. The compost product should not resemble the raw material from which it was derived. Wood and bark chips, ground construction debris or reprocessed wood products are not acceptable as the organic component of the mix.

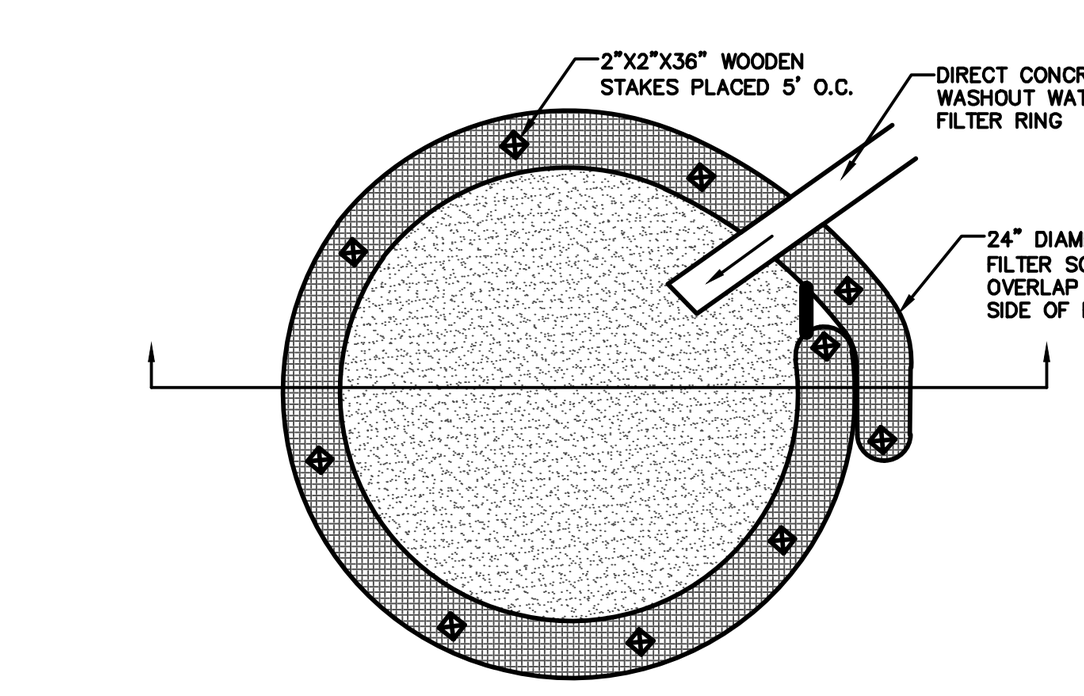
The physical parameters of the compost should comply with the standards in Table 4.2. The standards contained in the PennDOT Publication 408 are an acceptable alternative.

TABLE 4.2
Compost Standards

Organic Matter Content	25% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.5
Moisture Content	30% - 60%
Particle Size	30% - 50% pass through 3/8" sieve
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.



A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO THE INSTALLING SOCKS.

COMPOST SOCK WASHOUT DETAIL

NOT TO SCALE

CONCRETE WASHOUT NOTES

1. FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON SITE, A SUITABLE WASHOUT FACILITY MUST BE PROVIDED FOR THE CLEANING OF CHUTES, MIXERS, AND HOPPERS OF THE DELIVERY VEHICLES UNLESS SUCH A FACILITY WILL BE USED AT THE SOURCE OF THE CONCRETE. UNDER NO CIRCUMSTANCES MAY WASH WATER FROM THESE VEHICLES BE ALLOWED TO ENTER ANY SURFACE WATERS. PROPER SIGNAGE SHALL BE PROVIDED TO DRIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.
2. CONCRETE WASHOUT SHOULD NOT BE PLACED WITHIN 50 FEET OF ANY STORM DRAIN, OPEN DITCH, OR SURFACE WATERS.
3. WHEREVER POSSIBLE, CONCRETE WASHOUT SHALL BE PLACED ON SLOPES NOT EXCEEDING A 2% GRADE.
4. WHEREVER COMPOST SOCK WASHOUTS ARE USED, A SUITABLE IMPERVIOUS GEOMEMBRANE SHOULD BE PLACED AT THE LOCATION OF THE WASHOUT. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANE SO AS TO FORM A RING WITH THE ENDS OF THE SOCK LOCATED AT THE UPSLOPE CORNER (SEE DETAIL). CARE SHOULD BE TAKEN TO ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS. WHERE NECESSARY, SOCKS MAY BE STACKED AND STAKED SO AS TO FORM A TRIANGULAR CROSS-SECTION.
5. WASH WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
6. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
7. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
8. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY

TABLE 11.4
Recommended Seed Mixtures

Mixture Number	Species	Seeding Rate - Pure Live Seed [1] Most Sites	Adverse Sites
1 [2]	Spring oats (spring), or	64	96
	Annual ryegrass (spring or fall), or	10	15
	Winter wheat (fall), or	90	120
	Winter rye (fall)	56	112
2 [3]	Tall fescue, or	60	75
	Fine fescue, or	35	40
	Kentucky bluegrass, plus	25	30
	Redtop [4], or	3	3
	Perennial ryegrass	15	20
3	Birdsfoot trefoil, plus	6	10
	Tall fescue	30	35
4	Birdsfoot trefoil, plus	6	10
	Reed canarygrass	10	15
5 [5]	Crownvetch, plus	10	15
	Tall fescue, or	20	25
	Perennial ryegrass	20	25
6 [5,6]	Crownvetch, plus	10	15
	Annual ryegrass	20	25
7 [6]	Birdsfoot trefoil, plus	6	10
	Crownvetch, plus	10	15
	Tall fescue	20	30
8	Flatpea, plus	20	30
	Tall fescue, or	20	30
	Perennial ryegrass	20	25
9 [5]	Serecia lespedeza, plus	10	20
	Tall fescue, plus	20	25
	Redtop [4]	3	3
10	Tall fescue, plus	30	60
	Fine fescue	10	15
11	Deertongue, plus	15	20
	Birdsfoot trefoil	6	10
12 [7]	Switchgrass, or	15	20
	Big Bluestem, plus	15	20
	Birdsfoot trefoil	6	10
13	Orchardgrass, or	20	30
	Smooth bromegrass, plus	25	35
	Birdsfoot trefoil	6	10

Penn State, "Erosion Control and Conservation Plantings on Noncropland"
1. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
2. If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 11.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
3. This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
4. Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and redtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
5. Use for highway slopes and similar sites where the desired species after establishment is crownvetch.
6. Use only in extreme southeastern or extreme southwestern Pennsylvania. Serecia lespedeza is not well adapted to most of PA.
7. Do not mow shorter than 9 to 10 inches.
8. Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.

ERNMX-900 "NJ SALT TOLERANT BASIN MIX"

30.0% PANICUM CLANDESTINUM (DICHANTHELIUM C.), 'TIOGA'
25.0% ELYMUS RIPARIUS, PA ECOTYPE
20.0% PANICUM AMARUM, 'ATLANTIC'-VA ECOTYPE
20.0% PANICUM VIRGATUM, 'CARTHAGE', NC ECOTYPE
3.0% JUNCUS EFFUSUS
2.0% JUNCUS TENIUS, PA ECOTYPE

NOTE: ERNMX-900 IS TO BE USED AS PERMANENT STABILIZATION FOR ALL DISTURBED AREAS OF THE PROJECT. SEEDING RATE IS 20 LB/ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB/ACRE. MULCH PER TABLE 11.6. FERTILIZE PER TABLE 11.2 ONLY IF DEEMED NECESSARY BY THE DESIGN ENGINEER AFTER A SOIL TEST.

NOTE: MIX 1 FROM TABLE 11.4 IS TO BE USED AS TEMPORARY SEEDING IF NECESSARY FOR ALL AREAS OF THE PROJECT. MULCH PER TABLE 11.6. FERTILIZE PER TABLE 11.2 ONLY IF DEEMED NECESSARY BY THE DESIGN ENGINEER AFTER A SOIL TEST.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.) Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

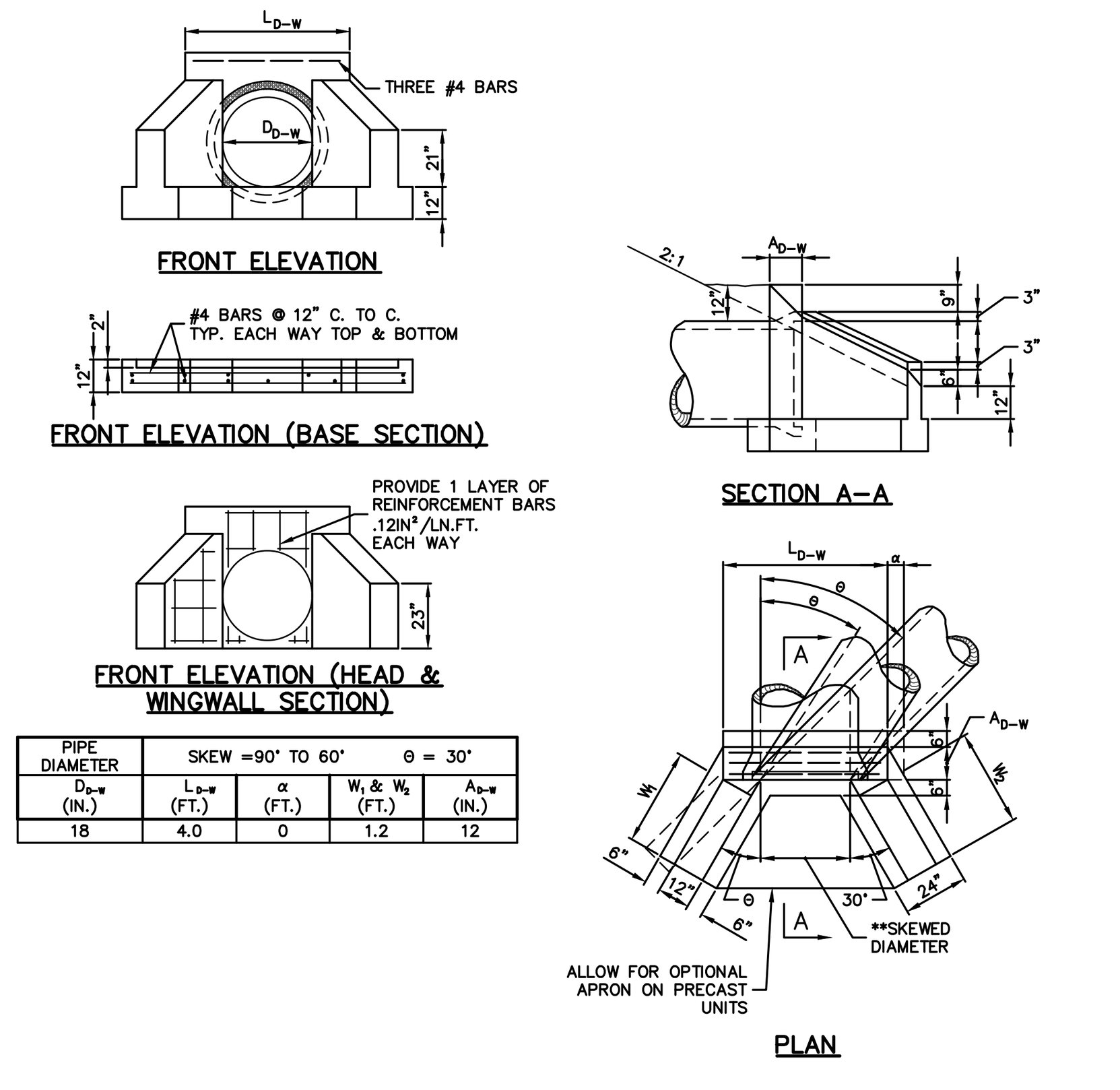
Mulch on slopes of 8% or steeper should be held in place with netting. Lightweight plastic, fiber, or paper nets may be stapled over the mulch according to manufacturer's recommendations.

Shredded paper hydromulch should not be used on slopes steeper than 5%. Wood fiber hydromulch may be applied on steeper slopes provided a tackifier is used. The application rate for any hydromulch should be 2,000 lb/acre at a minimum.

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
	Permanent Seeding Application Rate			
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"



PIPE DIAMETER D_{D-W} (IN.)	SKEW =90° TO 60° L_{D-W} (FT.)	α (FT.)	θ = 30° W_1 & W_2 (FT.)	A_{D-W} (IN.)
18	4.0	0	1.2	12

NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-31M), LATEST REVISION.

HEADWALL/ENDWALL - TYPE D-W

NOT TO SCALE

NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
##/##/20## DATE

FINAL CONSTRUCTION PLANS
SUSQUEHANNA AVENUE WET POND
KENNETH A. YOUNG MEMORIAL PARK
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

CONSTRUCTION DETAILS

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DRAWING CSD-1

SHEET 6 OF 6

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CONSTRUCTION PLANS
FOR
DALLAS AREA MUNICIPAL AUTHORITY
LACKAWANNA AVENUE CONSTRUCTED FILTER

DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA



SCALE: 1"=500'

LOCATION MAP

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING FEATURES AND REMOVALS PLAN
3	GRADING & DRAINAGE PLAN
4	STORM SEWER PROFILES AND SPECIAL STRUCTURES
5	EROSION AND SEDIMENTATION CONTROL PLAN
6	CONSTRUCTION DETAILS

SITE & ADJACENT PROPERTY OWNER'S LIST		
PARCEL No.	OWNER OF RECORD	DEED BK, PG
11-D8SW4-004-016 (SITE)	BOROUGH OF DALLAS	DEED NOT FOUND
11-D8SW4-004-015 (SITE)	BOROUGH OF DALLAS	DEED BOOK 2593, PAGE 901
11-D8SW4-004-017	MANZONI, GEORGE & TRACY	DEED BOOK 3002, PAGE 320581
11-D8SW4-004-004	HUGHES, PAUL J.	DEED BOOK 3004, PAGE 273448
11-D8SW4-004-005	MOORE, ROBERT & ELIM	DEED BOOK 3012, PAGE 175539
11-D8SW4-004-006	TOUEY, MICHAEL & GAIL	DEED BOOK 2468, PAGE 245
11-D8SW4-004-007	ENS REAL ESTATE LLC	DEED BOOK 3019, PAGE 11859
11-D8SW4-004-009	CASEY, CATHLEEN M.	DEED BOOK 3011, PAGE 144241
11-D8SW4-004-013	GABRIELE, KRISTI L.	DEED BOOK 3018, PAGE 219335

UTILITY USER LIST
ACT NUMBER 287 OF 1974 AS AMENDED

DALLAS BOROUGH
25 MAIN ST
DALLAS, PA 18612
CONTACT: TRACEY CARR, MANAGER
PHONE: (570) 675-1389
EMAIL: TCARR@DALLASBOROUGH.ORG

DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708
CONTACT: THOMAS MAYKA
PHONE: (570) 696-1133 x309
EMAIL: TMAYKA@DAMAONLINE.ORG

UGI UTL WILKES BARRE
511 E NORTHAMPTON ST
WILKES BARRE, PA 18702
PHONE: (800) 276-2722

SUEZ WATER PENNSYLVANIA INC
4636 SOMERTON ROAD
TREVOSE, PA 19053
PHONE: (888) 299-7292

OWNER:
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708-9603

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COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
DATE ##/##/20##

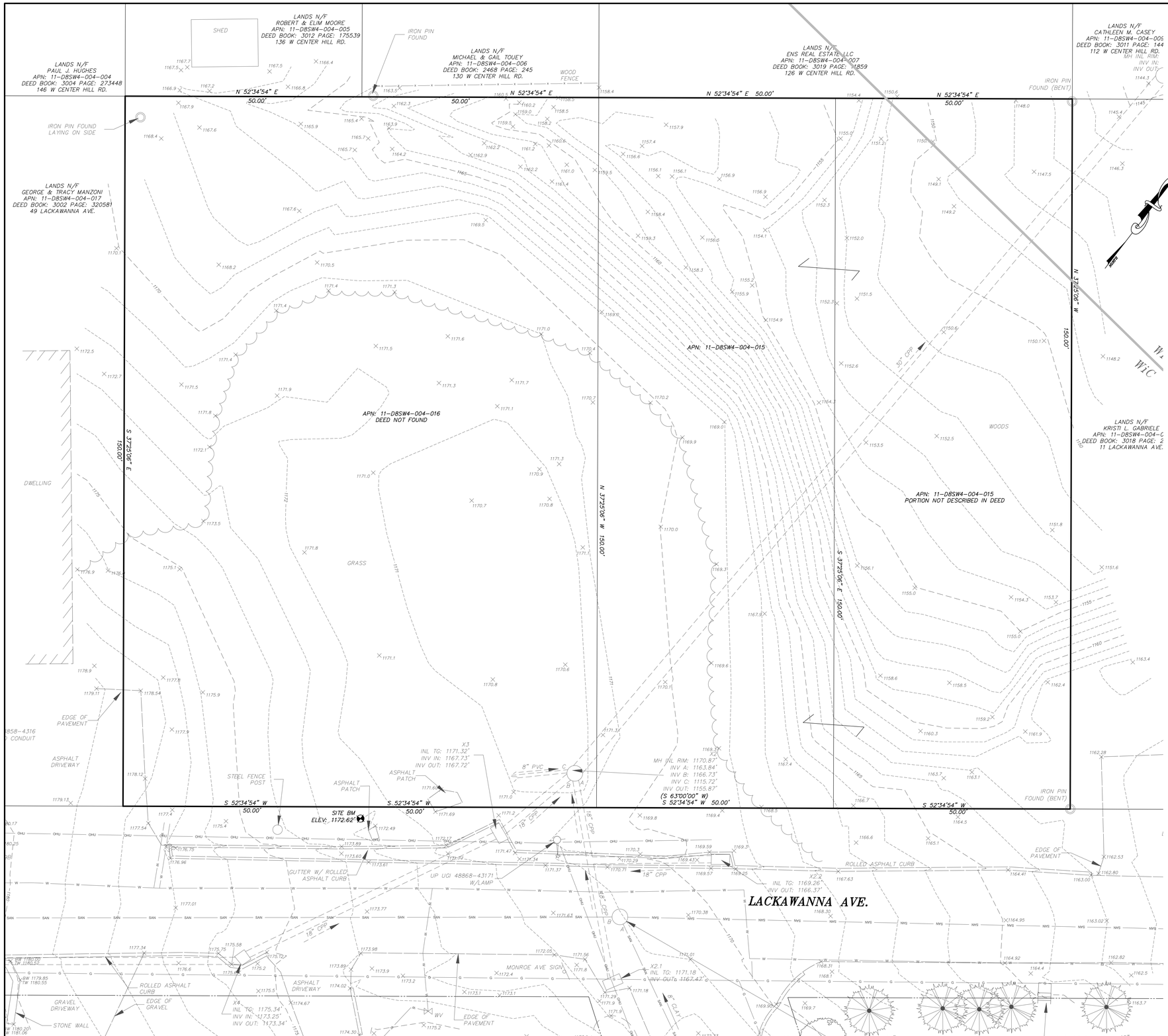
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SHEET	1 OF 6



GENERAL DEMOLITION NOTES

1. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS IDENTIFIED BY THE CONTRACTOR SHALL BE REPORTED TO THE ENGINEER IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF ACTIVITY.
2. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS AND OTHER FEDERAL, STATE, AND LOCAL REGULATIONS, TO ENSURE THE PUBLIC AND CONTRACTOR SAFETY.
3. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
   A. ENSURE COPIES OF ALL PERMITS AND APPROVALS ARE ON SITE FOR REVIEW.
   B. THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
   C. ALL EXISTING UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE, SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
   D. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING DEMOLITION ACTIVITIES.
   E. FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND RELOCATION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   F. COORDINATE WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT OF THE AFFECTED PARTIES.
   G. A COMPLETE INSPECTION FOR CONTAMINANTS, BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL, SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS SOLELY THE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
4. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES AND ANY OTHER IMPROVEMENTS TO REMAIN ON OR OFF SITE.
5. IN ABSENCE OF SPECIFIC SPECIFICATION, THE CONTRACTOR SHALL PERFORM EARTH MOVING ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S GEOTECHNICAL ENGINEER.
6. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
7. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH: THE "MANUAL ON UNIFORM TRAFFIC CONTROL," AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHT-OF-WAYS.
8. CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
9. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
10. USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
11. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
12. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
13. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
14. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL OFFSITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND LAWS.
15. THE CONTRACTOR SHALL COORDINATE SERVICE SHUTOFF AND DISCONNECT/REMOVAL PROCEDURES WITH EACH RESPECTIVE UTILITY COMPANY FOR THE EXISTING UTILITIES SHOWN TO BE REMOVED.
16. THE DEMOLITION PLAN IS NOT INTENDED TO SHOW EROSION CONTROL MEASURES. FOR SUCH GUIDELINES AND DETAILS, SEE THE EROSION AND SEDIMENT CONTROL PLAN AND DETAILS.

LEGEND

EXISTING		EXISTING	
	TRACT BOUNDARY		WOODED LIMITS
	PROPERTY LINE		TREES
	RIGHT-OF-WAY		STORM SEWER
	EASEMENT		SANITARY SEWER
	EDGE OF PAVEMENT	W	POTABLE WATER
	CURB	G	NATURAL GAS
	SIDEWALK	E	ELECTRIC
	BUILDINGS	OH	TELEPHONE LINE
	CONCRETE MONUMENTS	AbA	SOIL ID'S
	IRON PINS		SOIL TYPE LINES
	FENCE LINE		
	LIGHT POLES		
	UTILITY POLES		
	SIGNS		
102	INTERMEDIATE CONTOURS		
100	INDEX CONTOURS		
102.6	SPOT ELEVATIONS		

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LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
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LACKAWANNA AVENUE
CONSTRUCTED STORMWATER FILTER
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

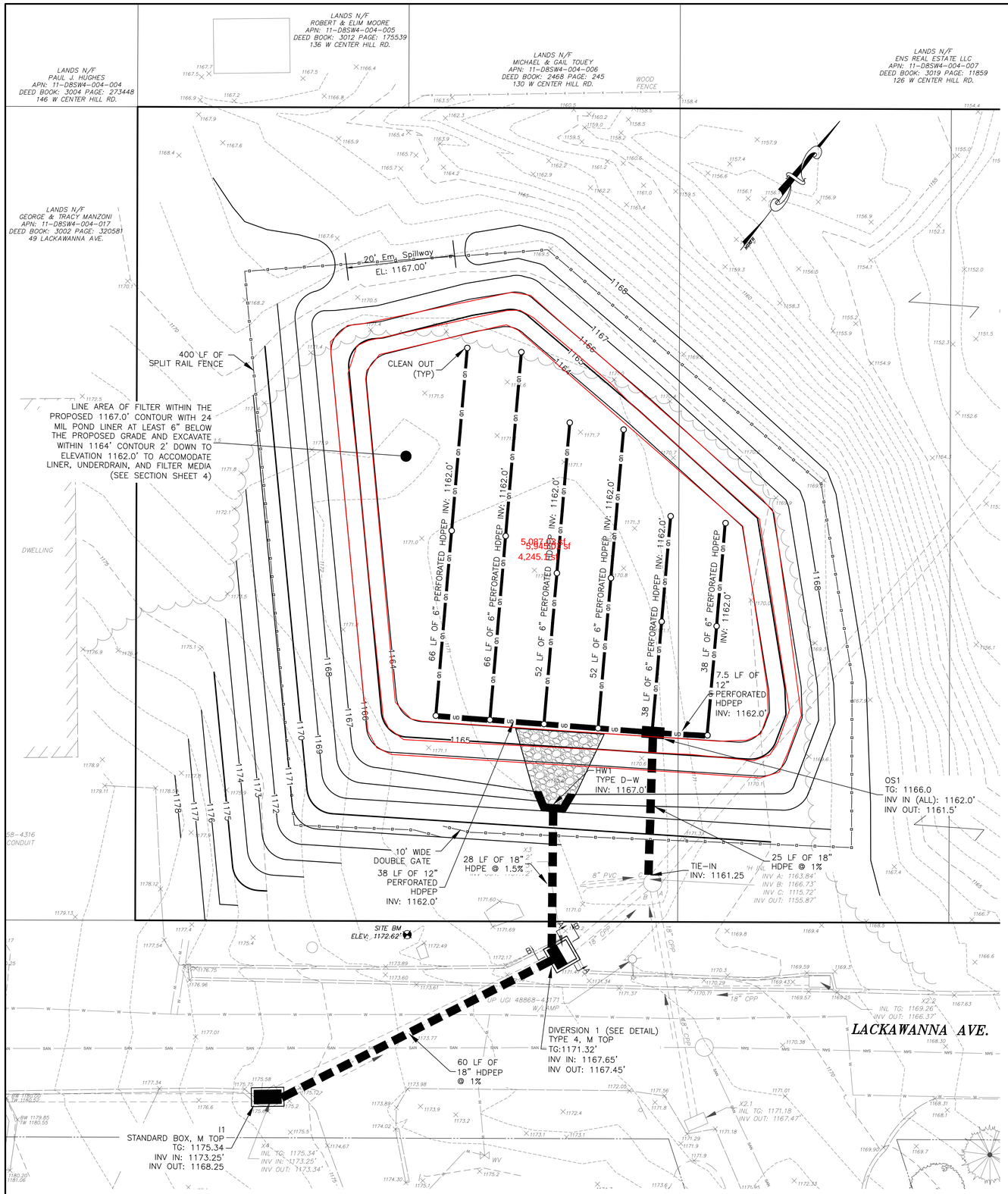
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FILE NAME: DEMO PLAN.dwg
LAST SAVED DATE AND TIME: 14 Aug 2020, 8:46AM
LAST SAVE BY: dpetrik



OPERATION & MAINTENANCE

STORMWATER MANAGEMENT & WATER QUALITY FACILITIES

THE DALLAS AREA MUNICIPAL AUTHORITY, AS OWNER OF THE SITE, ITS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN AND NARRATIVE. ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN THE APPROVED DESIGN CONDITIONS. FACILITIES SHALL BE INSPECTED QUARTERLY AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, A DETAILED INSPECTION BY A QUALIFIED INSPECTOR SHALL OCCUR AT LEAST ANNUALLY. MONTHLY MONITORING FOR THE FIRST YEAR AFTER THE SITE HAS BEEN STABILIZED IS RECOMMENDED. IF RESTORATION ACTIVITIES ARE REQUIRED, A SCHEDULE INDICATING THE DATE WHEN THE RESTORATION ACTIVITIES WILL BE STARTED AND COMPLETED SHALL BE COMPLETED. INSPECTIONS SHALL, AT A MINIMUM, INCLUDE:

- INSPECTING FOR DAMAGE TO THE FACILITY.
- INSPECTING EMBANKMENT AND EMERGENCY SPILLWAY FOR EROSION, SEEPS OR LEAKS, FAILURE OF SLOPE PROTECTION OR RIPRAP AND ADEQUATE GROUND COVER.
- ENSURE THE EMERGENCY SPILLWAY IS CLEAR OF OBSTRUCTIONS AND DEBRIS.
- NOTE SIGNS OF HYDROCARBON BUILD-UP AND ADDRESS APPROPRIATELY.
- MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES.
- ENSURE INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND OPERATIONAL.
- INSPECT OUTFALLS FOR RIPRAP FAILURES AND SLOPE EROSION.
- INSPECT FACILITIES FOR UNDESIRABLE VEGETATIVE OR WOODY GROWTH.

OBSTRUCTIONS AND DEBRIS

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CLEARED OF ALL DEBRIS AND LITTER ON A REGULAR BASIS AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, FLOATING DEBRIS SHALL BE REMOVED, AND THE FACILITY SHALL BE INSPECTED FOR VISIBLE POLLUTION OR SHORELINE PROBLEMS. ERODED CHANNELS OR AREAS OF EXCESSIVE EROSION NEAR THE FACILITY SHALL BE BACKFILLED AND STABILIZED IMMEDIATELY.

SEDIMENT ACCUMULATION

MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES. REMOVE SEDIMENT IF STORAGE VOLUMES HAVE BEEN REDUCED SIGNIFICANTLY OR THE POOLS BECOME STAGNANT. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES ON A REGULAR BASIS (EVERY 2 TO 10 YEARS FOR DRY DETENTION BASINS AND EVERY 5 TO 15 YEARS FOR WET POND FACILITIES) AND SHALL EITHER BE REMOVED FROM THE SITE OR DISPOSED OF ON-SITE AT AN APPROVED DISPOSAL AREA. MAINTENANCE OF CATCH BASINS AND INLETS IS BEST DONE MONTHLY WITH A VACUUM TRUCK. COLLECTED WASTE MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT, THE OWNER SHALL ACQUIRE THE APPROPRIATE EARTH DISTURBANCE PERMITS FROM THE MUNICIPALITY AND/OR THE CONSERVATION DISTRICT.

FILTRATION FACILITIES

OBSERVATIONS SHALL BE MADE TO DETERMINE THE LENGTH OF TIME NEEDED FOR RETAINED WATER TO INFILTRATE INTO THE FILTER AFTER A STORM EVENT. THE OBSERVATIONS SHALL BE MADE BY READING THE WATER LEVEL ON THE OUTLET BOX OF THE UNDERGROUND SYSTEM SEVERAL TIMES OVER A PERIOD OF TWO (2) DAYS AFTER A LARGE STORM EVENT. THE RESULT OF THESE OBSERVATIONS SHALL PROVIDE A RECORD OF HOW WELL THE SYSTEM IS WORKING WHEN COMPARING FUTURE OBSERVATIONS. MEASUREMENTS SHOULD BE TAKEN AFTER EACH RAIN EVENT OF 0.5-INCHES OR MORE, OR MONTHLY, AS DETERMINED BY LOCAL WEATHER CONDITIONS. AT A MINIMUM, OBSERVATIONS SHALL BE MADE TWICE THE FIRST YEAR AND YEARLY THEREAFTER.

AT A MINIMUM, OPERATION AND MAINTENANCE PROCEDURES FOR FILTRATION BEDS SHALL INCLUDE:

- ALL CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST 2 TIMES PER YEAR.
- THE OVERLYING VEGETATION OF FILTRATION FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
- VEHICULAR ACCESS ON FILTRATION AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.

VEGETATED AREAS

VEGETATED AREAS SHALL BE MAINTAINED WITH A MINIMUM UNIFORM VEGETATIVE 70% PERENNIAL VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. VEGETATED AREAS THAT WASH OUT MUST BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. AN ANCHORING METHOD SHOULD THEN BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT AROUND WATER COURSES, IN SWALES, IN AREAS OF CONCENTRATED FLOWS, AND ON STEEP SLOPES.

DETENTION AREA

AT A MINIMUM, THE FOLLOWING OPERATION AND MAINTENANCE PROCEDURES FOR DETENTION AREA OF THE FILTER SHALL BE PERFORMED QUARTERLY:

- STRUCTURES (BASIN BOTTOMS, TRASH RACKS, OUTLET STRUCTURES, RIPRAP, INLETS, GABION STRUCTURES) EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1 INCH.
- SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY, AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED.
- MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED QUARTERLY TO SUSTAIN THE SYSTEM, BUT ALL DEBRIS SHOULD BE REMOVED FROM THE BASIN.
- VEGETATED AREAS SHOULD BE INSPECTED QUARTERLY FOR EROSION.
- VEGETATED AREAS SHOULD BE INSPECTED QUARTERLY FOR UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES.
- VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95 PERCENT. IF VEGETATIVE COVER HAS BEEN REDUCED BY 10%, REVEGETATION SHOULD BE REESTABLISHED.
- FENCES AND GATES SHALL BE INSPECTED FOR DAMAGE AND REPAIRED AS NECESSARY.

OUTLET STRUCTURE:

- DURING LOW WATER CONDITIONS, CONCRETE STRUCTURES SHALL BE INSPECTED TO DETERMINE IF WATER IS PASSING THROUGH ANY JOINTS OR OTHER STRUCTURE CONTACTS AND TO IDENTIFY ANY CRACKS, SPALLING, BROKEN OR LOOSE SECTIONS. ANY CRACKED, SPALLED, BROKEN OR LOOSE SECTIONS SHALL BE CLEANED AND REFILLED WITH AN APPROPRIATE CONCRETE PATCHING MATERIAL. A PROFESSIONAL ENGINEER SHALL BE CONSULTED TO REPAIR EXTENSIVE LEAKAGE, SPALLS OR FRACTURES.
- ANY REPAIRS MADE TO THE PRINCIPAL SPILLWAY (RISER OR BARREL) SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER. VERTICAL TRENCHING TO EXPOSE THE BARREL SHALL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. THE TRENCH SIDE SLOPES SHALL BE STEPPED BACK AT A 2:1 SLOPE, MINIMUM.

EARTH EMBANKMENT:

- ALL ANIMAL BURROWS SHALL BE BACKFILLED AND COMPACTED AND BURROWING ANIMALS SHALL BE REMOVED FROM THE AREA.
- ALL TREES, WOODY VEGETATION, AND OTHER DEEP-ROOTED GROWTH, INCLUDING STUMPS AND ASSOCIATED ROOT SYSTEMS, SHALL BE REMOVED FROM THE EMBANKMENT TOE AND ABUTMENT CONTACTS. THE ROOT SYSTEMS SHALL BE EXTRACTED AND THE EXCAVATED VOLUME REPLACED AND COMPACTED WITH MATERIAL SIMILAR TO THE SURROUNDING AREA. ALL SEEDLINGS SHALL BE REMOVED AT THE FIRST OPPORTUNITY. SIMILARLY, ANY VINE COVER AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT TO ALLOW FOR INSPECTIONS.

FOR ADDITIONAL INFORMATION REGARDING MAINTENANCE OF SPECIFIC STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES, SEE THE PENNSYLVANIA HANDBOOK OF BEST MANAGEMENT PRACTICES FOR DEVELOPING AREAS.

GRADING NOTES

1. VERTICAL DATUM IS NAVD 1988 AND ESTABLISHED BY OBSERVATIONS REFERENCED TO THE NGS CORS NETWORK.
2. THE MINIMUM SLOPE IN GRASSED AREAS SHALL NOT BE LESS THAN 2% AND THE MINIMUM IN PAVED AREAS SHOULD NOT BE LESS THAN 1%.
3. RUNOFF FROM IMPERVIOUS AREAS SHALL NOT BE DIRECTED INTO THE SANITARY SEWER OR ONTO ADJACENT PROPERTIES. WHERE POSSIBLE, RUNOFF SHALL BE DIRECTED TO THE NEAREST PUBLIC RIGHT-OF-WAY OR STORM WATER CONVEYANCE SYSTEM.
4. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
5. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE / RECORD PLAN WILL SUPERSEDE IN ALL CASES. THE ENGINEER OF RECORD MUST BE IMMEDIATELY NOTIFIED IN WRITING OF ANY CONFLICTS.
6. THE CONTRACTOR SHALL BE REQUIRED TO SECURE ALL NECESSARY PERMITS (INCLUDING DEP, ETC.) FOR ALL OFF-SITE HAUL AND/OR BORROW SITES. CONTRACTOR SHALL SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING WORK.
7. EXISTING INLETS AND STORM SEWER SHOWN TO BE FILLED W/DEBRIS SHALL BE CLEANED AND FLUSHED. NEW INLETS AND PIPES SHALL BE CHECKED FOR SILT/DEBRIS AFTER CONSTRUCTION AND FLUSHED/CLEANED IF NECESSARY.
8. DEPTH OF EXISTING UTILITIES IN PORTIONS OF THE SITE ARE UNKNOWN. WHERE EXISTING UTILITIES ARE TO REMAIN AND ARE FOUND TO HAVE INADEQUATE GROUND COVER AFTER FINAL PROPOSED GRADES HAVE BEEN ESTABLISHED, THE DESIGN ENGINEER SHALL BE CONTACTED IMMEDIATELY AND PRIOR TO FURTHER CONSTRUCTION ACTIVITIES IN THE AREA OF SAID CONFLICT.
9. ALL DESIGNERS AND CONTRACTORS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED TO COMPLY WITH THE REQUIREMENTS OF PENNSYLVANIA ACT 287. LOCATION OF EXISTING AND PROPOSED UNDERGROUND UTILITIES AND FACILITIES SHOWN ON THE DRAWINGS HAVE BEEN DEVELOPED FROM INFORMATION MADE AVAILABLE. COMPLETENESS AND ACCURACY OF LOCATION AND DEPTH OF UTILITIES AND FACILITIES CANNOT BE GUARANTEED. THE CONTRACTOR IS TO VERIFY THE DEPTH AND LOCATION OF ALL UTILITIES AND FACILITIES BEFORE THE START OF WORK. UTILIZE HAND EXCAVATION AS REQUIRED. WORK IS ALSO TO BE DONE IN ACCORDANCE WITH THE STANDARDS OF THE UTILITY COMPANIES WHOSE FACILITIES ARE IN THE PROXIMITY OF THE WORK. OTHER UTILITIES MAY BE REQUIREMENTS OF PENNSYLVANIA ACT 38 (1991), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION.
10. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE AND LOCAL CODES, AND ALL REGULATIONS APPURTENANT TO THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. ALL WORK SHALL BE DONE IN ACCORDANCE WITH PROJECT SPECIFICATIONS INCLUDING CURRENT APPLICABLE STANDARDS AND REQUIREMENTS. WHERE ANY STANDARDS SEEM IN CONFLICT WITH THESE DRAWINGS, NOTIFY THE CONSTRUCTION MANAGER FOR DIRECTION PRIOR TO PROCEEDING WITH WORK.
11. CONTRACTORS SHALL HAVE ALL REQUIRED SUBMITTAL APPROVALS PRIOR TO BEGINNING WORK OR ORDERING MATERIALS.
12. CONTRACTORS SHALL VERIFY ALL DIMENSIONS, INVERTS, ELEVATIONS, AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH THE WORK. VARIATIONS BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED PRIOR TO PROCEEDING WITH THE WORK.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY, PROCEDURES, MEANS AND METHODS, SEQUENCING, AND COORDINATION.
14. ALL WORK SHALL BE PERFORMED BY QUALIFIED, EXPERIENCED PERSONNEL.
15. CONTRACTOR SHALL NOTIFY THE OWNER OF PREEXISTING CONDITIONS OF DETERIORATION IN AREAS OF WORK THAT ARE UNCOVERED OR EXPOSED DURING THE WORK.
16. FIELD CHANGES REQUIRE PRIOR ENGINEERING REVIEW AND WRITTEN CONFIRMATION.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR TO ANY SIDEWALKS, LAWN, TREES, PAVING, AND OTHER IMPROVEMENTS DISTURBED OR DAMAGED BY DEMOLITION ACTIVITIES PROPOSED HEREIN.
18. CONTRACTOR SHALL PROVIDE PROPER TEMPORARY BRACING AND SHORING OF ALL CONSTRUCTION TO REMAIN OR DEMOLITION WORK IN PROGRESS.
19. CONTRACTOR SHALL PROVIDE LAYOUT, LINE AND GRADE UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES WITHIN THE DRAWINGS, SPECIFICATIONS, CODES OR STANDARDS FOR CORRECTIVE ACTION PRIOR TO START OF WORK.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH LOCAL, PENNDOT & OSHA REGULATIONS.
22. CONTRACTOR SHALL PROVIDE PROTECTION FOR EXISTING UTILITIES UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY UTILITY LINE INTERRUPTION AT NO ADDITIONAL CONTRACT COST. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION AND SUPPORT FOR ALL UTILITIES EXPOSED DURING THE WORK TO INSURE AGAINST DAMAGE AT NO ADDITIONAL COST.
23. CONTRACTOR SHALL PROVIDE TEMPORARY DEWATERING OF EXCAVATIONS THROUGHOUT THE DURATION OF CONTRACT AT NO ADDITIONAL COST.
24. EXISTING UTILITIES SHOWN ARE BASED ON AVAILABLE DATA. DUE TO THE POTENTIAL LACK OF COMPLETE OR ACCURATE DATA REGARDING EXISTING ONSITE AND OFFSITE UTILITIES, THE CONTRACTOR SHALL ASSESS AVAILABLE DATA, SHALL REQUEST UTILITY COMPANY MARKOUTS, SHALL COORDINATE WITH AFFECTED UTILITY COMPANIES, AND SHALL DIG TEST PITS AT ALL PROPOSED UTILITY CROSSING LOCATIONS SO THAT ELEVATIONS CAN BE TAKEN TO ASSESS POTENTIAL CONFLICTING PIPES/UTILITIES PRIOR TO ANY PROPOSED UTILITY CONSTRUCTION. IF UNEXPECTED UTILITY LOCATIONS OR ELEVATIONS OR PIPE CONFLICTS ARE ENCOUNTERED DURING CONSTRUCTION, OR IF TEST PITS REVEAL POTENTIAL CONFLICT, ENGINEER SHALL BE NOTIFIED SO THAT ELEVATIONS AND LOCATIONS (WHERE NECESSARY) OF AFFECTED UTILITIES CAN BE OBTAINED TO FACILITATE NECESSARY DESIGN ADJUSTMENTS.
25. REMOVAL OF EXISTING UTILITIES SHALL BE COORDINATED WITH THE AUTHORITY AND APPROPRIATE UTILITY COMPANIES.
26. UNLESS SPECIFIED ELSEWHERE IN THE PLANS OR A MANUAL OF TECHNICAL SPECIFICATIONS FOR THE PROJECT, ALL TOPSOIL TO BE USED ON SITE, WHETHER STOCKPILED FROM EXISTING ON SITE SOILS OR IMPORTED MATERIAL SHALL MEET THE MINIMUM QUALITY STANDARDS FOR TOPSOIL AS STIPULATED IN THE PADOT SPECIFICATIONS, MANUAL 408, SECTION 802. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SAMPLES TO A QUALIFIED MATERIALS LABORATORY FOR ANALYSIS AND FOR PROVIDING THE RESULTS TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL BEFORE PLACING ANY TOPSOIL.

PLACEMENT OF FILL NOTES:

1. BACKFILLING, TO THE SUBGRADE ELEVATION, SHALL BE DONE IN LAYERS OF SIX (6) TO EIGHT (8) INCHES AND EACH LAYER SHALL BE THOROUGHLY TAMPED BY AN APPROVED MECHANICAL TAMPER TO A MINIMUM DENSITY OF 95% AT OPTIMUM MOISTURE AS DETERMINED BY ASTM D-698 OR AASHTO T-99 WITH SUITABLE BACKFILL MATERIAL. BACKFILLING OR TAMPING WITH TRENCHING MACHINES IS PROHIBITED.
2. THE FILL MATERIAL SHALL CONTAIN THE PROPER MOISTURE CONTENT TO OBTAIN THE REQUIRED COMPACTION. WETTING OR DRYING OF THE MATERIAL OR ANY OTHER MANIPULATION SHALL BE REQUIRED TO SECURE UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER. IF THE MATERIAL IS TOO WET TO PERMIT PROPER COMPACTION, ALL WORK ON PORTIONS THUS AFFECTED SHALL BE DELAYED UNTIL THE WET MATERIAL HAS EITHER DRIED TO THE MOISTURE CONTENT OR HAS BEEN REMOVED. A LAYER OF FILL SHALL NOT BE ADDED UNTIL THE PREVIOUS LAYER HAS ATTAINED THE REQUIRED PERCENT COMPACTION.
3. SUITABLE BACKFILL MATERIAL IS MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER, FROZEN MATERIAL OR LARGE ROCKS OR STONES WITH A DIAMETER OF GREATER THAN ONE-HALF THE THICKNESS OF THE COMPACTED LAYERS BEING PLACED. IN ADDITION, BACKFILL MATERIAL SHALL NOT CONTAIN VEGETATION, MASSES OF ROOTS, INDIVIDUAL ROOTS, CINDERS, ASHES, REFUSE, BOULDERS, AND ANY OTHER MATERIAL WHICH IN THE OPINION OF THE ENGINEER, IS UNSUITABLE.

STORM SEWER NOTES

1. ALL STORM CONVEYANCE PIPE SHALL BE SMOOTH LINED CORRUGATED POLYETHYLENE PIPE (HDPEP) ASTM F 2306 WITH SMOOTH LINED INTERIOR, AOS N12 ST 1B, OR APPROVED EQUAL UNLESS OTHERWISE SPECIFIED. ALL ROOF LEADERS SHALL BE SCHEDULE 40 PVC.
2. ALL WET POND EMBANKMENTS SHALL BE PLACED IN 8 INCH MAXIMUM LIFTS TO A MINIMUM 95% DRY DENSITY, PRIOR TO PROCEEDING TO THE NEXT LIFT, COMPACTION SHALL BE CHECKED BY A GEOTECHNICAL ENGINEER APPROVED BY THE AUTHORITY WHO SHALL PROVIDE THE AUTHORITY WITH A WRITTEN REPORT. COMPACTION TESTS SHALL BE PERFORMED USING THE MODIFIED PROCTOR METHOD IN ACCORDANCE WITH ASTM D-1577-07. COMPACTION TESTS SHALL BE RUN ON THE LEADING AND TRAILING EDGE AS WELL AS THE TOP OF THE BERM.
3. ANTI-SEEP COLLARS SHALL BE INSTALLED AROUND THE PIPE BARREL WITHIN THE NORMAL SATURATION ZONE OF THE DETENTION BASIN BERMS. THE ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE PIPE BARRELS SHALL BE WATERTIGHT. THE ANTI-SEEP COLLARS SHALL EXTEND A MINIMUM OF TWO FEET BEYOND THE OUTSIDE OF THE PRINCIPAL PIPE BARREL. THE MAXIMUM SPACING BETWEEN COLLARS SHALL BE FOURTEEN (14) TIMES THE MINIMUM PROJECTION OF THE COLLAR MEASURED PERPENDICULAR TO THE PIPE. A MINIMUM OF TWO (2) ANTI-SEEP COLLARS SHALL BE INSTALLED ON EACH OUTLET PIPE.
4. IF A CONFLICT ARISES DURING THE INSTALLATION OF ANY PART OF THE STORM SEWER SYSTEM THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY IN WRITING.

LEGEND

EXISTING		PROPOSED
	TRACT BOUNDARY	
	PROPERTY LINE	
	RIGHT-OF-WAY	
	EASEMENT	
	EDGE OF PAVEMENT	
	CURB	
	SIDEWALK	
	BUILDINGS	
	CONCRETE MONUMENTS	
	IRON PINS	
	FENCE LINE	

EXISTING		PROPOSED
	UTILITY POLES	
	SIGNS	
102	INTERMEDIATE CONTOURS	102
100	INDEX CONTOURS	100
× 102.6	SPOT ELEVATIONS	× 102.64
	WOODED LIMITS	
	STORM SEWER	
	SANITARY SEWER	
W WV	POTABLE WATER	W WV

Pennsylvania 811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20192043273 WAS PLACED FOR DESIGN PURPOSES.

NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 083078-E
##/##/2### DATE

FINAL

LACKAWANNA AVENUE
CONSTRUCTED STORMWATER FILTER
DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

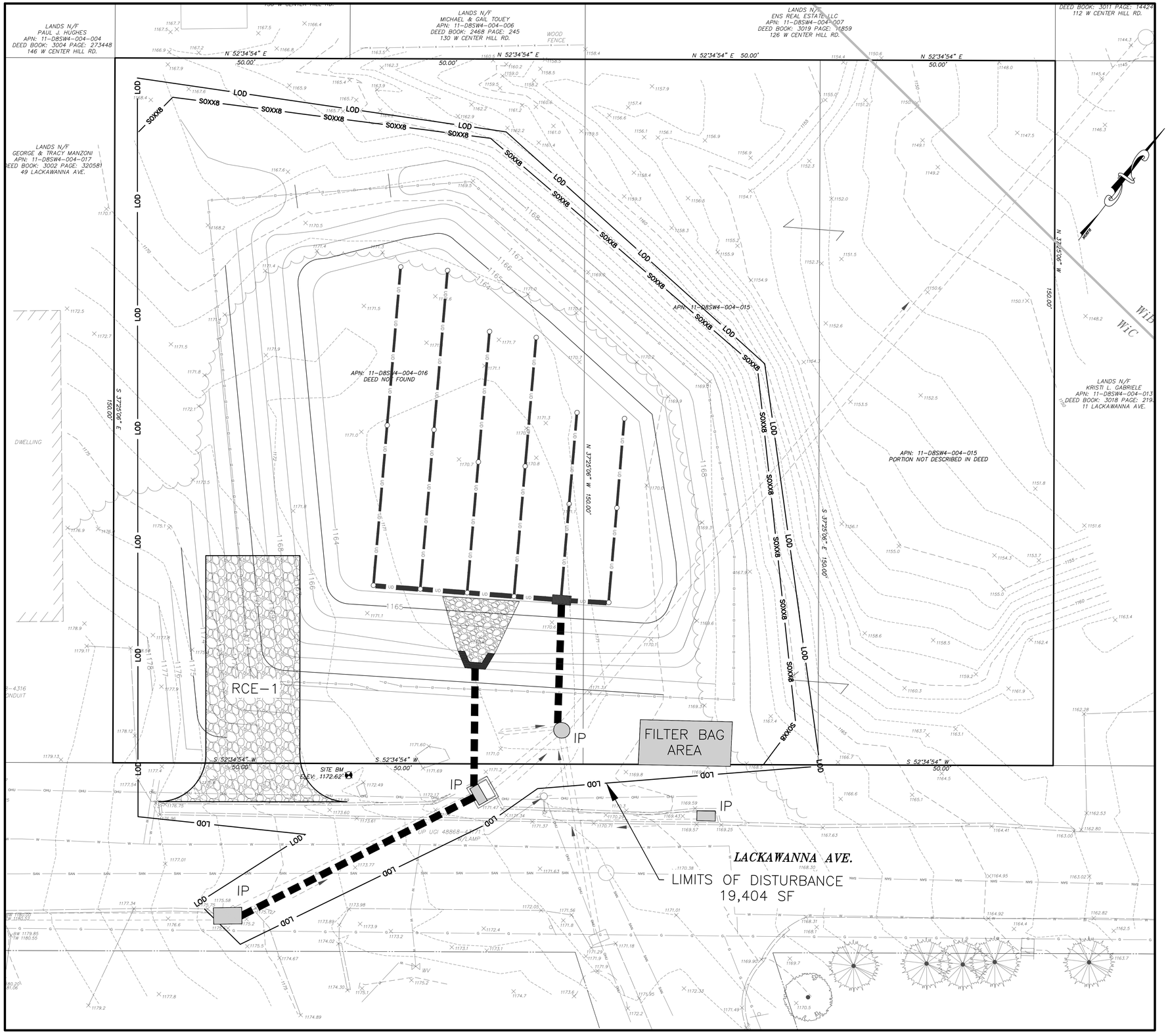
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SHEET	3 OF 6

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CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. STAGING AND STOCKPILE AREA ON BURNDALE AVE AS DEPICTED ON SHEET 5 OF THE SUSQUEHANNA AVE WET POND PLANS IS TO BE USED AS THE STAGIN AND STOCKPILING ARE FOR THIS PROJECT IF NEEDED.
2. INSTALL INLET PROTECTION DEVICES IS EXISTING STORM STRUCTURES AND INSTALL ROCK CONSTRUCTION ENTRANCE RCE-1.
3. INSTALL 8" SILTSOXX ON DOWNSLOPE SIDE OF SITE AS INDICATED.
4. CLEAR AND GRUB SITE, STRIP AND STOCKPILE TOPSOIL
5. EXCAVATE AND BERM CONSTRUCTED FILTER AREA, OVER EXCAVATING TO INSTALL THE 24 MIL POND LINER, UNDERDRAIN, FILTER MEDIA, OUTLET STRUCTURE (OS1) AND PIPING TO EXISTING INLET MANHOLE
6. SEED CONSTRUCTED FILTER AREA AND BERM AND STABILIZE WITH EROSION CONTROL BALNKETS (NAG S75 OR APPROVED EQUAL)
7. AFTER SEED HAS BEGUN TO GERMINATE, INSTALL NEW STORM SEWER STRUCTURES AND RIPRAP APRON FROM PROPOSED ENDWALL HW1 TO I1 ON LACKAWANNA AVENUE
8. RESTORE PAVING ON LACKAWANNA AVENUE
9. RESTORE LAWN TO CONSTRUCTION ENTRANCE, STABILIZE WITH TOPSOIL, SEED, AND EROSION CONTROL BLANKETS (NAG S75 OR APPROVED EQUAL)
10. INSTALL SPLIT RAIL FENCE

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

PROPOSED E&S CONTROLS

- 8" SILT SOXX — SOXX8
- ROCK CONSTRUCTION ENTRANCE — RCE-X
- INLET PROTECTION DEVICE — IP
- LIMIT OF DISTURBANCE — LOD
- PUMPED WATER FILTER BAG AREA

10' 5' 0 10' 20'
1" = 10'

Pennsylvania 811
PENNSYLVANIA ONE CALL SYSTEM, INC. — 1-800-242-1776 — CALL BEFORE YOU DIG!

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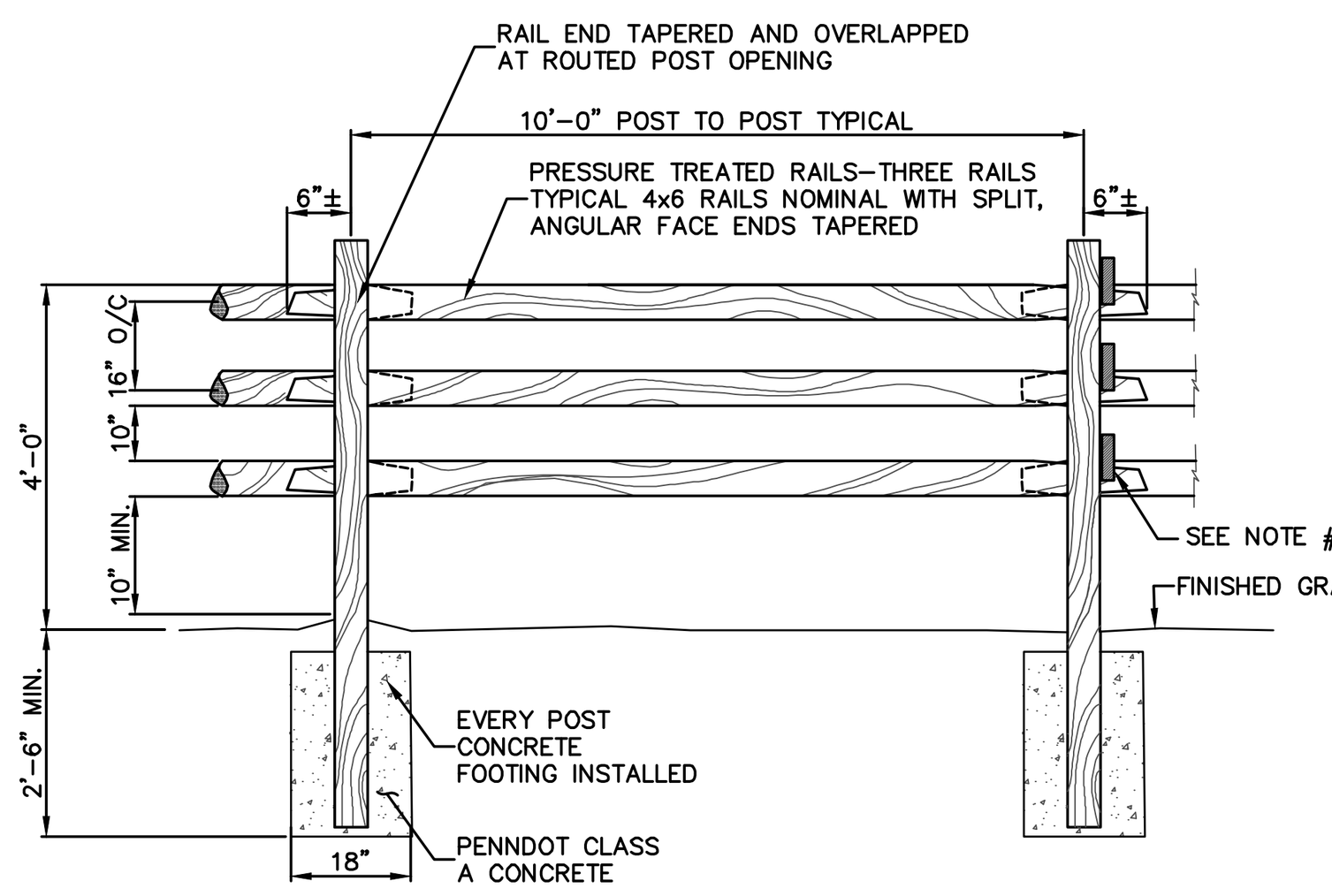
EROSION AND SEDIMENTATION CONTROL PLAN

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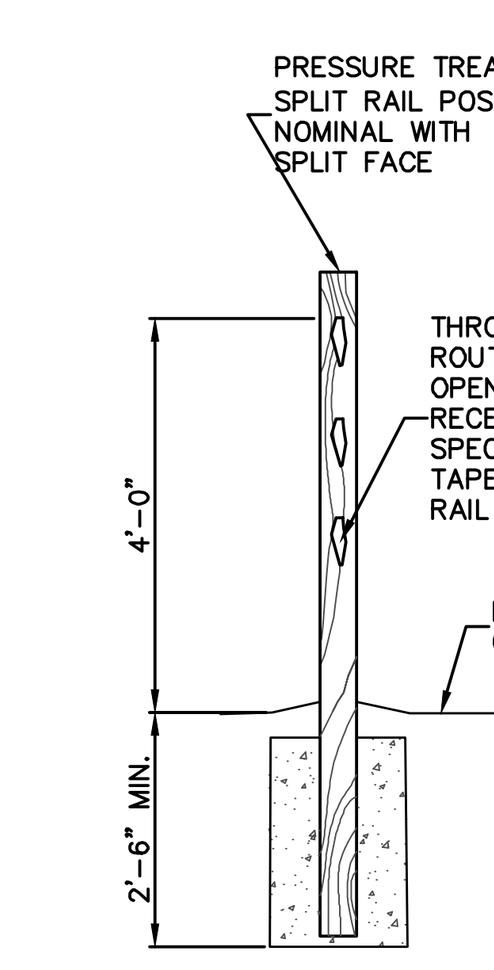
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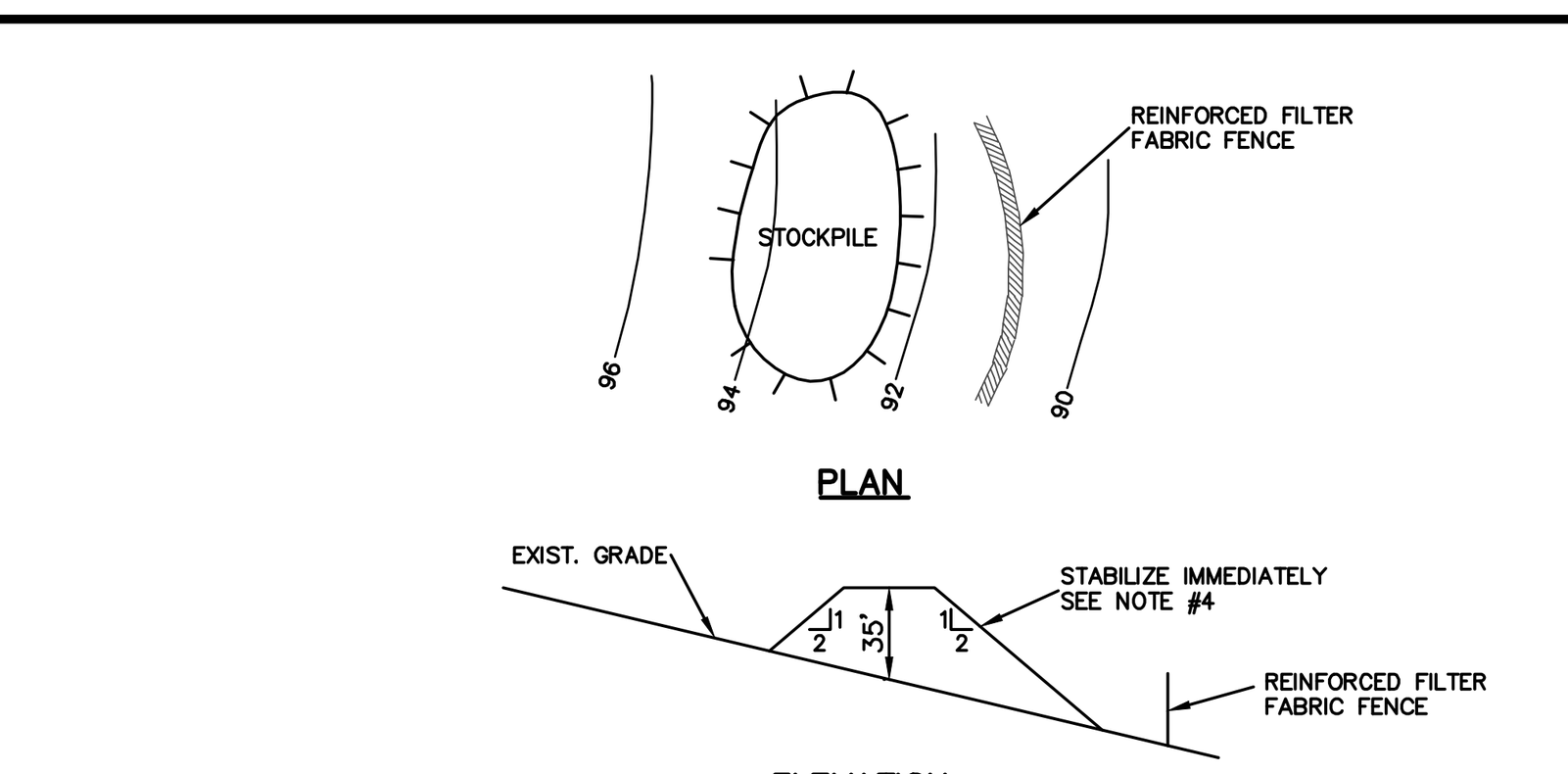
POST

NOTES:

1. WHERE FENCE CORNER INTERSECTS, JOIN RAILS WITH DOVETAIL JOINT 50% HEIGHT OF RAIL AND TOE NAIL TO POST.

FENCE – SPLIT RAIL

NOT TO SCALE

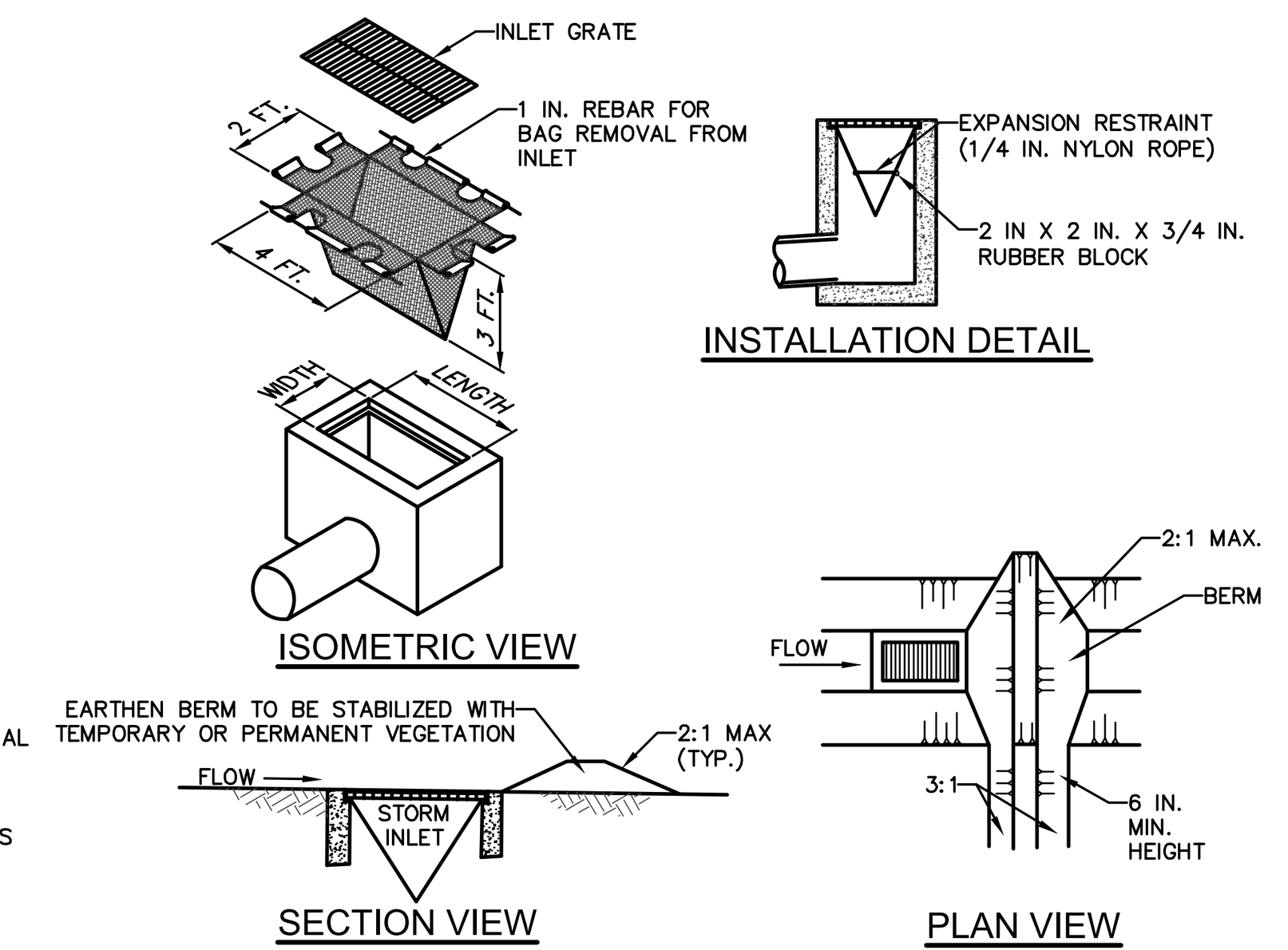


NOTES:

1. INSTALL SILT FENCE DOWNSLOPE OF AREA OF STOCKPILE.
2. PLACE STOCKPILE IN AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.
3. FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FT. SIDE SLOPES SHOULD NOT BE STEEPER THAN 2(H):1(V).
4. SEED IMMEDIATELY WITH TEMPORARY SEEDING PENNDOT FORMULA "D OR "E". IF MATERIAL IS NOT TO BE USED WITHIN 20 DAYS. FOLLOW "PERMANENT SEEDING, FERTILIZATION SCHEDULE & SPECIFICATIONS."

MATERIAL STOCKPILE AND MAINTENANCE

NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

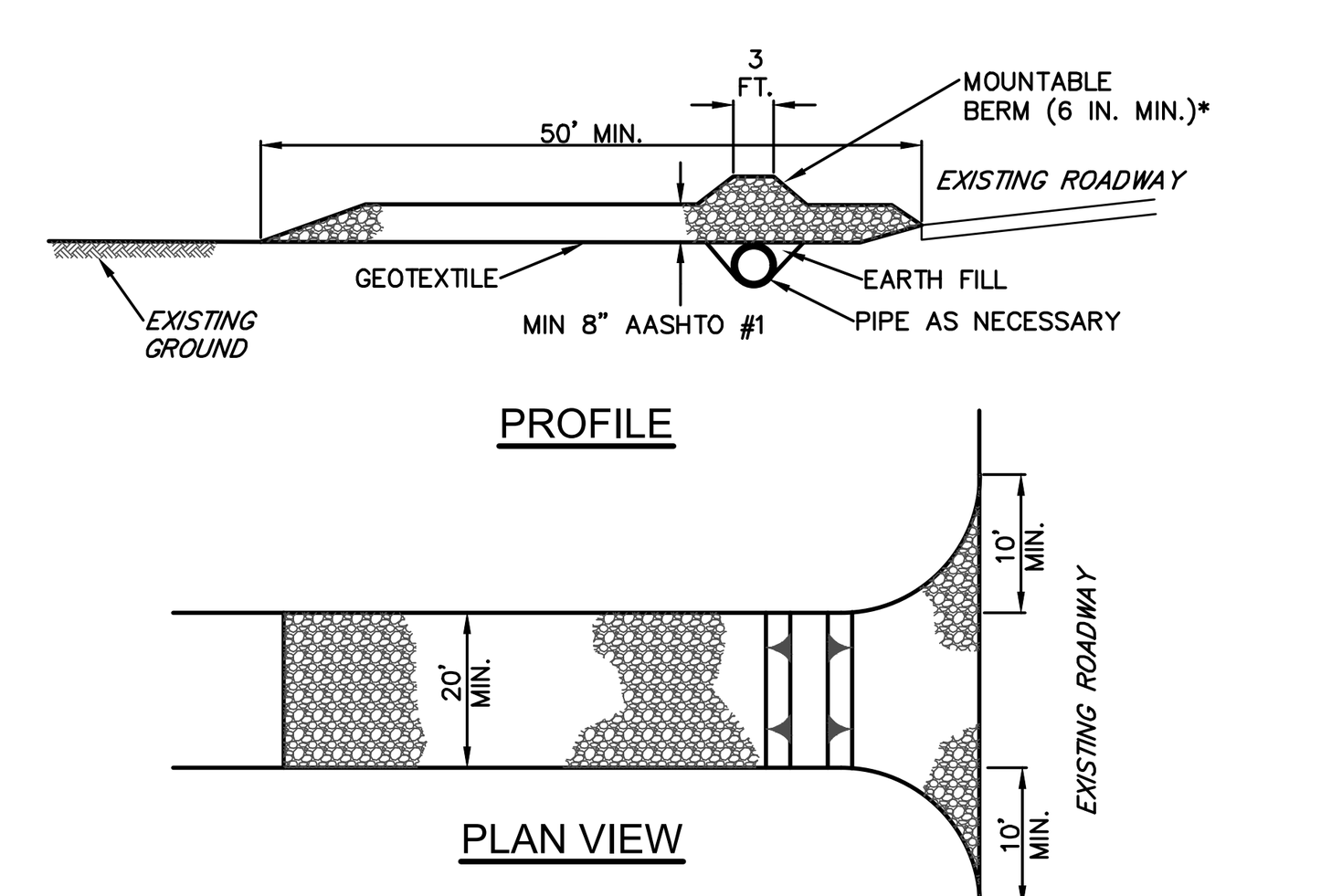
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET

NOT TO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

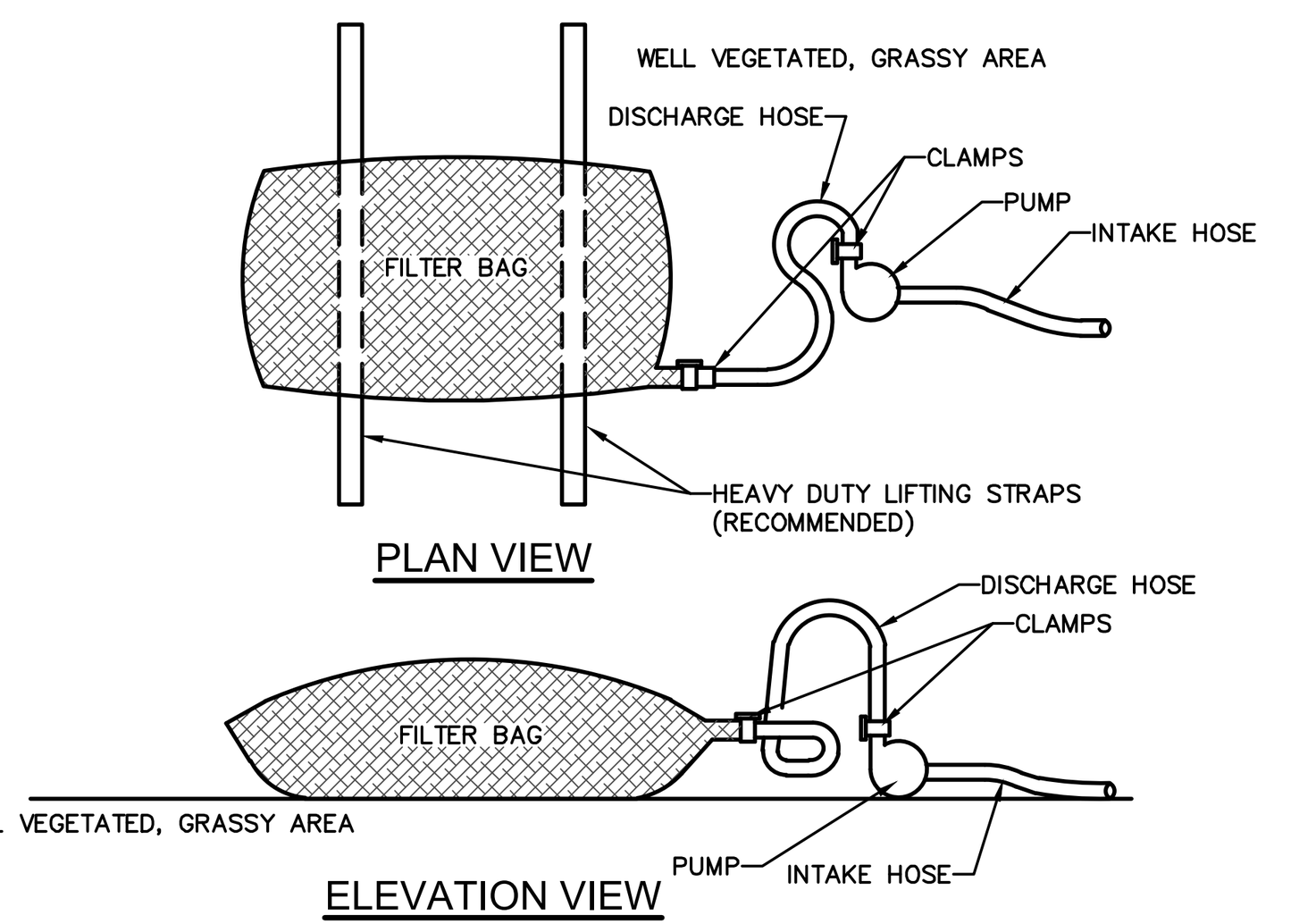
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

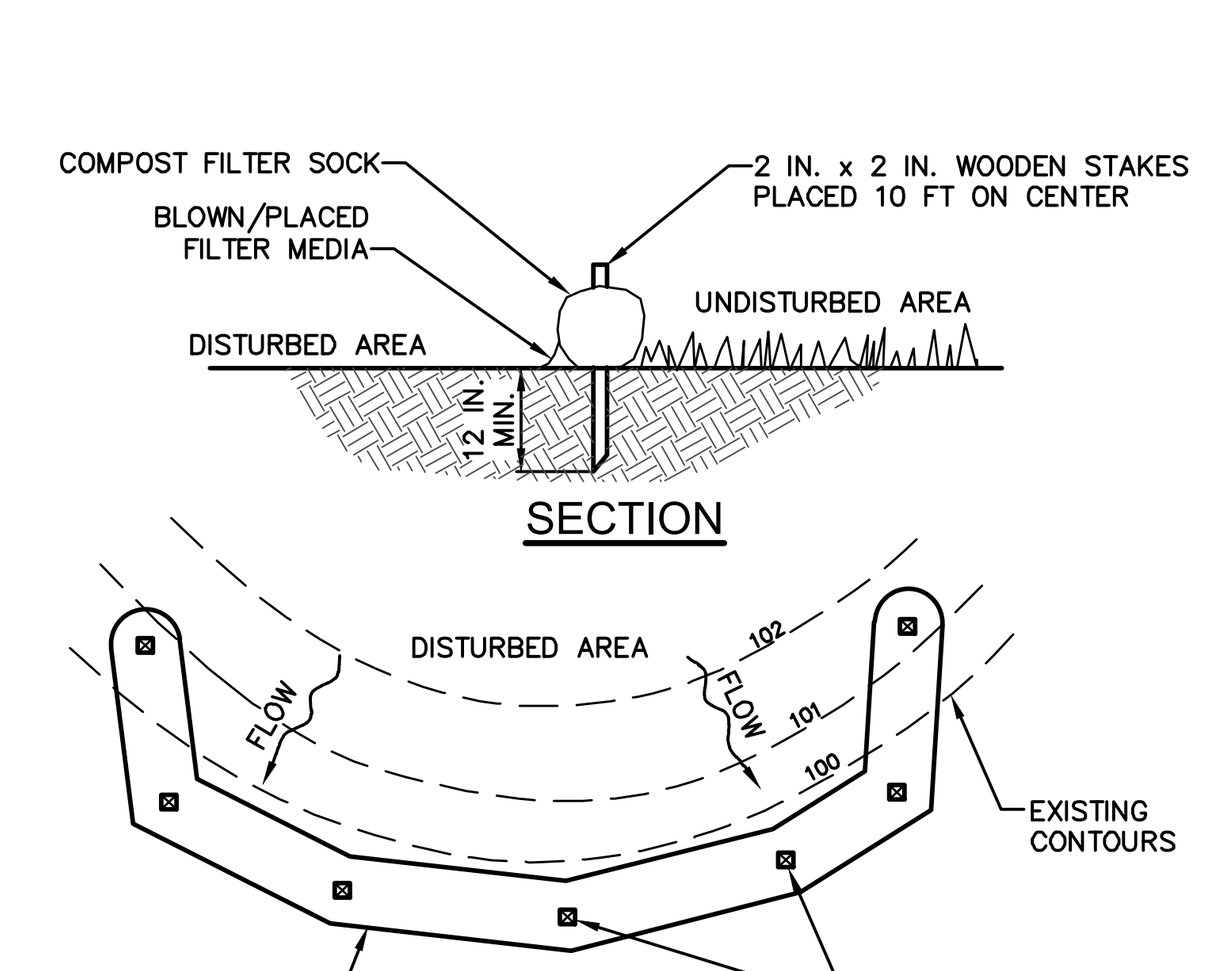
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

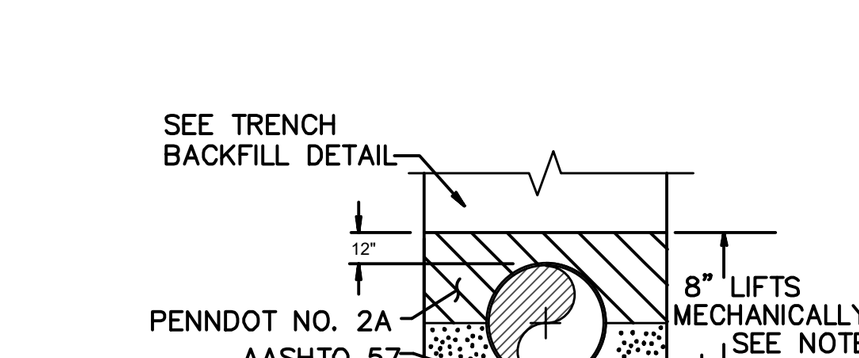
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

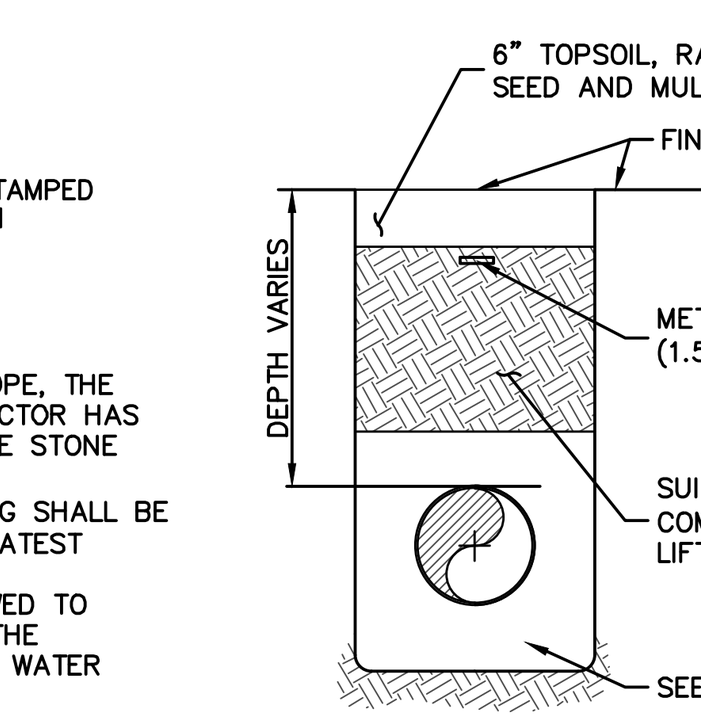
STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE

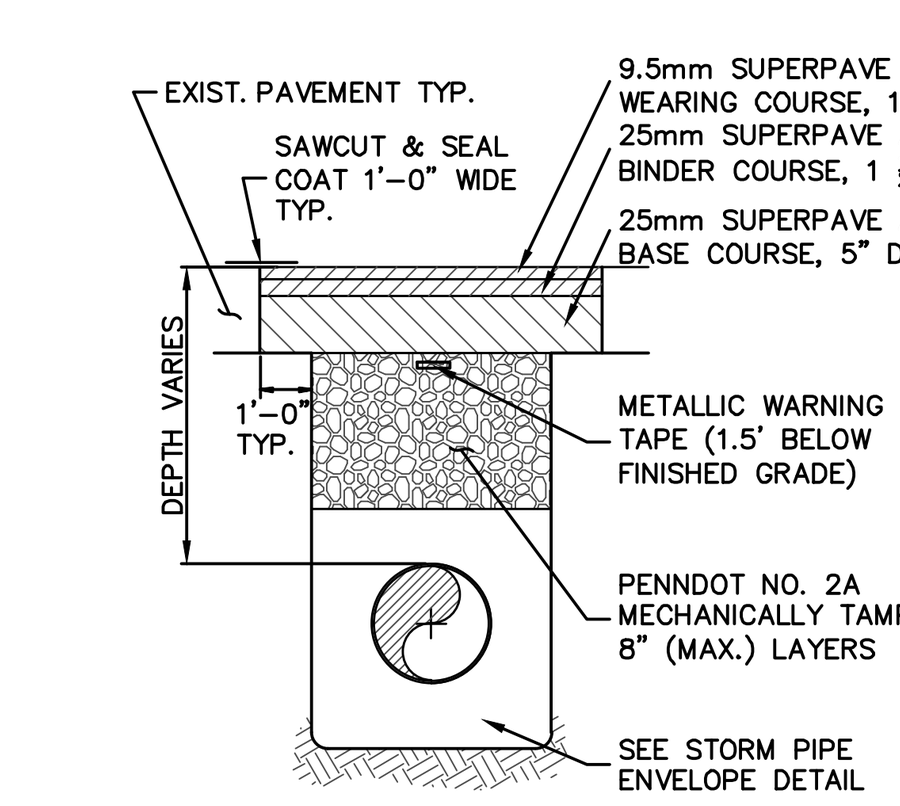


NOTES
1. IN REGARDS TO COMPACTION OF THE STONE ENVELOPE, THE TOWNSHIP, TOWNSHIP ENGINEER OR TOWNSHIP INSPECTOR HAS THE RIGHT TO REQUIRE COMPACTION TESTING OF THE STONE ENVELOPE AND/OR THE SUITABLE BACKFILL AT THE DEVELOPERS/OWNERS EXPENSE. COMPACTION TESTING SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, LATEST EDITION.
2. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.
3. Do = OUTSIDE DIAMETER OF THE PIPE IN FEET.

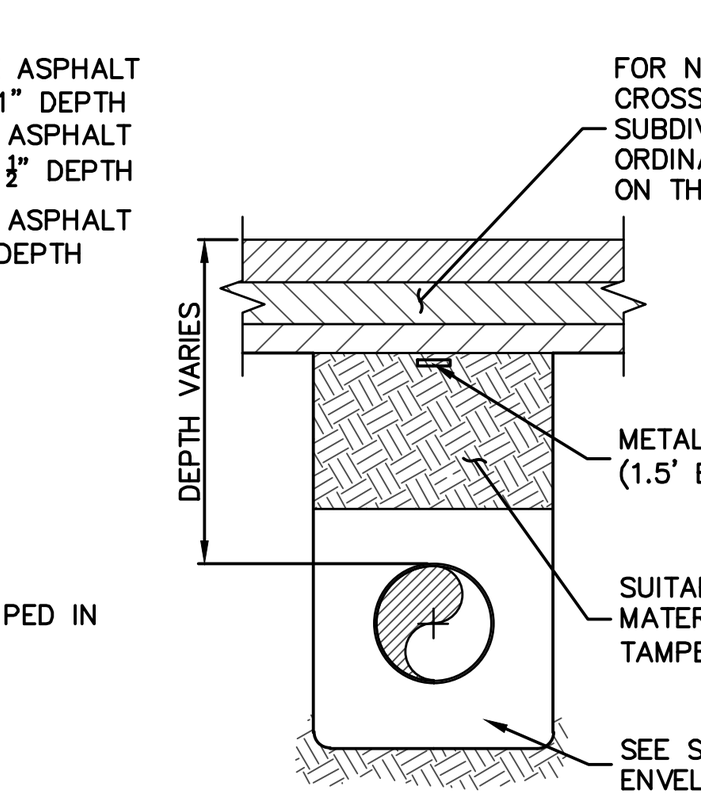
STORM PIPE ENVELOPE



UNPAVED AREAS



EXISTING PAVED AREAS



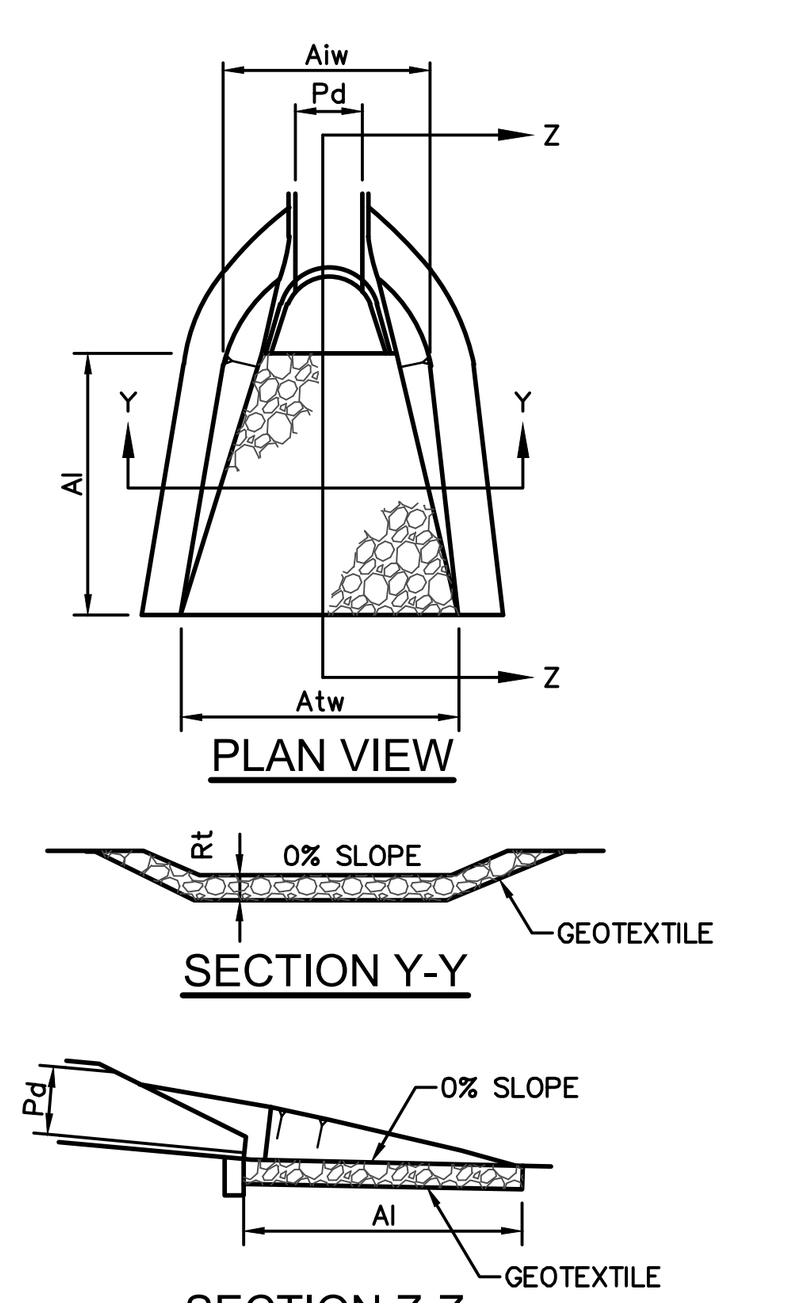
NEW ROADWAYS & PARKING AREAS

PROCEDURES/SPECIFICATIONS FOR PERMANENT PAVEMENT RESTORATION OF EXISTING PAVED AREAS
1. PERMANENT PAVEMENT RESTORATION SHALL BE INSTALLED AFTER A 90 DAY TEMPORARY RESTORATION CONSISTING OF A MINIMUM OF 2 INCHES OF BITUMINOUS BINDER MATERIAL (OR COLD BITUMINOUS IF APPROVED BY THE TOWNSHIP) ON A MINIMUM OF 8 INCHES OF STONE BASE (PENNDOT 2A). AFTER 90 DAYS BUT BEFORE 120 DAYS, THE TEMPORARY RESTORATION SHALL BE REMOVED AD PERMANENT RESTORATION INSTALLED. THE 1-FOOT CUTBACK INTO THE EXISTING PAVEMENT SHALL BE SAWCUT AND WILL BE DONE AT THE TIME OF PERMANENT RESTORATION, NOT AT TEMPORARY RESTORATION.
2. IN REGARDS TO THE PERMANENT RESTORATION BASE COURSE, THE DEPTH SHALL BE A MINIMUM 5" OR A DEPTH EQUAL TO THE EXISTING PAVEMENT DEPTH.
3. IN NO CASE SHALL THE TOTAL DEPTH OF THE (3) PERMANENT ASPHALT COURSES BE LESS THAN THE EXISTING PAVEMENT DEPTH, INCLUDING EXISTING STONE BASE.

NOTES:
1. IN REGARDS TO TRENCH COMPACTION, THE TOWNSHIP, TOWNSHIP ENGINEER OR TOWNSHIP INSPECTOR HAS THE RIGHT TO REQUIRE COMPACTION TESTING OF THE AGGREGATE OR SUITABLE BACKS AT THE DEVELOPER'S/OWNER'S EXPENSE. COMPACTION TESTING SHALL BE IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION.
2. SUITABLE BACKFILL SHALL BE MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER,FROZEN MATERIAL OR LARGE STONE WITH A DIAMETER GREATER THAN ONE-HALF THE THICKNESS OF THE COMPACTED LAYER BEING PLACED.
3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
4. NO SLAG MATERIAL PERMITTED.
5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

PIPE ENVELOPE / TRENCH BACKFILL / RESTORATION

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
HW1	18	4	12	11.3	8	16.5

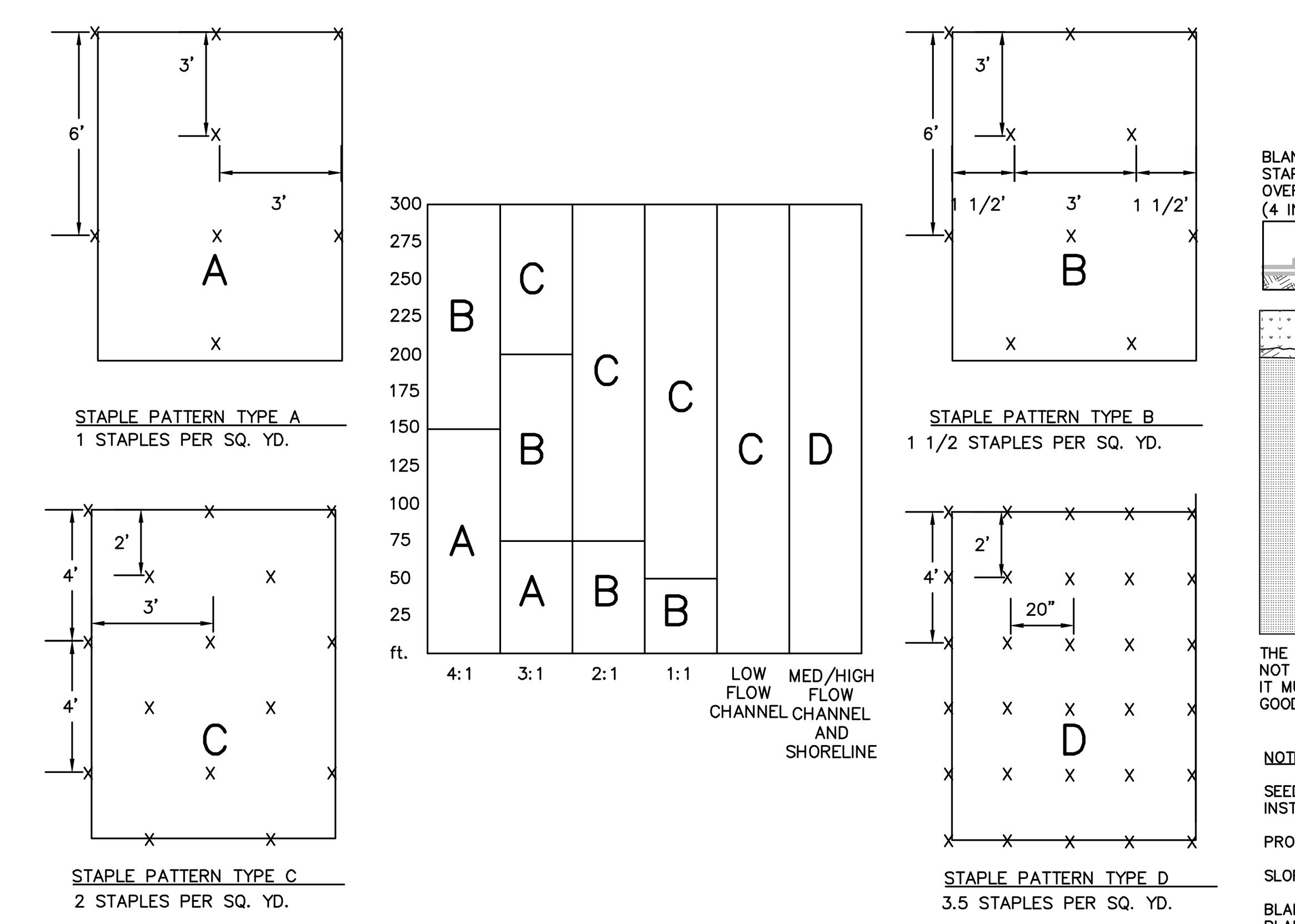
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

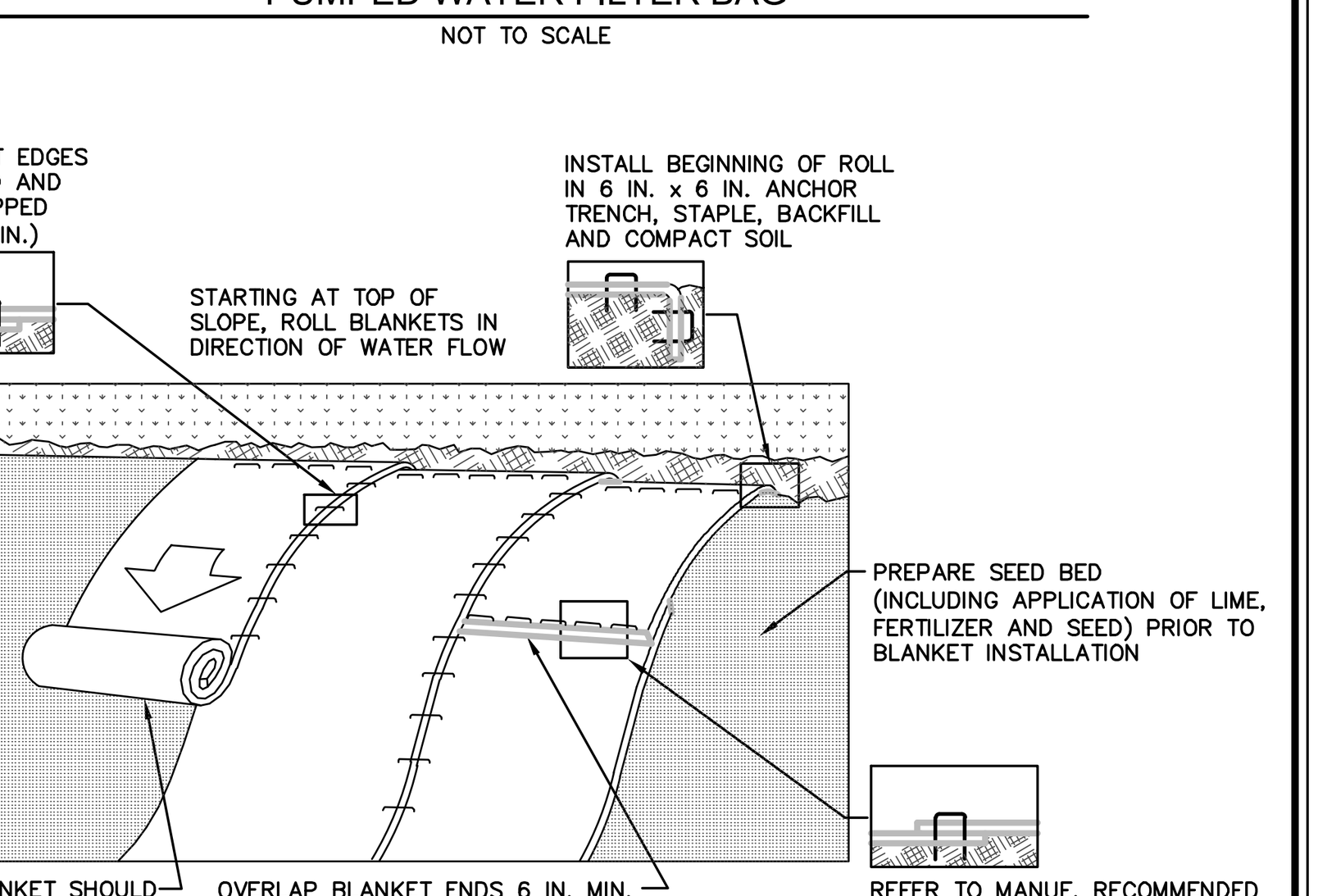
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET
WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE



NORTH AMERICAN GREEN STAPLE PATTERNS



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24"	12" 18" 24"	12" 18" 24"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting			HDPE biaxial net; Continuously wound; Fusion-welded junctures; 3/4" X 3/4" Max. aperture size		
Outer Filtration Mesh			Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch); 3/16" Max. aperture size		

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

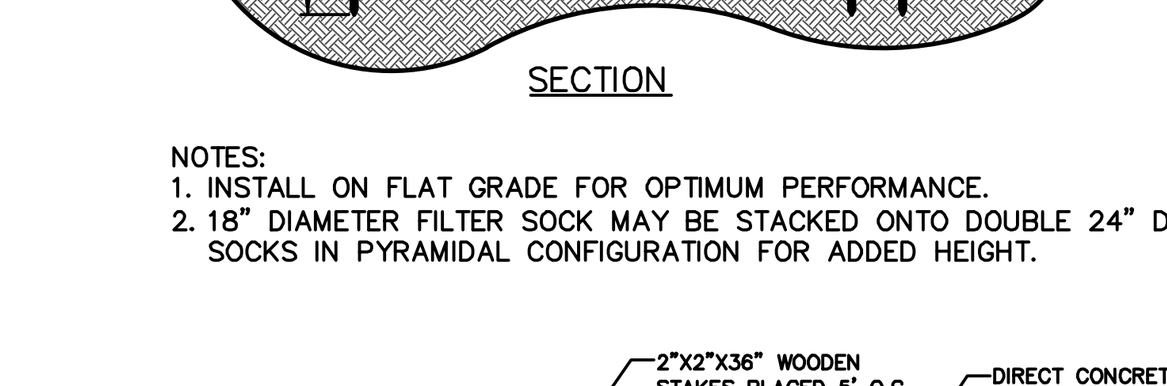
Filtrexx & JMD

Compost should be a well decomposed, weed-free organic matter derived from agriculture, food, stump grindings, and yard or wood/bark organic matter sources. The compost should be aerobically composted. The compost should possess no objectionable odors and should be reasonably free (<1% by dry weight) of man-made foreign matter. The compost product should not resemble the raw material from which it was derived. Wood and bark chips, ground construction debris or reprocessed wood products are not acceptable as the organic component of the mix.

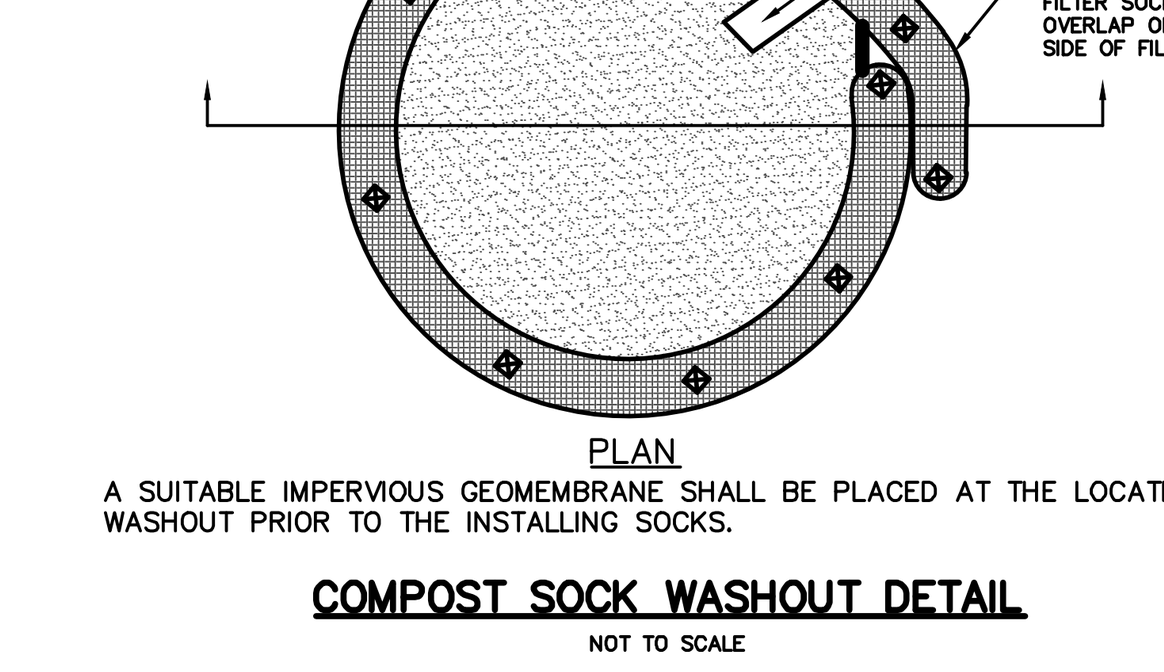
The physical parameters of the compost should comply with the standards in Table 4.2. The standards contained in the PennDOT Publication 408 are an acceptable alternative.

TABLE 4.2
Compost Standards

Organic Matter Content	25% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.5
Moisture Content	30% - 60%
Particle Size	30% - 50% pass through 3/8" sieve
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.



A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO THE INSTALLING SOCKS.

COMPOST SOCK WASHOUT DETAIL

NOT TO SCALE

CONCRETE WASHOUT NOTES

1. FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON SITE, A SUITABLE WASHOUT FACILITY MUST BE PROVIDED FOR THE CLEANING OF CHUTES, MIXERS, AND HOPPERS OF THE DELIVERY VEHICLES UNLESS SUCH A FACILITY WILL BE USED AT THE SOURCE OF THE CONCRETE. UNDER NO CIRCUMSTANCES MAY WASH WATER FROM THESE VEHICLES BE ALLOWED TO ENTER ANY SURFACE WATERS. PROPER SIGNAGE SHALL BE PROVIDED TO DRIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.
2. CONCRETE WASHOUT SHOULD NOT BE PLACED WITHIN 50 FEET OF ANY STORM DRAIN, OPEN DITCH, OR SURFACE WATERS.
3. WHEREVER POSSIBLE, CONCRETE WASHOUT SHALL BE PLACED ON SLOPES NOT EXCEEDING A 2% GRADE.
4. WHEREVER COMPOST SOCK WASHOUTS ARE USED, A SUITABLE IMPERVIOUS GEOMEMBRANE SHOULD BE PLACED AT THE LOCATION OF THE WASHOUT. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANE SO AS TO FORM A RING WITH THE ENDS OF THE SOCK LOCATED AT THE UPSLOPE CORNER (SEE DETAIL). CARE SHOULD BE TAKEN TO ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS. WHERE NECESSARY, SOCKS MAY BE STACKED AND STAKED SO AS TO FORM A TRIANGULAR CROSS-SECTION.
5. WASH WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
6. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
7. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
8. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY

TABLE 11.4
Recommended Seed Mixtures

Mixture Number	Species	Seeding Rate - Pure Live Seed[1] Most Sites	Adverse Sites
1[2]	Spring oats (spring), or Annual ryegrass (spring or fall), or Winter wheat (fall), or Winter rye (fall)	64 10 90 56	96 15 120 112
2[3]	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop[4], or Perennial ryegrass	60 35 25 3 15	75 40 30 3 20
3	Birdsfoot trefoil, plus Tall fescue	6 30	10 35
4	Birdsfoot trefoil, plus Reed canarygrass	6 10	10 15
5[5]	Crownvetch, plus Tall fescue, or Perennial ryegrass	10 20 20	15 25 25
6[5,6]	Crownvetch, plus Annual ryegrass	10 20	15 25
7[4]	Birdsfoot trefoil, plus Crownvetch, plus Tall fescue	6 10 20	10 15 30
8	Flatpea, plus Tall fescue, or Perennial ryegrass	20 20 20	30 30 25
9[6]	Serecia lespedeza, plus Tall fescue, plus Redtop[4]	10 20 3	20 25 3
10	Tall fescue, plus Fine fescue	40 10	60 15
11	Deertongue, plus Birdsfoot trefoil	15 6	20 10
12[7]	Switchgrass, or Big Bluestem, plus Birdsfoot trefoil	15 15 6	20 20 10
13	Orchardgrass, or Smooth bromegrass, plus Birdsfoot trefoil	20 25 6	30 35 10

Penn State, "Erosion Control and Conservation Plantings on Noncropland"
1. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
2. If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 1.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
3. This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
4. Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and redtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
5. Use for highway slopes and similar sites where the desired species after establishment is crownvetch.
6. Use only in extreme southeastern or extreme southwestern Pennsylvania. Serecia lespedeza is not well adapted to most of PA.
7. Do not mow shorter than 9 to 10 inches.
8. Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.

ERNMX-900 "NJ SALT TOLERANT BASIN MIX"

30.0% PANICUM CLANDESTINUM (DICHANTHELIUM C.), 'TIOGA'
25.0% ELYMUS RIPARIUS, PA ECOTYPE
20.0% PANICUM AMARUM, 'ATLANTIC'-VA ECOTYPE
20.0% PANICUM VIRGATUM, 'CARTHAGE', NC ECOTYPE
3.0% JUNCUS EFFUSUS
2.0% JUNCUS TENIUS, PA ECOTYPE

NOTE: ERNMX-900 IS TO BE USED AS PERMANENT STABILIZATION FOR ALL DISTURBED AREAS OF THE PROJECT.
SEEDING RATE IS 20 LB/ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB/ACRE. MULCH PER TABLE 11.6. FERTILIZE PER TABLE 11.2 ONLY IF DEEMED NECESSARY BY THE DESIGN ENGINEER AFTER A SOIL TEST.

NOTE: MIX 1 FROM TABLE 11.4 IS TO BE USED AS TEMPORARY SEEDING IF NECESSARY FOR ALL AREAS OF THE PROJECT. MULCH PER TABLE 11.6. FERTILIZE PER TABLE 11.2 ONLY IF DEEMED NECESSARY BY THE DESIGN ENGINEER AFTER A SOIL TEST.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.) Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

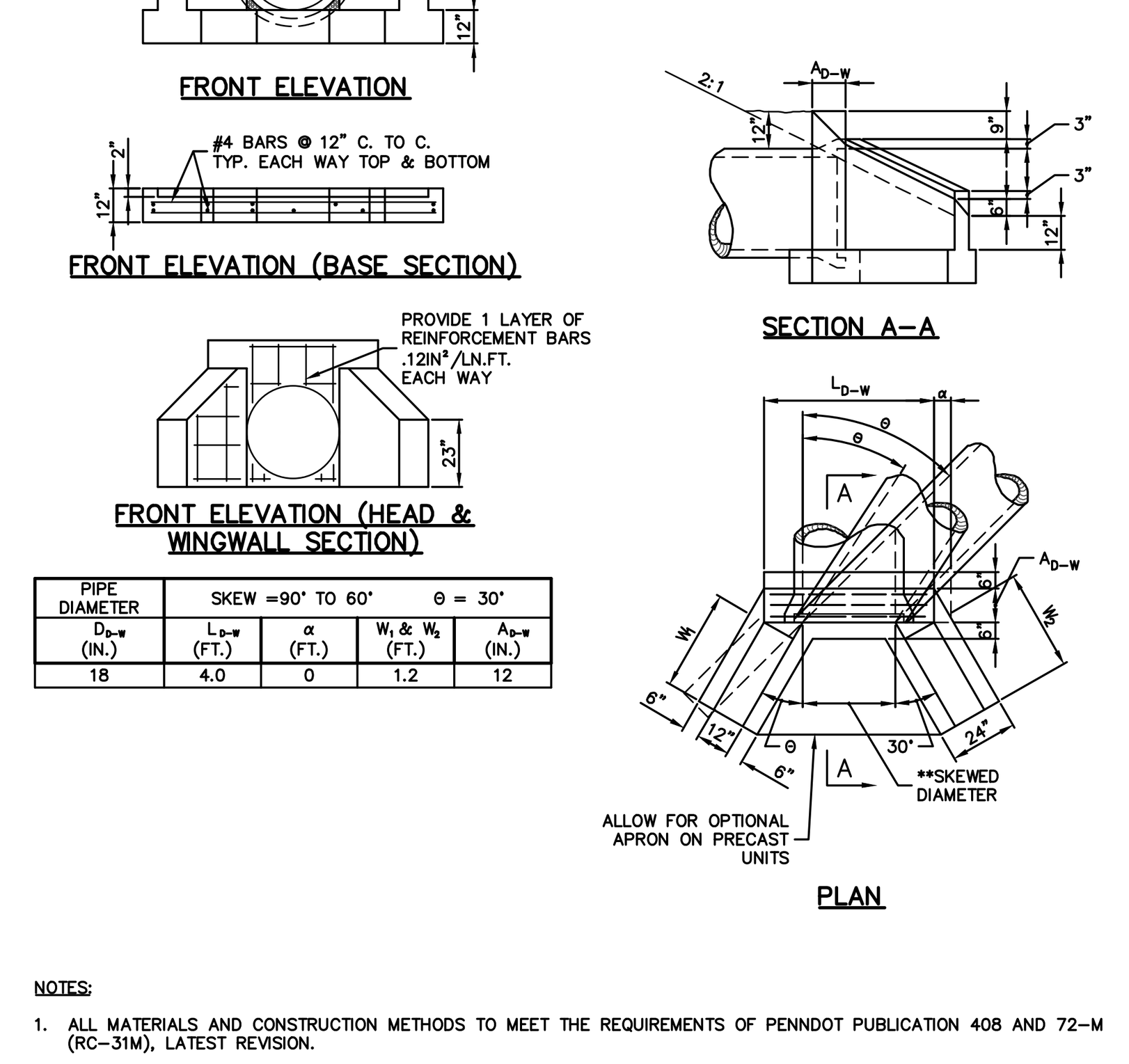
Mulch on slopes of 8% or steeper should be held in place with netting. Lightweight plastic, fiber, or paper nets may be stapled over the mulch according to manufacturer's recommendations.

Shredded paper hydromulch should not be used on slopes steeper than 5%. Wood fiber hydromulch may be applied on steeper slopes provided a tackifier is used. The application rate for any hydromulch should be 2,000 lb/acre at a minimum.

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Permanent Seeding Application Rate				
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
Temporary Seeding Application Rate				
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"



PIPE DIAMETER D_{D-W} (IN.)	SKEW =90° TO 60° θ = 30° L_{D-W} (FT.)	α (FT.)	W_1 & W_2 (FT.)	A_{D-W} (IN.)
18	4.0	0	1.2	12

NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-31M), LATEST REVISION.

HEADWALL/ENDWALL – TYPE D-W

NOT TO SCALE

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NO.	BY	REVISIONS	DATE

ZACHARY H. RANSTEAD, P.E.
LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
LICENSE NO. 063078-E
##/##/20## DATE

FINAL

LACKAWANNA AVENUE CONSTRUCTED STORMWATER FILTER

DALLAS BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

CONSTRUCTION DETAILS

YOUR GOALS. OUR MISSION.
74 WEST BROAD STREET,
SUITE 530
BETHLEHEM, PA 18018
TEL 610-625-2999
FAX 610-625-2969
www.tandmassociates.com
OFFICES LOCATED IN:
DELAWARE, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

DESIGNED BY	DP	DRAWING	F-DETAIL
CHECKED BY	ZHR		
DRAWN BY	DP	SHEET	6 OF 6
DATE	8/4/2020		
SCALE	AS NOTED		
PROJ. NO.	DAMA00006		

ATTACHMENT F: BMP P3 & P4 Plans

Basin Drainage Area
BMPs P3 & P4

Dallas Area Municipal Authority

Luzern County, PA

Legend

- Existing BMP
- Selected PRP BMPs
- PA Historic Streams
- Parcel Area
- Outfall
- Outlet
- Inlet
- Manhole
- Headwall
- EndWall
- StormwaterPipe
- Swale
- BMP
- Contour Lines 10ft
- Pa State Roads
- Municipal Boundaries
- HUC12 Watershed
- Existing BMP Drainage Area
- Proposed PRP BMP Drainage Area
- Municipality Owned Roads
- NHD Waterbodies
- NHD Streams
- NWI Wetlands
- 2010 Urbanized Area

0 250 500 Feet

1:6,172

ARRO

F20

RECOMMENDATION FOR PRELIMINARY PLAN APPROVAL BY THE DALLAS TOWNSHIP PLANNING COMMISSION

THIS ____ DAY OF _____, 20____

SIGNATURE OF PLANNING COMMISSION CHAIRMAN: _____

SIGNATURE OF PLANNING COMMISSION SECRETARY: _____

PRELIMINARY PLAN APPROVAL GRANTED BY THE DALLAS TOWNSHIP PLANNING COMMISSION

SIGNATURE OF PLANNING COMMISSION CHAIRMAN: _____ DATE: _____

SIGNATURE OF TOWNSHIP SECRETARY: _____ DATE: _____

CERTIFICATE OF OWNERSHIP AND ACKNOWLEDGEMENT OF APPLICATION

COMMONWEALTH OF PENNSYLVANIA, COUNTY OF _____

ON THIS _____ DAY OF _____, 20____, BEFORE ME, A NOTARY PUBLIC, THE UNDERSIGNED OFFICER PERSONALLY APPEARED _____ OF _____, A PENNSYLVANIA _____, WHO ACKNOWLEDGED HIMSELF/HERSELF TO BE THE _____ (TITLE) OF _____ AND THAT HE/SHE AS SUCH OFFICER BEING THE AUTHORIZED TO DO SO, DEPOSES AND SAYS THAT _____ IS THE OWNER OF THE PROPERTY DESCRIBED IN THIS APPLICATION AND THAT THE APPLICATION WAS MADE WITH THE KNOWLEDGE AND/OR DIRECTION OF THE COMPANY AND IT DOES HEREBY AGREE WITH THE SAID APPLICATION AND TO THE SUBMISSION OF THE SAME.

_____ _____
SIGNATURE OF OFFICER TITLE

THE UNDERSIGNED HEREBY CERTIFIED THAT TO THE BEST OF HIS/HER KNOWLEDGE AND BELIEF THE INFORMATION AND STATEMENTS GIVEN ABOVE ARE TRUE AND CORRECT.

SIGNATURE OF OFFICER: _____

SIGNATURE OF NOTARY PUBLIC: _____

MY COMMISSION EXPIRES: _____, 20____

CERTIFICATION OF ACCURACY AND COMPLETENESS

I, _____, A REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA DO HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON, AS WELL AS ALL RELATED DRAWINGS AND DOCUMENTS SUBMITTED HEREWITH ARE TRUE AND CORRECT TO THE ACCURACY AND COMPLETENESS REQUIRED BY THE DALLAS TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, AND WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND FOR WHICH I ACCEPT FULL AND COMPLETE RESPONSIBILITY.

SIGNATURE OF PROFESSIONAL: _____ DATE: _____

STORMWATER CERTIFICATION – TOWNSHIP ENGINEER

I, _____, ON THIS DATE _____, 20____, HAVE REVIEWED AND HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT PLAN IS IN SUBSTANTIAL COMPLIANCE WITH ALL DESIGN STANDARDS AND CRITERIA OF DALLAS TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

STORMWATER CERTIFICATION – DESIGN ENGINEER

I, _____, ON THIS DATE _____, 20____, HAVE PREPARED AND HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF DALLAS TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

STORMWATER STATEMENT

COMMONWEALTH OF PENNSYLVANIA, COUNTY OF _____

ON THIS _____ DAY OF _____, 20____, BEFORE ME, A NOTARY PUBLIC, PERSONALLY APPEARED _____ OF _____, A PENNSYLVANIA _____, WHO ACKNOWLEDGED HIMSELF/HERSELF TO BE THE _____ (TITLE) OF _____ AND THAT HE/SHE AS SUCH OFFICER BEING AUTHORIZED TO DO SO, DEPOSES AND SAYS THAT STORMWATER MANAGEMENT SYSTEM SHOWN ON THE APPROVED PLANS IS A PERMANENT FIXTURE THAT CAN BE ALTERED OR REMOVED ONLY AFTER PRIOR APPROVAL OF A REVISED PLAN BY DALLAS TOWNSHIP.

_____ _____
SIGNATURE OF OFFICER TITLE

THE UNDERSIGNED HEREBY CERTIFIED THAT TO THE BEST OF HIS/HER KNOWLEDGE AND BELIEF THE INFORMATION AND STATEMENTS GIVEN ABOVE ARE TRUE AND CORRECT.

SIGNATURE OF OFFICER: _____

SIGNATURE OF NOTARY PUBLIC: _____

MY COMMISSION EXPIRES: _____, 20____

LUZERNE COUNTY PLANNING COMMISSION REVIEW

RECORDER OF DEEDS CERTIFICATION

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS, IN LUZERNE COUNTY, PENNSYLVANIA, IN SUBDIVISION BOOK _____, VOLUME _____, PAGE ____, WITNESS MY HAND AND SEAL OF THE OFFICE THIS _____ DAY OF _____ A.D. 20___,

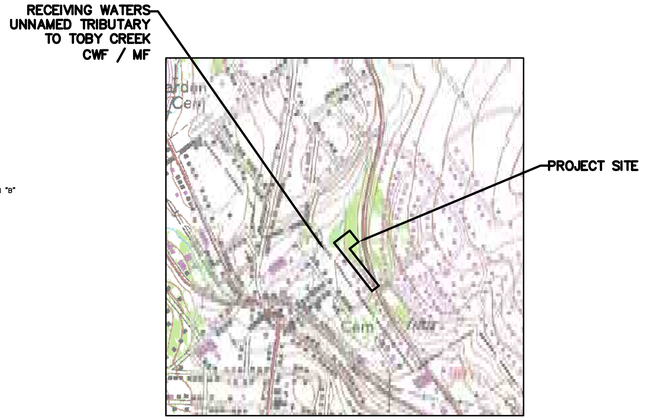
_____
RECORDER OF DEEDS

PRELIMINARY MAJOR LAND DEVELOPMENT PLANS FOR THE:

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT

DALLAS TOWNSHIP
LUZERNE COUNTY, PA

APRIL 30, 2020



LOCATION MAP
SCALE: 1"=250'
SOURCE: USGS TOPOGRAPHICAL MAP, KINGSTON QUADRANT

SITE DATA

RECORD OWNER:
DALLAS TOWNSHIP
P.O. BOX 518
2919 SR 309 HWY
DALLAS, PA 18612

DEED REFERENCE:
D.B.V. 806, PG. 28, MAIN PARK PARCEL
D.B.V. 975, PG. 365, SECTION "A" LOT 53
D.B.V. 1012, PG. 291, SECTION "A" LOT 54
D.B.V. 2022, PG. 647, SECTION "A" LOTS 50–52, 55–57, 61–66, 124–126; SECTION "B" LOT 61; RESIDUAL CENTRAL AVENUE TRACT; AND WESTERLY PARK PARCEL
D.B.V. 2022, PG. 696, LOTS 58, 59 & 60

MAP BOOK REFERENCE:
M.B.V. 2, PG. 335 (GOSS MANOR)
M.B.V. 2, PG. 334 (GOSS MANOR)
M.B.V. 5, PG. 46 (GOSS MANOR)

RIGHT–OF WAY REFERENCE:
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWINGS FOR CONSTRUCTION AND CONDEMNATION OF RIGHT–OF–WAY. ROUTE 177, SECTION NO. 11A, DALLAS TOWNSHIP LUZERNE COUNTY, PROJECT NO. F–896 (2) DATED FEBRUARY, 1955.

ZONING DATA

DISTRICT: R–1 SINGLE FAMILY RESIDENTIAL DISTRICT

MINIMUM LOT SIZE: 1 ACRE (SEE NOTE 1)
15,000 S.F. (SEE NOTE 2)
MINIMUM LOT WIDTH: 150 FT. (SEE NOTE 1)
75 FT. (SEE NOTE 2)

MINIMUM REQUIREMENTS:
THE MINIMUM REQUIREMENTS MAY BE INCREASED FOR CERTAIN USES AS PROVIDED FOR UNDER ARTICLE 7, CONDITIONAL USES, ARTICLE 8 SUPPLEMENTAL STANDARDS OR AS OTHERWISE SET FORTH IN THE ZONING ORDINANCE.

YARD SETBACKS REQUIRE A MINIMUM SETBACK DISTANCE OF ONE HUNDRED (100) FEET FROM ANY NATURAL WATERCOURSE, (AS DEFINED IN ARTICLE 3)

FRONT YARD: 30 FT.
REAR YARD: 35 FT.
SIDE YARD: 15 FT.

MAXIMUM REQUIREMENTS:
LOT COVERAGE: 20%
BUILDING HEIGHT: 35 FT. (2 1/2 STORIES) (SEE NOTE 3)

NOTES:

1. ON–LOT SEWAGE AND POTABLE WATER PROVIDED BY ON–LOT WELL.
2. CENTRAL SEWAGE AND POTABLE WATER PROVIDED BY CENTRALIZED WATER SUPPLY SYSTEM.
3. THE HEIGHT LIMITATIONS OF THE ZONING ORDINANCE SHALL NOT APPLY TO CHURCH SPIRES, BELFRIES, CUPOLAS, DOMES, CHIMNEYS, FLAGPOLES, WATER TOWERS, SKYLIGHTS; OR ANY ACCESSORY MECHANICAL APPURTENANCES USUALLY LOCATED ABOVE THE ROOF LEVEL; HEIGHT REGULATIONS FOR WIND ENERGY FACILITIES AND SMALL WIND ENERGY CONVERSION SYSTEMS ATE GOVERNED UNDER ARTICLE 7 OF THE ZONING ORDINANCE.

THE ZONING DATA PROVIDED IS BASED ON AN INTERPRETATION OF THE ZONING ORDINANCE BY THE PLAN PREPARER AND IS SUBJECT TO CONFIRMATION BY THE APPROPRIATE MUNICIPAL OFFICIAL

ENGINEER:
BARRY ISETT & ASSOCIATES, INC.
1170 HIGHWAY 315, SUITE 2
WILKES–BARRE, PA 18702
(570) 285–8280

RECORD OWNER:
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DRIVE
DALLAS, PA 18612
(570) 674–2000

DEVELOPER/APPLICANT:
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DRIVE
DALLAS, PA 18612
(570) 674–2000

811
Know what's **below.**
Call before you dig.

NOTE:
"PURSUANT TO THE REQUIREMENTS OF PA ACT 287 OF 1974 AS AMENDED BY ACT 121 OF 2008 73P.S. § 176 et seq. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE–GROUND EXAMINATIONS OF THE SITE. COMPLETENESS, ACCURACY, LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. THE CONTRACTORS, AT LEAST THREE (3) DAYS PRIOR TO PERFORMING ANY EXCAVATIONS, SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS AND DEPTHS OF ALL UNDERGROUND FACILITIES LOCATED WITHIN THE VICINITY OF THE WORK SITE IN ACCORDANCE WITH ACT 121. (PA ONE CALL SYSTEM, INC. 1–800–242–1776)."

THE SITE SERIAL NUMBER IS 20183400761.

GENERAL NOTES:

1. THE PURPOSE OF THIS LAND DEVELOPMENT IS TO CONSTRUCT IMPROVEMENTS TO THE DALLAS TOWNSHIP PARK AND ADJACENT ROADWAY.
2. NO BUILDINGS ARE PROPOSED. ACCORDINGLY, UTILITY SERVICES (I.E. WATER, ELECTRIC, SEWER, ETC.) WILL NOT BE REQUIRED.
3. REFER TO THE MINOR SUBDIVISION FINAL PLAN, DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT PREPARED BY BARRY ISETT & ASSOCIATES DATED 11–15–2019 FOR MORE INFORMATION REGARDING THE LOT CONSOLIDATION PLAN.
4. THIS DRAWING HAS BEEN PREPARED BASED ON THE BEST AVAILABLE INFORMATION. THE SURVEYOR HAS NOT VERIFIED THE ACCURACY OF THE UNDERGROUND UTILITIES AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT. CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS PRIOR TO ANY FUTURE CONSTRUCTION.
5. ADJOINING PROPERTY OWNER INFORMATION SHOWN AS PER THE LUZERNE COUNTY TAX MAPS.
6. THE OWNER/DEVELOPER OF THE LOT SHALL BE RESPONSIBLE FOR ACQUIRING ANY APPLICABLE APPROVALS/PERMITS PRIOR TO PERFORMING ANY SITE DEVELOPMENT.
7. FLOOD HAZARD AREAS ARE SHOWN AS PER THE FLOOD INSURANCE RATE MAP (FIRM) 42079C0204E, HAVING AN EFFECTIVE DATE OF 11/2/2012
8. WETLAND AREAS ARE PRESENT ON SITE. REFER TO THE REGULATED WATERS DELINEATION REPORT FOR DALLAS TOWNSHIP PARK, PREPARED BY BARRY ISETT AND ASSOCIATES, DATED MARCH 23, 2020 FOR MORE INFORMATION.
9. SOILS SHOWN ON PLAN AS PER WEB SOIL SURVEY, LUZERNE COUNTY PA.
10. CONTOURS AND FEATURES SHOWN OUTSIDE THE DETAILED SURVEY AREA ARE BASED ON AERIAL IMAGERY AND INFORMATION ATTAINED FROM THE PENNSYLVANIA SPATIAL DATABASE (PASDA).
11. UNLESS OTHERWISE SPECIFIED, PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 AND PUBLICATION 72M, AS LAST REVISED.
12. SOUTHSIDE AVENUE IS OWNED AND MAINTAINED BY DALLAS TOWNSHIP.

WAIVER REQUEST

THE FOLLOWING VARIANCES, WAIVERS, OR MODIFICATIONS HAVE BEEN REQUESTED:

1. SALDO SECTION 77–47.J, AS IT PERTAINS TO SHOWING YARD SETBACKS
2. SALDO SECTION 77–47.K, AS IT PERTAINS TO SHOWING ALL EXISTING FEATURES
3. SALDO SECTION 77–47.L, AS IT PERTAINS TO SHOWING THE DISTANCE OF EXISTING FEATURES FROM LOT LINES
4. SALDO SECTION 77–47.M. AS IT PERTAINS TO SHOWING ALL ADJOINING BLOCK AND LOT NUMBERS FROM THE LUZERNE COUNTY ASSESSOR'S OFFICE

SHEET INDEX

SHEET	SHEET TITLE	SHEET NO.	LAST REVISED
* TS–1	TITLE SHEET	1 OF 24	04/30/20
MSP	MASTER SITE PLAN	2 OF 24	04/30/20
EF–1	EXISTING FEATURES/DEMOLITION PLAN	3 OF 24	04/30/20
EF–2	EXISTING FEATURES/DEMOLITION PLAN	4 OF 24	04/30/20
* SP–1	SITE PLAN	5 OF 24	04/30/20
* SP–2	SITE PLAN	6 OF 24	04/30/20
GP–1	GRADING PLAN	7 OF 24	04/30/20
GP–2	GRADING PLAN	8 OF 24	04/30/20
* PCSM–1	POST CONSTRUCTION STORMWATER MANAGEMENT NOTES	9 OF 24	04/30/20
* PCSM–2	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	10 OF 24	04/30/20
* PCSM–3	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	11 OF 24	04/30/20
PR–1	STORM PROFILES	12 OF 24	04/30/20
LP–1	LANDSCAPING PLAN	13 OF 24	04/30/20
ES–1	EROSION AND SEDIMENTATION NOTES	14 OF 24	04/30/20
ES–2	EROSION AND SEDIMENTATION PLAN	15 OF 24	04/30/20
ES–3	EROSION AND SEDIMENTATION PLAN	16 OF 24	04/30/20
ES–4	EROSION AND SEDIMENTATION DETAILS	17 OF 24	04/30/20
ES–5	EROSION AND SEDIMENTATION DETAILS	18 OF 24	04/30/20
DE–1	CONSTRUCTION DETAILS	19 OF 24	04/30/20
DE–2	CONSTRUCTION DETAILS	20 OF 24	04/30/20
DE–3	CONSTRUCTION DETAILS	21 OF 24	04/30/20
DA–1	PRE–CONSTRUCTION DRAINAGE AREA MAP	22 OF 24	04/30/20
DA–2	POST–CONSTRUCTION DRAINAGE AREA MAP	23 OF 24	04/30/20
DA–3	SWALE DRAINAGE AREA MAP	24 OF 24	04/30/20

* DENOTES SHEETS TO BE RECORDED

REVISIONS	DATE	BY

610.398.0904
barryisett.com
BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS

TITLE SHEET
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

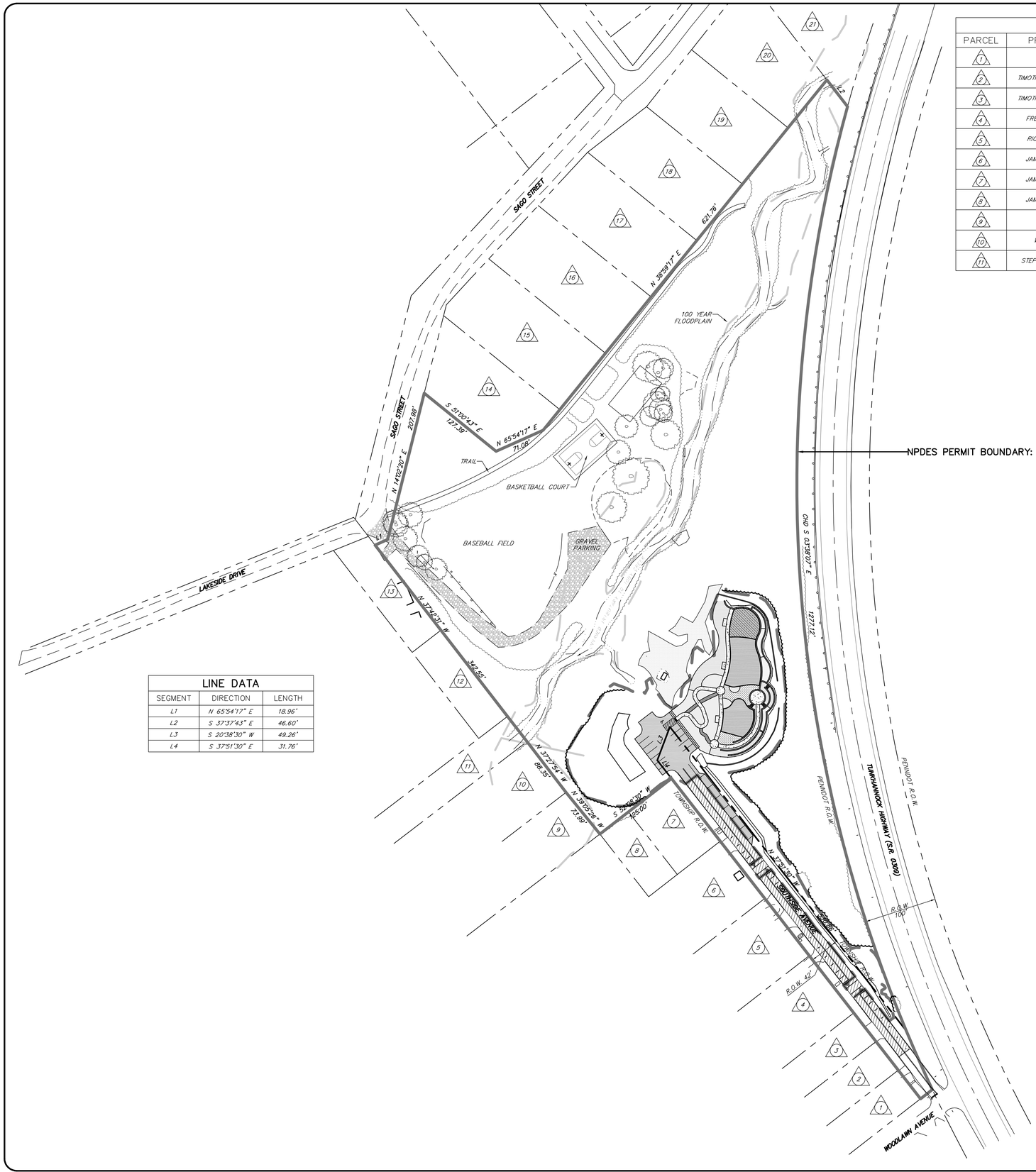
DATE: 04/30/20	DSGN: BNS
SCALE: AS NOTED	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 1 OF 24

TS–1

FILENAME: \\bisett.com\work\Projects\2015\1063515.000_Dallas Twp\Revit\MP\LAND\dwg\CAD_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\TITLE_SHEET_03-2020.dwg - May 1, 2020 - 3:16 PM



PROPERTY OWNER INDEX			
PARCEL	PROPERTY OWNER	PARCEL	PROPERTY OWNER
1	FRED J. DIMARIA	12	ANDREA & CARMELA TOMASINO
2	TIMOTHY M. & NICOLE RISMONDO	13	LINFORD & PATRICIA EVANS
3	TIMOTHY M. & NICOLE RISMONDO	14	RONALD W. DOMBROSKI
4	FRED J. & LAUREN DIMARIA	15	THOMAS DOMBROSKI JR.
5	RICHARD & GLORIA BROWN	16	THOMAS DOMBROSKI JR.
6	JAMES J. & LISA M. MCGEE	17	THOMAS DOMBROSKI JR.
7	JAMES J. & LISA M. MCGEE	18	THOMAS DOMBROSKI JR.
8	JAMES J. & LISA M. MCGEE	19	THOMAS DOMBROSKI TRUSTEE FOR JOYCE DOMBROSKI GERHARDT
9	YOUNG YE YU	20	THOMAS DOMBROSKI TRUSTEE FOR JOYCE DOMBROSKI GERHARDT
10	WILLIAM J. FERSCHEKE	21	THOMAS DOMBROSKI
11	STEPHEN & VALERIE CAMERON		

LINE DATA		
SEGMENT	DIRECTION	LENGTH
L1	N 65°54'17" E	18.96'
L2	S 37°37'43" E	46.60'
L3	S 20°38'30" W	49.26'
L4	S 37°51'30" E	31.76'

SITE DATA

RECORD OWNER:
DALLAS TOWNSHIP
P.O. BOX 518
2919 SR 309 HWY
DALLAS, PA 18612

LOT SIZE: 358,280 SF, 8.225 ACRES

DEED REFERENCE:
D.B.V. 806, PG. 28, MAIN PARK PARCEL
D.B.V. 975, PG. 365, SECTION "A" LOT 53
D.B.V. 1012, PG. 291, SECTION "A" LOT 54
D.B.V. 2022, PG. 647, SECTION "A" LOTS 50–52, 55–57, 61–66, 124–126; SECTION "B" LOT 61; RESIDUAL CENTRAL AVENUE TRACT; AND WESTERLY PARK PARCEL
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FRONT YARD; 30 FT.
REAR YARD; 35 FT.
SIDE YARD; 15 FT.

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LOT COVERAGE; 20%
BUILDING HEIGHT; 35 FT. (2 1/2 STORIES) (SEE NOTE 3)

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THE ZONING DATA PROVIDED IS BASED ON AN INTERPRETATION OF THE ZONING ORDINANCE BY THE PLAN PREPARER AND IS SUBJECT TO CONFIRMATION BY THE APPROPRIATE MUNICIPAL OFFICIAL.

LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LOT LINE		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
PAVEMENT		
MILL AND OVERLAY PAVEMENT		
CONCRETE WALKWAY		
PLAYGROUND SAFETY SURFACE		
TOPSOIL SURFACE		
WOOD MULCH SAFETY SURFACE		
LAWN		
GRASS/PLUG LANDSCAPE AREA		
STEPPING STONE LANDSCAPE AREA		
RETAINING WALL LANDSCAPE AREA		
RETAINING WALLS		
STONE STAIRS		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/E	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
FIRE HYDRANT	F.H.	
WELL	EXIST. WELL	
GAS MAIN & VALVE	G.V. G	
SANITARY LINE, MANHOLE, & CLEANOUT	EXIST. MH SAN C.O.	
STORM LINE, MANHOLE, & INLET	EXIST. MH EXIST. INLET	
CHAIN-LINK FENCE	CHAIN-LINK FENCE	
POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
STREAM		
WETLANDS		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

0 70' 140' 210'
SCALE: 1" = 70'

REVISIONS	DATE	BY

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
barryisett.com

MASTER SITE PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
SCALE: 1" = 70'	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 2 OF 24

MSP

FILENAME: P:\2015\1063515.000_Dallas Twp\PLMP\LAND\dwg\CSD_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT\3-2020\SITE_03-2020.dwg - May 1, 2020 3:18 PM

KEY MAP
SCALE: 1"=150'

SHEET EF-1
SHEET EF-2

TUNKHANNOCK HIGHWAY (SR 309)

SOUTHSIDE AVENUE

LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	
BUILDING	EXIST. BUILDING	
MATERIAL STOCKPILE		
PAVEMENT TO BE REMOVED		
PAVEMENT TO BE MILLED		
VEGETATION TO BE CLEARED		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V.	W
GAS MAIN & VALVE	G.V.	G
SANITARY LINE, MANHOLE, & CLEANOUT	EXIST. MH / SAN / C.O.	
STORM LINE, MANHOLE, & INLET	EXIST. MH / EXIST. INLET	
SIGN		
DECIDUOUS TREE	6" MAPLE	
EVERGREEN TREE	6" PINE	
TREE ROW		
CONTOUR	590	
STREAM		
WETLANDS		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

NOTES:
1. DALLAS TOWNSHIP TO COORDINATE WITH UTILITY OWNER (UGI) FOR REMOVAL AND RELOCATION OF GAS MARKER TO OUTSIDE THE LIMITS OF WORK.

SCALE: 1"=20'

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REVISIONS	DATE	BY

EXISTING FEATURES - DEMOLITION PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

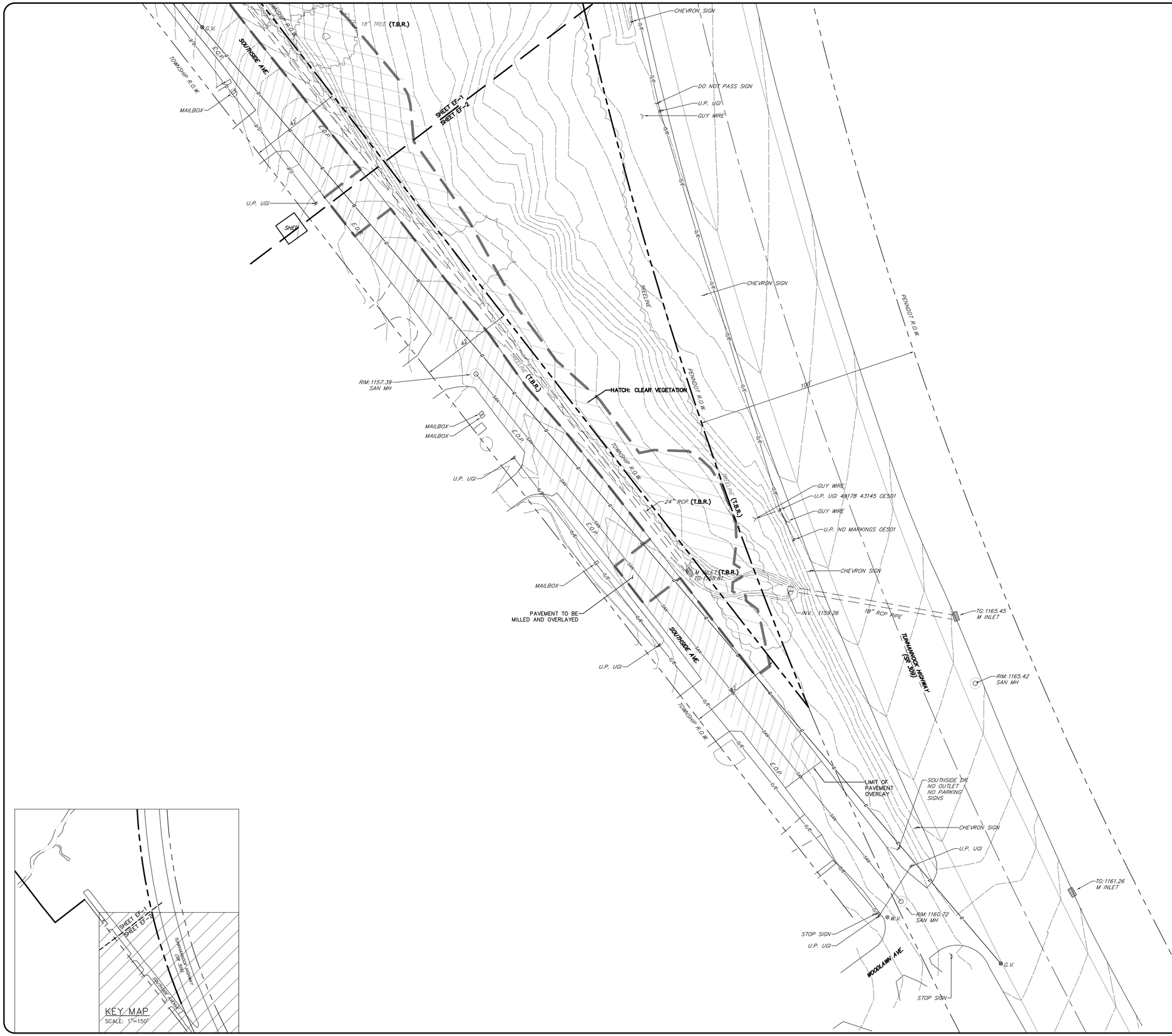
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EF-1

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LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	
BUILDING	EXIST. BUILDING	
PAVEMENT TO BE MILLED		
VEGETATION TO BE CLEARED		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
SANITARY LINE, MANHOLE, & CLEANOUT	EXIST. MH SAN C.O.	
STORM LINE, MANHOLE, & INLET	EXIST. MH EXIST. INLET	
SIGN		
DECIDUOUS TREE	6" MAPLE	
EVERGREEN TREE	6" PINE	
TREE ROW		
CONTOUR	590	
STREAM		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

REVISIONS	DATE	BY

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EXISTING FEATURES - DEMOLITION PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

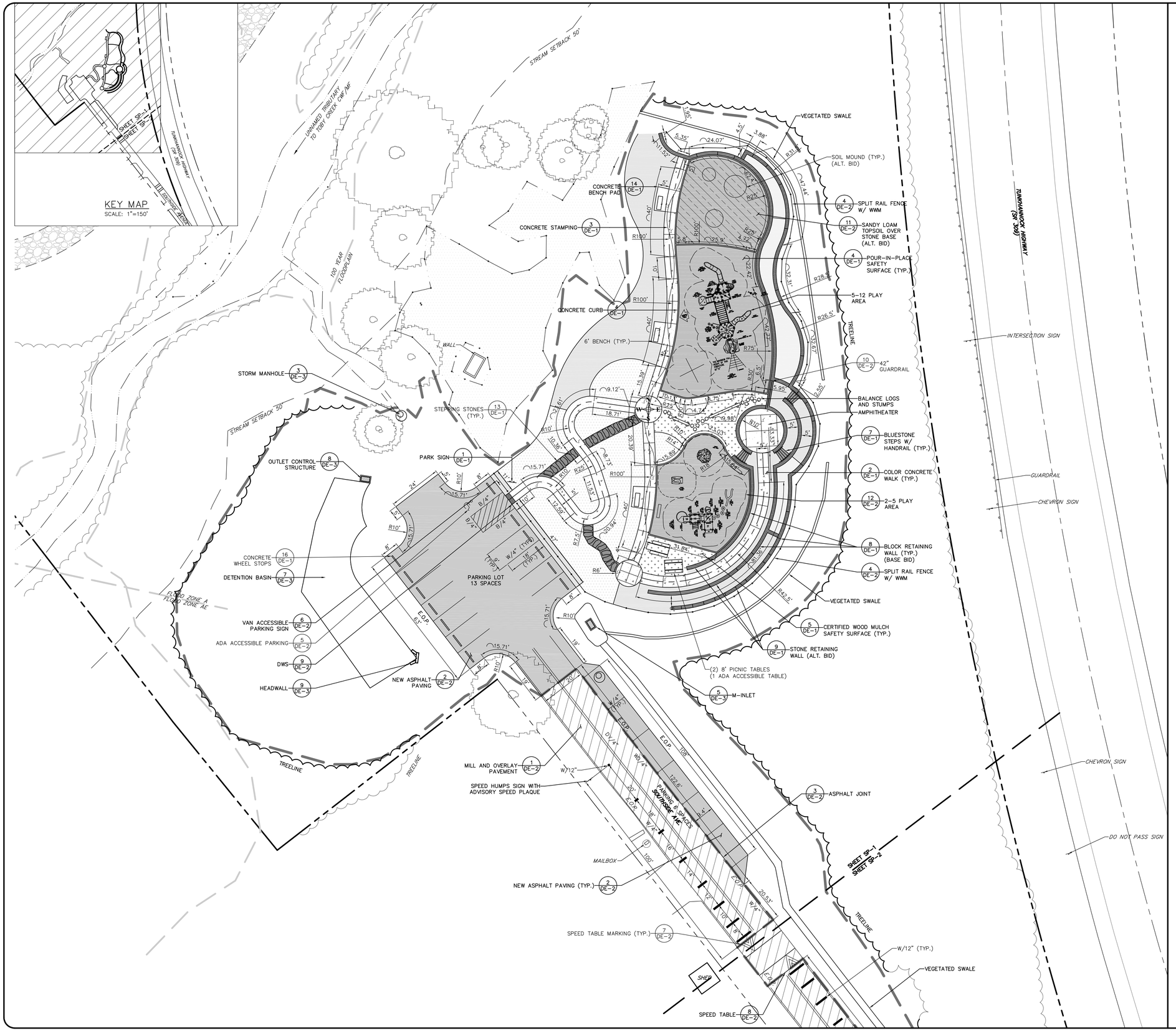
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EF-2

FILENAME: P:\2015\1063515.000_Dallas twp Park\MP\LAND\dwg\C3D_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT\3-2020\EXISTING_FEATURES_D3-2020.dwg May 1, 2020 3:18 PM



LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
PAVEMENT		
MILL AND OVERLAY PAVEMENT		
CONCRETE WALKWAY		
PLAYGROUND SAFETY SURFACE		
TOPSOIL SURFACE		
WOOD MULCH SAFETY SURFACE		
LAWN		
GRASS/PLUG LANDSCAPE AREA		
STEPPING STONE LANDSCAPE AREA		
RETAINING WALL LANDSCAPE AREA		
RETAINING WALLS		
STONE STAIRS		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V.	W
GAS MAIN & VALVE	G.V.	G
STORM LINE, MANHOLE, & INLET	EXIST. MH / EXIST. INLET	
POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
STREAM		
WETLANDS		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

SCALE: 1"=20'

REVISIONS	DATE	BY

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SITE PLAN

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

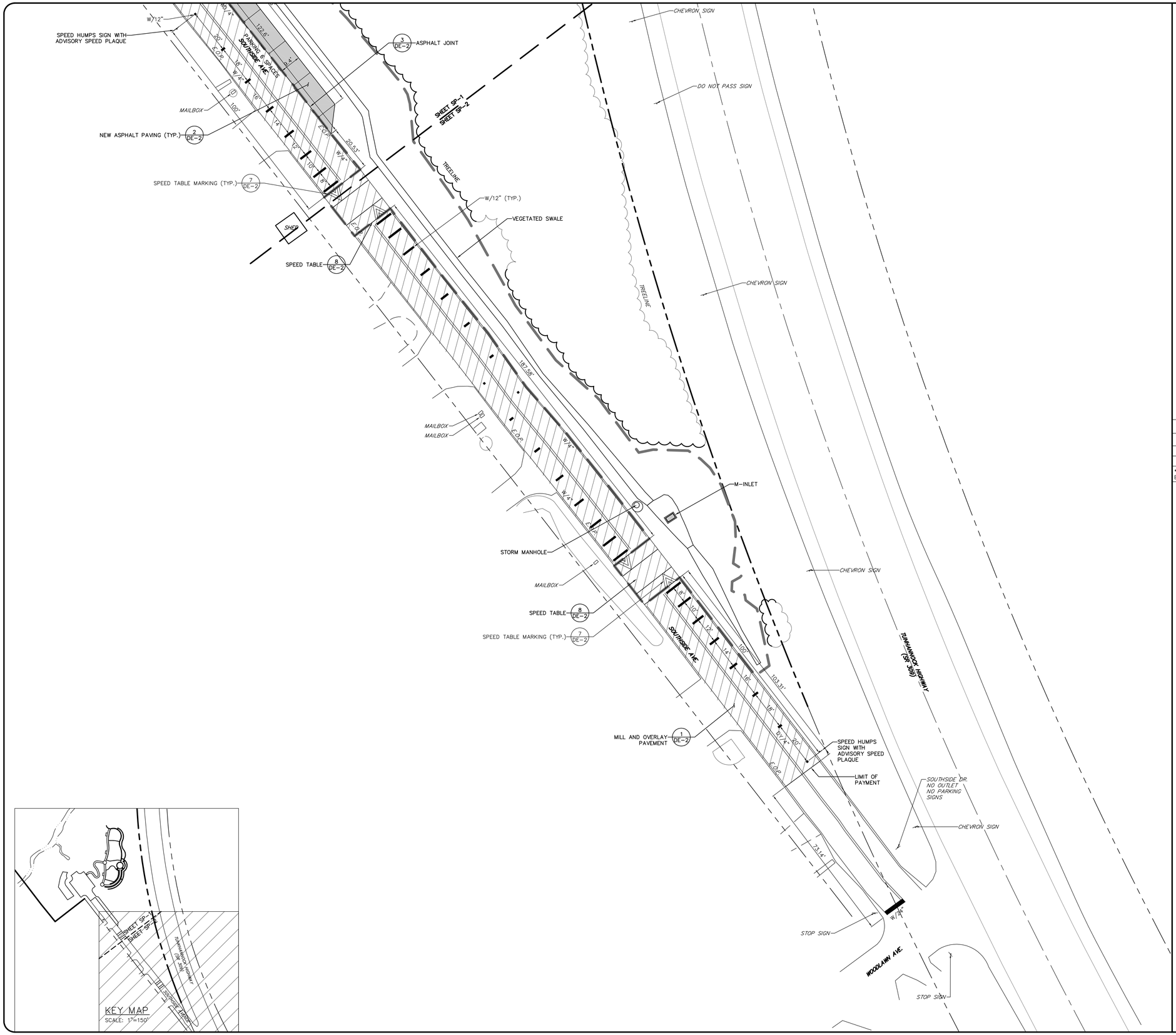
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SP-1

FILENAME: P:\2015\1063515.000_Dallas twp\Park&MP\LAND\dwg\C3D_Data_Group\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\SITE_D3-2020.dwg May 1, 2020 2:21 PM



LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
FULL DEPTH ASPHALT PAVEMENT		
MILL AND OVERLAY PAVEMENT		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
STORM LINE, MANHOLE, & INLET	EXIST. MH	EXIST. INLET
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
STREAM		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

SIGN TABULATION

PLAN	QTY.	SERIES	SIZE	DESCRIPTION
A	2	W17-1	30"X30"	* SPEED HUMPS
B	2	W13-1P	18"X18"	ADVISORY SPEED PLAQUE

* NOTE: W17-1 SIGN "SPEED HUMPS" IN LIEU OF INDIVIDUAL W17-1 SIGN "SPEED HUMP" FOR EACH SPEED TABLE.

SCALE: 1"=20'

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SITE PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
SCALE: 1" = 20'	CHK: TAD
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SP-2

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LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
STORM LINE, MANHOLE, & INLET	EXIST. MH, EXIST. INLET	PROP. MH, PROP. INLET
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
CONTOUR	590	590
SPOT ELEVATION	x590.53	x590.53
PROPOSED SLOPE PERCENTAGE		2.0%
STREAM		
WETLANDS		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

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GRADING PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
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GP-1

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KEY MAP
SCALE: 1"=150'

LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
STORM LINE, MANHOLE, & INLET	EXIST. MH EXIST. INLET	PROP. MH PROP. INLET
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
CONTOUR	590	590
SPOT ELEVATION	590.53	590.53
SLOPE PERCENTAGE		2.0%
STREAM		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

0 20' 40' 60'
SCALE: 1"=20'

N

REVISIONS	DATE	BY

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GRADING PLAN

DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
SCALE: 1" = 20'	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 8 OF 24

GP-2

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PLAN PREPARER CONTACT INFORMATION

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1170 HIGHWAY 315, SUITE 3
WILKES-BARRE, PA 18702
PHONE: (570) 285-8180

PLANNING AND DESIGN

THE MANAGEMENT OF POST-CONSTRUCTION STORMWATER WAS PLANNED IN ACCORDANCE WITH THE FOLLOWING TO THE MAXIMUM EXTENT PRACTICABLE:

1. PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL, AND CHEMICAL QUALITIES OF THE RECEIVING STREAM.
2. PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF.
3. MINIMIZE ANY INCREASE IN THE STORMWATER RUNOFF VOLUME.
4. MINIMIZE IMPERVIOUS AREA.
5. MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION.
6. MINIMIZE LAND CLEARING AND GRADING.
7. MINIMIZE SOIL COMPACTION.
8. UTILIZE OTHER STRUCTURAL OR NON-STRUCTURAL BMPs THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF.

CONSTRUCTION, OPERATION, MAINTENANCE, & OWNERSHIP OF PCSM BMPs

CONSTRUCTION, OPERATION, AND MAINTENANCE OF POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN ACCORDANCE WITH THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES (BMP) MANUAL, DATED DECEMBER 2006, AND THESE PLANS.

OPERATION AND MAINTENANCE OF PCSM BMPs SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION. FOLLOWING CONSTRUCTION, THE OWNER WILL BE RESPONSIBLE.

THE OWNER SHALL RETAIN OWNERSHIP AND MAINTENANCE RESPONSIBILITY FOR THE PCSM BMPs. PCSM BMPs SHALL BE ENUMERATED AS PERMANENT REAL ESTATE APPURTENANCES AND RECORDED AS DEED RESTRICTIONS OR CONSERVATION EASEMENTS THAT RUN WITH THE LAND.

THE FOLLOWING PCSM BMPs ARE PROPOSED:

VEGETATED SWALE

A VEGETATED SWALE IS A BROAD, SHALLOW, TRAPEZOIDAL OR PARABOLIC CHANNEL, DENSELY PLANTED WITH A VARIETY OF TREES, SHRUBS, AND/OR GRASSES. IT IS DESIGNED TO ATTENUATE AND IN SOME CASE INFILTRATE RUNOFF VOLUME FROM ADJACENT IMPERVIOUS SURFACES, ALLOWING SOME POLLUTANTS TO SETTLE OUT IN THE PROCESS. IN STEEPER SLOPE SITUATIONS, CHECK DAMS MAY BE USED TO FURTHER ENHANCE ATTENUATION AND INFILTRATION OPPORTUNITIES.

BMP SPECIFIC CONSTRUCTION SEQUENCE

CONSTRUCTION OF THIS BMP IS A CRITICAL STAGE OF PCSM BMP IMPLEMENTATION. AS SUCH, THE DESIGN ENGINEER, OR REPRESENTATIVE THEREOF, MUST BE PRESENT ON-SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL GIVE THE DESIGN ENGINEER AT LEAST THREE (3) DAYS NOTICE.

1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN THE UPGRADIENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE. VEGETATED SWALES SHOULD BE CONSTRUCTED AND STABILIZED EARLY IN THE CONSTRUCTION SCHEDULE, PREFERABLY BEFORE MASS EARTHWORK AND PAVING INCREASE THE RATE AND VOLUME OF RUNOFF.
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHALL OPERATE FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM. IF EXCAVATION LEADS TO SUBSTANTIAL COMPACTION OF THE SUBGRADE (WHERE INFILTRATION TRENCH IS NOT PROPOSED), 18 INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL AND SAND TO PROMOTE INFILTRATION AND BIOLOGICAL GROWTH. AT THE VERY LEAST, TOPSOIL SHALL BE THOROUGHLY DEEP PLOWED INTO THE SUBGRADE IN ORDER TO PENETRATE THE COMPACTED ZONE AND PROMOTE AERATION AND THE FORMATION OF MACROPORES. FOLLOWING THIS, THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
3. CONSTRUCT CHECK DAMS, IF REQUIRED.
4. FINE GRADE THE VEGETATED SWALE. ACCURATE GRADING IS CRUCIAL FOR SWALES. EVEN THE SMALLEST NON-CONFORMITIES MAY COMPROMISE FLOW CONDITIONS.
5. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND ACCORDING TO FINAL PLANTING LIST. PLANT THE SWALE AT A TIME OF THE YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION SHOULD BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
6. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. IT IS VERY IMPORTANT THAT THE SWALE BE STABILIZED BEFORE RECEIVING UPLAND STORMWATER FLOW.

OPERATION AND MAINTENANCE

COMPARED TO OTHER STORMWATER MANAGEMENT MEASURES, THE REQUIRED UPKEEP OF VEGETATED SWALES IS RELATIVELY LOW. IN GENERAL, MAINTENANCE STRATEGIES FOR SWALES FOCUS ON SUSTAINING THE HYDRAULIC AND POLLUTANT REMOVAL EFFICIENCY OF THE CHANNEL, AS WELL AS MAINTAINING A DENSE VEGETATIVE COVER. EXPERIENCE HAS PROVEN THAT PROPER MAINTENANCE ACTIVITIES ENSURE THE FUNCTIONALITY OF VEGETATED SWALES FOR MANY YEARS. THE FOLLOWING SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES IS RECOMMENDED:

MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (GREATER THAN 1 INCH RAINFALL DEPTH):

1. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN GREATER THAN 3 INCHES AT ANY SPOT OR COVERING VEGETATION).
2. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED.
3. INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE.
4. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING.
5. INSPECT FOR LITTER; REMOVE PRIOR TO MOWING.
6. INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
7. INSPECT SWALE INLET (CURB CUTS, PIPES, ETC.) AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED

MAINTENANCE ACTIVITIES TO BE DONE AS NEEDED:

1. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT.
2. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.
3. ROTOTILL AND REPLANT SWALE IF DRAW DOWN TIME IS MORE THAN 48 HOURS.
4. INSPECT AND CORRECT CHECK DAMS WHEN SIGNS OF ALTERED WATER FLOW (CHANNELIZATION, OBSTRUCTIONS, EROSION, ETC.) ARE IDENTIFIED.
5. WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDE ONLY WHEN ABSOLUTELY NECESSARY.

WINTER CONDITIONS ALSO NECESSITATE ADDITIONAL MAINTENANCE CONCERNS, WHICH INCLUDE THE FOLLOWING:

1. INSPECT SWALE IMMEDIATELY AFTER THE SPRING MELT, REMOVE RESIDUALS (E.G. SAND) AND REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
2. IF ROADSIDE OR PARKING LOT RUNOFF IS DIRECTED TO THE SWALE, MULCHING AND/OR SOIL AERATION/MANIPULATION MAY BE REQUIRED IN THE SPRING TO RESTORE SOIL STRUCTURE AND MOISTURE CAPACITY AND TO REDUCE THE IMPACTS OF DEICING AGENTS.
3. USE NONTOXIC, ORGANIC DEICING AGENTS, APPLIED EITHER AS BLENDED, MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS OR AS PRETREATED SALT.
4. USE SALT-TOLERANT VEGETATION IN SWALES.

DETENTION BASIN

A DETENTION BASIN IS AN EARTHEN STRUCTURE CONSTRUCTED EITHER BY IMPOUNDMENT OF A NATURAL DEPRESSION OR EXCAVATION OF EXISTING SOIL, THAT PROVIDES TEMPORARY STORAGE OF RUNOFF AND FUNCTIONS HYDRAULICALLY TO ATTENUATE STORMWATER RUNOFF PEAKS.

BMP SPECIFIC CONSTRUCTION SEQUENCE

CONSTRUCTION OF THIS BMP IS A CRITICAL STAGE OF PCSM BMP IMPLEMENTATION. AS SUCH, THE DESIGN ENGINEER, OR REPRESENTATIVE THEREOF, MUST BE PRESENT ON-SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL GIVE THE DESIGN ENGINEER AT LEAST THREE (3) DAYS NOTICE.

1. INSTALL ALL E&S BMPs, AS PER THE E&S PLAN.
   1.1. THE AREA IMMEDIATELY ADJACENT TO THE BASIN MUST BE STABILIZED PER THE SEEDING SCHEDULE ON SHEET ESD-1, IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM (E&S) MANUAL, AS LAST REVISED, PRIOR TO BASIN CONSTRUCTION.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   2.1. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHOULD ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   2.2. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   2.3. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION, IF NECESSARY.
4. INSTALL SURROUNDING EMBANKMENTS, INLETS STRUCTURES, AND OUTLET CONTROL STRUCTURE.
5. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET CONTROL STRUCTURES.
6. INSTALL ADDITIONAL E&S BMPs ACCORDING TO THE E&S PLAN.
7. TOPSOIL, SEED, PLANT, AND MULCH THE BASIN ACCORDING TO PLAN. SEE PCSM WATER QUALITY CONTROL SEE MIXTURE, THIS SHEET.

OPERATION AND MAINTENANCE

MAINTENANCE IS NECESSARY TO ENSURE PROPER FUNCTIONALITY OF THE EXTENDED DETENTION BASIN. BASIN MAINTENANCE SHOULD TAKE ON A QUARTERLY BASIS AND AFTER EACH STORM EVENT GREATER THAN 1-INCH. THE FOLLOWING MAINTENANCE MEASURES MUST TAKE PLACE:

1. ALL BASIN STRUCTURES (I.E. BASIN BOTTOM, TRASH RACKS, OUTLET STRUCTURES, RIPRAP OR GABION STRUCTURES, UPSTREAM STORM SEWER) MUST BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION. DEBRIS AND SEDIMENT MUST BE IMMEDIATELY REMOVED AND DISPOSED OF PROPERLY. SEDIMENT REMOVAL MUST BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. FOLLOWING MAINTENANCE ACTIVITIES, DISTURBED AREAS MUST BE IMMEDIATELY STABILIZED.
2. VEGETATED AREAS SHOULD BE MAINTAINED IN ACCORDANCE WITH THE VEGETATED STABILIZATION SECTION HEREIN.

VEGETATIVE STABILIZATION

VEGETATIVE STABILIZATION IS THE STABILIZATION OF DISTURBED AREAS THROUGH THE THE PLACEMENT OF SEED MIXTURES AND/OR VARIOUS PLANTINGS.

BMP SPECIFIC CONSTRUCTION SEQUENCE

VEGETATIVE STABILIZATION SHOULD BE PERFORMED IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM (E&S) MANUAL, AS LAST REVISED,

OPERATION AND MAINTENANCE

MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM, BUT ALL DETRITUS SHOULD BE REMOVED.

AREAS WHICH HAVE VEGETATIVE STABILIZATION SHOULD BE INSPECTED ON AN ANNUAL BASIS. THE FOLLOWING MUST BE TAKEN INTO CONSIDERATION:

1. EROSION SHOULD BE NOTED AND CORRECTED, PER THE MEASURES ON THE E&SC PLANS AND DETAILS IN ACCORDANCE WITH THE E&S MANUAL, AS LAST REVISED.
2. UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES SHOULD BE NOTED AND ADDRESSED IMMEDIATELY.
3. VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95%. IF VEGETATIVE COVER IS REDUCED BY 10%, THEN THE AREA SHOULD BE REESTABLISHED.

GENERAL PCSM NOTES

1. NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER ANY PCSM BMPs WITHOUT THE WRITTEN APPROVAL OF DALLAS TOWNSHIP.
2. A COPY OF THIS PLAN IS REQUIRED TO BE ON-SITE THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION.

REVISIONS	DATE	BY

610.398.0904
barryisett.com
BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES

DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

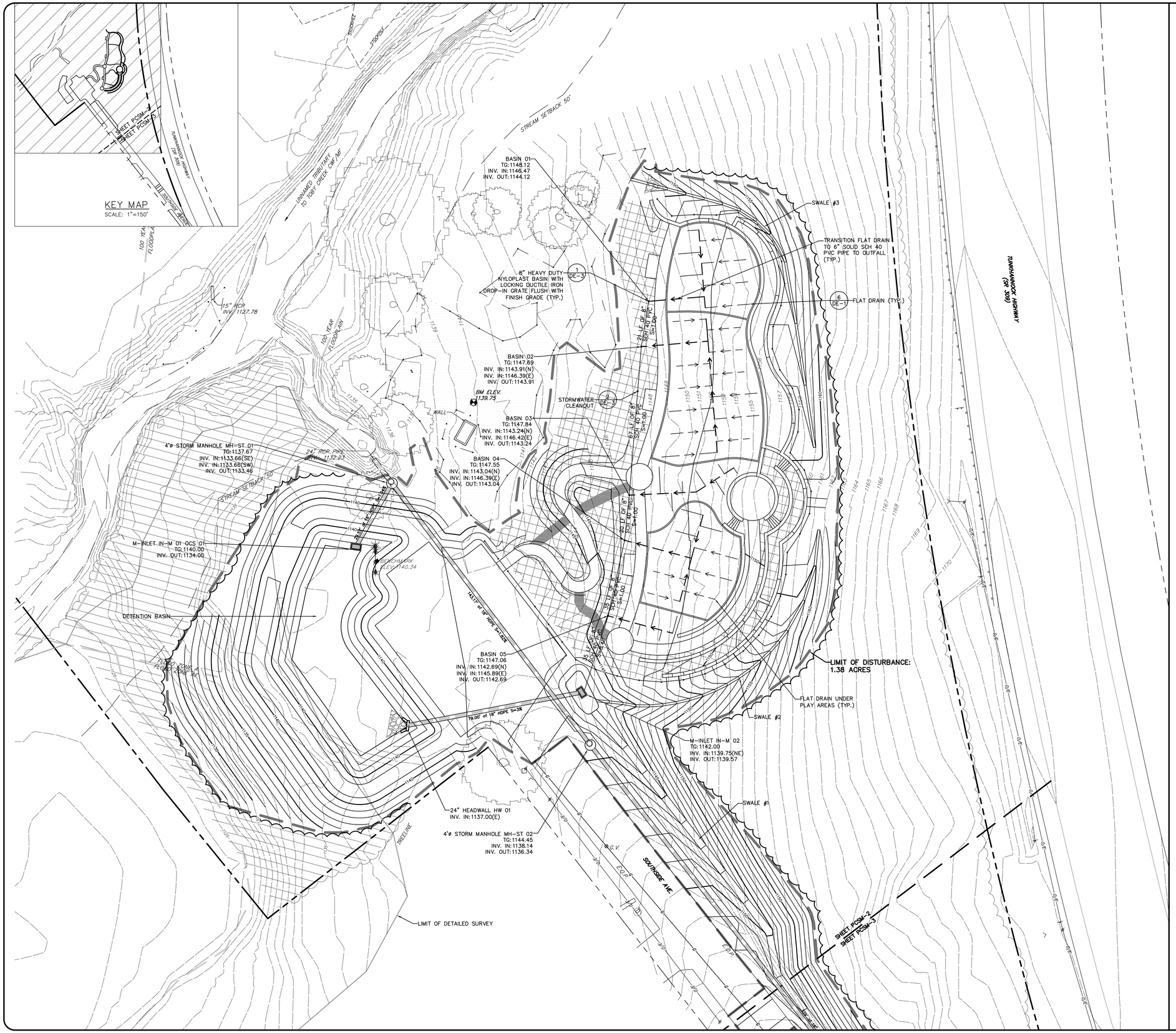
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DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 9 OF 24

PCSM-1

FILENAME: P:\2015\1063515.000_Dallas Twp\PcsMP\LAND\dwg\CSD_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\PCSM_03-2020.dwg May 1, 2020 2:26 PM



LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
PROTECTED EXISTING WOODLAND		
STEPPING STONE LANDSCAPE AREA		
AMENDED SOILS AREA		
WETLANDS		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/L	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
STORM LINE, MANHOLE, & INLET	EXIST. MH, EXIST. INLET	PROP. MH, PROP. INLET
RIP-RAP OUTLET PROTECTION		
POST/SPLIT RAIL FENCE		POST/SPLIT RAIL FENCE
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
CONTOUR	590	590
SPOT ELEVATION	×590.53	×590.53
STREAM		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

NOTES:
1. REFER TO SHEET MSP FOR NPDES PERMIT BOUNDARY LOCATION.
2. REFER TO SHEET LP-1 FOR LOCATION OF PROPOSED PLANTINGS.

REVISIONS	DATE	BY

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MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

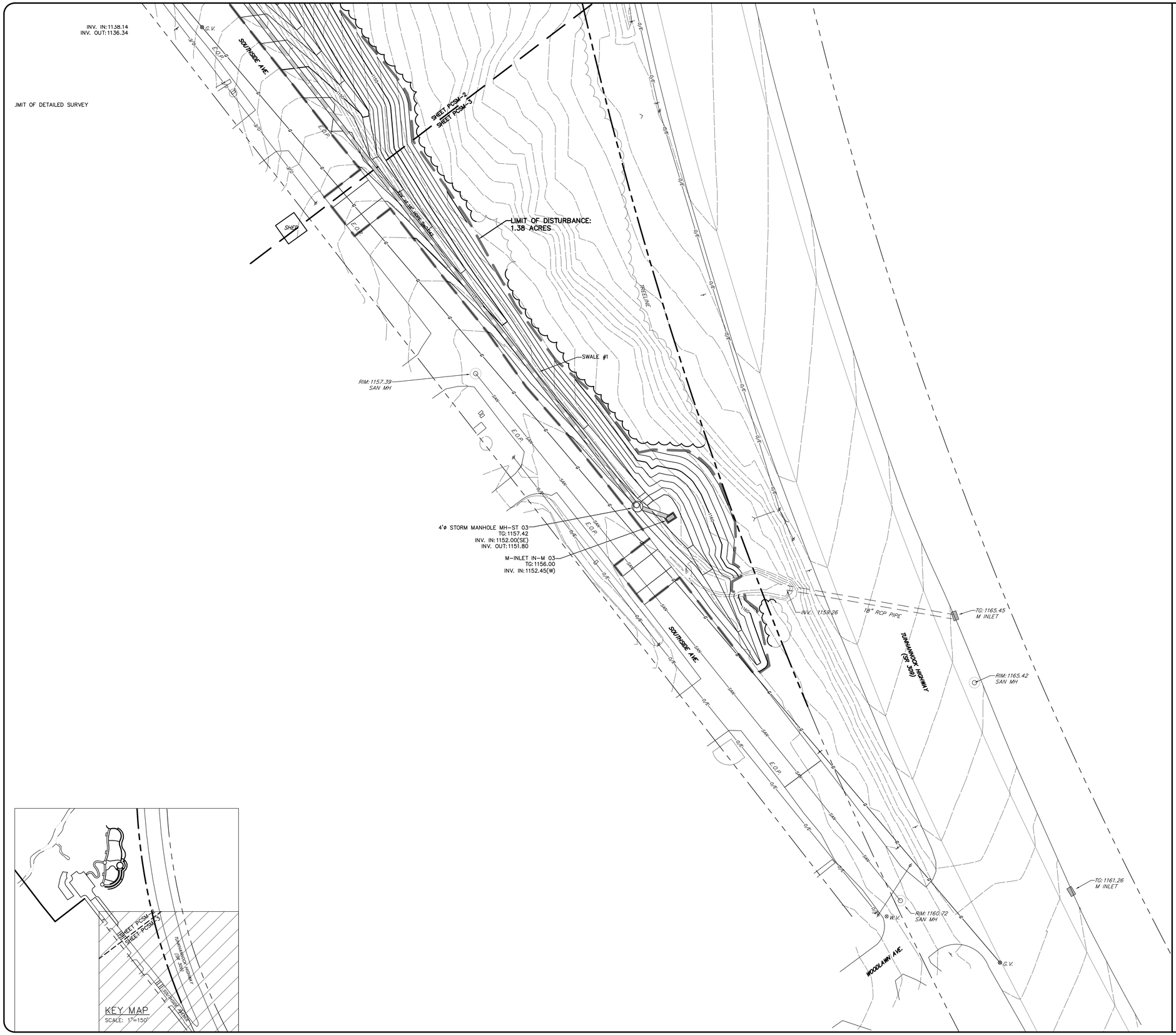
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PCSM-2

FILENAME: P:\2019\1063515.000_Dallas twp\PcsMSP\LAND Use\Civil3D_Data_Groups\2017\1221\Production Drawings\LAND DEVELOPMENT 3 - 2020\PCSM_03 - 2020.dwg - May 1, 2020 3:26 PM



LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V. W	
GAS MAIN & VALVE	G.V. G	
STORM LINE, MANHOLE, & INLET	EXIST. MH EXIST. INLET	PROP. MH PROP. INLET
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
CONTOUR	590	590
SPOT ELEVATION	590.53	590.53
STREAM		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

0 20' 40' 60'
SCALE: 1"=20'

N

REVISIONS	DATE	BY

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MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

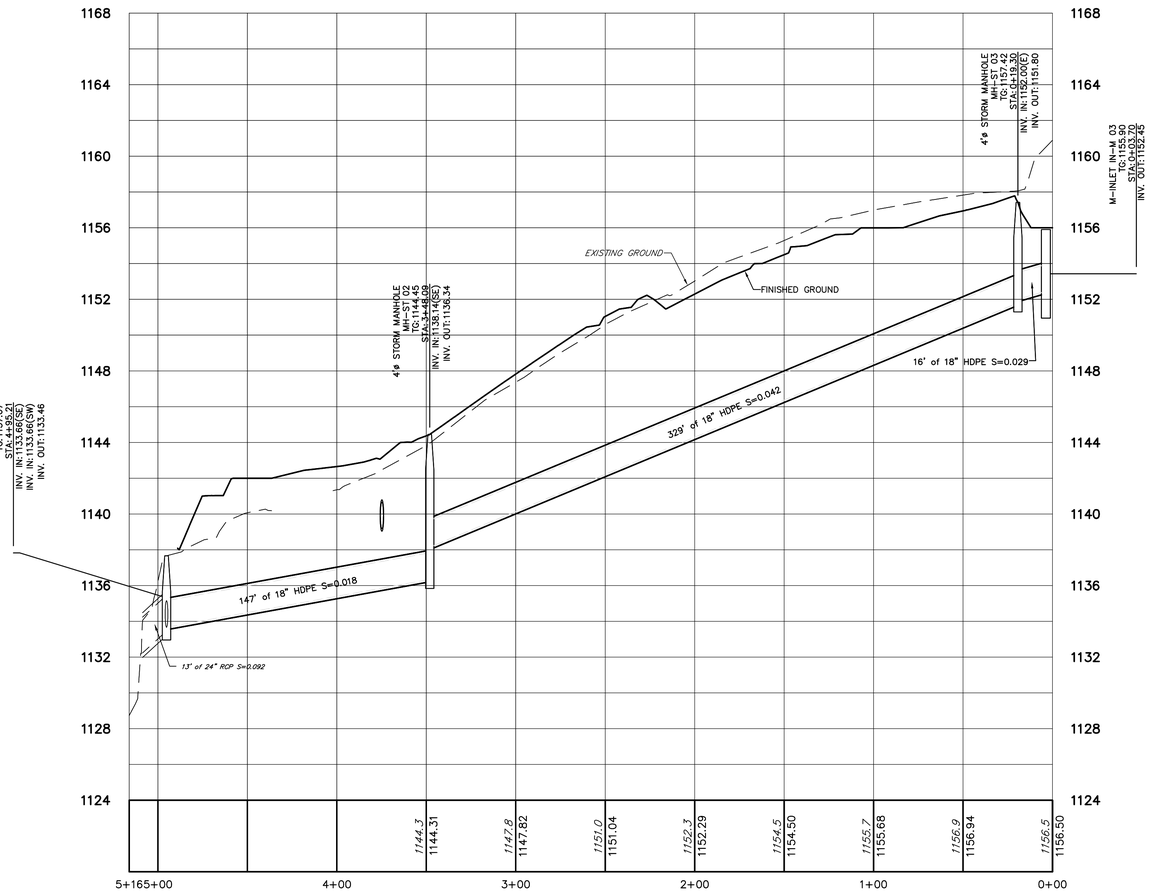
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JOB: 1063515.003	P MGR: BNS

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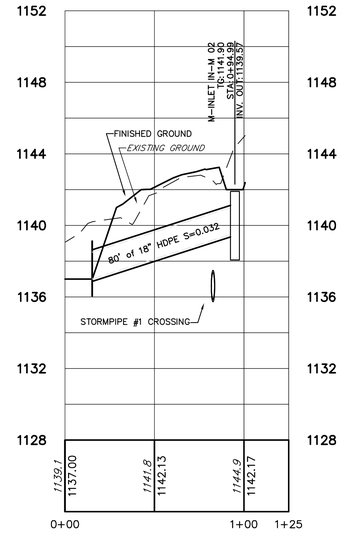
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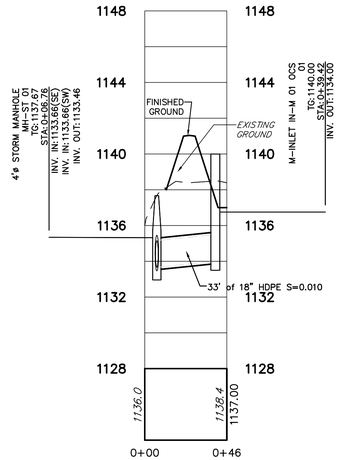
PROFILE OF STORM PIPE #1

HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'



PROFILE OF STORM PIPE #2

HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'



PROFILE OF STORM PIPE #3

HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'

REVISIONS	DATE	BY

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STORM PROFILES

DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

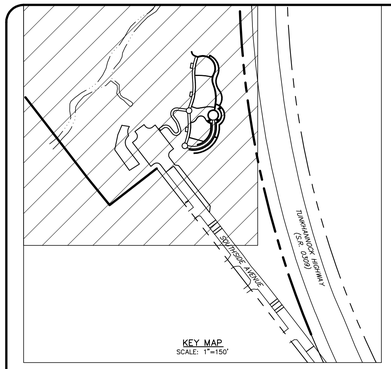
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JOB: 1063515.003	P MGR: BNS

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PR-1

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PLANTING LIST

QTY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	ROOT	SIZE (MIN.)	NOTES
GROUNDCOVER						
1850	NT	NARCISSUS 'THALIA'	FRAGRANT DAFFODIL	BULB	N/A	12" O.C. SPACING
30	PS	PHLOX STOLONIFERA	CREEPING PHLOX	CONT.	#2	ESTABLISHED ROOT SYSTEM TO EDGE OF CONTAINER, 24" O.C. SPACING
290	ST	SEDUM TERNATUM	THREE-LEAFED SEDUM	CONT.	#1	ESTABLISHED ROOT SYSTEM TO EDGE OF CONTAINER, 15" O.C. SPACING
200	TC	TIARELLA CORDIFOLIA	FOAMFLOWER	CONT.	#1	ESTABLISHED ROOT SYSTEM TO EDGE OF CONTAINER, 15" O.C. SPACING
100	TH	THYMUS MIX	CREEPING THYME (20 EA. VARIETY)	CONT.	#1	ESTABLISHED ROOT SYSTEM TO EDGE OF CONTAINER, PLANT BETWEEN STEPPING STONES
SHRUBS						
6	CA	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	CONT.	24" HT.	FULL DENSE BRANCHING
16	CO	CORNUS ALBA 'IVORY HALO'	IVORY HALO RED-TWIG DOGWOOD	CONT.	24" HT.	FULL DENSE BRANCHING
23	IT	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE	CONT.	15" HT.	FULL DENSE BRANCHING
34	PO	PHYSOCARPUS OPULIFOLIUS 'COPPERTINA'	COPPERTINA NINEBARK	CONT.	30" HT.	FULL DENSE BRANCHING
TREES						
9	AS	ACER SACCHARUM	SUGAR MAPLE	B&B	3" CAL. MIN.	SINGLE LEADER, FULL BRANCHING
20	BN	BETULA NIGRA	RIVER BIRCH	B&B	2" CAL. MIN.	3 EQUAL STEMS MIN., FULL BRANCHING

LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
LIMIT OF WORK		
CURBING	DEPRESSED CURB	DEPRESSED CURB
BUILDING	EXIST. BUILDING	
PAVEMENT		
MILL AND OVERLAY PAVEMENT		
CONCRETE WALKWAY		
PLAYGROUND SAFETY SURFACE		
TOPSOIL SURFACE		
WOOD MULCH SAFETY SURFACE		
DETENTION BASIN – MIX A		
LANDSCAPE AREA – MIX B (PLUGS)		
LAWN – MIX C (SOD)		
SWALE – MIX D		
STEPPING STONE LANDSCAPE AREA		
RETAINING WALL LANDSCAPE AREA		
RETAINING WALLS		
STONE STAIRS		
UTILITY POLE	U.P.	
OVERHEAD WIRES	O/A	
OVERHEAD ELECTRIC	O/E	
UNDERGROUND ELECTRIC	U/E	
WATER MAIN & VALVE	W.V.	
GAS MAIN & VALVE	G.V.	
STORM LINE, MANHOLE, & INLET	EXIST. MH / EXIST. INLET	
POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE	POST/SPLIT RAIL FENCE
SIGN		
DECIDUOUS TREE	6" MAPLE	1 AR
EVERGREEN TREE	6" PINE	1 PS
TREE ROW		
STREAM		
WETLANDS		
EDGE OF PAVEMENT	E.O.P.	E.O.P.
BITUMINOUS	BIT.	BIT.
TYPICAL	(TYP.)	(TYP.)
DETECTABLE WARNING SYSTEM	DWS	DWS
TO BE REMOVED		(T.B.R.)
TO REMAIN		(REM.)
TO BE REPLACED		(REP.)
RELOCATE		(REL.)

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

SEED MIXES

MIX A – DETENTION BASIN GRASS MIX
(ERNST MIX-180 OR APPROVED EQUAL COMPOSITION)
25.0% SCHIZACHYRIUM SCOPARIUM, FORT INDIANTOWN GAP-PA ECOTYPE (LITTLE BLUESTEM, FORT INDIANTOWN GAP-PA ECOTYPE)
24.0% PANICUM CLANDESTINUM, "TIOGA" (DEERTONGUE, "TIOGA")
20.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
14.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
10.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)
5.0% CAREX SCOPARIA, PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
1.0% JUNCUS TENUIS, PA ECOTYPE (PATH RUSH, PA ECOTYPE)

MIX B – GRASS/PERENNIAL PLUG LANDSCAPE AREA
20% PANICUM VIRGATUM, SWITCHGRASS
20% AGROSTIS PERENNANS, UPLAND BENTGRASS
20% DANTHONIA SPICATA, POVERTY OATGRASS
20% CAREX PENSYLVANICA, PA SEDGE
5% EUPATORIUM PURPUREUM, JOE PYE WEED
5% LOBELIA SIPHILITICA, GREAT BLUE LOBELIA
5% MONARDA FISTULOSA, BEEBALM
5% RUDBECKIA HIRTA, BLACK-EYED SUSAN

MIX C – LAWNS (SOD)	*RATE (LB./1000 SF)
FESTUCA RUBRA COMMUNATA, CHEWING'S FESCUE	2#/1000 SF
FESTUCA OVINA GLAUCA, BLUE FESCUE	2#/1000 SF
FESTUCA RUBRA, RED FESCUE	1#/1000 SF
FESTUCA OVINA DURIUSCULA, HARD FESCUE	1#/1000 SF
FESTUCA RUBRA TRICHOPHYLLA, SLENDER CREEPING RED FESCUE	1#/1000 SF
FESTUCA RUBRA 'DAWSON', DAWSON RED FESCUE	1#/1000 SF
LOLIUM MULTIFLORUM, ITALIAN RYEGRASS	0.5#/1000 SF

MIX D – VEGETATED SWALES (ONE MOWING ANNUALLY)	
ANDROPOGON VIRGINICUS, BROOM SEDGE	2#/1000 SF
ANDROPOGON ELLIOTTII, ELLOTT'S BLUESTEM	1#/1000 SF
PANICUM VIRGATUM, SWITCHGRASS	0.5#/1000 SF
LOLIUM MULTIFLORUM, ITALIAN RYEGRASS	0.5#/1000 SF
DICHANTHELIUM SCOPARIUM, VELVET PANICGRASS	0.25#/1000 SF
CAREX TRIBULOIDES, BLUNT BROOM SEDGE	0.25#/1000 SF

*ALL SEED TO BE MIN. 98% PURE LIVE SEED.

NOTE:

1. SEE SHEET ES-1 FOR SEEDING SCHEDULE
2. ALL DISTURBED AREAS NOT NOTED, SHALL BE SEEDED WITH MIX A.

0 20' 40' 60'
SCALE: 1"=20'

N

REVISIONS	DATE	BY

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
barryisett.com

LANDSCAPE PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
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LP-1

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PLAN PREPARER CONTACT INFORMATION

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BARRY ISETT AND ASSOCIATES
1170 HIGHWAY 315, SUITE 3
WILKES-BARRE, PA 18702
PHONE: (570) 285-8180
FAX: (570) 285-8201

PLANNING AND DESIGN

THE EARTH CONSTRUCTION ACTIVITIES, PROPOSED BY THIS PLAN, HAVE BEEN PLANNED AND IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE, IN ACCORDANCE WITH THE FOLLOWING:

1. MINIMIZE THE EXTENT AND DURATION OF THE EARTH DISTURBANCE.
2. MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION.
3. MINIMIZE SOIL COMPACTION.
4. UTILIZE OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF.

SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST SEVEN DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LAND OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE E&S CONTROL PLAN PREPARER, AND THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.

AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM, INC. AT 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.

AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE LOCAL CONSERVATION DISTRICT.

IN NO CASE SHALL AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED.

IF WORK AT THE SITE CEASES FOR A PERIOD OF FOUR OR MORE DAYS, TEMPORARY STABILIZATION SHALL BE PROVIDED.

1. FIELD MARK LIMITS OF DISTURBANCE AND ANY ENVIRONMENTALLY SENSITIVE AREAS (I.E. RIPARIAN BUFFERS, WETLANDS, SPRINGS, EXISTING TREES TO REMAIN, AND FLOODWAYS) AS NEEDED.
2. INSTALL ROCK CONSTRUCTION ENTRANCE.
3. INSTALL COMPOST FILTER SOCK AS SHOWN ON THE PLAN DRAWINGS.
4. ESTABLISH TOPSOIL STOCKPILE AND INSTALL COMPOST SOCK WASHOUT.
5. BEGIN CLEARING AND GRUBBING OPERATIONS FOR CONSTRUCTION OF THE PLAYGROUND IMPROVEMENTS.
6. BEGIN CONSTRUCTION OF DETENTION BASIN, INCLUDING CONSTRUCTION OF STORM SEWER FROM MH-ST 01 TO OCS 01, ALSO, BEGIN CONSTRUCTION OF STORM SEWER FROM HW 01 TO IN-M 02. STRUCTURES AND PIPES MUST BE INSTALLED FROM DOWNSTREAM TO UPSTREAM. THIS IS A CRITICAL STAGE OF PCSM PLAN IMPLEMENTATION. AS SUCH, THE ENGINEER, OR REPRESENTATIVE THEREOF, SHALL BE ON-SITE FOR THIS STAGE OF CONSTRUCTION.
7. IMMEDIATELY UPON PLACING INLET STRUCTURES, EXCLUDING OCS 01, INSTALL INLET FILTER BAG.
8. BEGIN CONSTRUCTION OF PLAYGROUND IMPROVEMENTS.
9. IMMEDIATELY AFTER CONSTRUCTION OF THE RETAINING WALLS, CONSTRUCT SWALE 02 AND SWALE 03.
10. BEGIN CONSTRUCTION OF STORM SEWER FROM MH-ST 01 TO INLET M-03. STRUCTURES AND PIPES MUST BE INSTALLED FROM DOWNSTREAM TO UPSTREAM. ALSO, BEGIN CONSTRUCTION OF SWALE 01.
11. BEGIN CONSTRUCTION OF SOUTHSIDE AVENUE IMPROVEMENTS.
12. BEGIN CONSTRUCTION OF PARKING LOT IMPROVEMENTS.
13. WHEN NECESSARY, REMOVE TOPSOIL STOCKPILE, COMPOST SOCK WASHOUT, AND ROCK CONSTRUCTION ENTRANCE.
14. BEING INSTALLATION OF INFILTRATION BERM. THIS IS A CRITICAL STAGE OF PCSM PLAN IMPLEMENTATION. AS SUCH, THE ENGINEER, OR REPRESENTATIVE THEREOF, SHALL BE ON-SITE FOR THIS STAGE OF CONSTRUCTION.
15. UPON REACHING FINAL GRADE AND AS PRACTICABLE, IMMEDIATELY STABILIZE ALL AREAS ACCORDING TO PLAN. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENT.
16. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN ON-SITE INSPECTION PRIOR TO REMOVAL / CONVERSION OF THE EROSION AND SEDIMENT POLLUTION CONTROL BMPS.
17. UPON SUCCESSFUL INSPECTION BY THE LOCAL CONSERVATION DISTRICT, REMOVE COMPOST FILTER SOCK, COMPOST SOCK WASHOUT, AND ANY OTHER REMAINING BMPS. PERMANENTLY STABILIZE THE AREAS WHERE BMPS WERE LOCATED.

OPERATION AND MAINTENANCE PROGRAM

THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL EROSION AND SEDIMENT POLLUTION CONTROL (E&S) BEST MANAGEMENT PRACTICES (BMPS) IDENTIFIED HEREIN. E&S BMPS SHALL BE MAINTAINED IN ACCORDANCE WITH THIS E&S PLAN AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (E&S MANUAL), MARCH 2012.

E&S BMPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT, UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL KEEP RECORD OF ALL INSPECTIONS USING THE VISUAL SITE INSPECTION REPORT FORM (FORM 3150-FM-BWEW0083). E&S BMPS WHICH NEED REPAIR OR REPLACEMENT, SHALL BE REMEDIED IMMEDIATELY. DISPOSAL OF MATERIALS REMOVED FROM THE BMPS SHALL BE PERFORMED IN ACCORDANCE WITH THE RECYCLING OR DISPOSAL OF MATERIALS NOTES HEREIN.

RECYCLING OR DISPOSAL OF MATERIALS

ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

ACCUMULATED SEDIMENT IS A SOLID WASTE, AND SHALL BE DISPOSED OF AS OUTLINED ABOVE.

STANDARD E&S PLAN NOTES:

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LAND OWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THE SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN.
7. AT NO TIMES SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET. SEQ., 271.1 AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER OF ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BY QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER DISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED , ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES – 6 TO 12 INCHES ON COMPACTED SOILS – PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHLL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN AN AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATION SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

SEEDING SCHEDULE

NOTE: THE FOLLOWING SEEDING SCHEDULE SHALL BE USED UNLESS OTHERWISE NOTED.

TEMPORARY COVER FOR EROSION CONTROL

INITIAL PROTECTION: USE WHERE SEEDING IS TO BE DELAYED, HAY OR STRAW APPLIED AT A RATE OF THREE TONS PER ACRE.

SITE PREPARATION: ONE TON AGRICULTURAL GRADE LIMESTONE PER ACRE PLUS 50#-50#-50# FERTILIZER PER ACRE. WORK INTO SOIL.

SEASON	SPECIES	RATE (LB./ACRE)
SPRING (MARCH 15 TO JUNE 15)	ANNUAL RYEGRASS or SPRING OATS	40 96
SUMMER (JUNE 16 TO AUGUST 15)	ANNUAL RYEGRASS	40
FALL (AUGUST 16 ON) NOVEMBER 1)	ANNUAL RYEGRASS or WINTER RYE	40 168

PERMANENT COVER FOR STABILIZATION

PERMANENT: ALL DISTURBED AREAS SHALL BE PREPARED AND SEEDED WITH THE DESIGNATED SPECIES AT THE NOTED SEEDING RATE FOLLOWING FINAL GRADING.

SITE PREPARATION: INCORPORATE LIME AND FERTILIZER (RATE BASED ON SOIL TEST) AS DEEPLY INTO THE SOIL AS POSSIBLE. IF SOIL TESTS ARE NOT AVAILABLE, APPLY SIX TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 100#-200#-200# FERTILIZER PER ACRE.

MULCHING: APPLY THREE TONS PER ACRE OF HAY OR STRAW TO ACHIEVE A LOOSE LAYER 3/4-1" DEEP. USE HAY RATHER THAN STRAW ON STEEP SLOPES. APPLY NON-ASPHALTIC CON-TACK TACKIFIER by CONWEB FIBERS OR APPROVED EQUIVALENT, AT A RATE OF 50 LBS. PER ACRE, WITH SPRAYING EQUIPMENT. ANY MULCH WHICH HAS BLOWN OR WASHED FROM THE SITE SHALL BE CLEANED UP AND BARE AREAS RE-MULCHED.

PERMANENT SEEDING: MARCH 15-MAY 15 AND AUGUST 16-OCTOBER 15. SEEDING OUTSIDE THESE DATES WILL REQUIRE WRITTEN APPROVAL OF THE OWNER.

ESTABLISHMENT: CONTRACTOR SHALL SUPPLY, CONVEY AND MAINTAIN CONSISTENT MOISTURE REQUIRED TO SUPPLIMENT RAINFALL EVENTS TO ENSURE GOOD GERMINATION AND GROWTH OF SEED. ADDITIONAL SEED, WEED CONTROL AND FERTILIZATION MUST BE APPLIED, IF REQUIRED, TO ESTABLISH 95% TURF COVERAGE.

SOURCE: Penn State College of Agriculture Sciences, EROSION CONTROL AND CONSERVATION PLANTINGS ON NONCROPLAND by Peter Landschoot, 1997 or as revised.

TOPSOIL AMENDMENTS FOR TURF GRASS AREAS

MINIMUM DEPTH 4"
P.h. 6-8
ORGANIC CONTENT 2.5 – 4%
FERTILIZER:
TEMPORARY – 5-5-5 1,000 LBS/ACRE
PERMANENT – 10-5-5 1,000 LBS/ACRE
4% MIN. WATER INSOLUBLE NITROGEN
LIME:
TEMPORARY – 1 TON/ACRE
PERMANENT – 2-3 TON/ACRE

NOTES:
1. AS A ALTERNATIVE, SAMPLES OF EXISTING OR FURNISHED TOPSOIL MAY BE TESTED BY A SOIL TESTING LABORATORY. THE TESTING AGENCY SHALL PREPARE RECOMMENDATIONS FOR THE ESTABLISHMENT OF PERMANENT TURFGRASS.
2. SOIL TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR MAY ONLY USE THE SOIL TESTING LABORATORIES RECOMMENDATION AFTER RECEIVING WRITTEN PERMISSION FROM THE ENGINEER. CONTRACTOR SHALL CONDITION THE SOIL AS RECOMMENDED BY THE SOIL TESTING LABORATORY.
3. COPIES OF ALL INVOICES FOR DELIVERIES OF BULK SOIL AMENDMENT MATERIALS DELIVERED TO THE SITE OR ORIGINAL LABELS FROM BAGS OF FERTILIZER OR ORGANIC MATERIAL SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

REVISIONS	DATE	BY

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
barryisett.com

EROSION AND SEDIMENTATION NOTES

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

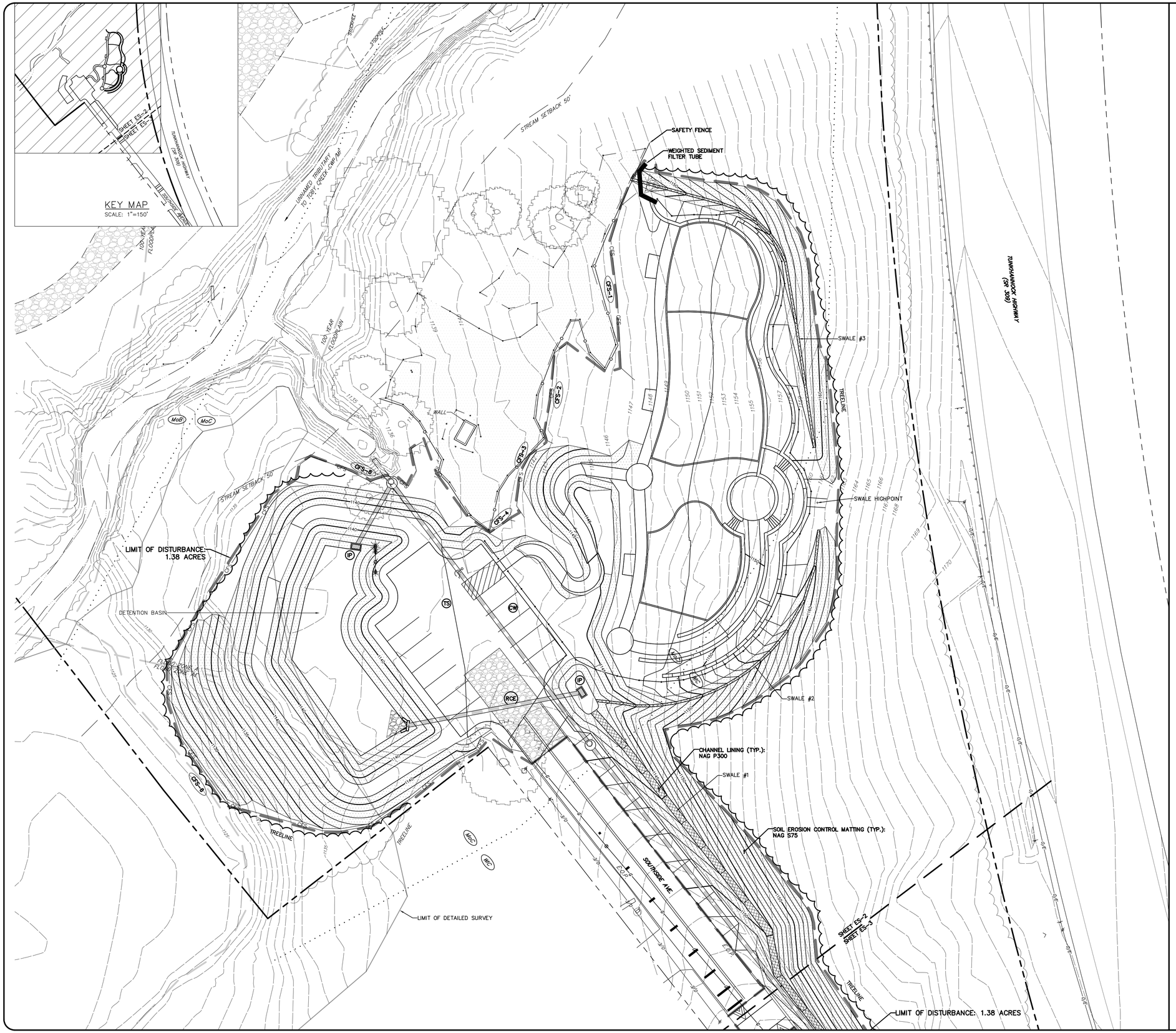
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EROSION AND SEDIMENT CONTROL MEASURES LEGEND

- COMPOST FILTER SOCK — CFS
- INLET PROTECTION — IP
- RIP-RAP OUTLET PROTECTION
- ROCK CONSTRUCTION ENTRANCE — RCE
- TOPSOIL STOCKPILE — TS
- LIMIT OF WORK
- CHANNEL LINING/NAG P300
- SLOPE EROSION CONTROL MATTING/ NAG S75

SOIL CLASSIFICATIONS

- MoB — MORRIS CHANNERY SILT LOAM 0-8% SLOPE
- MoC — MORRIS CHANNERY SILT LOAM 8-15% SLOPE
- WIC — WELLSBORO CHANNERY SILT LOAM 8-15% SLOPE
- WID — WELLSBORO CHANNERY SILT LOAM 15-25% SLOPE

COMPOST FILTER SOCK	LOCATION	SLOPE-PERCENT	SLOPE LENGTH ABOVE BARRIER (FT.)	SIZE (IN.)
CFS-1	REFER TO PLAN	17%	155	24
CFS-2	REFER TO PLAN	17%	180	24
CFS-3	REFER TO PLAN	15%	213	24
CFS-4	REFER TO PLAN	14%	222	24
CFS-5	REFER TO PLAN	13%	268	32
CFS-6	REFER TO PLAN	10%	369	32

BY	DATE	REVISIONS

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
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barryisett.com

EROSION AND SEDIMENTATION PLAN
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
SCALE: 1" = 20'	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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EROSION AND SEDIMENT CONTROL MEASURES LEGEND

INLET PROTECTION	(IP)
LIMIT OF WORK	— — —
CHANNEL LINING/NAG P300	(hatch)
SLOPE EROSION CONTROL MATTING/ NAG S75	(hatch)

SOIL CLASSIFICATIONS

MoB	MORRIS CHANNERY SILT LOAM 0-8% SLOPE
MoC	MORRIS CHANNERY SILT LOAM 8-15% SLOPE
WlC	WELLSBORO CHANNERY SILT LOAM 8-15% SLOPE
WlD	WELLSBORO CHANNERY SILT LOAM 15-25% SLOPE

0 20' 40' 60'
SCALE: 1"=20'

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REVISIONS	DATE	BY

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EROSION AND SEDIMENTATION PLAN

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

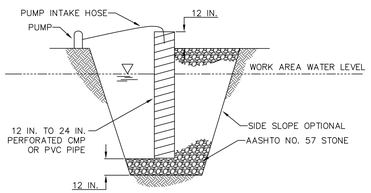
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SECTION VIEW

NOTES:

LOCATE SUMP AT LOW POINT IN WORK AREA AND OUTSIDE OF CONSTRUCTION ACTIVITY. WHEREVER RUNOFF FROM A WORK AREA FLOWS DIRECTLY TO THE SUMP AREA, A FILTER BAG SHALL BE ATTACHED AT THE DISCHARGE POINT UNLESS PUMPING TO A SEDIMENT BASIN OR SEDIMENT TRAP.

MINIMUM DIAMETER OF PIT BOTTOM SHALL BE 24" LARGER THAN PIPE DIAMETER. MINIMUM DEPTH OF PIT SHALL BE 24" BELOW WATER LEVEL IN WORK AREA (INCLUDING THE AASHTO #57 STONE). 12" TO 24" PERFORATED CMP OR PVC PIPE SHALL BE SET ON 12" OF CLEAN AASHTO # 57 STONE.

VOID SPACE AROUND PIPE SHALL BE FILLED WITH AASHTO # 57 STONE. PIPE TO EXTEND 12" MIN. ABOVE TOP OF STONE AND/OR WATER BEING PUMPED FROM WORK AREA.

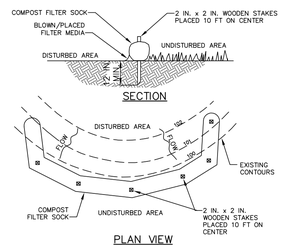
SET PUMP INTAKE INSIDE STANDPIPE.

DISCHARGE FROM PUMP SHALL BE TO A STABLE AREA BELOW DISTURBANCES FROM THE WORK ZONE.

SUMP MAY BE USED IN CONJUNCTION WITH FILTER BAG WHERE ADDITIONAL FILTERING IS NEEDED.

STANDARD CONSTRUCTION DETAIL #3-17
SUMP PIT

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING		HDPE BIAXIAL NET CONTINUOUSLY WOUND FUSION-WELDED JUNCTURES 3/4" X 3/4" MAX. APERTURE SIZE			
OUTER FILTRATION MESH		COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NO-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH) 3/16" APERTURE SIZE			
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

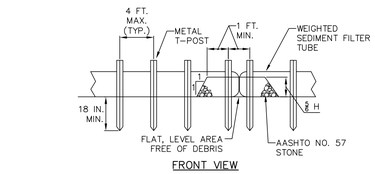
FILTREXX & JMD

TABLE 4.2
COMPOST STANDARDS

ORGANIC MATTER CONTENT	25% – 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	30% – 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE



NOTES:

A SEDIMENT TUBE PLACEMENT AREA SHALL BE PREPARED SO THAT IT IS FREE OF ALL DEBRIS, INCLUDING ROCKS, STICKS, ROOTS, ETC. A 2" LAYER OF AASHTO #57 STONE SHALL BE PLACED WHERE THE LOGS COME TOGETHER. ENDS OF TUBES MAY BE OVERLAPPED ACCORDING TO MANUFACTURER'S SPECIFICATIONS INSTEAD OF THE AASHTO #57 STONE.

SEDIMENT TUBES SHALL BE PLACED AT EXISTING LEVEL GRADE. ENDS SHALL BE EXTENDED UPSLOPE AT 45 DEGREES TO THE MAIN FILTER LOG ALIGNMENT FOR A MINIMUM OF 8 FEET.

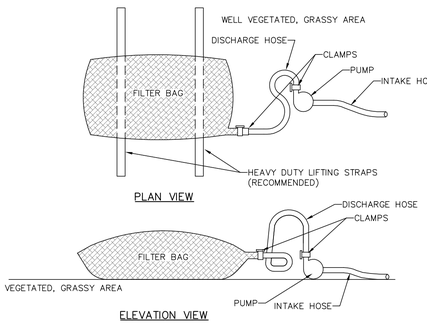
SEDIMENT TUBES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

SEDIMENT DEPOSITS SHALL BE CLEANED FROM THE LOG WHEN IT REACHES HALF THE HEIGHT OF THE TUBE.

DAMAGED TUBES SHALL BE REPLACED WITHIN 24 HOURS OF INSPECTION. A SUPPLY OF TUBES SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.

STANDARD CONSTRUCTION DETAIL #4-3
WEIGHTED SEDIMENT FILTER TUBE INSTALLATION

NOT TO SCALE



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

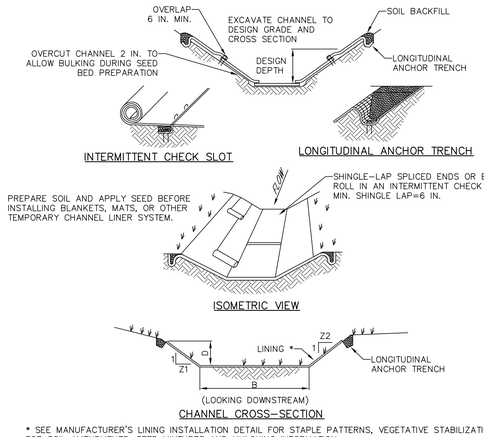
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING *
C1	ENTIRE LENGTH	3	2.0	2	3	NAG P300
C2	ENTIRE LENGTH	1	1	3	3	NAG P300
C3	ENTIRE LENGTH	1	1	3	3	NAG P300

NOTES:

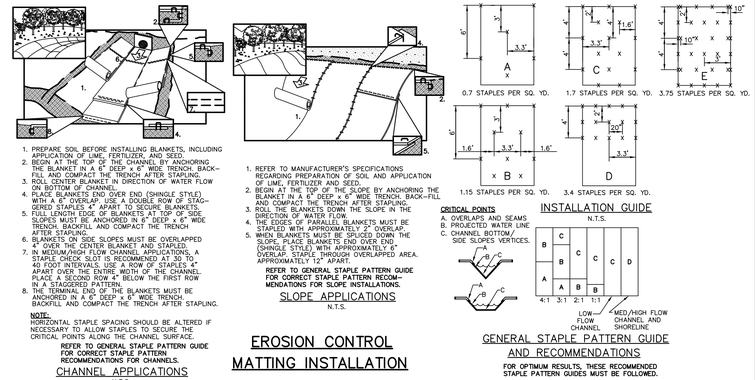
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL

NOT TO SCALE



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EROSION AND SEDIMENTATION DETAILS
DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

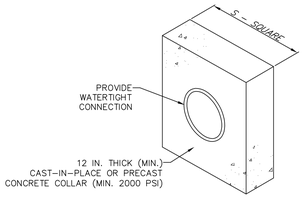
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BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
1	18	42	2	10	10

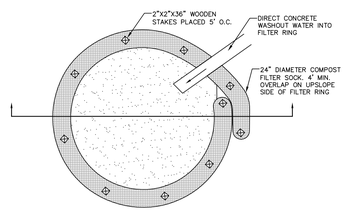
NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

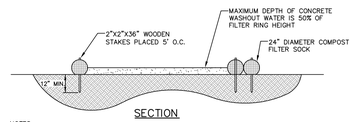
COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE



PLAN



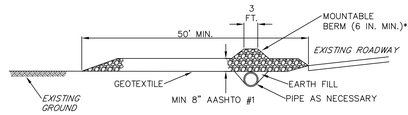
SECTION

NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

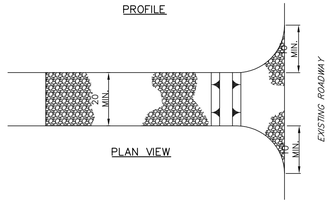
A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO THE INSTALLING SOCKS.

COMPOST SOCK WASHOUT DETAIL #3-18 (CW)

NOT TO SCALE



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

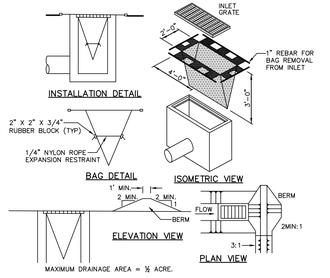
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

(RCE) STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



INSTALLATION DETAIL

BAG DETAIL

ISOMETRIC VIEW

ELEVATION VIEW

PLAN VIEW

MAXIMUM DRAINAGE AREA = ½ ACRE.

INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS REQUIRED FOR ALL INSTALLATIONS.

EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

(IP) FILTER BAG INLET PROTECTION
(M-INLETS)

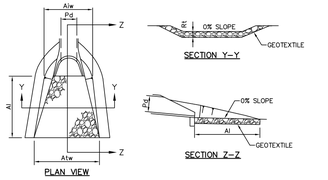
N.T.S.

OUTLET NO.	PIPE DIA Pd (IN)	TAIL WATER COND. (MAX OR MIN)	MAN. "n" FOR PIPE	PIPE SLOPE (%)	Q (CFS)	V* (FPS)	RIPRAP		APRON		
							SIZE R-	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
HW 01	18	MIN	0.012	3.00	6.94	8.94	4	18	8	4.5	12.5
SWALE 3	–	MIN	0.012	–	1.13	3.94	4	18	6	3	9

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.



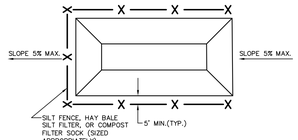
PLAN VIEW

SECTION Y-Y

SECTION Z-Z

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

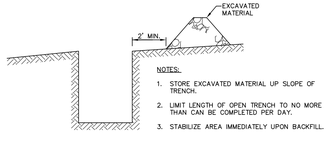
N.T.S.



NOTES:
1. PLACE STOCKPILES AT LOCATIONS SHOWN ON PLAN.
2. STOCKPILE TO BE IMMEDIATELY SEEDED WITH A TEMPORARY SEED MIXTURE.
3. SIDE SLOPES SHALL NOT EXCEED 1' VERTICAL TO 2' HORIZONTAL.
4. MAXIMUM TOPSOIL STOCKPILE HEIGHT NOT TO EXCEED 35'.

(TS) TOPSOIL STOCKPILE

N.T.S.



NOTES:
1. STORE EXCAVATED MATERIAL UP SLOPE OF TRENCH.
2. LIMIT LENGTH OF OPEN TRENCH TO NO MORE THAN CAN BE COMPLETED PER DAY.
3. STABILIZE AREA IMMEDIATELY UPON BACKFILL.

TYPICAL TRENCH E&S DETAIL

N.T.S.

REVISIONS | DATE | BY

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EROSION AND SEDIMENTATION DETAILS
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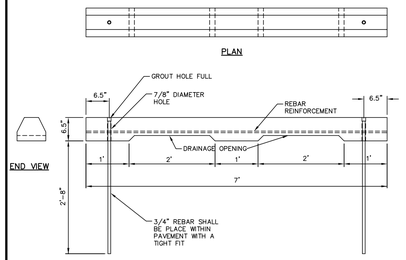
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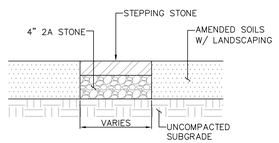
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NOTES:
1. WHEEL STOPS SHALL BE AS SPECIFIED OR AN APPROVED EQUIVALENT.
2. WHEEL STOPS SHALL BE PLACE 3'-0" FROM EDGE OF PAVEMENT.

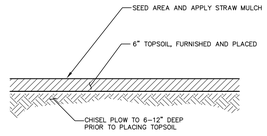
CONCRETE WHEEL STOP
N.T.S.

16 DE-1



STEPPING STONE
N.T.S.

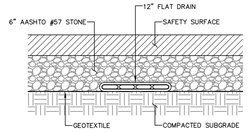
13 DE-1



NOTES:
REFER TO SEEDING SCHEDULE

LAWN RESTORATION
N.T.S.

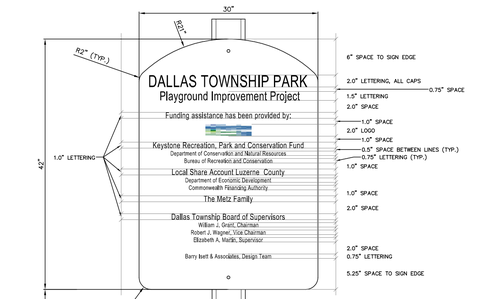
10 DE-1

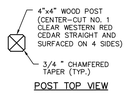


NOTE:
DEPTH OF SAFETY SURFACE BASED ON FALL HEIGHT REQUIREMENTS SET BY PLAY EQUIPMENT MANUFACTURER.

FLAT DRAIN
N.T.S.

6 DE-1

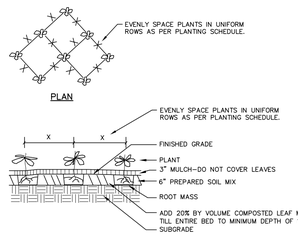




NOTE:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH FONT TYPES, CHARACTER SPACING, SIZE DIMENSIONS AND PAINT COLORS FOR OWNER APPROVAL PRIOR TO FABRICATION.
2. COLORS SHALL BE FEDERAL STANDARD 595 AS FOLLOWS:
   BORDER: WHITE # 27875
   LETTERING: WHITE # 27875
   BACKGROUND: GREEN
3. TEXT FONT STYLE: ARIAL
   TEXT SIZE: AS SHOWN
4. SIGN MATERIAL: ALUMINUM
   SIGN THICKNESS: 0.080
   SIGN CORNERS: ROUNDED
   OVERLAY: EG VINYL

DCNR FUNDING SIGNAGE DETAIL (PERMANENT)
N.T.S.

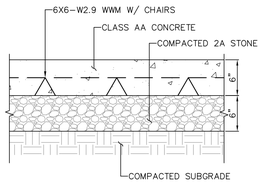
1 DE-1



NOTE:
REMOVE PLASTIC, PAPER, OR FIBER POTS FROM CONTAINERIZED PLANT MATERIAL. PULL ROOTS OUT OF THE ROOT MAT, AND CUT CIRCLING ROOTS WITH A SHARP KNIFE. IMMEDIATELY AFTER REMOVING THE CONTAINER, INSTALL THE PLANT SUCH THAT THE ROOTS DO NOT DRY OUT. PACK PLANTING MIX AROUND THE EXPOSED ROOTS WHILE PLANTING. WATER THOROUGHLY.

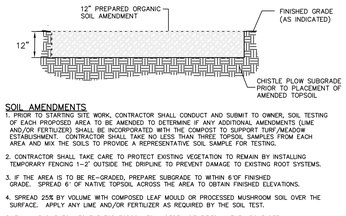
PLUG PLANTING DETAIL
N.T.S.

17 DE-1



BENCH CONCRETE PAD
N.T.S.

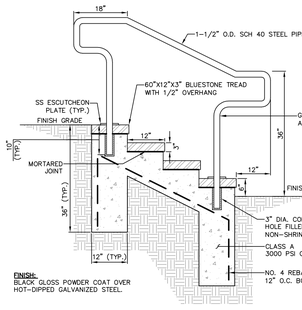
14 DE-1



SOIL AMENDMENTS
1. PRIOR TO STARTING SITE WORK, CONTRACTOR SHALL CONDUCT AND SUBMIT TO OWNER, SOIL TESTING OF EACH PROPOSED AREA TO BE AMENDED TO DETERMINE IF ANY ADDITIONAL AMENDMENTS (LIME AND/OR FERTILIZER) SHALL BE INCORPORATED WITH THE COMPOST TO SUPPORT TURF/MEADOW ESTABLISHMENT. CONTRACTOR SHALL TAKE NO LESS THAN THREE TOPSOIL SAMPLES FROM EACH AREA AND MIX THE SOILS TO PROVIDE A REPRESENTATIVE SOIL SAMPLE FOR TESTING.
2. CONTRACTOR SHALL TAKE CARE TO PROTECT EXISTING VEGETATION TO REMAIN BY INSTALLING TEMPORARY FENCING 1-2' OUTSIDE THE DRIPLINE TO PREVENT DAMAGE TO EXISTING ROOT SYSTEMS.
3. IF THE AREA IS TO BE RE-GRADED, PREPARE SUBGRADE TO WITHIN 6"OF FINISHED GRADE. SPREAD 6" OF NATIVE TOPSOIL ACROSS THE AREA TO OBTAIN FINISHED ELEVATIONS.
4. SPREAD 25% BY VOLUME WITH COMPOSED LEAF MOULD OR PROCESSED MUSHROOM SOIL OVER THE SURFACE. APPLY ANY LIME AND/OR FERTILIZER AS REQUIRED BY THE SOIL TEST.
5. TILL AMENDMENTS INTO THE TOP TOPSOIL TO A DEPTH IDENTIFIED IN THE ABOVE DETAIL.
6. REMOVE ANY ROCKS WITHIN THE TOPSOIL LAYER WHICH ARE GREATER THAN 1" IN ANY DIRECTION.
7. FINE GRADE, RAKE, SEED, AND MULCH. SEED SHALL BE APPLIED WITH A DRILL OR SPLIT SEEDER TO OBTAIN GOOD SEED TO SOIL CONTACT.
8. STRAW MULCH SHALL BE SPREAD OVER SEEDED AREAS WITH A SLOPE LESS THAN 1:4. HYDRO-MULCH SHALL BE APPLIED ON SLOPES GREATER THAN 1:4 BUT LESS THAN 1:2. MATTING SHALL BE APPLIED ON SLOPES OF 1:2 OR STEEPER.

AMENDED SOIL DETAIL
N.T.S.

11 DE-1



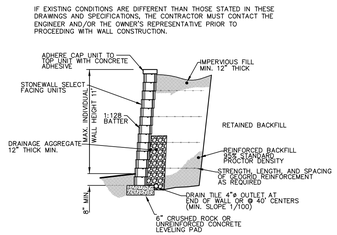
FINISH:
BLACK GLOSS POWDER COAT OVER HOT-DIPPED GALVANIZED STEEL.

STAIR DETAIL WITH HANDRAIL
N.T.S.

7 DE-1

RETAINING WALL CONSTRUCTION NOTES:
1. STRIP ALL VEGETATION AND ORGANIC SOIL FROM THE WALL AREA, INCLUDING THE GEOSYNTHETIC REINFORCEMENT EMBEDMENT LENGTH. PLAN EXCAVATION DIVERSION DITCHES TO ROUTE SURFACE WATER AROUND EXCAVATION DURING WALL CONSTRUCTION.
2. BENCH CUT ALL EXCAVATED SLOPES, TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CHECK AND VERIFY WALL LOCATION AND ALIGNMENT PRIOR TO STARTING WALL CONSTRUCTION.
3. SITE SOIL ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS, PARAMETERS, AND/OR LOCAL BUILDING CODES. DO NOT OVER EXCAVATE SOIL UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
4. MINIMUM EMBEDMENT DEPTH OF WALL BELOW FINISH GRADE SHALL BE AS SHOWN ON PLANS. FOR WALL HEIGHTS BELOW 10 FT. USE 6", ABOVE 10 FT. USE 2'-0". WHEN THERE IS A SLOPE BELOW THE WALL, CONSULT THE ENGINEER.
5. FOLLOW ALL APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. WRITTEN PROJECT SPECIFICATIONS SHALL BE USED AS GUIDANCE WHEN INSTRUCTIONS AND SPECIFICATIONS CONFLICT.
6. LEVELING PAD SHALL CONSIST OF COMPACTED DRAINAGE AGGREGATE, MINIMUM 6" THICK. CONTRACTOR MAY USE COMPACTED SAND AND GRAVEL WITH APPROVAL OF THE ENGINEER.
7. DRAINAGE FILL 12" THICK SHALL BE INSTALLED BEHIND THE SWS UNITS TO WITHIN 12" OF THE TOP OF THE WALL. DRAINAGE FILL TO BE AASHTO 57 OR 67 STONE.
8. WHERE DRAIN TILE IS USED, PROVIDE GRAVITY FLOW TO OUTLETS @ MIN. (1/100) SLOPE.
9. BACKFILL AND COMPACT AS EACH COURSE OF SWS UNITS IS INSTALLED. BACKFILL AGGREGATE FIRST, THEN SOIL, THEN COMPACT BOTH.
10. CONTRACTOR IS RESPONSIBLE FOR MOISTURE CONTROL OF NATURAL FILL SOILS USED ON SITE.
11. COMPACTION SHALL BE TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY, (ASTM D-698).
12. SOIL COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE SITE SOILS ENGINEER, BUT NOT LESS THAN EVERY 500 SQ. FT. OF WALL FACE NOR EVERY 4 FEET CHANGE IN FILL ELEVATION.
13. PROVIDE PERMANENT, STABILIZED LATERAL DRAINAGE SWALES TO DIRECT SURFACE WATER FLOW AROUND THE ENDS OF THE WALL.
14. ESTABLISH TURF IMMEDIATELY AFTER THE WALL IS COMPLETED.

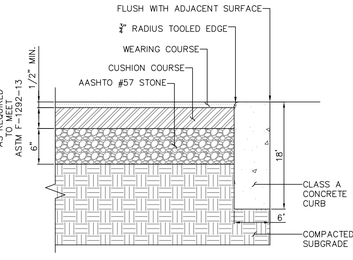
IF EXISTING CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT THE ENGINEER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH WALL CONSTRUCTION.



CONTRACTOR TO PROVIDE WALL DESIGN TO CONFORM TO EXISTING GRADES, PROPOSED ELEVATIONS, AND SOIL CONDITIONS. WALL DESIGN AND DETAILS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA. THE DESIGN WILL BE SUBMITTED TO THE PROJECT ARCHITECT AND/OR ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

SEGMENTAL BLOCK RETAINING WALL
N.T.S.

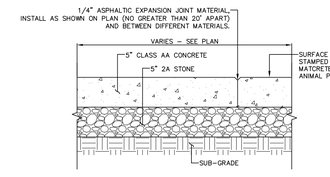
8 DE-1



NOTE:
FOR CONCRETE EDGE, INSTALL EXPANSION JOINT MATERIAL AT ALL INSIDE CORNERS AT INTERVALS OF 20', CONFIRM LOCATIONS WITH PROJECT LANDSCAPE ARCHITECT.

POUR-IN-PLACE SAFETY SURFACE WITH CONCRETE EDGE
N.T.S.

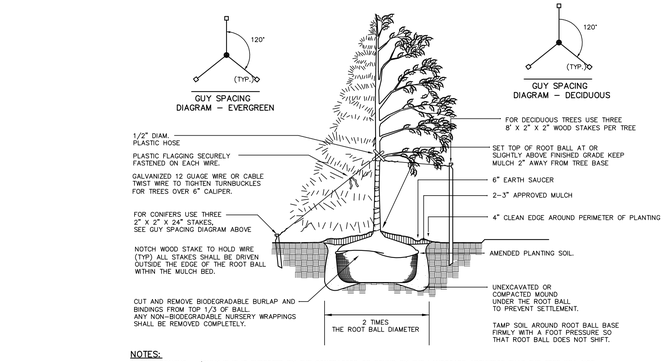
4 DE-1



NOTES:
1. CLASS AA CONCRETE
2. CONCRETE SHALL INCLUDE INTEGRAL COLOR AND COLOR HARDENER.
3. MINIMUM WATER CEMENT RATIO 0.45
4. 6% AIR ENTRAINMENT, +/- 1.5%
5. CONCRETE WALK SHALL HAVE A 2% MAX. CROSS-SLOPE, UNLESS NOTED OTHERWISE.
6. FALSE JOINTS SHALL BE PROVIDED AT MAXIMUM INTERVALS OF 5' AND SHALL BE AT LEAST 1/4" THE DEPTH OF THE CONCRETE.
7. SIDEWALKS SHALL BE SPRAYED WITH ANTI-SPALLING COMPOUND WITHIN 28 DAYS AFTER BEING POURED.

CONCRETE SIDEWALK
N.T.S.

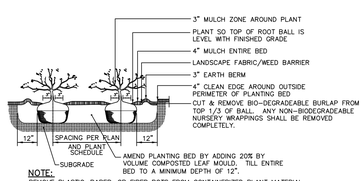
2 DE-1



NOTES:
1. TREE STAKING - (ONLY IF IT IS EXPECTED BY THE CONTRACTOR OR FOUND BY THE LANDSCAPE ARCHITECT THAT THE TREE WILL NOT SUPPORT ITSELF) TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5" OF GROWTH AND BUFFER ALL BRANCHES FROM THE WIRE. TUCK ANY LOOSE ENDS OF THE WIRE CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWN SUFFICIENT ROOTS (USUALLY AFTER ONE GROWING SEASON) PROVIDE AND MAINTAIN WARNING FLAGS ON ALL WIRES.
2. REMOVE PLASTIC, PAPER, OR FIBER POTS FROM CONTAINERIZED PLANT MATERIAL. PULL ROOTS OUT OF THE ROOT MAT, AND CUT CIRCLING ROOTS WITH A SHARP KNIFE LOOSEN THE POTTING MEDIUM AND SHAKE AWAY FROM THE ROOT MAT. IMMEDIATELY AFTER REMOVING THE CONTAINER, INSTALL THE PLANT SUCH THAT THE ROOTS DO NOT DRY OUT. PACK PLANTING MIX AROUND THE EXPOSED ROOTS WHILE PLANTING. WATER THOROUGHLY.
3. TREE AND SHRUB MASSINGS SHALL BE ENCOMPASSED BY ONE LARGE MULCHED BED.

TREE PLANTING
N.T.S.

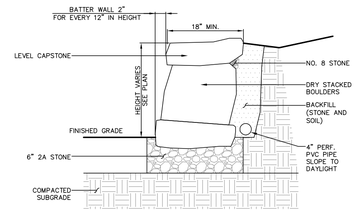
15 DE-1



NOTE:
REMOVE PLASTIC, PAPER, OR FIBER POTS FROM CONTAINERIZED PLANT MATERIAL. PULL ROOTS OUT OF THE ROOT MAT, AND CUT CIRCLING ROOTS WITH A SHARP KNIFE. IMMEDIATELY AFTER REMOVING THE CONTAINER, INSTALL THE PLANT SUCH THT THE ROOTS DO NOT DRY OUT. PACK SOIL AROUND THE EXPOSED ROOTS WHILE PLANTING. WATER THOROUGHLY.

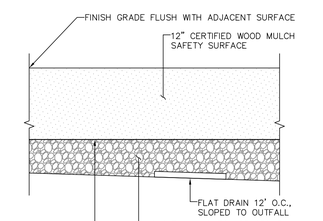
SHRUB BED
N.T.S.

12 DE-1



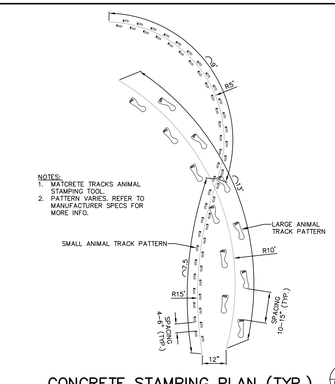
DRY STACKED STONE RETAINING WALL (ALT. BID)
N.T.S.

9 DE-1



MULCH SAFETY SURFACE
N.T.S.

5 DE-1



NOTES:
1. MATCRETE TRACKS ANIMAL STAMPING TOOL.
2. PATTERN VARIES. REFER TO MANUFACTURER SPECS FOR MORE INFO.

CONCRETE STAMPING PLAN (TYP.)
N.T.S.

3 DE-1

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
barryisett.com

REVISIONS	DATE	BY

CONSTRUCTION DETAILS
DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

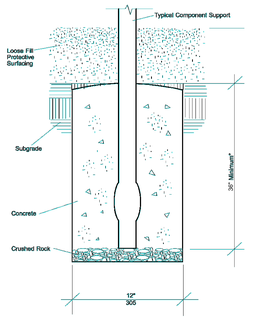
DATE: 04/30/20	DSGN: BNS
SCALE: AS NOTED	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 19 OF 24

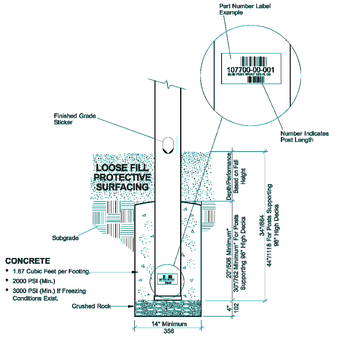
DE-1

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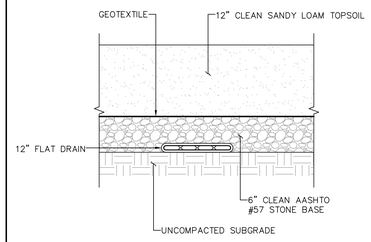
Minimum 1.2 Cubic Feet of Concrete Required per Support.

PLAY SECONDARY POST FOOTING (TYP.)
N.T.S.



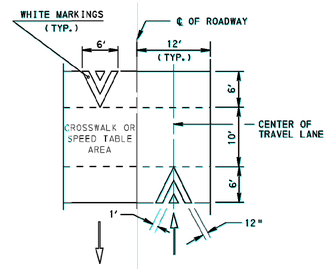
PLAY MAIN POST FOOTING (TYP.)
N.T.S.

12
DE-2



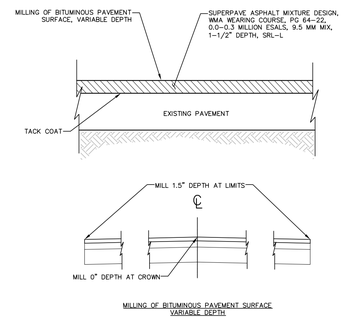
TOPSOIL OVER STONE BASE
N.T.S.

11
DE-2



SPEED TABLE MARKING
N.T.S.

7
DE-2

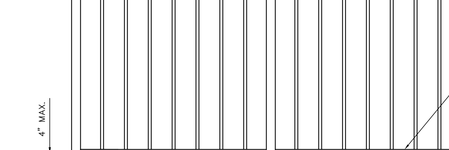


MILLING OF BITUMINOUS PAVEMENT SURFACE
VARIABLE DEPTH

NOTES:
1. PERFORM MILLING AS SPECIFIED IN PENNDOT 408, SECTION 491, AS LAST REVISED.
2. PLACE EDGE FLUSH WITH EXISTING PAVEMENT AND SEAL AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 409.3(k)3, AS LAST REVISED.
3. PREPARE EXPOSED VERTICAL AND HORIZONTAL SURFACES AS PER PUBLICATION 408, SECTION 409.3(g), AS LAST REVISED.
4. FOR BITUMINOUS MATERIAL, PROVIDE MATERIAL AND CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 409, AS LAST REVISED.
5. FOR TACK COAT, PROVIDE MATERIAL AND CONSTRUCTION IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 460, AS LAST REVISED.
6. CONTRACTOR SHALL RETAIN ALL MILLED MATERIAL.

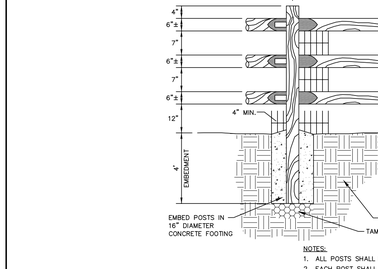
MILL AND OVERLAY DETAIL
N.T.S.

1
DE-2



SPEED TABLE
N.T.S.

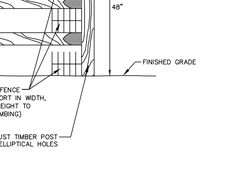
8
DE-2



NOTES:
1. SEE SITE LAYOUT PLAN FOR ACCESSIBLE SPACE LOCATION AND DIMENSIONS.
2. PAINTED ISLAND SHALL BE 8'-0" MIN. FOR VAN ACCESSIBLE SPACES, REFER TO PLANS FOR LAYOUT DIMENSIONS.
3. CURB RAMPS, PAVEMENT MARKINGS & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
4. APPLY TWO COATS OF PAINT ON ALL SURFACES.

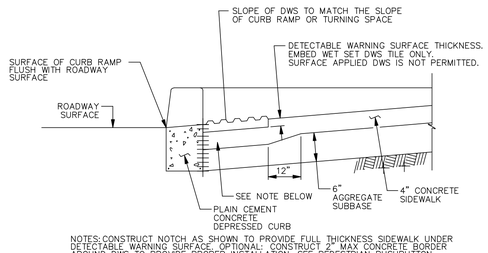
ACCESSIBLE PARKING SPACE
N.T.S.

5
DE-2



ASPHALT PAVING
N.T.S.

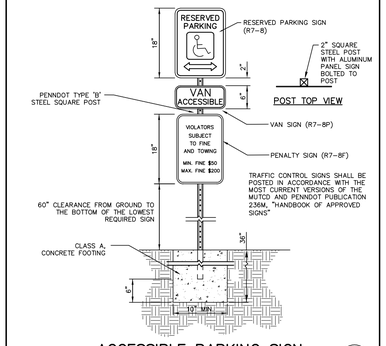
2
DE-2



NOTES: CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK UNDER DETECTABLE WARNING SURFACE. OPTIONAL: CONSTRUCT 2" MAX CONCRETE BORDER AROUND DWS TO PROVIDE PROPER INSTALLATION. SEE PEDESTRIAN PUSHBUTTON ACCESS AREAS DETAIL ON SHEET 14, FOR PLAN VIEW DETAILS.

DETECTABLE WARNING SURFACE EMBEDDING
N.T.S.

9
DE-2



ACCESSIBLE PARKING SIGN
N.T.S.

6
DE-2

REMOVE WEARING COURSE FROM EXIST. PAVING WITH PROP. PAVING

TYPICAL PAVING AND PAVING CUTBACK/SAWCUT DETAIL
N.T.S.

3
DE-2

RETAINING WALL GUARDRAIL
N.T.S.

10
DE-2

NOTES:
1. ALL POSTS SHALL BE PRESSURE TREATED
2. EACH POST SHALL HAVE A 1'-0" SPACER RAIL IN EACH ELLIPTICAL HOLE, WEDGED ADJACENT TO THE END OF EACH RAIL.
3. EACH POST SHALL HAVE A GALVANIZED STAPLE IN THE TOP OF POST.
4. ALL POSTS AND SPLIT RAILS SHALL BE RUSTIC ROUGH SAWN TIMBER.

SPLIT RAIL & WIRE MESH FENCE DETAIL
(FOR USE AT STORMWATER MANAGEMENT BASINS)
N.T.S.

4
DE-2

REVISIONS	DATE	BY

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
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CONSTRUCTION DETAILS

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

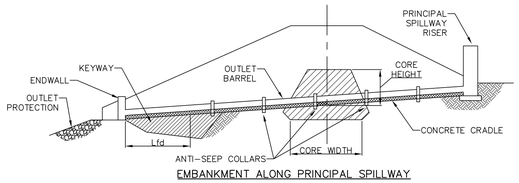
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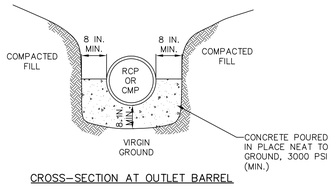
SHEET: 20 OF 24

DE-2

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EMBANKMENT ALONG PRINCIPAL SPILLWAY



CROSS-SECTION AT OUTLET BARREL

NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS. ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.

MODIFIED CONSTRUCTION DETAIL #7-17
CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

NOT TO SCALE

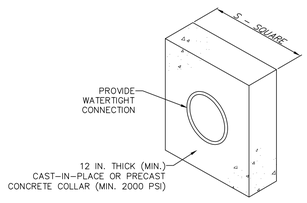
10 DE-3

BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
1	18	42	2	10	10

NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

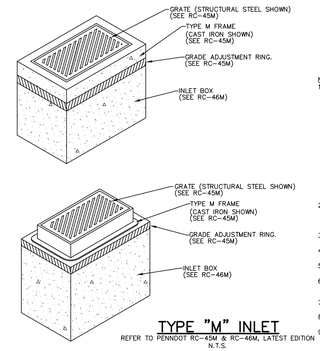
COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.



STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE

11 DE-3



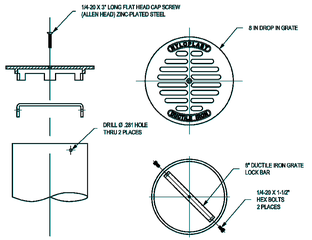
TYPE "M" INLET

REFER TO PENNDOT RC-45M & RC-46M, LATEST EDITION
N.T.S.

NOTES:

1. CONSTRUCTION REQUIREMENTS:
   - A. CONSTRUCT IN ACCORDANCE WITH PUBLICATION 408, SECTIONS 605, 606 AND 714; AND AS MODIFIED HEREIN.
   - B. MINIMUM CONCRETE CLASS:
     - PRE CAST CLASS AA
   - C. PROVIDE STEEL REINFORCEMENT IN ACCORDANCE WITH PUBLICATION 408, SECTION 709, PROVIDE MINIMUM YIELD STRENGTH OF 400 MPa (60,000 PSI).
   - D. CLEAR COVER FOR STEEL:
     - WALLS: PRE CAST 1"-1/2"
     - FOOTINGS: PRE CAST 2" TOP BARS
       1"-1/2" BOTTOM BARS
       1"-1/2" SIDE COVER
2. EACH TYPE OF INLET SHOWN IS SUITED FOR A PARTICULAR SITUATION AS FOLLOWS:
   - TYPE 'C' INLET IS DESIGNATED FOR INSTALLATION WITH NON-MOUNTABLE CURBS.
   - TYPE 'M' INLET IS DESIGNATED FOR INSTALLATION IN MEDIAN AREAS AND MOUNTABLE CURBS.
3. THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET ASSEMBLY IS THE CONTRACTORS RESPONSIBILITY.
4. USE PRE CAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED. (REHABILITATION PROJECTS)
5. FOR WALL REINFORCEMENT, BOTH DIRECTIONS, USE 10"MINIMUM EACH WAY, EACH FACE 6" MAXIMUM SPACING.
6. FOR FOOTING REINFORCEMENT, TOP AND BOTTOM, USE #4 BARS AT 12" CENTER EACH WAY OR 17"/M² WWF 6" MAXIMUM SPACING.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN PARENTHESIS.
8. PROVIDE WEEP HOLE ON INLET BOXES WHEN REQUIRED.
9. PIPES MAY BE CONNECTED TO DRAINAGE STRUCTURES (PRE CAST INLETS. ETC.) WITH MORTAR OR WATERTIGHT RUBBER FLEXIBLE CONNECTORS.

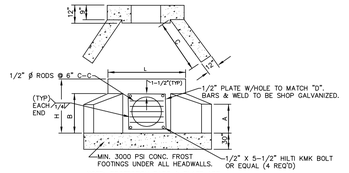
5 DE-3



NYLOPLAST 8" BASIN WITH LOCKABLE DROP-IN IRON GRATE

N.T.S.

1 DE-3



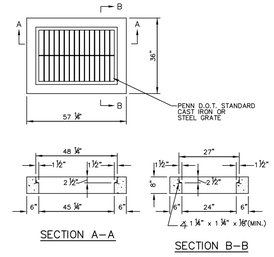
NOTE: PROTECTION BARS & PLATE ARE FOR UPSTREAM CONDITIONS ONLY.

WALL TYPE	"D"	"H"	"K"	"A"	"B"	"C"
DW-15	15"	2'-9"	4'-4"	1'-2"	1'-9"	2'-0"
DW-18	18"	3'-0"	4'-4"	1'-3"	2'-0"	2'-5"
DW-21	21"	3'-3"	4'-4"	1'-5"	2'-3"	2'-7"
DW-27	27"	3'-9"	4'-4"	1'-8"	2'-9"	3'-2"
DW-30	30"	4'-0"	5'-4"	1'-9"	3'-0"	3'-7"
DW-34	34"	4'-4"	5'-4"	1'-11"	3'-4"	3'-11"
DW-38	38"	4'-8"	5'-4"	2'-1"	3'-8"	4'-4"
DW-42	42"	5'-0"	5'-10"	2'-3"	4'-0"	4'-8"
DW-48	48"	5'-6"	6'-4"	2'-6"	4'-6"	5'-3"
DW-54	54"	6'-0"	7'-0"	2'-9"	5'-0"	5'-10"

TYPE D-W ENDWALL

N.T.S.

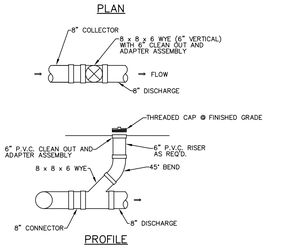
9 DE-3



TYPE M INLET TOP

REFER TO PENNDOT RC-34M
N.T.S.

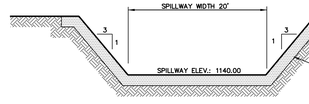
6 DE-3



STORMWATER CLEANOUT

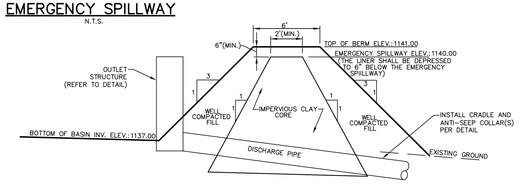
N.T.S.

2 DE-3



EMERGENCY SPILLWAY

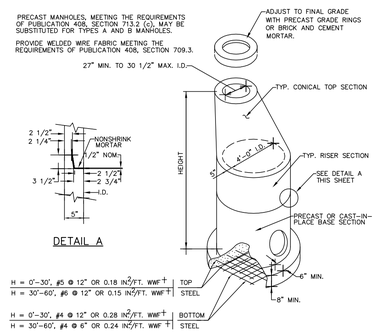
N.T.S.



TYPICAL DETENTION BASIN BERM SECTION

N.T.S.

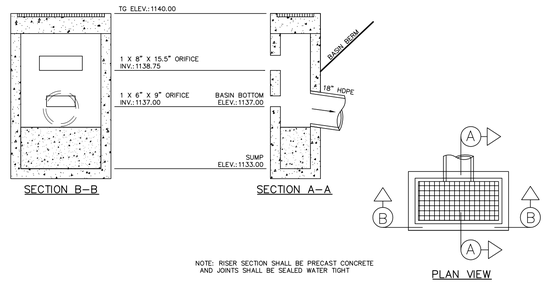
7 DE-3



STORM SEWER MANHOLE

REFER TO PENNDOT RC-39M, LATEST EDITION
N.T.S.

3 DE-3

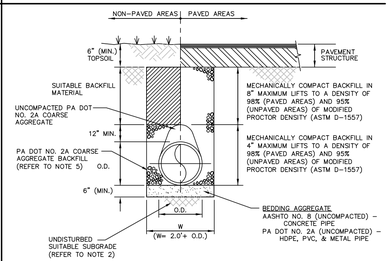


NOTE: RISER SECTION SHALL BE PRECAST CONCRETE AND JOINTS SHALL BE SEALED WATER TIGHT

STORMWATER MANAGEMEMENT STORAGE BASIN OUTLET CONTROL STRUCTURE OCS-01 DETAIL (REFERENCE STANDARD PRECAST INLET DETAILS)

N.T.S.

8 DE-3



TYPICAL STORM PIPE TRENCH & BACKFILL

N.T.S.

NOTES:

1. EXCAVATE TRENCH BOX AND INSTALL SHORING AS REQUIRED TO COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND CODES.
2. IF UNSUITABLE MATERIAL IS FOUND, UNDERCUT AS DIRECTED BY THE ENGINEER AND BACKFILL WITH SUITABLE MATERIAL TO BOTTOM OF BEDDING ELEVATION.
3. KEEP EXCAVATINGS DRY AND FREE OF WATER. INTERCEPT AND DIVERT SURFACE DRAINAGE AWAY FROM EXCAVATIONS. DEWATER ANY PRECIPITATION AND SUBSURFACE WATER FROM EXCAVATIONS.
4. DO NOT ADVANCE TRENCHING OPERATIONS MORE THAN 200 FEET AHEAD OF COMPLETED PIPELINE.
5. ALL TRENCHES WITHIN PAVED AREAS SHALL BE BACKFILLED WITH FULL DEPTH PA DOT NO. 2A COARSE AGGREGATE.

4 DE-3

REVISIONS	DATE	BY

BARRY ISETT & associates INC
MULTI-DISCIPLINE ENGINEERS AND CONSULTANTS
610.398.0904
barryisett.com

CONSTRUCTION DETAILS

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DATE: 04/30/20	DSGN: BNS
SCALE: AS NOTED	CHK: TAD
DRAWN: SMG	APPRD: BNS
JOB: 1063515.003	P MGR: BNS

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SHEET: 21 OF 24

DE-3

FILENAME: \\bisett.com\work\Projects\2019\1063515.000_Dallas Twp\PrivMS4\LAND\dwg\CSD_Data_Groups\2019\F22\Production Drawings\LAND DEVELOPMENT 3-2020\CONSTRUCTION_DETAILS_03-2020.dwg — May 1, 2020 3:31 PM



SCALE: 1" = 40'

0' 40' 80' 120'

N

LEGEND

EXISTING

PROPERTY BOUNDARY
LEGAL RIGHT-OF-WAY
DRAINAGE BOUNDARY
CONTOUR

PROPOSED

NOTE:
VERTICAL TEXT INDICATES PROPOSED FEATURES
SLANTED TEXT INDICATES EXISTING FEATURES

PRE-CONSTRUCTION DRAINAGE AREA MAP

DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DA-1

SHEET: 22 OF 24

DATE: 04/30/20
SCALE: 1"=40'
DRAWN: JG
JOB: 1063515.003
P MGR: BNS
CHK: TAD
APPRD: JG
DSGN: JG

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REVISIONS	DATE	BY

F42

FILENAME: \\bisces.com\work\Projects\2015\1063515.000_DallasTwpParksMP\LAND\dwg\C30_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\DRAINAGE_AREA.dwg - May 1, 2020 3:50 PM



SCALE: 1" = 40'

0' 40' 80' 120'

N

LEGEND

EXISTING

PROPERTY BOUNDARY
LEGAL RIGHT-OF-WAY
DRAINAGE BOUNDARY
CONTOUR

PROPOSED

NOTE:
NORMAL TEXT INDICATES PROPOSED FEATURES
SCREENED TEXT INDICATES EXISTING FEATURES

POST-CONSTRUCTION DRAINAGE AREA MAP

DALLAS TOWNSHIP PARK NATURE PLAYGROUND AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DA-2

SHEET: 22 OF 24

DATE: 04/30/20
SCALE: 1"=40'
DRAWN: JG
JOB: 1063515.003
P MGR: BNS
CHK: TAD
APPRD: JG
DSGN: JG

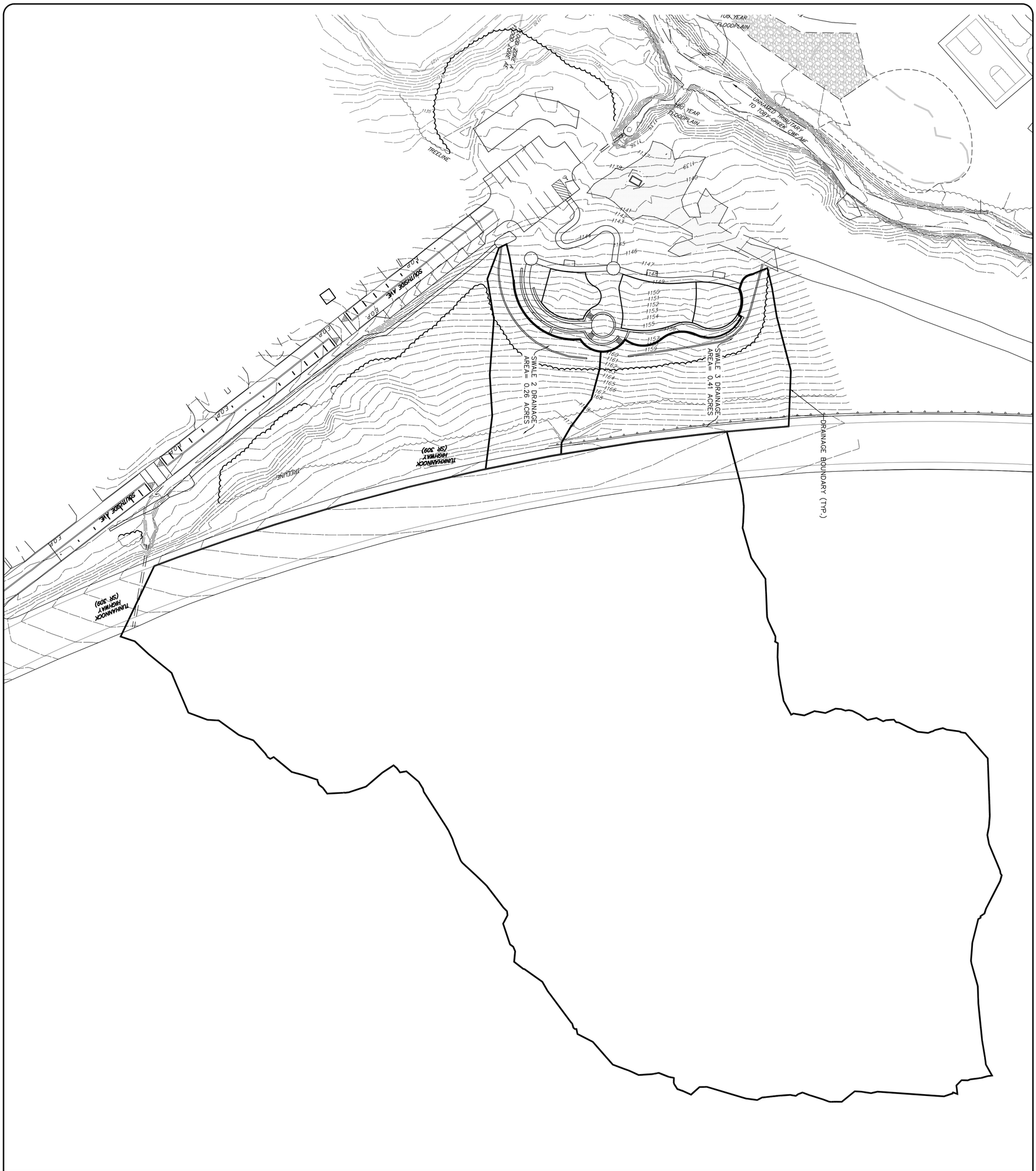
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REVISIONS	DATE	BY

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FILENAME: \\bisces.com\work\Projects\2015\1063515.000_DallasTwpParksMP\LAND\dwg\C30_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\DRAINAGE_AREA.dwg - May 1, 2020 3:52 PM



LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
LEGAL RIGHT-OF-WAY		
DRAINAGE BOUNDARY		
CONTOUR	590	

NOTE: NATURAL TEXT INDICATES PROPOSED FEATURES
SCARIFIED TEXT INDICATES EXISTING FEATURES

SWALE DRAINAGE AREA MAP

DALLAS TOWNSHIP PARK NATURE PLAYGROUND
AND MS4 IMPROVEMENTS PROJECT
DALLAS TOWNSHIP
LUZERNE COUNTY, PA

DA-3

SHEET: 24 OF 24

DATE: 04/30/20
DSGN: JG
SCALE: 1"=40'
CHK: TAD
DRAWN: JG
APPRD: JG
JOB: 1063515.003
P MGR: BNS

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FILENAME: \\bisces.com\work\Projects\2015\1063515.000_DallasTwpParksMP\LAND\dwg\C30_Data_Groups\20171221\Production Drawings\LAND DEVELOPMENT 3-2020\DRAINAGE_AREA.dwg - May 1, 2020 3:48 PM

ATTACHMENT F: BMP B1 Plans

Dallas Area Municipal Authority

BMP B1

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
716,373	123,927	592,446	16.45	2.84	13.60	17.30	82.70

Sheet Flow
n=0.40
s=8%
l=100'

SCF
l=920'
s=24%
vegetated

Pipe Flow
l=695'
s=6.3%
n=0.013
W_p=3.14
A=1.57

B1

0 75 150 300 Feet

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B1

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 2/1/2022 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20220321420

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 OR 811 STOP! CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: william_mays@cable.comcast.com

COMPANY: PENCOR SERVICES/BLUE RIDGE COMMUNICATION
ADDRESS: 475 DELAWARE AVE
PO BOX 215
PALMERTON, PA. 18071-0215
CONTACT: JOE BUCCIERI
EMAIL: jbuccieri@brctv.com

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

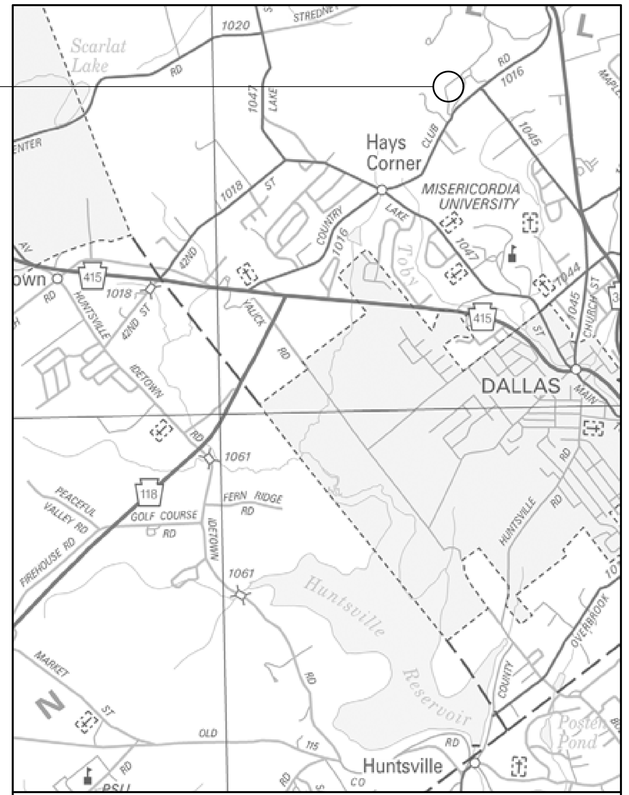
COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: cgallagher@dsdhs.com

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI DR
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: anixon@ugi.com

COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: JONATHAN GENSEL
EMAIL: jonathan.gensel@gmail.com

PROJECT LOCATION



LOCATION MAP

N

2000 1000 0 2000 4000

SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE
	FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084523 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

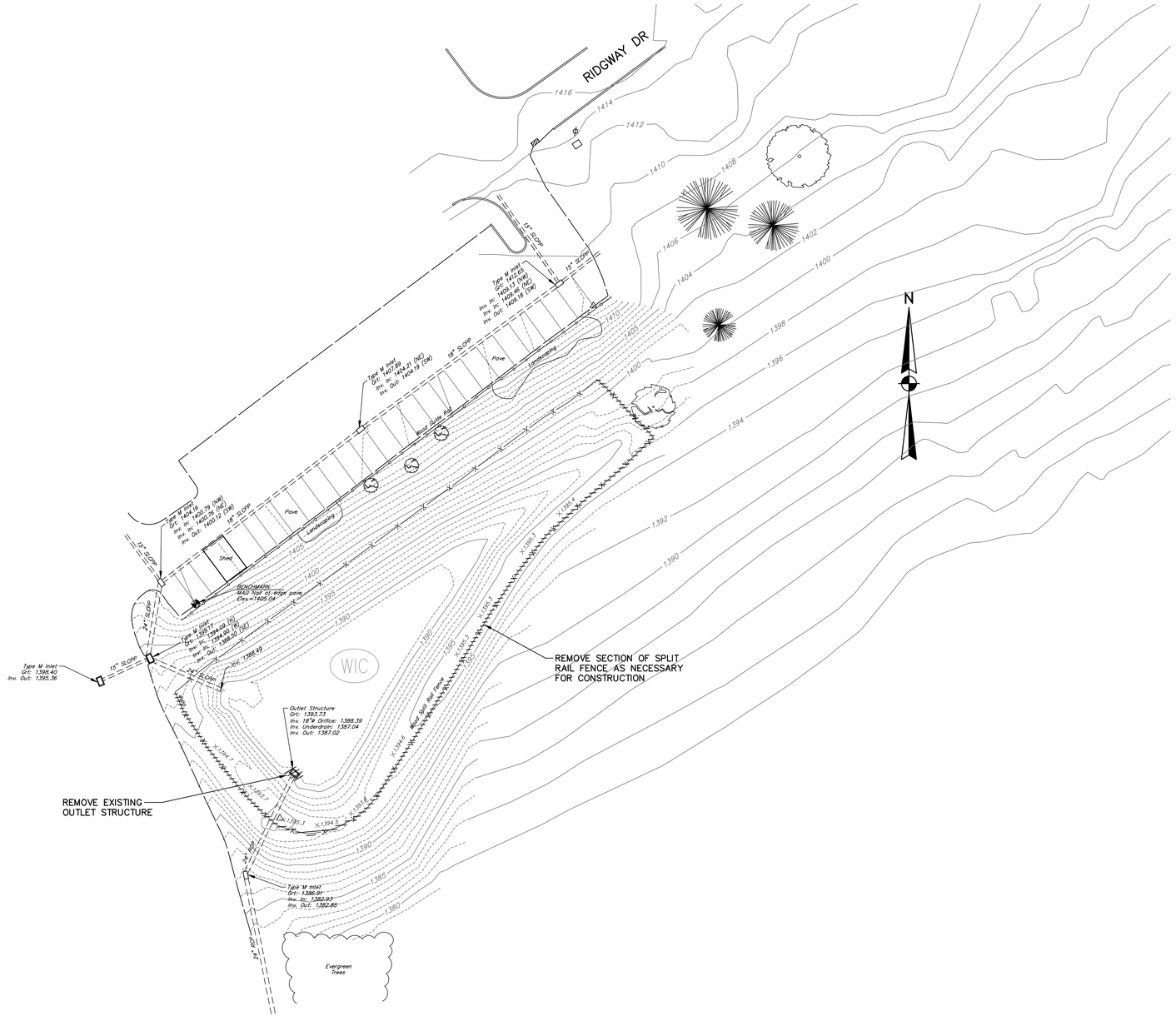
STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.09	SHEET NO. 1 OF 6
REV.	

Dwg. Name: 1113809-D01.DWG Plotted: 5/16/2022 1:14 PM



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- CONTOUR LINES (1025)
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S — SAN SEWER
- W — WATER
- G — GAS
- OH — OVERHEAD ELEC
- UE — UNDERGROUND ELEC
- FEATURES TO BE DEMOLISHED

SOILS

WIC – WELLSBORO CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES

Survey Notes:

1. *Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on July 26, 2021. 931 Stony Battery Road, Landisville, PA (717)–898–9466. Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00. Vertical Datum: NAVD88 (Geoid12B, established by GPS observation) Benchmark: MAG Nail set near edge pave, see plan. Elevation: 1405.04 Contour Interval: 1 Foot*
2. *All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.*
3. *Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.*
4. *All features shown are existing unless otherwise noted.*
5. *This survey was prepared without the benefit of a title search.*
6. *Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.*

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE
	FIELD BOOK

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101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

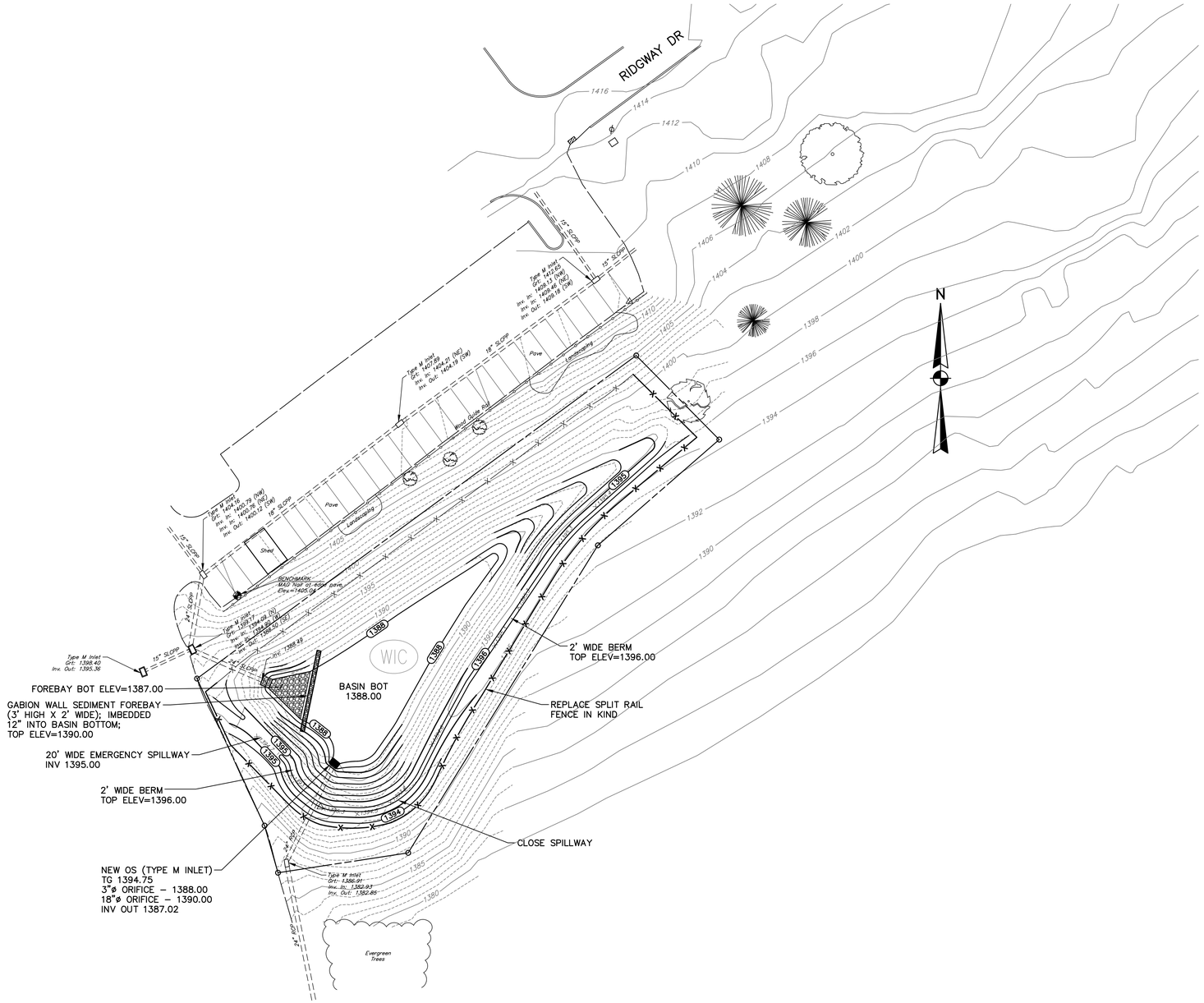
STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

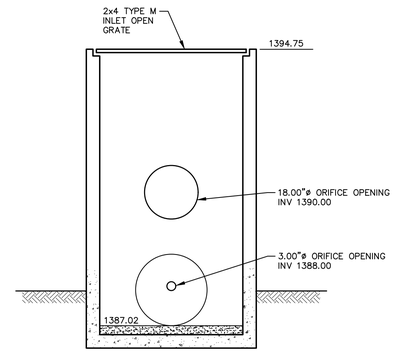
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

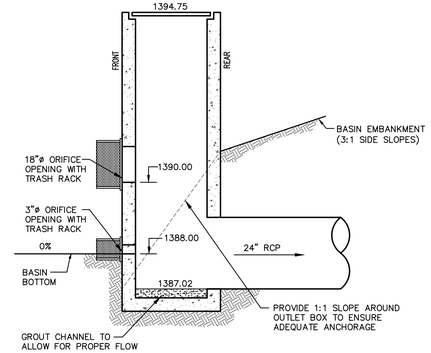
TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'
DWG. NO.
PROJECT NO. 11138.09
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113809-S02-B1.DWG Plotted: 5/16/2022 1:14 PM



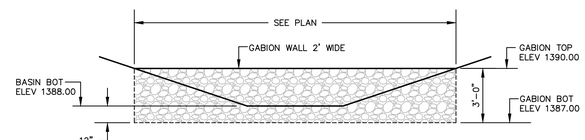




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



AGGREGATE SIZE	
MINIMUM	MAXIMUM
4"	8"

GABION FOREBAY DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — MICHAEL J BINGHAM — PE084921 — 2/1/22

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STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

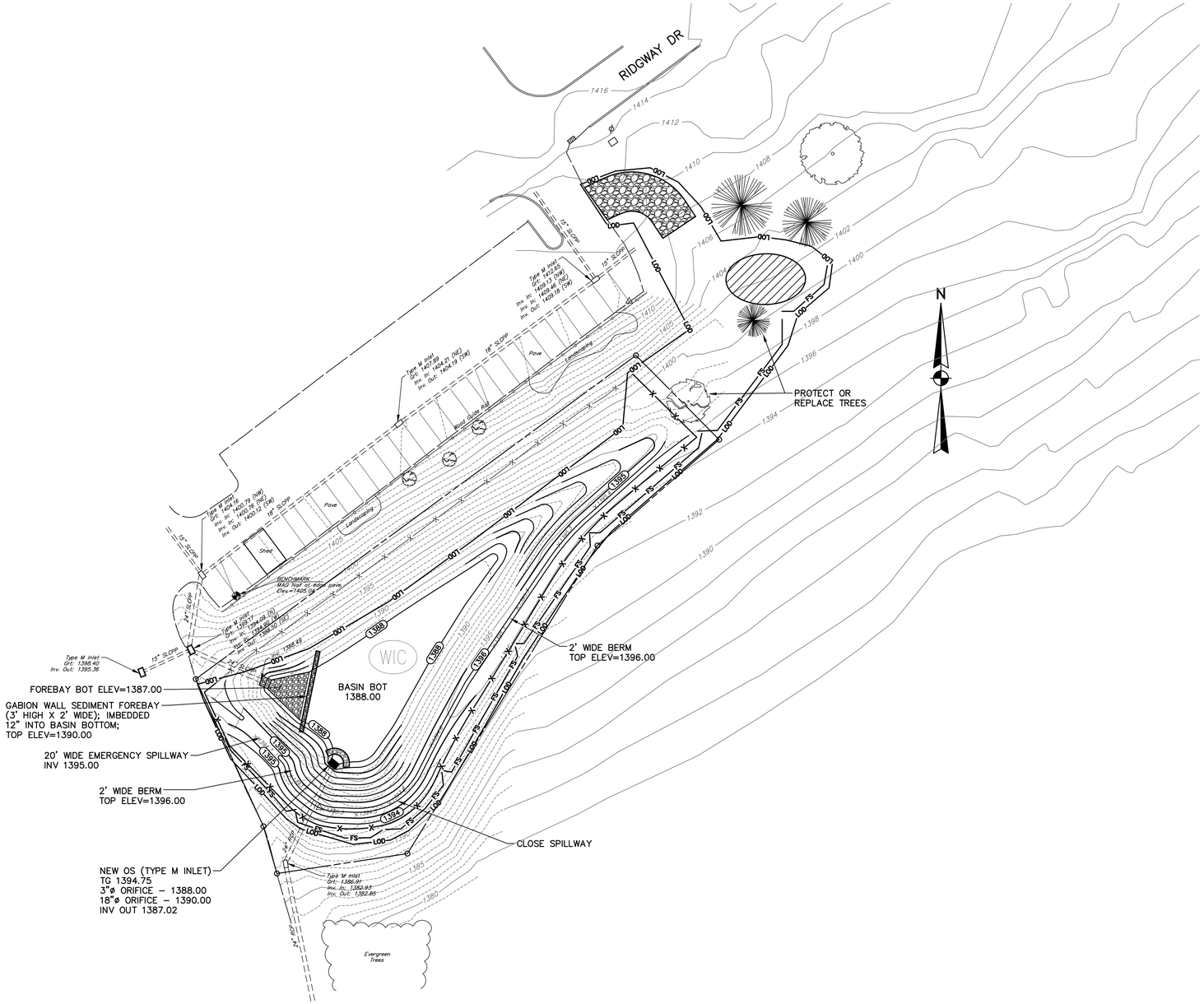
TITLE
PROPOSED CONDITIONS

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.09	3 OF 6	

Dwg. Name: 1113809-S02-B1.DWG Plotted: 5/16/2022 1:14 PM



LEGEND

- NAG S75 EROSION CONTROL BLANKET
- 12" COMPOST FILTER SOCK
- LIMIT OF DISTURBANCE (27,756 SF, 0.637 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)
- INLET PROTECTION

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE / FIELD BOOK

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SEAL

CLIENT & PROJECT
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101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

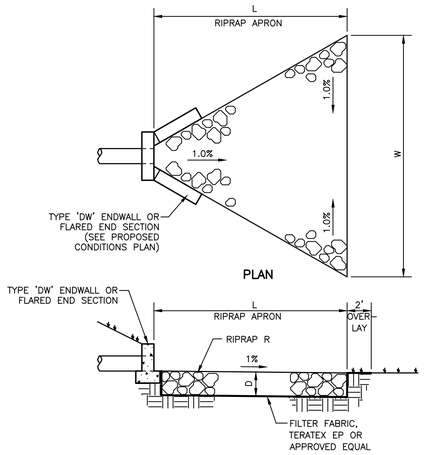
PROJECT NO. 11138.09

SHEET NO. 4 OF 6

REV.

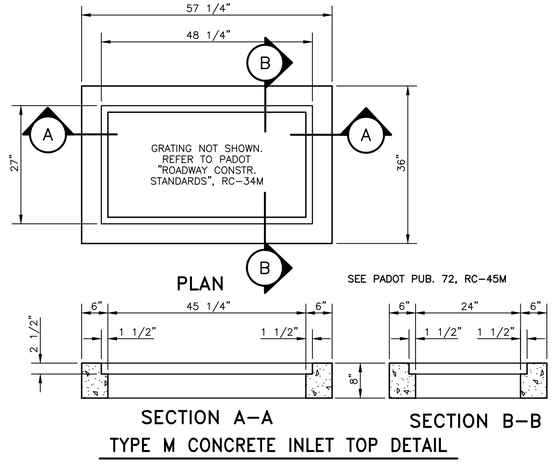
Dwg. Name: 1113809-S02-B1.DWG Plotted: 5/16/2022 1:14 PM

STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
EX. 24"SSLCP	18	25	R-5	27	24



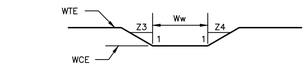
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

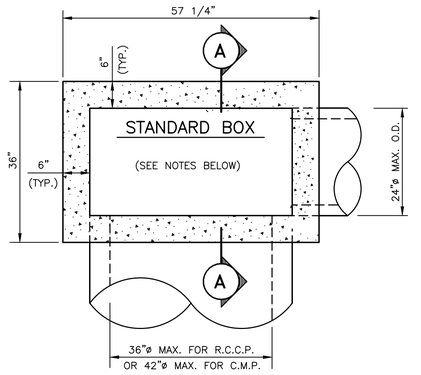


WEIR SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1396.00	1395.00	20	NAG S75

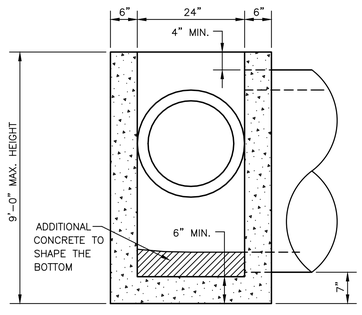
BASIN EMERGENCY SPILLWAY

NO SCALE



NOTE:
1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

PLAN



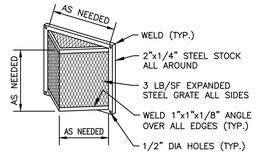
SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

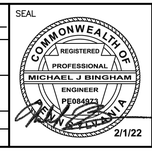
NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	
	FIELD BOOK

SEAL



SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.09	SHEET NO. 5 OF 6
REV.	

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

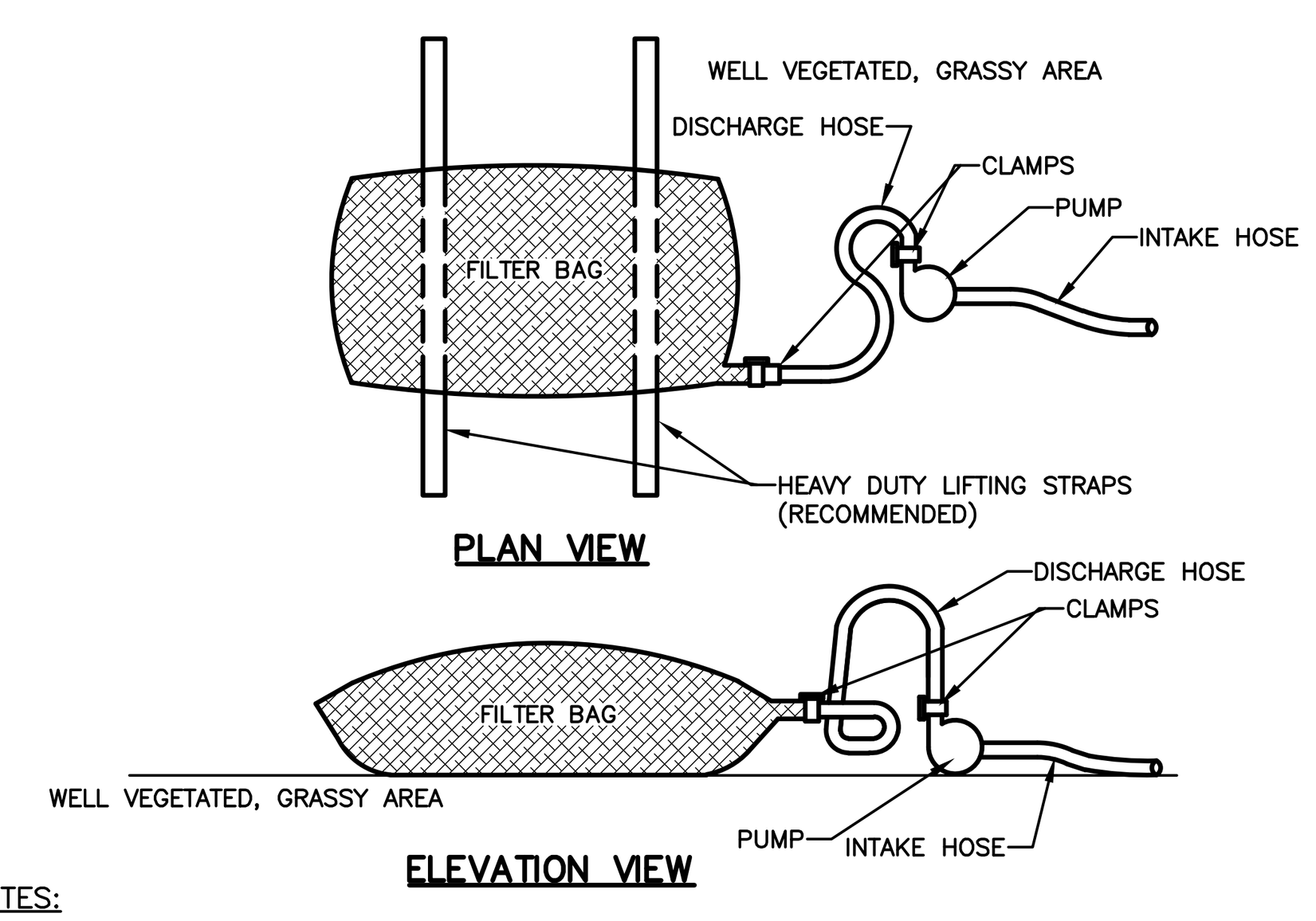
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, INCLUDING A MINIMUM UNIFORM 70% PERENNIAL VEGETATED COVER IN ALL DISTURBED VEGETATED AREAS AND AT A MINIMUM CLEAN SUBBASE PLACED IN ROADWAY AND PARKING AREAS, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B1 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

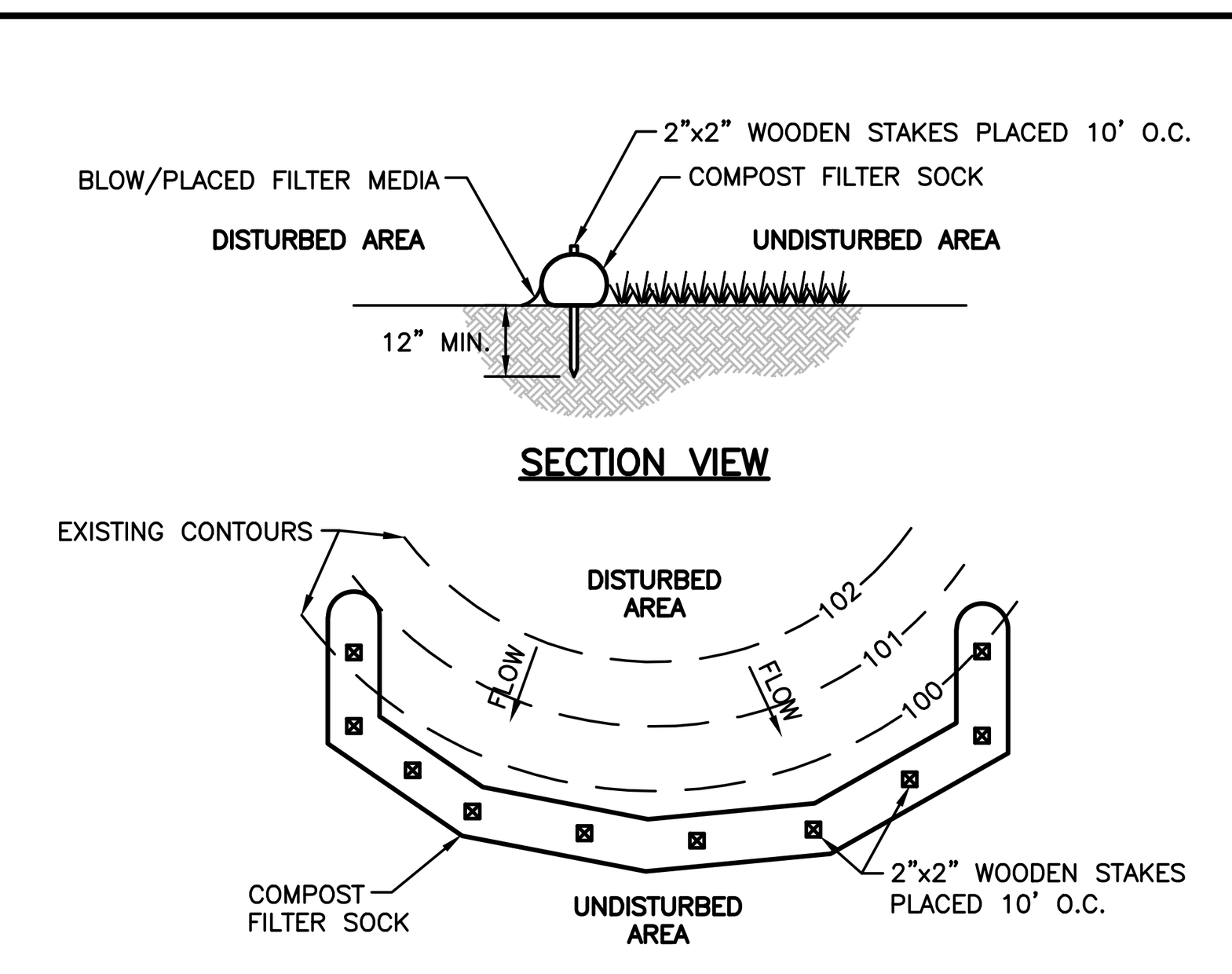
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

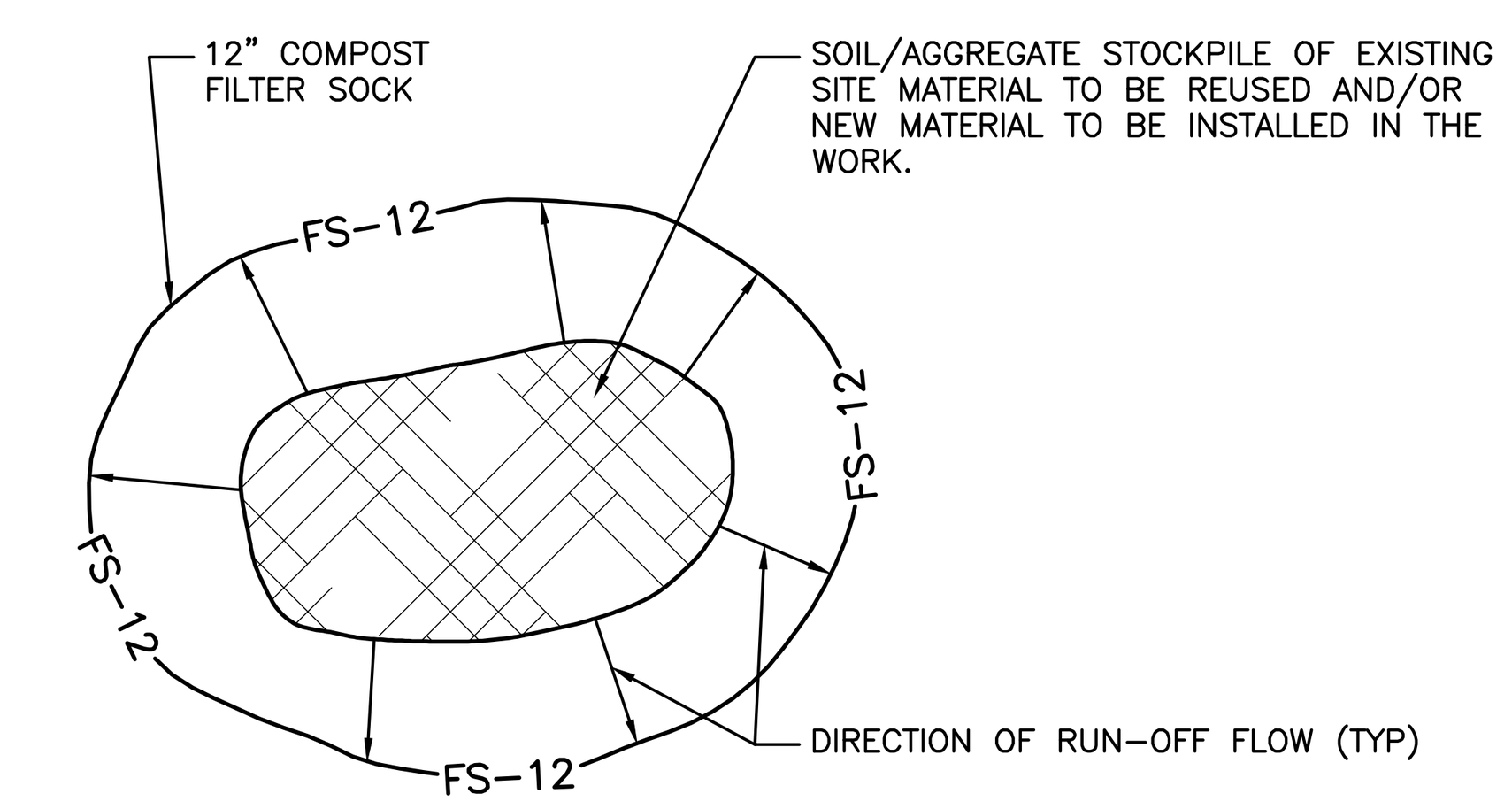


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

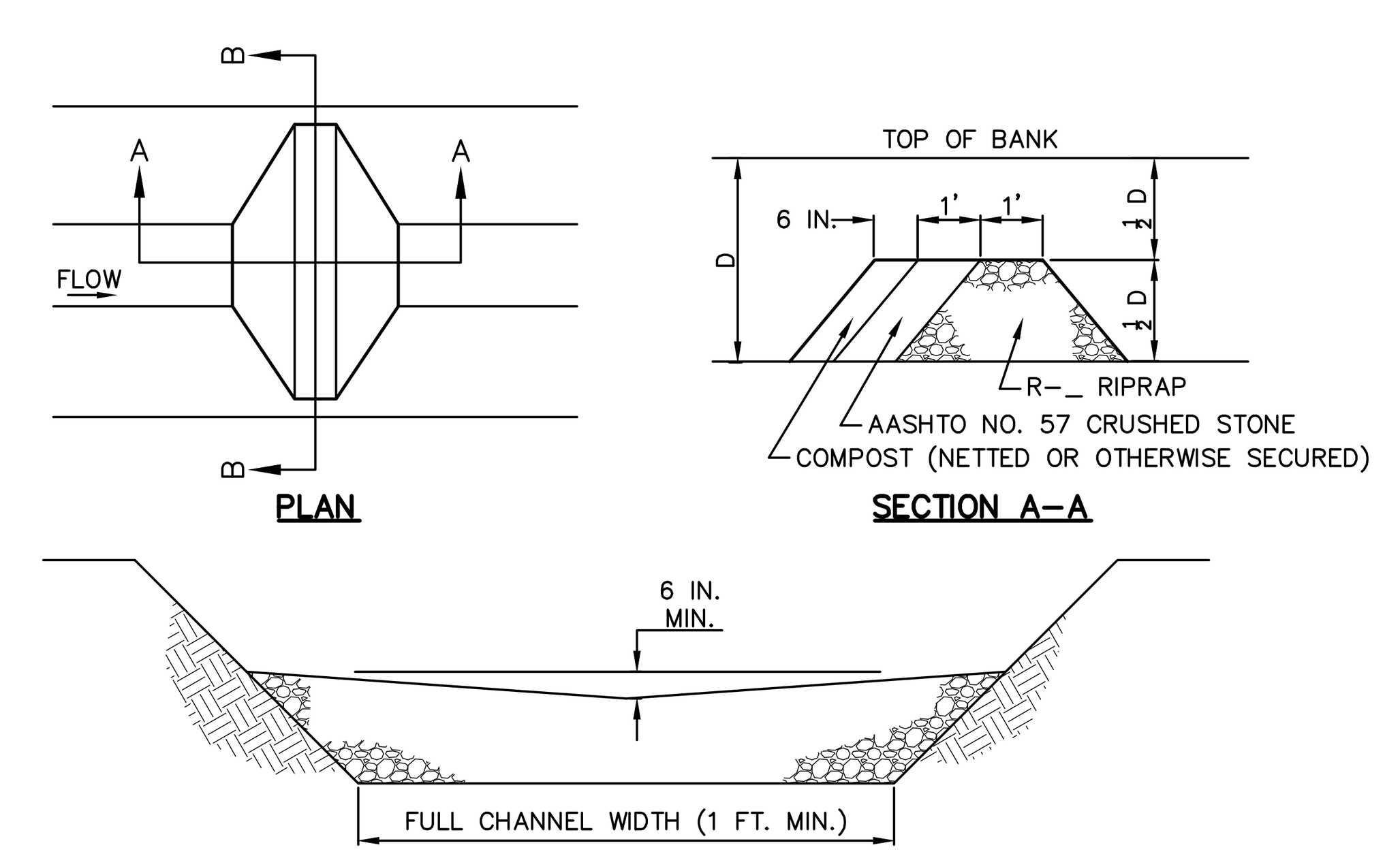
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

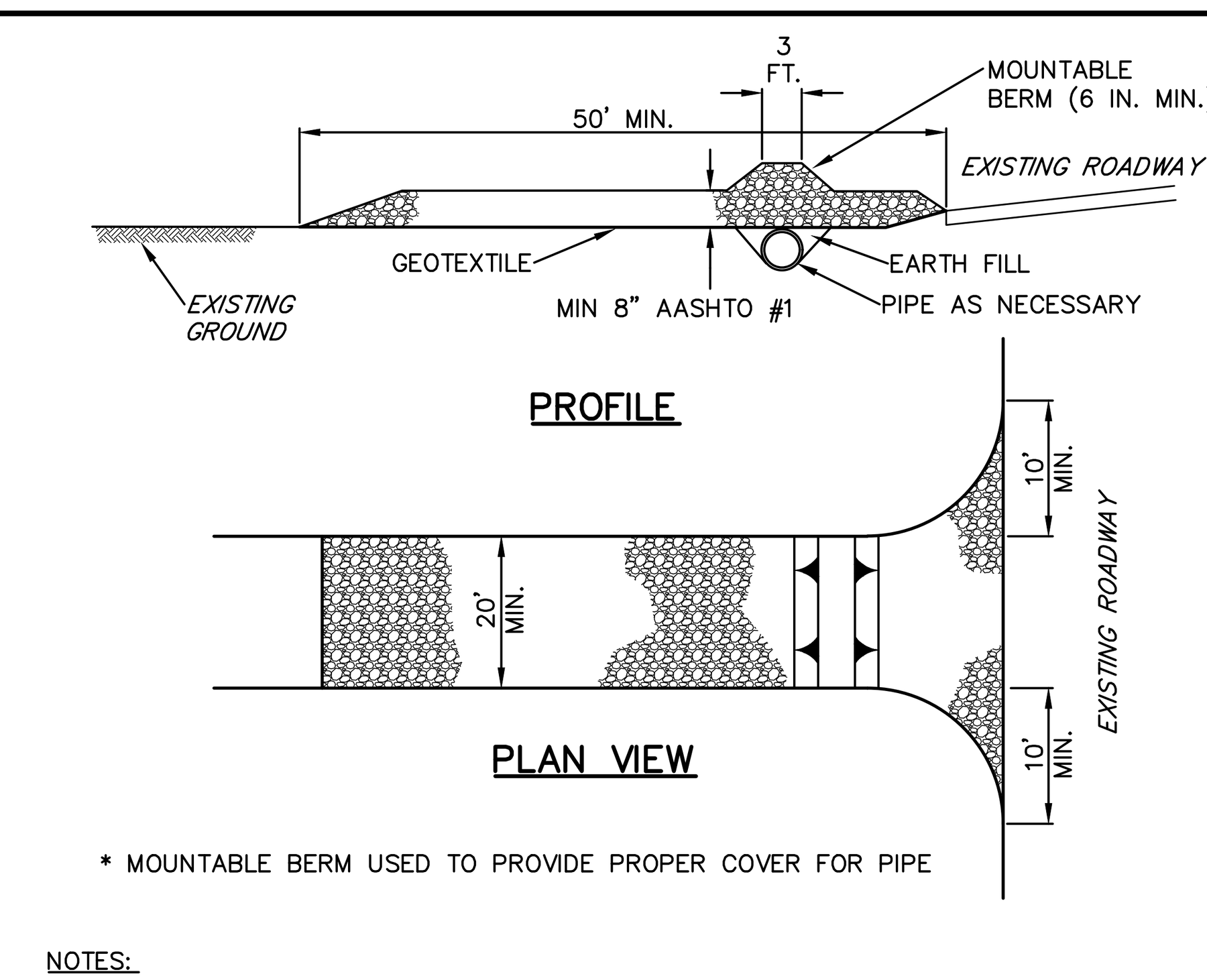
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

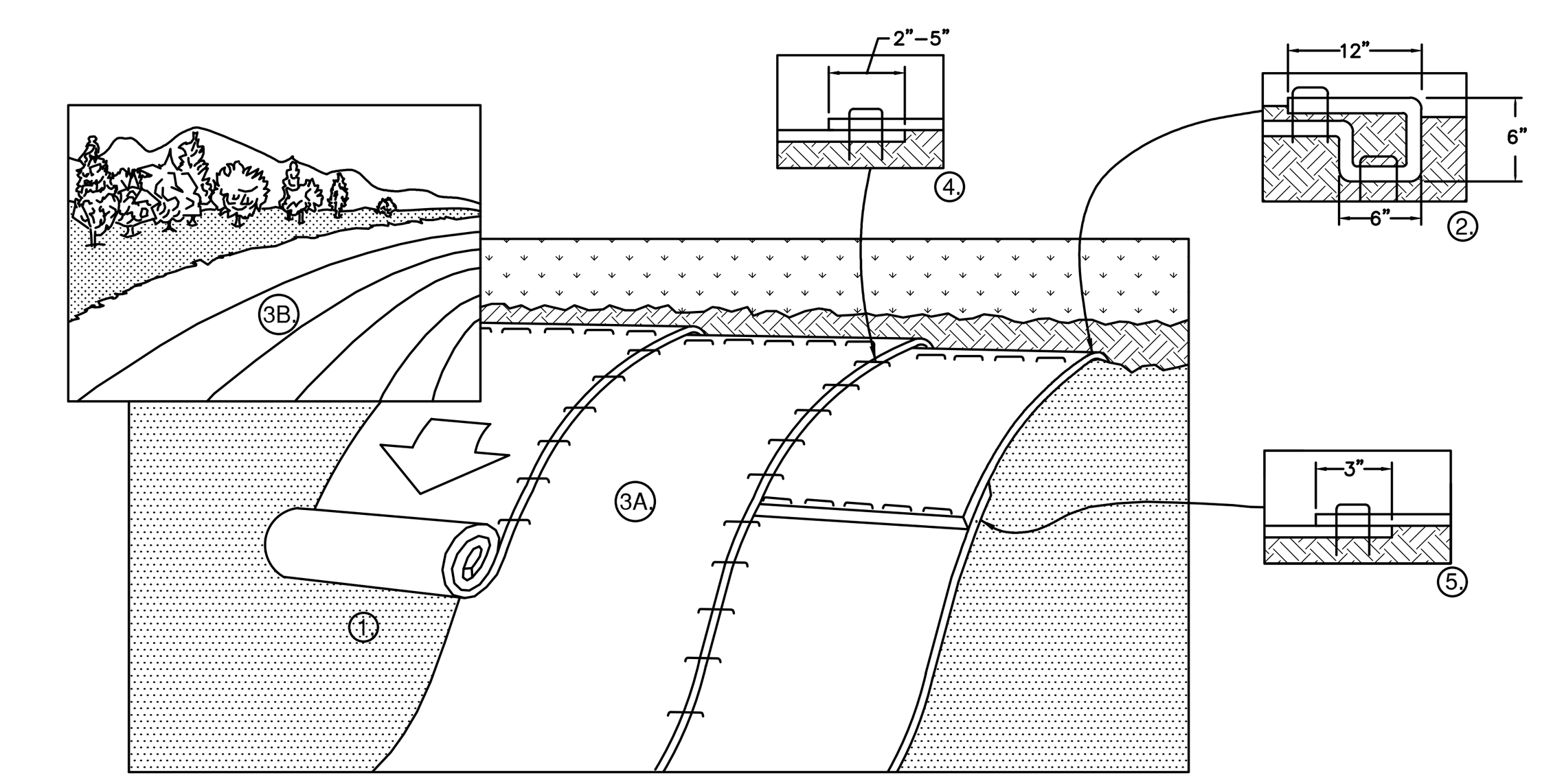
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU					

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU — CHECKED:
DRAWN: SAM — CHECKED:
DATE: JANUARY 2022 — SURVEY DATE: — FIELD BOOK:

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084973 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B1
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.09
SHEET NO.: 6 OF 6
REV.

Dwg. Name: 1113809-D01.DWG Plotted: 5/16/2022 1:14 PM

F52

ATTACHMENT F: BMP B7 Plans

Dallas Area Municipal Authority

BMP B7 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
331,474	215,881	115,594	7.61	4.96	2.65	65.13	34.87

B7

Shallow Conc. Flow
L = 330'
s=5.2%
Vegetated

Sheet Flow
L = 100'
s=4.0%
Grass, n=.15

0 50 100 200 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B7

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/29/2021 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211192549

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: cgallagher@dsdhs.com

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 3OOE LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: Michael.Navich@FTR.com

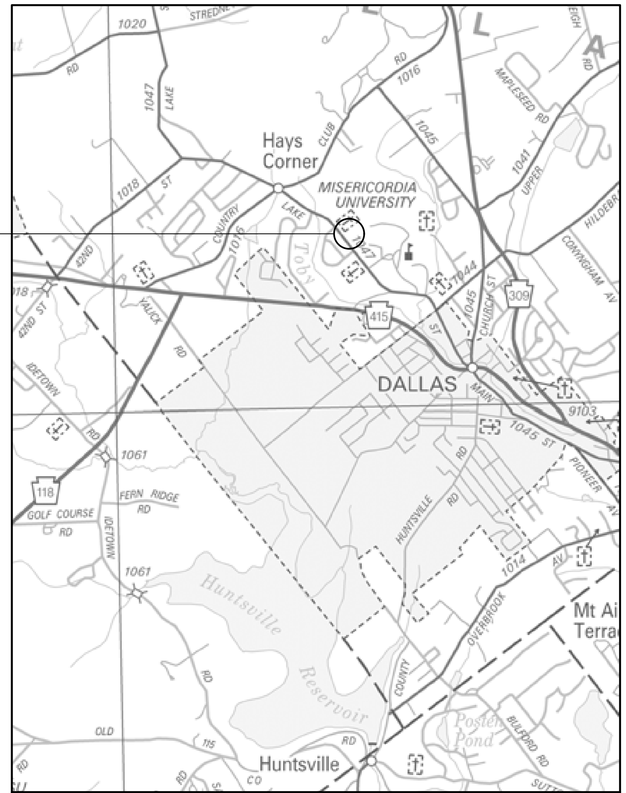
COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: anixon@ugi.com

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: justin.adams@williams.com

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: jboecker@ugi.com

PROJECT LOCATION



LOCATION MAP

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084023 — 6/17/21

SEAL

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B7
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

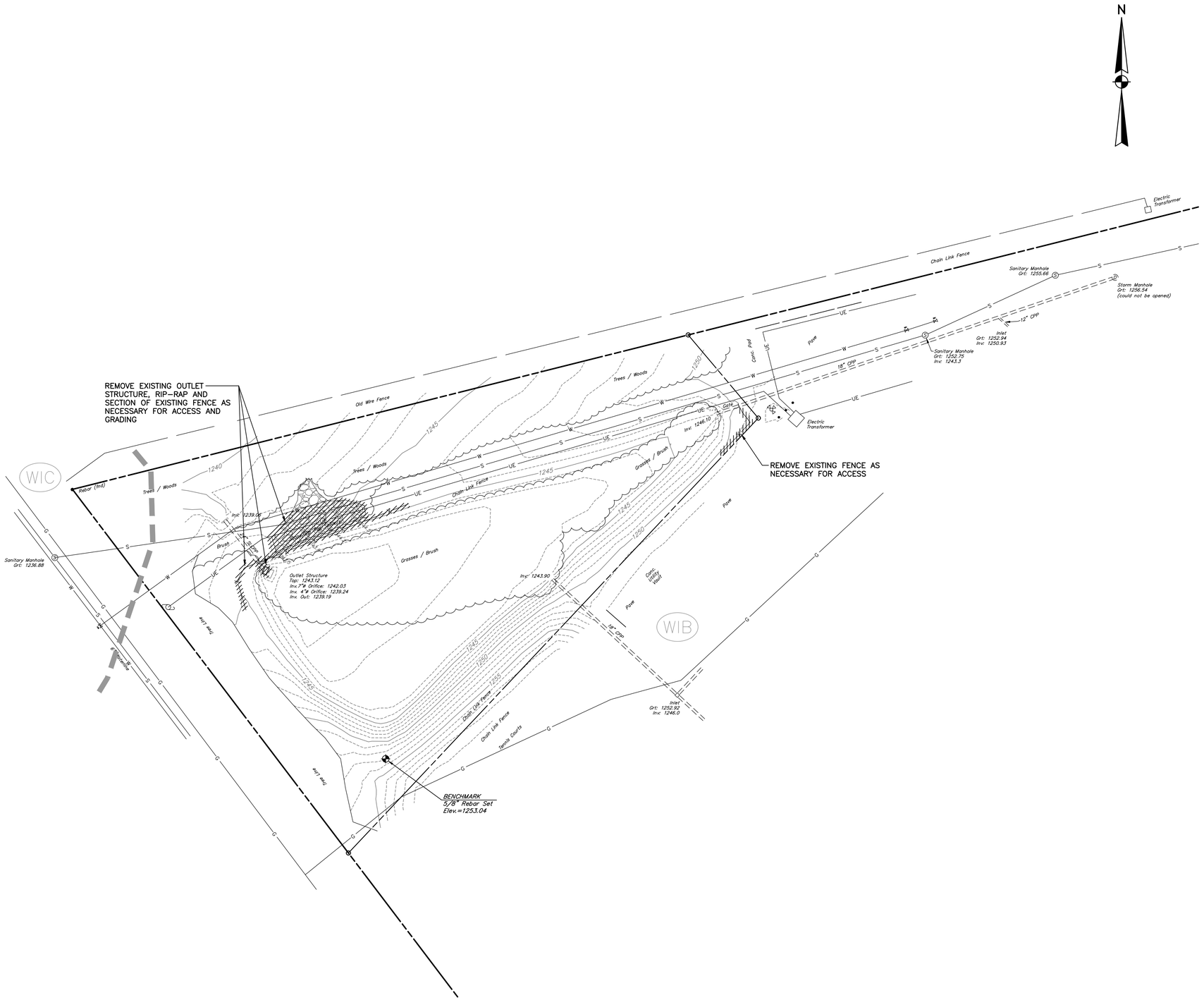
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.04	SHEET NO. 1 OF 6
REV.	

F55

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:38 AM



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE

SOILS

WIB – WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

WIC – WELLSBORO CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES

Survey Notes:

1. *Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on January 19, 2021. 931 Stony Battery Road, Landisville, PA (717)–898–9466. Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00. Vertical Datum: NAVD88 (established by GPS observation) Benchmark: 5/8" Rebar set flush with ground, see plan. Elevation: 1253.04 Contour Interval: 1 Foot*
2. *All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.*
3. *Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.*
4. *All features shown are existing unless otherwise noted.*
5. *This survey was prepared without the benefit of a title search.*
6. *Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.*

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE JANUARY 2021
	FIELD BOOK WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084923 6/17/21

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101 N MEMORIAL HIGHWAY
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STORMWATER BMP IMPROVEMENTS – SITE B7
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

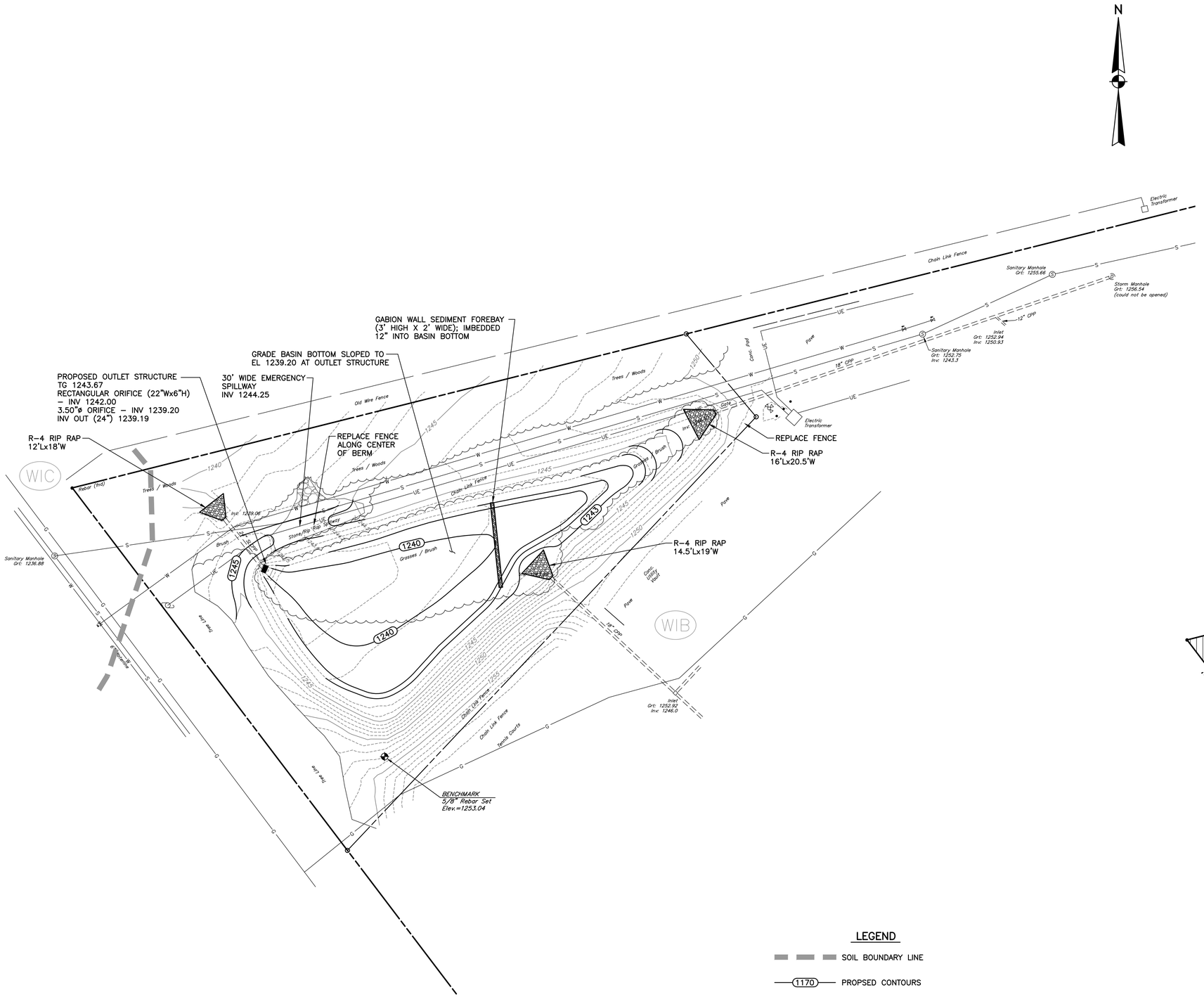
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SCALE: 1" = 30'

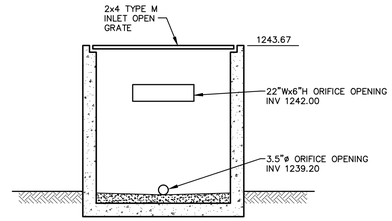
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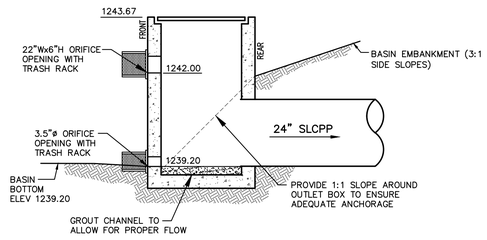
PROJECT NO.	SHEET NO.	REV.
11138.04	2 OF 6	

F56

Dwg. Name: 1113804–S07 – B7.DWG Plotted: 6/17/2021 10:38 AM



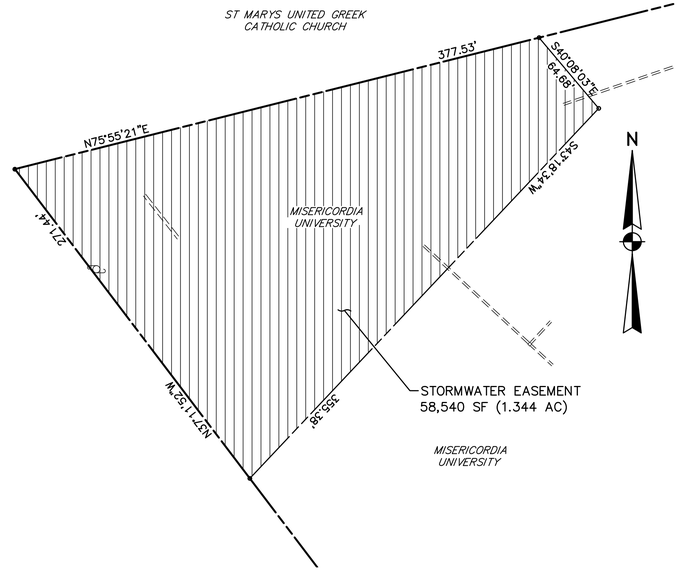




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



STORMWATER EASEMENT PLAN

1" = 50'

0 25' 50' 100' 150'

SCALE: 1" = 50'

LEGEND

SOIL BOUNDARY LINE

1170 PROPSED CONTOURS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	JANUARY 2021
		FIELD BOOK	WEBER

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REGISTERED PROFESSIONAL
MICHAEL J. BINGHAM
ENGINEER
PE084973
6/17/21

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SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B7
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS

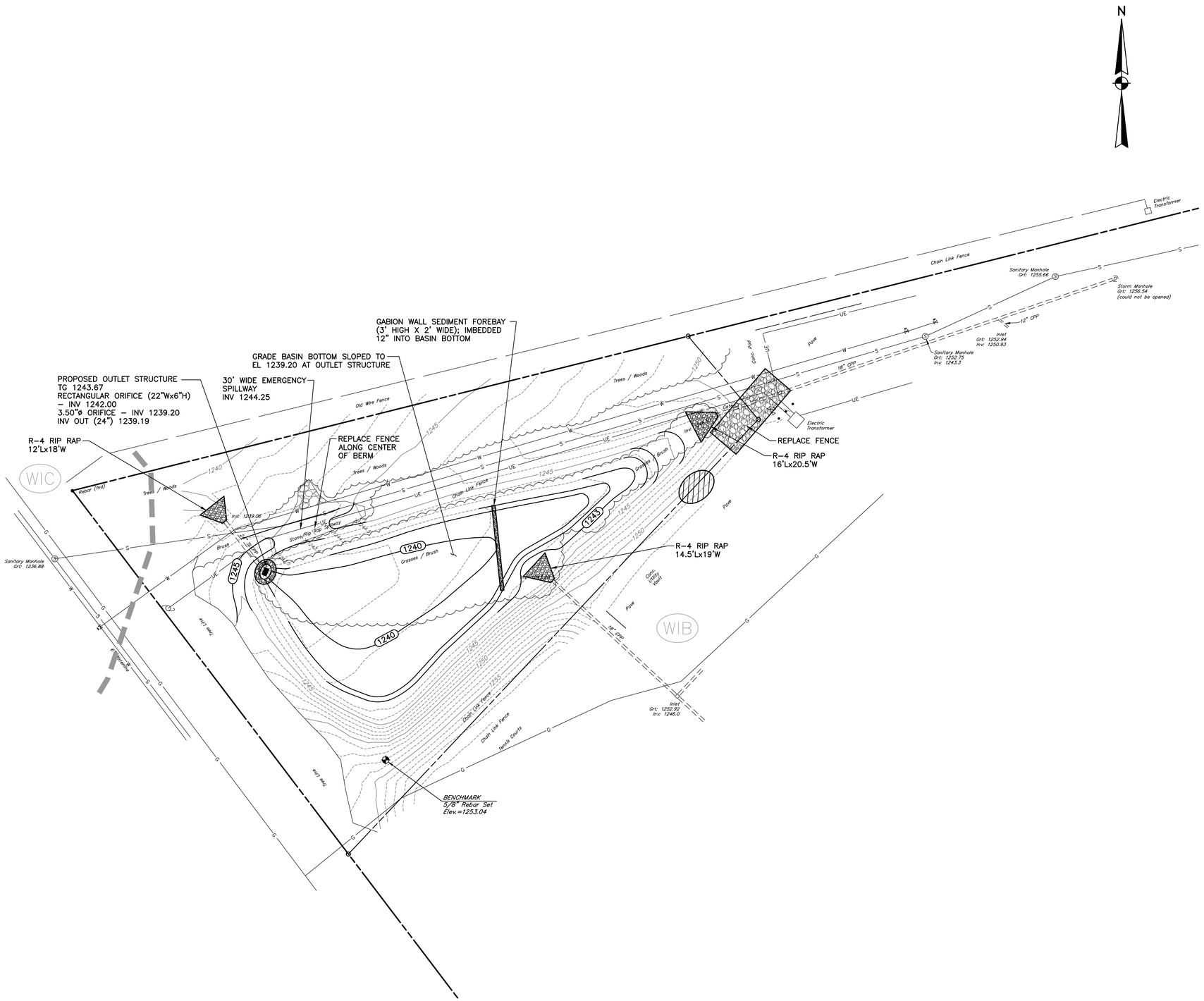
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SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.04	3 OF 6	

F57

Dwg. Name: 1113804-S07 – B7.DWG Plotted: 6/17/2021 10:38 AM



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (22,610 SF, 0.519 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J. BINGHAM
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PE084927
6/17/21

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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

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SCALE: 1" = 30'

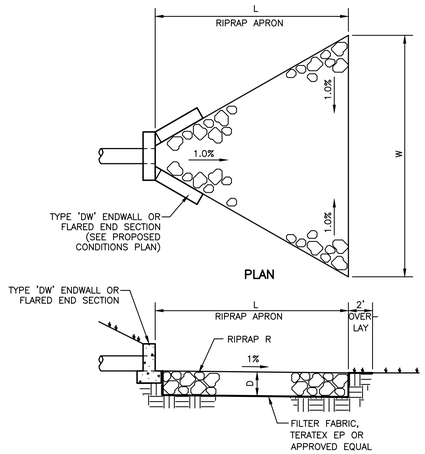
DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.04	4 OF 6	

F58

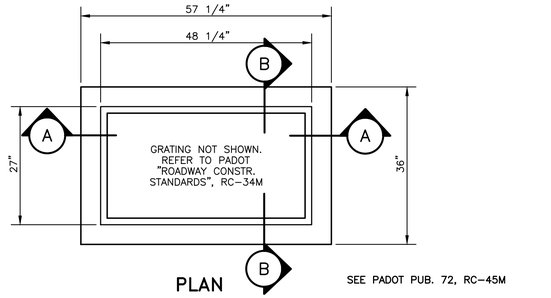
Dwg. Name: 1113804-S07 – B7.DWG Plotted: 6/17/2021 10:38 AM

STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
24" SLCPP	12	18	R-4	18	24
18" CPP (NE)	16	20.5	R-4	18	18
18" CPP (SE)	14.5	19	R-4	18	18



RIP-RAP OUTLET PROTECTION DETAIL

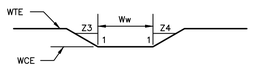
NO SCALE



SECTION A-A SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

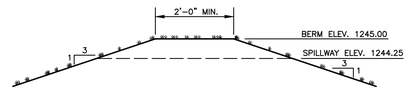


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1245.00	1244.25	30	NAG S75

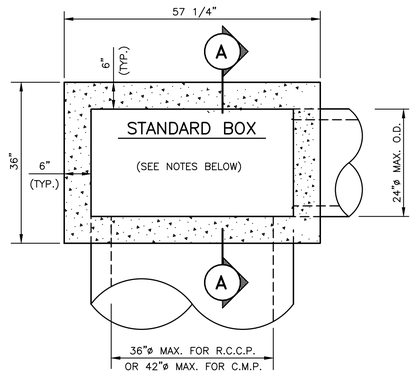
EMERGENCY SPILLWAY

NO SCALE



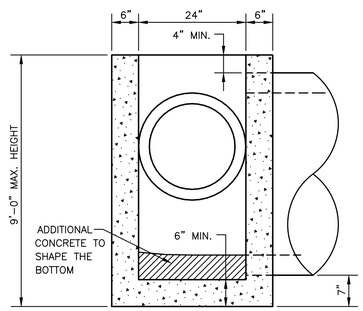
BASIN BERM DETAIL

NO SCALE



NOTE:
1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

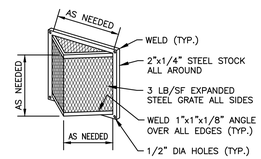
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

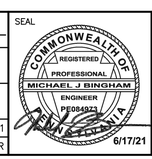
NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	JANUARY 2021
		FIELD BOOK	WEBER

SEAL



SEAL

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DALLAS AREA MUNICIPAL AUTHORITY
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SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B7
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
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Tel 717.569.7021

TITLE
DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.04	5 OF 6	

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:38 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

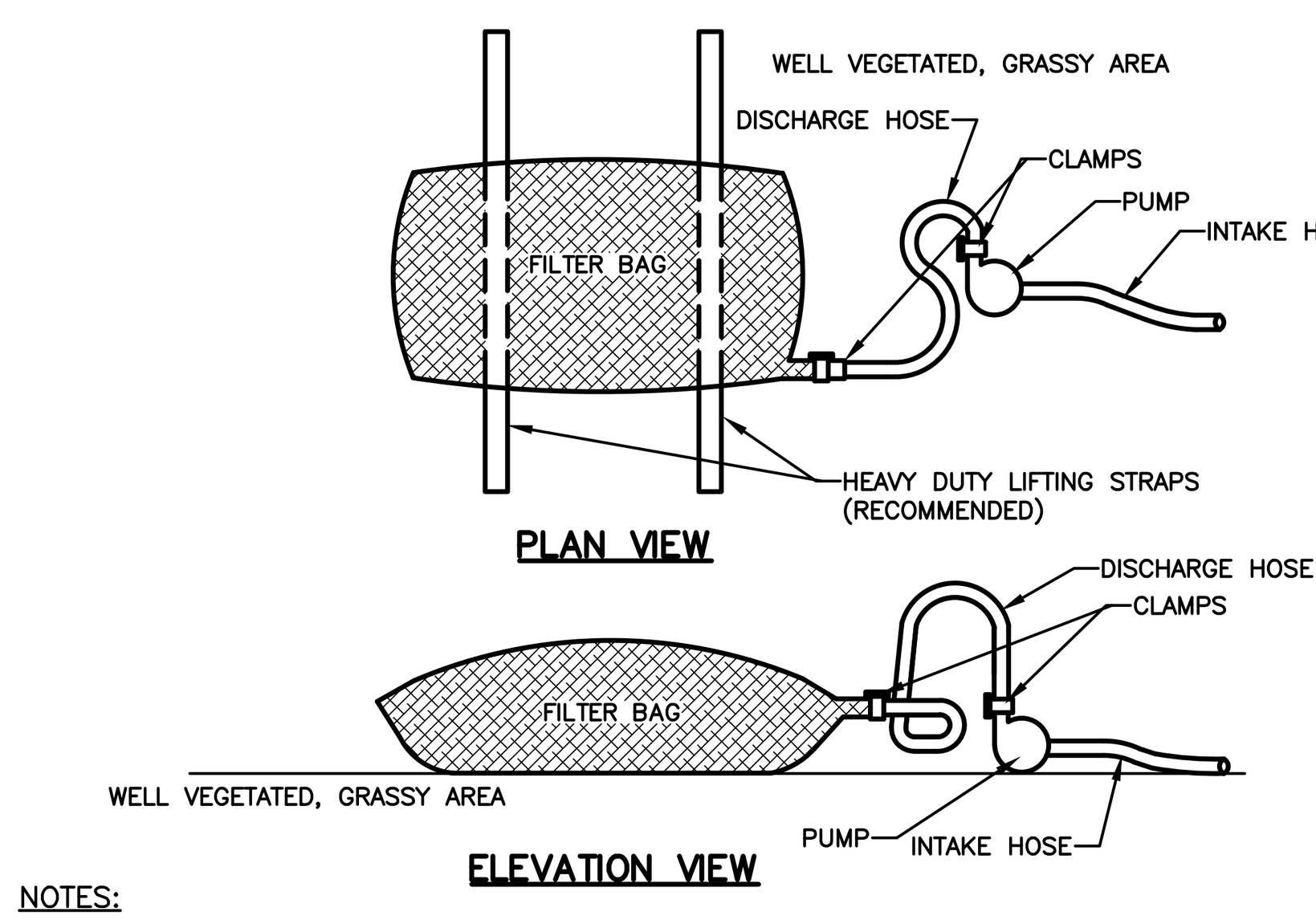
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B7 - DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

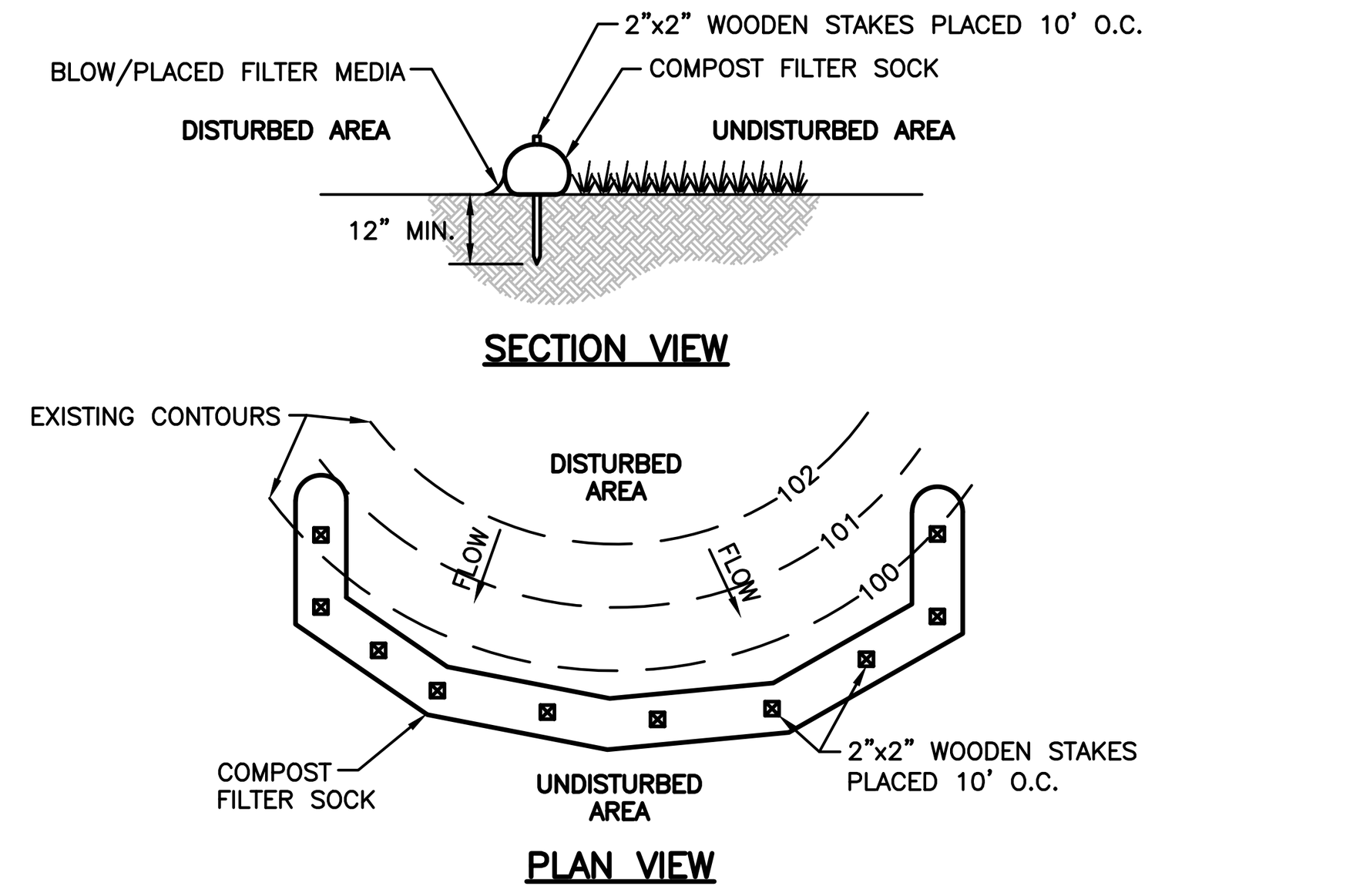
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

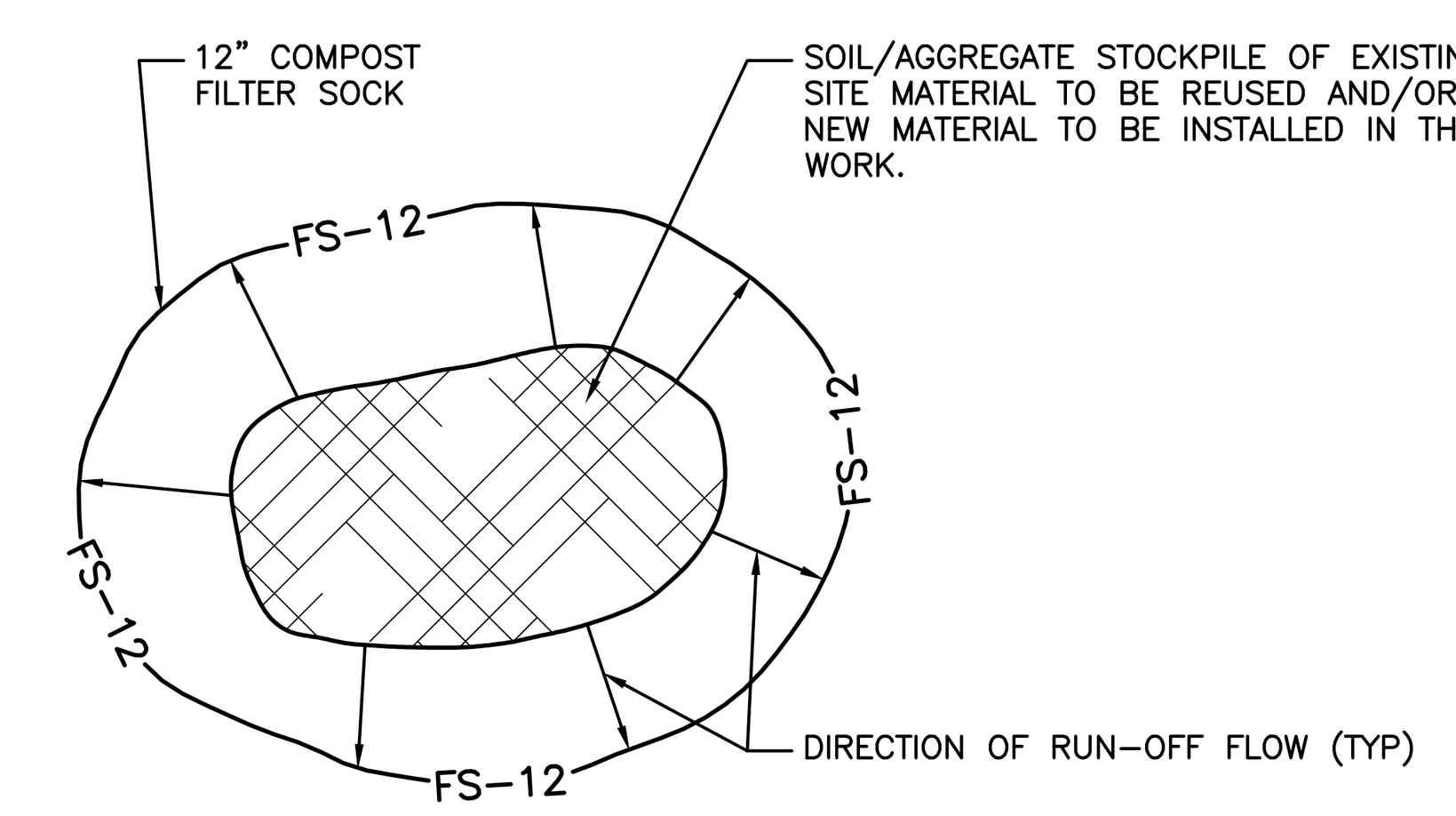


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

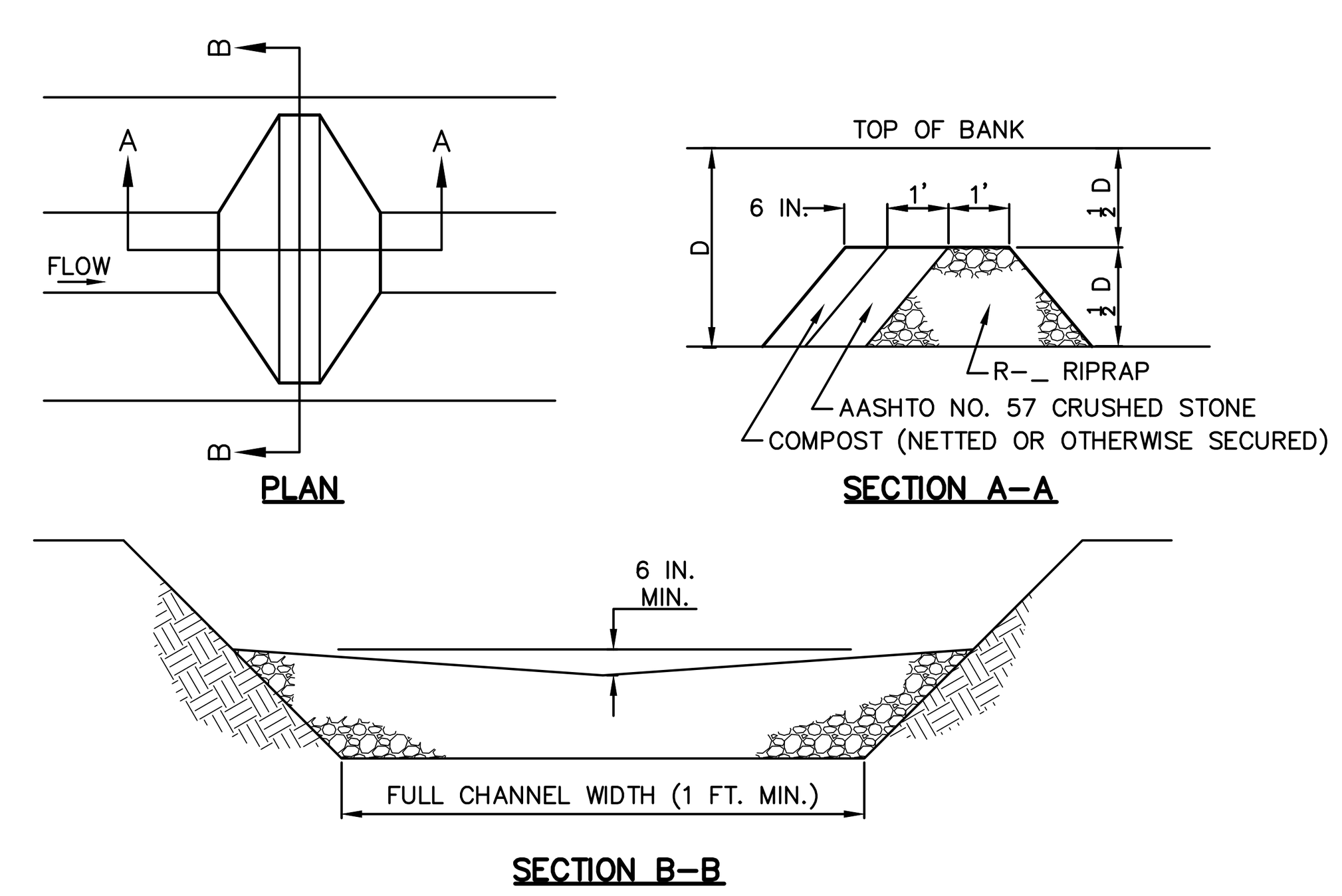
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. - USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. - USE R-3
NOT APPLICABLE FOR D < 2 FT.

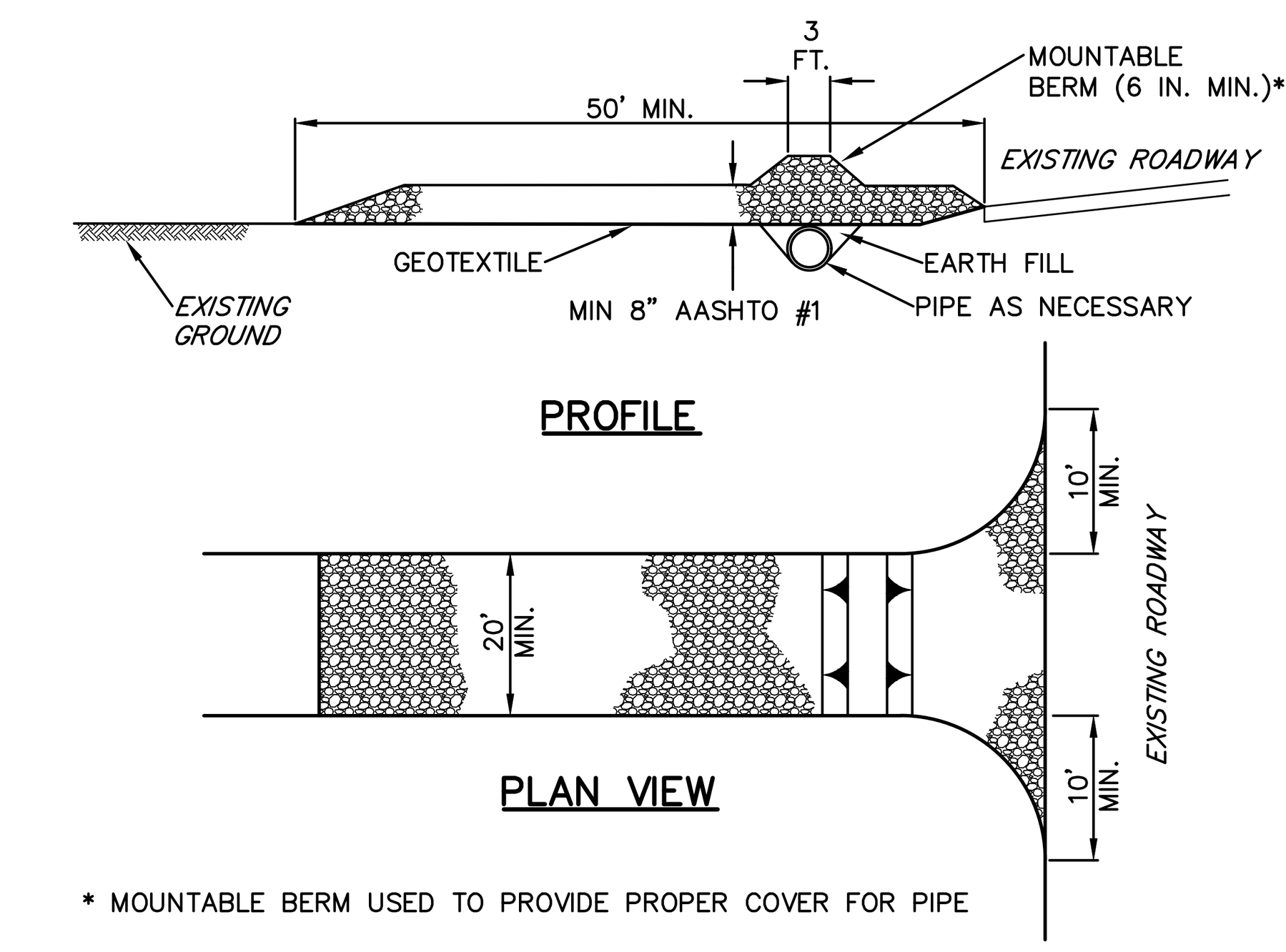
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE

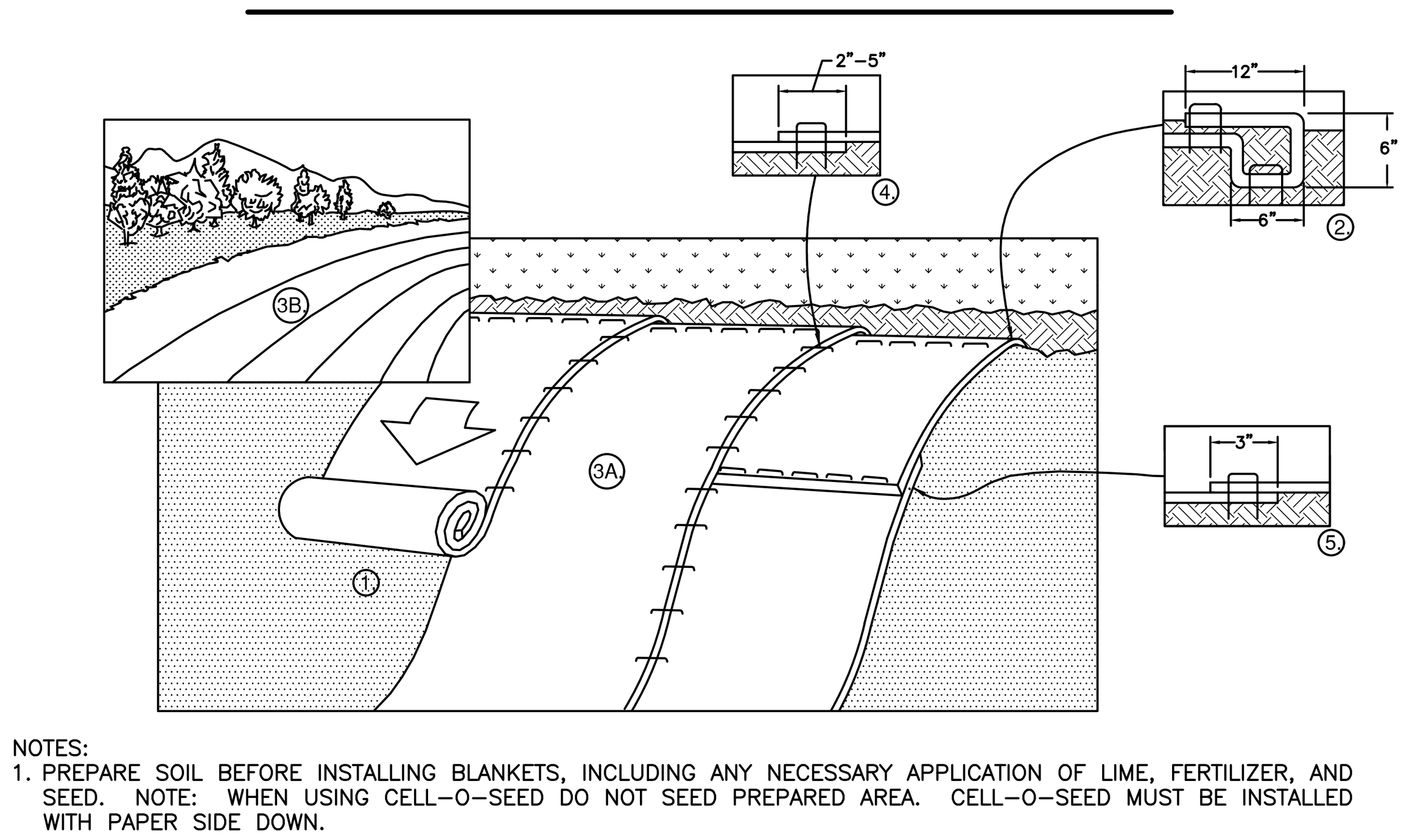
APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE

   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

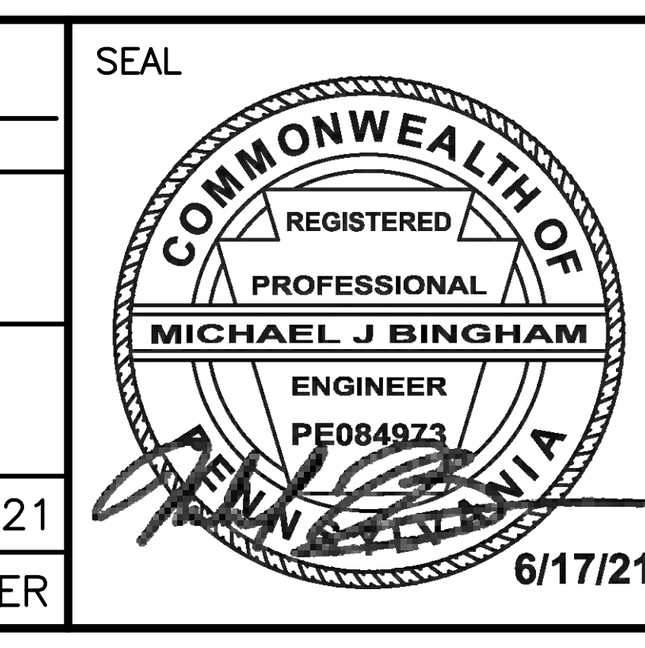
NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL



SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS - SITE B7
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.04
SHEET NO.: 6 OF 6
REV.

F60

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:38 AM

ATTACHMENT F: BMP B16 Plans

Dallas Area Municipal Authority

BMP B16 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
105,089	23,778	81,311	2.41	0.55	1.87	22.63	77.37

Pipe flow
L=125'
s=10%
W_p=1.96
A=0.61

Shallow conc. flow
L=350'
s=3.4%
vegetated

Sheet flow
L=100'
s=3.0%
grass,n=.15

B16

0 50 100 200 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B16

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 04/26/2021 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211162085

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 811 DIGGER STOP - CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM

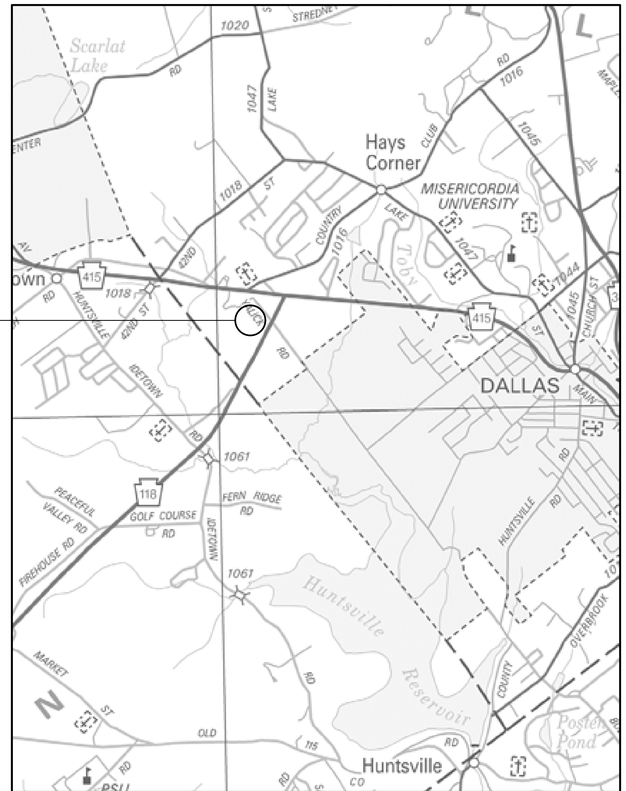
COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: JUSTIN.ADAMS@WILLIAMS.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

PROJECT LOCATION



LOCATION MAP

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: APRIL 2021	SURVEY DATE: DECEMBER 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084021 — 6/17/21

SEAL

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B16
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

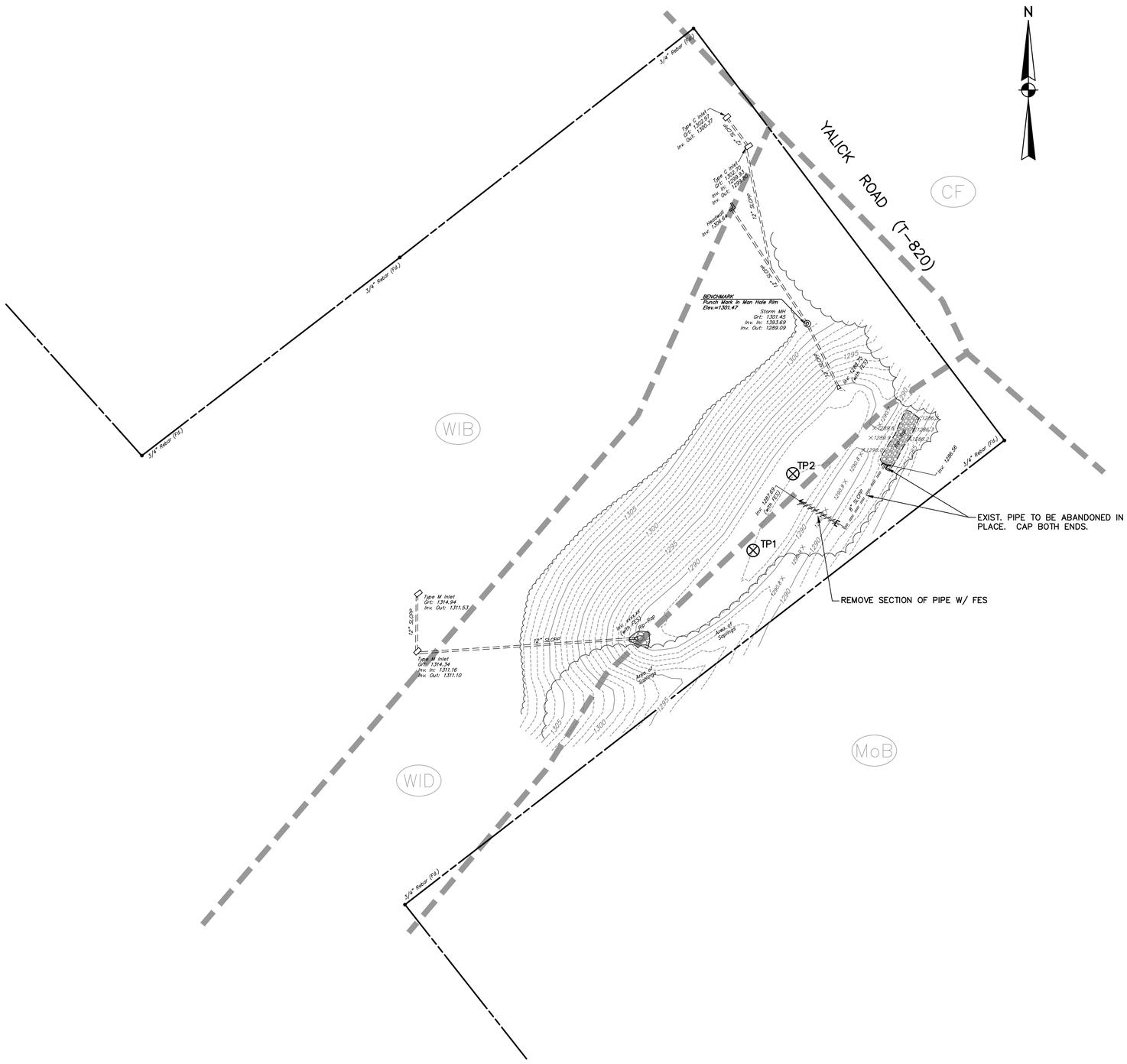
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.04	SHEET NO. 1 OF 6
REV.	

F63

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:25 AM



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- TP1 TEST PIT LOCATION

SOILS

CF – CUT AND FILL LAND

MoB – MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES

WIB – WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

WID – WELLSBORO CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES

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NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE DECEMBER 2020
	FIELD BOOK WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084921
6/17/21

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SHAVERTOWN, PA 18708

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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

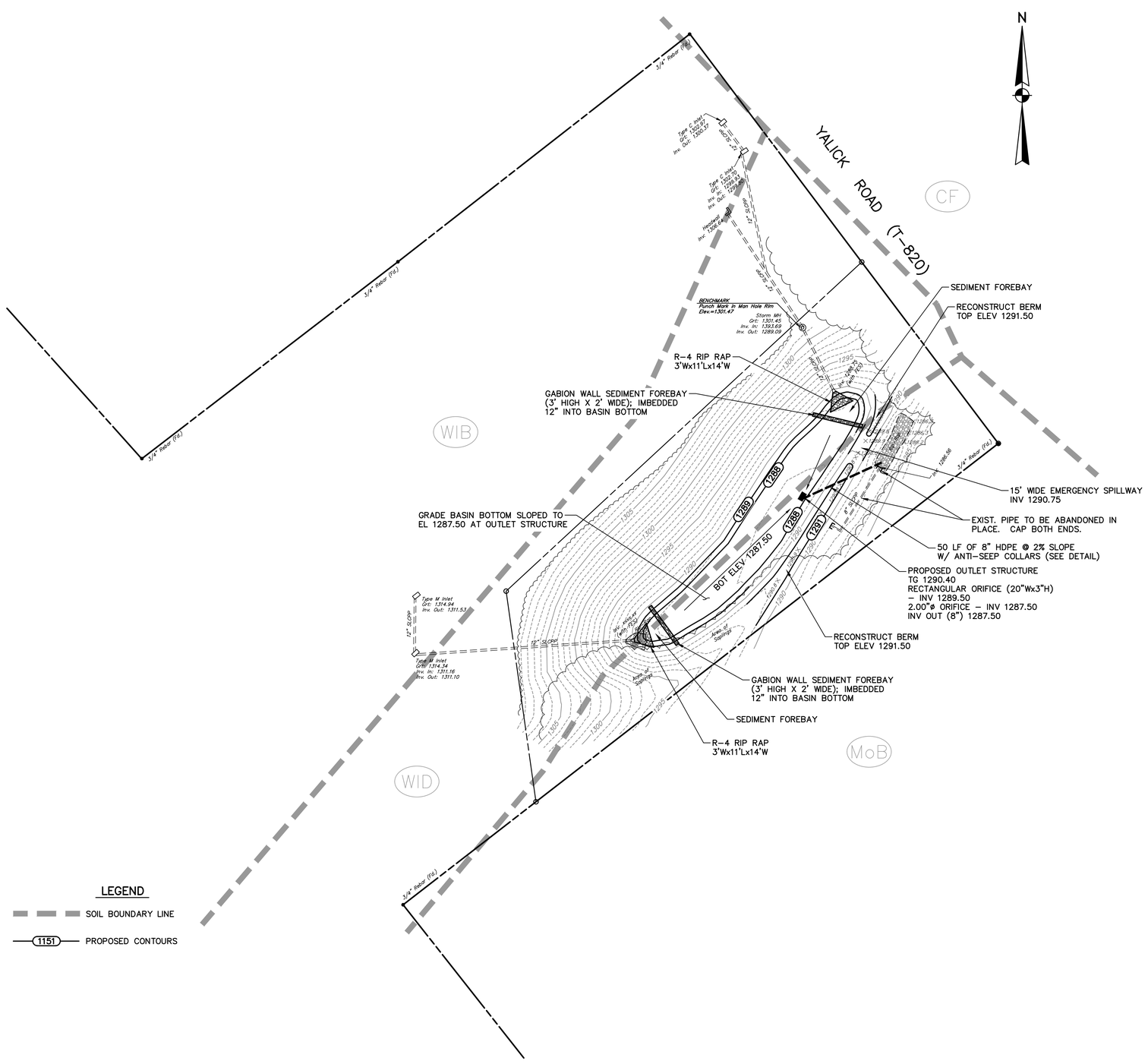
DWG. NO. F64

PROJECT NO. 11138.04

SHEET NO. 2 OF 6

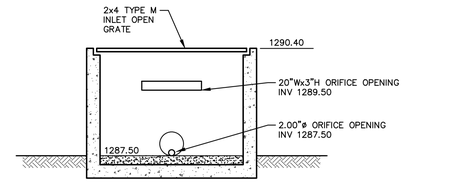
REV.

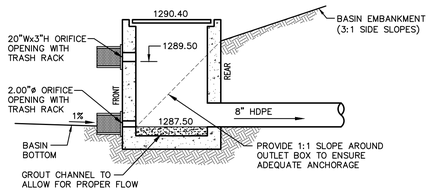
Dwg. Name: 1113804-S01 – B16.DWG Plotted: 6/17/2021 10:25 AM



PROPOSED FEATURES PLAN

1" = 30'

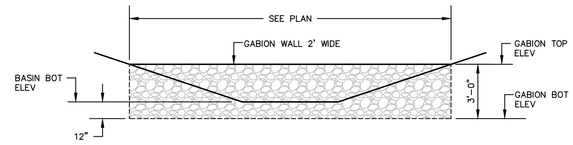




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

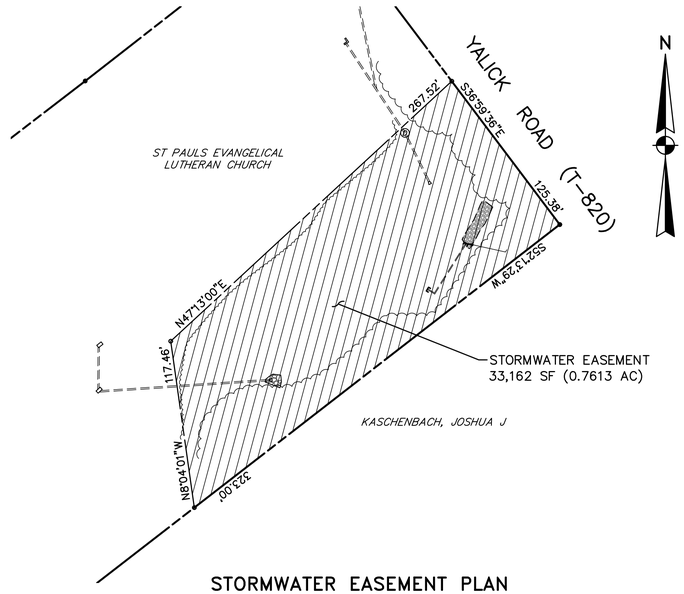
OUTLET CONTROL STRUCTURE

NO SCALE



GABION FOREBAY DETAIL

NO SCALE



STORMWATER EASEMENT PLAN

1" = 50'

0 25' 50' 100' 150'

SCALE: 1" = 50'

NO	REVISION	DATE	BY	APP.

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MICHAEL J. BINGHAM, PE
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DATE: APRIL 2021	SURVEY DATE: DECEMBER 2020
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STORMWATER BMP IMPROVEMENTS - SITE B16
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: PROPOSED CONDITIONS

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'

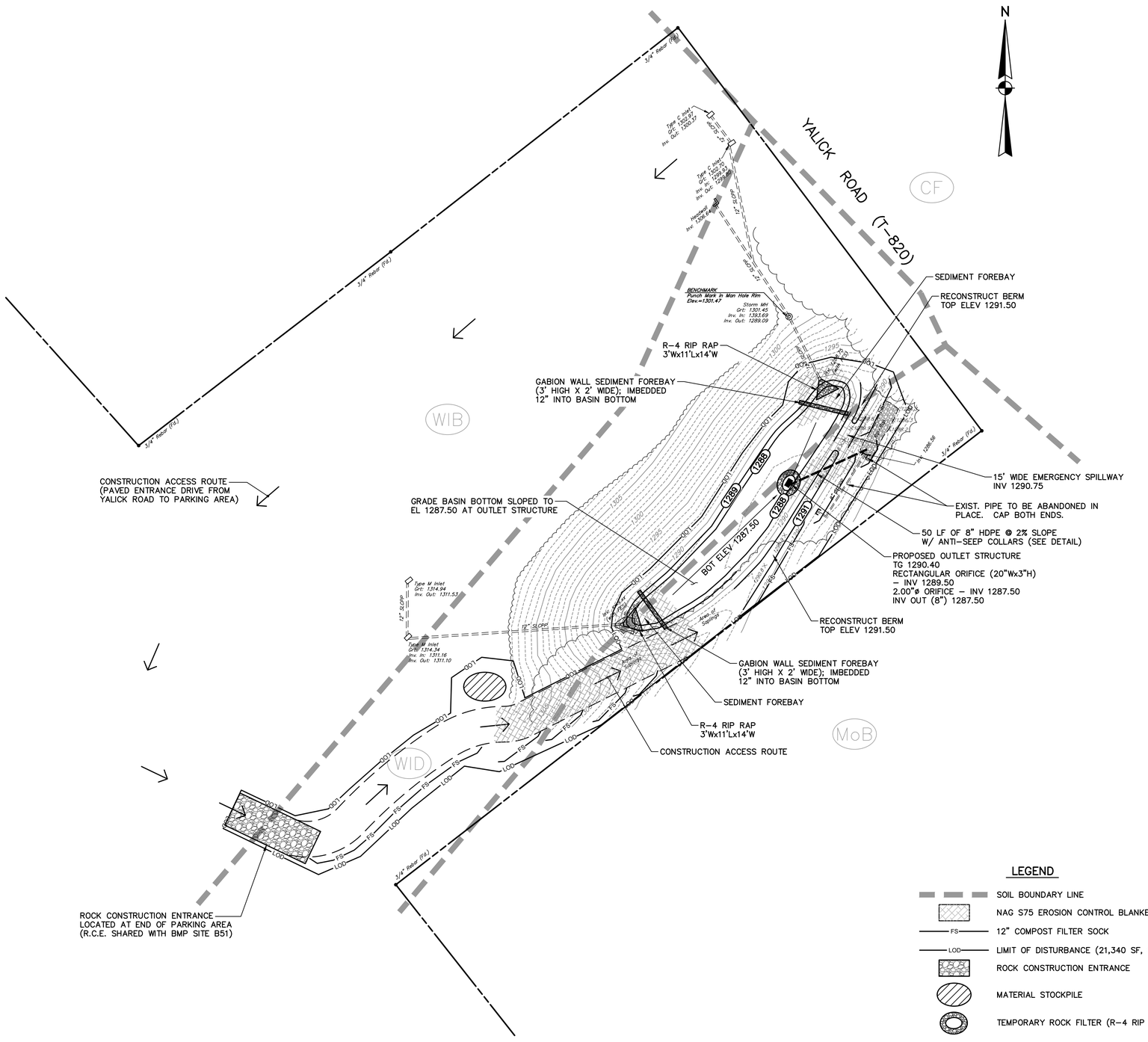
DWG. NO.

PROJECT NO. 11138.04

SHEET NO. 3 OF 6

REV.

Dwg. Name: 1113804-S01 - B16.DWG Plotted: 6/17/2021 10:25 AM



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RELEASED BY: MICHAEL J. BINGHAM, PE

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: DECEMBER 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084923 — 6/17/21

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

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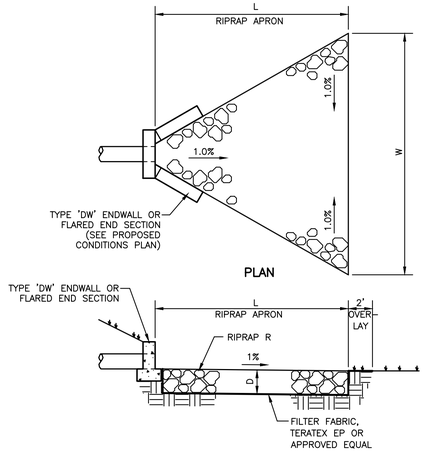
TITLE: EROSION AND SEDIMENT CONTROL PLAN

SCALE: 0 15' 30' 60' 90' — SCALE: 1" = 30'

PROJECT NO.	SHEET NO.	REV.	DWG. NO.
11138.04	4 OF 6		

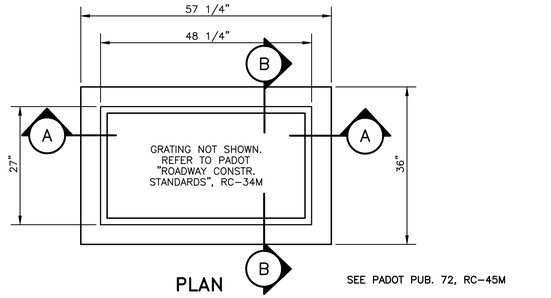
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STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
EX. 12"SSLCP(N)	11	14	R-4	18	12
EX. 12"SSLCP(S)	11	14	R-4	18	12



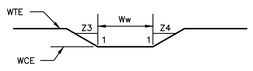
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

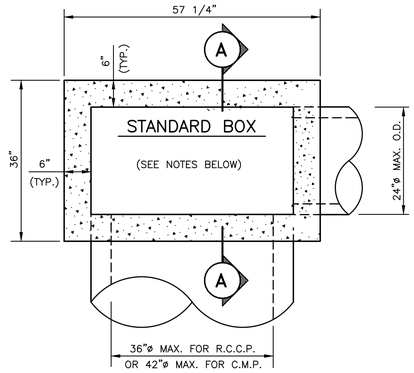


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1291.50	1290.75	15	NAG S75

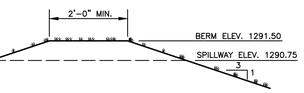
BASIN EMERGENCY SPILLWAY

NO SCALE



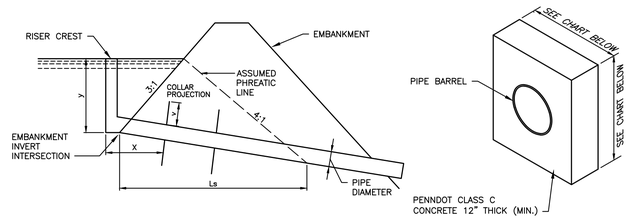
NOTE:
1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

PLAN



BASIN BERM DETAIL

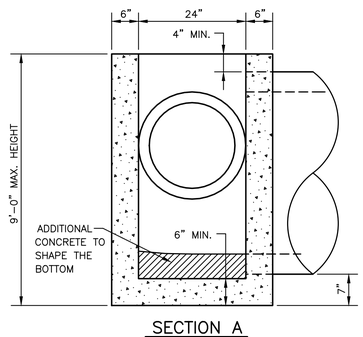
NO SCALE



BASIN NO.	EMBANKMENT INVERT	RISER CREST	y (FT.)	z	PIPE SLOPE	Ls (FT.)	PIPE DIA. (IN.)	NO. OF COLLARS	COLLARS PROJECTION (FT.)	BARREL O.D. (IN.)	COLLAR SIZE (SQUARE) (FT.)	OFFSITE X (FT.)
1	1287.50	1290.4	2.5	3	0.0050	9.7	8	2	0.4	0.87	1.67	12

ANTI SEEP COLLAR DETAIL

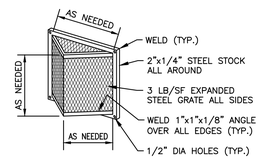
NO SCALE



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

RELEASED BY: MICHAEL J. BINGHAM, PE

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
APRIL 2021	DECEMBER 2020
	FIELD BOOK
	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084927
6/17/21

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.04	5 OF 6	

F67

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:26 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

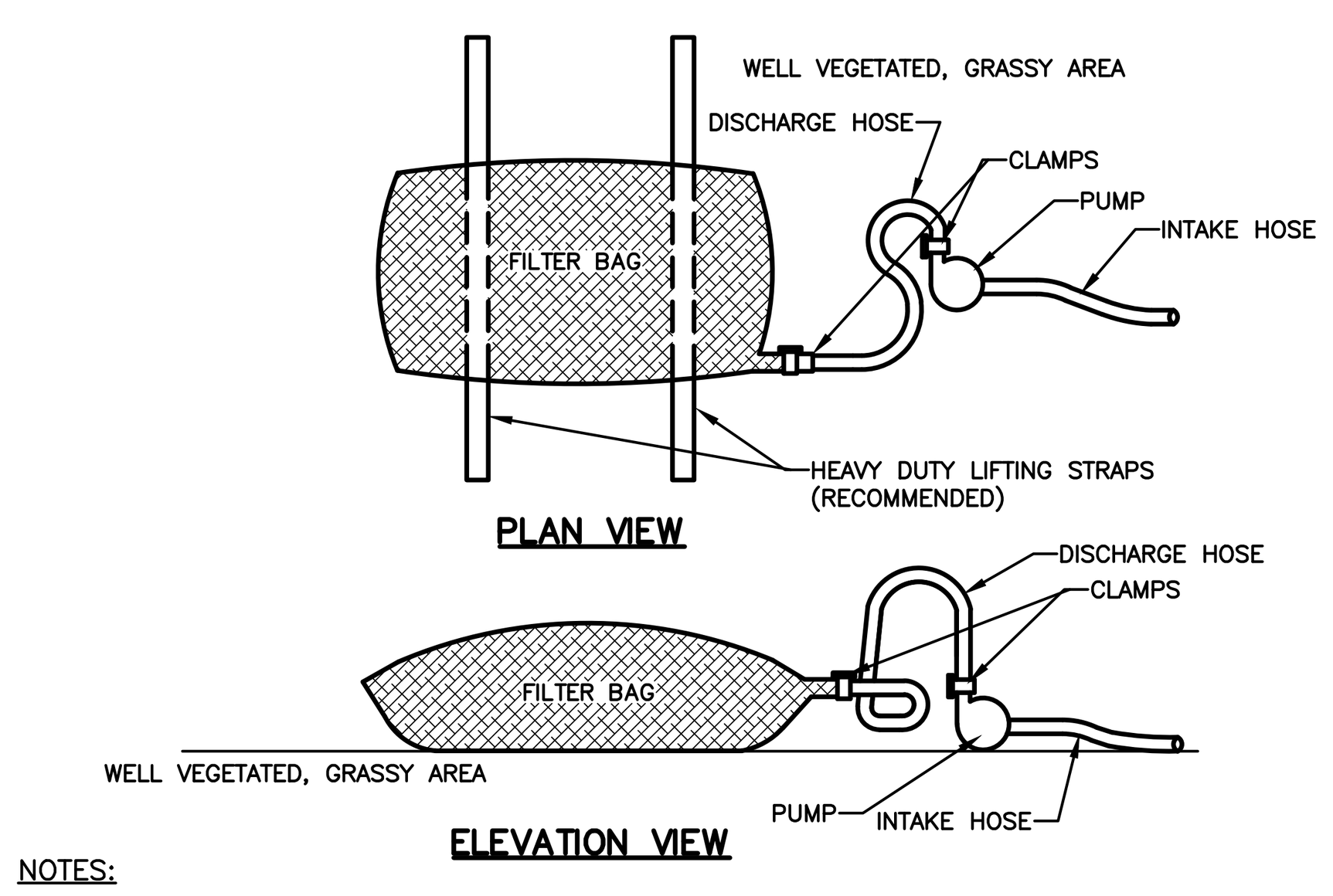
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B16 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

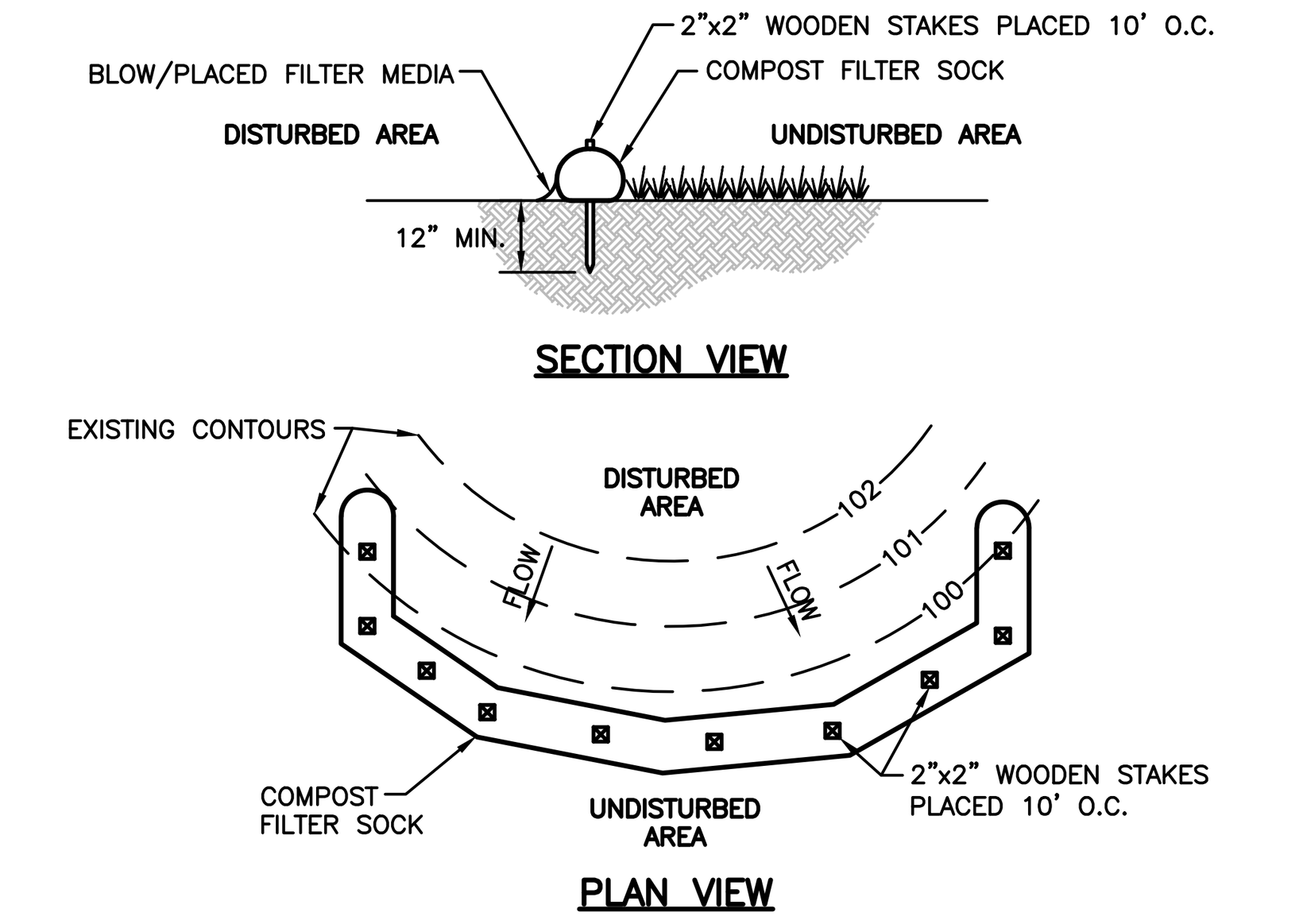
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

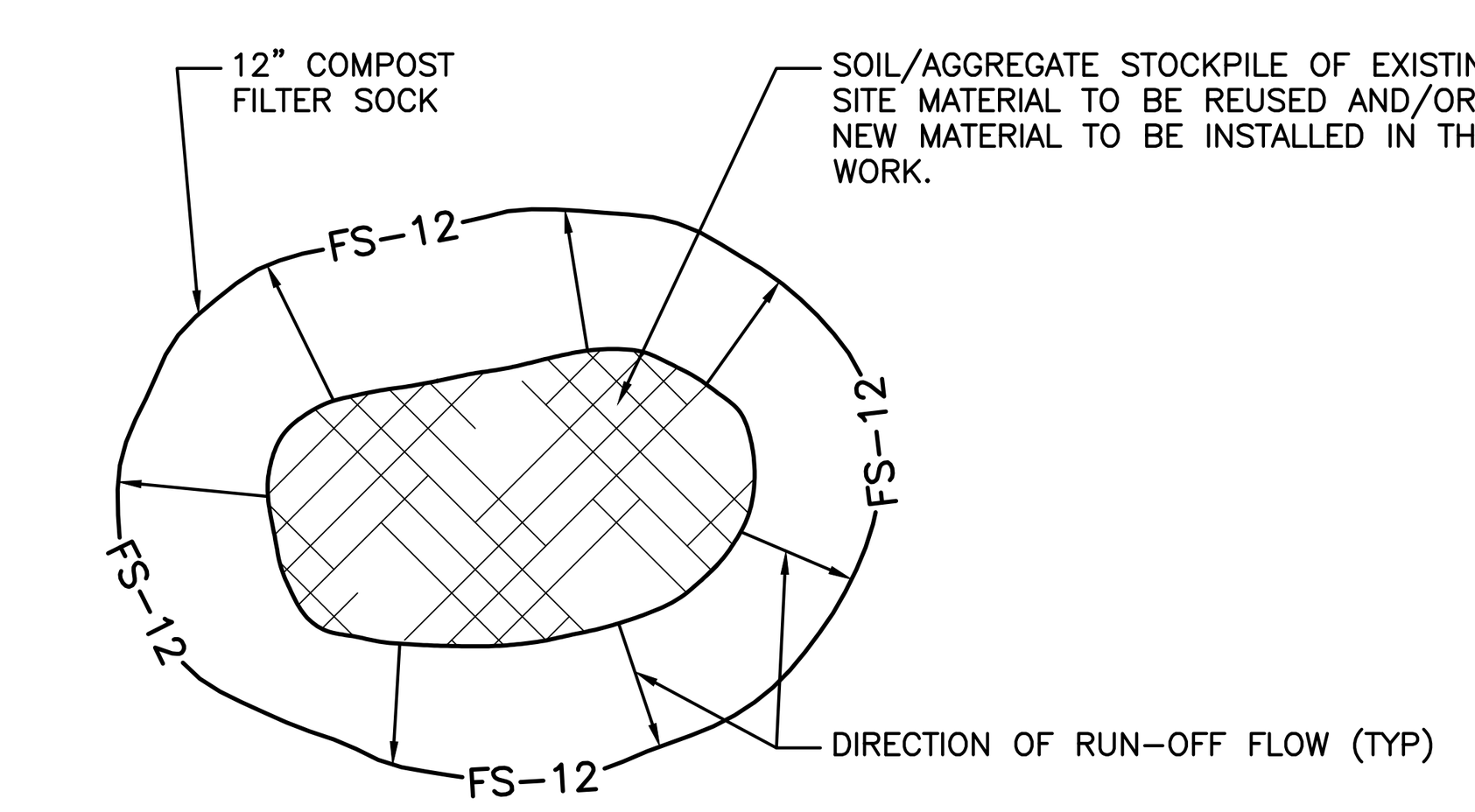


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

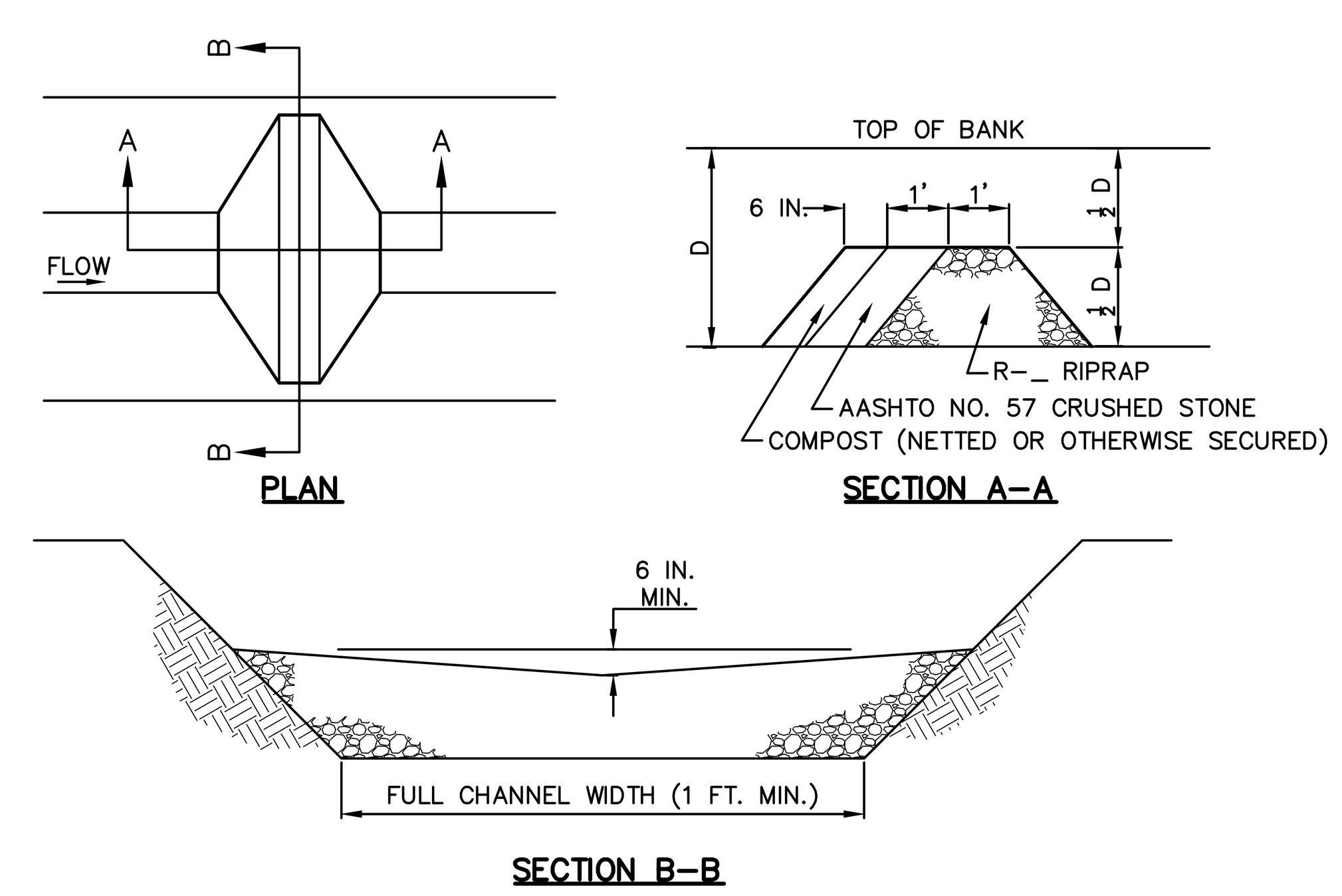
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

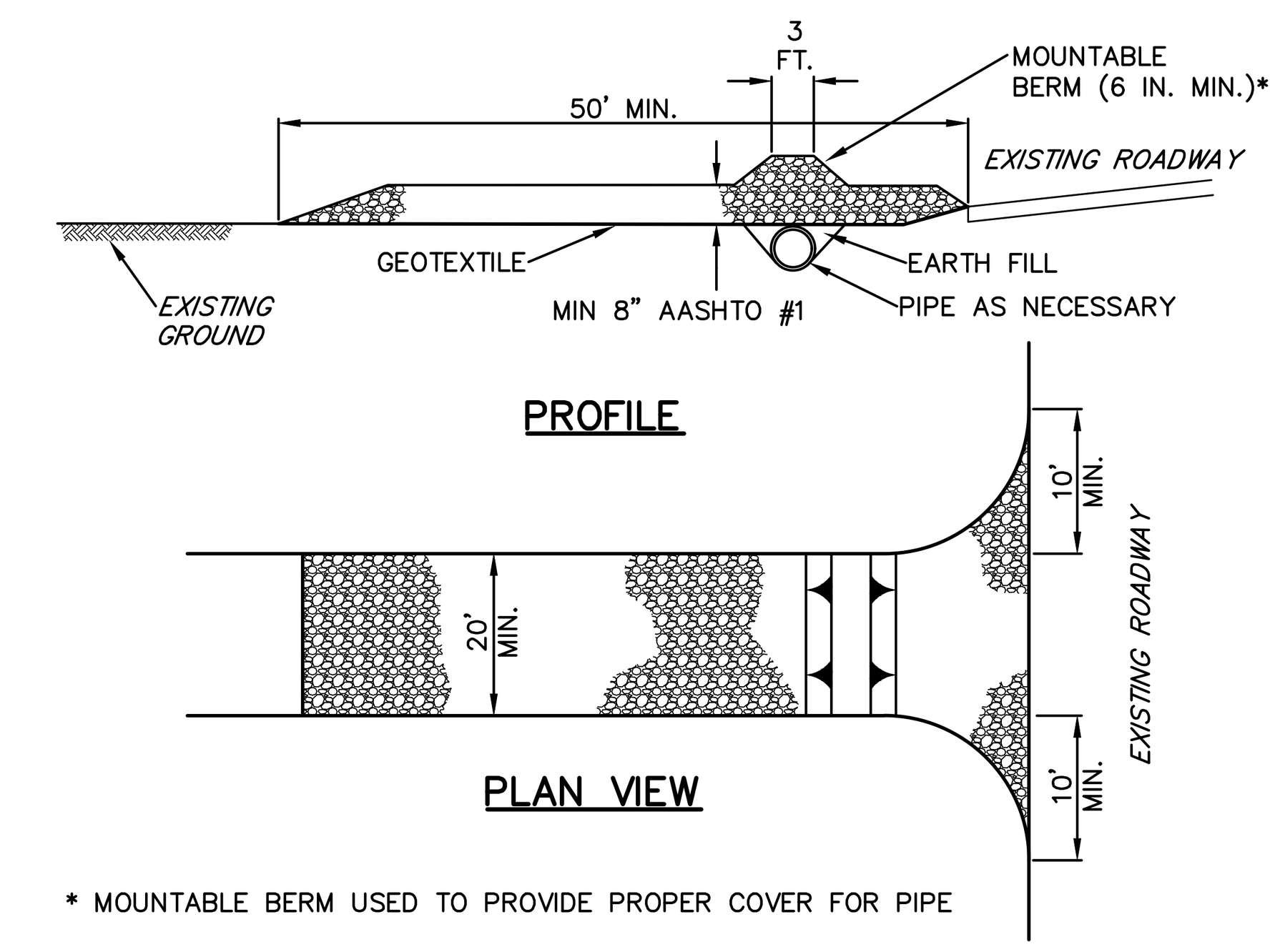
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

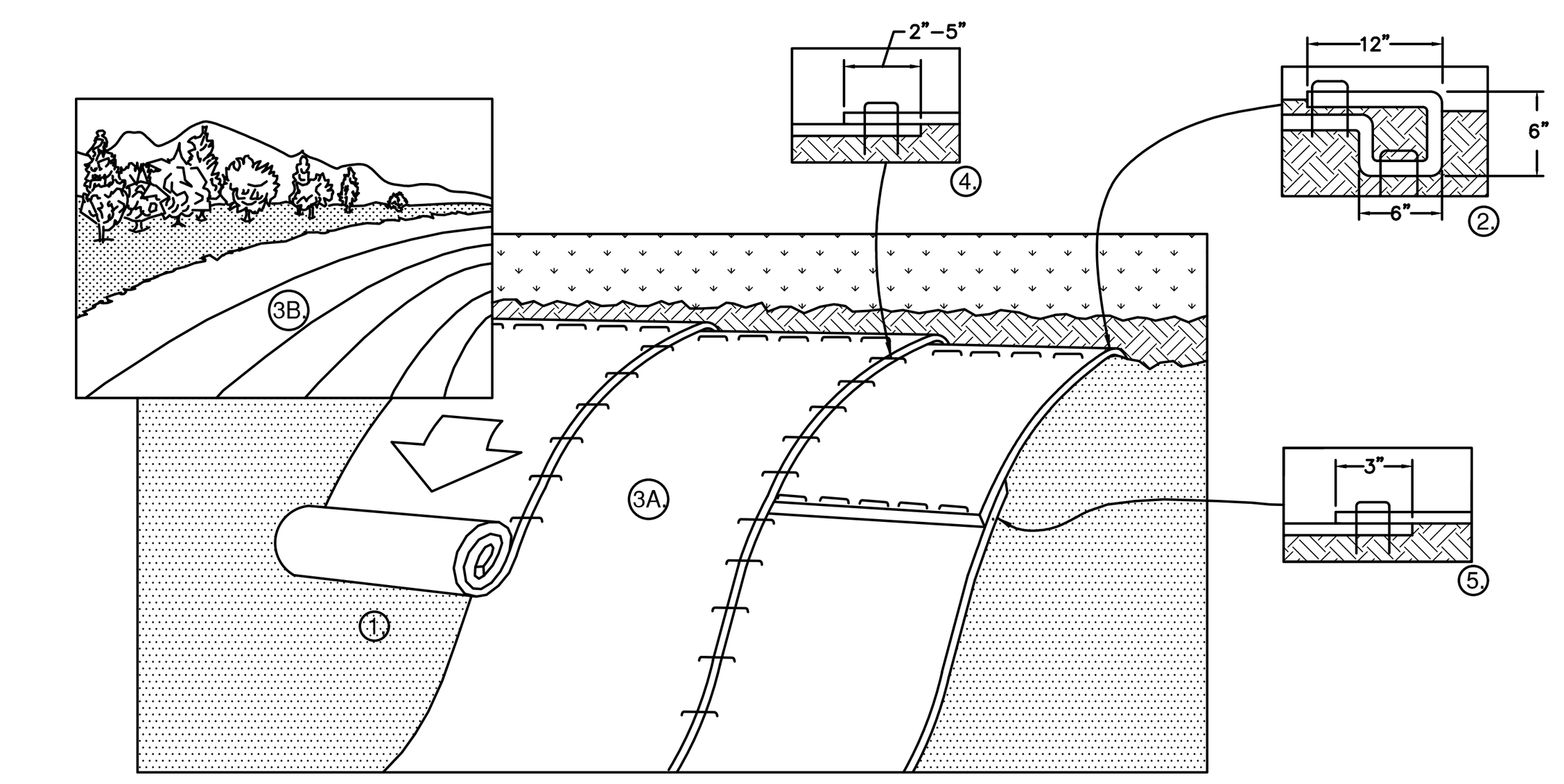
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU | CHECKED
DRAWN: SAM | CHECKED
DATE: APRIL 2021 | SURVEY DATE: DECEMBER 2020 | FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B16
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.04
SHEET NO.: 6 OF 6
REV.

F68

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:26 AM

ATTACHMENT F: BMP B33 Plans

Dallas Area Municipal Authority

BMP B33 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
646,832	216,104	430,728	14.85	4.96	9.89	33.41	66.59

Pipe flow
l=60'
s=20%
n=.013
Wp=3.14
a=1.57

B33

Channel flow
l=630'
s=9.5%
n=.033
W_p=3.14
a=1.57

Shallow conc. flow
l=160'
s=11.25%
pavement

Sheet flow
l=100'
s=10%
n=0.40

Shallow conc. flow
l=210'
s=10.5%
vegetation

0 75 150 300 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B33

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/27/21 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211170630

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 8-1-1 STOP! CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: WILLIAM_MAYS@CABLE.COMCAST.COM

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM

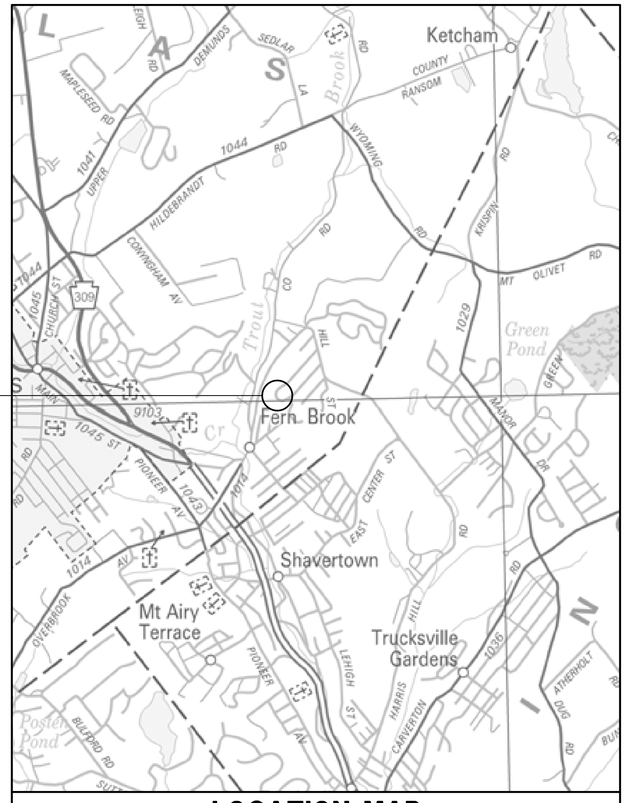
COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

PROJECT LOCATION



LOCATION MAP

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	BLE	CHECKED	
DATE	APRIL 2021	SURVEY DATE	JANUARY 2021
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J. BINGHAM ENGINEER PE084973
6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

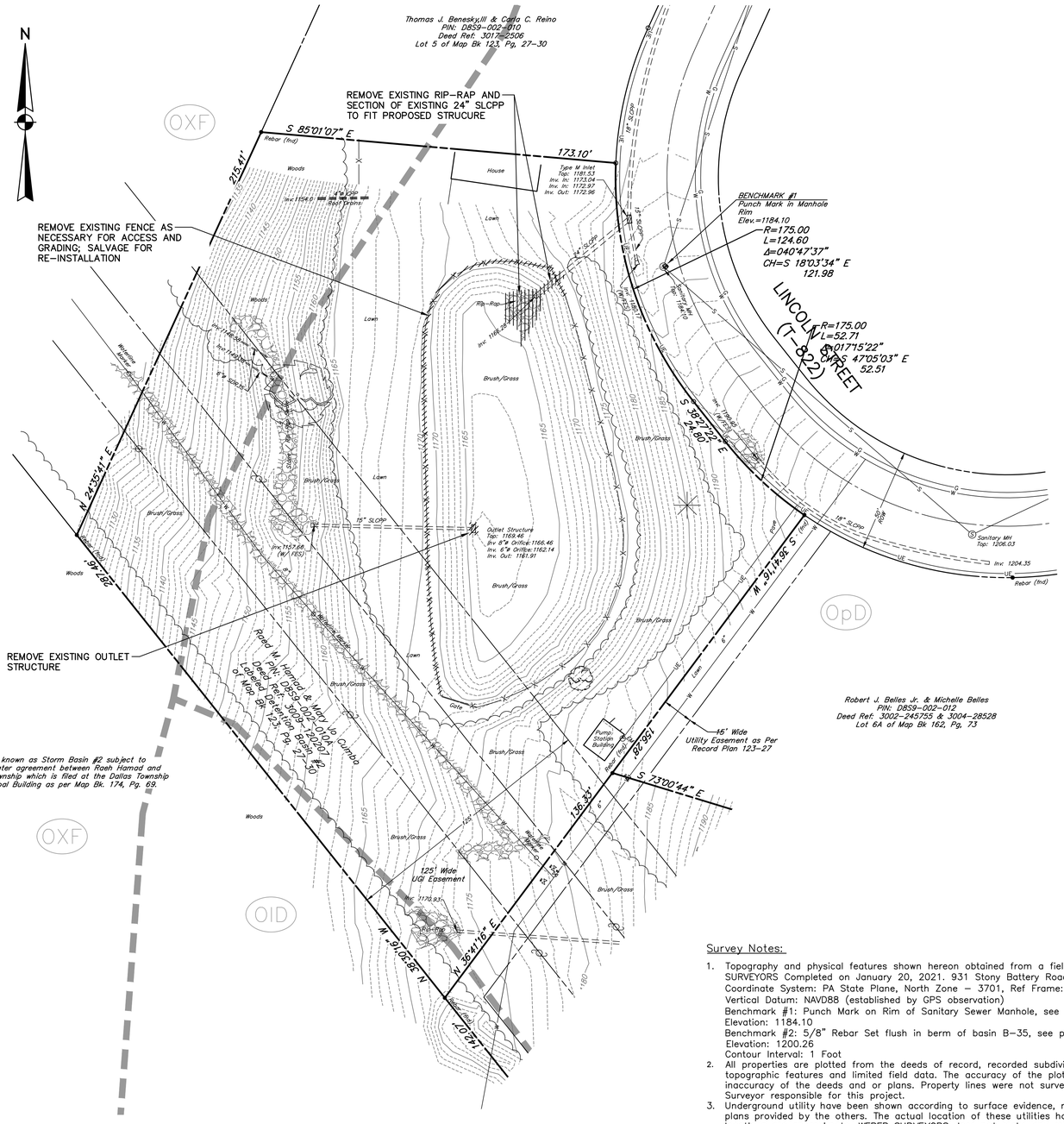
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
TITLE SHEET

SCALE: AS SHOWN
DWG. NO.
PROJECT NO. 11138.04
SHEET NO. 1 OF 6
REV.

F71

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:44 AM



LEGEND

- Adjoiner Property Line
- Property Line
- Right-of-Way Line
- Centerline
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- X 391.0 Spot Elevation
- Curb Line
- Edge of Pavement (E.O.P.)
- GV Gas Valve / G / GM Gas Meter — Gas Line
- C.O. Clean Out / S / S Manhole — Sanitary Sewer Line
- F.M / S Manhole — Sanitary Force Main
- WM Water Meter / W / WV Water Valve / FH Fire Hydrant — Water Line
- Headwall / D Manhole / Inlet / Endwall / Rip Rap — Storm Drainage Piping
- Fence
- Sign
- Light Pole (LP)
- DS Down Spout (DS)
- Bollard
- Deciduous Trees
- Coniferous Tree
- Shrub
- Soils Boundary Line
- Features To Be Demolished

SOILS

OID – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES

OpD – OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, 8 TO 25 PERCENT SLOPES

OXF – OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, STEEP

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on January 20, 2021. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark #1: Punch Mark on Rim of Sanitary Sewer Manhole, see plan.
   Elevation: 1184.10
   Benchmark #2: 5/8" Rebar Set flush in berm of basin B-35, see plan.
   Elevation: 1200.26
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
BLE	
DATE	SURVEY DATE
APRIL 2021	JANUARY 2021
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084927 — 6/17/21

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

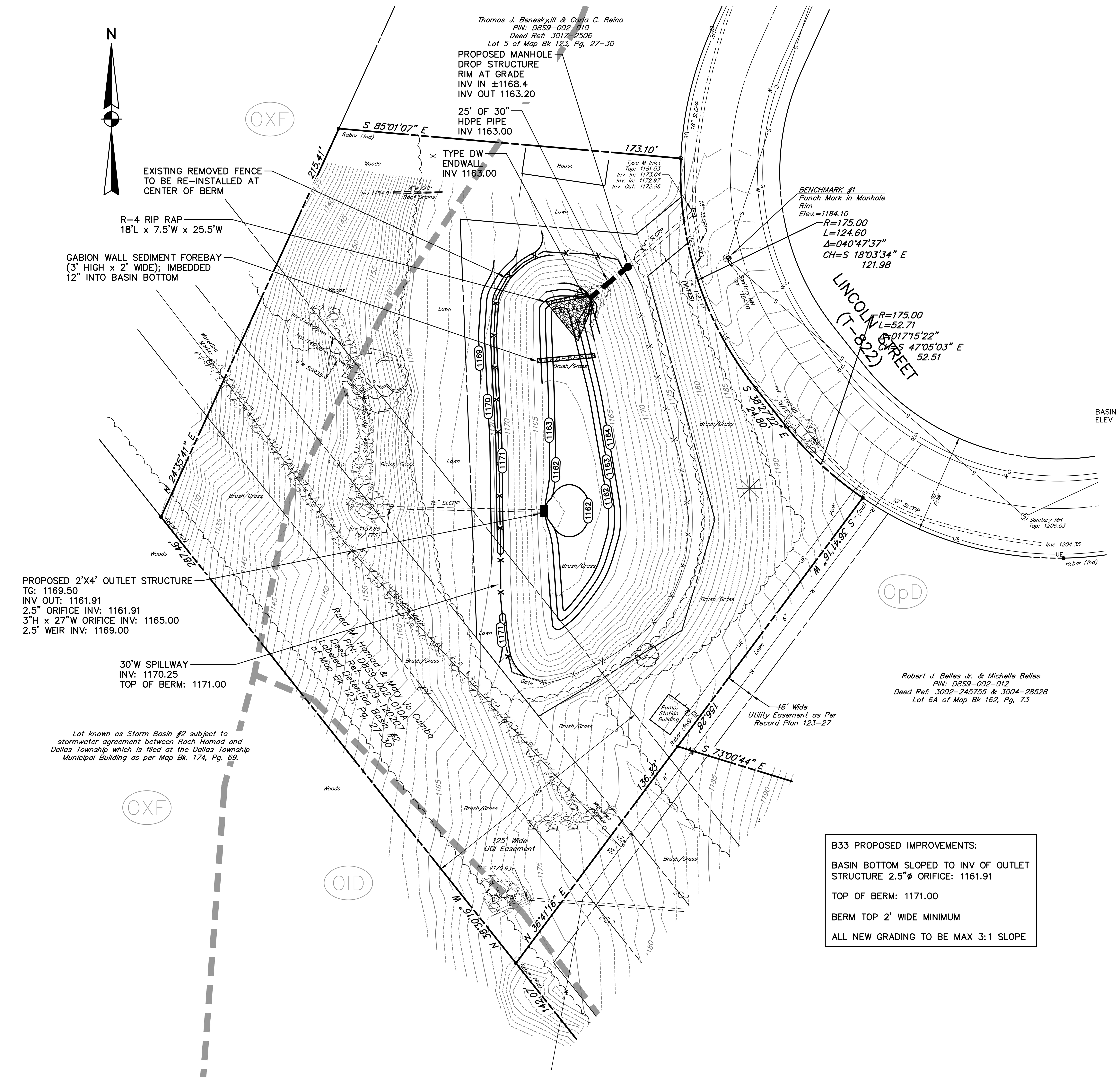
DWG. NO.

PROJECT NO. 11138.04

SHEET NO. 2 OF 6

REV.

Dwg. Name: 1113804-S05 – B33 B35.DWG Plotted: 6/17/2021 10:44 AM



B33 PROPOSED IMPROVEMENTS:

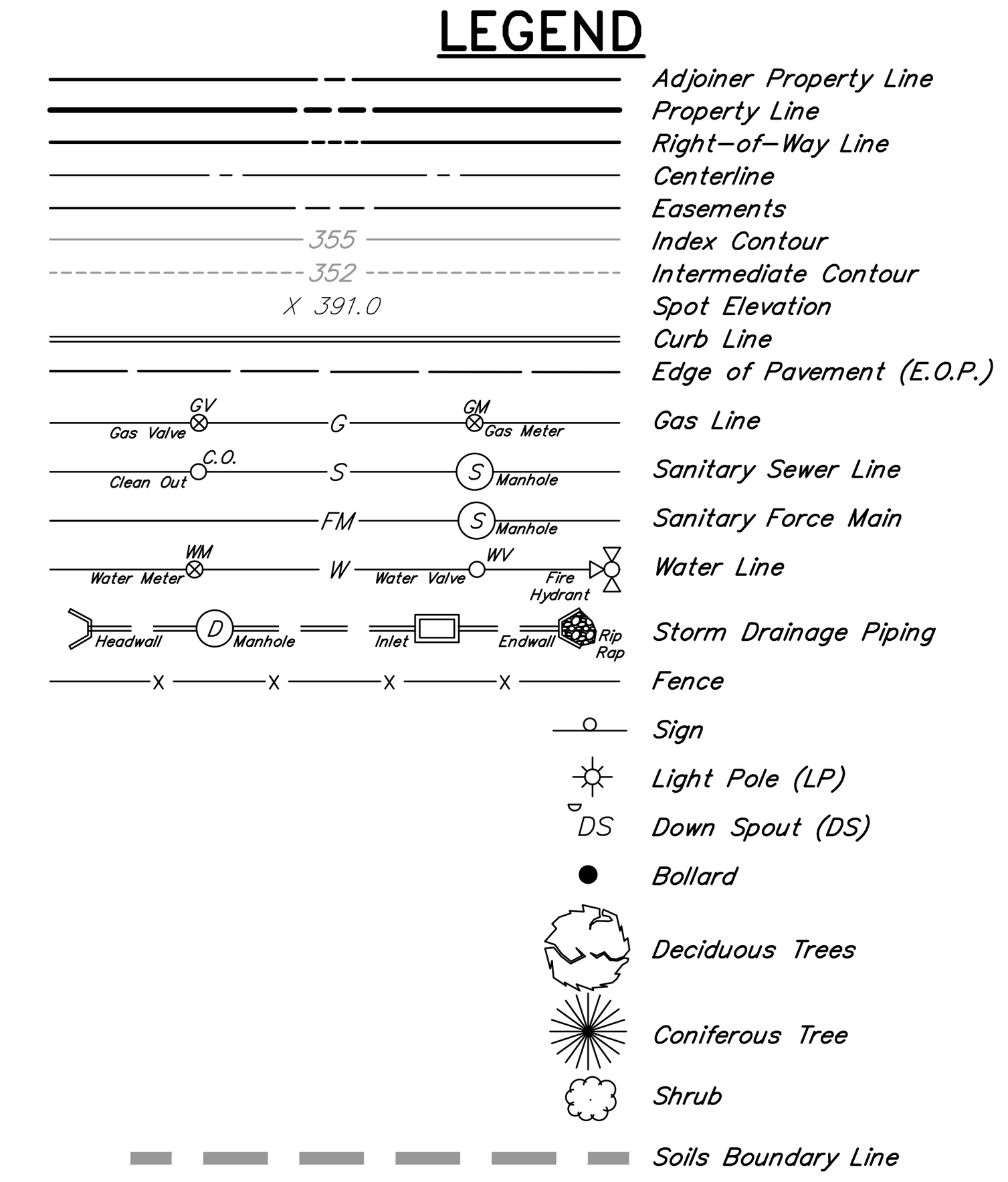
BASIN BOTTOM SLOPED TO INV OF OUTLET STRUCTURE 2.5"ø ORIFICE: 1161.91

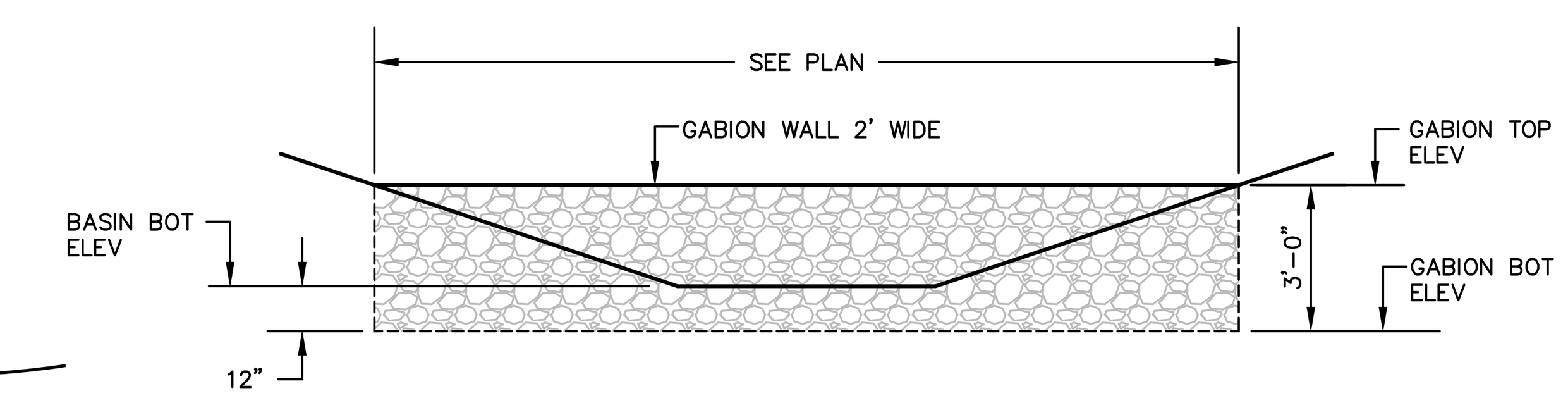
TOP OF BERM: 1171.00

BERM TOP 2' WIDE MINIMUM

ALL NEW GRADING TO BE MAX 3:1 SLOPE

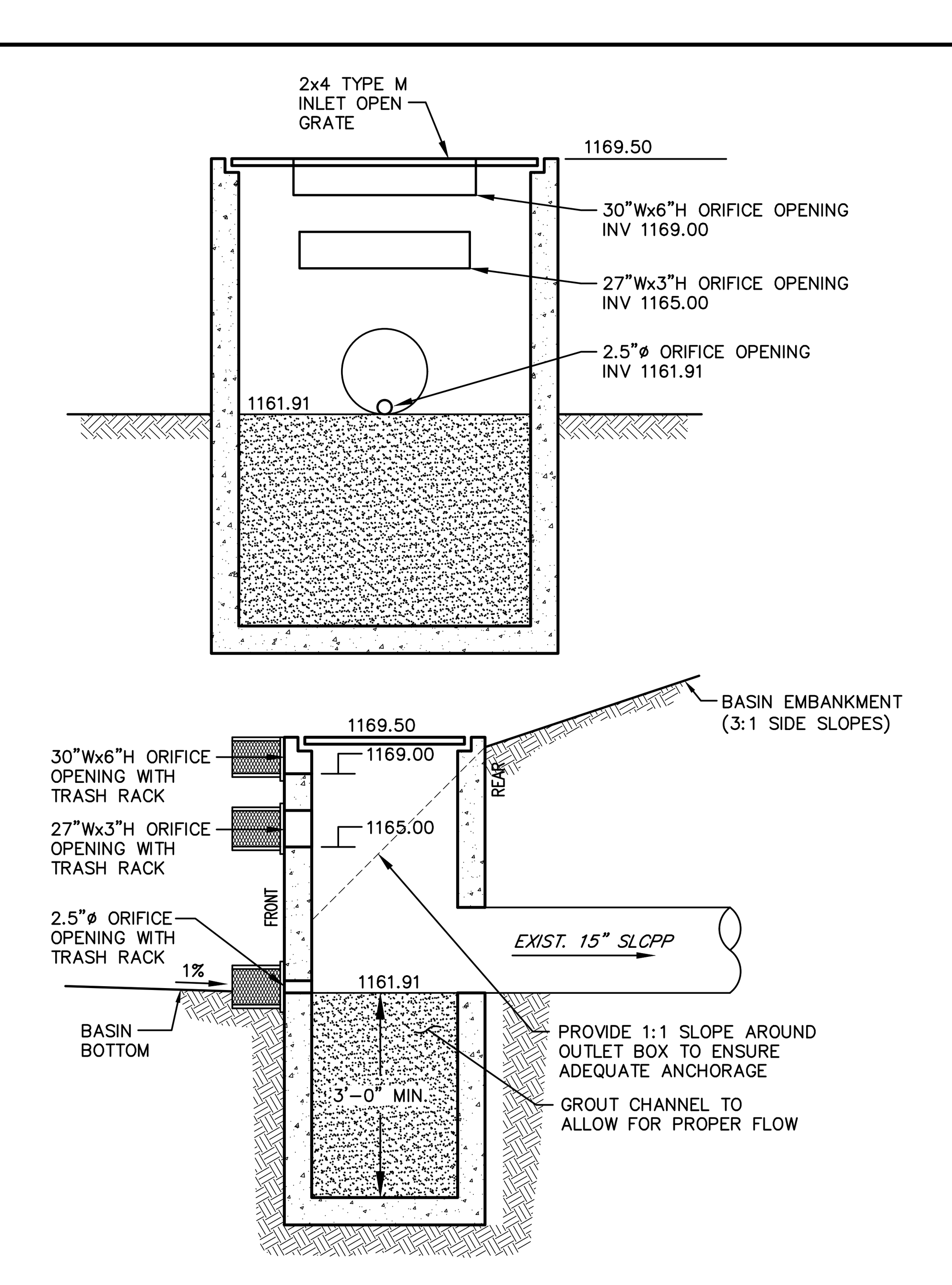
LEGEND





GABION FOREBAY DETAIL

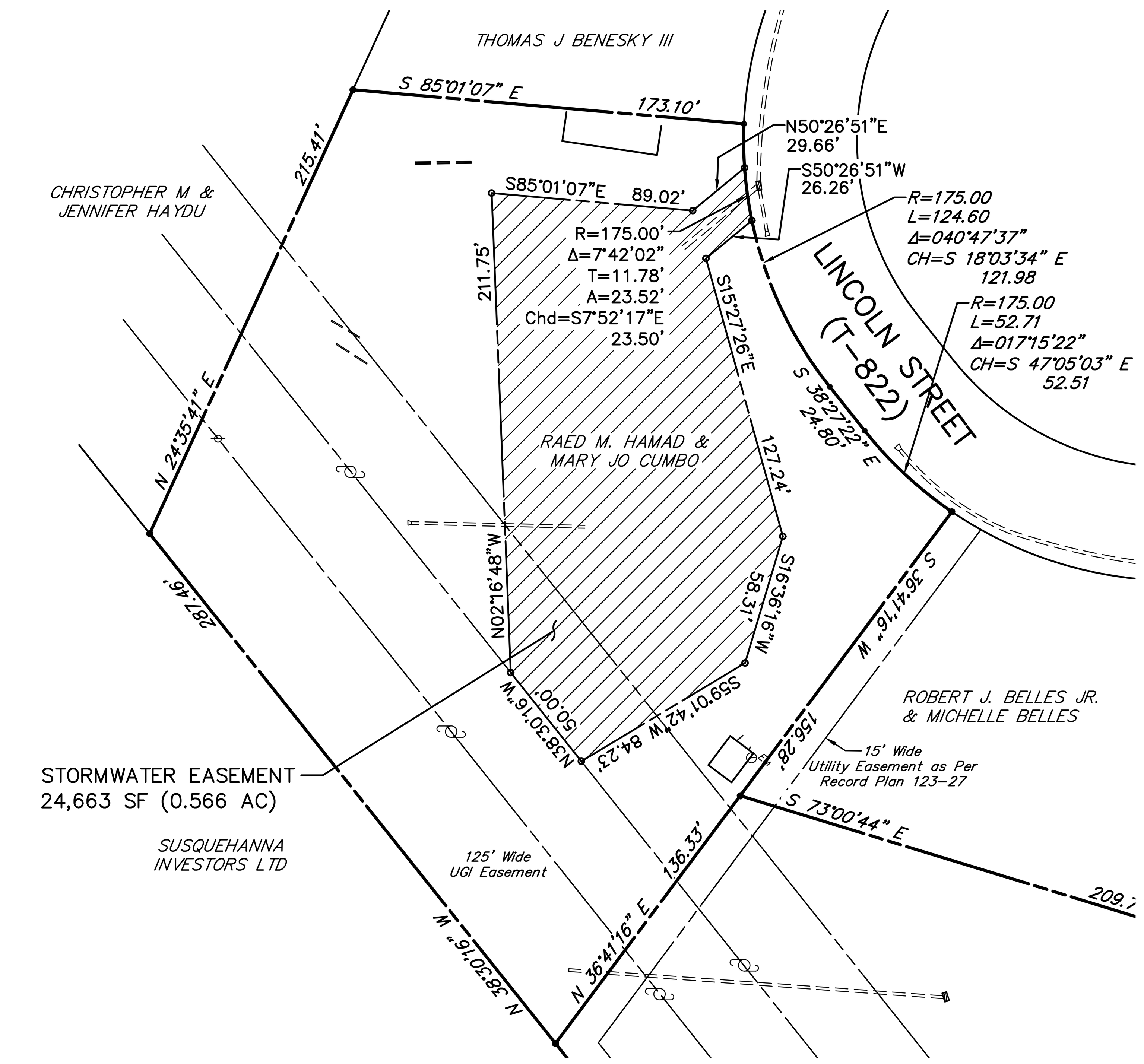
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NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



STORMWATER EASEMENT PLAN

1" = 50'

0 25' 50' 100' 150'

SCALE: 1" = 50'

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: BLE	CHECKED
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — MICHAEL J BINGHAM — PE084873 — 6/17/21

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS

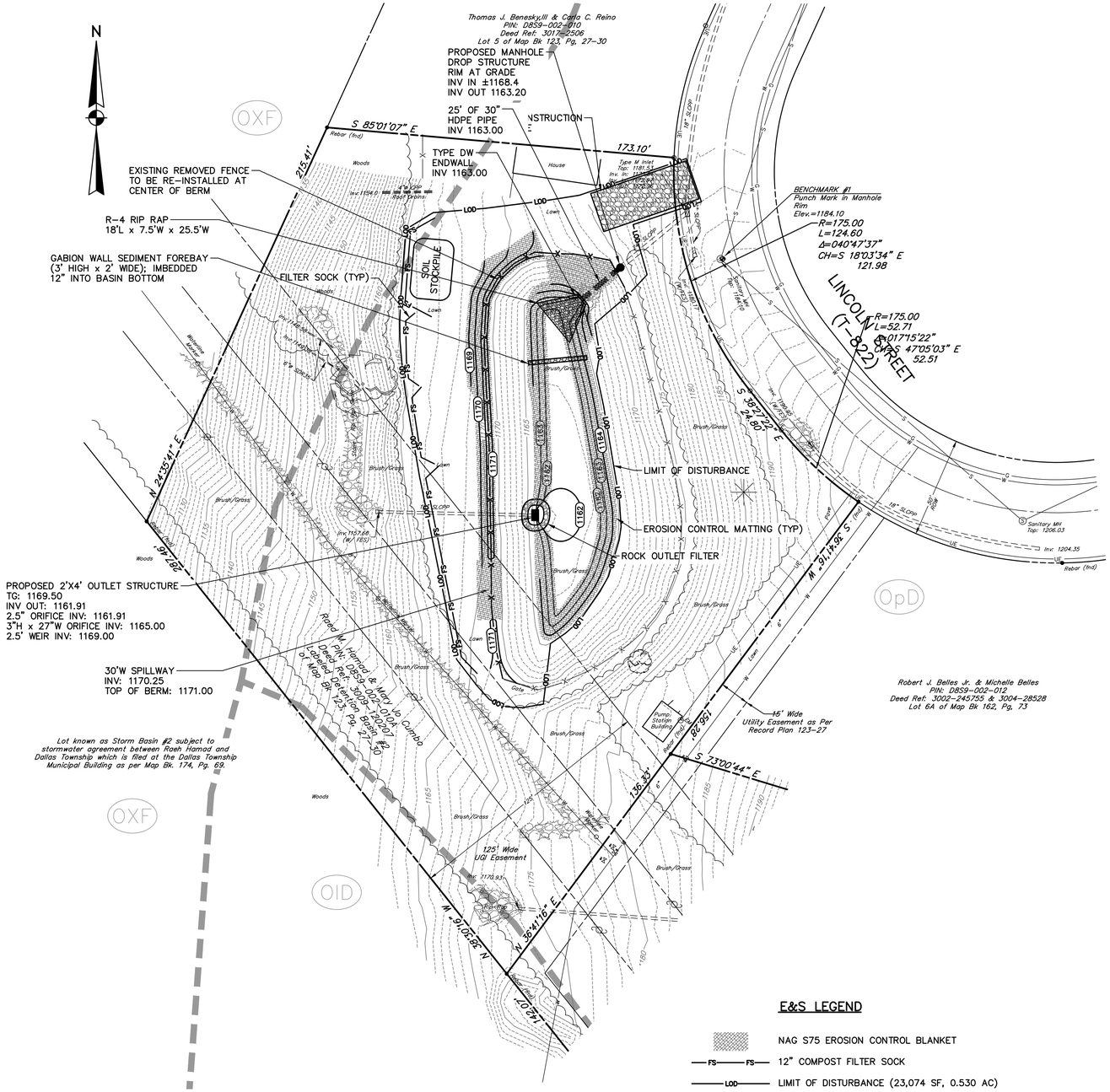
SCALE: 0 15' 30' 60' 90' — SCALE: 1" = 30'

DWG. NO.

PROJECT NO. 11138.04 | SHEET NO. 3 OF 6 | REV.

Dwg. Name: 1113804-S05 – B33 B35.DWG Plotted: 6/17/2021 10:44 AM

F73



LEGEND

- Adjoiner Property Line
- Property Line
- Right-of-Way Line
- Centerline
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- X 391.0 Spot Elevation
- Curb Line
- Edge of Pavement (E.O.P.)
- Gas Line
- Sanitary Sewer Line
- Sanitary Force Main
- Water Line
- Storm Drainage Piping
- Fence
- Sign
- Light Pole (LP)
- DS Down Spout (DS)
- Bollard
- Deciduous Trees
- Coniferous Tree
- Shrub
- Soils Boundary Line

E&S LEGEND

- NAG S75 EROSION CONTROL BLANKET
- FS FS 12" COMPOST FILTER SOCK
- LOD LIMIT OF DISTURBANCE (23,074 SF, 0.530 AC)
- ROCK CONSTRUCTION ENTRANCE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: BLE	CHECKED:
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
6/17/21

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CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
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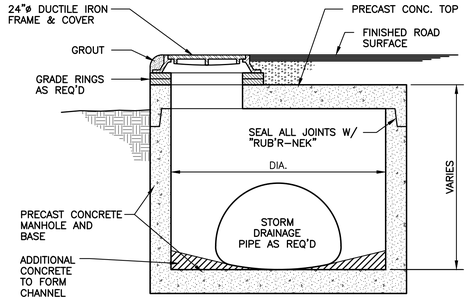
STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENTATION CONTROL PLAN

SCALE		DWG. NO.
PROJECT NO. 11138.04	SHEET NO. 4 OF 6	REV.

Dwg. Name: 1113804-S05 - B33 B35.DWG Plotted: 6/17/2021 10:44 AM

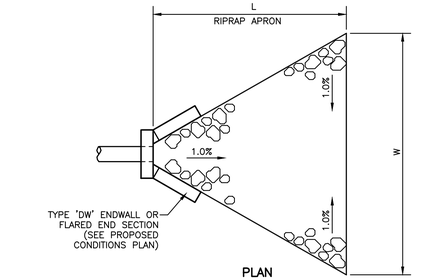


SECTION

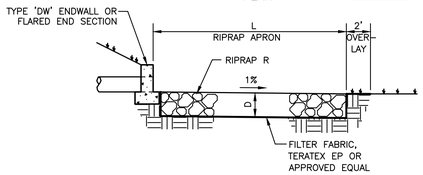
STORM DRAINAGE MANHOLE

NO SCALE

STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
30" HDPE	18	25.5	R-4	18	30



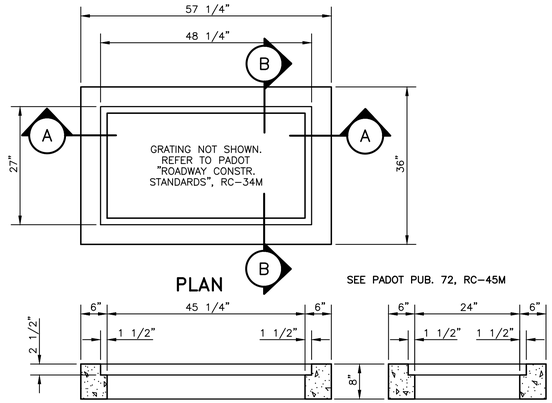
PLAN



SECTION

RIP-RAP OUTLET PROTECTION DETAIL

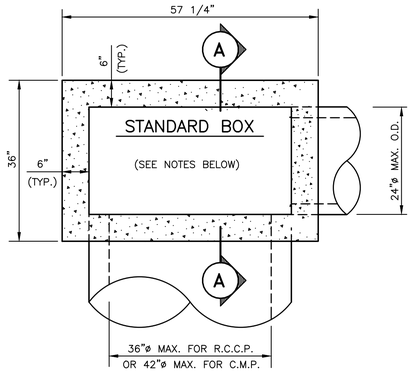
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SECTION A-A SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

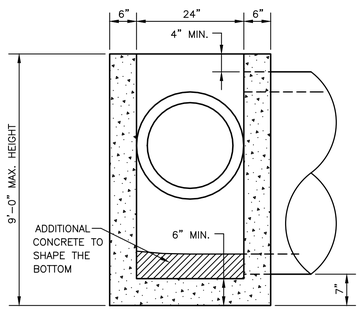
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

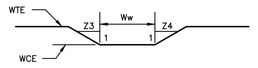
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SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

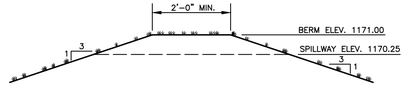


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1171.00	1170.25	30	NAG S75

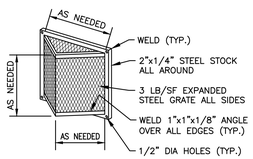
SEDIMENT BASIN EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: BLE	CHECKED:
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084973
6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.04	5 OF 6	

F75

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 10:44 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

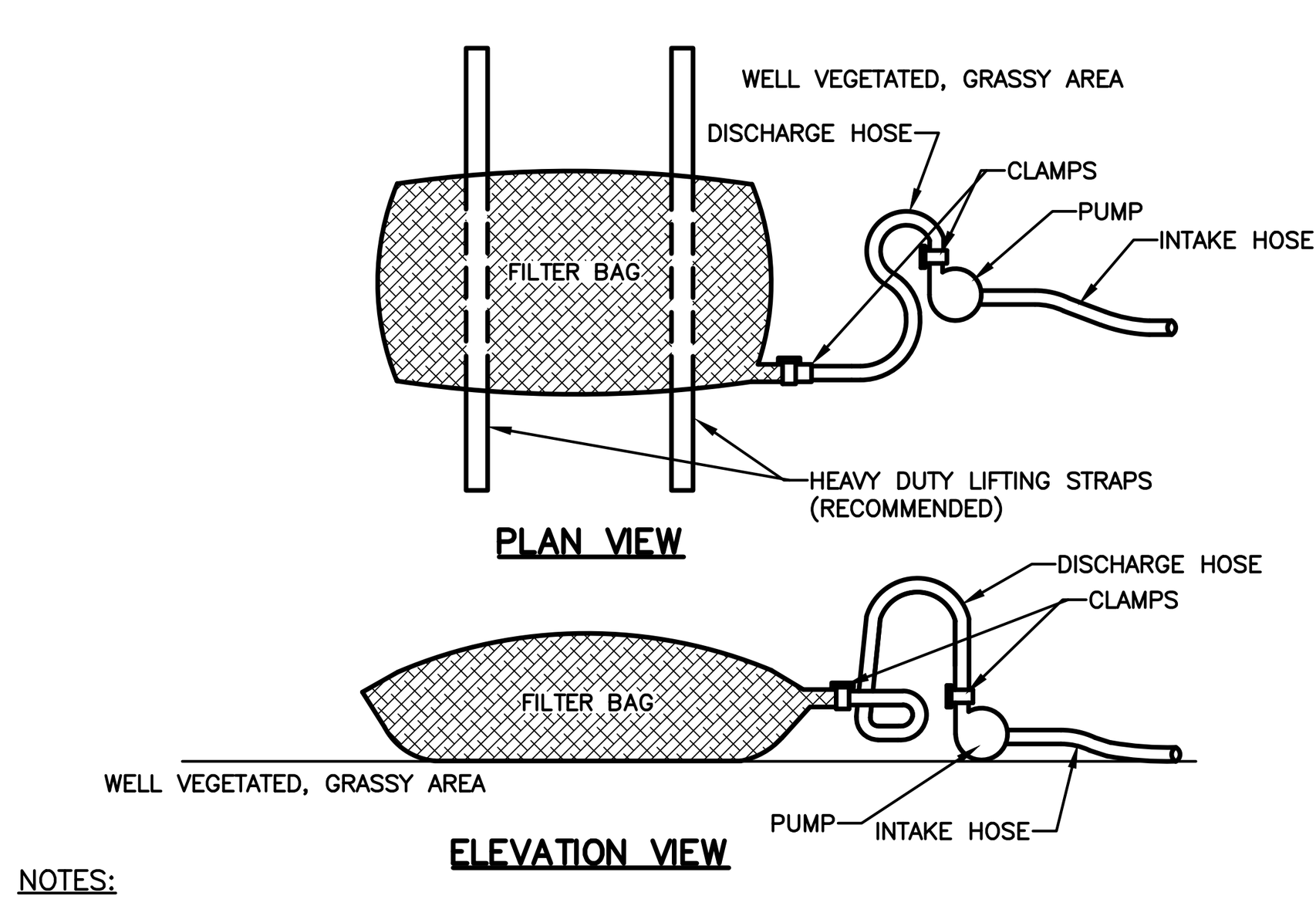
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON–SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO–TEXTILES AND OTHER EROSION–CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI–GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS–SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER–EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS–BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B33 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY–FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

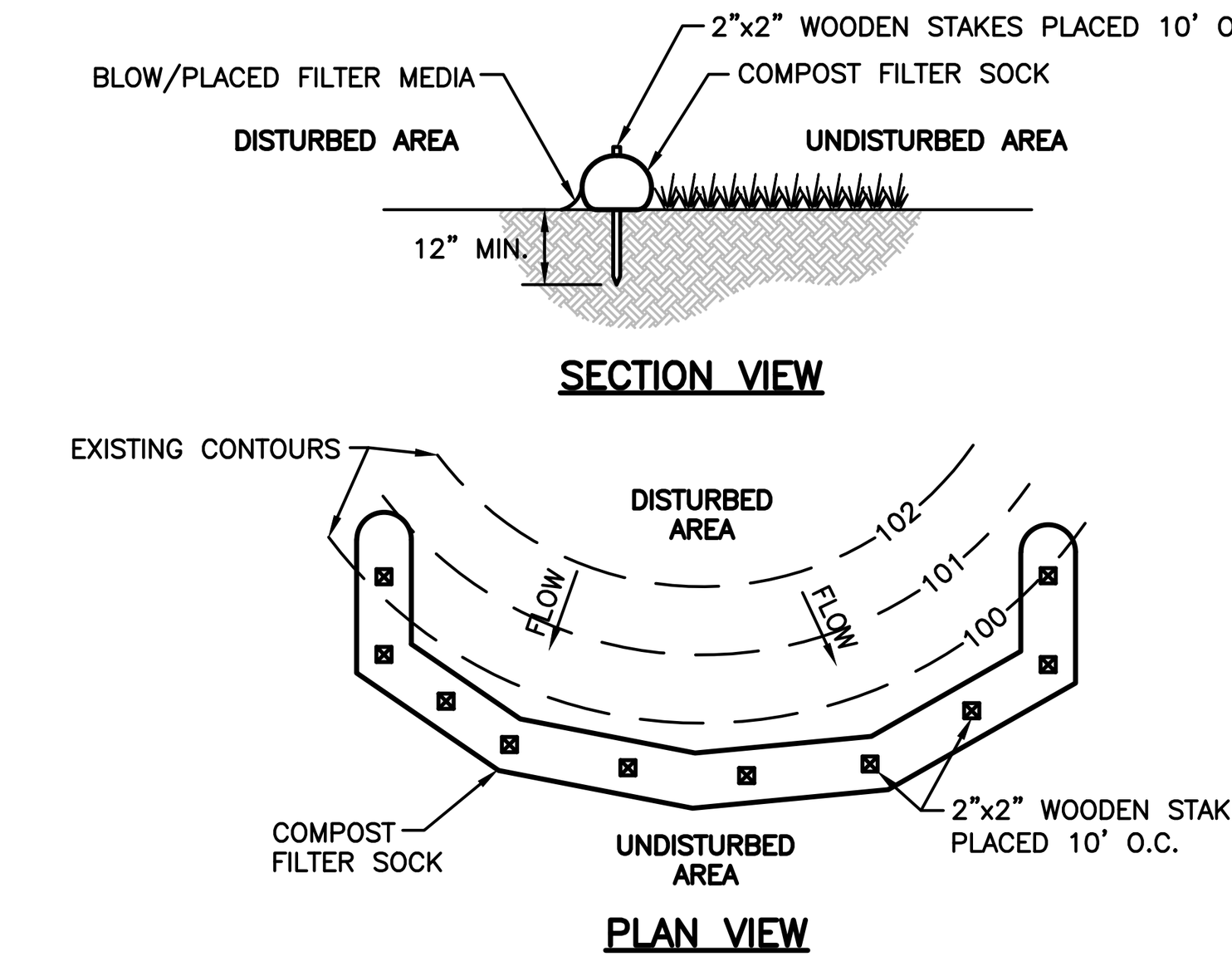
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

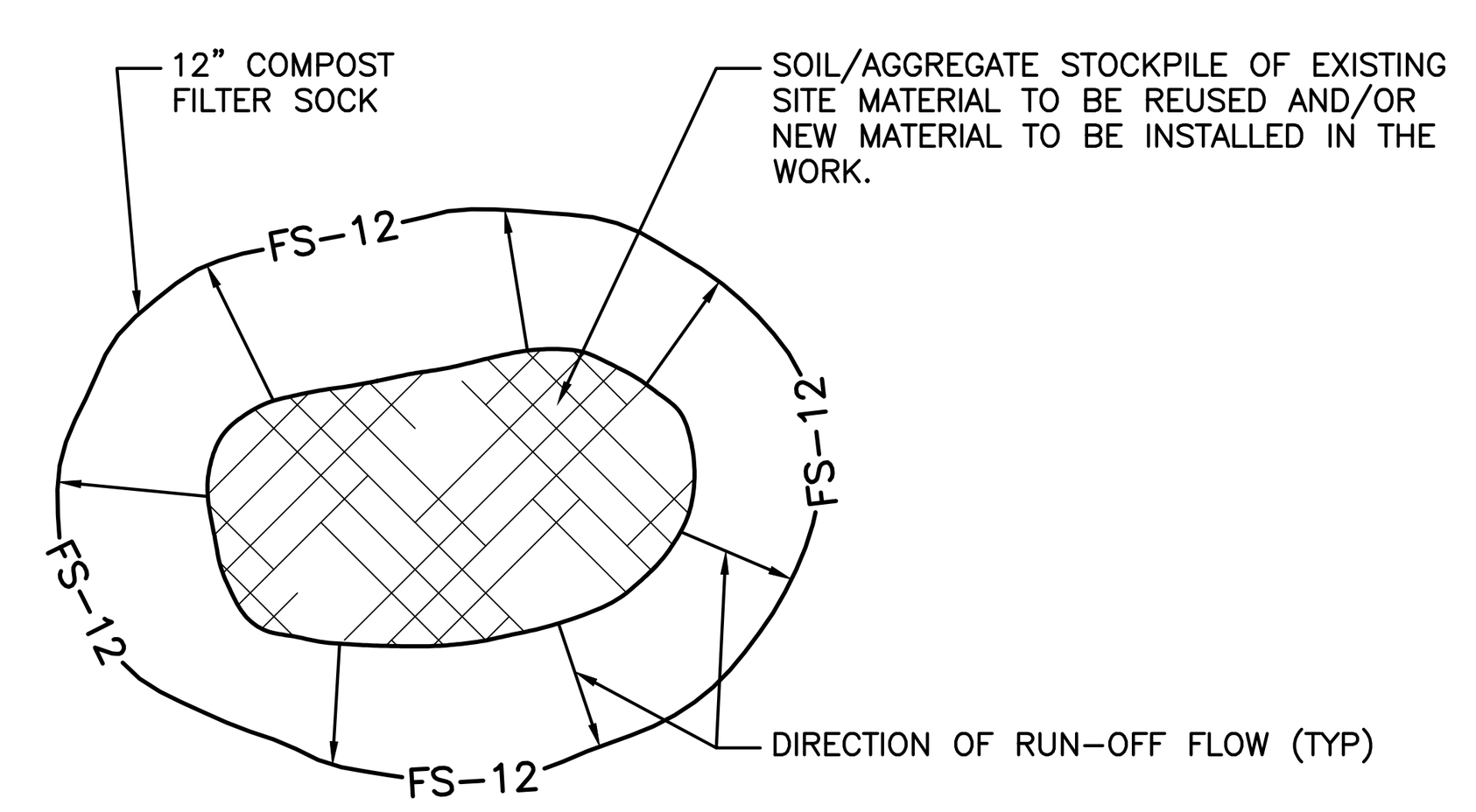


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

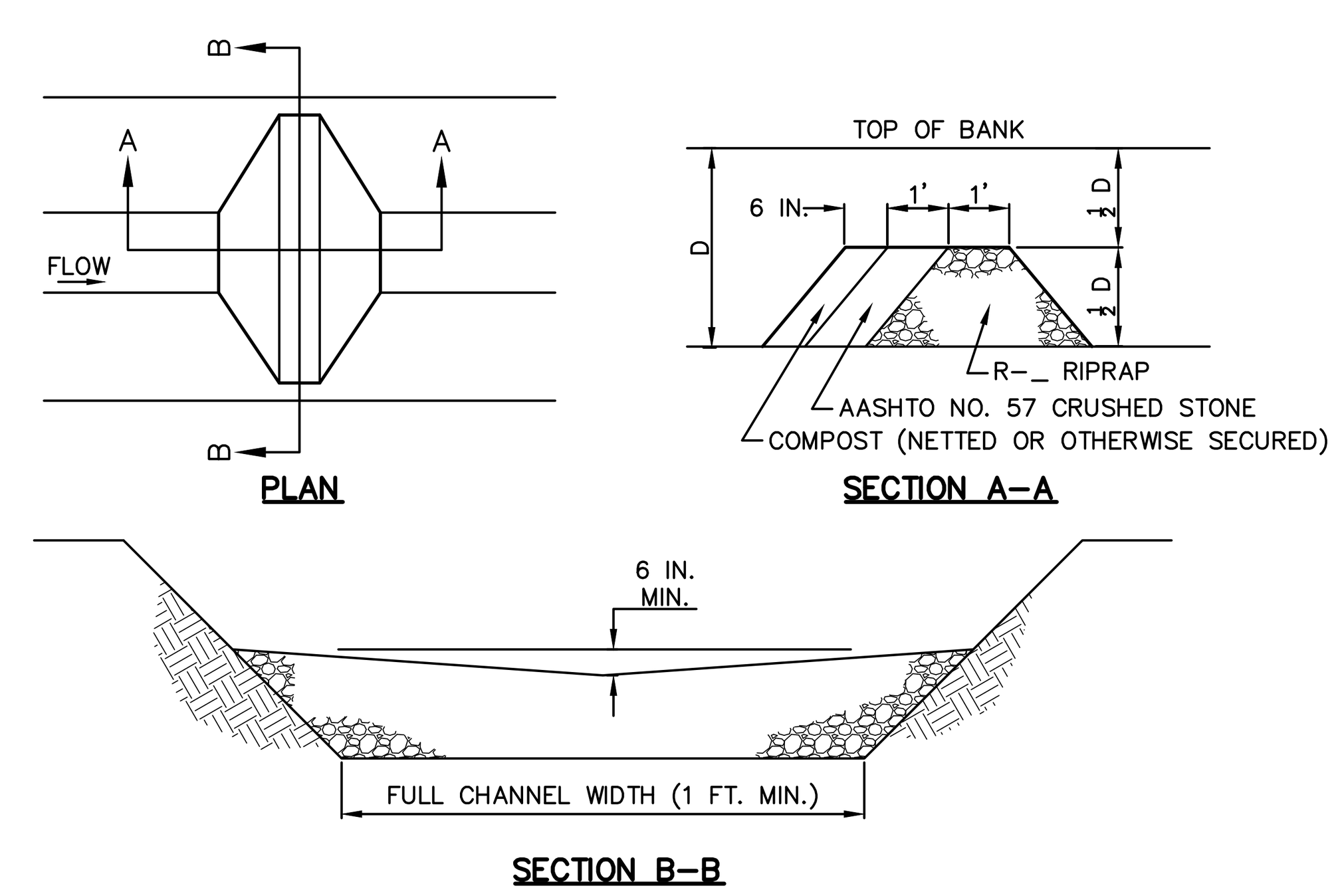
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE–EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R–_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R–4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R–3
NOT APPLICABLE FOR D < 2 FT.

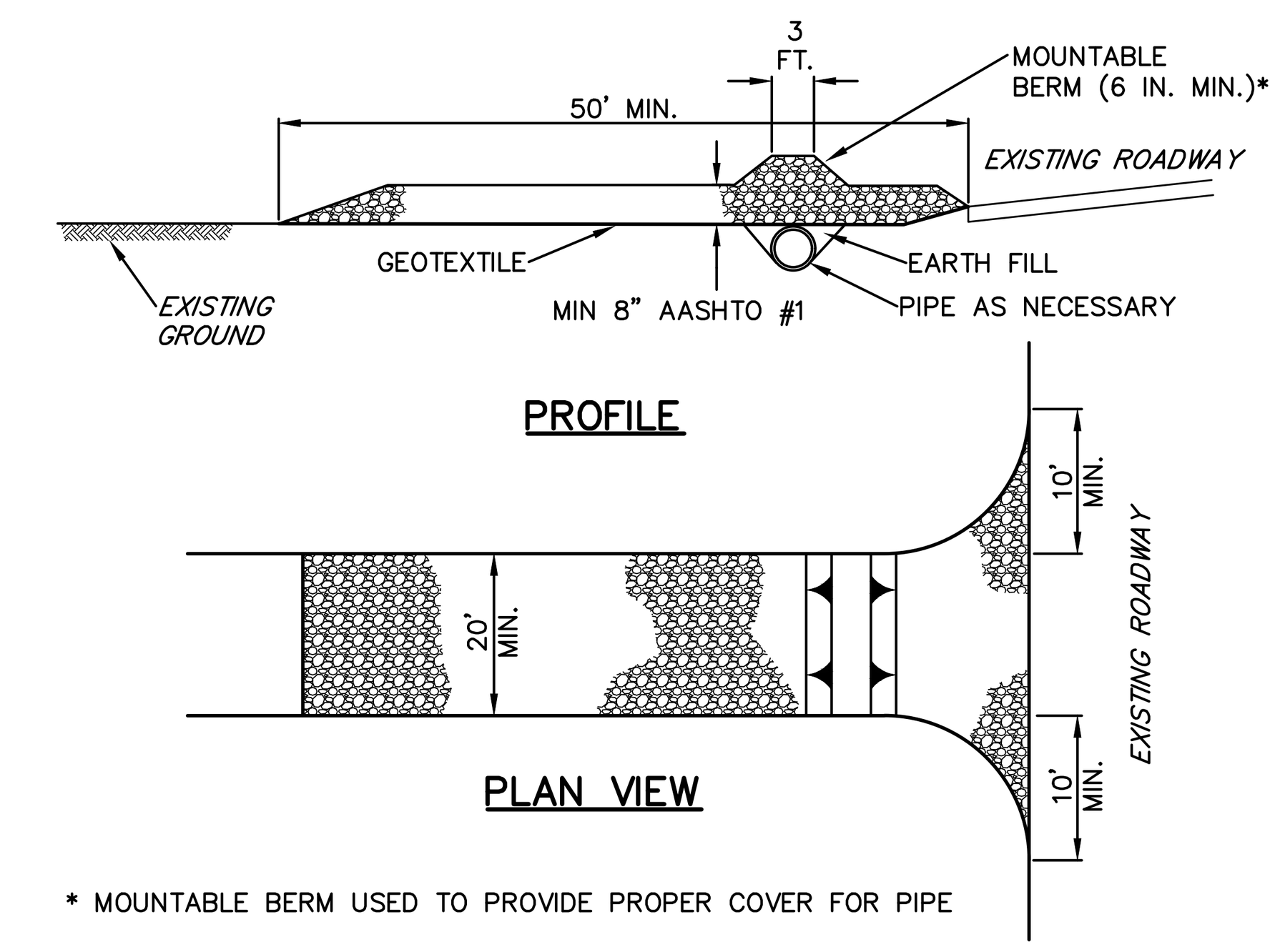
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE

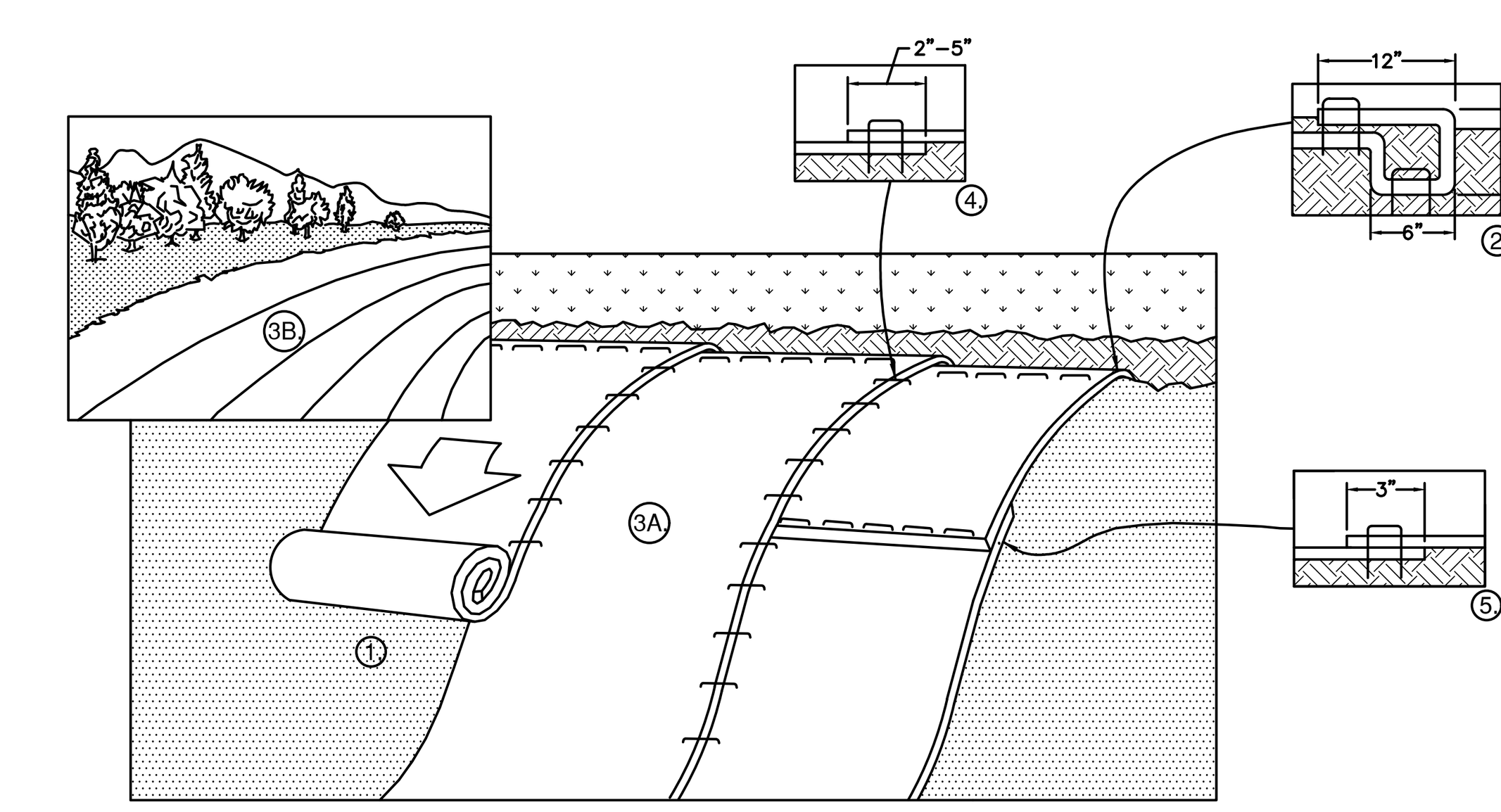
APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10–10–10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX–183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL–GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10–10–20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE

   1.2. TEMPORARY SEEDING
   10–10–10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
BLE	
DATE: APRIL 2021	SURVEY DATE: JANUARY 2021
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B33
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.04
SHEET NO.: 6 OF 6
REV.

F76

Dwg. Name: 1113804–D01.DWG Plotted: 6/17/2021 10:44 AM

ATTACHMENT F: BMP B34 Plans

Dallas Area Municipal Authority

BMP B34 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
306,416	96,412	210,004	7.03	2.21	4.82	31.46	68.54

B34

Channel flow:
l=425'
s=1.2%
n=.030
a=1.57
W_p=3.14

SCF:
l=550'
s=6.20%
unpaved

Sheet flow (2 sections):
l=85'
s=4%
n=0.24

l=15'
s=4%
n=.011

0 50 100 200 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B34

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/27/21 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211171543

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 8-1-1 STOP CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: WILLIAM_MAYS@CABLE.COMCAST.COM

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

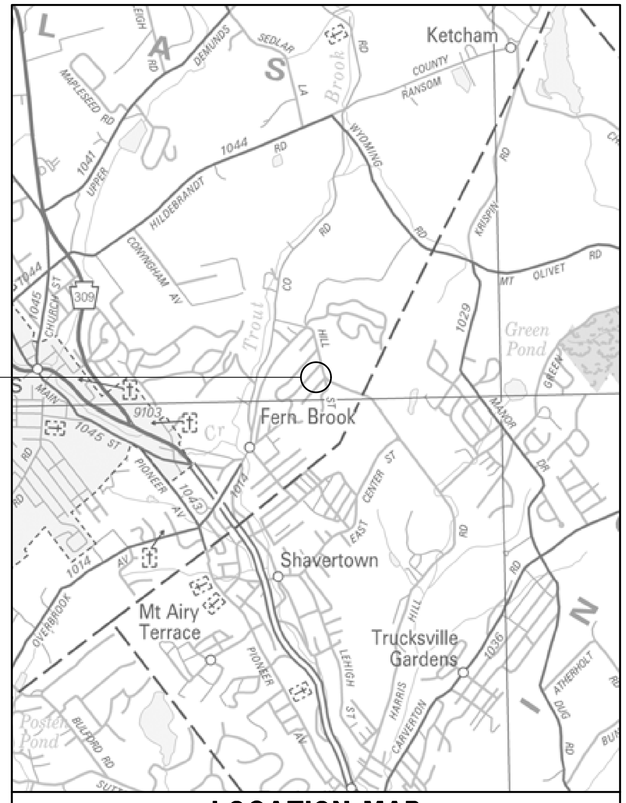
COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: JUSTIN.ADAMS@WILLIAMS.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

COMPANY: AQUA PENNSYLVANIA
ADDRESS: 1 AQUA WAY
WHITE HAVEN, PA. 18661
CONTACT: JOSHUA SHOFF
EMAIL: JPSHOFF@AQUAAMERICA.COM

PROJECT LOCATION



LOCATION MAP

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	DECEMBER 2020
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J. BINGHAM ENGINEER PE084973
6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

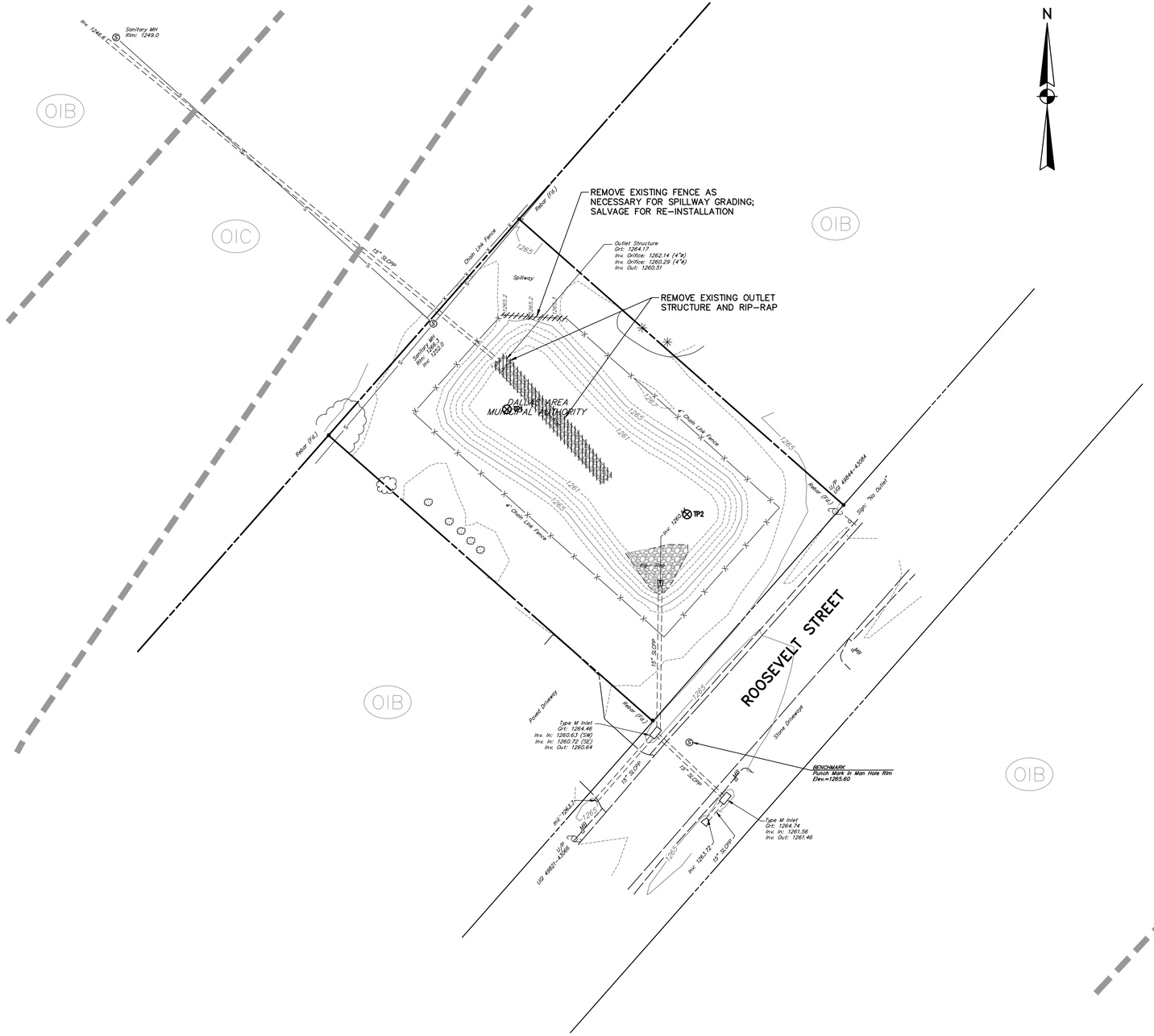
TITLE
TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.04	1 OF 6	

F79

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 11:00 AM



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- FEATURES TO BE DEMOLISHED
- TP TEST PIT LOCATION

SOILS

OIB – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 3 TO 8 PERCENT SLOPES

OIC – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 8 TO 15 PERCENT SLOPES

WIB – WELLSBORO CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on December 7, 2020. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3702, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: Punch Mark on Rim of Storm Man Hole, see plan.
   Elevation: 1265.60
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE DECEMBER 2020
	FIELD BOOK WEBER

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084923
6/17/21

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B34
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

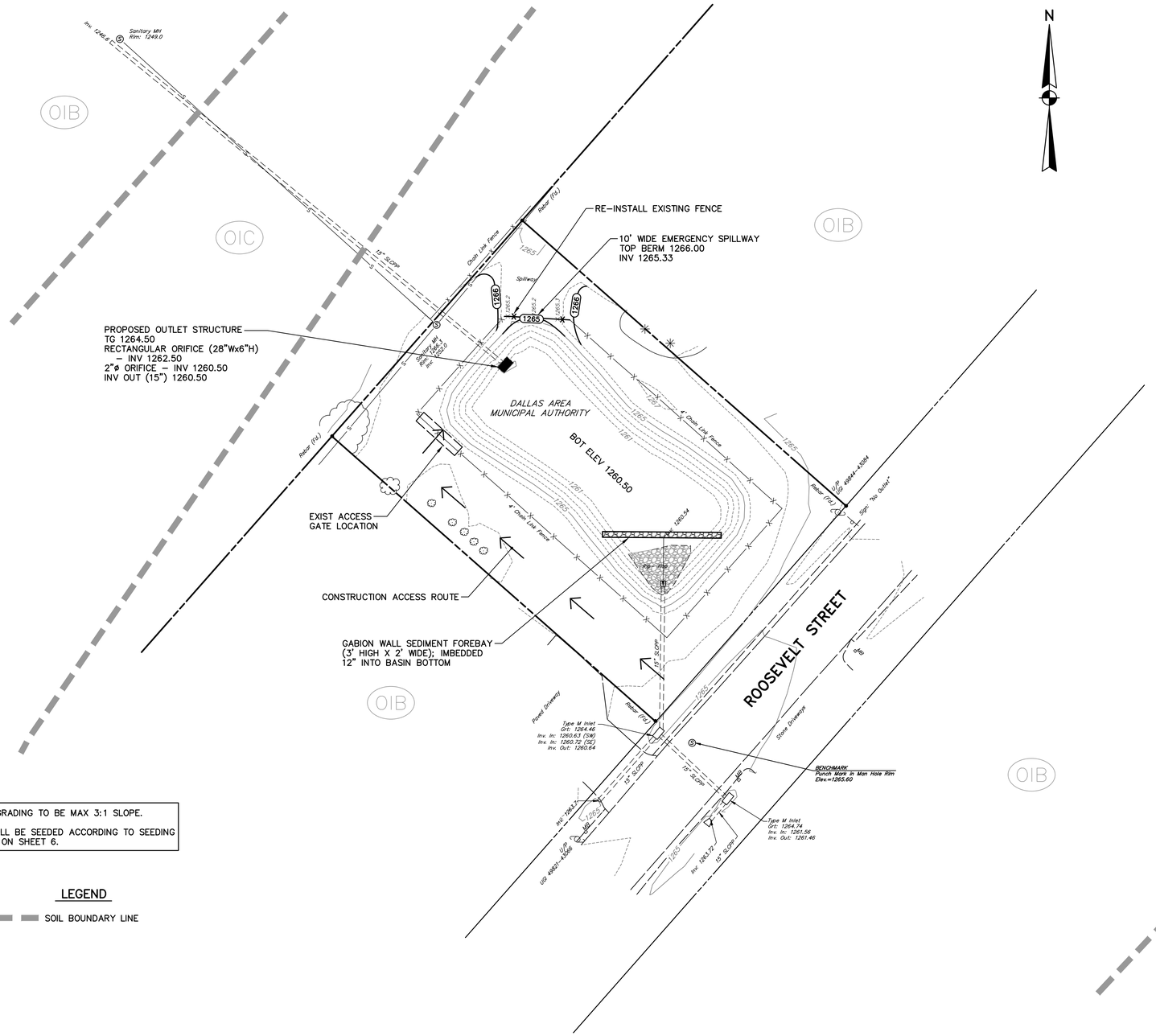
DWG. NO. F80

PROJECT NO. 11138.04

SHEET NO. 2 OF 6

REV.

Dwg. Name: 1113804-S02 – B34.DWG Plotted: 6/17/2021 11:00 AM

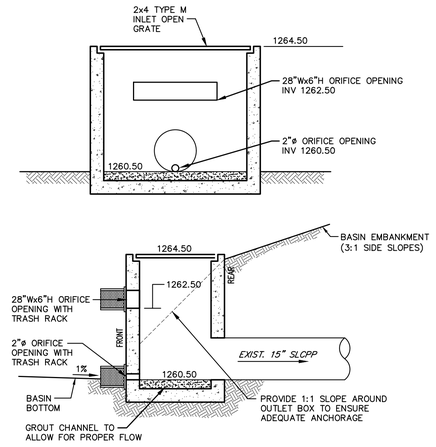


ALL NEW GRADING TO BE MAX 3:1 SLOPE.

BASIN SHALL BE SEEDED ACCORDING TO SEEDING SCHEDULE ON SHEET 6.

LEGEND

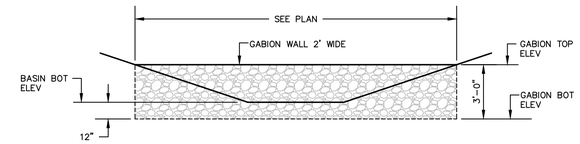
SOIL BOUNDARY LINE



NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



GABION FOREBAY DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
NO	REVISION	DATE	BY	APP.

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RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE DECEMBER 2020
	FIELD BOOK WEBER

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Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS

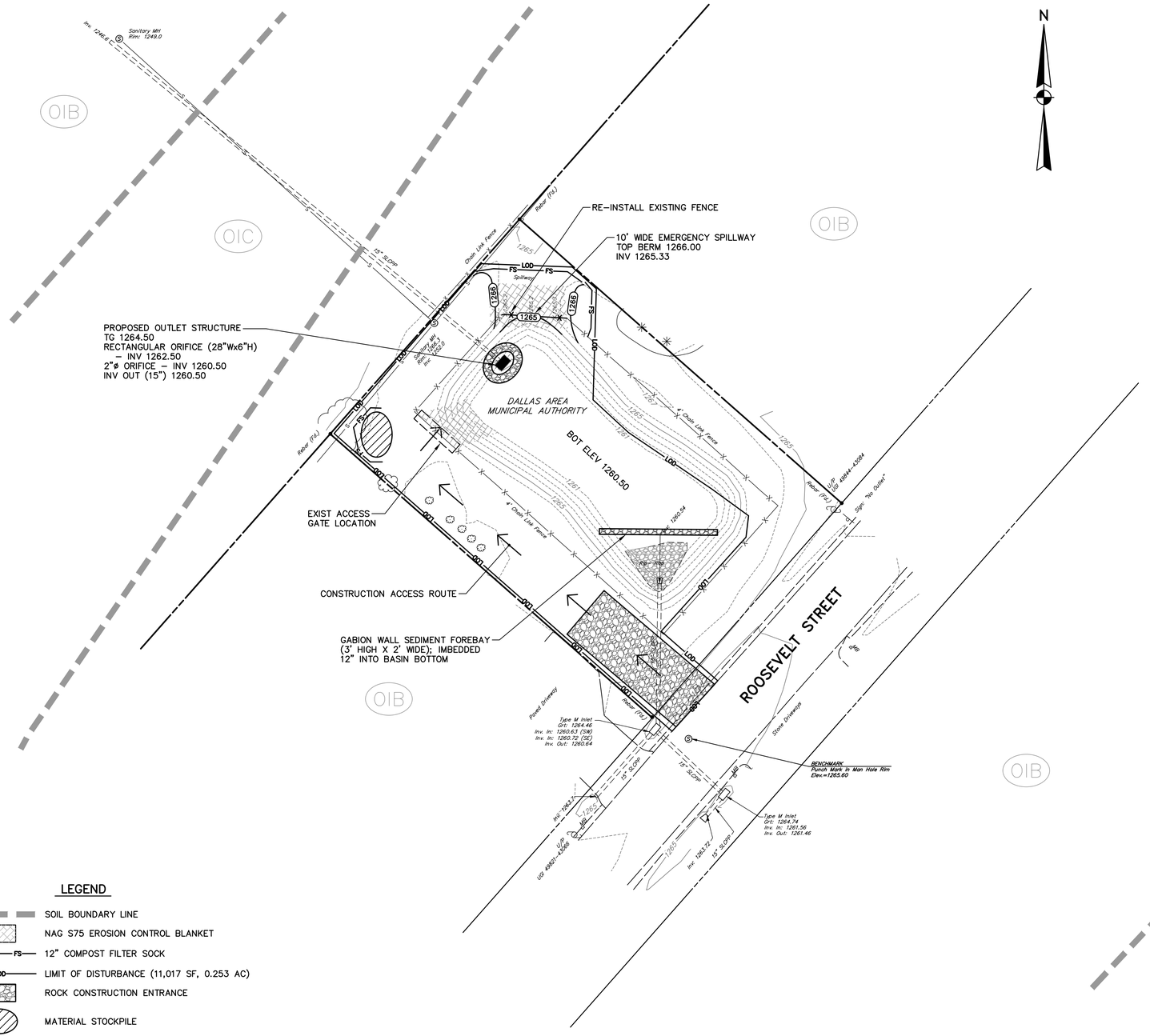
SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.04	3 OF 6	

F81

Dwg. Name: 1113804-S02 – B34.DWG Plotted: 6/17/2021 11:00 AM



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS—FS 12" COMPOST FILTER SOCK
- LOD LIMIT OF DISTURBANCE (11,017 SF, 0.253 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R–4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE: APRIL 2021	SURVEY DATE: DECEMBER 2020
	FIELD BOOK: WEBER

SEAL

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REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
6/17/21

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DALLAS TOWNSHIP, LUZERNE COUNTY, PA

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108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

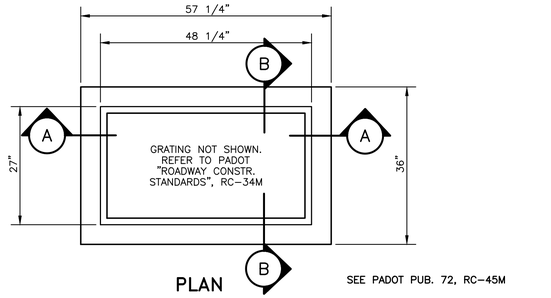
DWG. NO. F82

PROJECT NO. 11138.04

SHEET NO. 4 OF 6

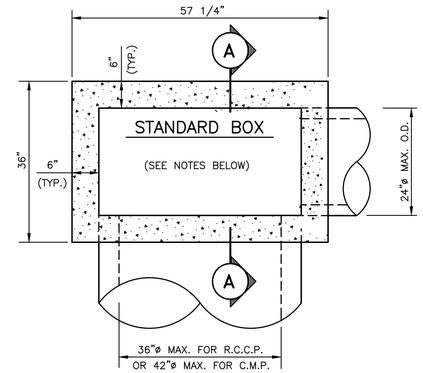
REV.

Dwg. Name: 1113804–S02 – B34.DWG Plotted: 6/17/2021 11:00 AM



TYPE M CONCRETE INLET TOP DETAIL

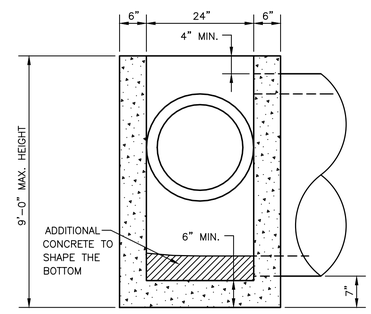
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

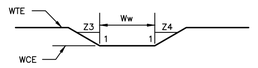
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

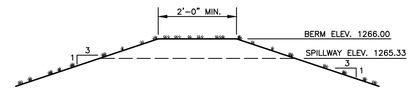


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1266.00	1265.33	10	NAG S75

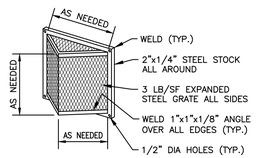
BASIN EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

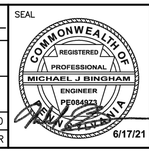
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MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: DECEMBER 2020
	FIELD BOOK: WEBER

SEAL



SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B34
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.04	5 OF 6	

F83

Dwg. Name: 1113804-D01.DWG Plotted: 6/17/2021 11:00 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

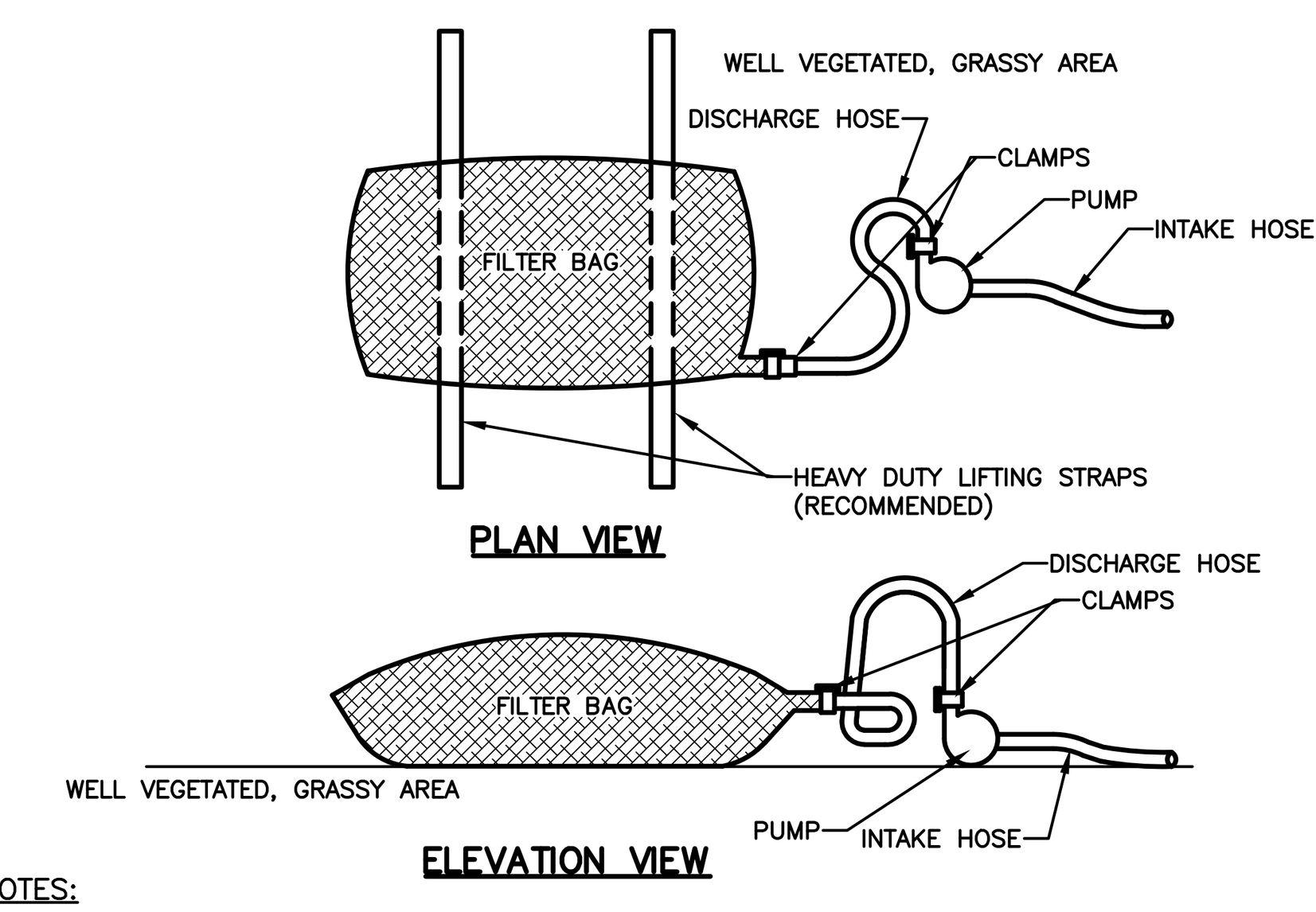
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON–SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO–TEXTILES AND OTHER EROSION–CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI–GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS–SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER–EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS–BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B34 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY–FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

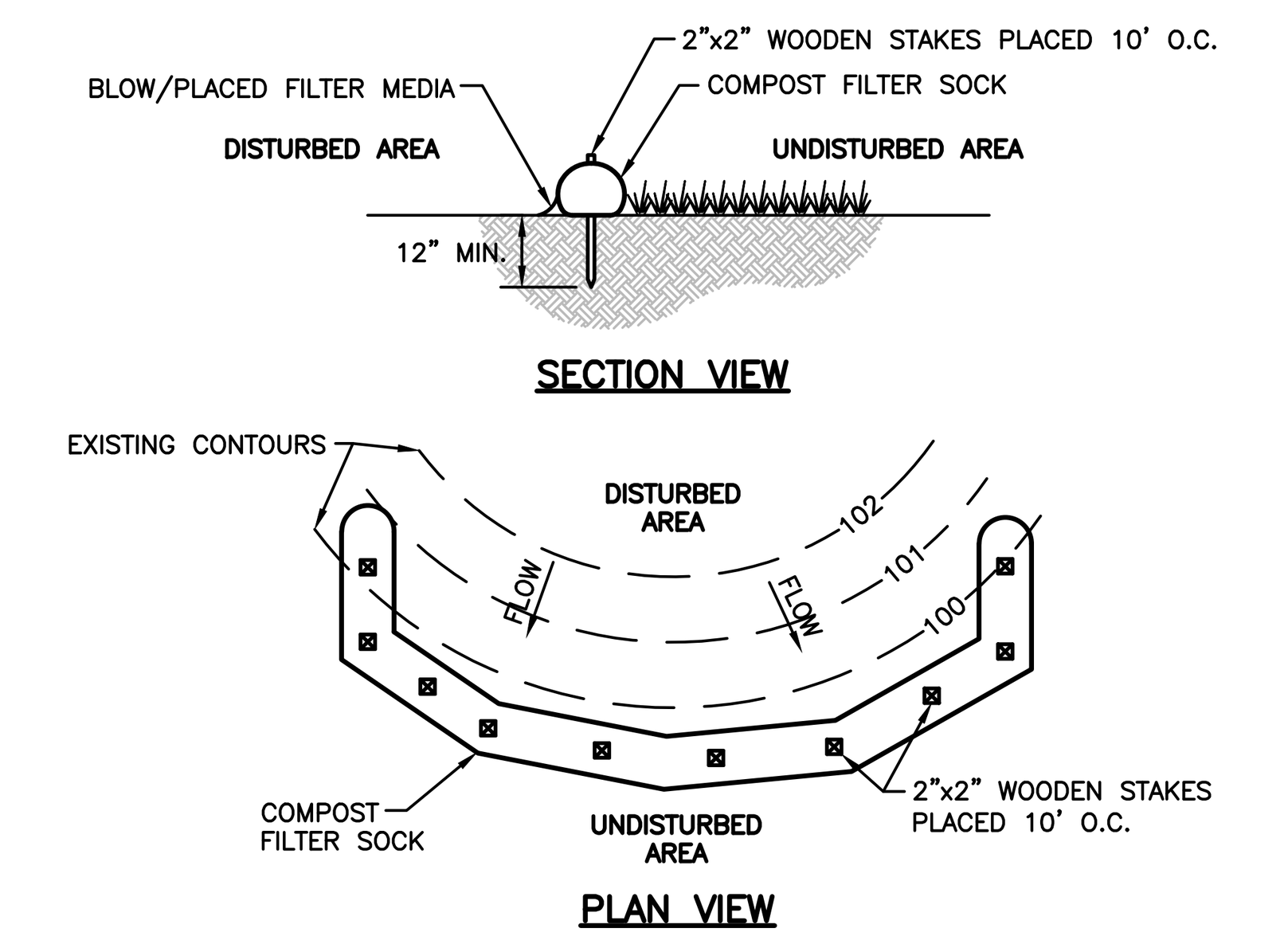
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

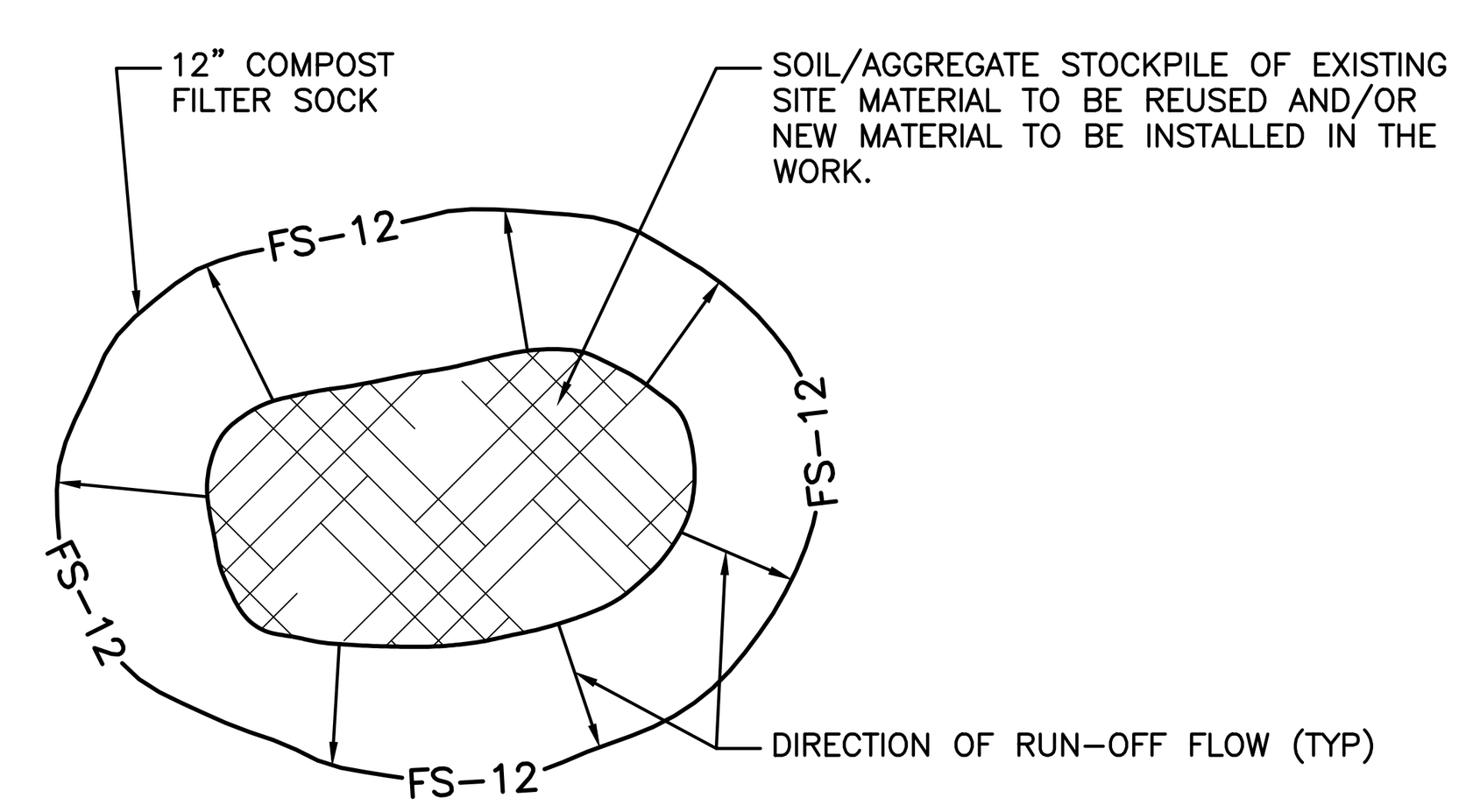


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

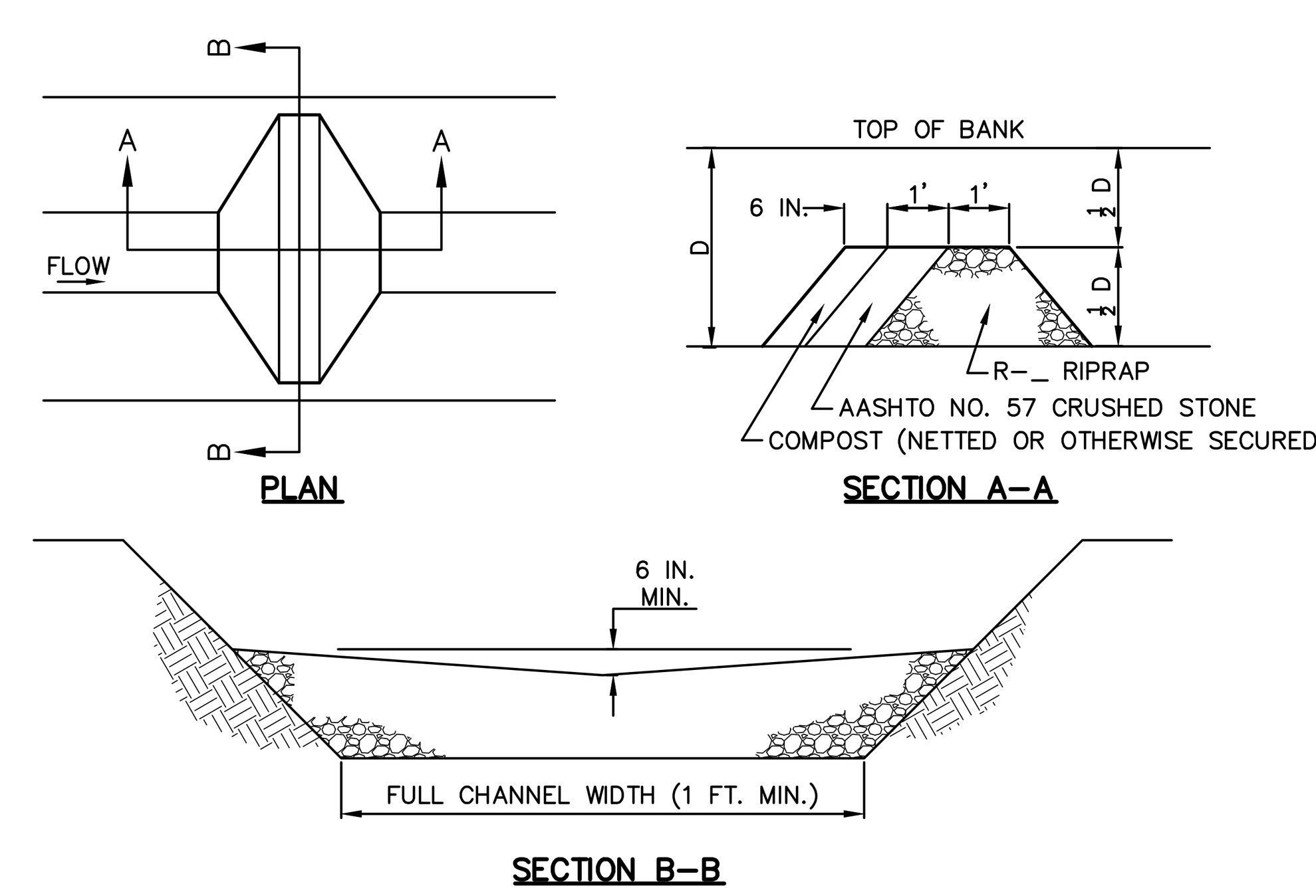
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE–EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R–_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R–4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R–3
NOT APPLICABLE FOR D < 2 FT.

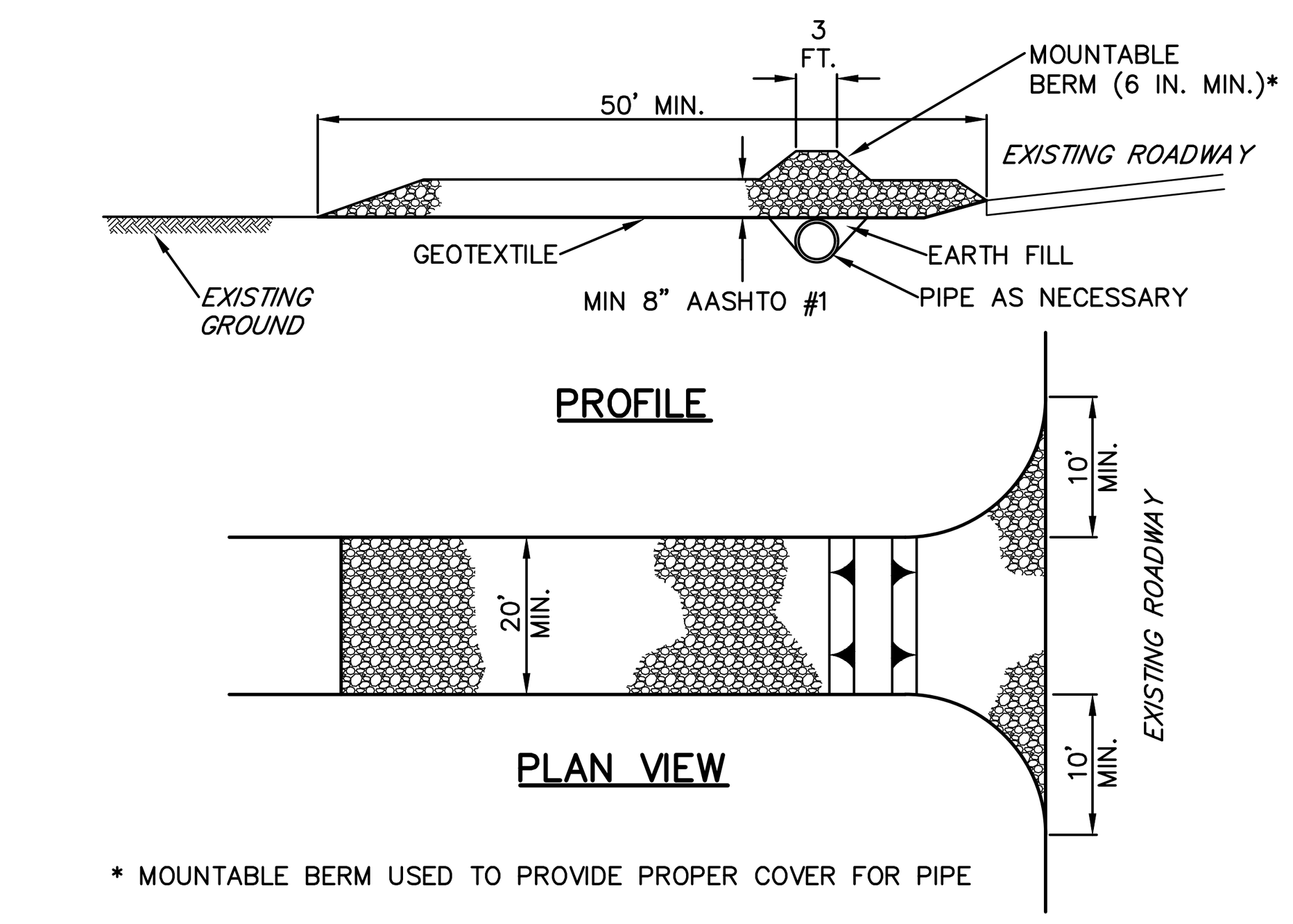
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

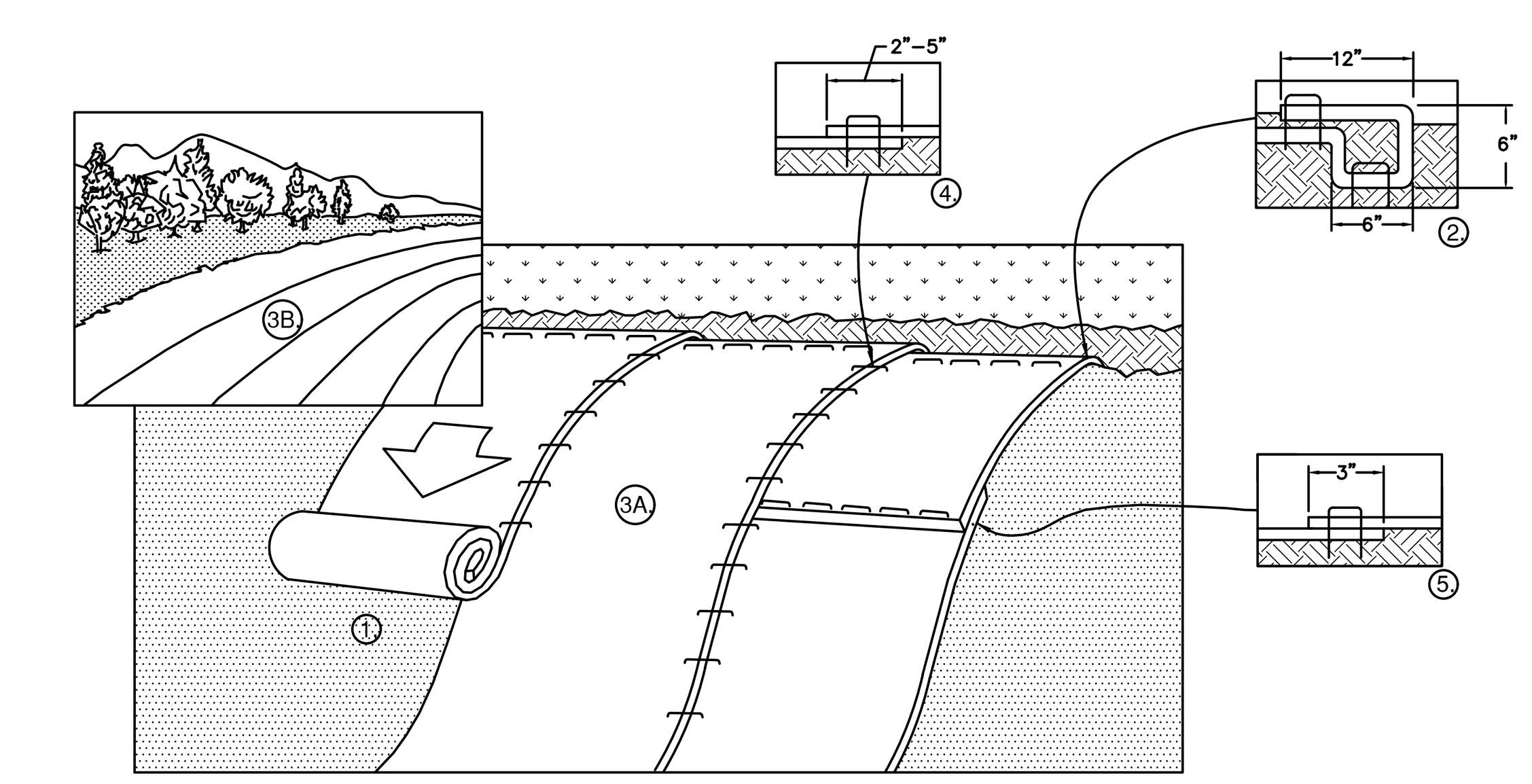
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10–10–10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE RED FESCUE KENTUCKY BLUEGRASS	41 LBS./AC 60 LBS./AC 102 LBS./AC	6 TONS	97% 97% 97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
NATIVE DETENTION AREA MIX	ERNMX–183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL–GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10–10–20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10–10–10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU — CHECKED:
DRAWN: SAM — CHECKED:
DATE: APRIL 2021 — SURVEY DATE: DECEMBER 2020 — FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B34
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.04
SHEET NO.: 6 OF 6
REV.

F84

Dwg. Name: 1113804–D01.DWG Plotted: 6/17/2021 11:00 AM

ATTACHMENT F: BMP B35 Plans

Dallas Area Municipal Authority

BMP B35 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
262,682	57,350	205,332	6.03	1.32	4.71	21.83	78.17

B35

SCF
Pavement
s=8%
l=125'

SCF
Grass
s=4.5%
l=200'

Sheet flow
n=.24
s=4%
l=100'

Channel Flow
l=415'
n=.033
s=9.4%
W_p=3.14
a=1.57

0 75 150 300 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B35

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/29/21 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211181450

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 8-1-1 DIGI STOP CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: WILLIAM_MAYS@CABLE.COMCAST.COM

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM

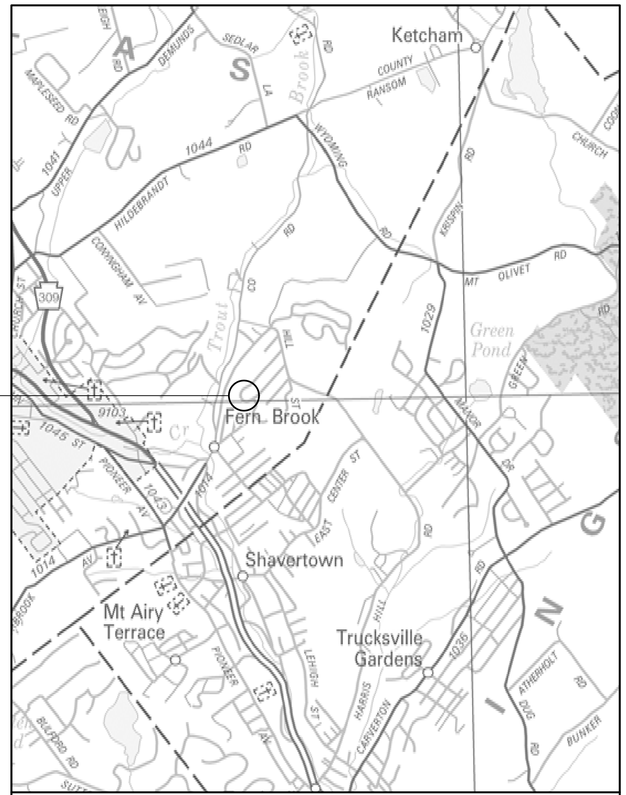
COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

PROJECT LOCATION



LOCATION MAP

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	OCTOBER 2020
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084973
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

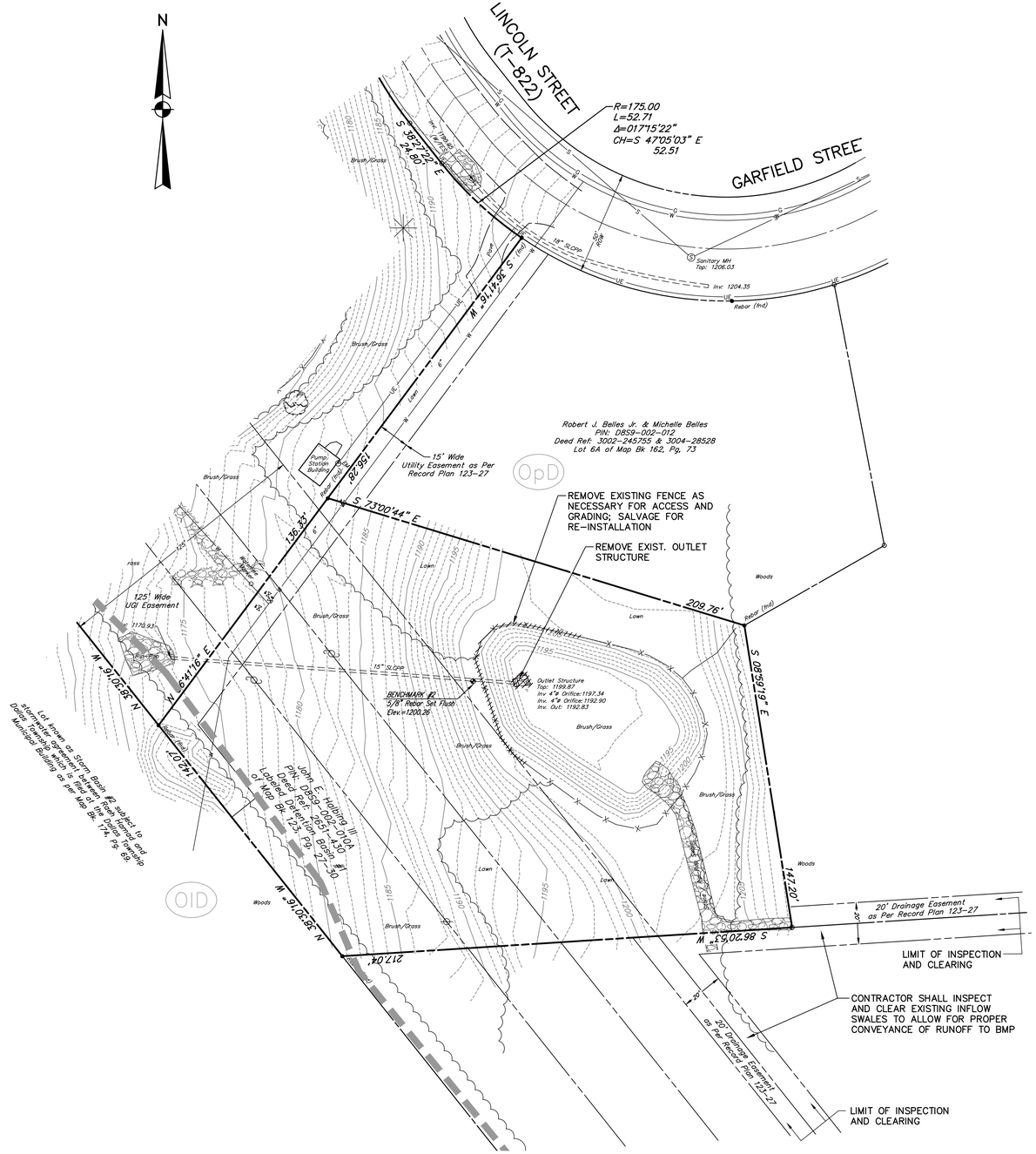
STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
TITLE SHEET

SCALE: AS SHOWN
DWG. NO.

PROJECT NO. 11138.05
SHEET NO. 1 OF 6
REV.



LEGEND

- Adjoiner Property Line
- Property Line
- Right-of-Way Line
- Centerline
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- X 391.0 Spot Elevation
- Curb Line
- Edge of Pavement (E.O.P.)
- Gas Line (Gas Valve, Gas Meter)
- Sanitary Sewer Line (Clean Out, Manhole)
- Sanitary Force Main (Manhole)
- Water Line (Water Meter, Water Valve, Fire Hydrant)
- Storm Drainage Piping (Headwall, Manhole, Inlet, Endwall, Rip Rap)
- Fence
- Sign
- Light Pole (LP)
- DS Down Spout (DS)
- Bollard
- Deciduous Trees
- Coniferous Tree
- Shrub
- Soils Boundary Line
- Features To Be Demolished

SOILS

OID – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES

OpD – OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS, 8 TO 25 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on January 20, 2021. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark #1: Punch Mark on Rim of Sanitary Sewer Manhole, see plan.
   Elevation: 1184.10
   Benchmark #2: 5/8" Rebar Set flush in berm of basin B-35, see plan.
   Elevation: 1200.26
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE OCTOBER 2020
	FIELD BOOK WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084021 2/1/22

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

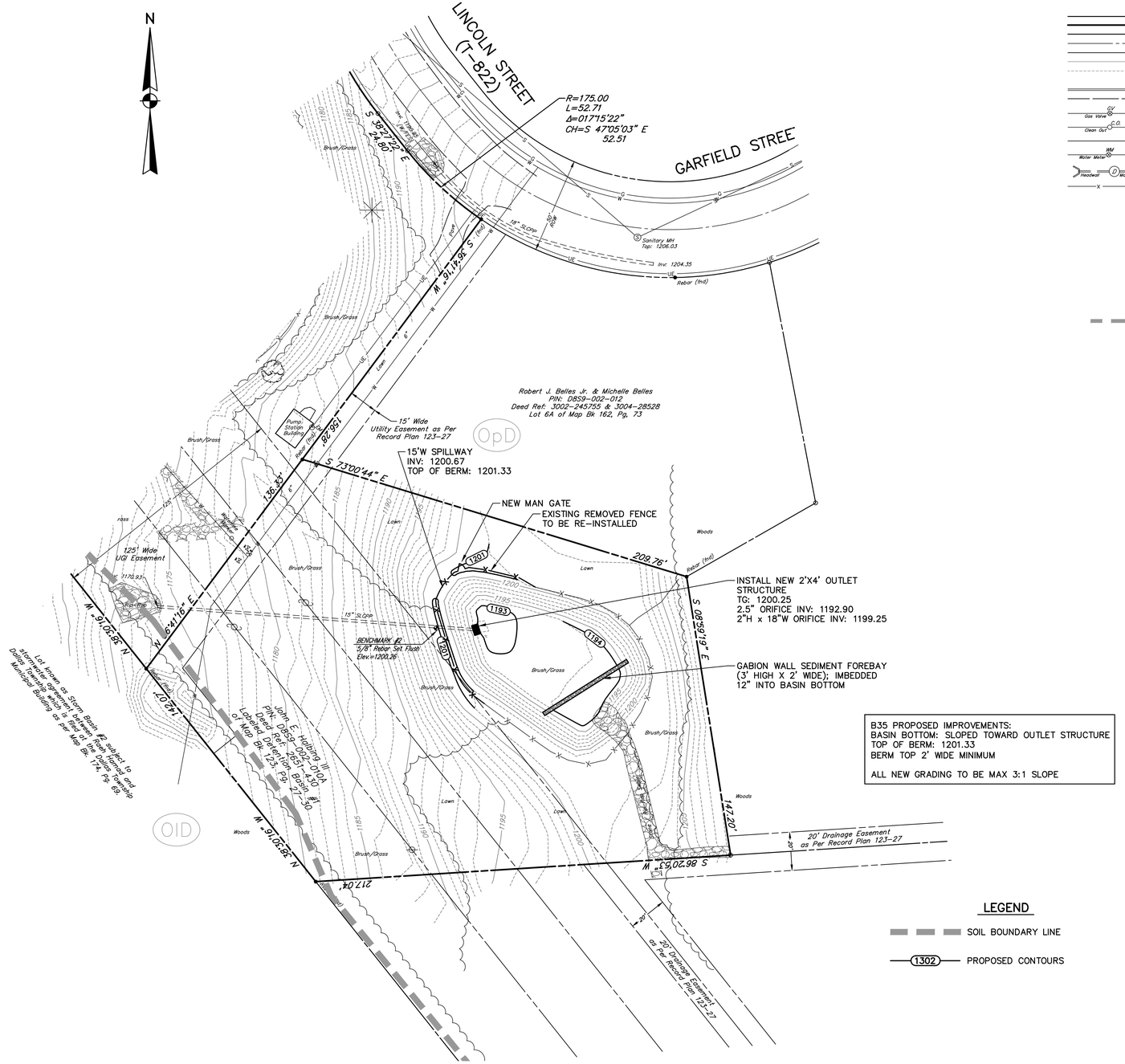
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

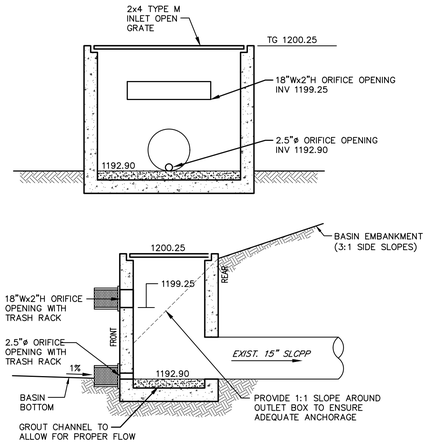
DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.05	2 OF 6	



LEGEND

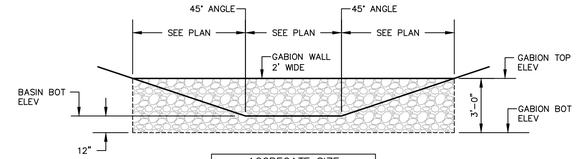
- Adjoiner Property Line
- Property Line
- Right-of-Way Line
- Centerline
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- X 391.0 Spot Elevation
- Curb Line
- Edge of Pavement (E.O.P.)
- Gas Line
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- Water Line
- Storm Drainage Piping
- Fence
- Sign
- Light Pole (LP)
- DS Down Spout (DS)
- Bollard
- Deciduous Trees
- Coniferous Tree
- Shrub
- Soils Boundary Line



NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET STRUCTURE DETAIL

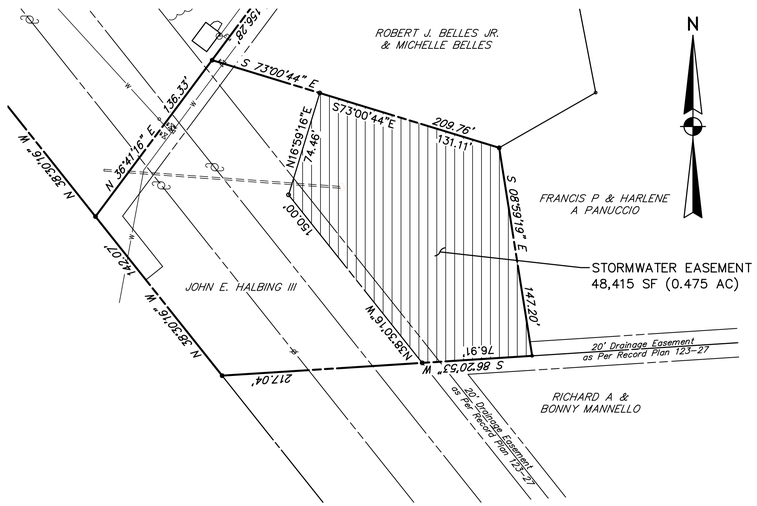
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AGGREGATE SIZE	
MINIMUM	MAXIMUM
4"	8"

GABION FOREBAY DETAIL

NO SCALE



STORMWATER EASEMENT PLAN

1" = 50'

0 25' 50' 100' 150'

SCALE: 1" = 50'

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	OCTOBER 2020
		FIELD BOOK	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084927
2/1/22

SEAL

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DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

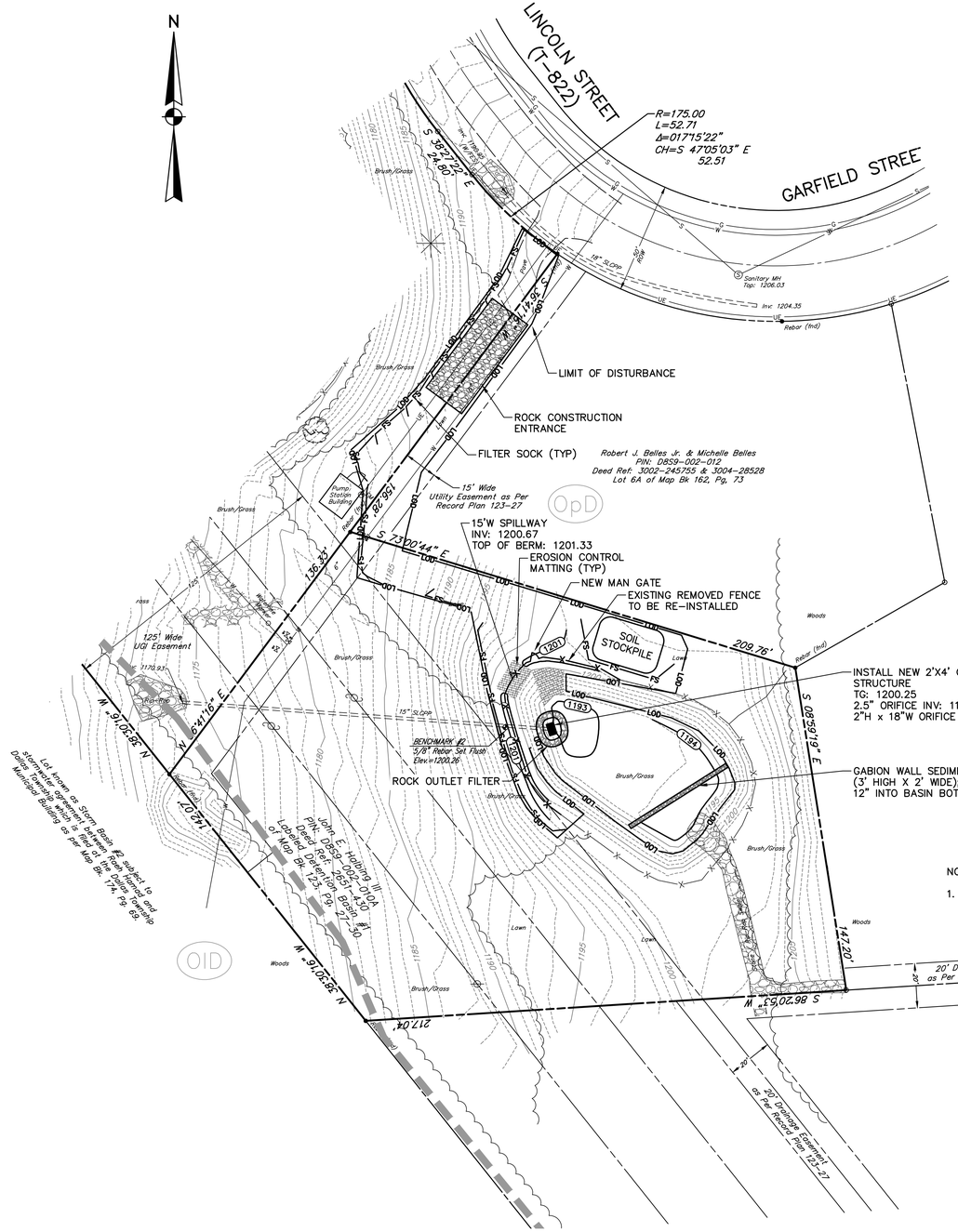
PROPOSED CONDITIONS

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.05	3 OF 6	

Dwg. Name: 1113805-S02 – B33 B35.DWG Plotted: 2/18/2022 1:21 PM



LEGEND

- Adjoiner Property Line
- Property Line
- Right-of-Way Line
- Centerline
- Easements
- 355 — Index Contour
- 352 — Intermediate Contour
- X 391.0 — Spot Elevation
- Curb Line
- Edge of Pavement (E.O.P.)
- Gas Line
- Sanitary Sewer Line
- Sanitary Force Main
- Water Line
- Storm Drainage Piping
- Fence
- Sign
- Light Pole (LP)
- Down Spout (DS)
- Bollard
- Deciduous Trees
- Coniferous Tree
- Shrub
- Soils Boundary Line

NOTE:

1. EROSION CONTROL MATTING SHALL BE INSTALLED WHEN NECESSARY – INCLUDING AREAS SHOWN ON THIS PLAN.

E&S LEGEND

- NAG S75 EROSION CONTROL BLANKET
- FS — FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (13,454 SF, 0.309 AC)
- ROCK CONSTRUCTION ENTRANCE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: OCTOBER 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084027 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

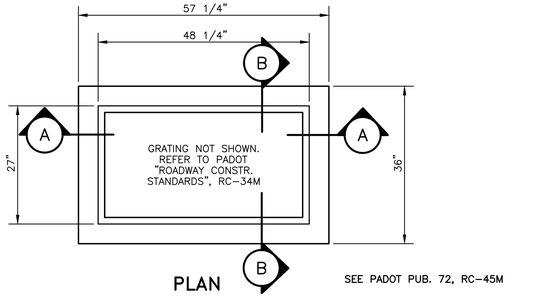
STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENTATION CONTROL PLAN

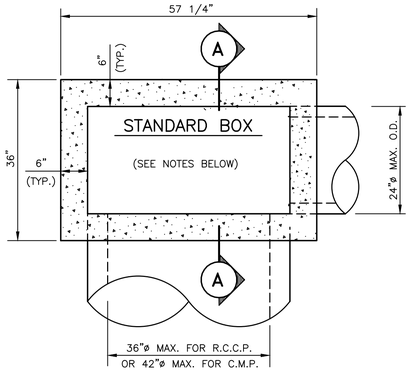
SCALE		DWG. NO.
PROJECT NO. 11138.05	SHEET NO. 4 OF 6	REV.

Dwg. Name: 1113805-S02 – B33 B35.DWG Plotted: 2/18/2022 1:22 PM



TYPE M CONCRETE INLET TOP DETAIL

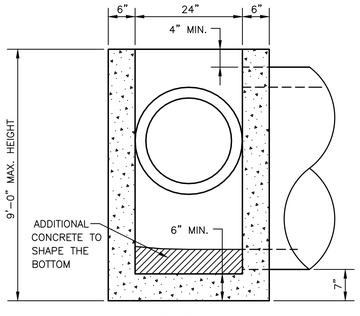
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

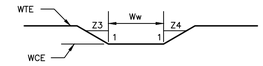
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

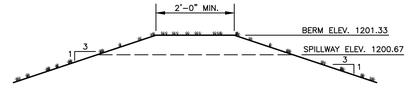


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1201.33	1200.67	15	NAG S75

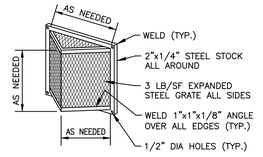
EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
APRIL 2021	OCTOBER 2020
	FIELD BOOK WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084973
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.05	5 OF 6	

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

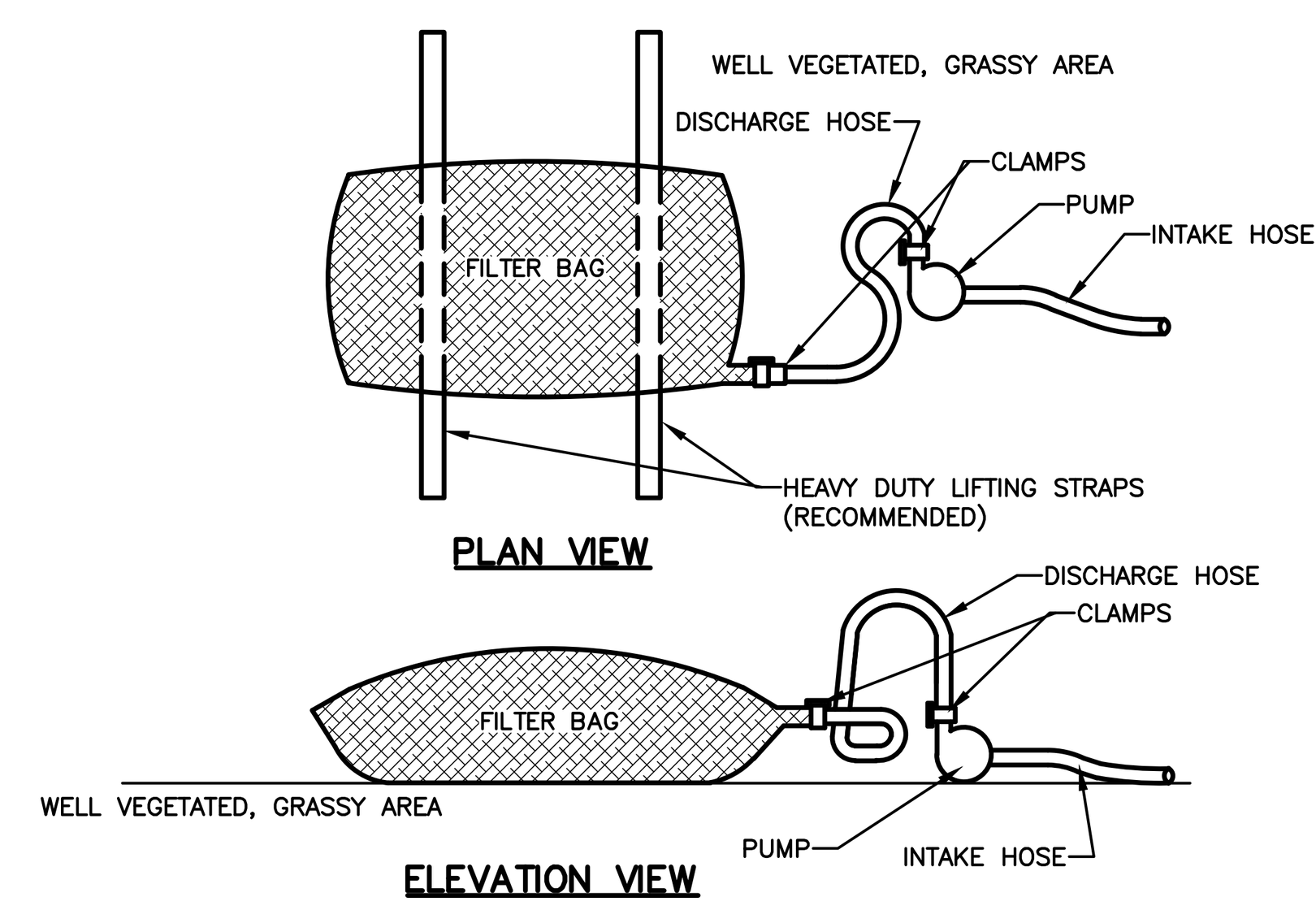
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B35 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

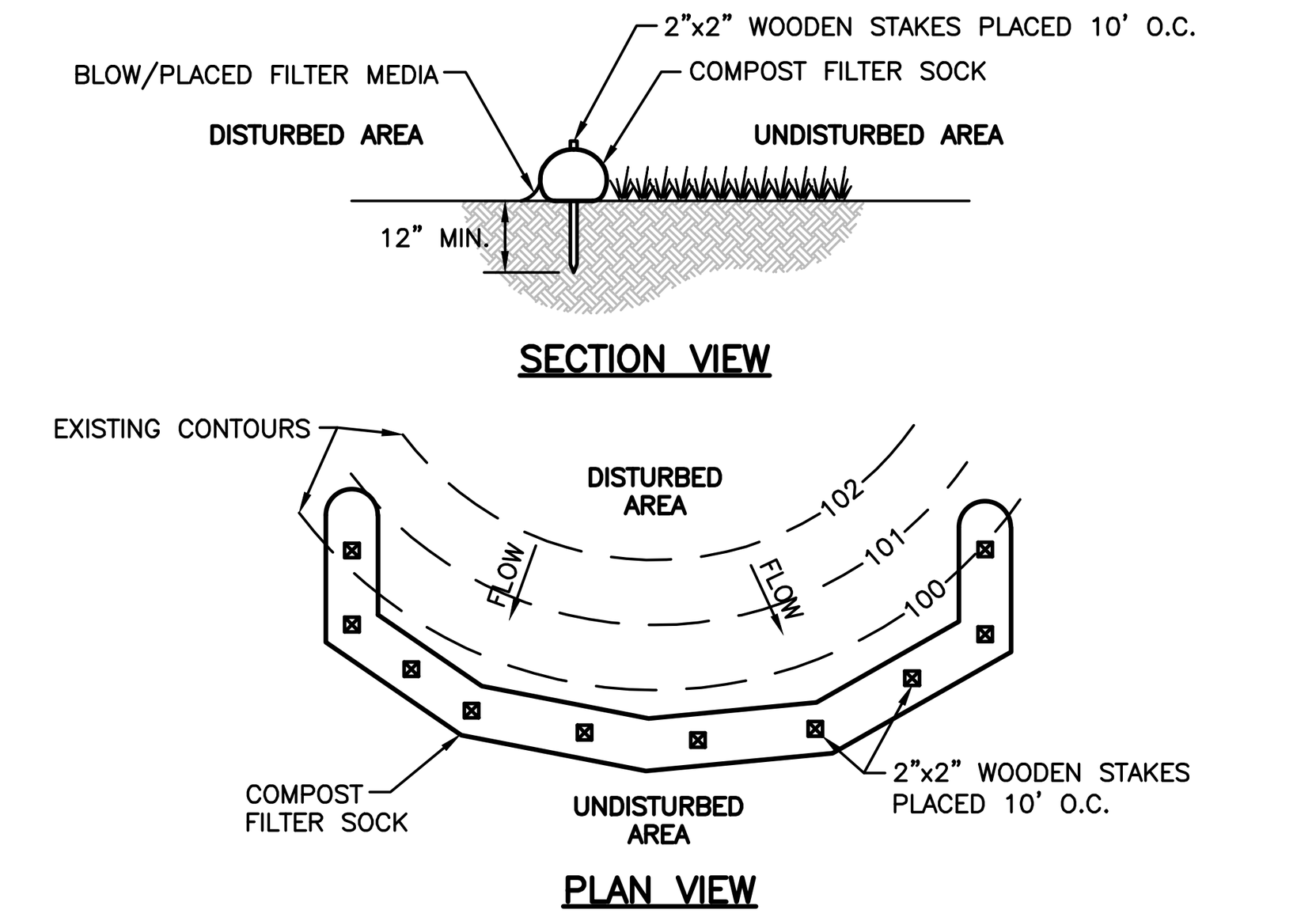
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

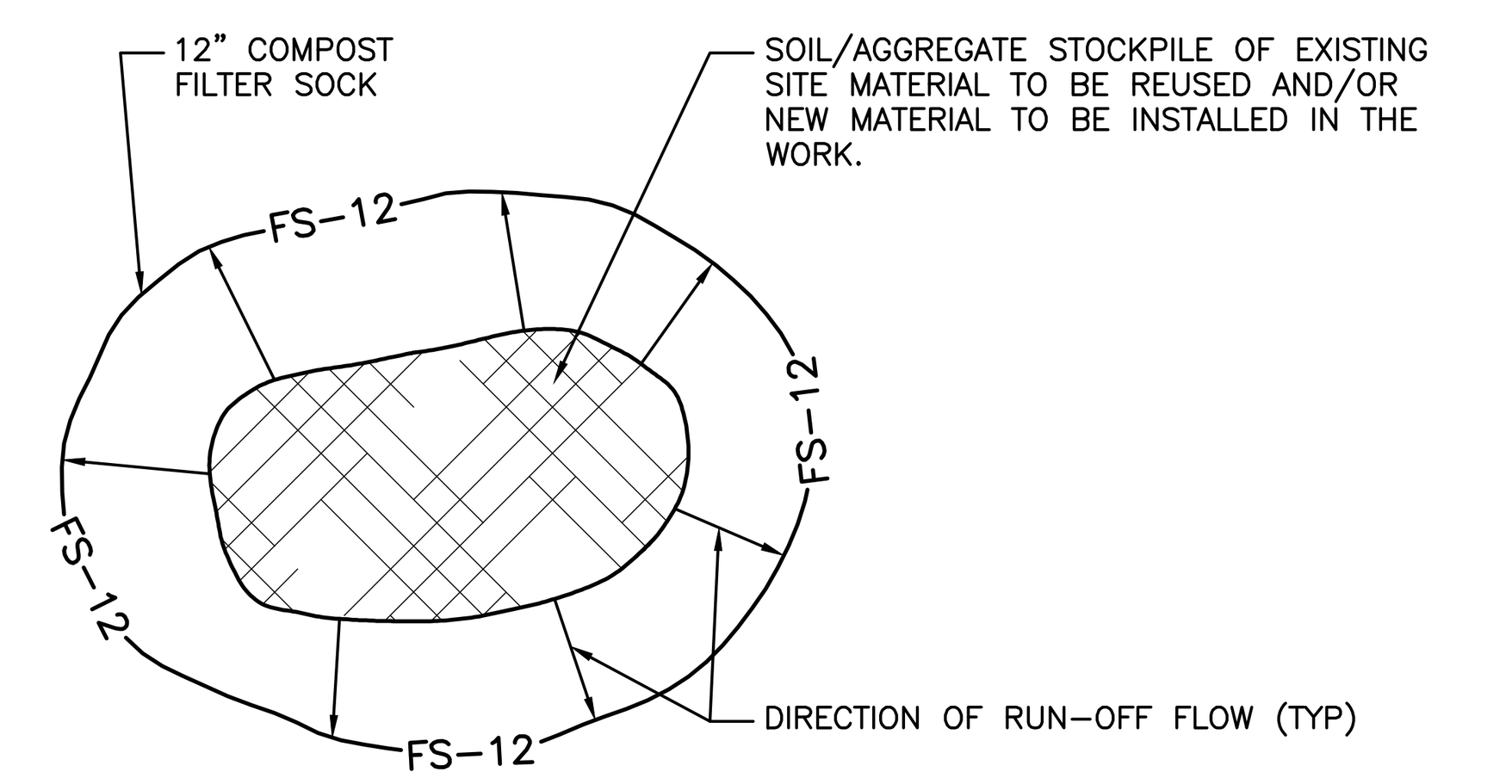


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

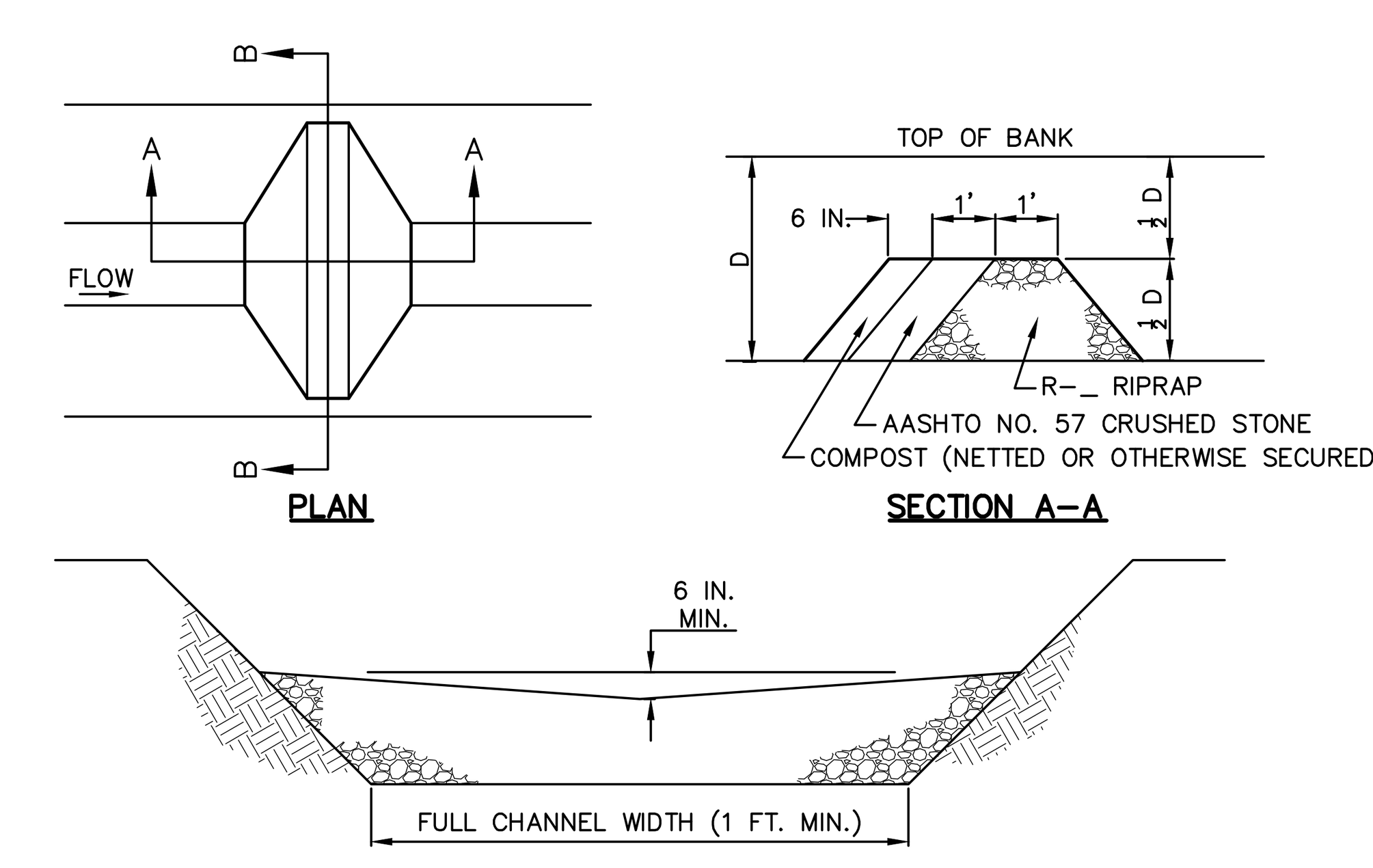
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

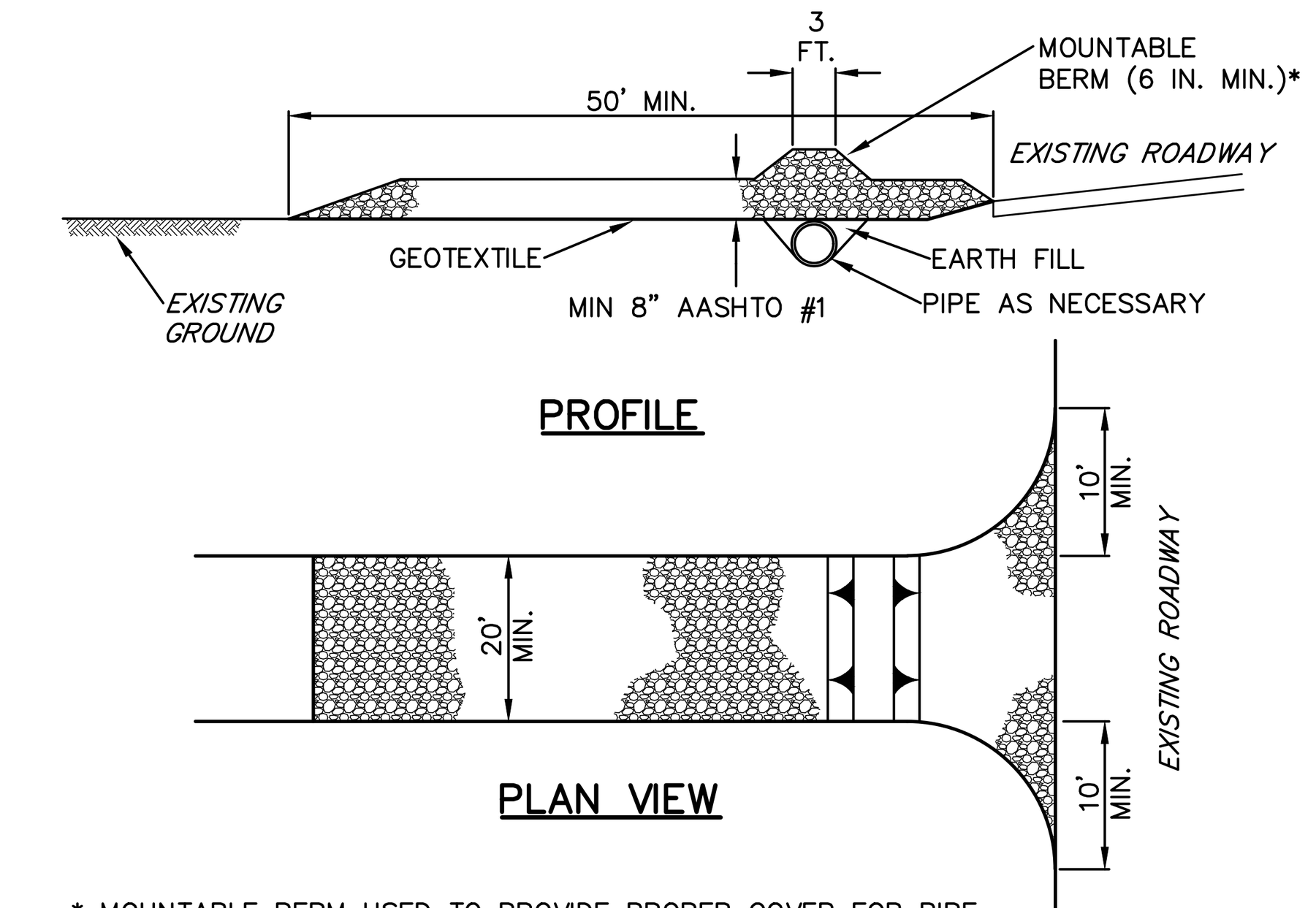
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

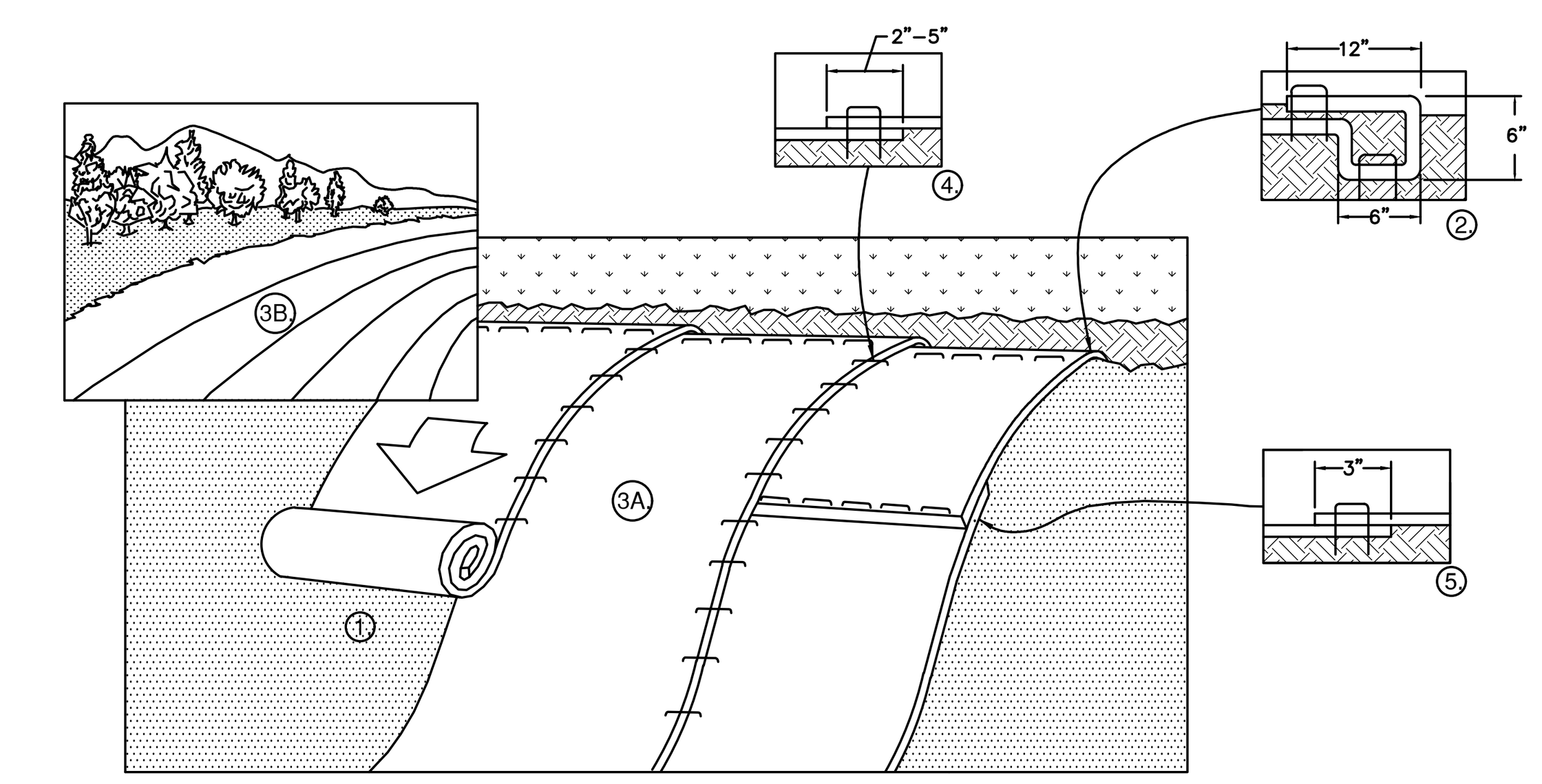
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU   CHECKED:
DRAWN: SAM   CHECKED:
DATE: APRIL 2021   SURVEY DATE: OCTOBER 2020
FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B35
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.05
SHEET NO.: 6 OF 6
REV.

Dwg. Name: 1113805-D01.DWG Plotted: 2/18/2022 1:22 PM

F92

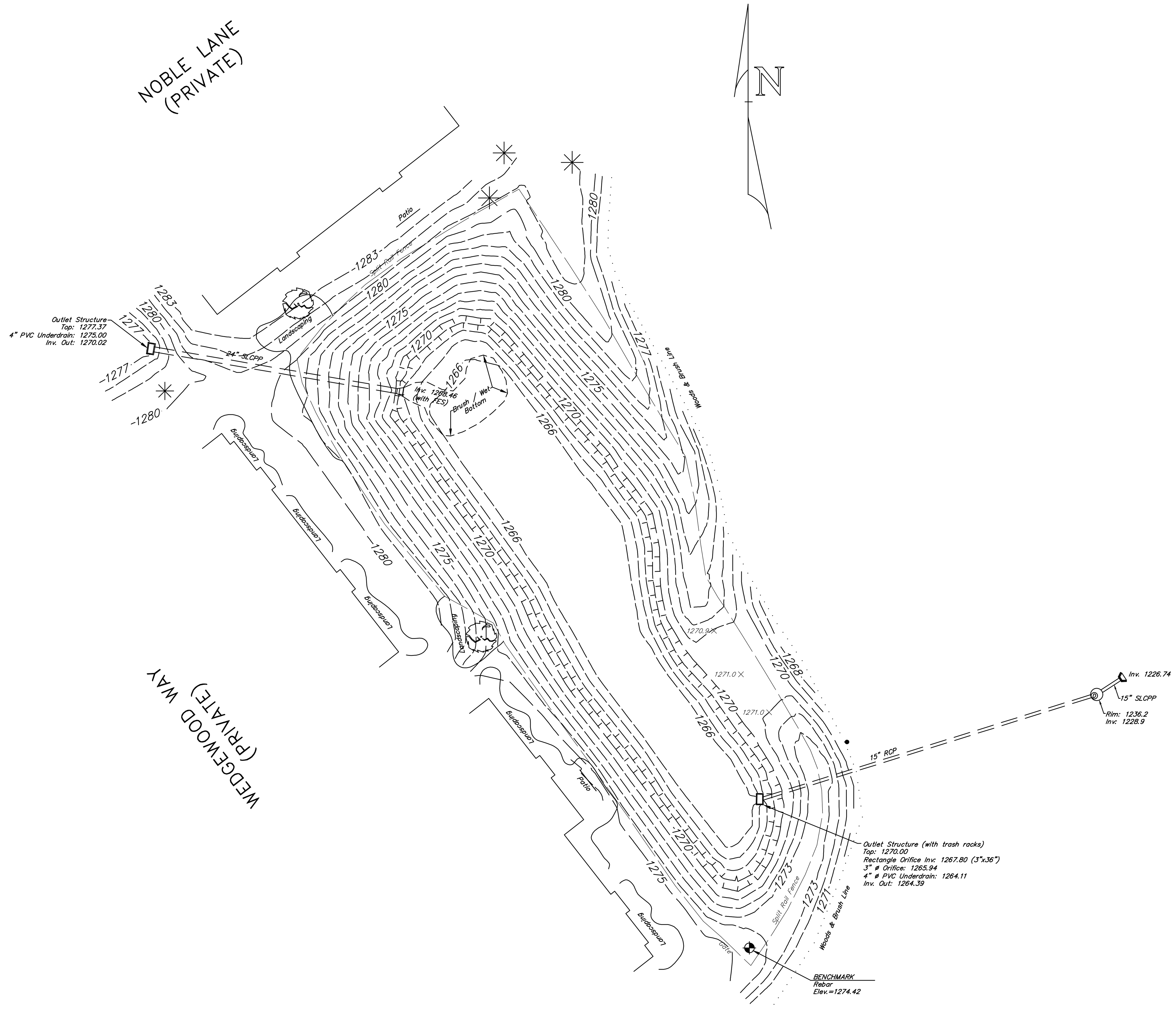
ATTACHMENT F: BMP B41 Plans

Dallas Area Municipal Authority

BMP B41 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
353,735	151,675	202,060	8.12	3.48	4.64	42.88	57.12





<u>Survey Notes:</u>

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on January 5, 2021. 931 Stony Battery Road, Landisville, PA (717)–898–9466.
   Coordinate System: PA State Plane, North Zone – 3702, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: Survey Control Point #1 – Rebar set at south end of storm basin, See Plan.
   Elevation: 1274.42
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

ATTACHMENT F: BMP B45 Plans

Dallas Area Municipal Authority

BMP B45 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
73,420	31,581	41,839	1.69	0.72	0.96	43.01	56.99



DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B45

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/30/2021 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211200448

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 811 STOP CALL BEFORE YOU DIG

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: william_mays@cable.comcast.com

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

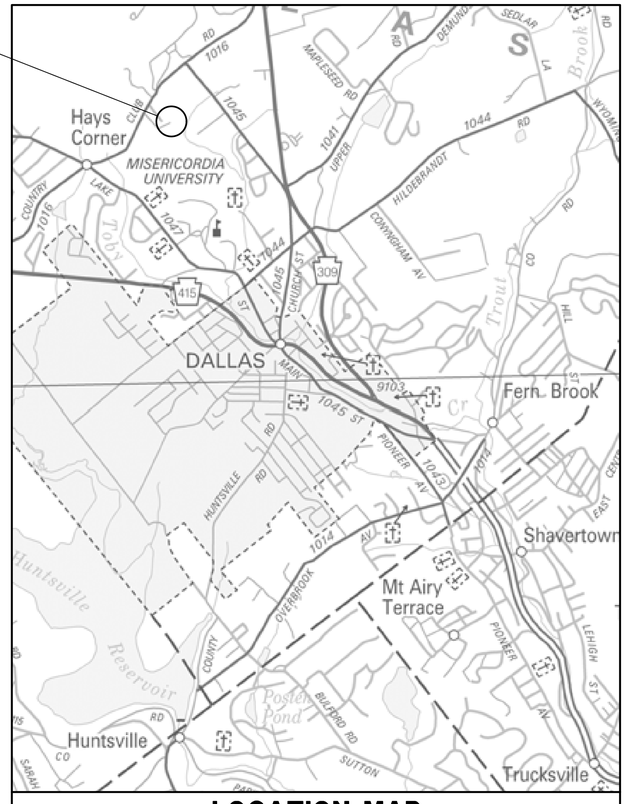
COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS CALLAGHER
EMAIL: cgallagher@dsdhs.com

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: anixon@ugi.com

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: jboecker@ugi.com

PROJECT LOCATION



LOCATION MAP

DRAWING INDEX

1 OF 5 TITLE SHEET
2 OF 5 EXISTING CONDITIONS AND DEMOLITION PLAN
3 OF 5 PROPOSED CONDITIONS PLAN
4 OF 5 EROSION AND SEDIMENT CONTROL PLAN
5 OF 5 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	MARCH 2021
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

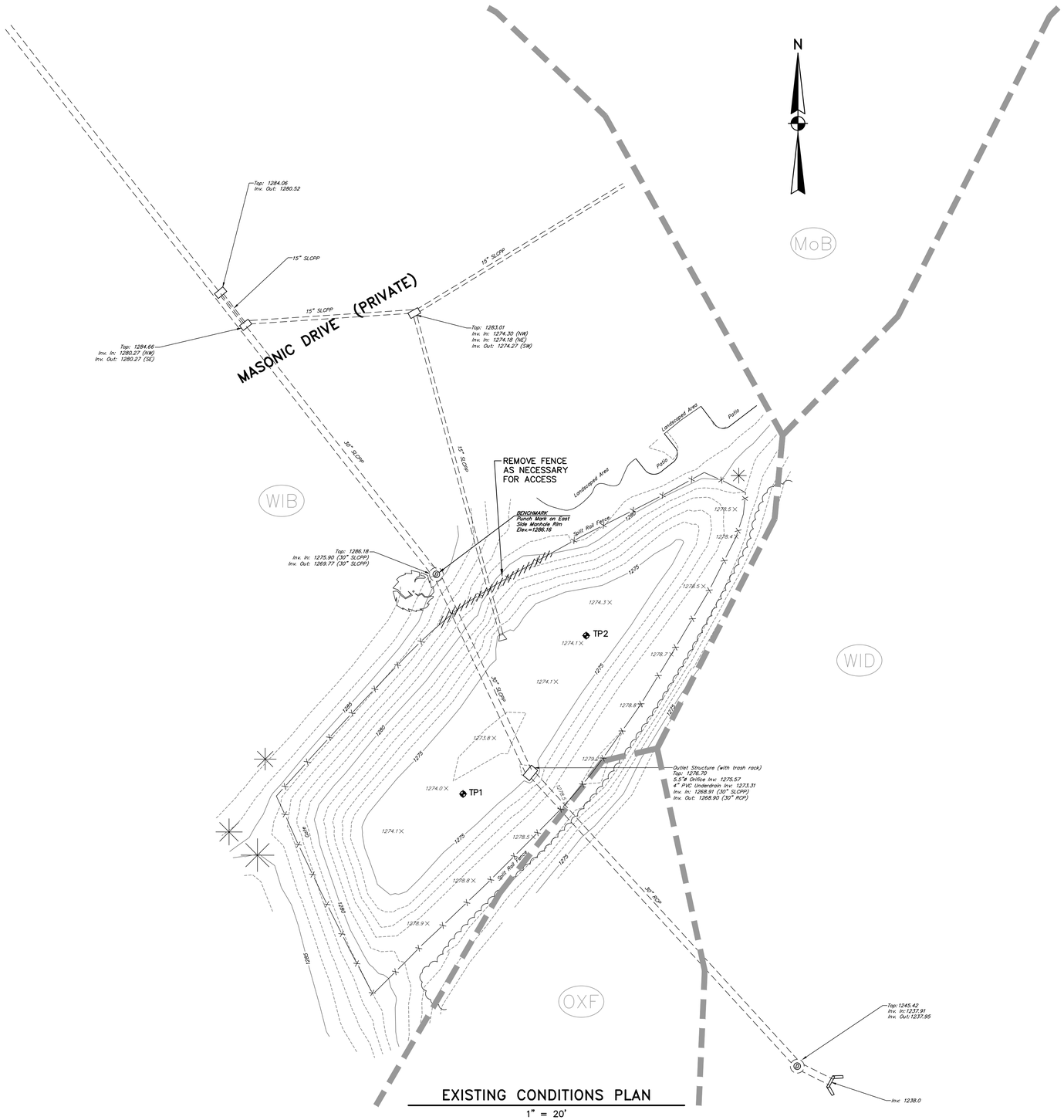
STORMWATER BMP IMPROVEMENTS – SITE B45
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET
SCALE: AS SHOWN
DWG. NO.
PROJECT NO. 11138.07
SHEET NO. 1 OF 5
REV.

F97

Dwg. Name: 1113807-D01 B45.DWG Plotted: 6/17/2021 9:57 AM



EXISTING CONDITIONS PLAN

1" = 20'

LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- FEATURES TO BE DEMOLISHED
- TP1 TEST PIT LOCATION

SOILS

MoB – MORRIS CHANNERY SILT LOAM,
0 TO 8 PERCENT SLOPES

OXF – OQUAGA AND LORDSTOWN EXTREMELY STONY SILT LOAMS,
STEEP

WIB – WELLSBORO CHANNERY SILT LOAM,
3 TO 8 PERCENT SLOPES

WID – WELLSBORO CHANNERY SILT LOAM,
15 TO 25 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on March 17, 2021. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (geoid 12B) (established by GPS observation)
   Benchmark: Punch Mark on East Side Man Hole Rim, See Plan.
   Elevation: 1286.16
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	MARCH 2021
		FIELD BOOK	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
6/17/21

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CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B45
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

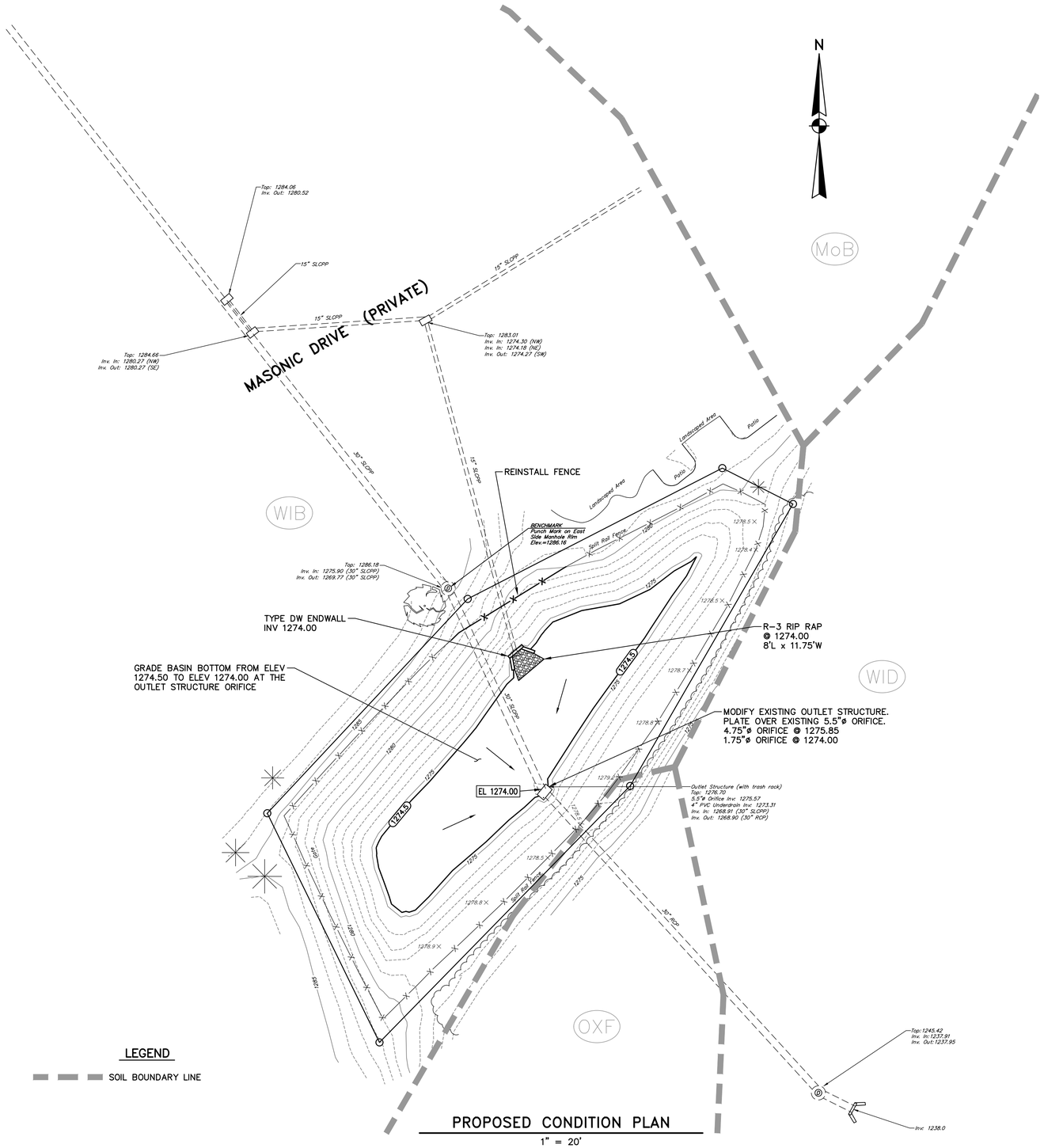
DWG. NO. F98

PROJECT NO. 11138.07

SHEET NO. 2 OF 5

REV.

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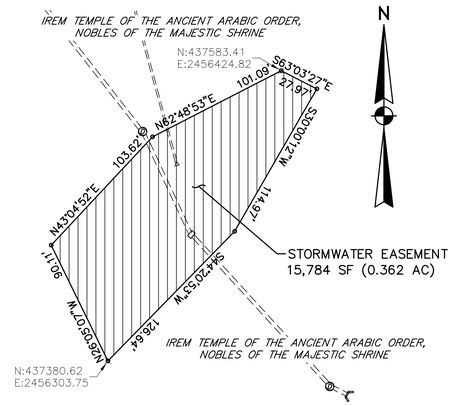


LEGEND

SOIL BOUNDARY LINE

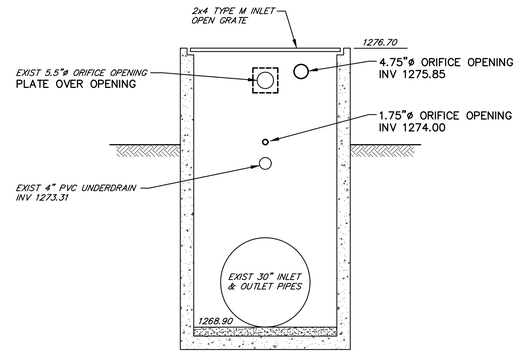
PROPOSED CONDITION PLAN

1" = 20'



STORMWATER EASEMENT PLAN

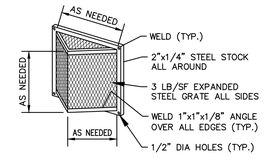
1" = 50'



OUTLET CONTROL STRUCTURE

NO SCALE

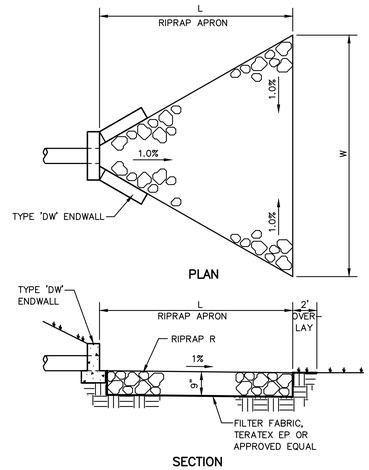
STRUCTURE NAME	APRON LENGTH L	APRON WIDTH W	RIP-RAP R	PIPE DIAMETER
EW1	8'	11.75'	R-3	15"



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE



SECTION

RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	MARCH 2021
		FIELD BOOK	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J. BINGHAM
ENGINEER
PE084973
6/17/21

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CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B45
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO

108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS PLAN

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

DWG. NO.

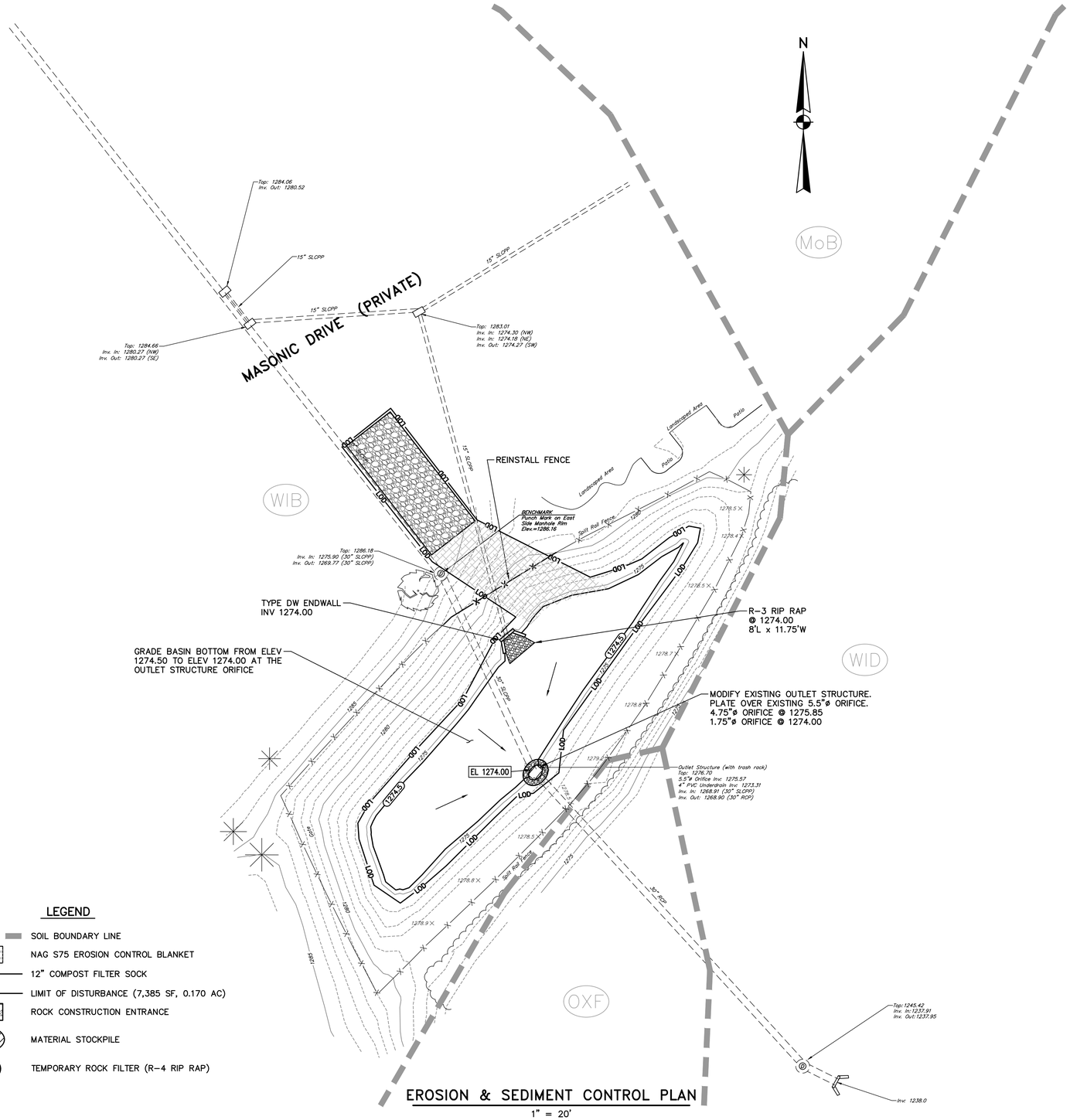
PROJECT NO. 11138.07

SHEET NO. 3 OF 5

REV.

F99

Dwg. Name: 1113807-S01 B45.DWG Plotted: 6/17/2021 9:57 AM



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (7,385 SF, 0.170 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

EROSION & SEDIMENT CONTROL PLAN

1" = 20'

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	MARCH 2021
		FIELD BOOK	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084923
6/17/21

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B45
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'

DWG. NO.

PROJECT NO. 11138.07

SHEET NO. 4 OF 5

REV.

Dwg. Name: 1113807-S01 B45.DWG Plotted: 6/17/2021 9:57 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

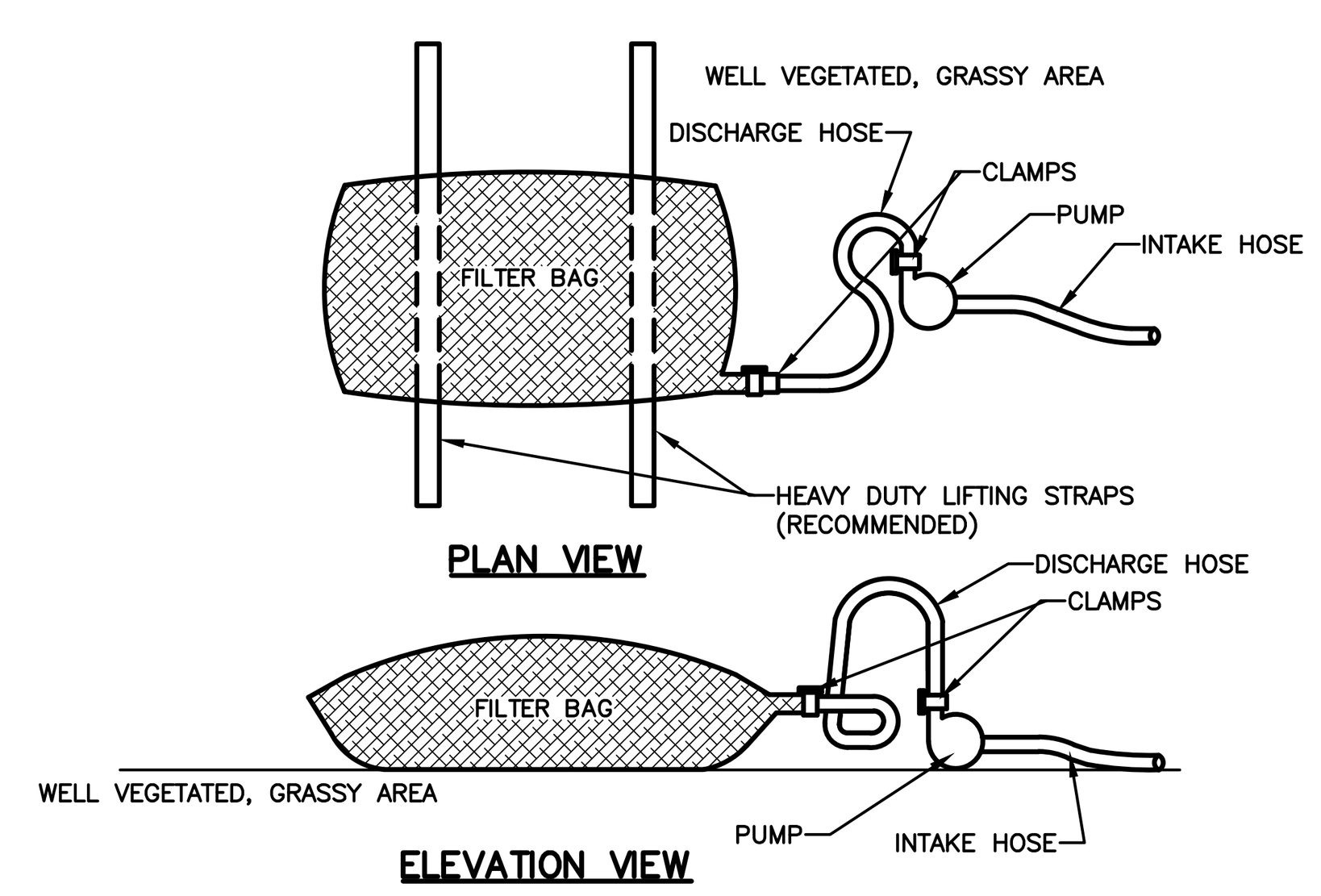
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B45 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

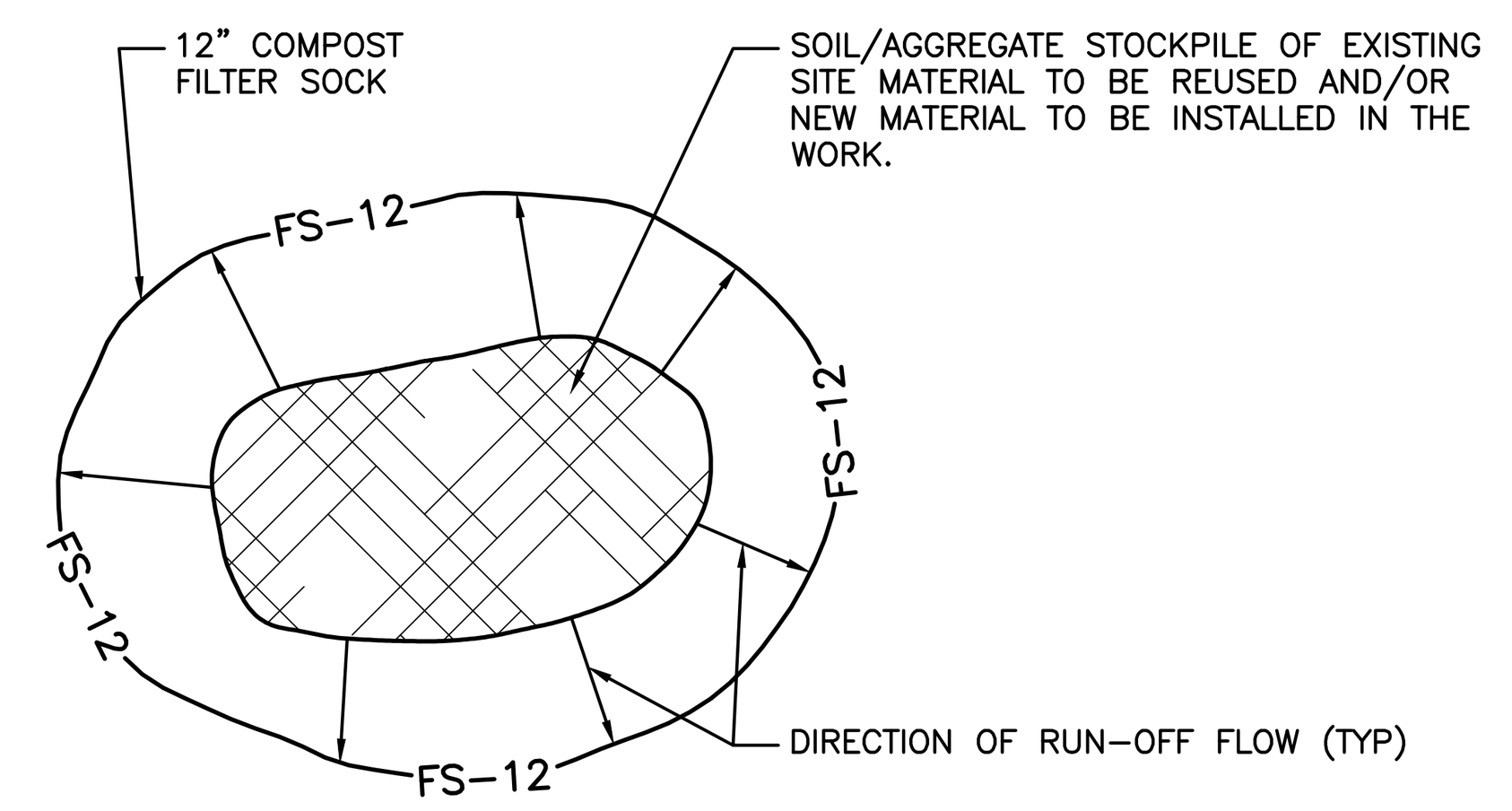
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

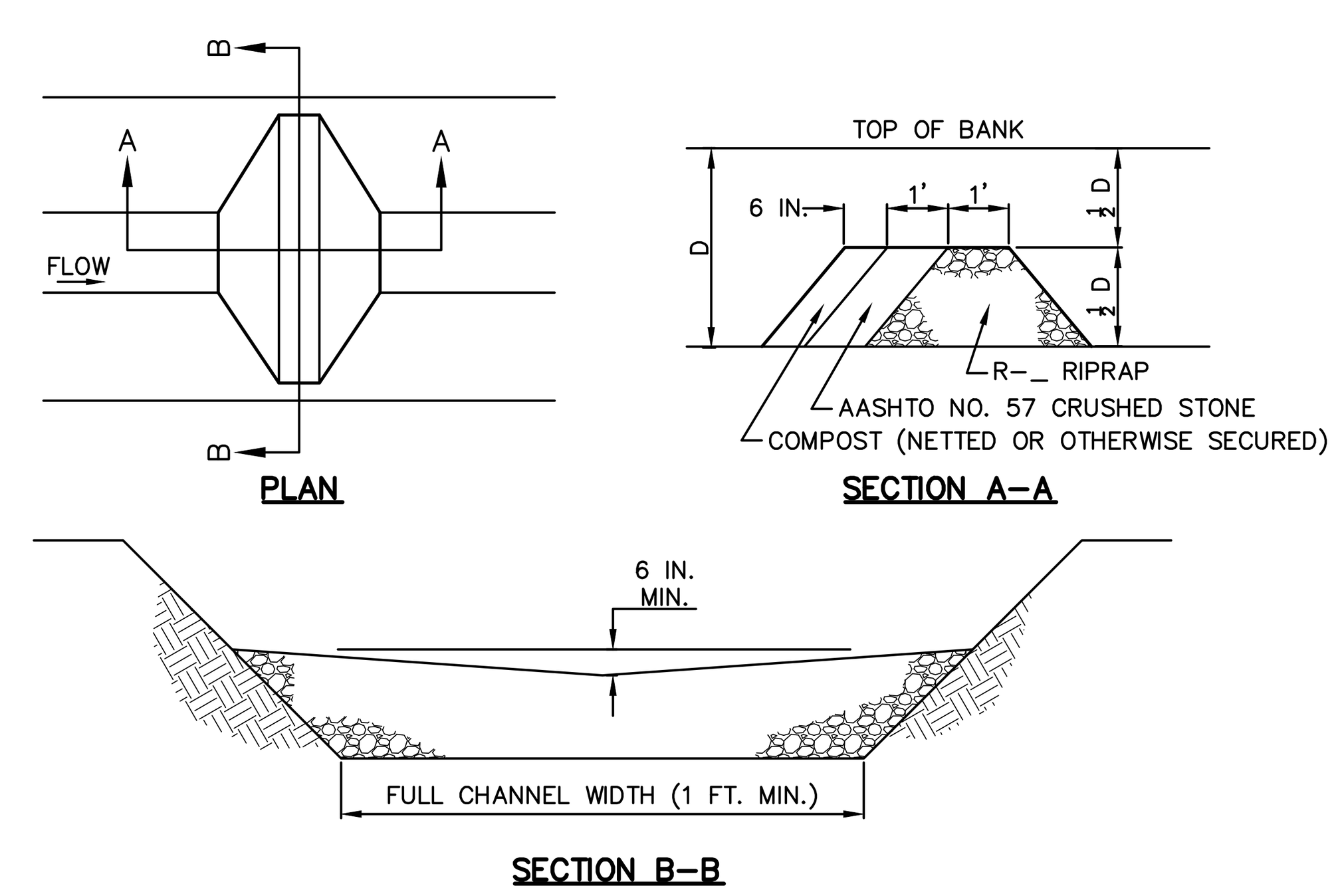
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

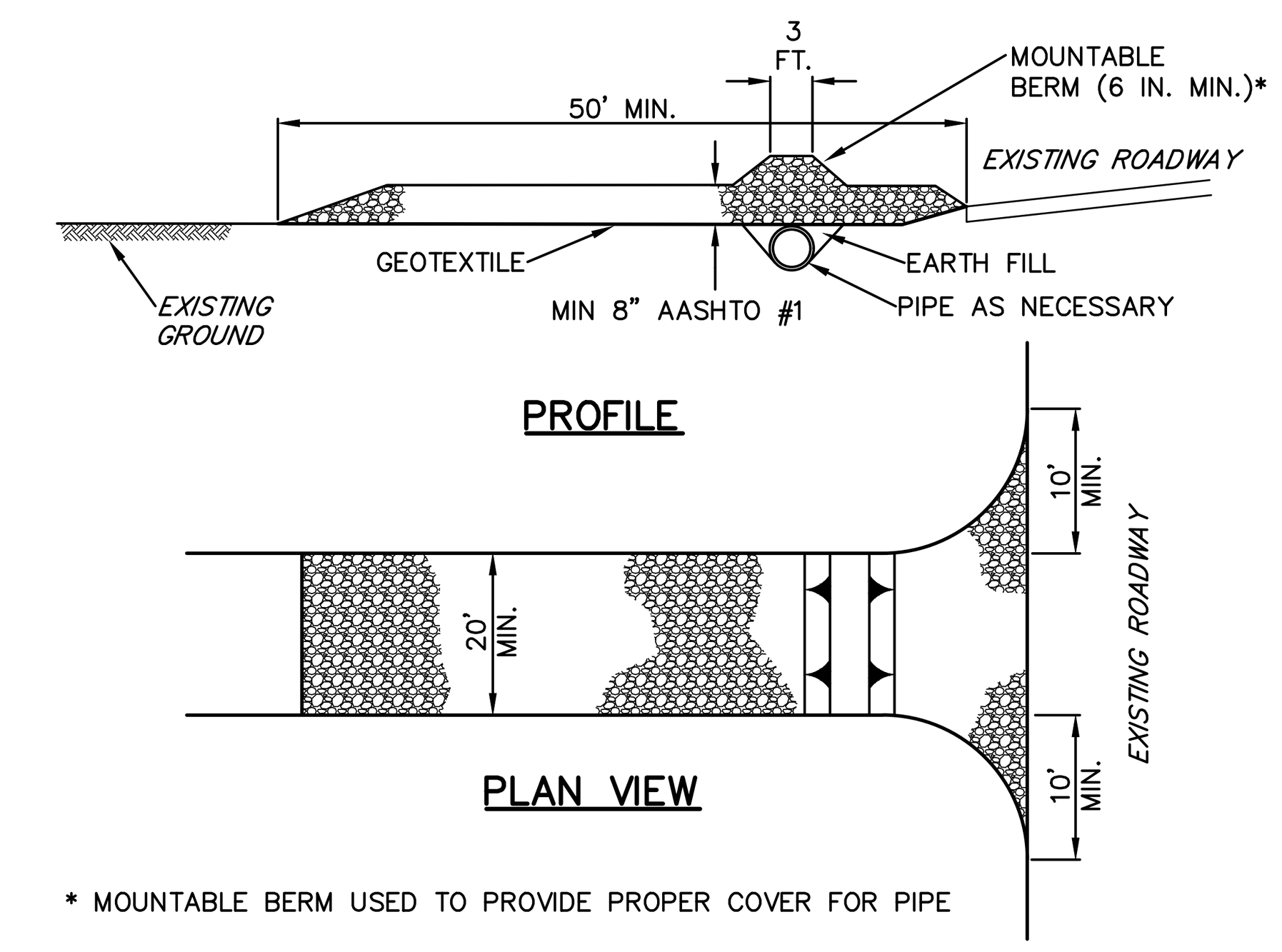
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE

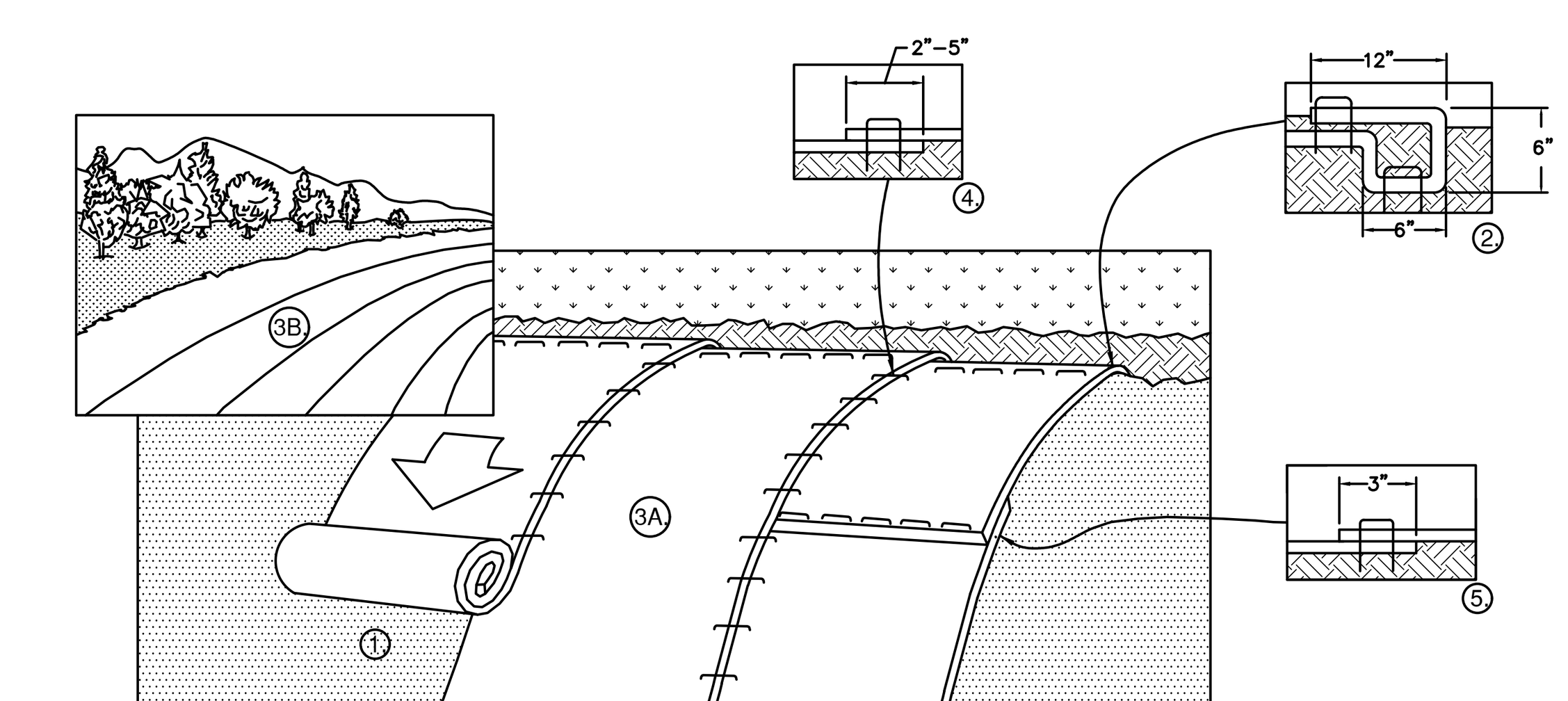
APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE

   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU — CHECKED:
DRAWN: SAM — CHECKED:
DATE: APRIL 2021 — SURVEY DATE: MARCH 2021 — FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B45
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.07
SHEET NO.: 5 OF 5
REV.

F101

Dwg. Name: 1113807-D01 B45.DWG Plotted: 6/17/2021 9:57 AM

ATTACHMENT F: BMP B51 Plans

Dallas Area Municipal Authority

BMP B51 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
194,493	85,928	108,565	4.46	1.97	2.49	44.18	55.82

SCF
l=145'
pavement
s=4%

Sheet flow
l=100'
n=.15
s=1.5%

Pipe flow
l=490'
s=1.5%
W_p=1.96
A=.61
n=.013

B16

B51

0 50 100 200 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

F103

DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B51

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 4/27/21 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20211174316

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 18612
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

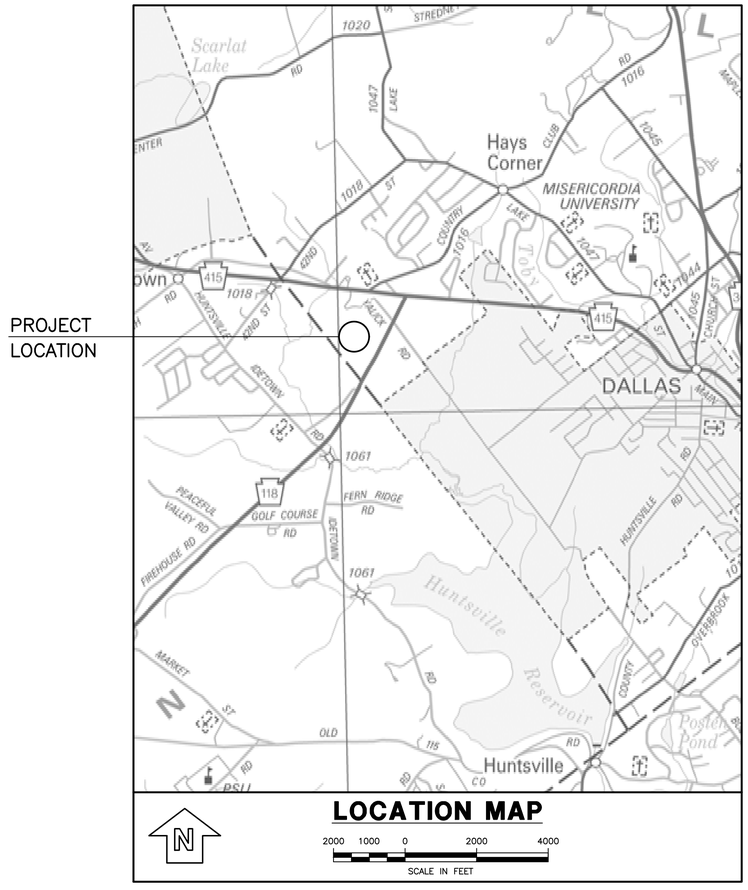
COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: JUSTIN.ADAMS@WILLIAMS.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM



DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE OCTOBER 2020
	FIELD BOOK WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084921 — 6/17/21

SEAL

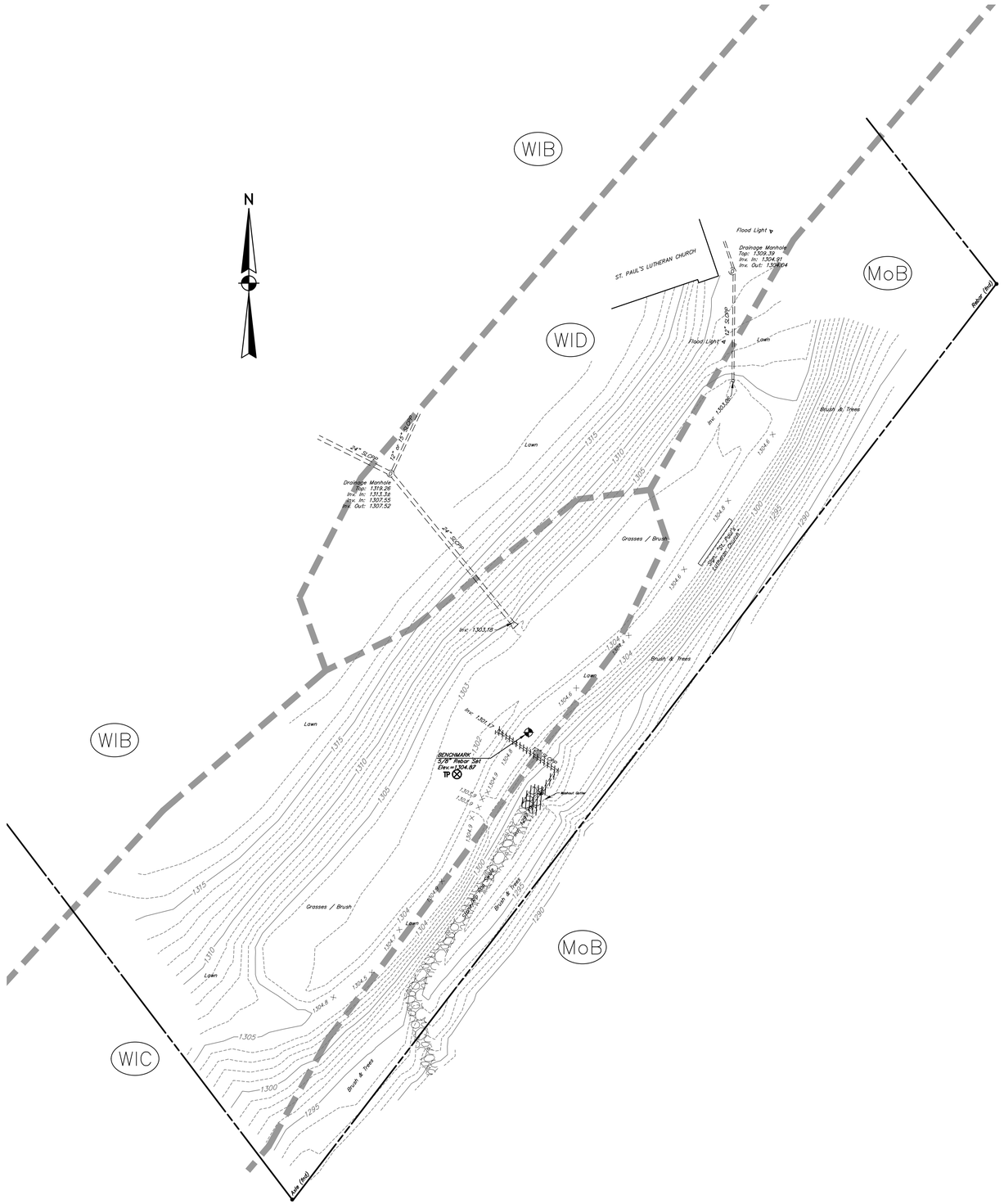
CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B51
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.05	SHEET NO. 1 OF 6
REV.	



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- SAN SEWER
- WATER
- GAS
- OVERHEAD ELEC
- UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- FEATURES TO BE DEMOLISHED
- TEST PIT LOCATION

MoB – MORRIS CHANNERY SILT LOAM,
0 TO 8 PERCENT SLOPES

WIB – WELLSBORO CHANNERY SILT LOAM,
3 TO 8 PERCENT SLOPES

WIC – WELLSBORO CHANNERY SILT LOAM,
8 TO 15 PERCENT SLOPES

WID – WELLSBORO CHANNERY SILT LOAM,
15 TO 25 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on January 20, 2021. 931 Stony Battery Road, Landisville, PA (717)–898–9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: 5/8" Rebar set on basin berm, see plan.
   Elevation: 1304.87
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	OCTOBER 2020
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
6/17/21

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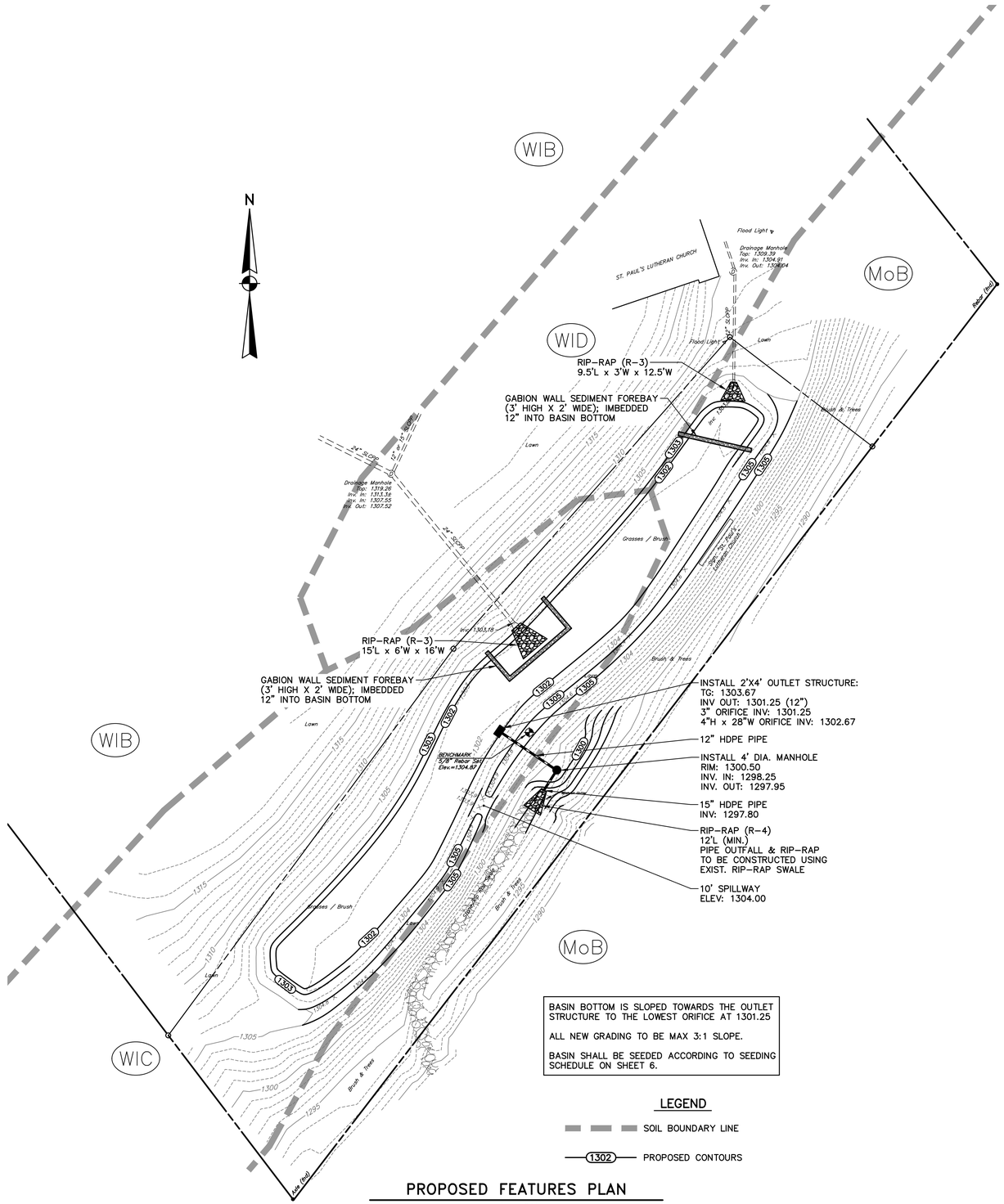
TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO. 11138.05
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113805–S01 – B51.DWG Plotted: 6/17/2021 9:42 AM



BASIN BOTTOM IS SLOPED TOWARDS THE OUTLET STRUCTURE TO THE LOWEST ORIFICE AT 1301.25

ALL NEW GRADING TO BE MAX 3:1 SLOPE.

BASIN SHALL BE SEEDED ACCORDING TO SEEDING SCHEDULE ON SHEET 6.

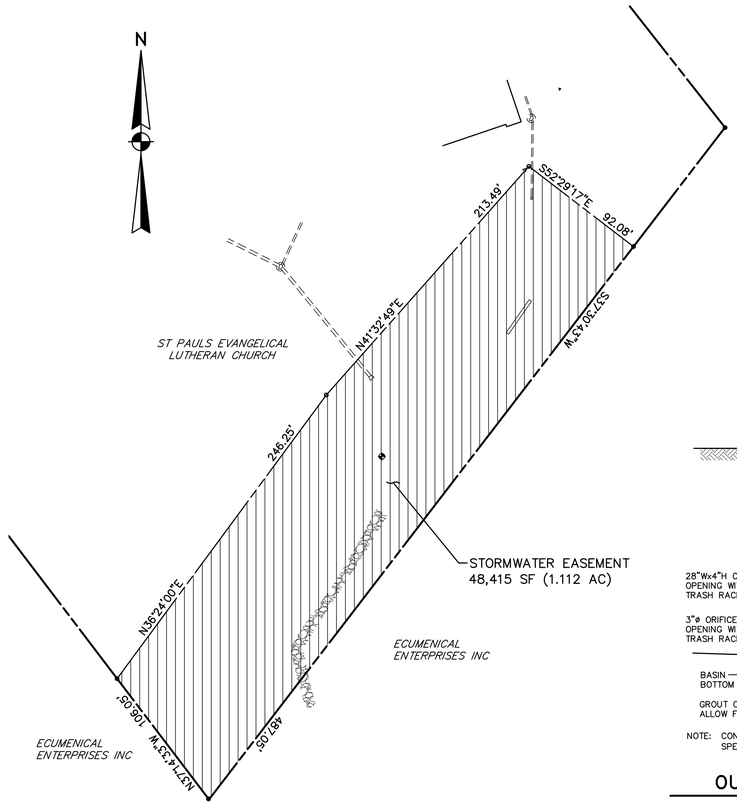
LEGEND

SOIL BOUNDARY LINE

1302 PROPOSED CONTOURS

PROPOSED FEATURES PLAN

1" = 30'

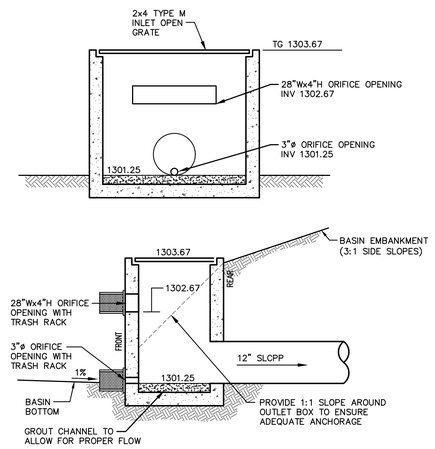


STORMWATER EASEMENT PLAN

1" = 50'

0 25' 50' 100' 150'

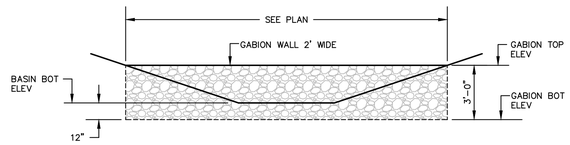
SCALE: 1" = 50'



NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

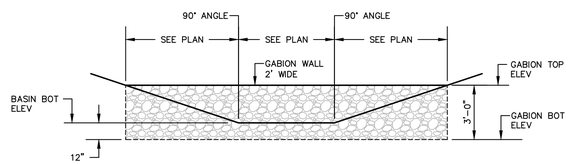
OUTLET STRUCTURE DETAIL

NO SCALE



GABION FOREBAY DETAIL (STRAIGHT)

NO SCALE



GABION FOREBAY DETAIL (U-SHAPE)

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE

RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
APRIL 2021	OCTOBER 2020
	FIELD BOOK
	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE064523
6/17/21

SEAL

CLIENT & PROJECT

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TITLE

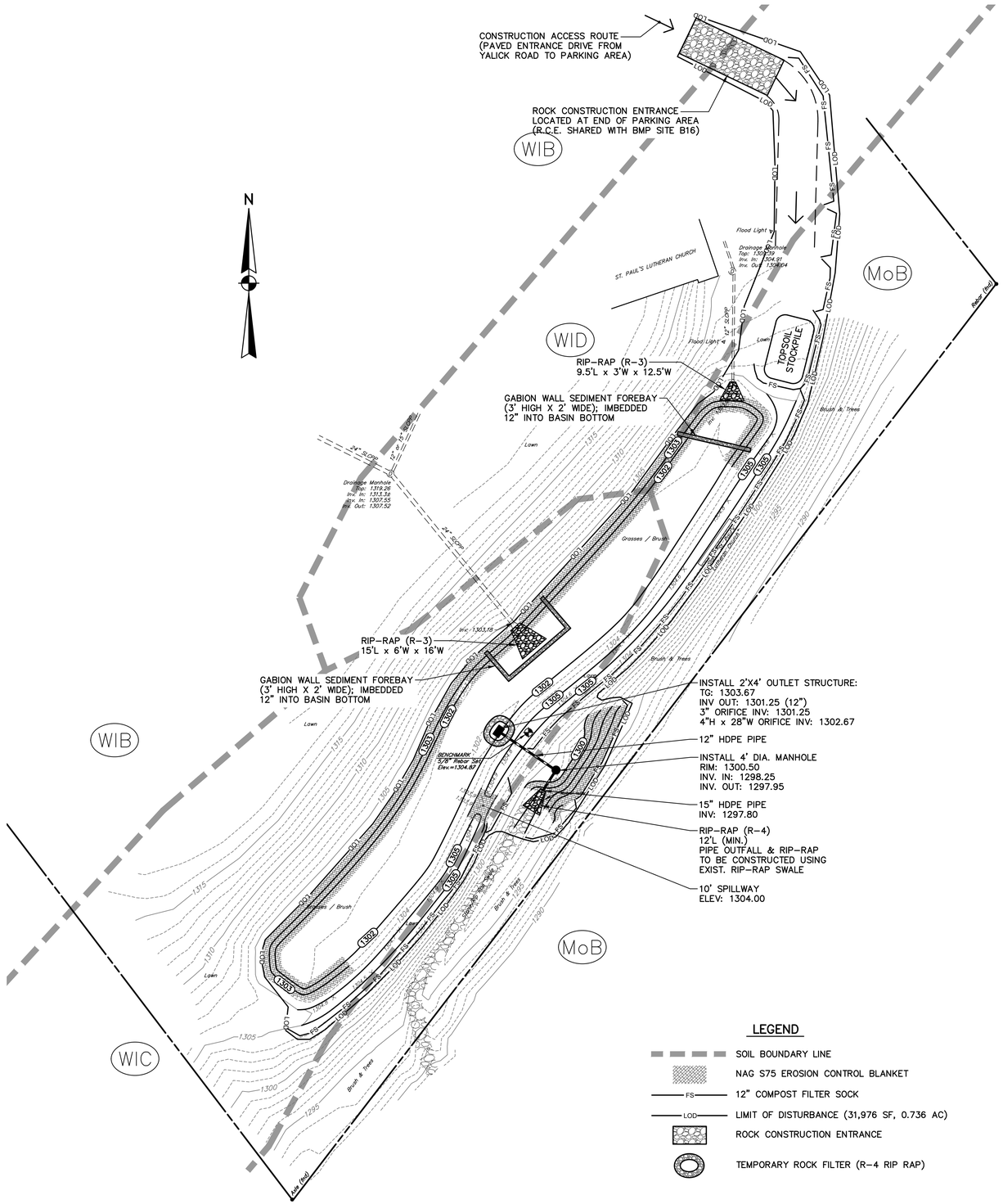
PROPOSED CONDITIONS

SCALE 0 15' 30' 60' 90'

SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.05	3 OF 6	



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (31,976 SF, 0.736 AC)
- ROCK CONSTRUCTION ENTRANCE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	APRIL 2021	SURVEY DATE	OCTOBER 2020
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084072
6/17/21

SEAL

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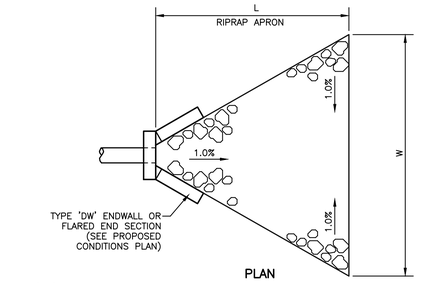
TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

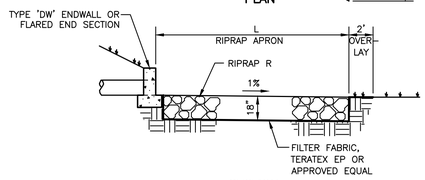
DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.05	4 OF 6	

STRUCTURE NAME	APRON LENGTH L	APRON WIDTH W	RIP-RAP R	PIPE DIAMETER
EX. 24" SLCPP	15	16	R-3	24
EX. 12" SLCPP	9.5	12.5	R-3	12
15" HDPE	12	15	R-4	12



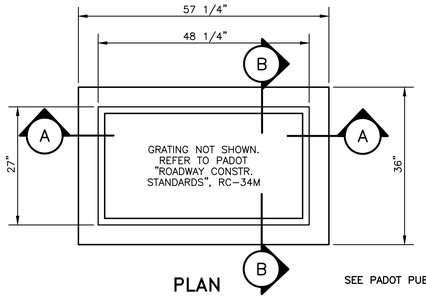
PLAN



SECTION

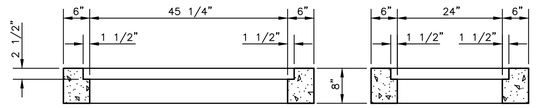
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



PLAN

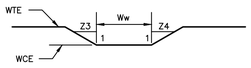
SEE PADOT PUB. 72, RC-45M



SECTION A-A SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

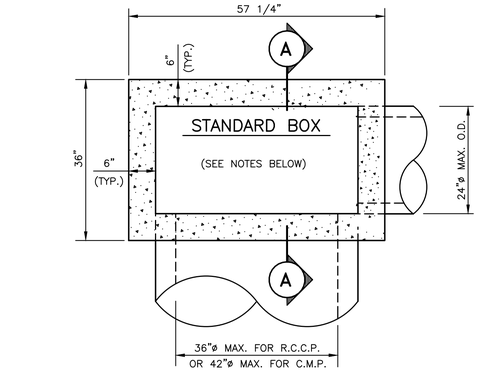


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1305.00	1304.00	10	NAG S75

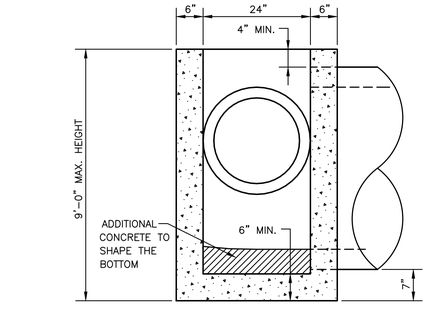
EMERGENCY SPILLWAY

NO SCALE



NOTE:
1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

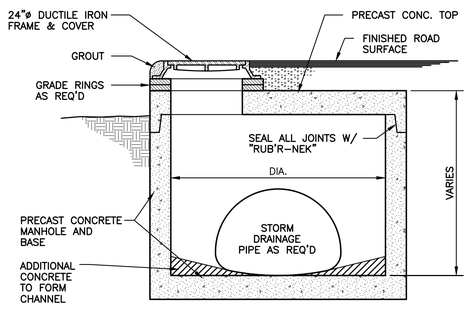
PLAN



SECTION A

STANDARD PRECAST INLET BOX

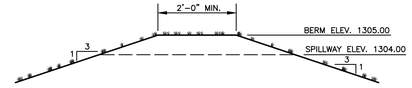
NO SCALE



SECTION

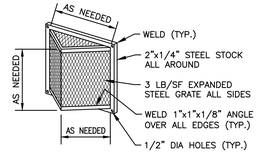
STORM DRAINAGE MANHOLE

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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SEAL



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TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.05	SHEET NO. 5 OF 6
REV.	

Dwg. Name: 1113805-D01.DWG Plotted: 6/17/2021 9:42 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

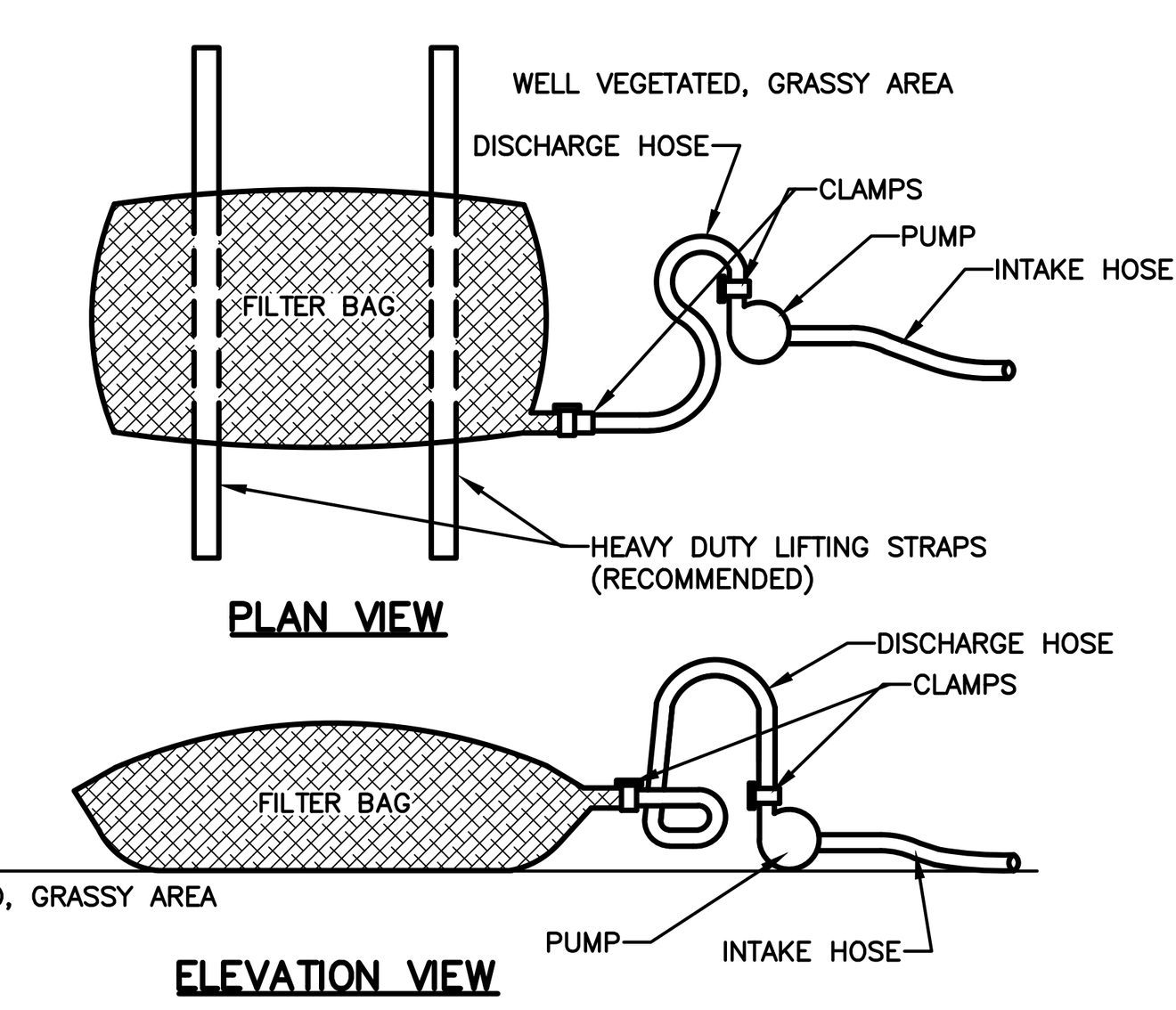
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B51 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

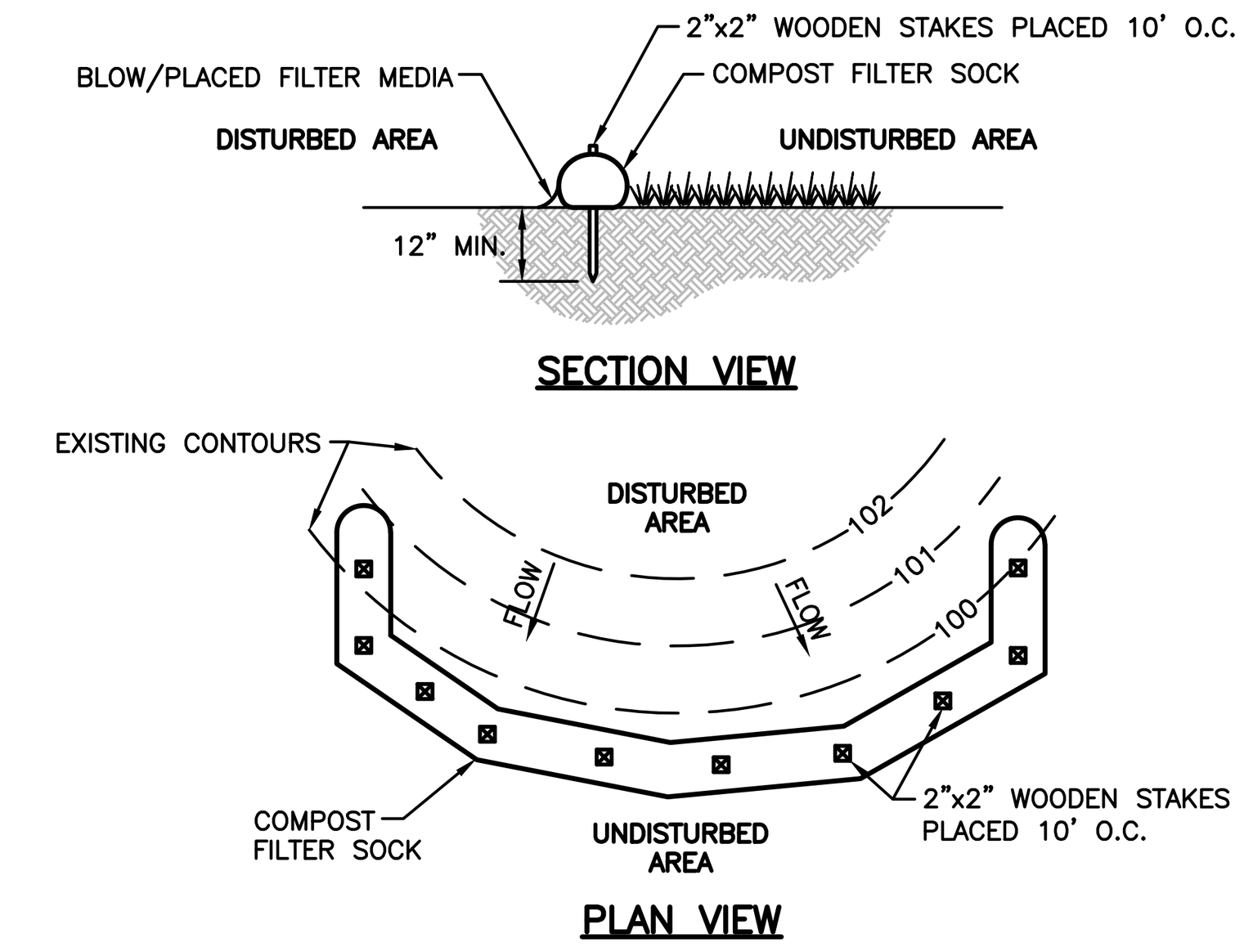
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

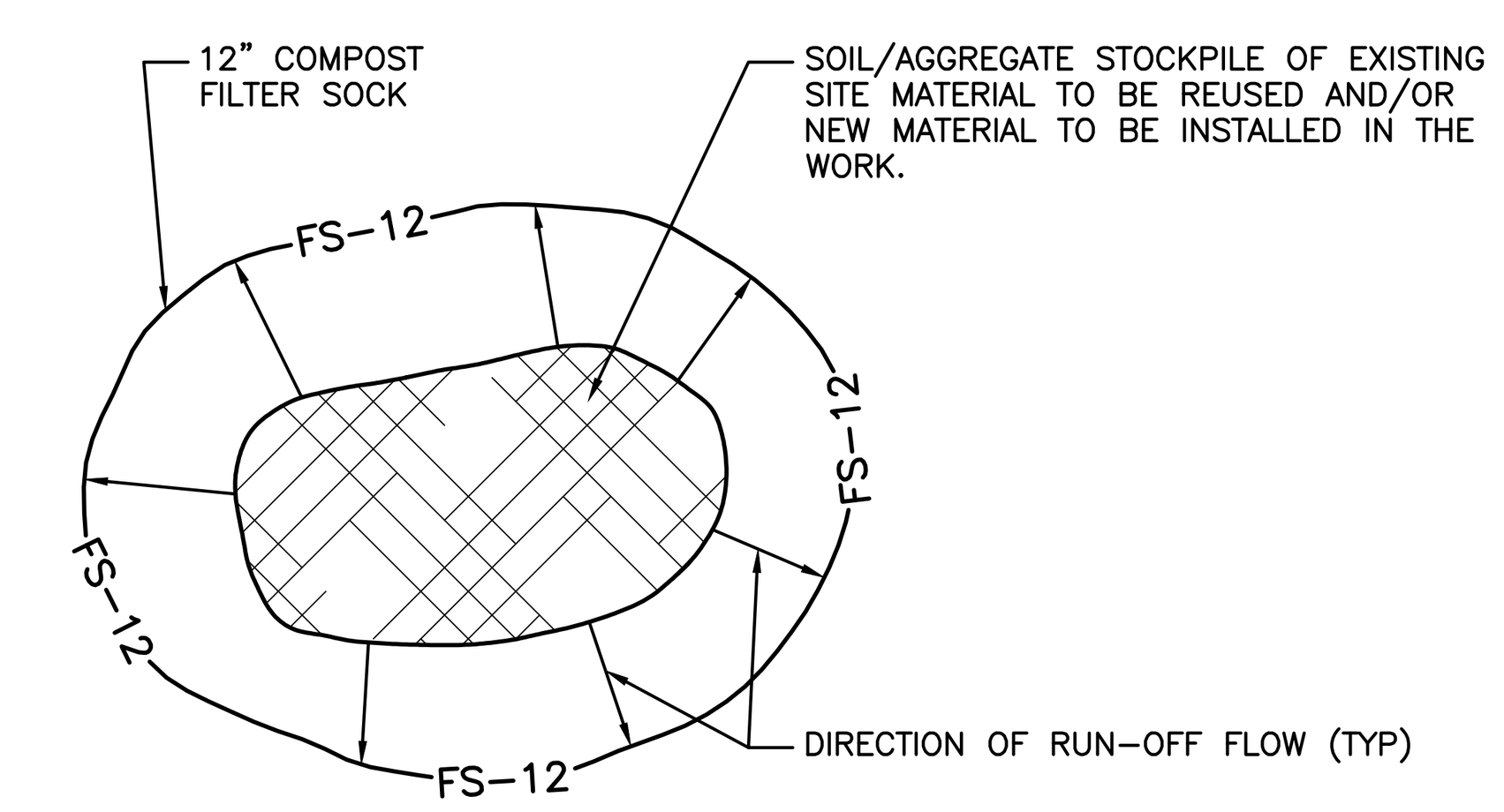


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

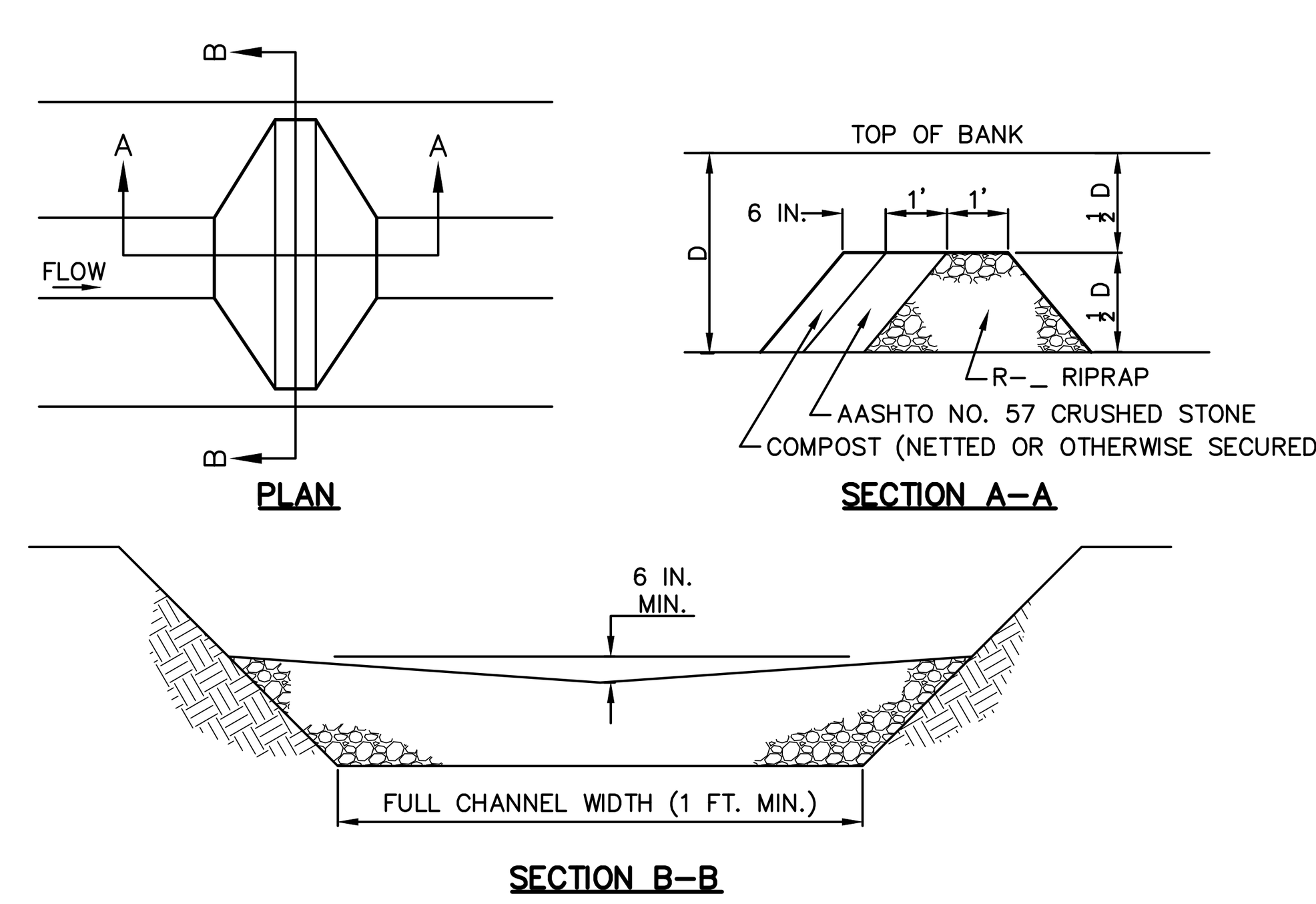
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NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

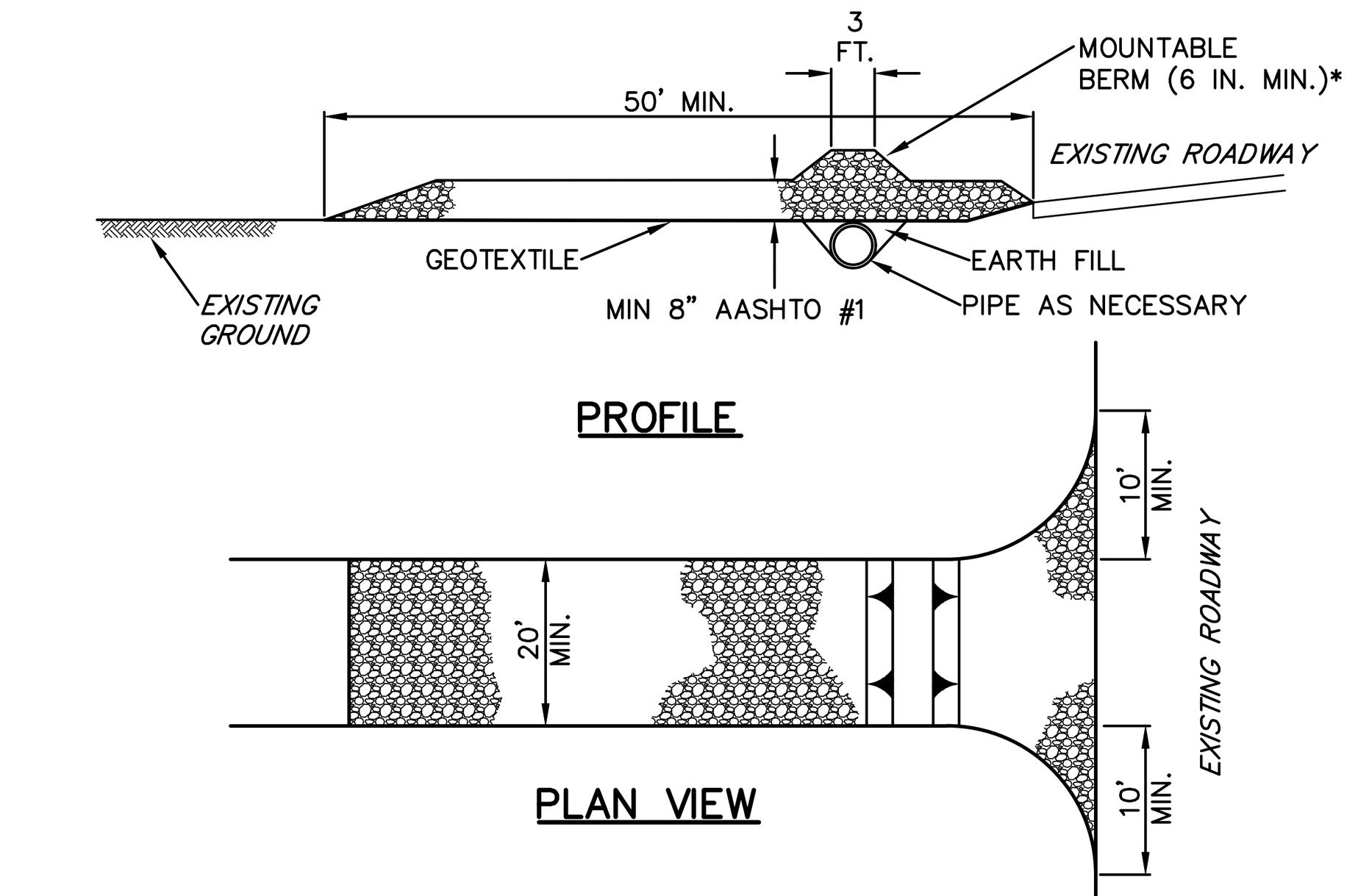
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

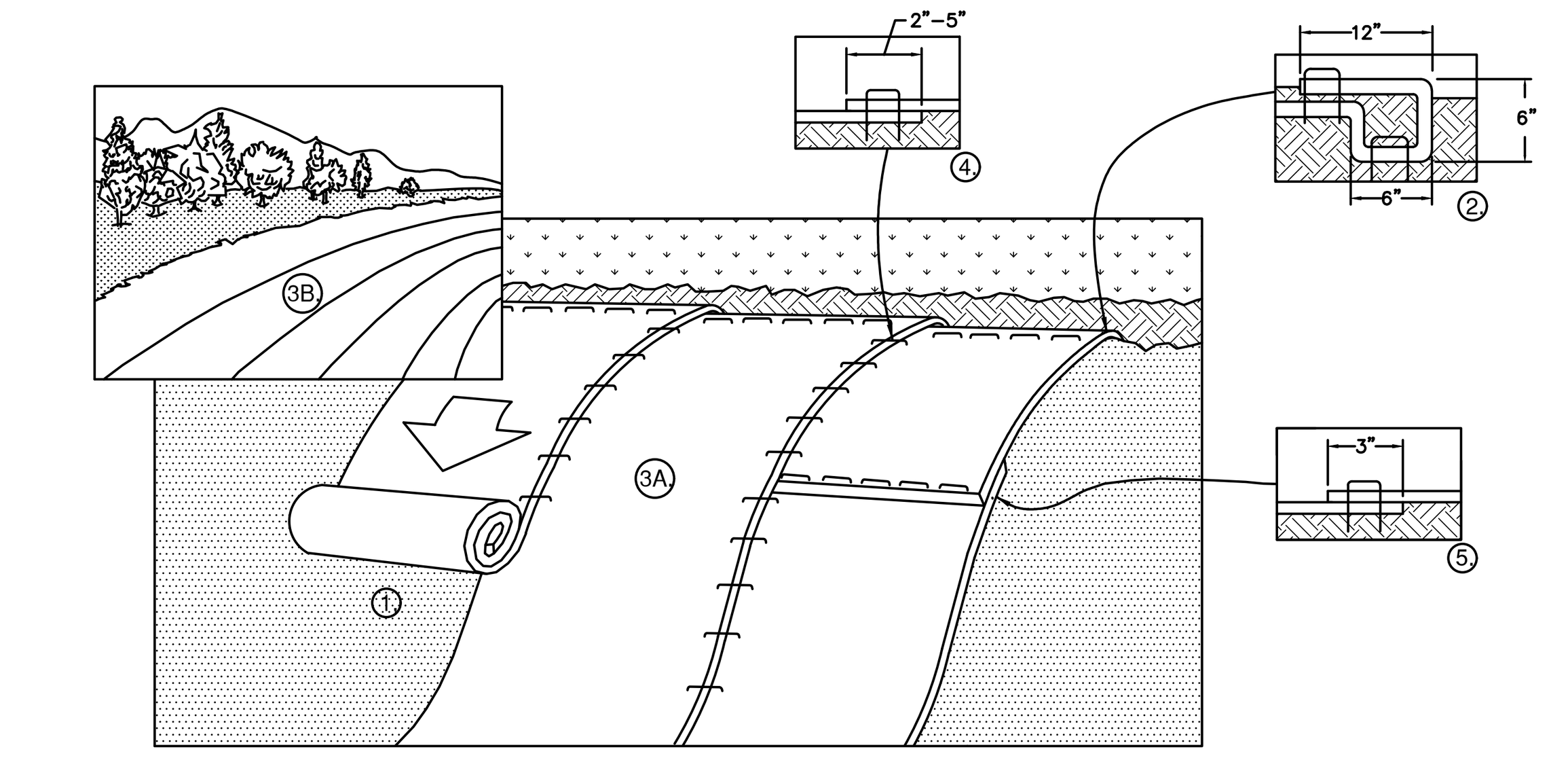
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN BCU | CHECKED
DRAWN SAM | CHECKED
DATE APRIL 2021 | SURVEY DATE OCTOBER 2020 | FIELD BOOK WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084973 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B51
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AMD SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO. 11138.05 | SHEET NO. 6 OF 6 | REV.

ATTACHMENT F: BMP B71 Plans

Dallas Area Municipal Authority

BMP B71

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
449,195	273,087	176,108	10.31	6.27	4.04	60.79	39.21

Sheet Flow
L=100'
s=9%
grass, n=0.15

Shallow Conc. Flow
L=375'
s=3.5%
pavement

Pipe Flow
L=2450'
s=7.1%
n=0.013
W_p=3.14
A=1.57

B71

Feet
0 112.5 225 450

F111

DALLAS AREA MUNICIPAL AUTHORITY
KINGSTON TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B71

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 2/1/2022 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20220321459

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 OR 811 STOP. CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: william_mays@cable.comcast.com

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: Michael.Navich@FTR.com

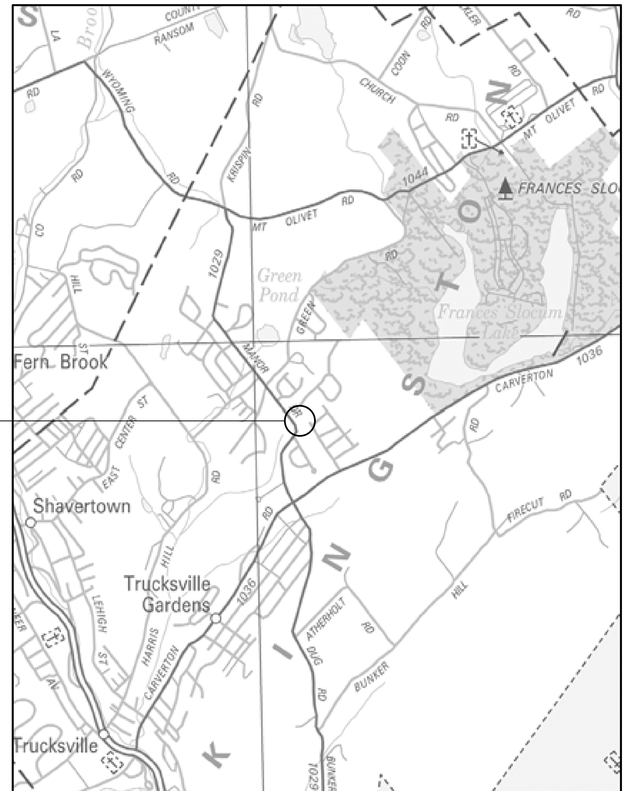
COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI DR
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: anixon@ugi.com

COMPANY: KINGSTON TOWNSHIP
ADDRESS: 180 E CENTER STREET
SHAVERTOWN, PA. 18708
CONTACT: DONALD FRITZGES
EMAIL: dfritzges@kingstontownship.com

COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: JONATHAN GENSEL
EMAIL: jonathan.gensel@gmail.com

COMPANY: AQUA PENNSYLVANIA
ADDRESS: 1 AQUA WAY
WHITE HAVEN, PA. 18661
CONTACT: JOSHUA SHOFF
EMAIL: jpshoff@aquaamerica.com

PROJECT LOCATION



LOCATION MAP

N

2000 1000 0 2000 4000

SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE / FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084927 — 2/1/22

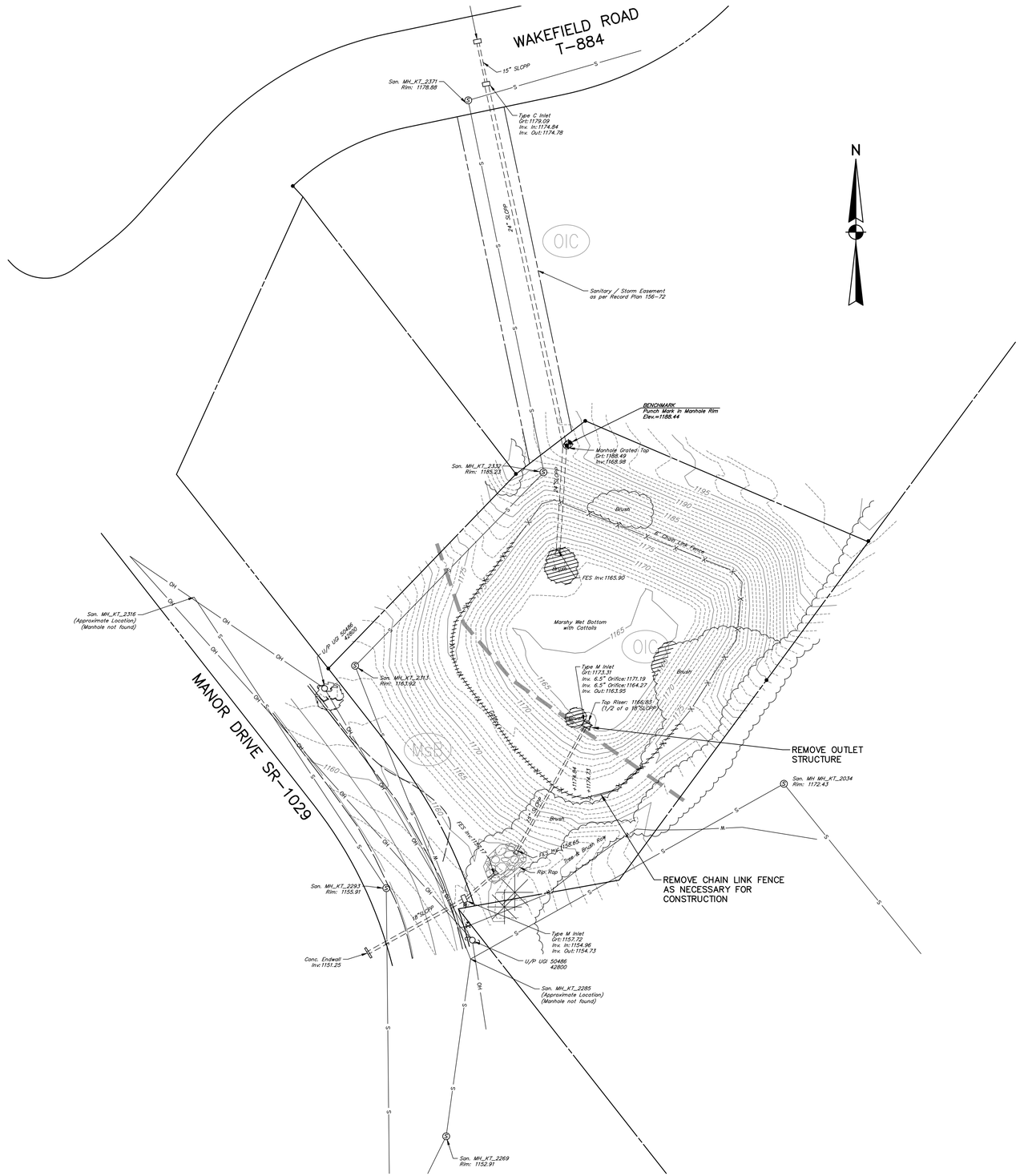
SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.09
SHEET NO.: 1 OF 6
REV.



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- FEATURES TO BE DEMOLISHED

SOILS

MsB – MORRIS CHANNERY SILT LOAM,
0 TO 8 PERCENT SLOPES, EXTREMELY STONY

OIC – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS,
8 TO 15 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS completed on September 28, 2021. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: Survey Control Point #1 – Punch Mark in Storm Manhole Rim, See Plan.
   Elevation: 1188.44 (GEOID 12B)
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflects the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE JANUARY 2022	SURVEY DATE
	FIELD BOOK

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084923
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

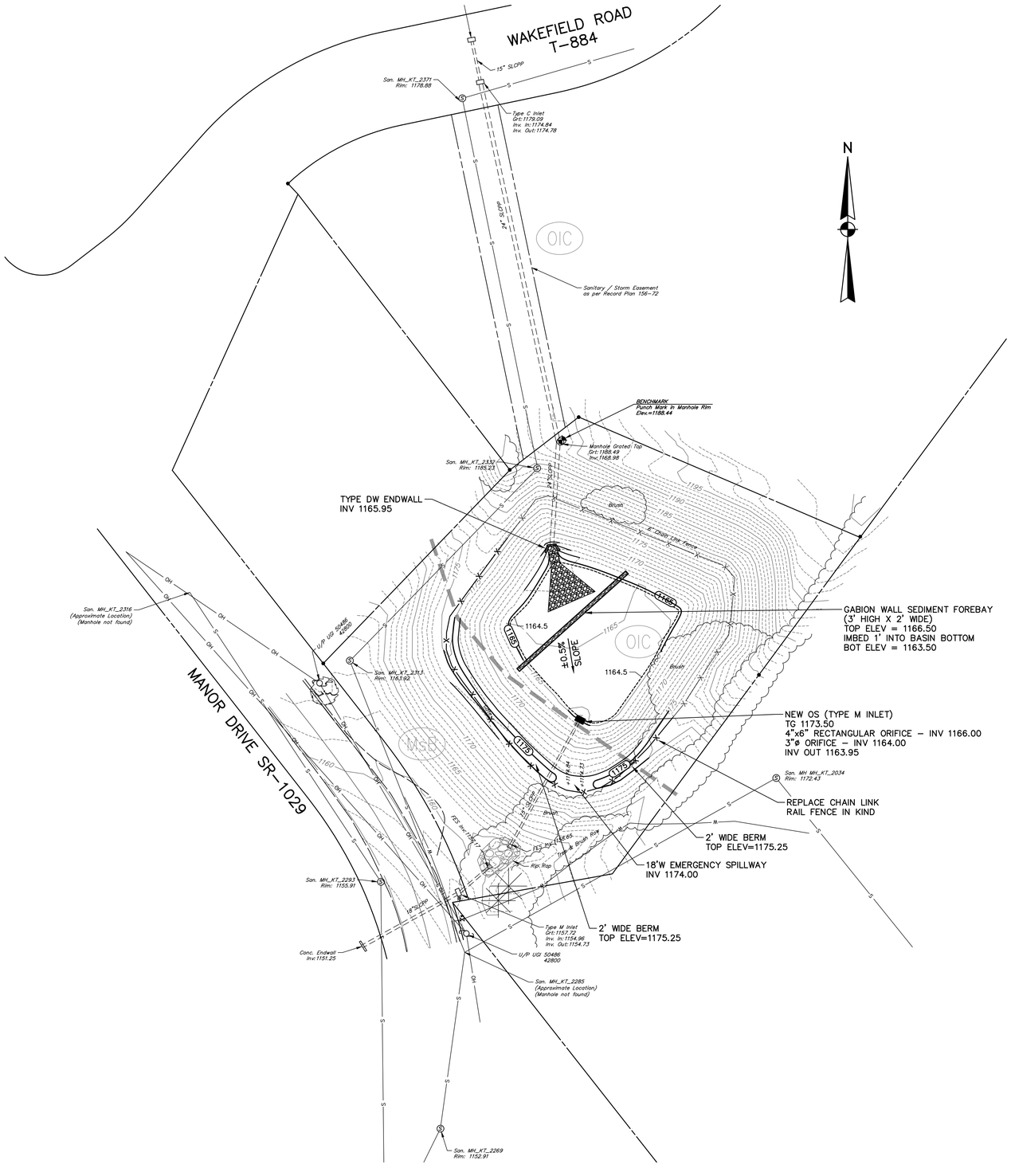
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

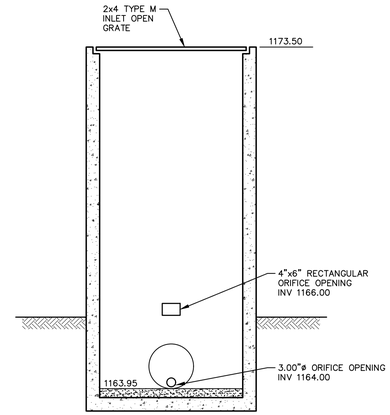
TITLE
EXISTING CONDITIONS AND DEMOLITION

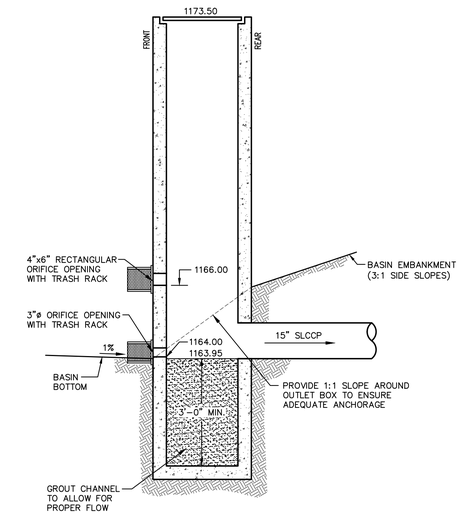
SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'
DWG. NO.

PROJECT NO. 11138.09
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113809-S06-B71.DWG Plotted: 5/16/2022 1:27 PM



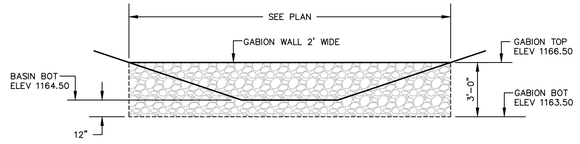




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



GABION FOREBAY DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE
	FIELD BOOK

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084923
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
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STORMWATER BMP IMPROVEMENTS – SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
PROPOSED CONDITIONS

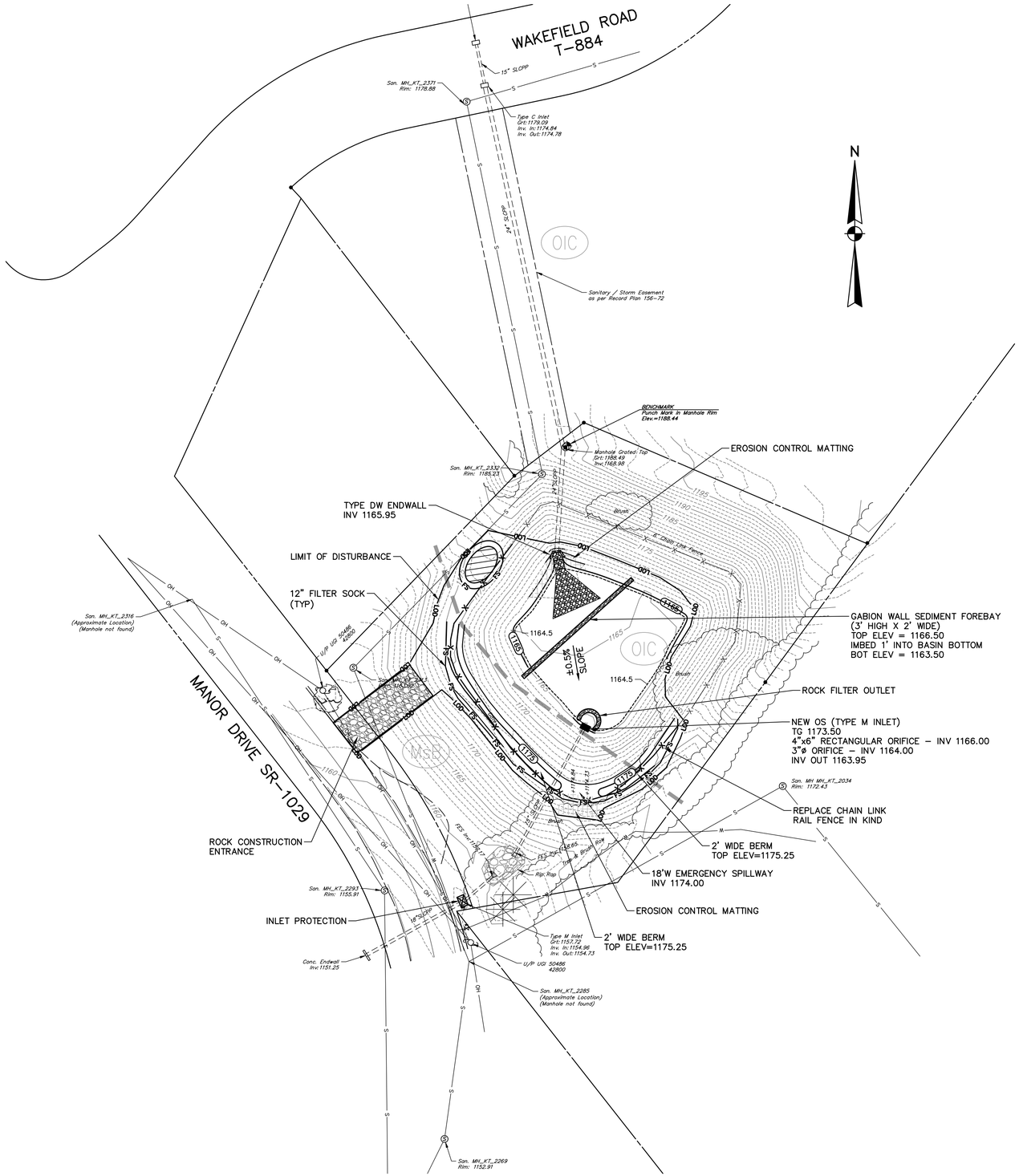
SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.09	3 OF 6	

Dwg. Name: 1113809-S06-B71.DWG Plotted: 5/16/2022 1:27 PM

F114



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS—FS— 12" COMPOST FILTER SOCK
- LOD— LIMIT OF DISTURBANCE (15,822 SF, 0.363 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)
- INLET PROTECTION

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE / FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084021 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS - SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

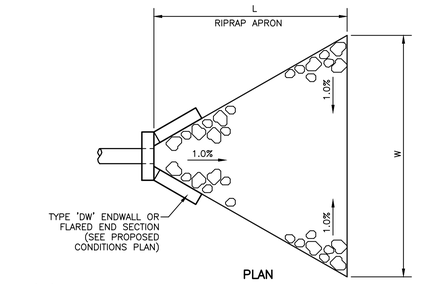
PROJECT NO. 11138.09

SHEET NO. 4 OF 6

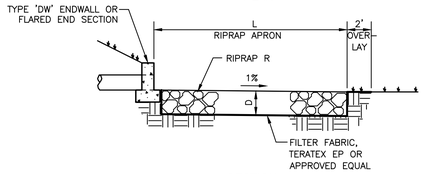
REV.

Dwg. Name: 1113809-S06-B71.DWG Plotted: 5/16/2022 1:28 PM

STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
24" SLCPP	21	27	R-5	27	24



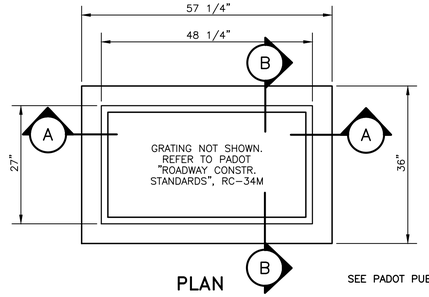
PLAN



SECTION

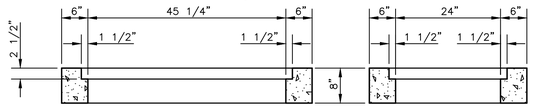
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



PLAN

SEE PADOT PUB. 72, RC-45M

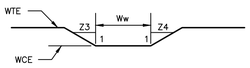


SECTION A-A

SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

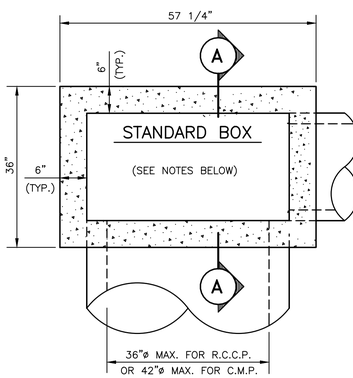


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1175.25	1174.00	18	NAG S75

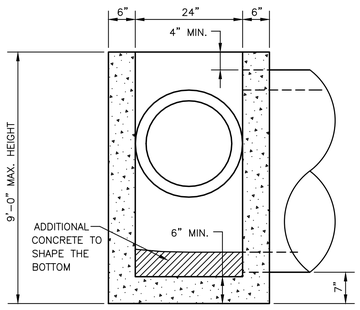
EMERGENCY SPILLWAY

NO SCALE



NOTE:
1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

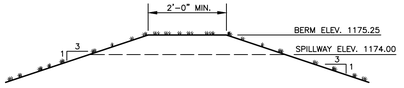
PLAN



SECTION A

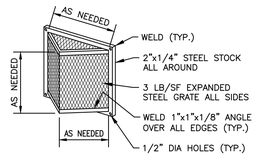
STANDARD PRECAST INLET BOX

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE
	FIELD BOOK

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE: AS SHOWN

DWG. NO.

PROJECT NO. 11138.09

SHEET NO. 5 OF 6

REV.

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

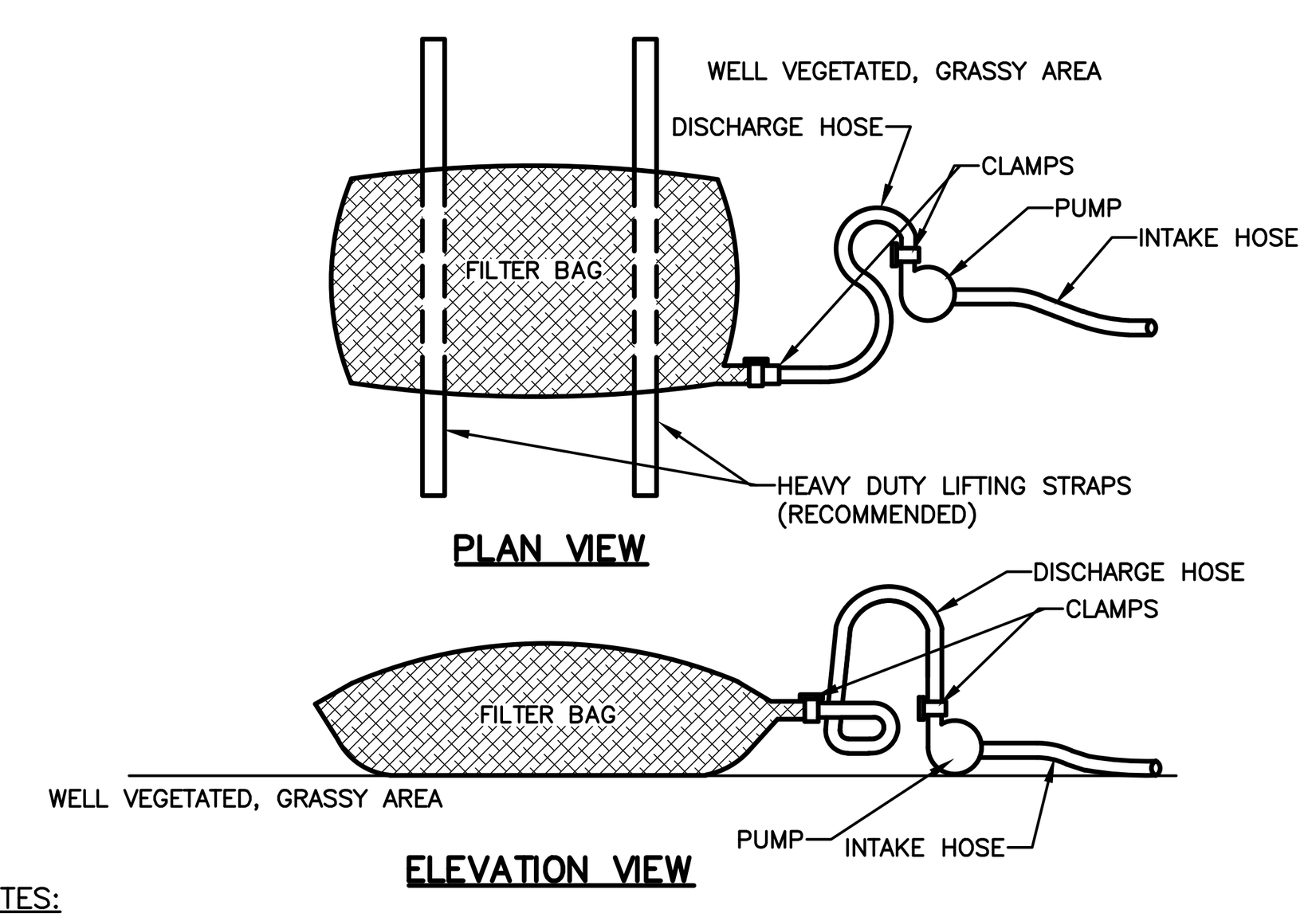
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, INCLUDING A MINIMUM UNIFORM 70% PERENNIAL VEGETATED COVER IN ALL DISTURBED VEGETATED AREAS AND AT A MINIMUM CLEAN SUBBASE PLACED IN ROADWAY AND PARKING AREAS, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B71 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

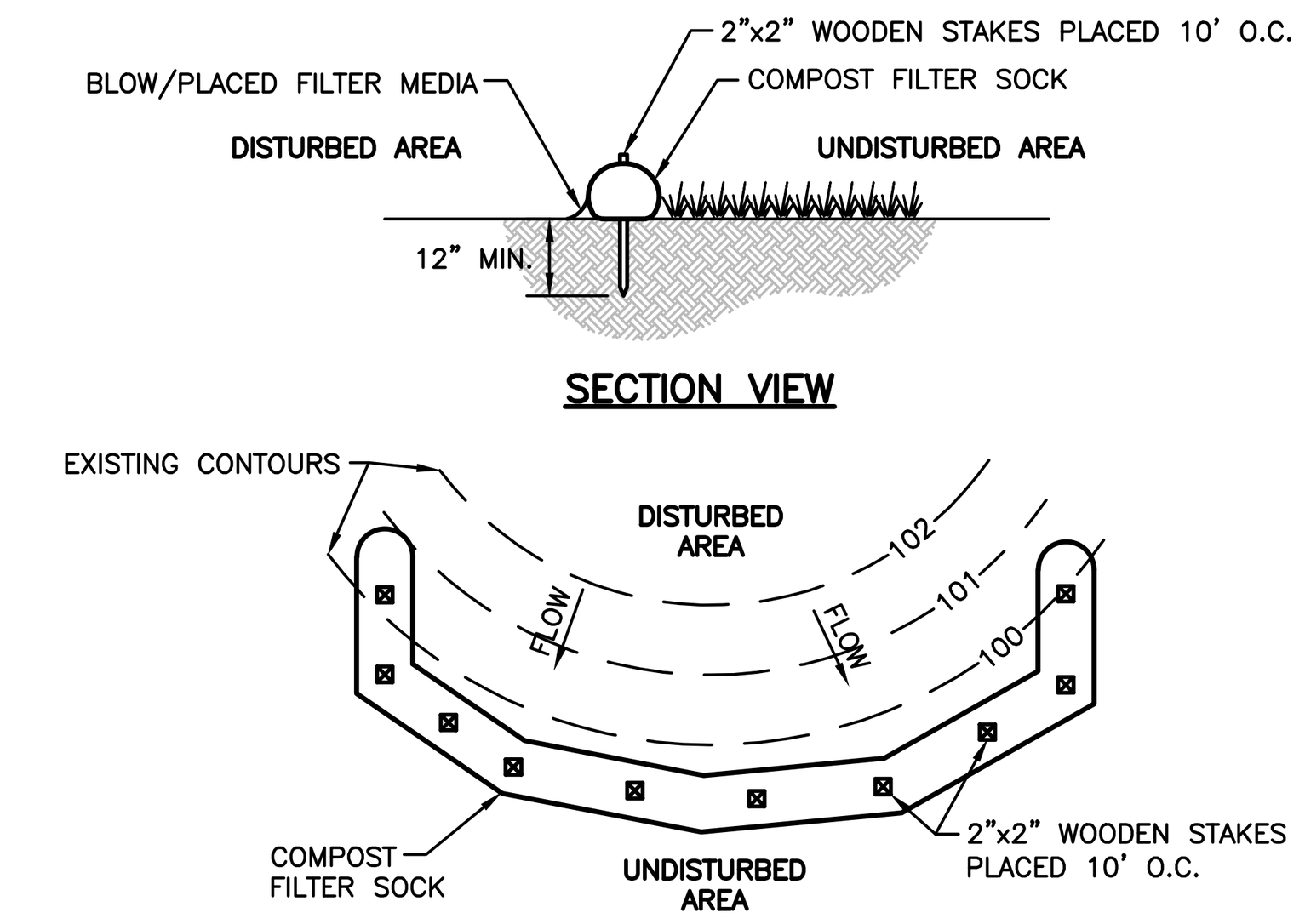
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

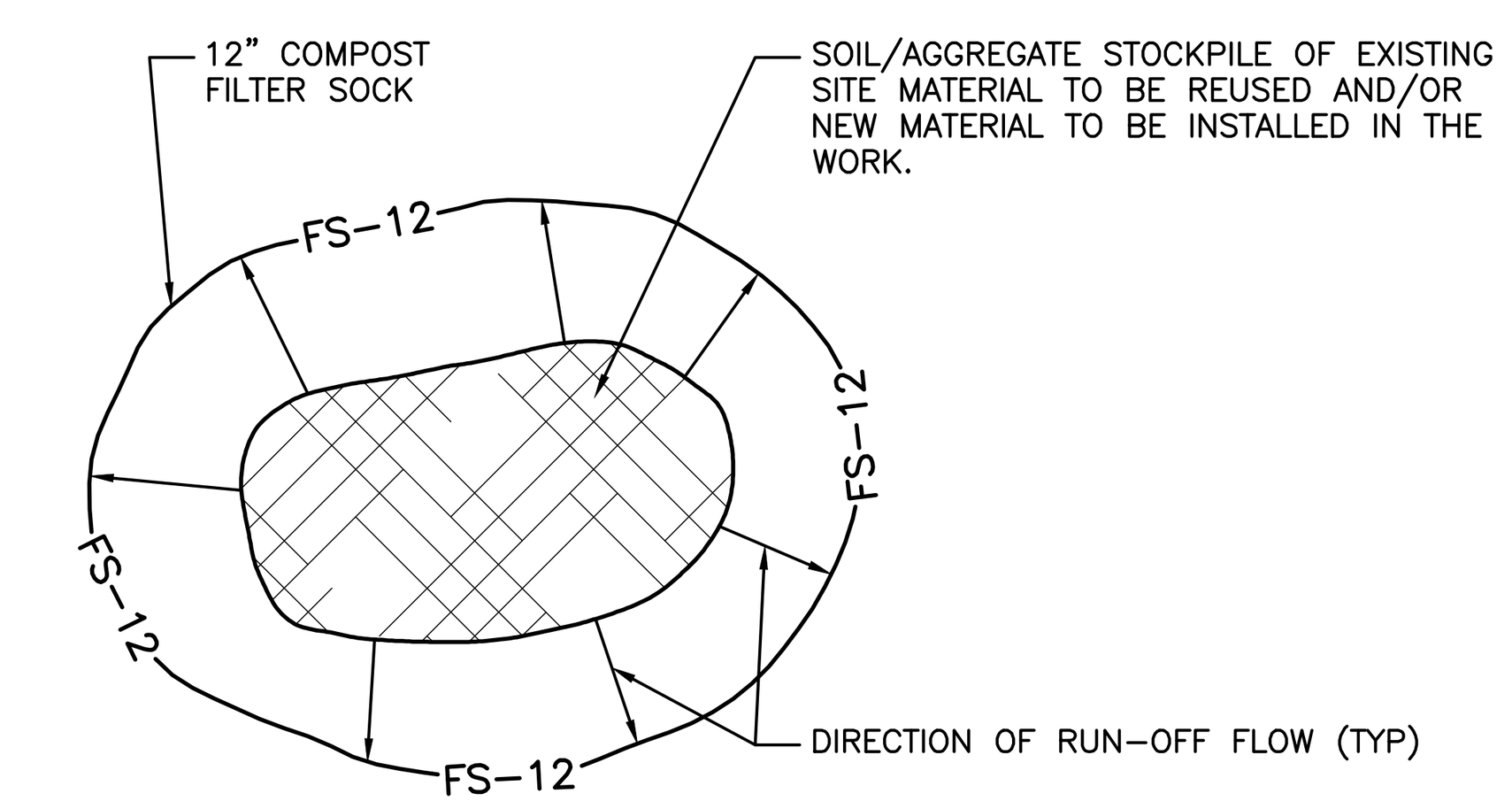


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

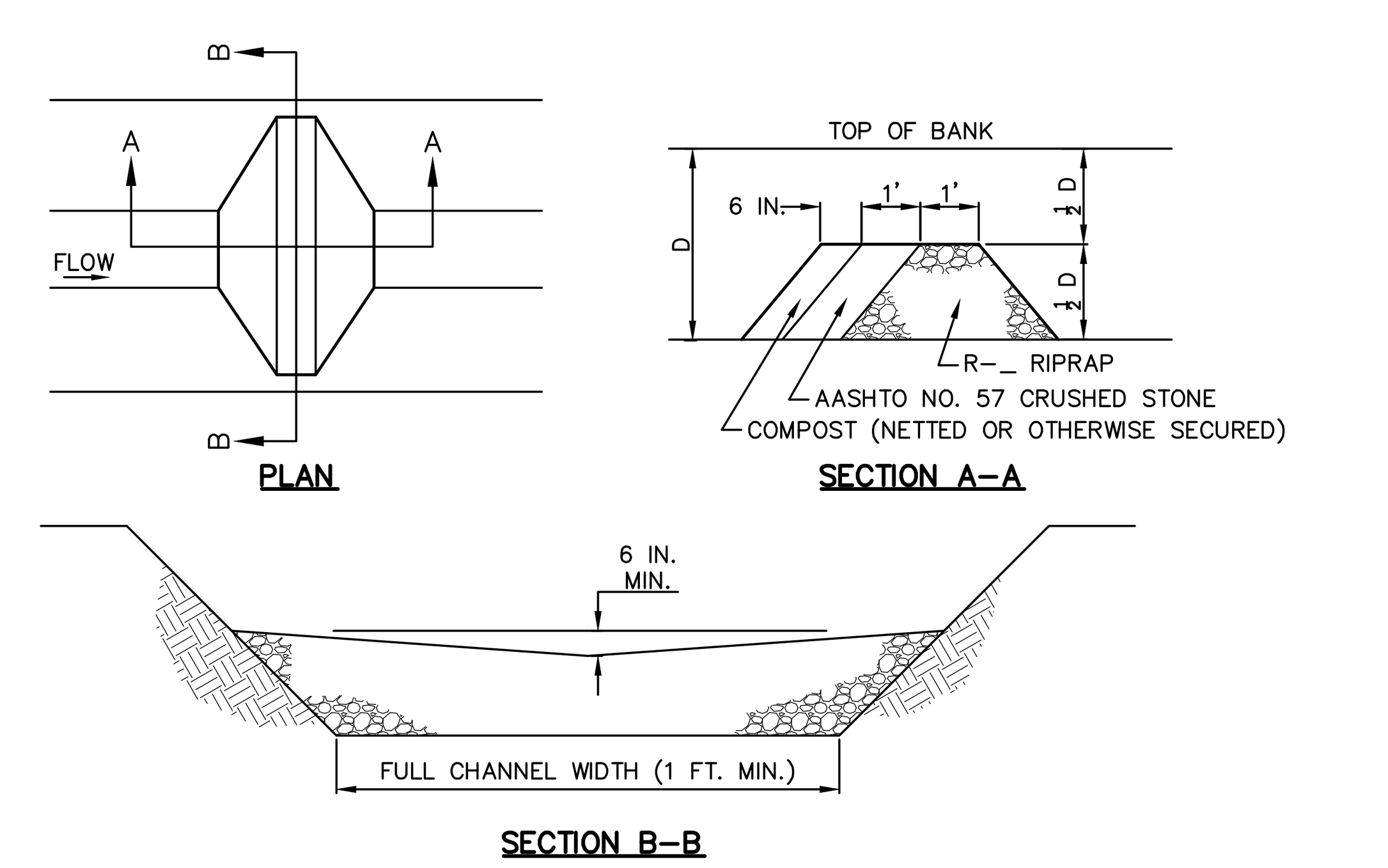
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NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

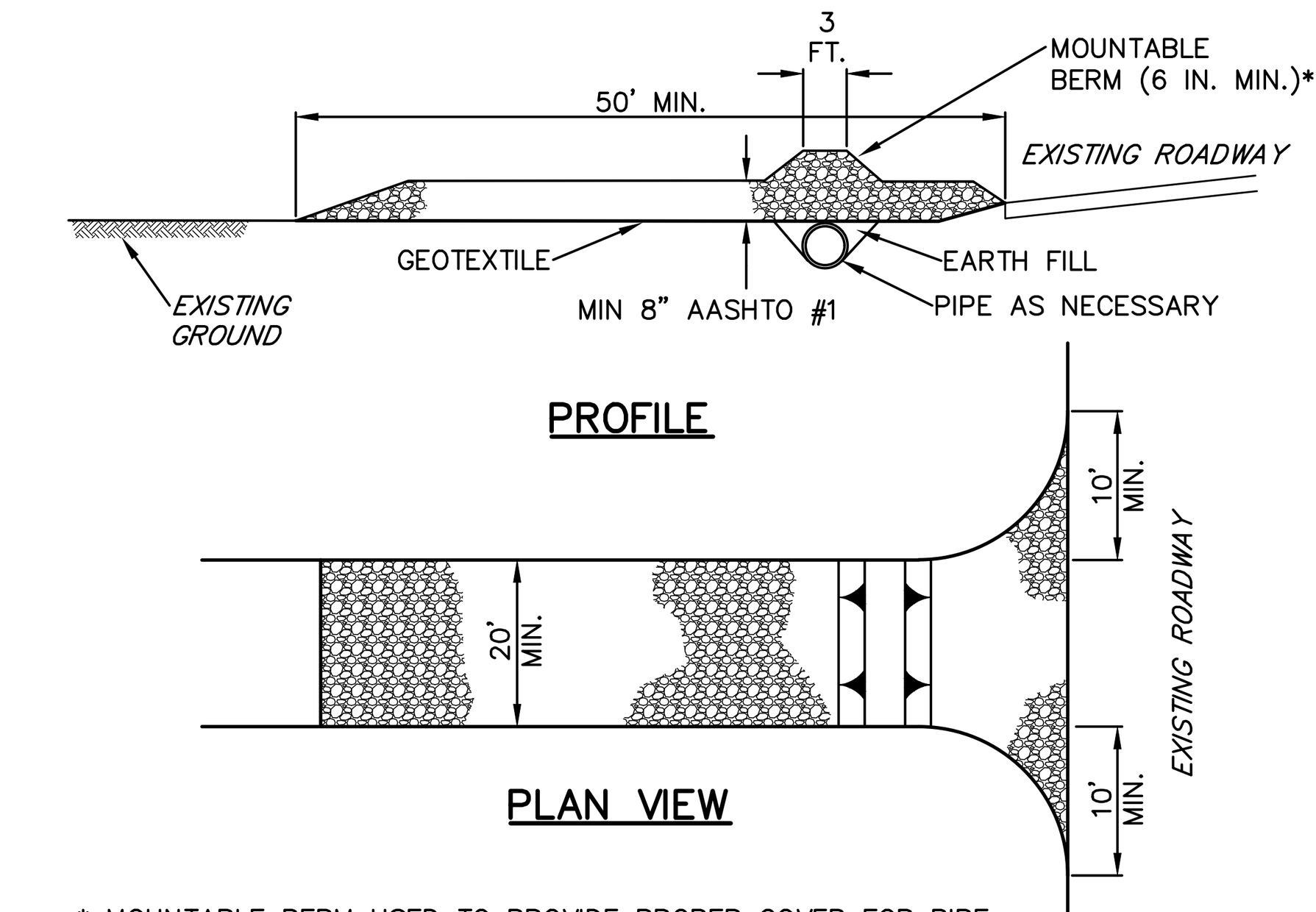
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

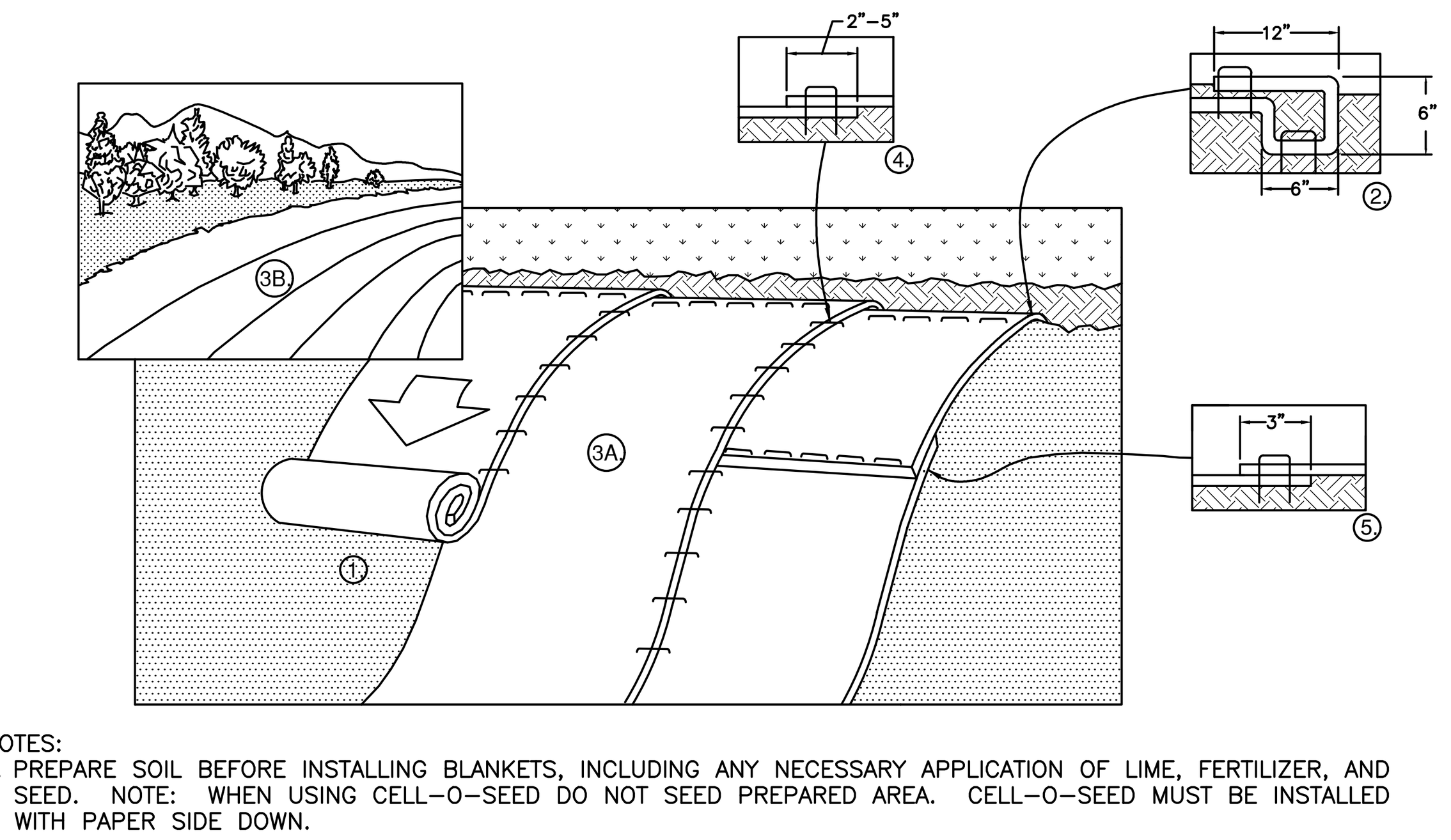
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU					

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU | CHECKED:
DRAWN: SAM | CHECKED:
DATE: JANUARY 2022 | SURVEY DATE: | FIELD BOOK:

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084973 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B71
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.09
SHEET NO.: 6 OF 6
REV.

Dwg. Name: 1113809-D01.DWG Plotted: 5/16/2022 1:28 PM

F117

ATTACHMENT F: BMP B72 Plans

Dallas Area Municipal Authority

BMP B72 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
902,311	285,034	617,277	20.71	6.54	14.17	31.59	68.41

B72

0 75 150 300 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
KINGSTON TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP DESIGN
SITE B72

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 7/29/2020 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20202113079

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 OR 811 STOP. CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 1 COMCAST WAY
DURYEA, PA. 18642
CONTACT: JAMES HALL
EMAIL: JAMES_HALL3@CABLE.COMCAST.COM

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: UGI UTL WILKES BARRE
ADDRESS: 511-517 E NORTHAMPTON ST
1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: KIM SERIS
EMAIL: KSERIS@UGI.COM

COMPANY: KINGSTON TOWNSHIP
ADDRESS: 180 E CENTER STREET
SHAVERTOWN, PA. 18708
CONTACT: DONALD FRITZGES
EMAIL: DFRITZGES@KINGSTONTOWNSHIP.COM

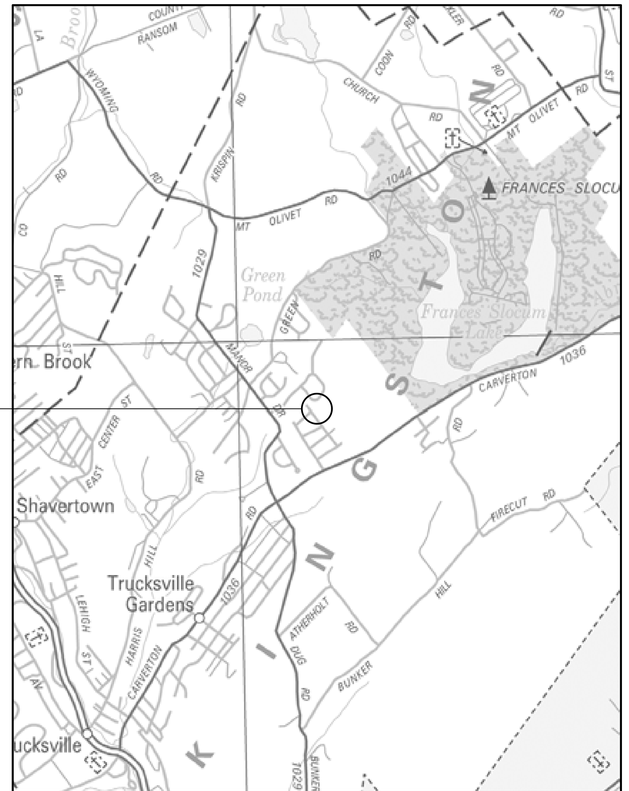
COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 187027025
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: JUSTIN.ADAMS@WILLIAMS.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

COMPANY: AQUA PENNSYLVANIA
ADDRESS: 1 AQUA WAY
WHITE HAVEN, PA. 18661
CONTACT: JOSHUA SHOFF
EMAIL: JPSHOFF@AQUAAMERICA.COM

PROJECT LOCATION



LOCATION MAP

N

2000 1000 0 2000 4000

SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT REVIEW	9/28/20	SAM	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: AUGUST 2020	SURVEY DATE: JUNE 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084927 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

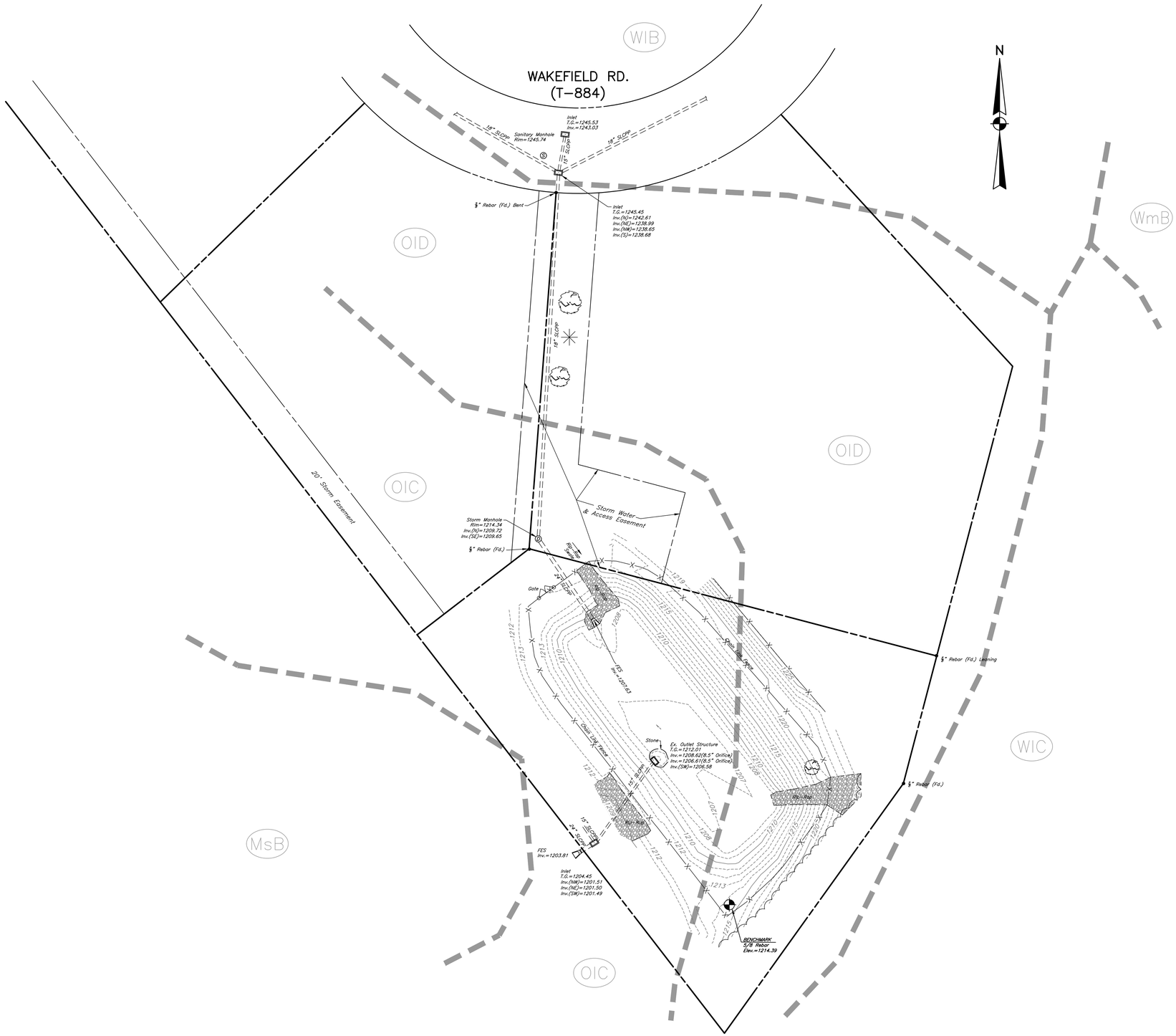
TITLE: TITLE SHEET

SCALE: AS SHOWN
DWG. NO.

PROJECT NO. 11138.01
SHEET NO. 1 OF 6
REV.

Dwg. Name: 1113801-D01.DWG Plotted: 2/1/2022 10:24 AM

F120



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- CONTOUR LINES (1025)
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- SAN SEWER
- WATER
- GAS
- OVERHEAD ELEC
- UNDERGROUND ELEC
- SOILS BOUNDARY LINE

SOILS

MsB – MORRIS CHANNERY SILT LOAM,
0 TO 8 PERCENT SLOPES, EXTREMELY STONY
OIC – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS,
8 TO 15 PERCENT SLOPES
OID – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS,
15 TO 25 PERCENT SLOPES
WIB – WELLSBORO CHANNERY SILT LOAM,
3 TO 8 PERCENT SLOPES
WIC – WELLSBORO CHANNERY SILT LOAM,
8 TO 5 PERCENT SLOPES
WmB – WELLSBORO CHANNERY SILT LOAM,
3 TO 8 PERCENT SLOPES, EXTREMELY STONY

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on June 4, 2020. 931 Stony Battery Road, Landisville, PA (717)-898-9466. Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00. Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: 5/8 Rebar set at the south eastern corner of the basin, inside the fence, see plan.
   Elevation: 1214.39
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.
NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: AUGUST 2020	SURVEY DATE: JUNE 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – MICHAEL J BINGHAM – ENGINEER – PE084923 – 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

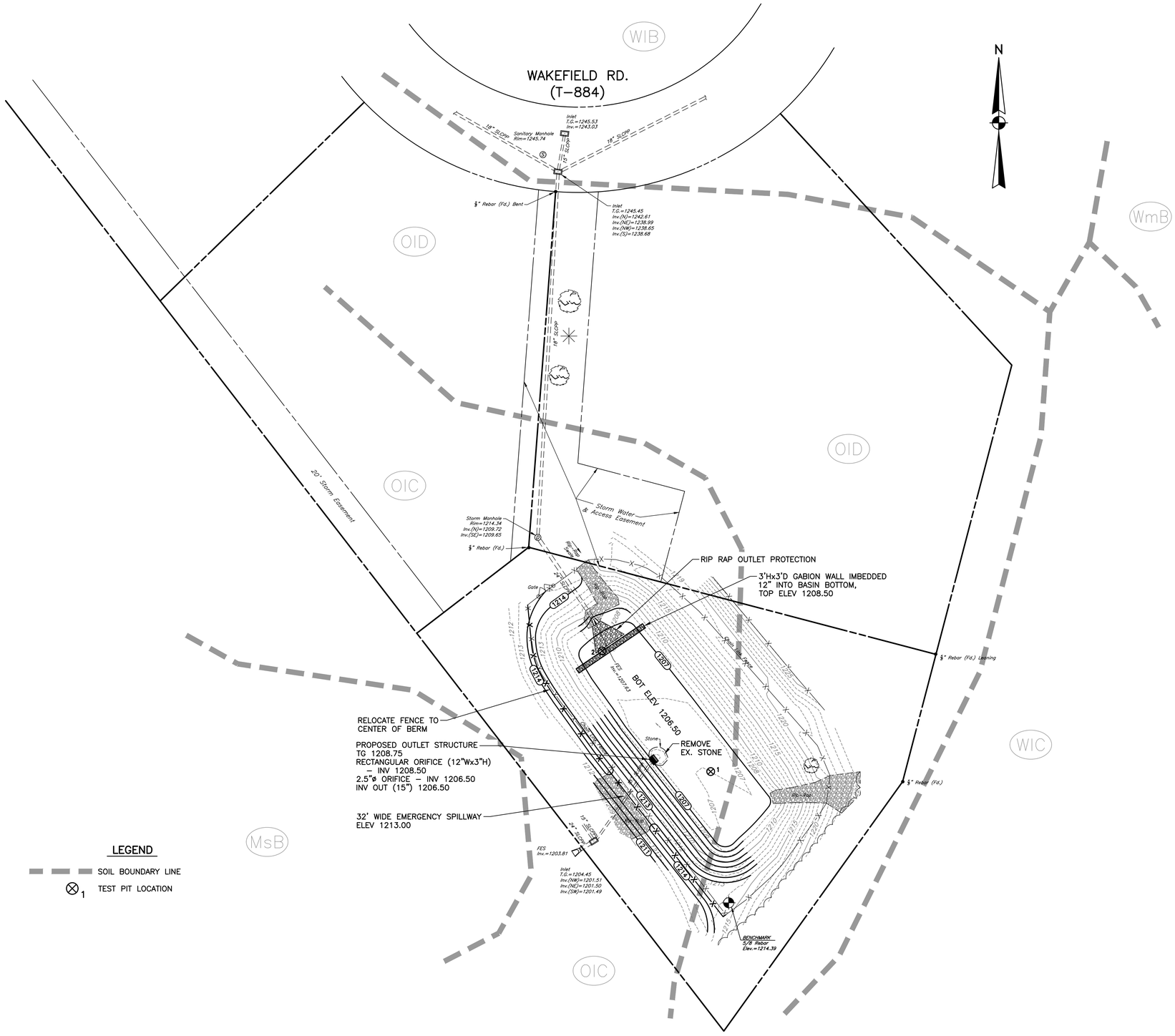
STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

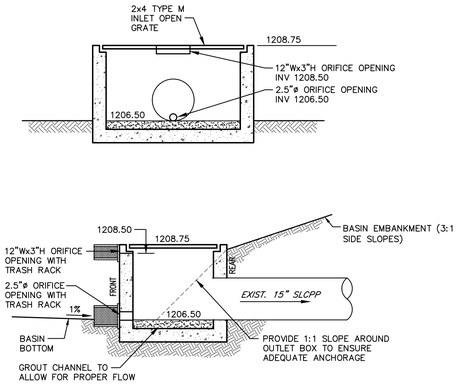
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'
DWG. NO.
PROJECT NO. 11138.01
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113801-S01 – B72.DWG Plotted: 2/1/2022 10:25 AM

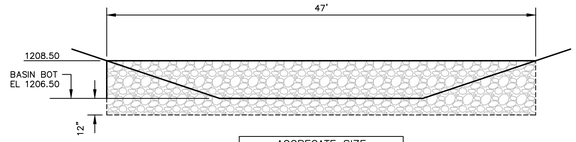




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



AGGREGATE SIZE	
MINIMUM	MAXIMUM
4"	8"

GABION FOREBAY DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
AUGUST 2020	JUNE 2020
	FIELD BOOK
	WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084923
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'


DWG. NO.

PROJECT NO. 11138.01

SHEET NO. 3 OF 6

REV.

Dwg. Name: 1113801-S01 – B72.DWG Plotted: 2/1/2022 10:25 AM



NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE: AUGUST 2020	SURVEY DATE: JUNE 2020
	FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA, REGISTERED PROFESSIONAL ENGINEER, MICHAEL J BINGHAM, PE084973 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'

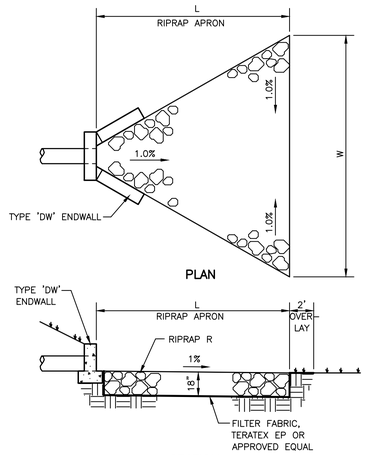
DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.01	4 OF 6	

Dwg. Name: 1113801-S01 – B72.DWG Plotted: 2/1/2022 10:25 AM

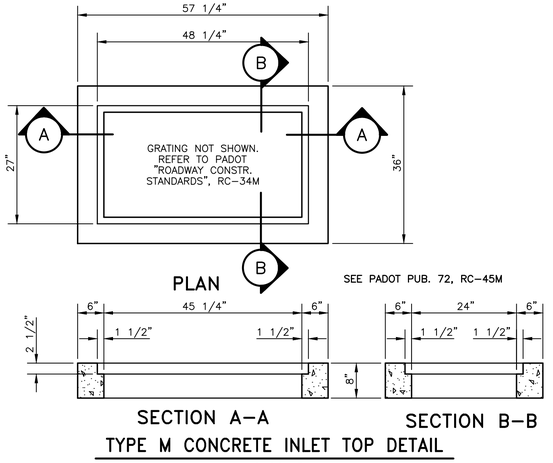
F123

STRUCTURE NAME	APRON LENGTH L	APRON WIDTH W	RIP-RAP R	PIPE DIAMETER
24" CPP	14	20.0	R-4	24



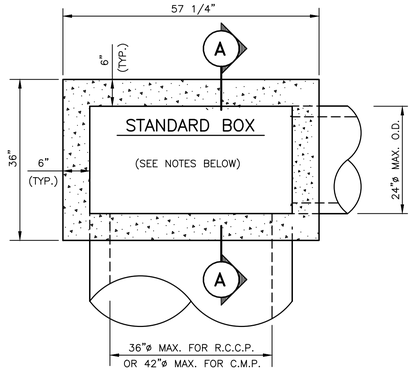
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



TYPE M CONCRETE INLET TOP DETAIL

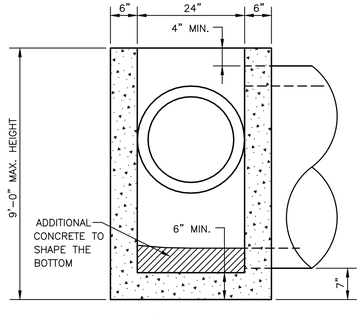
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

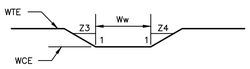
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

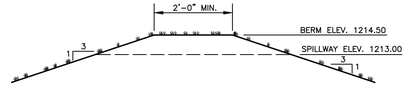


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1214.50	1213.00	32	NAG S75

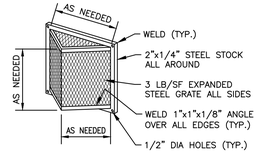
SEDIMENT BASIN EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:

1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
AUGUST 2020	JUNE 2020
	FIELD BOOK WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.01	5 OF 6	

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

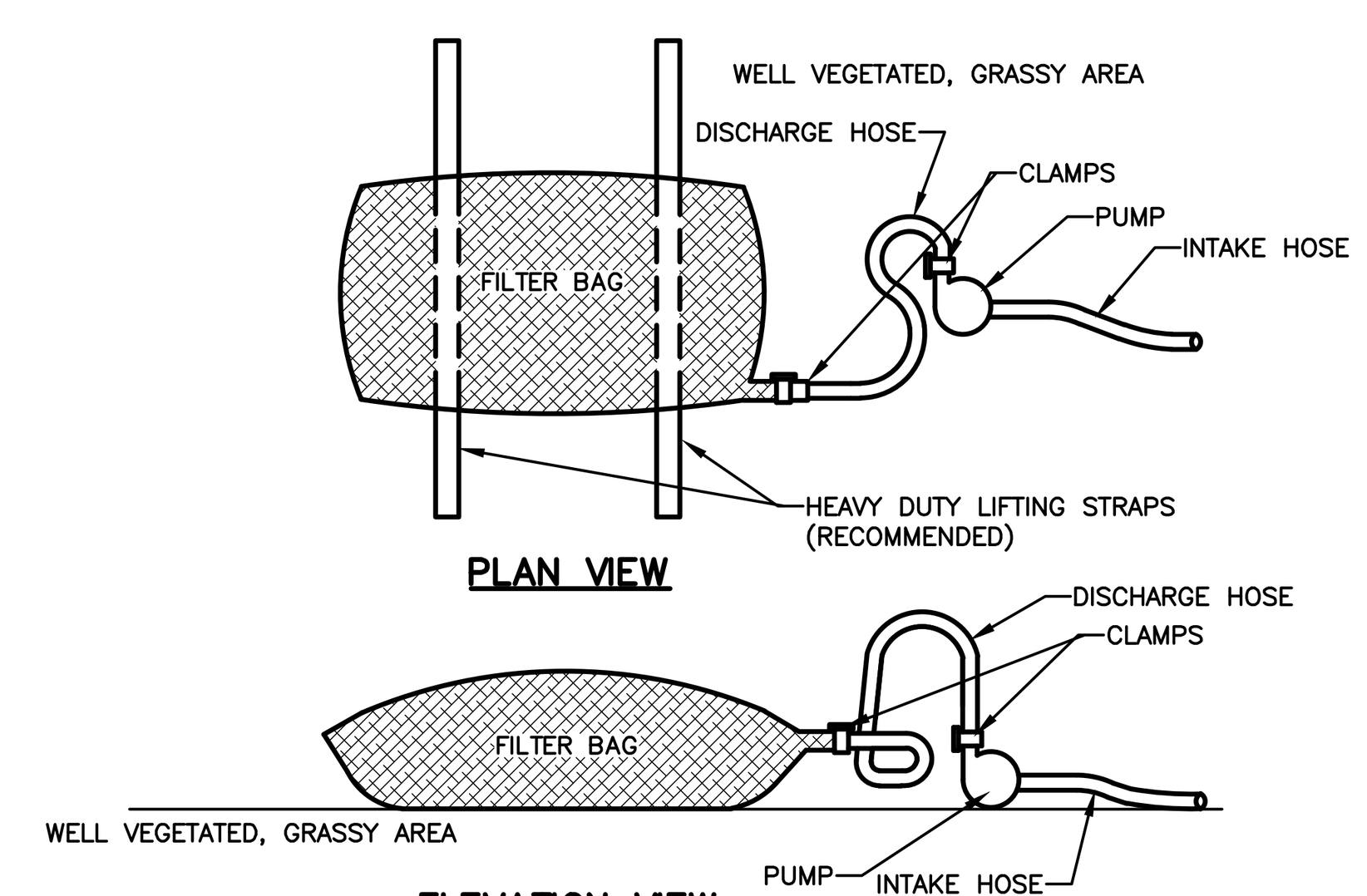
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. THE AREA IMMEDIATELY ADJACENT TO THE BASIN MUST BE STABILIZED IN ACCORDANCE WITH THE PADEP'S EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (2000 OR LATEST EDITION) PRIOR TO BASIN CONSTRUCTION.
   b. THE ROCK FILTER OUTLET SHALL BE INSTALLED PER THE PLANS AND DETAILS PRIOR TO ANY DISTURBANCE OF LAND TRIBUTARY TO THE OUTLET STRUCTURE.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILIZED.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B72 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

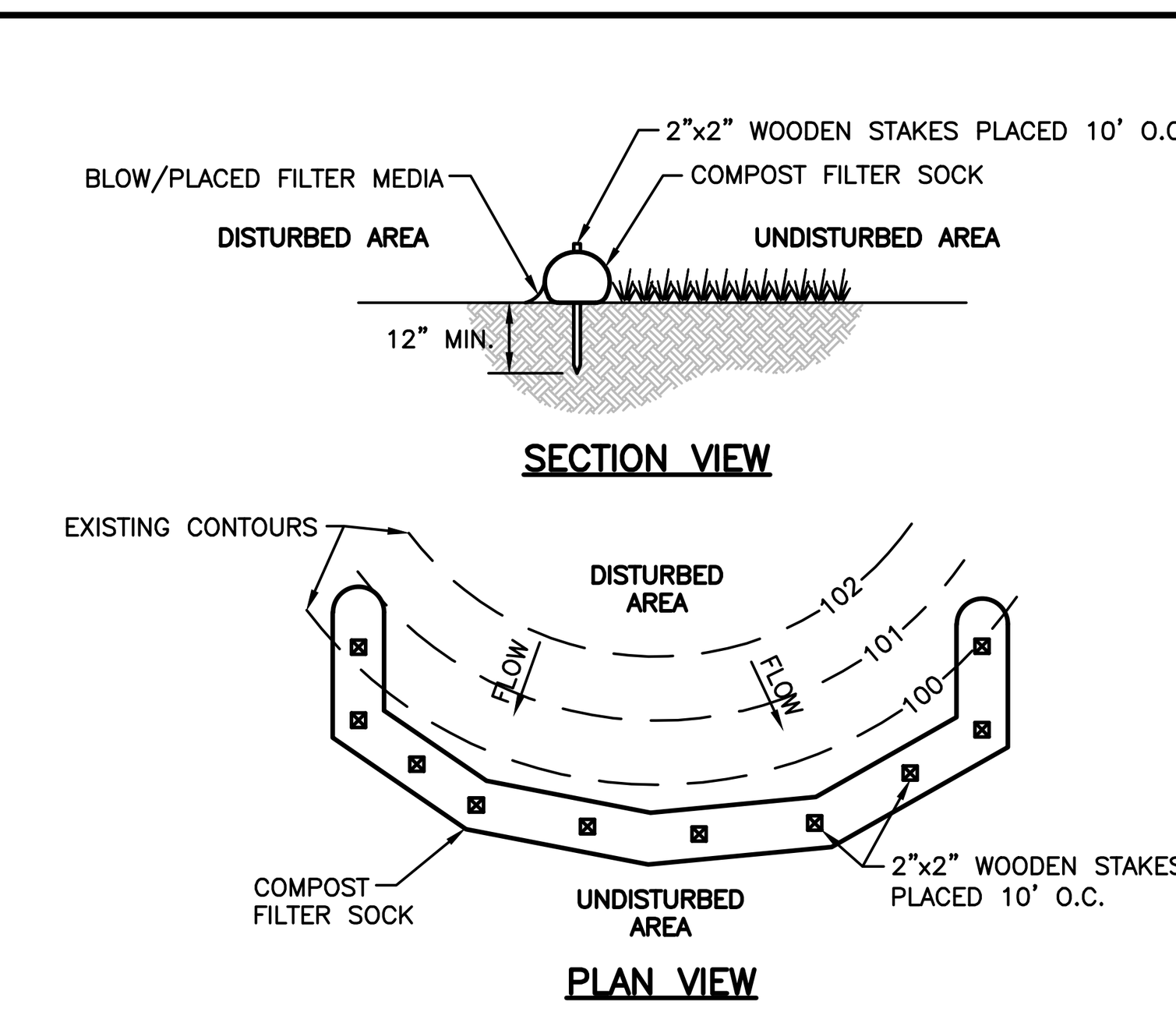
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

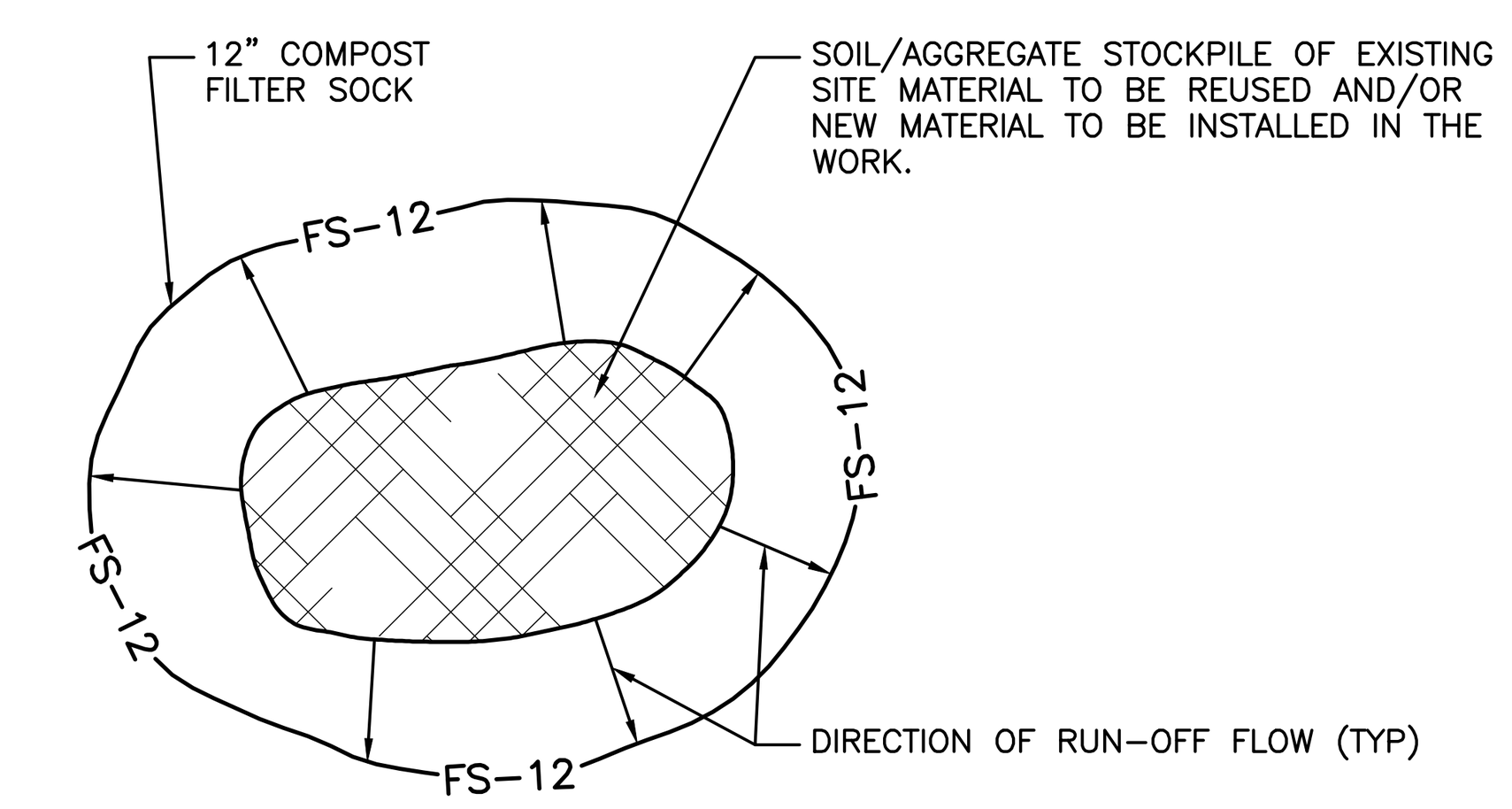


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

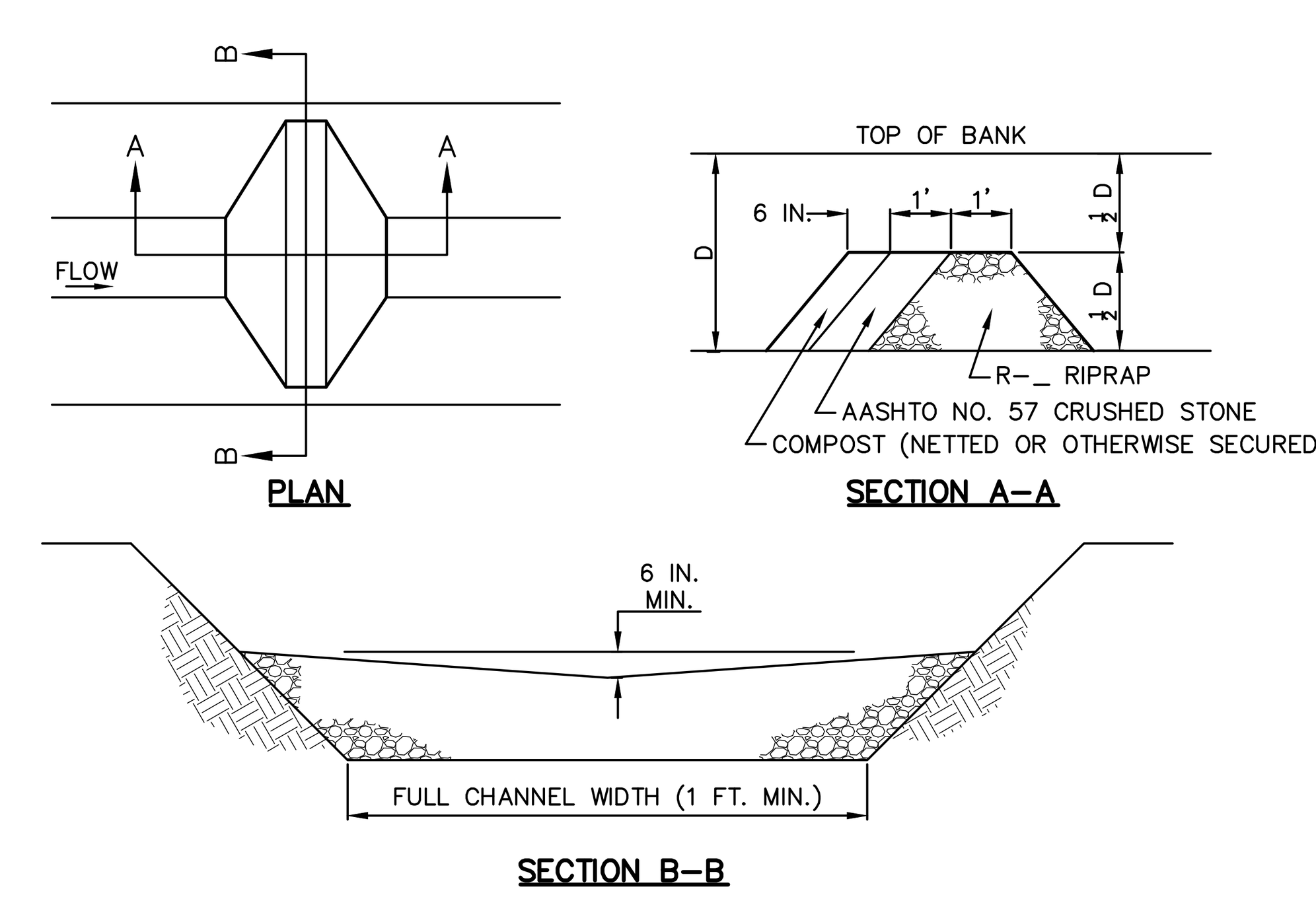
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

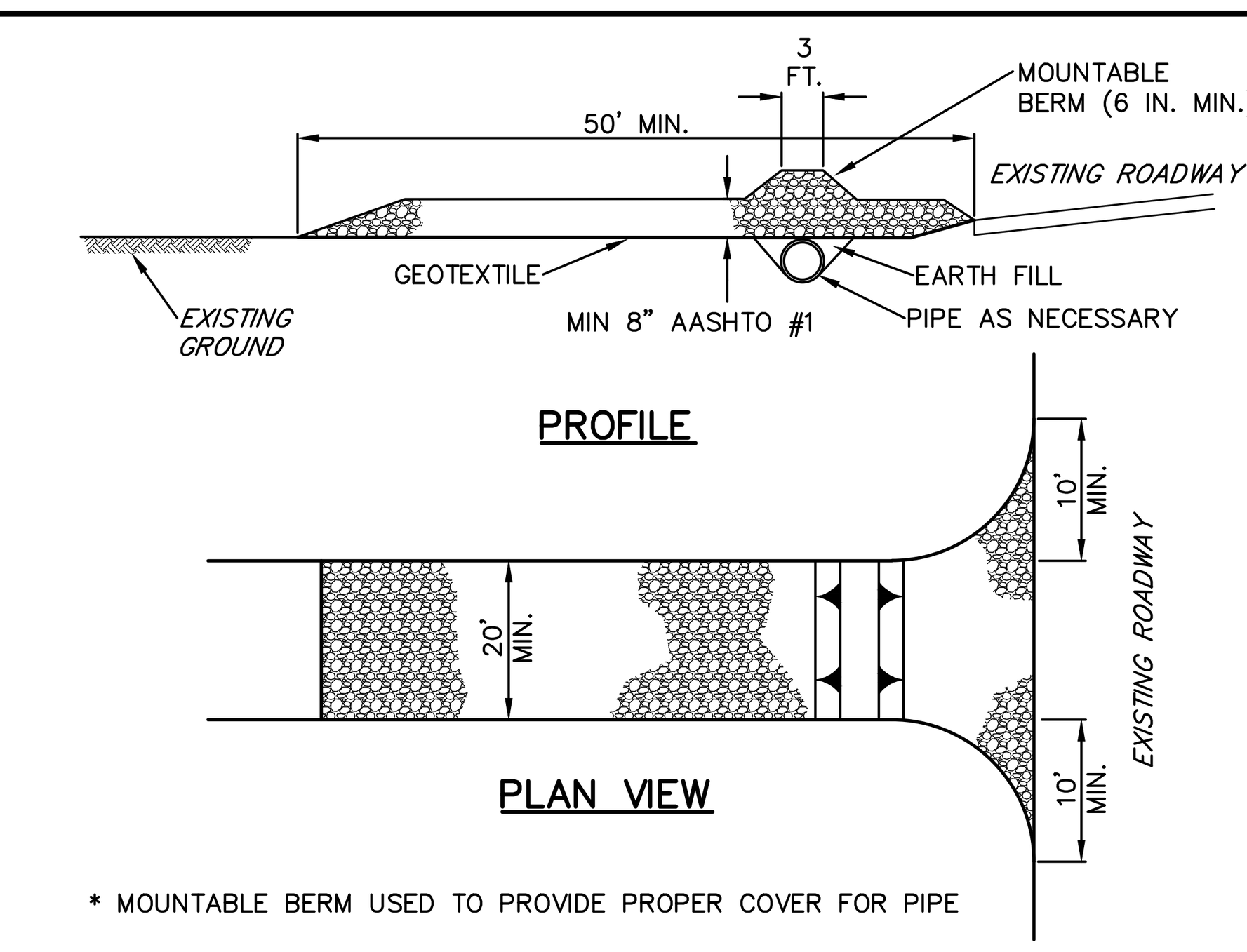
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE

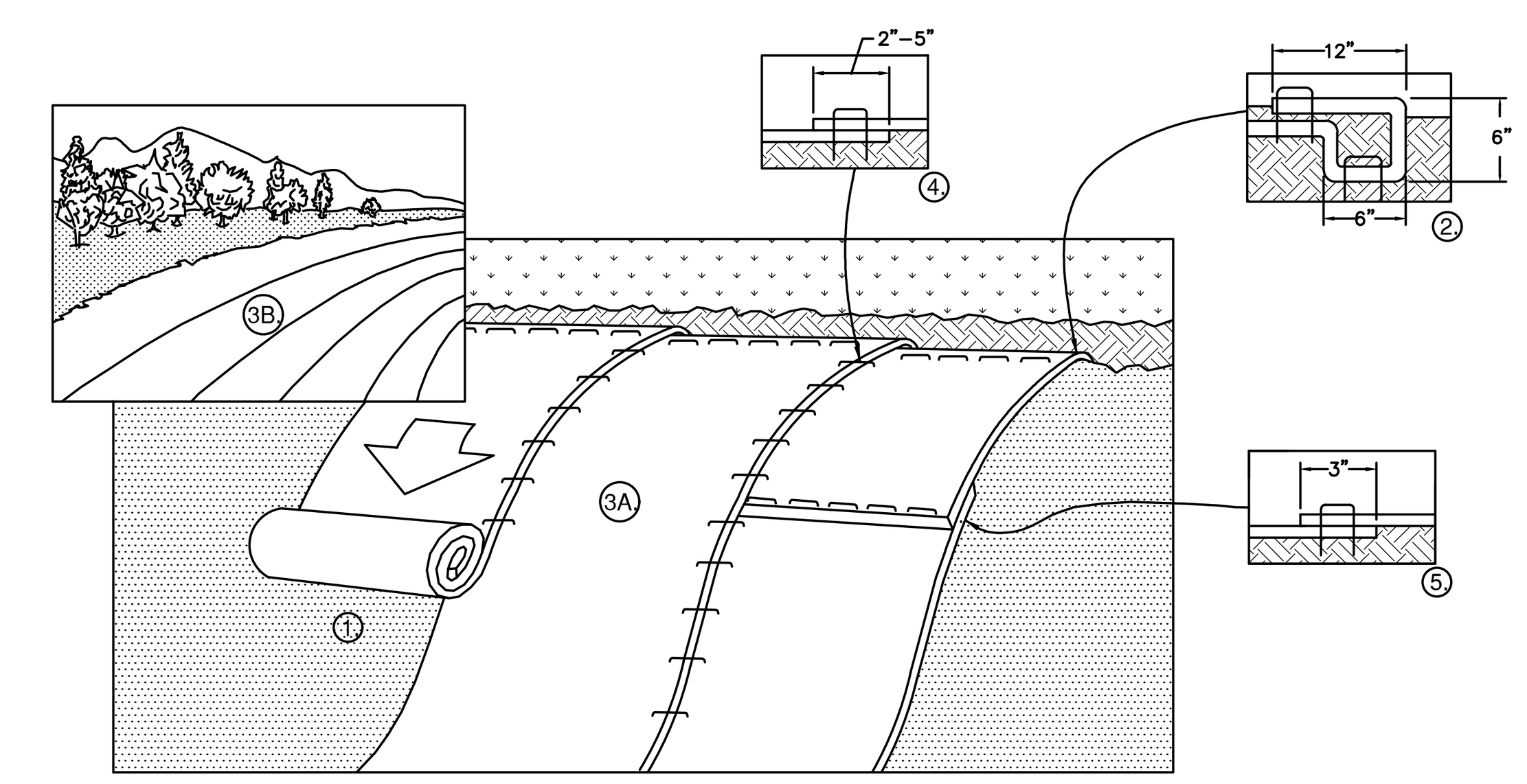
APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE

   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE AUGUST 2020	SURVEY DATE JUNE 2020
	FIELD BOOK WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B72
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SCALE			DWG. NO.
AS SHOWN			
PROJECT NO. 11138.01	SHEET NO. 6 OF 6	REV.	

Dwg. Name: 1113801-D01.DWG Plotted: 2/1/2022 10:25 AM

F125

ATTACHMENT F: BMP B74 Plans

Dallas Area Municipal Authority

BMP B74

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
338,877	129,228	209,648	7.78	2.97	4.81	38.13	61.87

Sheet Flow
L=100'
s=3%
n=.24

Shallow Conc. Flow
L=70'
s=1.4%
pavement

Shallow Conc. Flow
L=310'
s=2.3%
vegetated

Pipe Flow
L=630'
s=4.8%
n=0.013
W_p=3.14
A=1.57

B74

Feet
0 37.5 75 150

DALLAS AREA MUNICIPAL AUTHORITY
KINGSTON TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B74

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 9/2/2021 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20212452757

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 339 BALTIMORE RD
SHIPPENSBURG, PA. 17257
CONTACT: WILLIAM MAYS
EMAIL: william_mays@cable.comcast.com

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 18702
CONTACT: MICHAEL NAVICH
EMAIL: Michael.Navich@FTR.com

COMPANY: UGI UTL LANCASTER
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: anixon@ugi.com

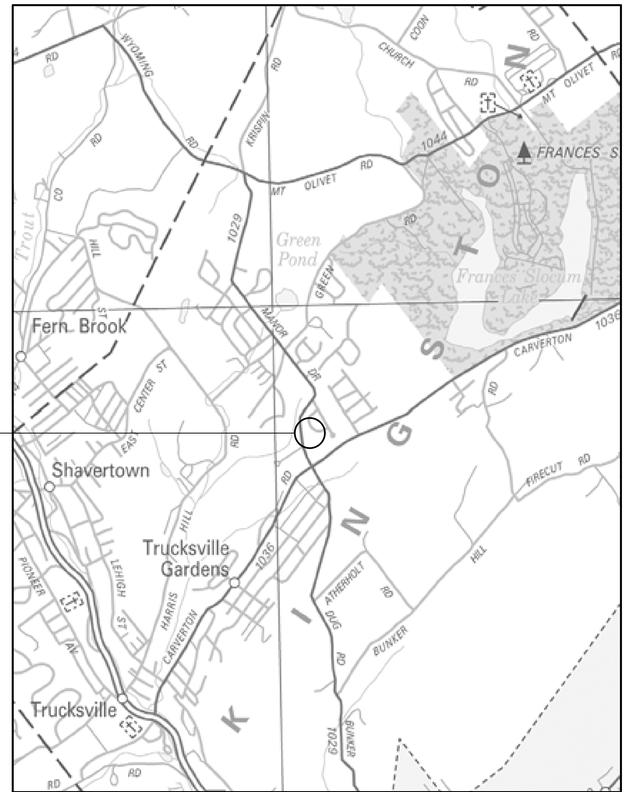
COMPANY: KINGSTON TOWNSHIP
ADDRESS: 180 E CENTER STREET
SHAVERTOWN, PA. 18708
CONTACT: DONALD FRITZGES
EMAIL: dfritzges@kingstontownship.com

COMPANY: TRANSCONTINENTAL GAS/WILLIAMS GAS
ADDRESS: 99 FARBER RD
PRINCETON, NJ. 08540
CONTACT: JUSTIN ADAMS
EMAIL: justin.adams@williams.com

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: jboecker@ugi.com

COMPANY: AQUA PENNSYLVANIA
ADDRESS: 1 AQUA WAY
WHITE HAVEN, PA. 18661
CONTACT: JOSHUA SHOFF
EMAIL: jpshoff@aquaamerica.com

PROJECT LOCATION



LOCATION MAP

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS AND DEMOLITION
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED
DRAWN: SAM	CHECKED
DATE: JANUARY 2022	SURVEY DATE / FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084927 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

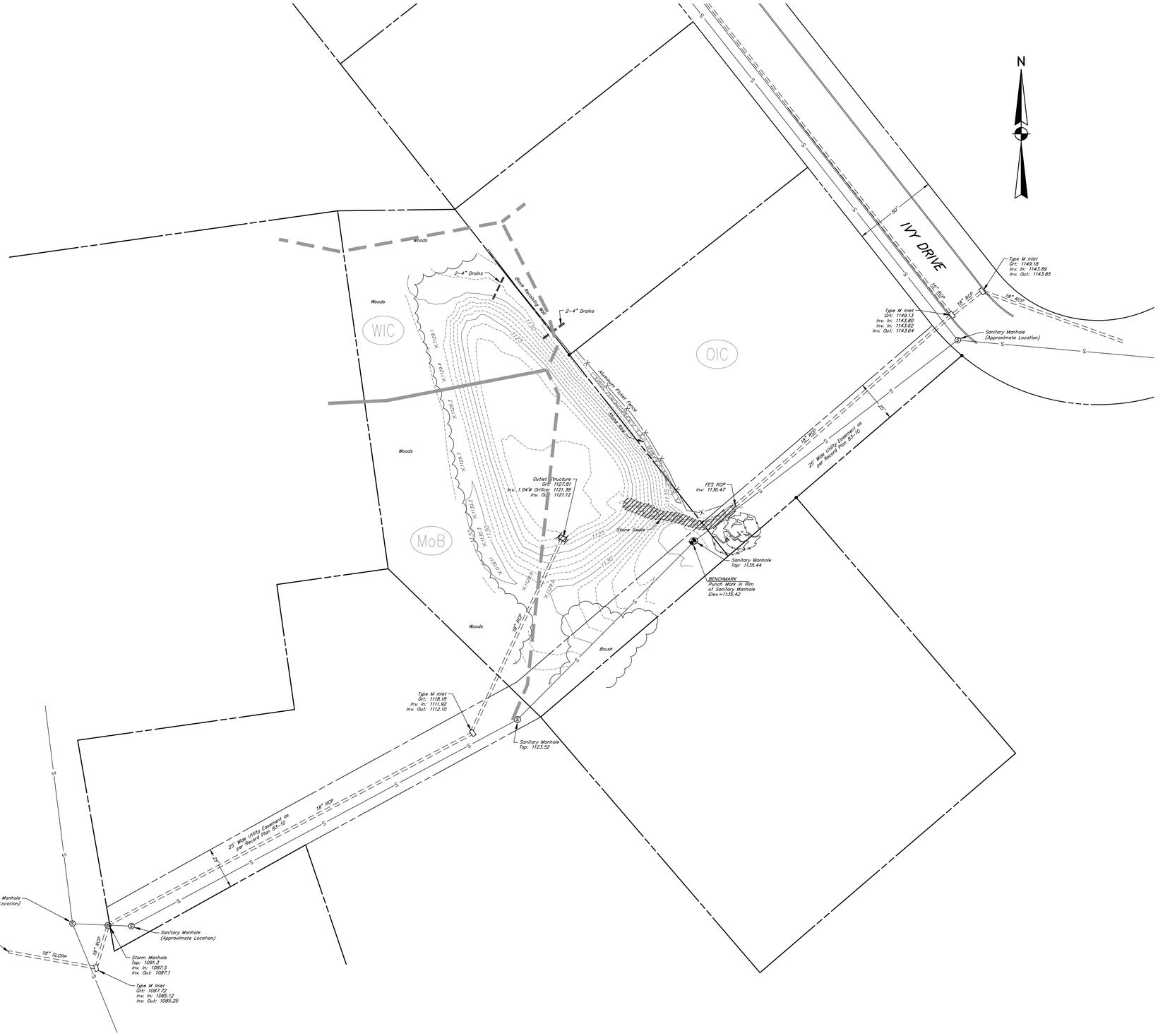
TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.09	1 OF 6	

Dwg. Name: 1113809-D01.DWG Plotted: 5/16/2022 1:29 PM

F128



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE
- FEATURES TO BE DEMOLISHED

SOILS

MoB – MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES

OIC – OQUAGA AND LORSTOWN CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES

WIC – WELLSBORO CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES

Survey Notes:

1. *Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on July 27, 2021. 931 Stony Battery Road, Landisville, PA (717)–898–9466. Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00. Vertical Datum: NAVD88 (Geoid12B, established by GPS observation) Benchmark: Punch Mark in Rim of Sanitary Sewer Manhole, see plan. Elevation: 1135.42 Contour Interval: 1 Foot*
2. *All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.*
3. *Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.*
4. *All features shown are existing unless otherwise noted.*
5. *This survey was prepared without the benefit of a title search.*
6. *Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.*

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – MICHAEL J BINGHAM – ENGINEER – PE084921 – 2/1/22

SEAL

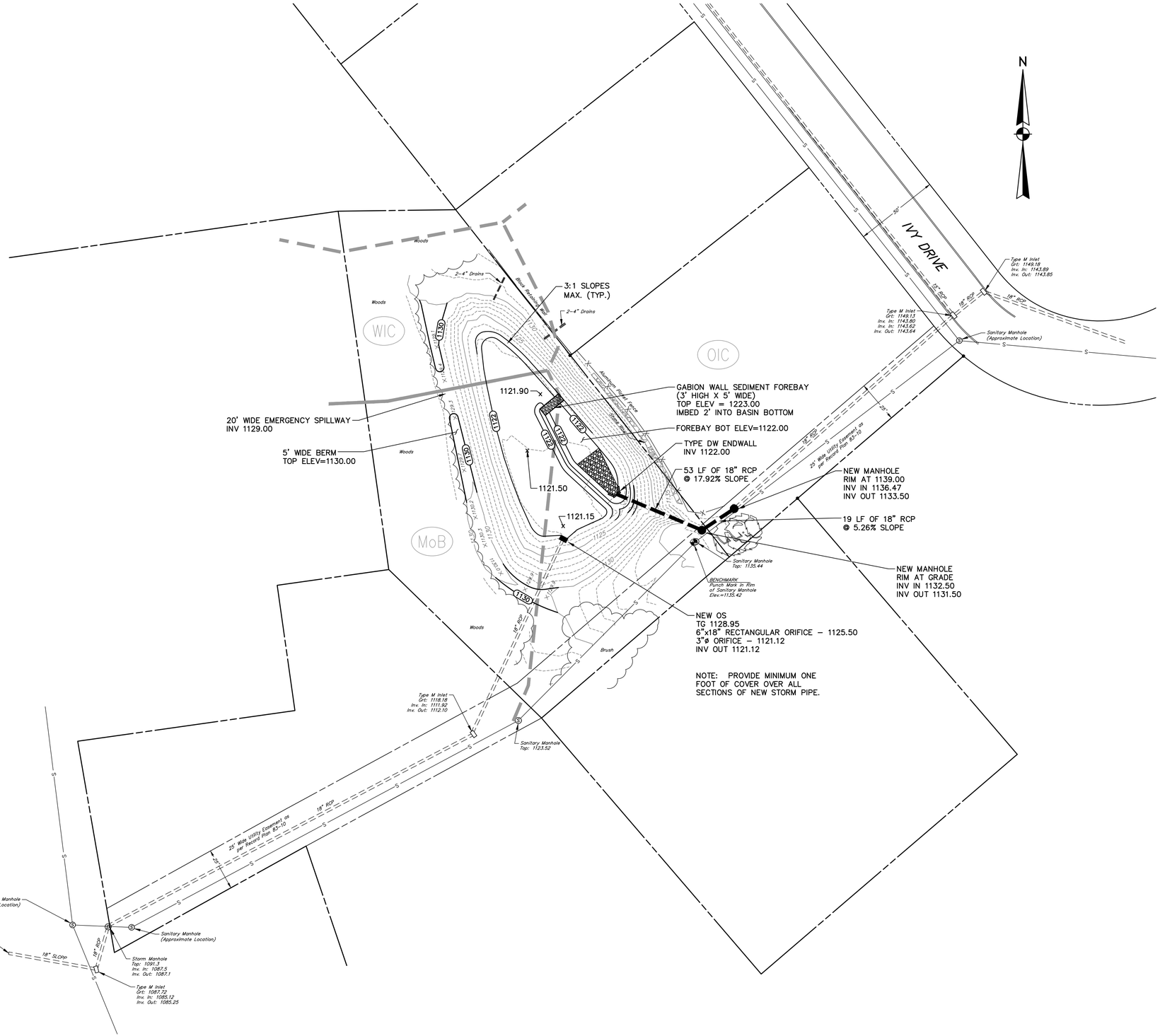
CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

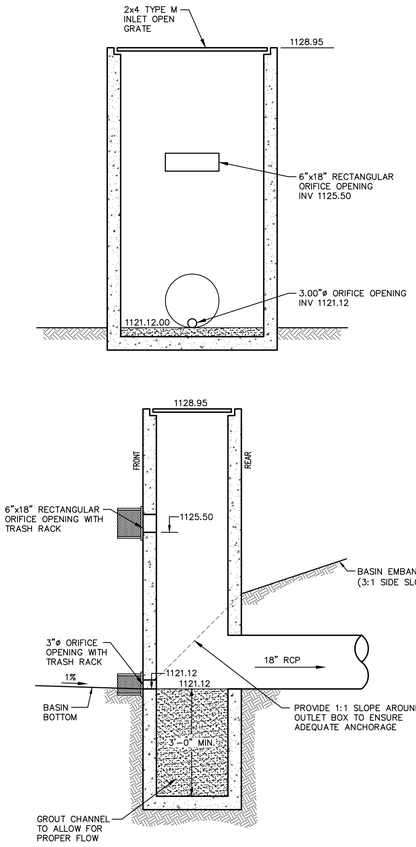
STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EXISTING CONDITIONS AND DEMOLITION

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'
DWG. NO.
PROJECT NO. 11138.09
SHEET NO. 2 OF 6
REV.

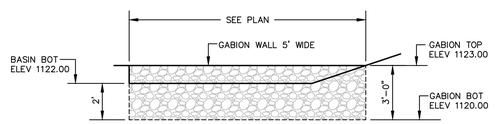




NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE



AGGREGATE SIZE	
MINIMUM	MAXIMUM
4"	8"

GABION FOREBAY DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
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DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	FIELD BOOK

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084973
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

PROPOSED CONDITIONS

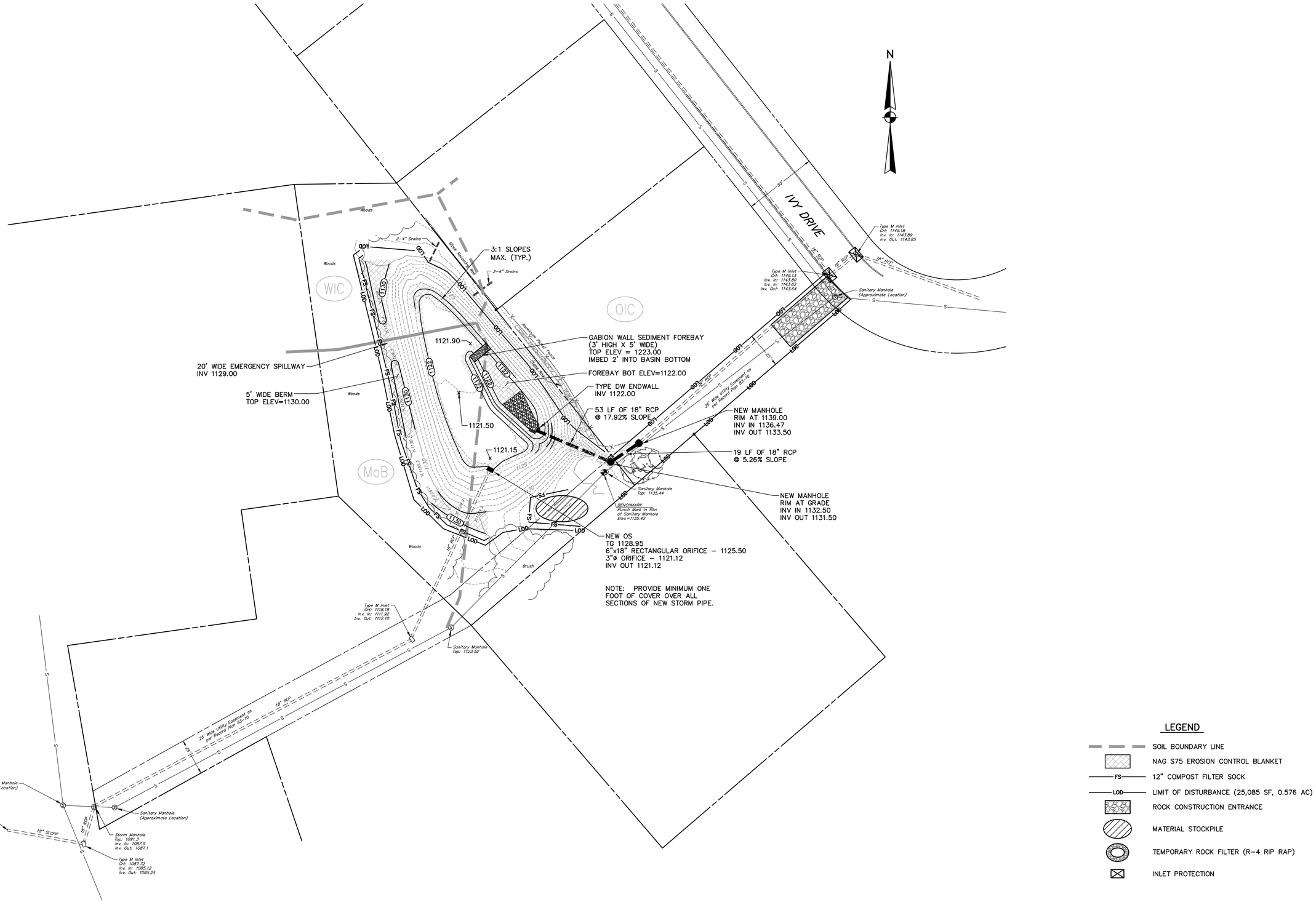
SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO. 11138.09

SHEET NO. 3 OF 6

REV.



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (25,085 SF, 0.576 AC)
- ROCK CONSTRUCTION ENTRANCE
- MATERIAL STOCKPILE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)
- INLET PROTECTION

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — MICHAEL J BINGHAM — PE085921 — 2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

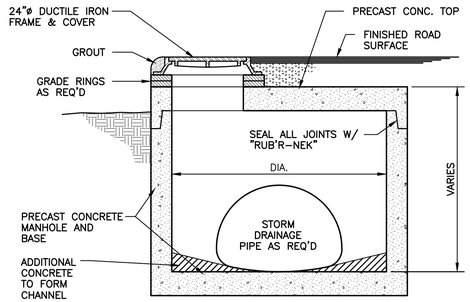
STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90' — SCALE: 1" = 30'
DWG. NO.
PROJECT NO. 11138.09
SHEET NO. 4 OF 6
REV.

Dwg. Name: 1113809-S04-B74.DWG Plotted: 5/16/2022 1:29 PM

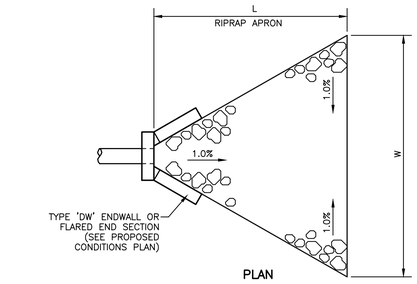


SECTION

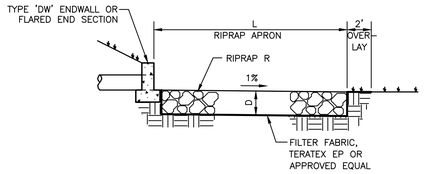
STORM DRAINAGE MANHOLE

NO SCALE

STRUCTURE NAME	APRON LENGTH L (FT)	APRON WIDTH W (FT)	RIP-RAP R	APRON DEPTH D (IN)	PIPE DIAMETER (IN)
18" RCP	28	16	R-4	18	18



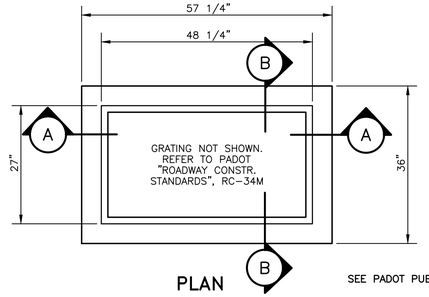
PLAN



SECTION

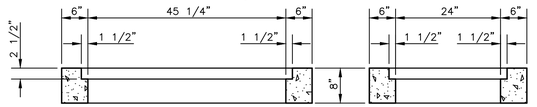
RIP-RAP OUTLET PROTECTION DETAIL

NO SCALE



PLAN

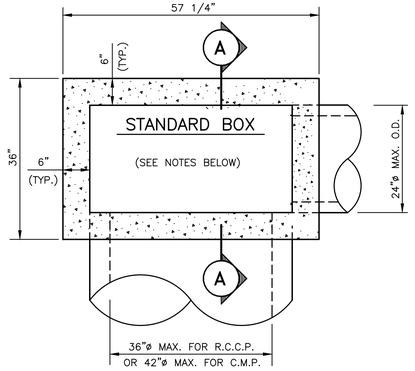
SEE PADOT PUB. 72, RC-45M



SECTION A-A SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

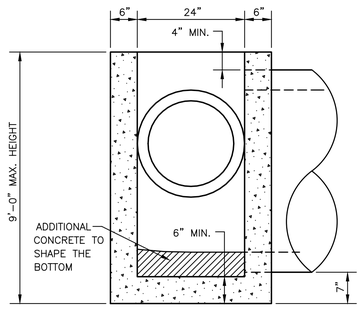
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

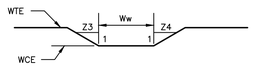
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

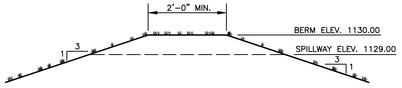


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1130.00	1129.00	20	NAG S75

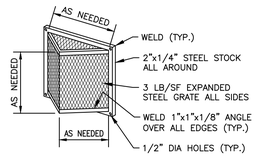
EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
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DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
JANUARY 2022	
	FIELD BOOK

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	
PROJECT NO. 11138.09	SHEET NO. 5 OF 6
REV.	

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

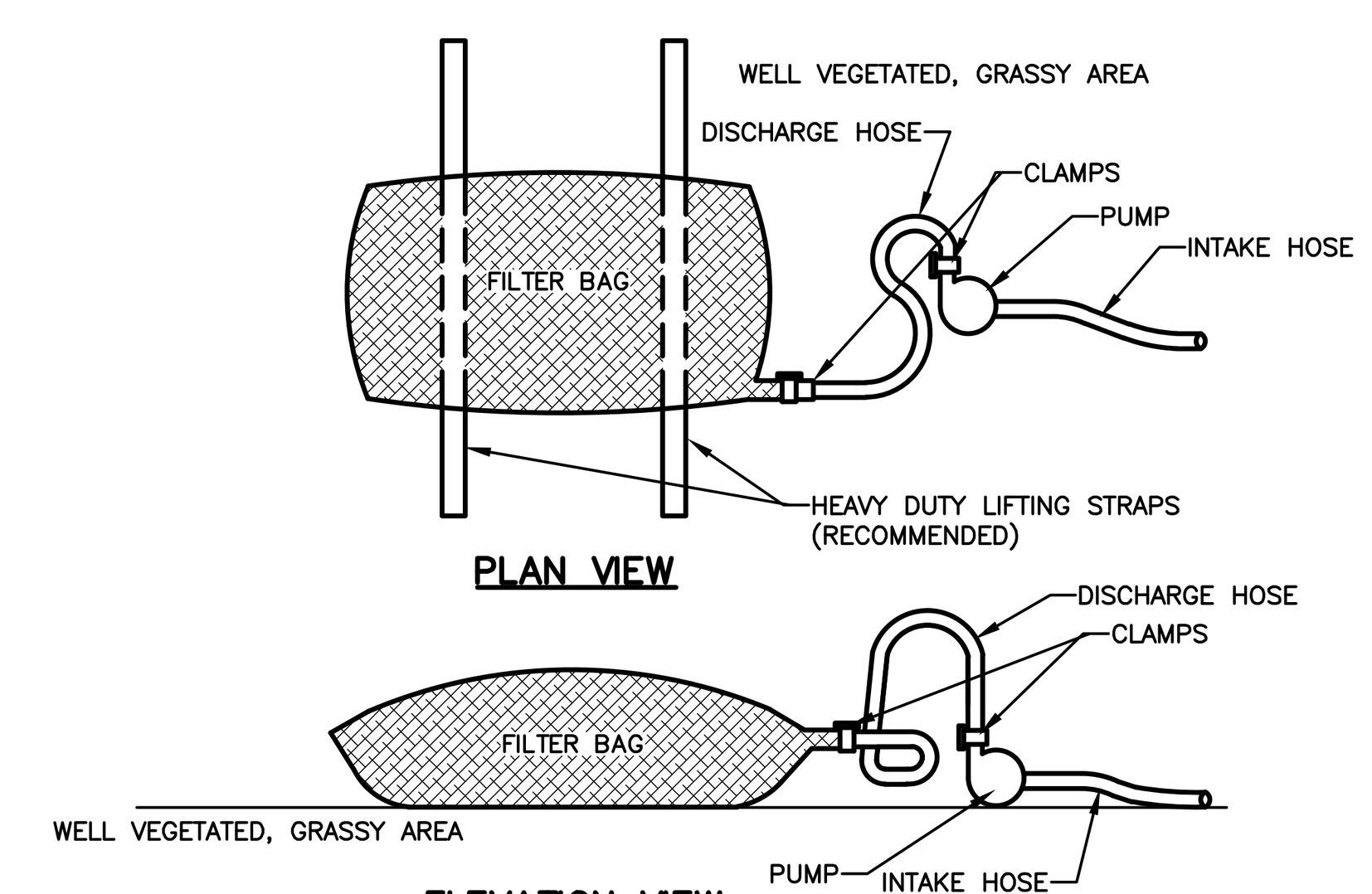
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON-SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, INCLUDING A MINIMUM UNIFORM 70% PERENNIAL VEGETATED COVER IN ALL DISTURBED VEGETATED AREAS AND AT A MINIMUM CLEAN SUBBASE PLACED IN ROADWAY AND PARKING AREAS, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
    a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B74 – DRY EXTENDED DETENTION BASIN
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE DRY EXTENDED DETENTION BASIN.
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A DRY EXTENDED DETENTION BASIN AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE BASINS ARE COMPLETELY DRY. SEDIMENT REMOVED FROM THE BASINS SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF DRY EXTENDED DETENTION BASIN TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE DRY EXTENDED DETENTION BASIN SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

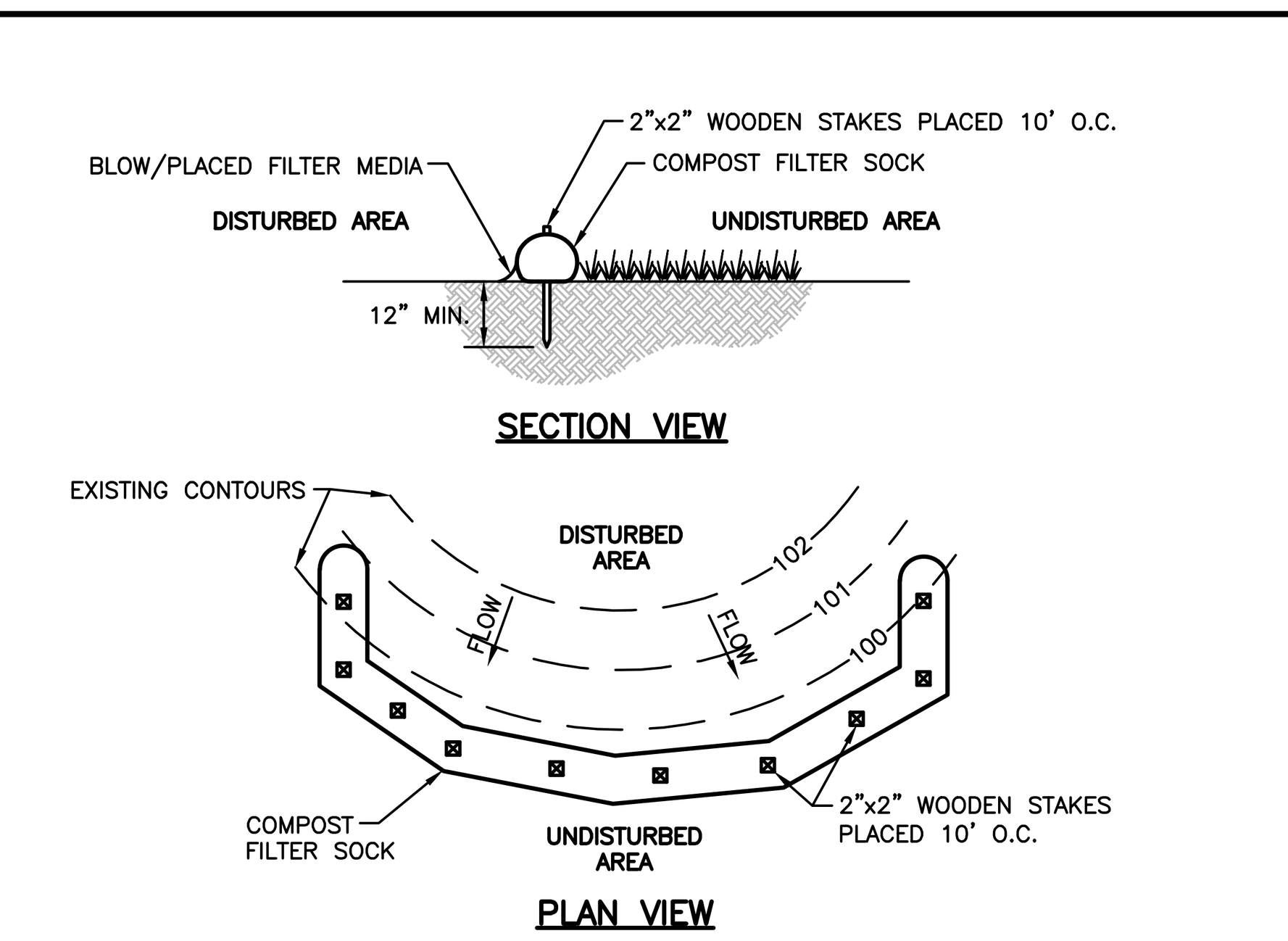
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

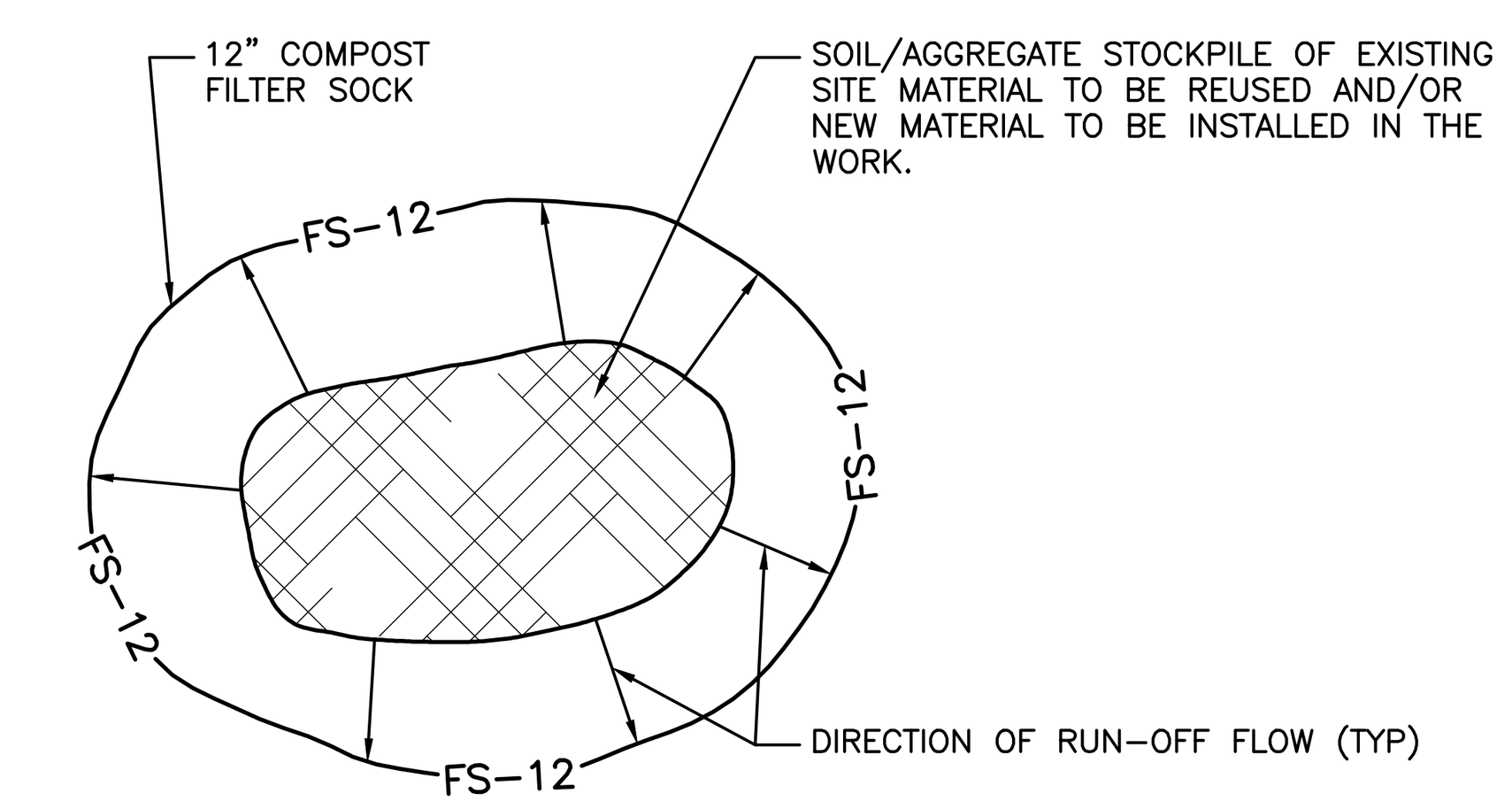


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

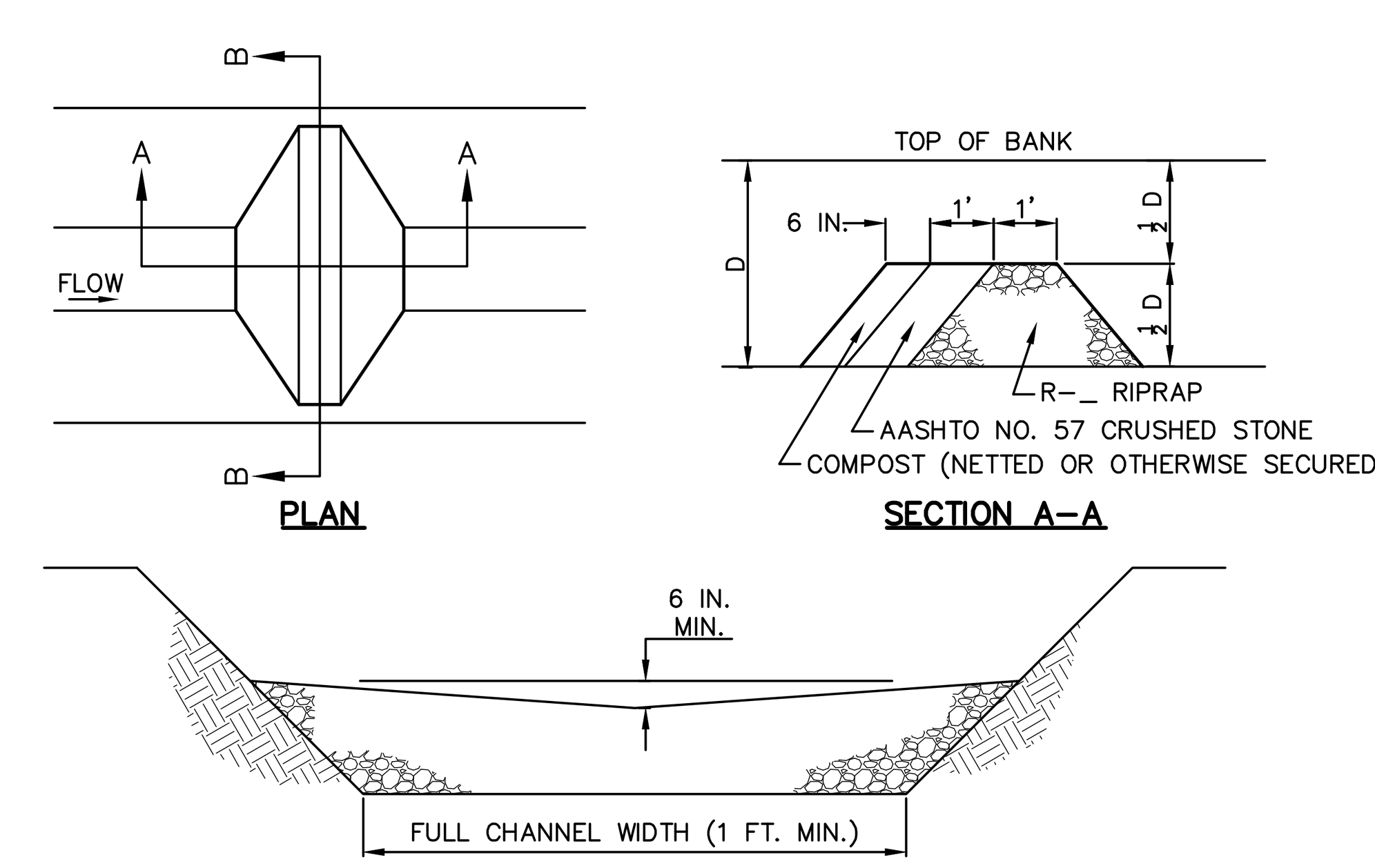
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

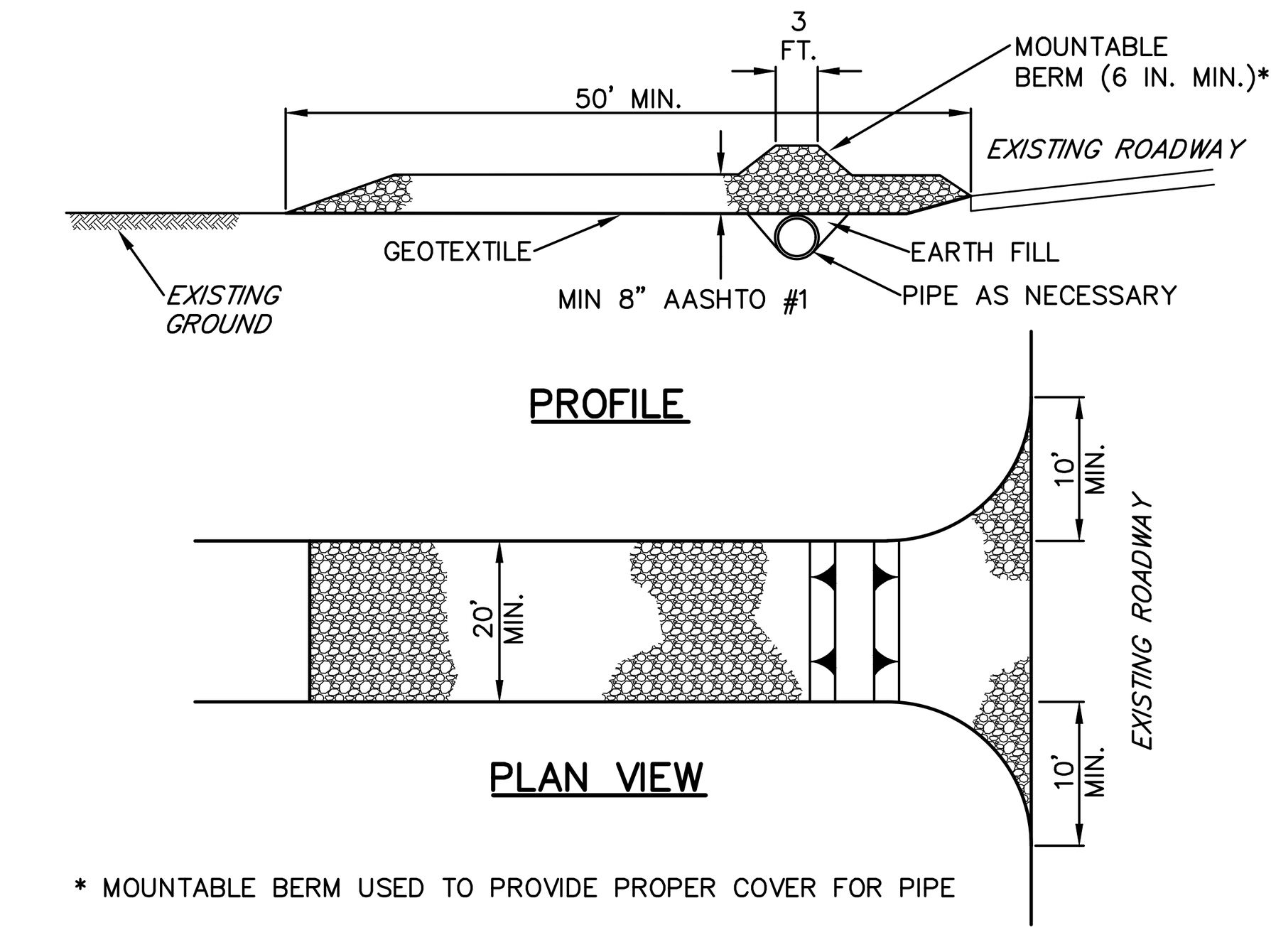
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NO SCALE

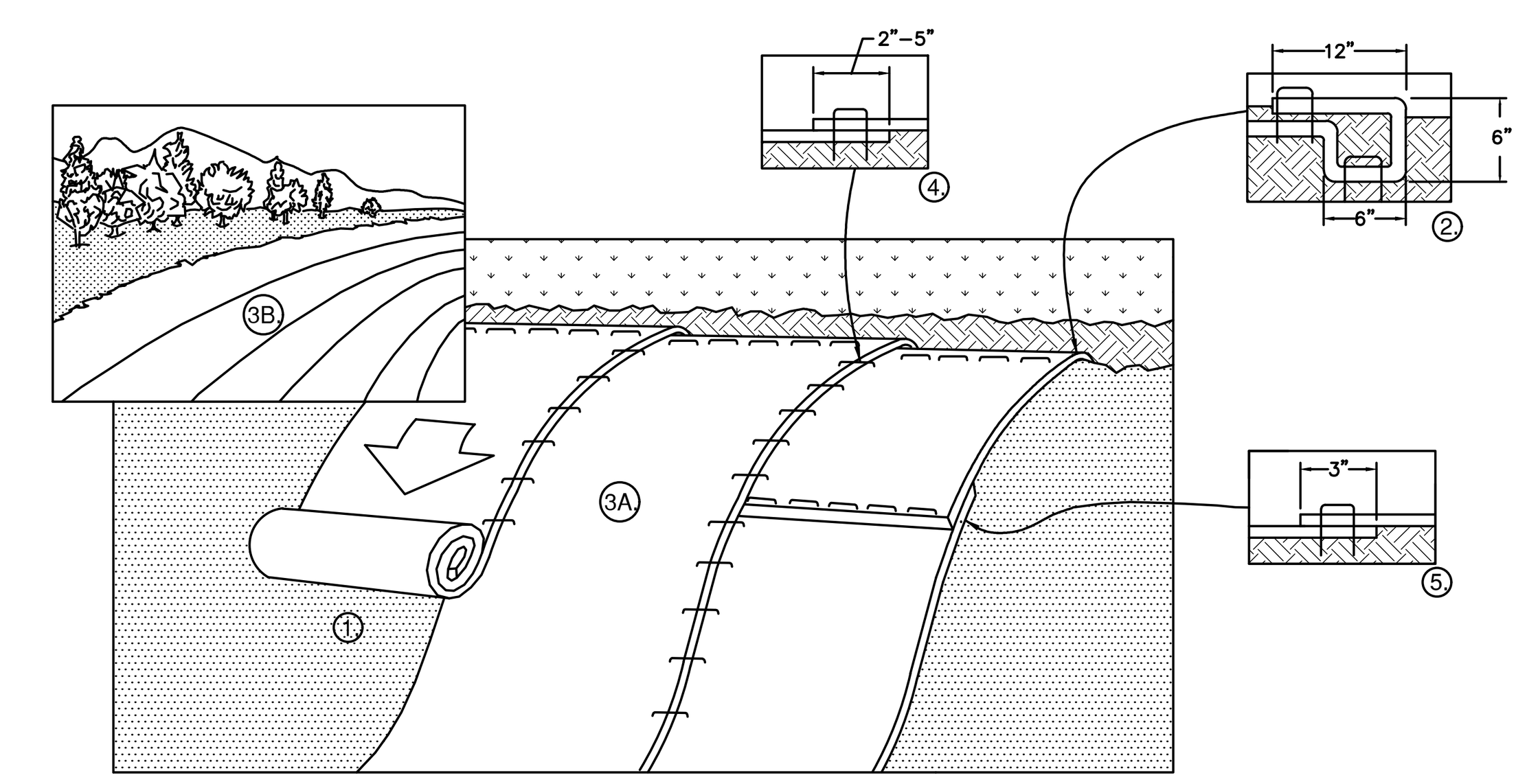
APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE

   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT COMMENTS	05/16/22	KLL	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU | CHECKED
DRAWN: SAM | CHECKED
DATE: JANUARY 2022 | SURVEY DATE | FIELD BOOK

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084973
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B74
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL
NOTES AND DETAILS

SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.09
SHEET NO.: 6 OF 6
REV.

Dwg. Name: 1113809-D01.DWG Plotted: 5/16/2022 1:30 PM

F133

ATTACHMENT F: BMP B79 Plans

Dallas Area Municipal Authority

BMP B79 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
529,979	113,943	416,035	12.17	2.62	9.55	21.50	78.50



DALLAS AREA MUNICIPAL AUTHORITY
KINGSTON TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
SITE B79

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 11/12/2020 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20203172543

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 811 DIGI STOP CALL BEFORE YOU

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 1 COMCAST WAY
DURYEA, PA. 18642
CONTACT: JAMES HALL
EMAIL: james_hall3@cable.comcast.com

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: SUEZ WATER PENNSYLVANIA INC
ADDRESS: RT 309
PO BOX J
DALLAS, PA. 18612
CONTACT: DAVE STRENFEL
EMAIL: DAVE.STRENFEL@SUEZ.COM

COMPANY: UGI UTL WILKES BARRE
ADDRESS: 511-517 E NORTHAMPTON ST
1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: KIM SERIS
EMAIL: kseris@ugi.com

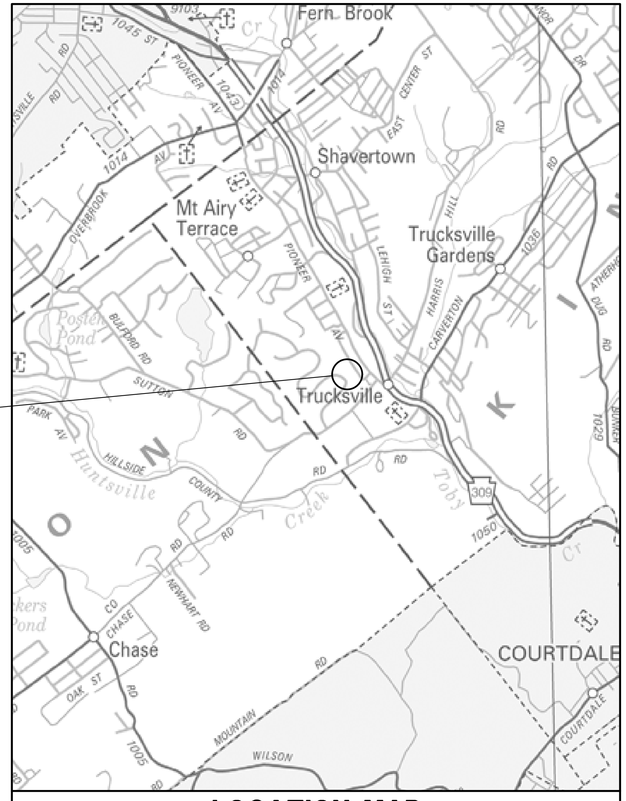
COMPANY: KINGSTON TOWNSHIP
ADDRESS: 180 E CENTER STREET
SHAVERTOWN, PA. 18708
CONTACT: DONALD FRITZGES
EMAIL: dfritzges@kingstontownship.com

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 187027025
CONTACT: MICHAEL NAVICH
EMAIL: Michael.Navich@FTR.com

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: jboecker@ugi.com

COMPANY: PENNSYLVANIA AMERICAN WATER
ADDRESS: 2699 STAFFORD AVE
SCRANTON, PA. 18507
CONTACT: MARK BALOH
EMAIL: mark.baloh@amwater.com

PROJECT LOCATION



LOCATION MAP

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS/DEMOLITION PLAN
3 OF 6	PROPOSED CONDITIONS PLAN
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
DATE: APRIL 2021	SURVEY DATE: OCTOBER 2020
	FIELD BOOK: WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084927
6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B79
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.03	1 OF 6	



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- CONTOUR LINES (1025)
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- SAN SEWER (S)
- WATER (W)
- GAS (G)
- OVERHEAD ELEC (OH)
- UNDERGROUND ELEC (UE)
- SOILS BOUNDARY LINE
- TP1 TEST PIT LOCATION
- FEATURES TO BE DEMOLISHED

SOILS

ASF – ARNOT–ROCK OUTCROP COMPLEX, STEEP
OIB – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 3 TO 8 PERCENT SLOPES
OIC – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 8 TO 15 PERCENT SLOPES
OID – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES
WeC – WEIKERT AND KLINESVILLE CHANNERY SILT LOAMS, 8 TO 15 PERCENT SLOPES

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE OCTOBER 2020
	FIELD BOOK WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J BINGHAM
ENGINEER
PE084021
6/17/21

SEAL

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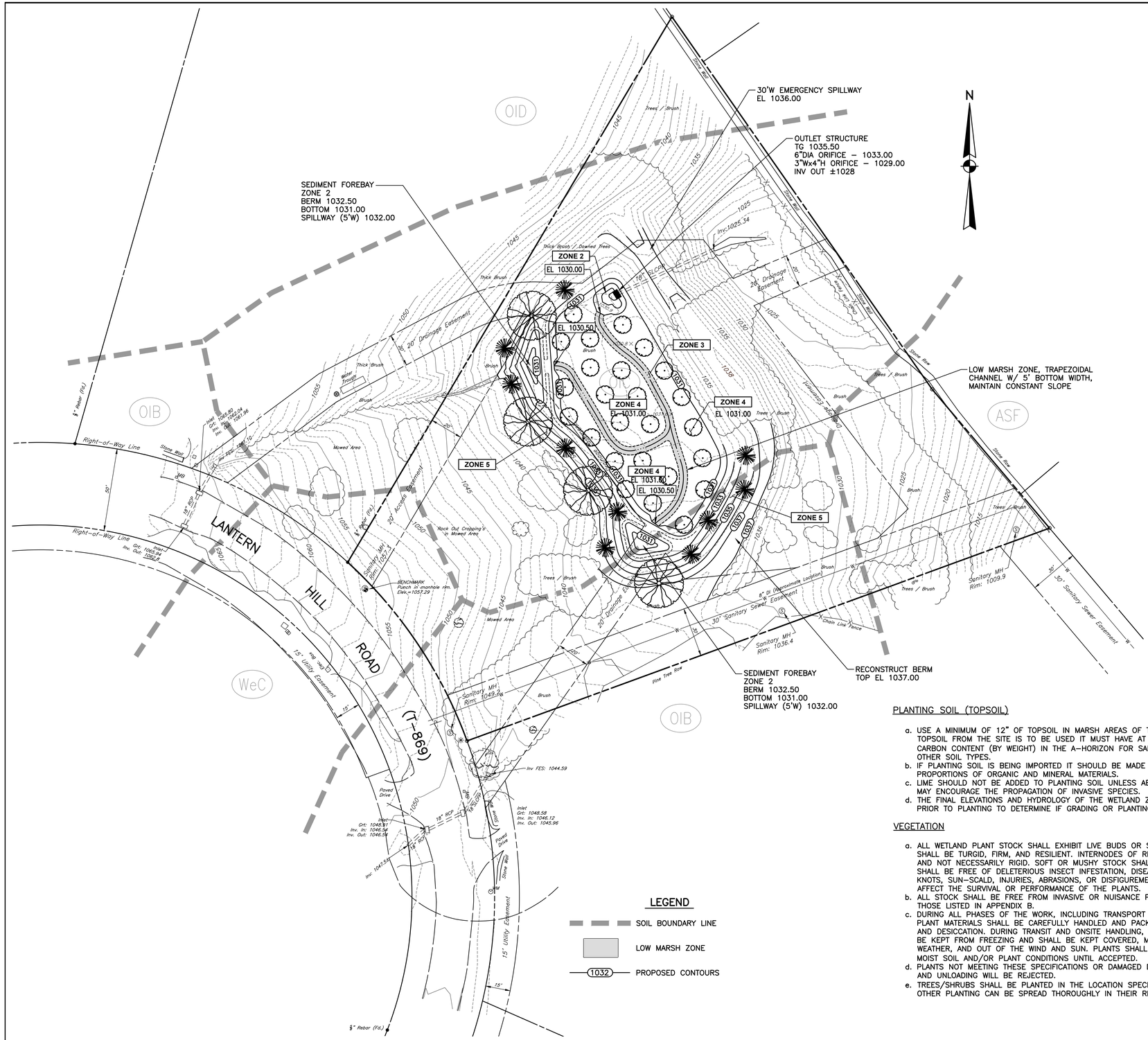
TITLE
EXISTING CONDITIONS/DEMOLITION PLAN

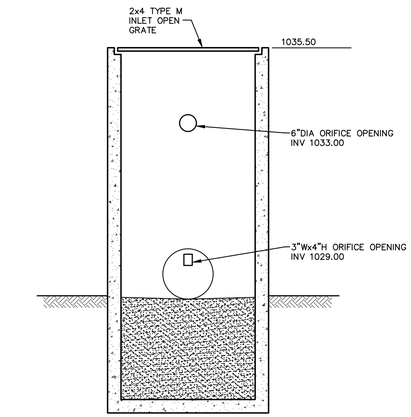
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SCALE: 1" = 30'

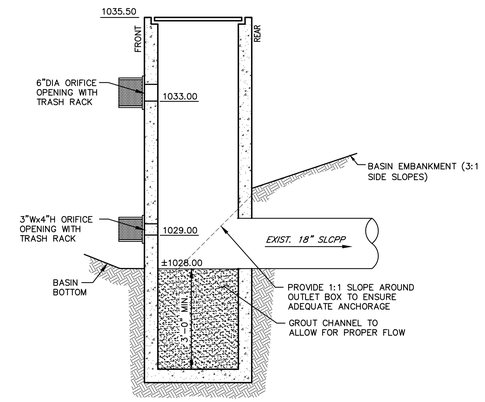
DWG. NO.

PROJECT NO. 11138.03
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113803-S01 B79.DWG Plotted: 7/25/2022 3:44 PM







NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE

PLANTING SOIL (TOPSOIL)

a. USE A MINIMUM OF 12" OF TOPSOIL IN MARSH AREAS OF THE WETLAND. IF NATURAL TOPSOIL FROM THE SITE IS TO BE USED IT MUST HAVE AT LEAST 8 PERCENT ORGANIC CARBON CONTENT (BY WEIGHT) IN THE A-HORIZON FOR SANDY SOILS AND 12% FOR OTHER SOIL TYPES.
b. IF PLANTING SOIL IS BEING IMPORTED IT SHOULD BE MADE UP OF EQUIVALENT PROPORTIONS OF ORGANIC AND MINERAL MATERIALS.
c. LIME SHOULD NOT BE ADDED TO PLANTING SOIL UNLESS ABSOLUTELY NECESSARY AS IT MAY ENCOURAGE THE PROPAGATION OF INVASIVE SPECIES.
d. THE FINAL ELEVATIONS AND HYDROLOGY OF THE WETLAND ZONES SHOULD BE EVALUATED PRIOR TO PLANTING TO DETERMINE IF GRADING OR PLANTING CHANGES ARE REQUIRED.

VEGETATION

a. ALL WETLAND PLANT STOCK SHALL EXHIBIT LIVE BUDS OR SHOOTS. ALL PLANT STOCK SHALL BE TURGID, FIRM, AND RESILIENT. INTERNODES OF RHIZOMES MAY BE FLEXIBLE AND NOT NECESSARILY RIGID. SOFT OR MUSHY STOCK SHALL BE REJECTED. THE STOCK SHALL BE FREE OF DELETERIOUS INSECT INFESTATION, DISEASE AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT THAT COULD ADVERSELY AFFECT THE SURVIVAL OR PERFORMANCE OF THE PLANTS.
b. ALL STOCK SHALL BE FREE FROM INVASIVE OR NUISANCE PLANTS OR SEEDS SUCH AS THOSE LISTED IN APPENDIX B.
c. DURING ALL PHASES OF THE WORK, INCLUDING TRANSPORT AND ONSITE HANDLING, THE PLANT MATERIALS SHALL BE CAREFULLY HANDLED AND PACKED TO PREVENT INJURIES AND DESICCATION. DURING TRANSIT AND ONSITE HANDLING, THE PLANT MATERIAL SHALL BE KEPT FROM FREEZING AND SHALL BE KEPT COVERED, MOIST, COOL, OUT OF WEATHER, AND OUT OF THE WIND AND SUN. PLANTS SHALL BE WATERED TO MAINTAIN MOIST SOIL AND/OR PLANT CONDITIONS UNTIL ACCEPTED.
d. PLANTS NOT MEETING THESE SPECIFICATIONS OR DAMAGED DURING HANDLING, LOADING, AND UNLOADING WILL BE REJECTED.
e. TREES/SHRUBS SHALL BE PLANTED IN THE LOCATION SPECIFIED ON THE PLANS. ALL OTHER PLANTING CAN BE SPREAD THOROUGHLY IN THEIR RESPECTIVE ZONES.

ZONE 2

SHALLOW WATER TERRACE

- SOFT STEM BULRUSH

ZONE 3

LOW MARSH ZONE PLANINGS

- BROAD LEAF CATTAIL
- BLUE FLAG IRIS
- RICE CATGRASS

ZONE 4

HIGH MARSH

- SWAMP MILKWEED
- WOOL GRASS
- SILKY DOGWOOD

ZONE 5

FLOODPLAIN TERRACE

- SWITCHGRASS
- BLACKHAW
- RIVER BIRCH

PLANT SCHEDULE

SYMBOL	QUANTITY	NAME	ZONE
	4	RIVER BIRCH	ZONE 5 – FLOODPLAIN TERRACE
	10	BLACKHAW	ZONE 5 – FLOODPLAIN TERRACE
	25	SILKY DOGWOOD	ZONE 4 – HIGH MARSH

PLANTING DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE APRIL 2021	SURVEY DATE OCTOBER 2020
	FIELD BOOK WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – MICHAEL J BINGHAM – ENGINEER – PE084021 – 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B79
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
PROPOSED CONDITIONS PLAN

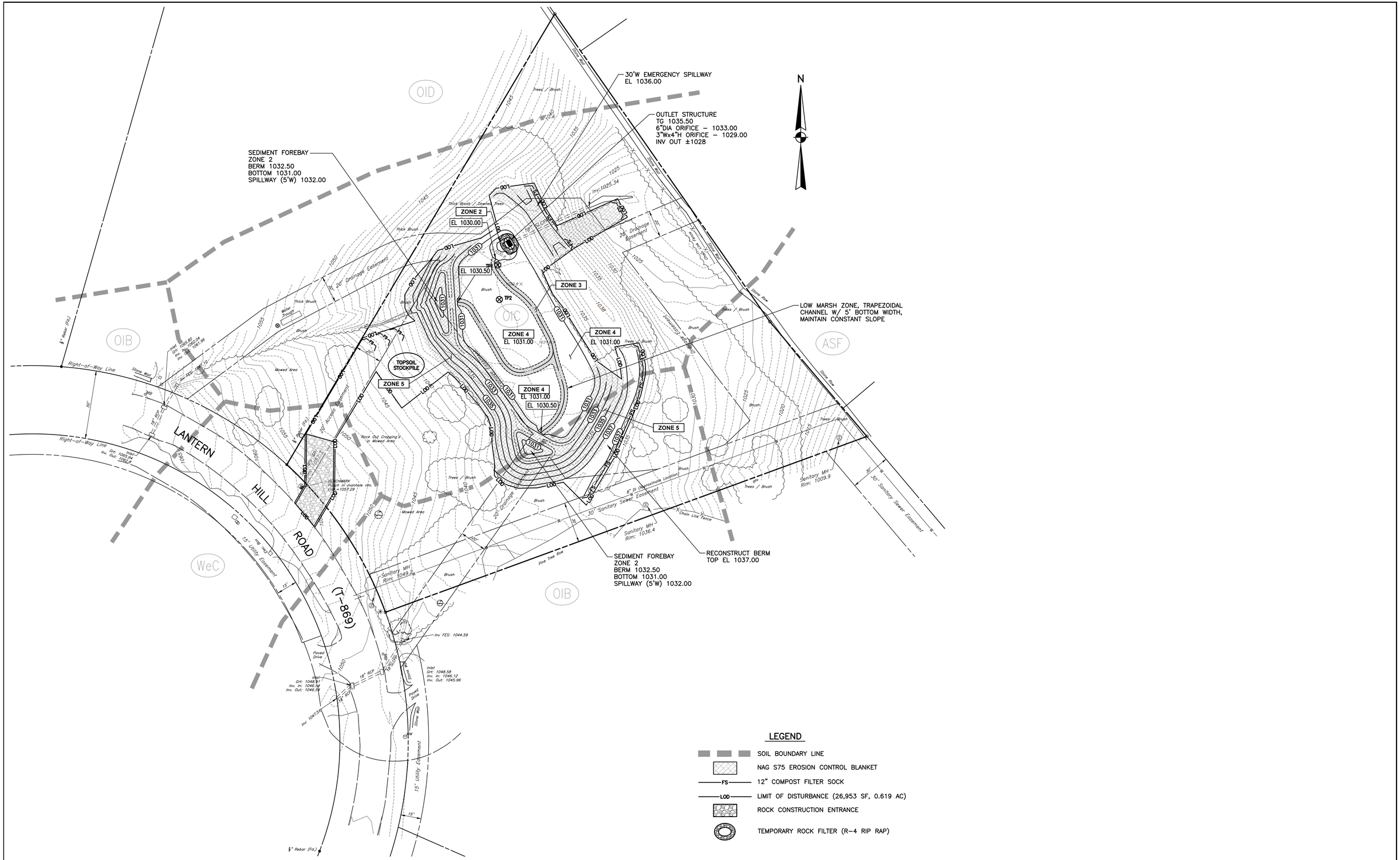
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SCALE: 1" = 30'

DWG. NO.

PROJECT NO. 11138.03
SHEET NO. 3 OF 6
REV.

F138

Dwg. Name: 1113803-S01 B79.DWG Plotted: 7/25/2022 3:44 PM



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (26,953 SF, 0.619 AC)
- ROCK CONSTRUCTION ENTRANCE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

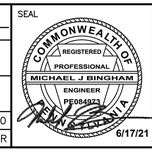
NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN: BCU	CHECKED:
DRAWN: SAM	CHECKED:
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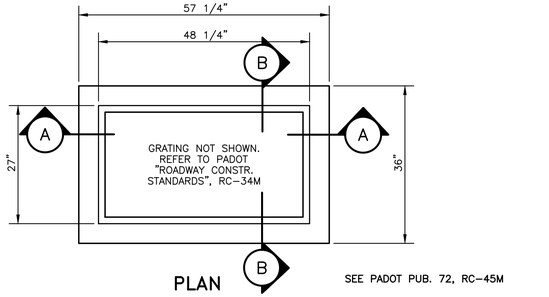
TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 15' 30' 60' 90'
SCALE: 1" = 30'

DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.03	4 OF 6	

Dwg. Name: 1113803-S01 B79.DWG Plotted: 7/25/2022 3:44 PM

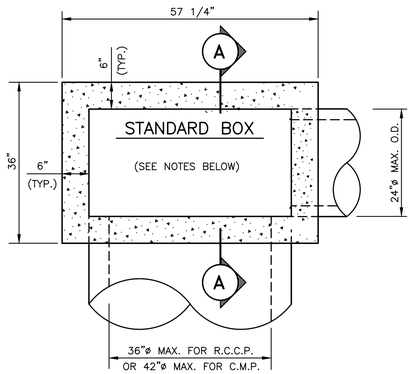


TYPE M CONCRETE INLET TOP DETAIL

NO SCALE

LOW MARSH ZONE SWALE

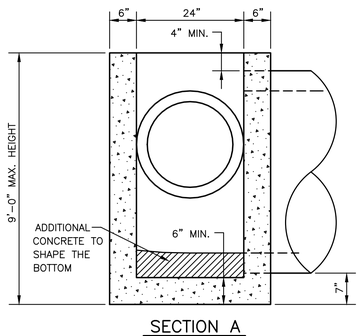
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NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

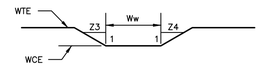
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

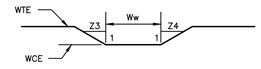


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1032.50	1032.00	5	NAG S75
2	3	3	1032.50	1032.00	5	NAG S75

SEDIMENT FOREBAY SPILLWAY

NO SCALE

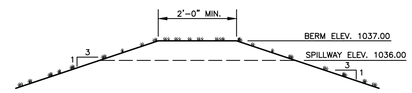


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
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1	3	3	1037.00	1036.00	30	NAG S75

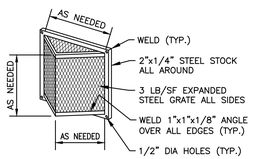
CONSTRUCTED WETLAND EMERGENCY SPILLWAY

NO SCALE



BASIN BERM DETAIL

NO SCALE



NOTES:

1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

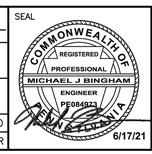
NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
APRIL 2021	OCTOBER 2020
	FIELD BOOK WEBER

SEAL



SEAL

CLIENT & PROJECT

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ARRO

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TITLE

DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.03	5 OF 6	

Dwg. Name: 1113803-D01 B79.DWG Plotted: 7/25/2022 3:44 PM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

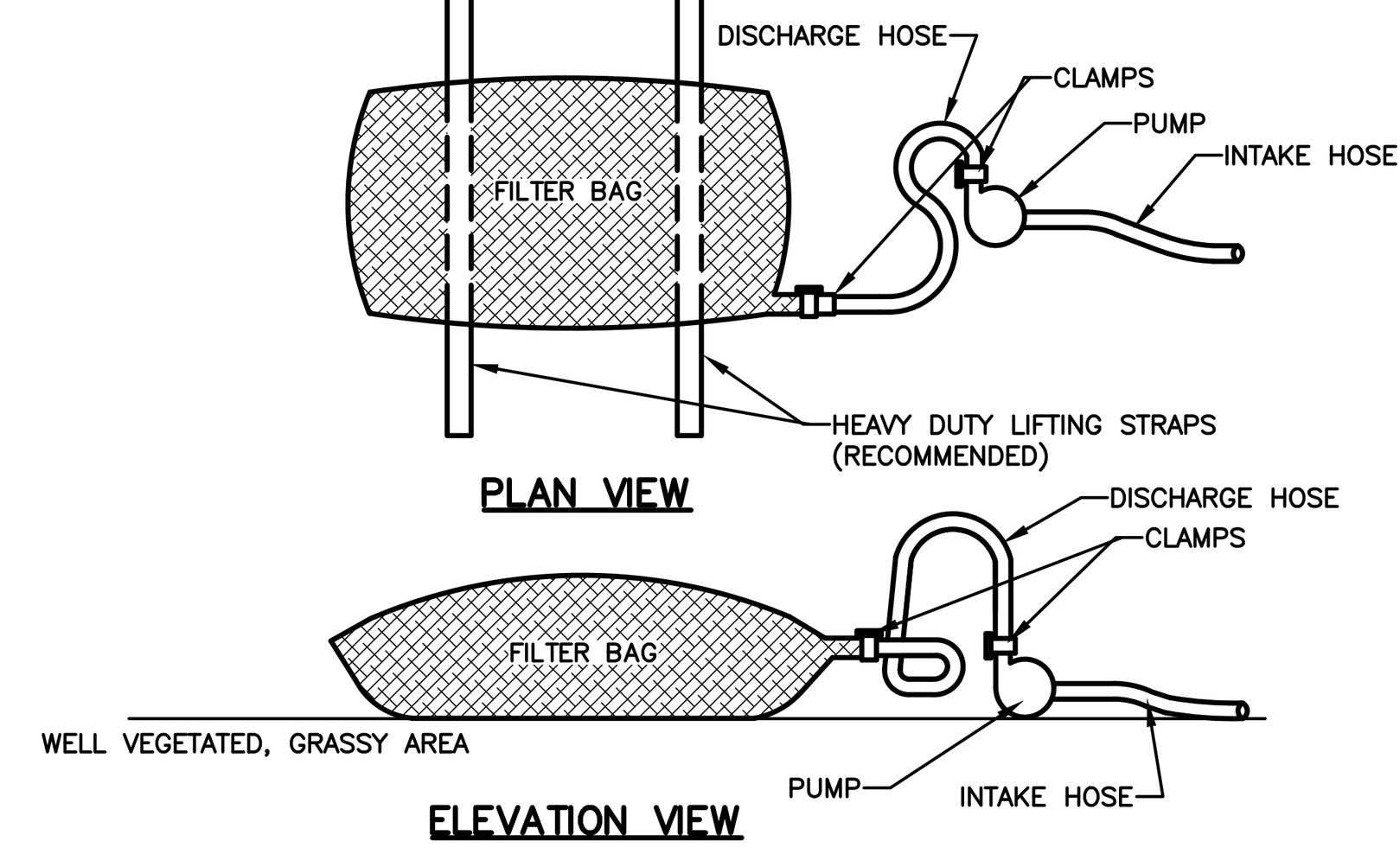
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. INSTALL ROCK CONSTRUCTION ENTRANCE IN ACCORDANCE TO THE PLAN AND ROCK CONSTRUCTION DETAILS.
   b. COMPOST FILTER SOCK SHALL BE INSTALLED IN THE LOCATION AND SIZES DEPICTED ON PLANS. COMPOST FILTER SOCK AND ITS MAINTENANCE SHALL MEET THE REQUIREMENTS SHOWN ON THE COMPOST FILTER SOCK DETAIL.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
   a. IF EXCAVATED MATERIAL IS TO BE STORED ON–SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO–TEXTILES AND OTHER EROSION–CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI–GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILZED. THESE CONTROLS INCLUDE:
   a. ROCK CONSTRUCTION ENTRANCE, ROCK FILTER, PUMPED WATER FILTER BAG, AND COMPOST FILTER SOCK.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS–SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER–EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS–BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B79 – CONSTRUCTED WETLAND
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE CONSTRUCTED WETLAND
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A CONSTRUCTED WETLAND AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE CONSTRUCTED WETLAND IS DRY IN ALL ZONES BUT THE LOW MARSH ZONE (SWALE WITH CONSTANT WATER FLOW). SEDIMENT REMOVED FROM THE BASIN SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF CONSTRUCTED WETLAND TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY–FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE CONSTRUCTED WETLAND SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

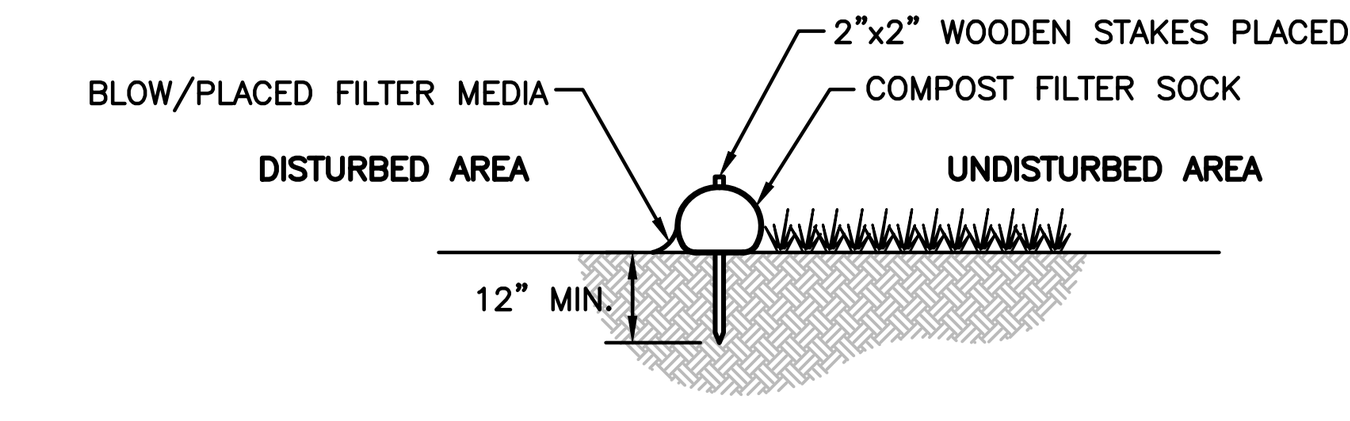
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

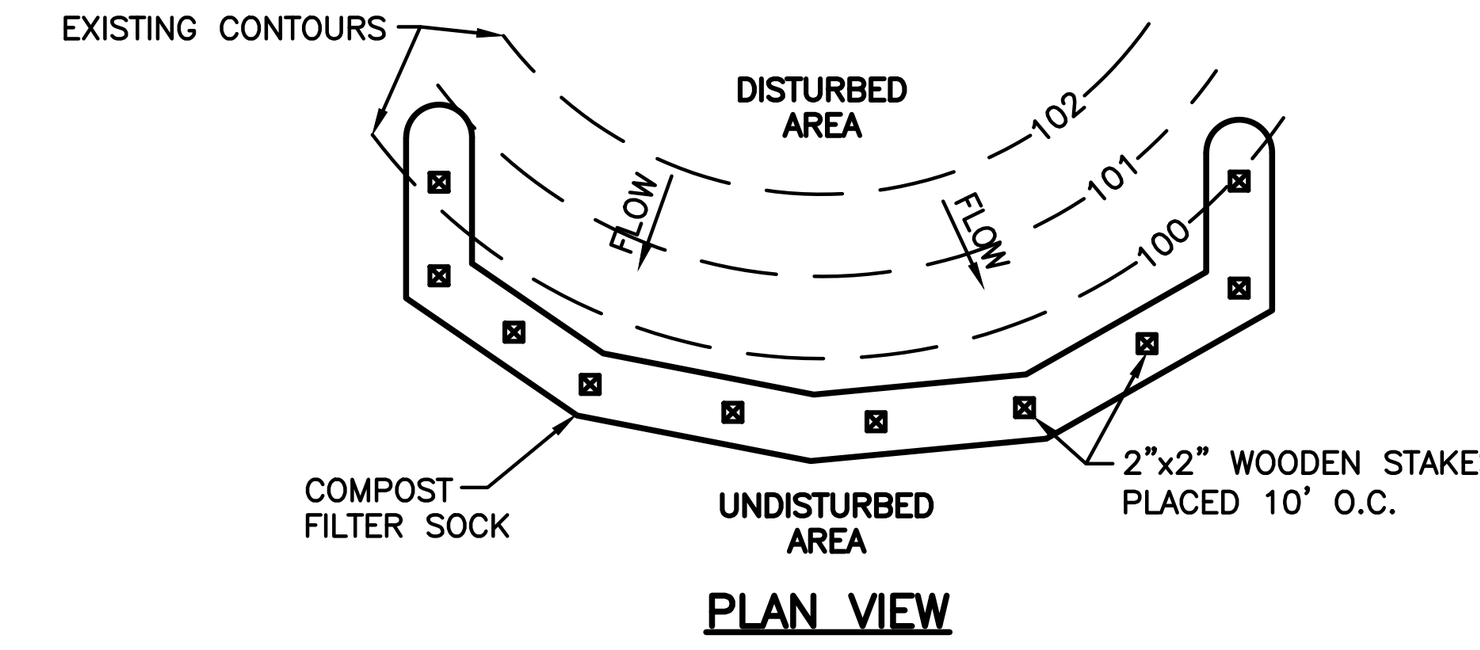
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE



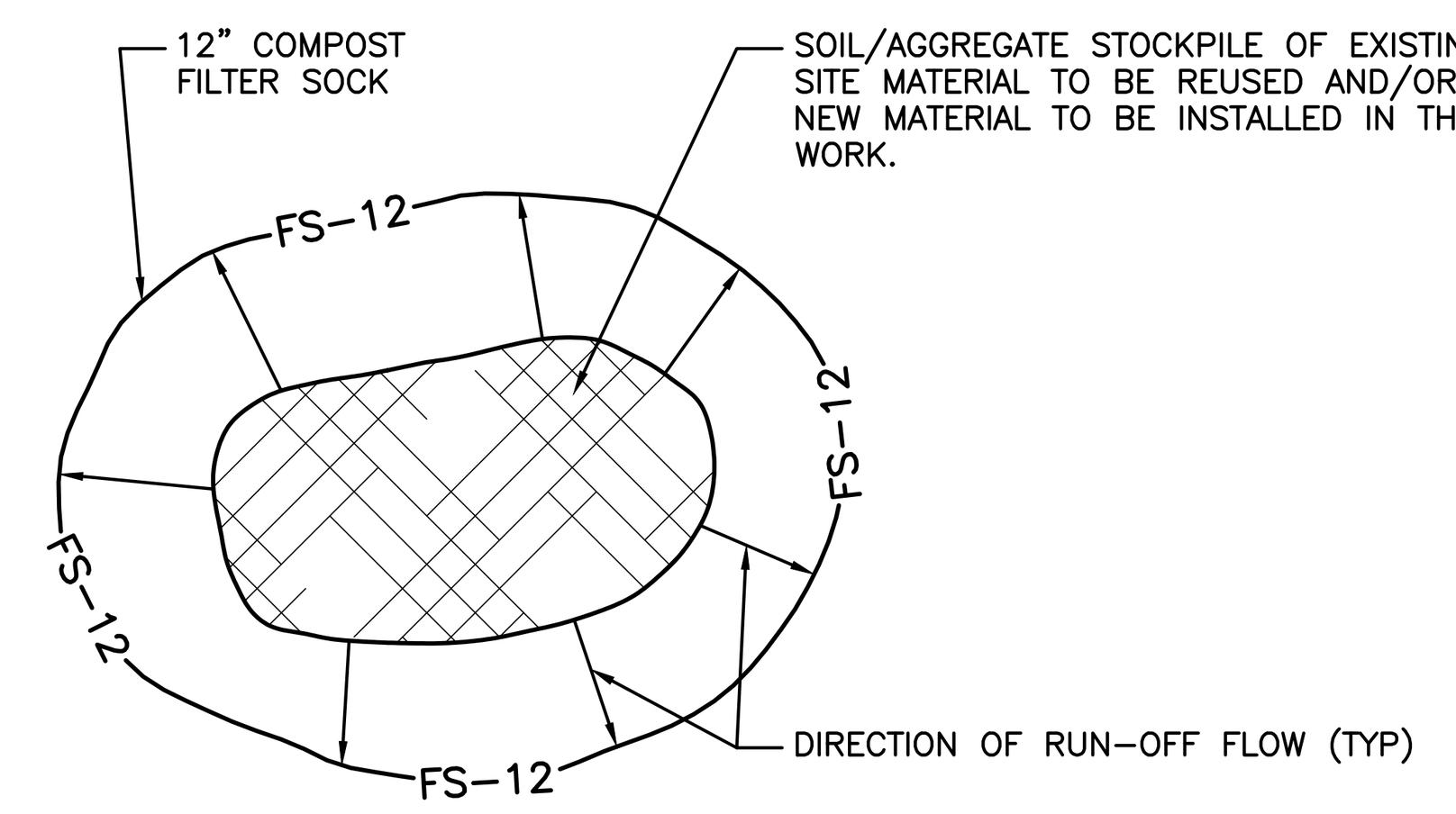


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

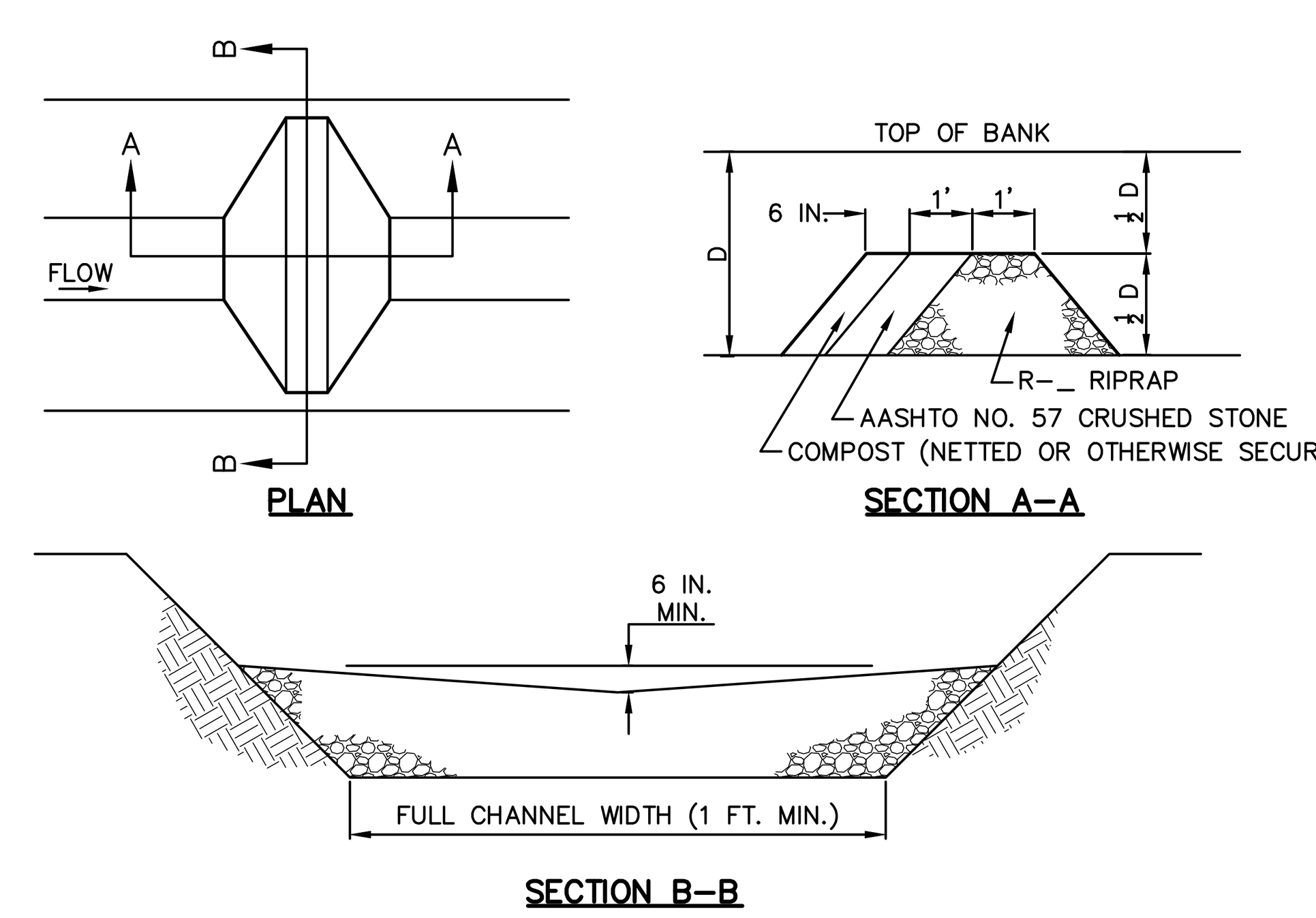
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE–EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R–_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R–4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R–3
NOT APPLICABLE FOR D < 2 FT.

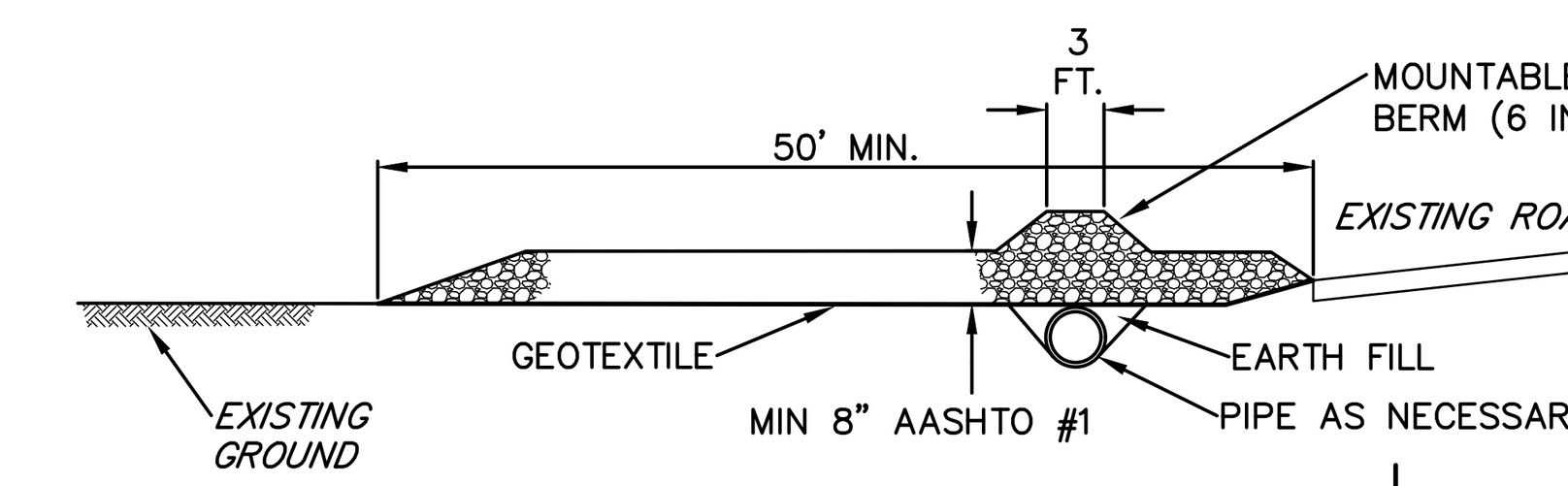
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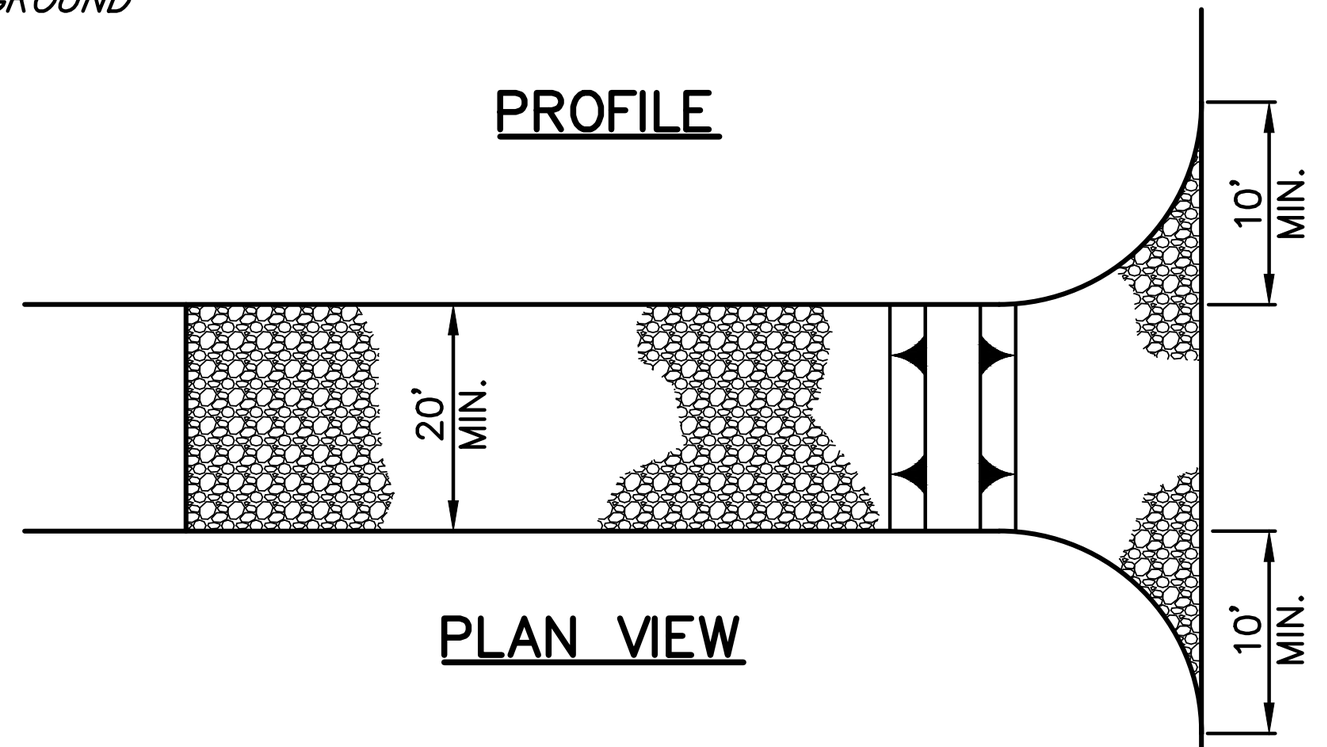
SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE





* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

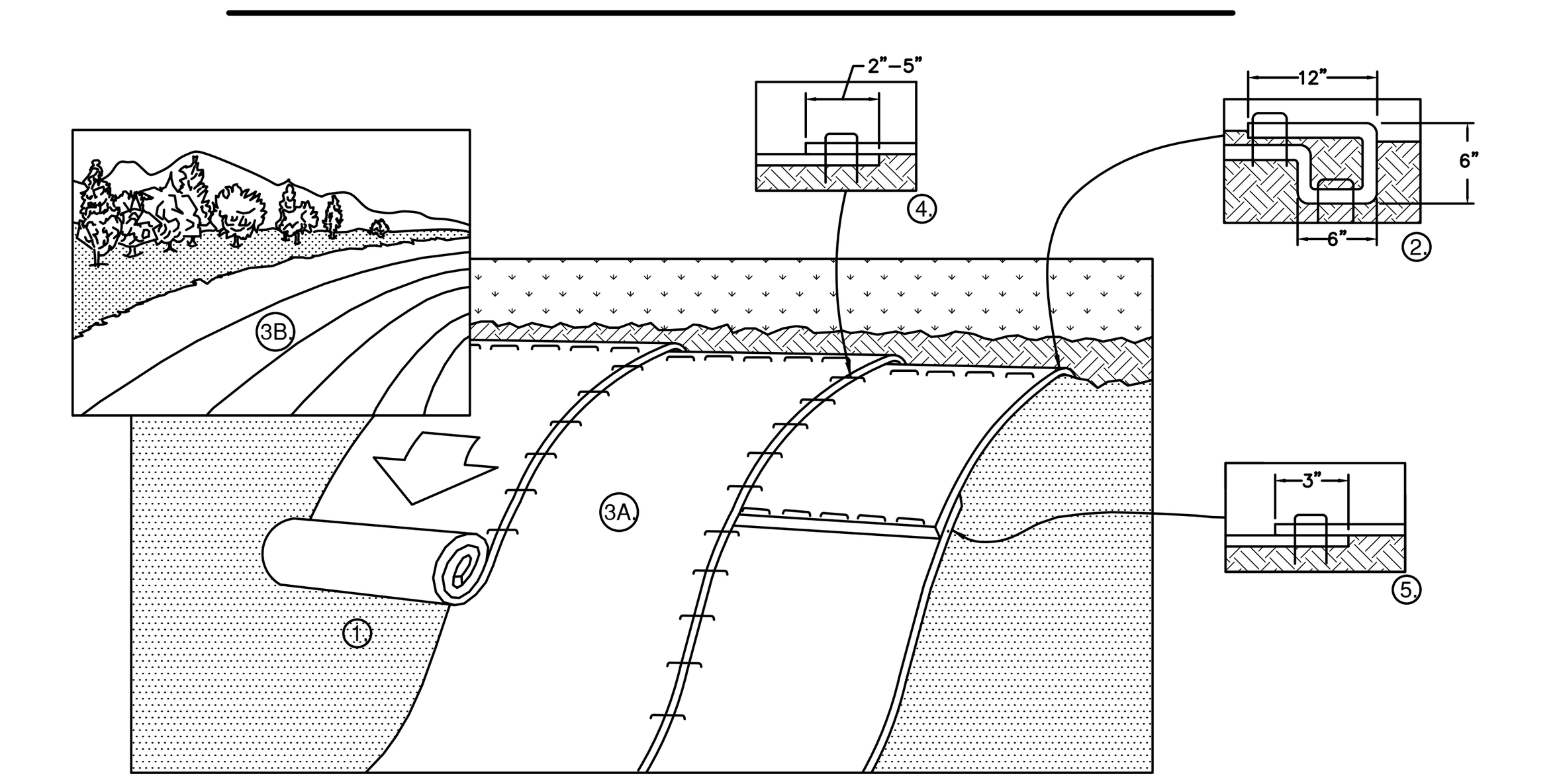
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10–10–10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX–183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL–GRADE LIMESTONE   * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10–10–20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10–10–10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU   CHECKED:
DRAWN: SAM   CHECKED:
DATE: APRIL 2021   SURVEY DATE: OCTOBER 2020   FIELD BOOK: WEBER

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL J BINGHAM — ENGINEER — PE084973 — 6/17/21

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP IMPROVEMENTS – SITE B79
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.03   SHEET NO.: 6 OF 6   REV.

F141

Dwg. Name: 1113803–D01 B79.DWG Plotted: 7/25/2022 3:44 PM

ATTACHMENT F: BMP B80 Plans

Dallas Area Municipal Authority

BMP B80 Drainage Area

Square Feet			Acres				
Drainage Area	Impervious Area	Pervious Area	Drainage Area	Impervious Area	Pervious Area	% Impervious	% Pervious
2,174,082	339,569	1,834,513	49.91	7.80	42.11	15.62	84.38

B80

0 100 200 400 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DALLAS AREA MUNICIPAL AUTHORITY
KINGSTON TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP DESIGN
SITE B80

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 7/9/20 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20201911533

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 or 811 DIGI STOP CALL BEFORE YOU DIG!

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: COMCAST
ADDRESS: 1 COMCAST WAY
DURYEA, PA. 18642
CONTACT: JAMES HALL
EMAIL: JAMES_HALL3@CABLE.COMCAST.COM

COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL

COMPANY: UGI UTL WILKES BARRE
ADDRESS: 511-517 E NORTHAMPTON ST
1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: KIM SERIS
EMAIL: KSERIS@UGI.COM

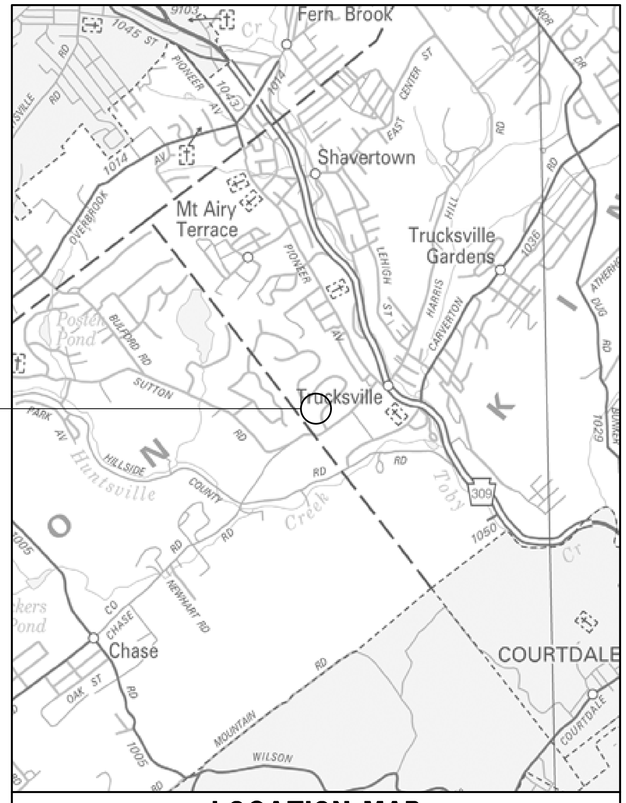
COMPANY: KINGSTON TOWNSHIP
ADDRESS: 180 E CENTER STREET
SHAVERTOWN, PA. 18708
CONTACT: DONALD FRITZGES
EMAIL: DFRITZGES@KINGSTONTOWNSHIP.COM

COMPANY: FRONTIER COMMUNICATIONS OF PA INC
ADDRESS: 300E LAIRD ST
WILKES BARRE, PA. 187027025
CONTACT: MICHAEL NAVICH
EMAIL: MICHAEL.NAVICH@FTR.COM

COMPANY: UGI UTL LANCASTER
ADDRESS: 20 VINE STREET
EDWARDSVILLE, PA. 18704
CONTACT: JEREMY BOECKER
EMAIL: JBOECKER@UGI.COM

COMPANY: PENNSYLVANIA AMERICAN WATER
ADDRESS: 2699 STAFFORD AVE
SCRANTON, PA. 18507
CONTACT: MARK BALOH
EMAIL: MARK.BALOH@AMWATER.COM

PROJECT LOCATION



LOCATION MAP

N

2000 1000 0 2000 4000
SCALE IN FEET

DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	EXISTING CONDITIONS
3 OF 6	PROPOSED CONDITIONS
4 OF 6	EROSION AND SEDIMENT CONTROL PLAN
5 OF 6	DESIGN DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

NO	REVISION	DATE	BY	APP.
1.	REVISED PER CONSERVATION DISTRICT REVIEW	9/28/20	SAM	BCU

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	AUGUST 2020	SURVEY DATE	JUNE 2020
		FIELD BOOK	WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL J BINGHAM ENGINEER PE084927
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B80
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

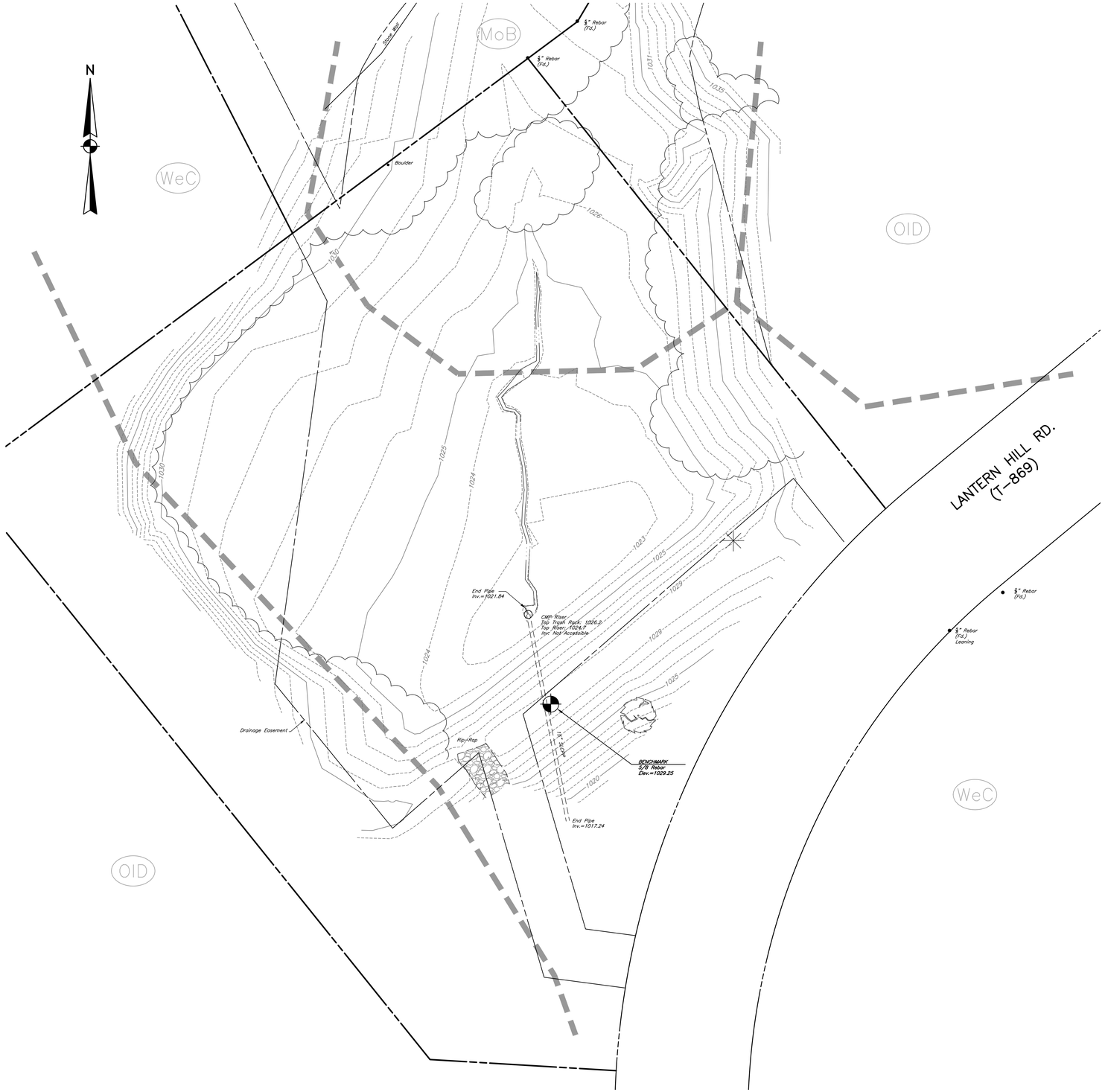
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.01	1 OF 6	

Dwg. Name: 1113801-D01.DWG Plotted: 7/26/2022 9:36 AM



LEGEND

- UTILITY POLE
- LIGHT STANDARD
- VALVE
- SEWER VENT
- MANHOLE
- STORM SEWER
- FIRE HYDRANT
- HEDGE ROW
- EDGE OF MACADAM
- EDGE OF GRAVEL
- CURB
- PROPERTY LINE
- LEGAL R/W LINE
- 1025 CONTOUR LINES
- SHRUB
- DECIDUOUS TREE
- CONIFER TREE
- LANDSCAPED AREA
- EXISTING CENTERLINE
- FARM FIELDS
- STREAMS
- S SAN SEWER
- W WATER
- G GAS
- OH OVERHEAD ELEC
- UE UNDERGROUND ELEC
- SOILS BOUNDARY LINE

SOILS

MoB – MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES
OIB – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 3 TO 8 PERCENT SLOPES
OID – OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES
WeC – WEIKERT AND KLINESVILLE CHANNERY SILT LOAMS, 8 TO 15 PERCENT SLOPES
WeD – WEIKERT AND KLINESVILLE CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES

Survey Notes:

1. Topography and physical features shown hereon obtained from a field survey performed by WEBER SURVEYORS Completed on June 4, 2020. 931 Stony Battery Road, Landisville, PA (717)-898-9466.
   Coordinate System: PA State Plane, North Zone – 3701, Ref Frame: NAD83(2011) Epoch 2010.00.
   Vertical Datum: NAVD88 (established by GPS observation)
   Benchmark: 5/8 Rebar set onthe berm of the basin, see plan.
   Elevation: 1029.25
   Contour Interval: 1 Foot
2. All properties are plotted from the deeds of record, recorded subdivision plans or lot plans, existing topographic features and limited field data. The accuracy of the plotting reflect the accuracy or inaccuracy of the deeds and or plans. Property lines were not surveyed by the Professional Land Surveyor responsible for this project.
3. Underground utility have been shown according to surface evidence, markings provided by others, and or plans provided by the others. The actual location of these utilities have not been field verified and the locations are approximate. WEBER SURVEYORS does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct or accurate. WEBER SURVEYORS assumes no responsibility for a any damage as a result of underground utilities omitted or inaccurately shown.
4. All features shown are existing unless otherwise noted.
5. This survey was prepared without the benefit of a title search.
6. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of WEBER SURVEYORS.

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	BCU	CHECKED	
DRAWN	SAM	CHECKED	
DATE	AUGUST 2020	SURVEY DATE	JUNE 2020
		FIELD BOOK	WEBER

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ENGINEER
PE084923
2/1/22

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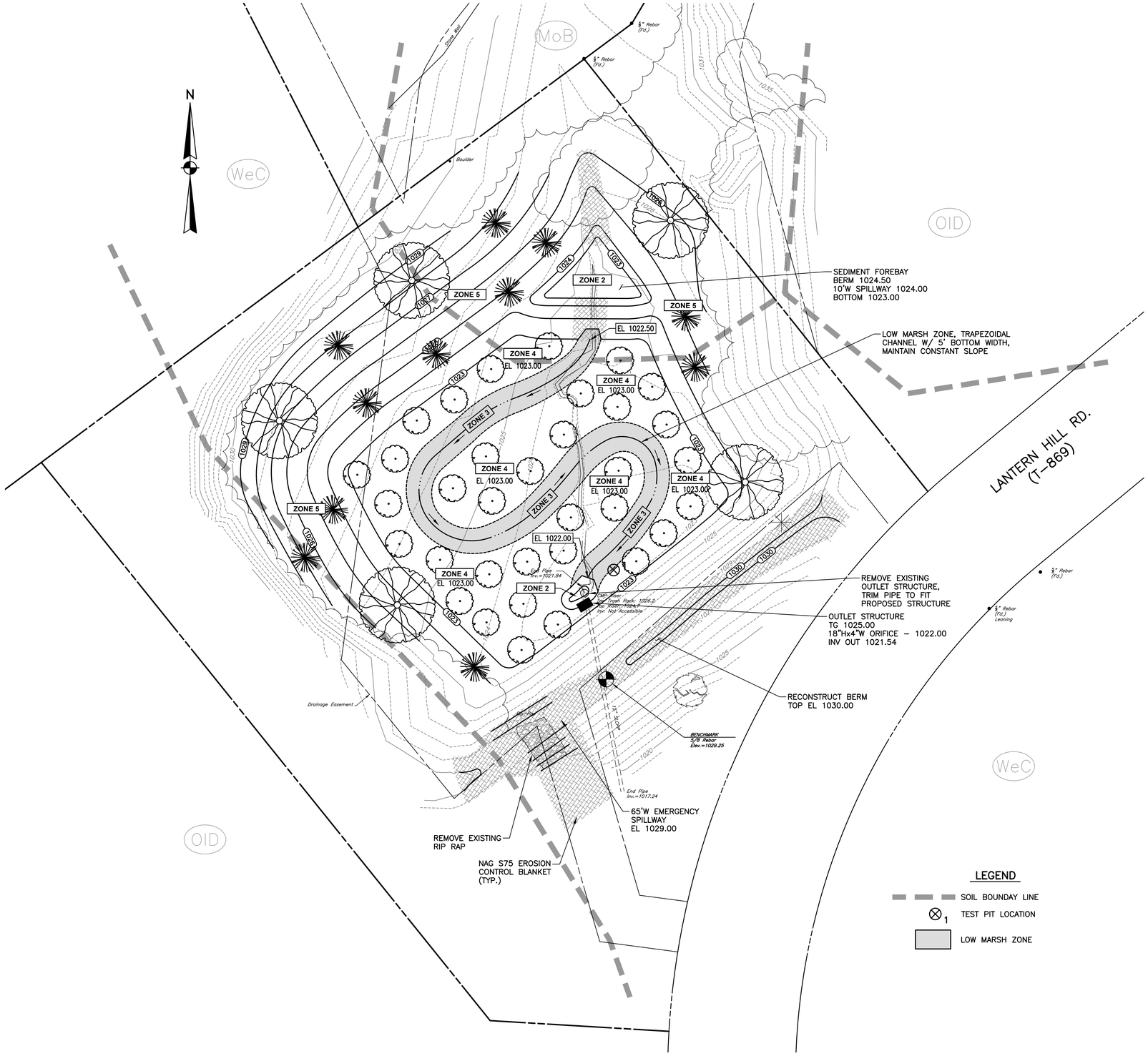
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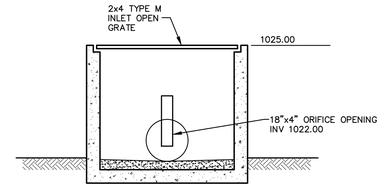
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SCALE: 1" = 20'

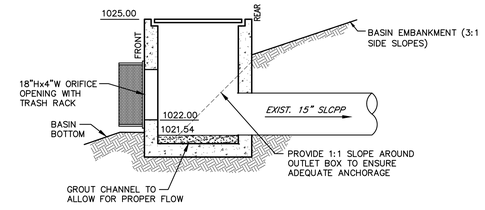
DWG. NO.

PROJECT NO. 11138.01
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113801-S03 – B80.DWG Plotted: 7/26/2022 9:36 AM







NOTE: CONSTRUCT OUTLET CONTROL STRUCTURE AS PER PADOT RC-34 SPECIFICATIONS. USE PADOT 2'x4' TYPE M INLET & GRATE

OUTLET CONTROL STRUCTURE

NO SCALE

ZONE 2

SHALLOW WATER TERRACE

- SOFT STEM BULRUSH

ZONE 3

LOW MARSH ZONE PLANINGS

- BROAD LEAF CATTAIL
- BLUE FLAG IRIS
- RICE CATGRASS

ZONE 4

HIGH MARSH

- SWAMP MILKWEED
- WOOL GRASS
- SILKY DOGWOOD

ZONE 5

FLOODPLAIN TERRACE

- SWITCHGRASS
- BLACKHAW
- RIVER BIRCH

PLANT SCHEDULE

SYMBOL	QUANTITY	NAME	ZONE
	5	RIVER BIRCH	ZONE 5 – FLOODPLAIN TERRACE
	11	BLACKHAW	ZONE 5 – FLOODPLAIN TERRACE
	34	SILKY DOGWOOD	ZONE 4 – HIGH MARSH

PLANTING SOIL (TOPSOIL)

a. USE A MINIMUM OF 12" OF TOPSOIL IN MARSH AREAS OF THE WETLAND. IF NATURAL TOPSOIL FROM THE SITE IS TO BE USED IT MUST HAVE AT LEAST 8 PERCENT ORGANIC CARBON CONTENT (BY WEIGHT) IN THE A-HORIZON FOR SANDY SOILS AND 12% FOR OTHER SOIL TYPES.
b. IF PLANTING SOIL IS BEING IMPORTED IT SHOULD BE MADE UP OF EQUIVALENT PROPORTIONS OF ORGANIC AND MINERAL MATERIALS.
c. LIME SHOULD NOT BE ADDED TO PLANTING SOIL UNLESS ABSOLUTELY NECESSARY AS IT MAY ENCOURAGE THE PROPAGATION OF INVASIVE SPECIES.
d. THE FINAL ELEVATIONS AND HYDROLOGY OF THE WETLAND ZONES SHOULD BE EVALUATED PRIOR TO PLANTING TO DETERMINE IF GRADING OR PLANTING CHANGES ARE REQUIRED.

VEGETATION

a. ALL WETLAND PLANT STOCK SHALL EXHIBIT LIVE BUDS OR SHOOTS. ALL PLANT STOCK SHALL BE TURGID, FIRM, AND RESILIENT. INTERNODES OF RHIZOMES MAY BE FLEXIBLE AND NOT NECESSARILY RIGID. SOFT OR MUSHY STOCK SHALL BE REJECTED. THE STOCK SHALL BE FREE OF DELETERIOUS INSECT INFESTATION, DISEASE AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT THAT COULD ADVERSELY AFFECT THE SURVIVAL OR PERFORMANCE OF THE PLANTS.
b. ALL STOCK SHALL BE FREE FROM INVASIVE OR NUISANCE PLANTS OR SEEDS SUCH AS THOSE LISTED IN APPENDIX B.
c. DURING ALL PHASES OF THE WORK, INCLUDING TRANSPORT AND ONSITE HANDLING, THE PLANT MATERIALS SHALL BE CAREFULLY HANDLED AND PACKED TO PREVENT INJURIES AND DESICCATION. DURING TRANSIT AND ONSITE HANDLING, THE PLANT MATERIAL SHALL BE KEPT FROM FREEZING AND SHALL BE KEPT COVERED, MOIST, COOL, OUT OF WEATHER, AND OUT OF THE WIND AND SUN. PLANTS SHALL BE WATERED TO MAINTAIN MOIST SOIL AND/OR PLANT CONDITIONS UNTIL ACCEPTED.
d. PLANTS NOT MEETING THESE SPECIFICATIONS OR DAMAGED DURING HANDLING, LOADING, AND UNLOADING WILL BE REJECTED.
e. TREES/SHRUBS SHALL BE PLANTED IN THE LOCATION SPECIFIED ON THE PLANS. ALL OTHER PLANTING CAN BE SPREAD THOROUGHLY IN THEIR RESPECTIVE ZONES.

PLANTING DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE AUGUST 2020	SURVEY DATE JUNE 2020
	FIELD BOOK WEBER

SEAL
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL J. BINGHAM
ENGINEER
PE084973
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B80
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
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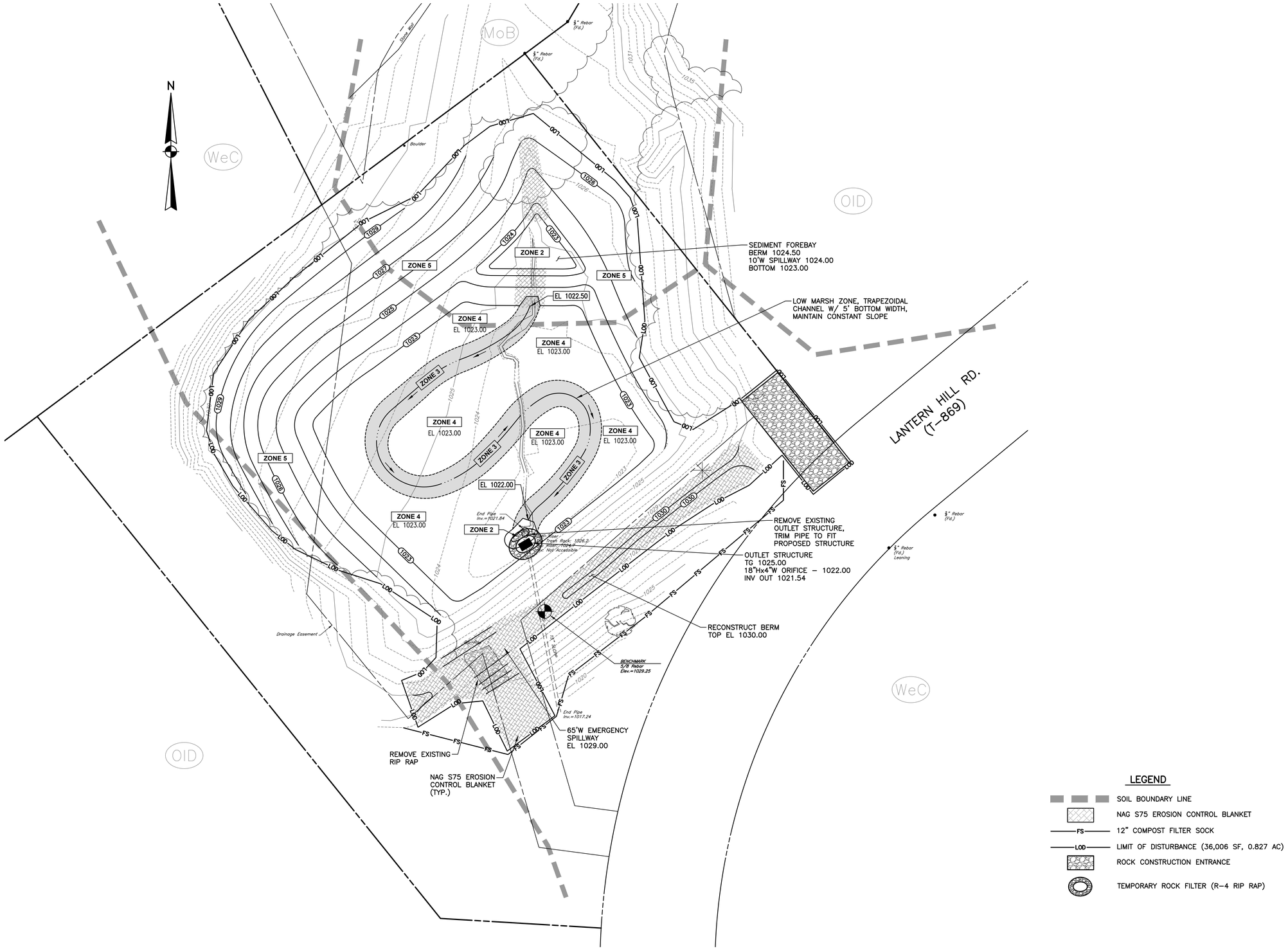
TITLE
PROPOSED CONDITIONS

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SCALE: 1" = 20'

DWG. NO.

PROJECT NO. 11138.01
SHEET NO. 3 OF 6
REV.

Dwg. Name: 1113801-S03 – B80.DWG Plotted: 7/26/2022 9:36 AM



LEGEND

- SOIL BOUNDARY LINE
- NAG S75 EROSION CONTROL BLANKET
- FS — 12" COMPOST FILTER SOCK
- LOD — LIMIT OF DISTURBANCE (36,006 SF, 0.827 AC)
- ROCK CONSTRUCTION ENTRANCE
- TEMPORARY ROCK FILTER (R-4 RIP RAP)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN	CHECKED
BCU	
DRAWN	CHECKED
SAM	
DATE	SURVEY DATE
AUGUST 2020	JUNE 2020
	FIELD BOOK: WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084973
2/1/22

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
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STORMWATER BMP DESIGN - SITE B80
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

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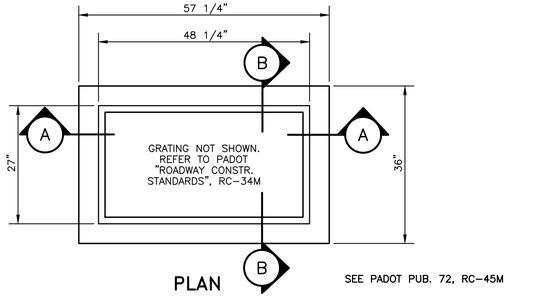
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PROJECT NO. 11138.01

SHEET NO. 4 OF 6

REV.

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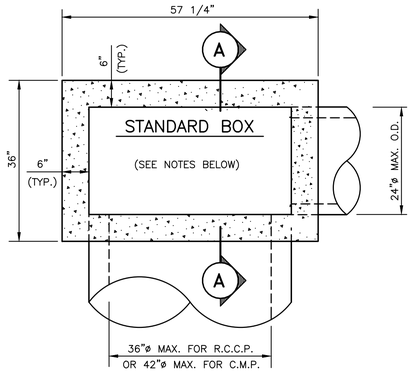


SECTION A-A

SECTION B-B

TYPE M CONCRETE INLET TOP DETAIL

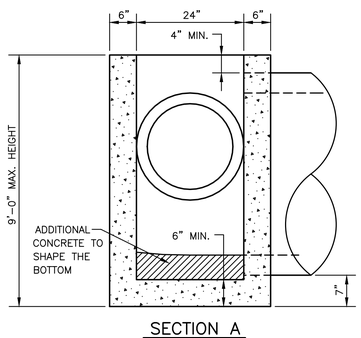
NO SCALE



NOTE:

1. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24"x45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS
2. REFER TO PADOT PUBLICATION 72M, DESIGN STANDARD RC-46M FOR INFORMATION ON REINFORCING.

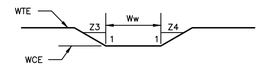
PLAN



SECTION A

STANDARD PRECAST INLET BOX

NO SCALE

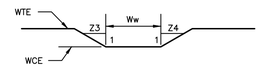


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1024.50	1024.00	10	NAG S75

SEDIMENT FOREBAY SPILLWAY

NO SCALE

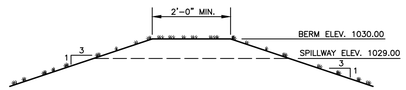


WEIR
SECTION Z-Z

BASIN NO.	WEIR					
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	LINING *
1	3	3	1030.00	1029.00	65	NAG S75

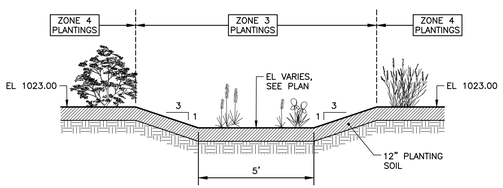
CONSTRUCTED WETLAND EMERGENCY SPILLWAY

NO SCALE



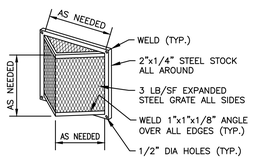
BASIN BERM DETAIL

NO SCALE



LOW MARSH ZONE SWALE

NO SCALE



NOTES:

1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

TRASH RACK DETAIL

NO SCALE

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY

DESIGN BCU	CHECKED
DRAWN SAM	CHECKED
DATE AUGUST 2020	SURVEY DATE JUNE 2020
	FIELD BOOK WEBER

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J BINGHAM
PE084927
2/1/22

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B80
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
DESIGN DETAILS

SCALE	DWG. NO.
AS SHOWN	

PROJECT NO.	SHEET NO.	REV.
11138.01	5 OF 6	

Dwg. Name: 1113801-D01.DWG Plotted: 7/26/2022 9:36 AM

STANDARD E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOTCOMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V ORFLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 et. seq., 271.1, AND 287.1 et. seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

CONSTRUCTION SEQUENCE

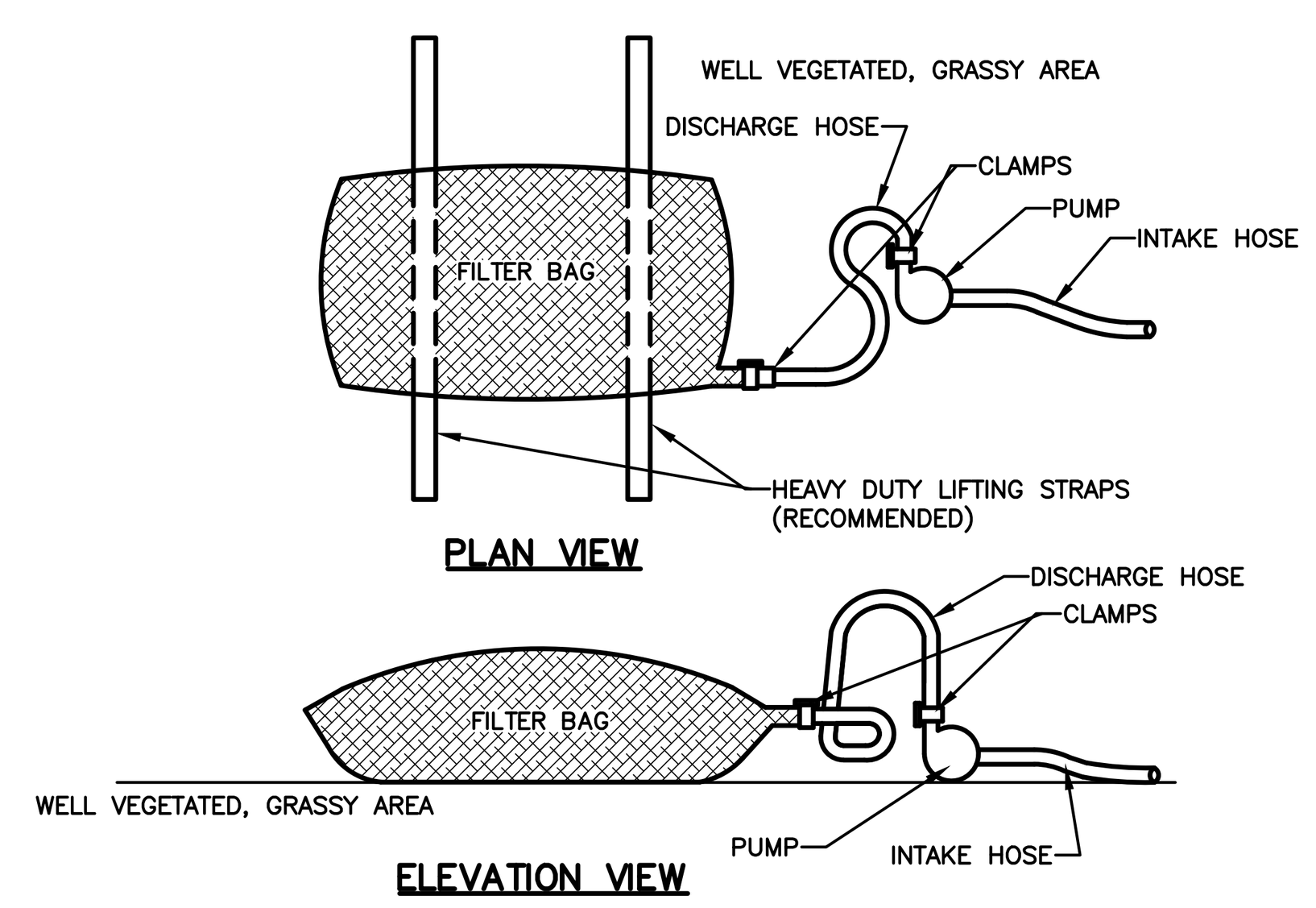
1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   a. THE AREA IMMEDIATELY ADJACENT TO THE BASIN MUST BE STABILIZED IN ACCORDANCE WITH THE PADEP'S EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (2000 OR LATEST EDITION) PRIOR TO BASIN CONSTRUCTION.
   b. THE ROCK FILTER OUTLET SHALL BE INSTALLED PER THE PLANS AND DETAILS PRIOR TO ANY DISTURBANCE OF LAND TRIBUTARY TO THE OUTLET STRUCTURE.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   a. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHALL ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   b. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   c. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. SHOULD THE BASIN CONTAIN WATER PRIOR TO OR DURING CONSTRUCTION, WATER SHALL BE REMOVED VIA A PUMPED WATER FILTER BAG AND DISCHARGED INTO THE STABILIZED DOWNSTREAM CHANNEL.
   a. PUMPING OF WATER SHALL BE PERFORMED PER THE PUMPED WATER FILTER BAG DETAIL AND CORRESPONDING NOTES.
4. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
5. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
6. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
7. APPLY AND GRADE PLANTING SOIL.
8. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES.
9. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
10. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY.
11. ONCE PROPER FINAL STABILIZATION HAS BEEN REACHED, ALL EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND THE AREA SHALL BE STABILIZED.

OPTIONAL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
3. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
4. BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
5. BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
6. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
7. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
8. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
9. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM LAYERED LIFTS AT % DENSITY.

OPERATION AND MAINTENANCE PLAN

1. BMP B80 – CONSTRUCTED WETLAND
   a. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY AND AT THE OWNER'S EXPENSE.
   b. MAINTENANCE IS NECESSARY EVERY QUARTER TO ENSURE PROPER FUNCTIONALITY OF THE CONSTRUCTED WETLAND
   c. ANY BASIN STRUCTURE THAT IS EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHALL BE THOROUGHLY INSPECTED FOR EXCESSIVE DEBRIS AND CLOGGING. INSPECTIONS SHALL BE CONDUCTED AT MINIMUM FOUR (4) TIMES PER YEAR OR IMMEDIATELY FOLLOWING ANY STORM CREATING GREATER THAN ONE (1) INCH OF WATER.
   d. VEHICLES SHALL NOT BE PARKED OR DRIVEN ON A CONSTRUCTED WETLAND AND CARE SHALL BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWER IF APPLICABLE.
   e. REMOVAL OF SEDIMENT FROM THE BASINS SHALL OCCUR WHEN THE CONSTRUCTED WETLAND IS DRY IN ALL ZONES BUT THE LOW MARSH ZONE (SWALE WITH CONSTANT WATER FLOW). SEDIMENT REMOVED FROM THE BASIN SHALL BE DISPOSED OF PROPERLY, AND ANY AREAS THAT WERE DISTURBED SHALL BE STABILIZED AND REVEGETATED IMMEDIATELY.
   f. SEDIMENT FOREBAYS SHALL BE CLEANED WHEN ACCUMULATED SEDIMENT REACHES HALF THE TOTAL DEPTH OF THE FOREBAY.
   g. CARE SHALL BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF CONSTRUCTED WETLAND TO PROMOTE HEALTHY VEGETATION GROWTH AND TO ENCOURAGE INFILTRATION.
   h. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHALL NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
   i. ALSO INSPECT FOR DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
   j. UPKEEP OF VEGETATION INCLUDING MOWING AND/OR TRIMMING SHALL BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. ALL DETRITUS SHALL BE REMOVED FROM THE BASIN.
      1) FERTILIZERS AND PESTICIDES SHALL NOT BE USED IN MAINTAINING THE VEGETATION.
      2) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR ANY EROSION.
      3) ALL VEGETATED AREAS SHALL BE INSPECTED EVERY YEAR FOR UNWANTED GROWTH OF EXOTIC AND/OR INVASIVE SPECIES.
      4) VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF NINETY-FIVE (95) PERCENT. VEGETATION SHALL BE REESTABLISHED IF VEGETATIVE COVER HAS BEEN REDUCED BY TEN (10) PERCENT.
   k. A DAM AND INSPECTION CHECKLIST SHALL BE INCLUDED IN THE MAINTENANCE AND SHALL BE COMPLETED AT A MINIMUM OF ONCE EVERY YEAR.
2. ADDITIONAL NOTES
   a. REGULAR INSPECTION OF THE CONSTRUCTED WETLAND SHALL OCCUR TO ASSURE PROPER IMPLEMENTATION OF BMP'S. OPERATION AND MAINTENANCE PLANS SHALL BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER OR THE OWNER'S DESIGNEE (INCLUDING THE MUNICIPALITY FOR DEDICATED AND OWNED FACILITIES).



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

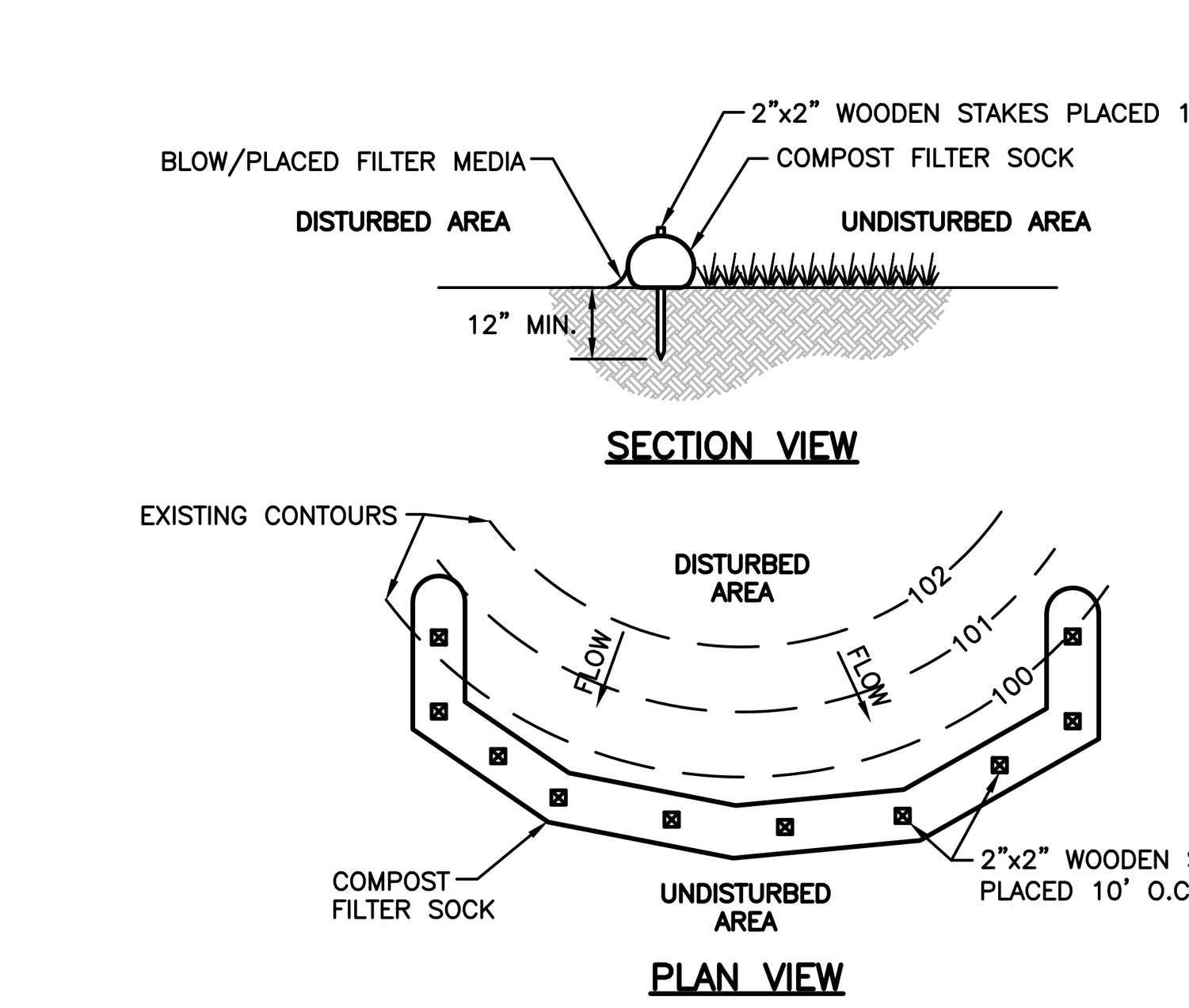
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAGS SHALL BE SURROUNDED BY A RING OF COMPOST FILTER SOCK.

PUMPED WATER FILTER BAG DETAIL

NO SCALE

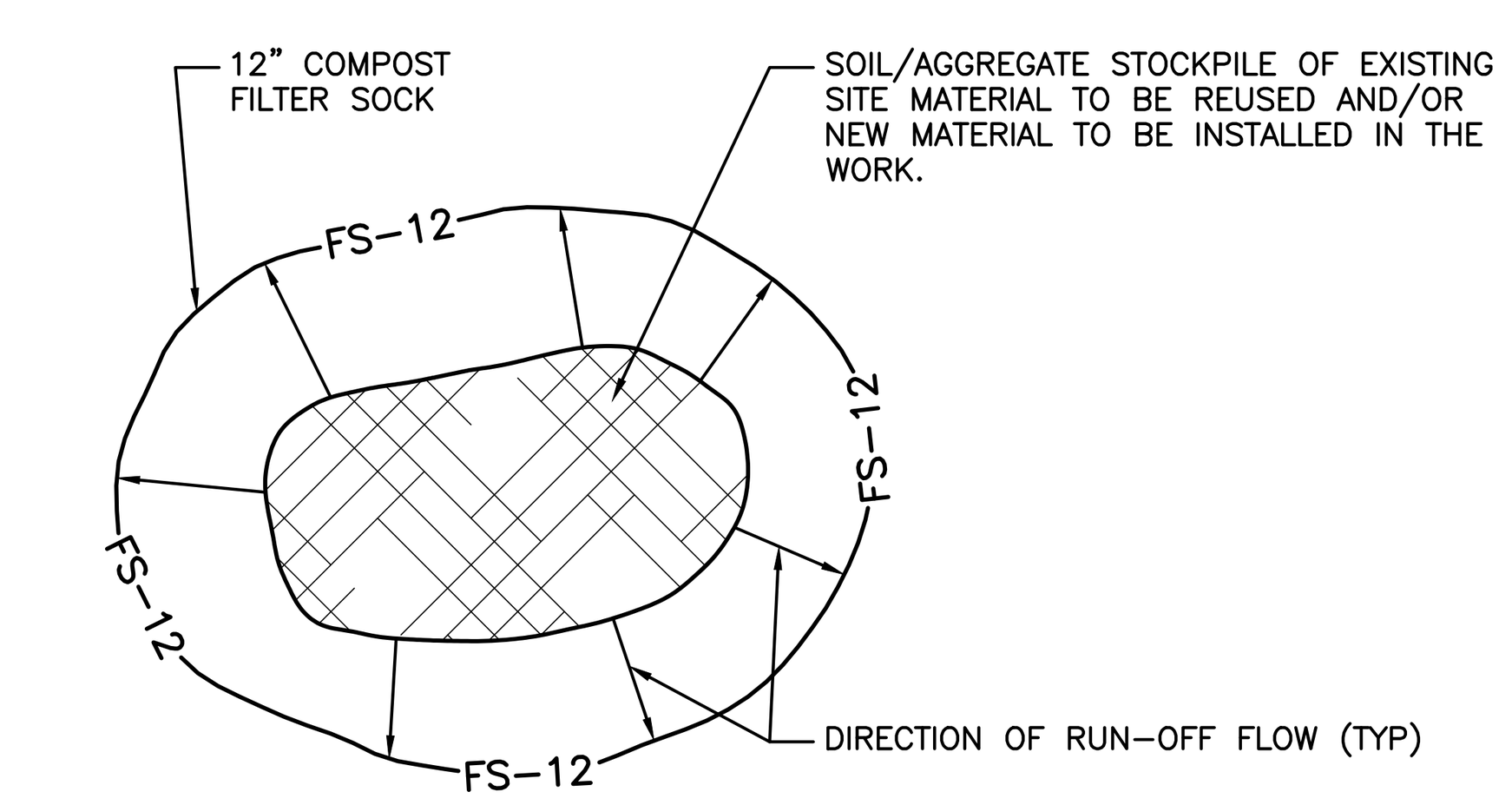


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

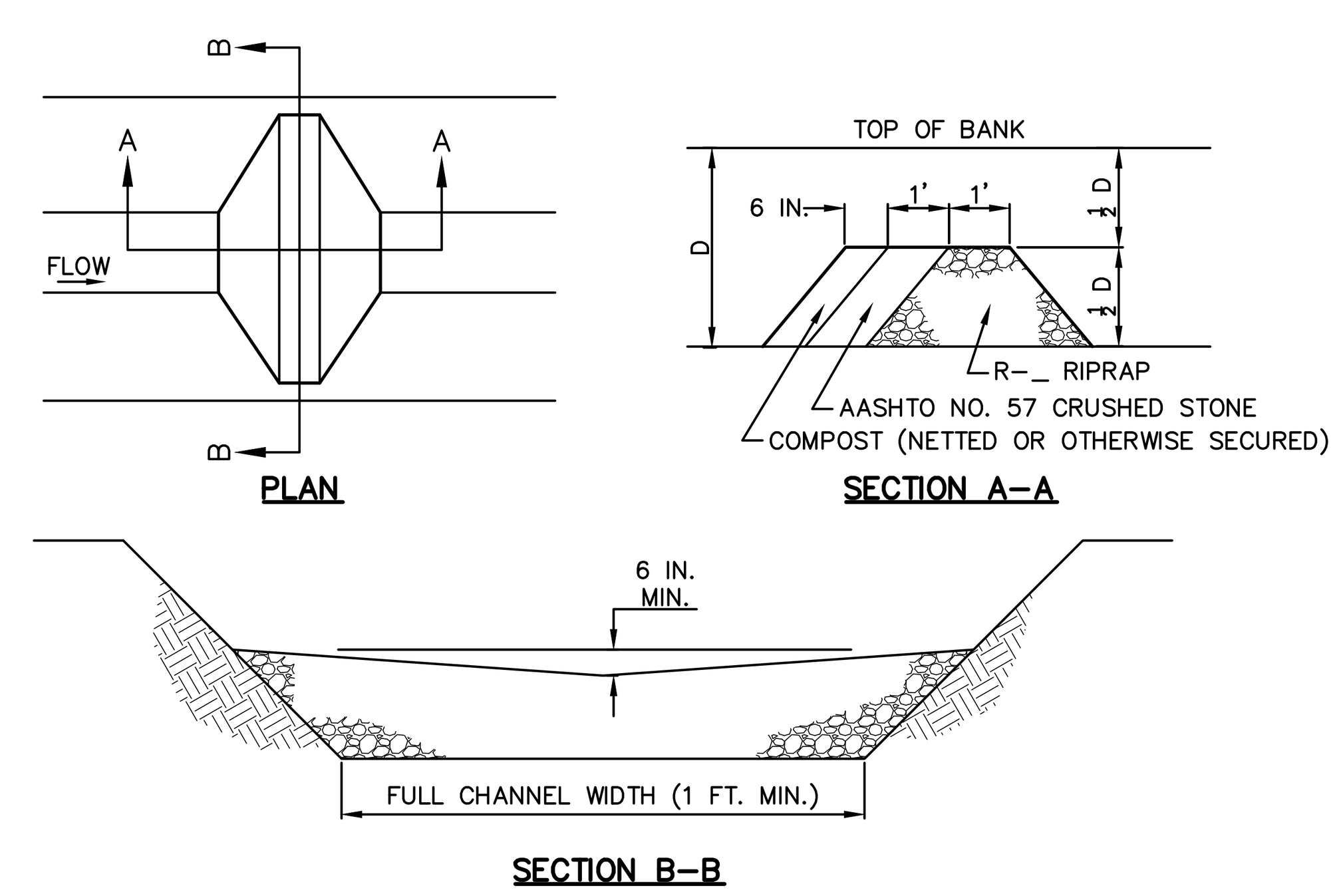
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

NO SCALE



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	OUTLET STR	4	4

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

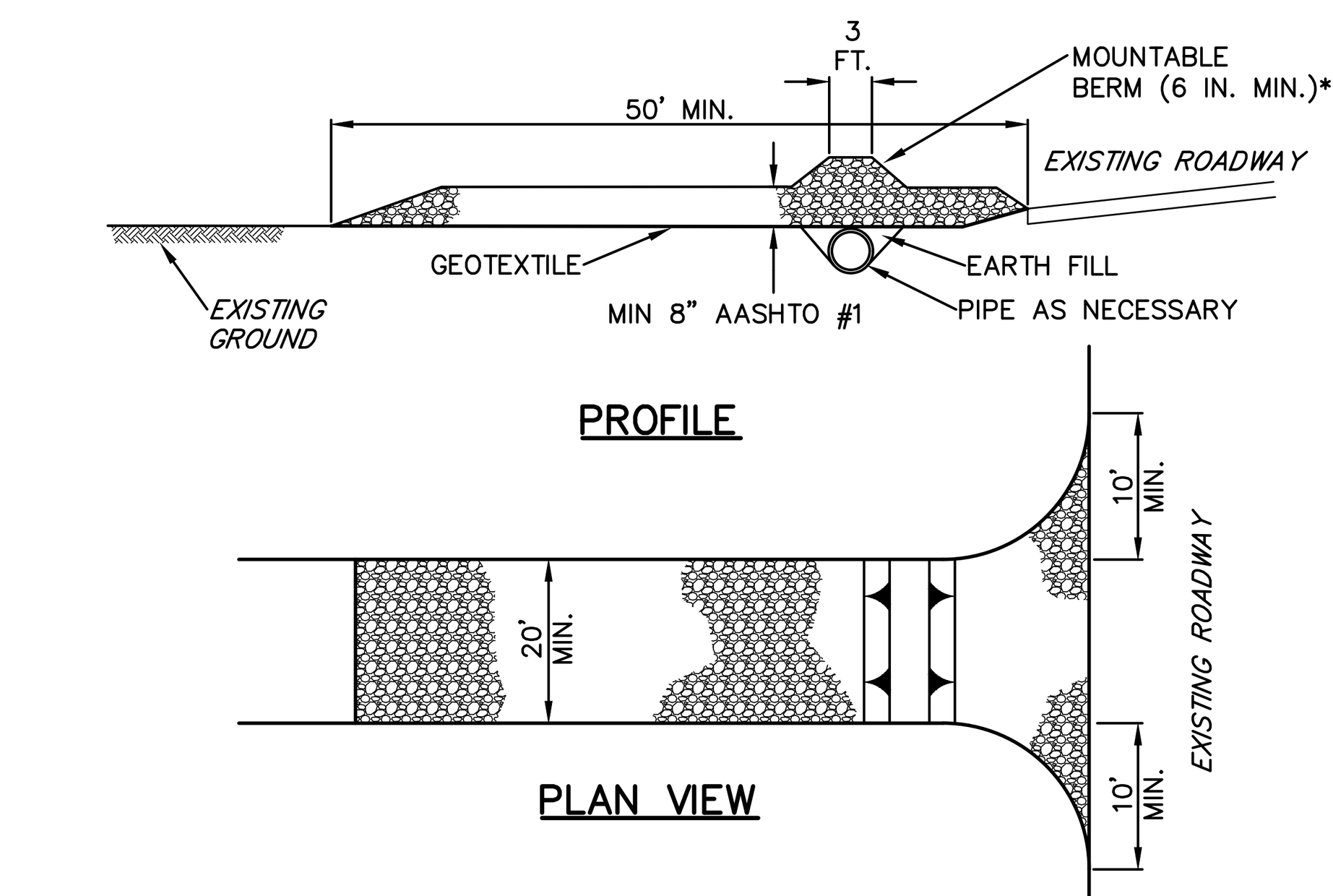
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

TEMPORARY ROCK FILTER DETAIL

NO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

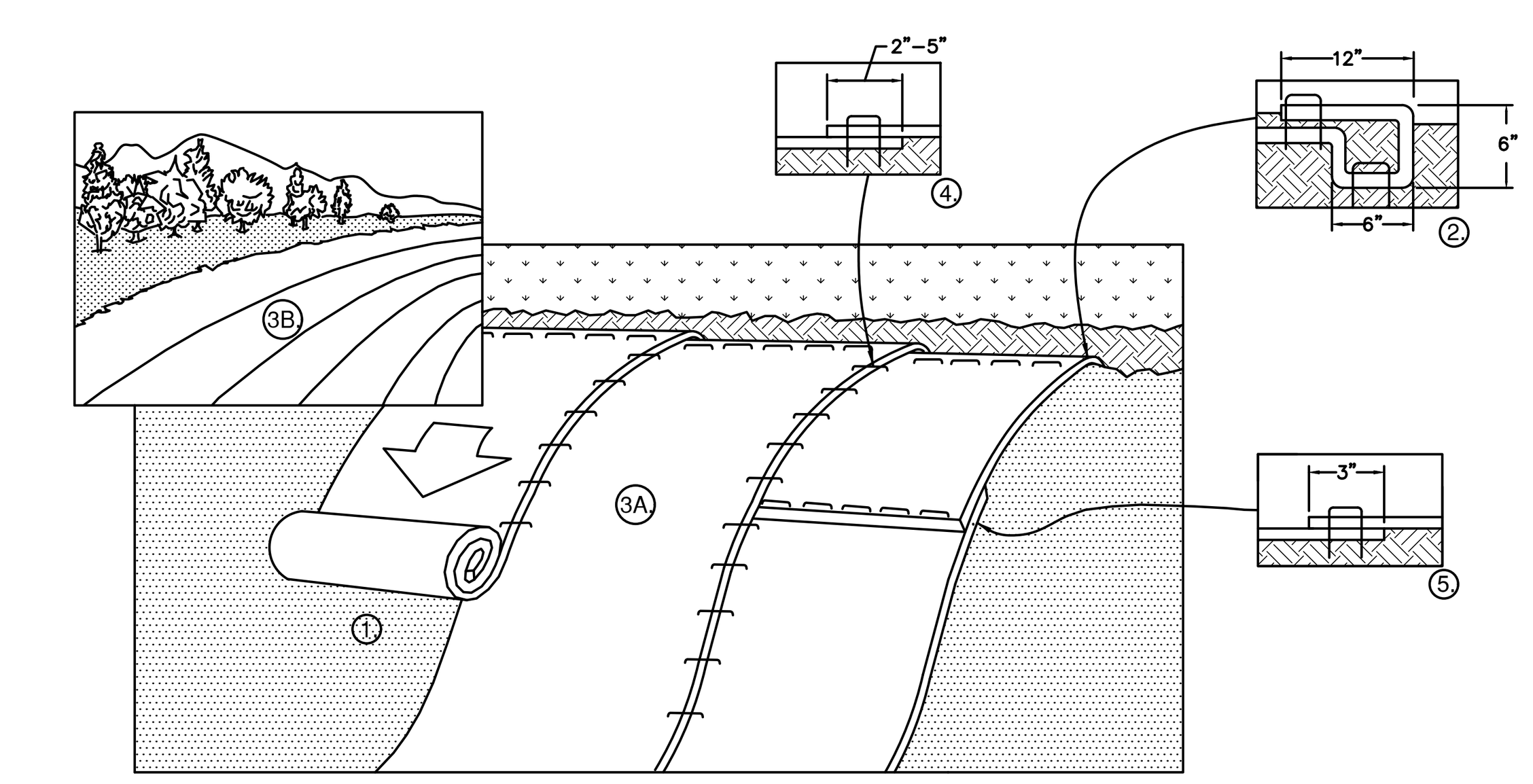
NO SCALE

APPLICATION	SPECIES	APPLICATION RATE/CONTENT	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	10-10-10 @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	41 LBS./AC	6 TONS	97%	SEE NOTE 1.1 BELOW	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15
	RED FESCUE	60 LBS./AC		97%		
	KENTUCKY BLUEGRASS	102 LBS./AC		97%		
NATIVE DETENTION AREA MIX	ERNMX-183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL-GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1. PERMANENT SEEDING
   10-10-20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2. TEMPORARY SEEDING
   10-10-10 IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION L ABOVE.

SEEDING SCHEDULE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

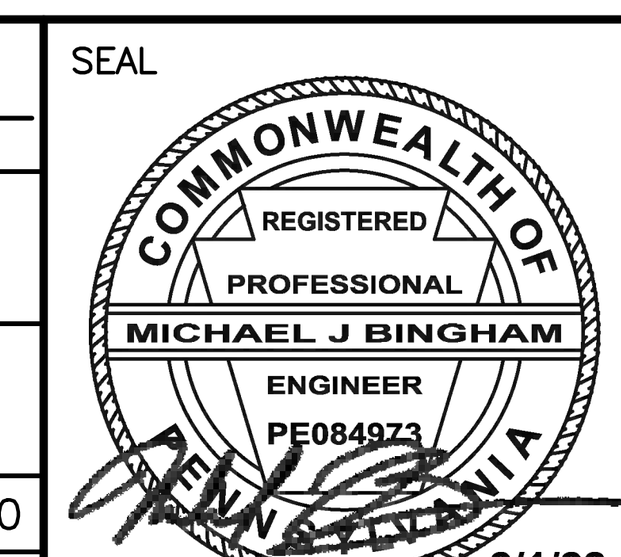
EMBANKMENT PROTECTION

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

MICHAEL J. BINGHAM, PE
RELEASED BY
DESIGN: BCU | CHECKED:
DRAWN: SAM | CHECKED:
DATE: AUGUST 2020 | SURVEY DATE: JUNE 2020
FIELD BOOK: WEBER

SEAL



SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 N MEMORIAL HIGHWAY
SHAVERTOWN, PA 18708

STORMWATER BMP DESIGN – SITE B80
KINGSTON TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL
NOTES AND DETAILS

SCALE: AS SHOWN
DWG. NO.
PROJECT NO.: 11138.01
SHEET NO.: 6 OF 6
REV.

F149

Dwg. Name: 1113801-D01.DWG Plotted: 7/26/2022 9:36 AM

SB-17

E-4 ROCK CONSTRUCTION ENTRANCE

E-6 CONCRETE WASHOUT

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 1

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 2

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 3

TEMPORARY STAGING AND STOCKPILE AREA

D-2 CHANNEL BANK GRADING

D-4 PEDESTRIAN FOOTBRIDGE (FINAL DESIGN BY OTHERS)

D-1 FLOODPLAIN BENCH GRADING

E-5 SANDBAG DIVERSION DAM

E-7 TEMPORARY STREAM CROSSING

CHANNEL BANK GRADING IN THIS AREA TO TIE INTO PROPOSED STORMWATER / MANAGEMENT/ FACILITY GRADING (SEE PLANS TITLED DALLAS TOWNSHIP PARK IMPROVEMENTS - PHASE 2).

STREAMBANK GRADING SHALL TIE INTO GRADING OF THE PROPOSED BRIDGE ABUTMENTS IN THIS AREA

SEE "DALLAS TOWNSHIP PARK PEDESTRIAN BRIDGE AND STREAMBANK STABILIZATION" PLAN SET DATED 7/23/21 AND REVISED 9/30/21 BY BARRY ISETT & ASSOCIATED FOR BRIDGE DESIGN.

WETLAND A

WETLAND C

COVERED PAVILION

REST ROOMS

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 100-YEAR FLOODPLAIN (FEMA)
- EXISTING FLOODWAY (LSI)
- EXISTING EDGE OF CHANNEL
- EXISTING DOMESTIC WATER LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING PROPERTY BOUNDARY
- SOILS
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED (TBR)
- LIMIT OF DISTURBANCE
- CHAPTER 105 BOUNDARY
- PROPOSED FILTER SOCK
- PROPOSED FLOODPLAIN BENCH GRADING
- PROPOSED STREAMBANK GRADING
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY PUMP-AROUND BYPASS SYSTEM
- PROPOSED COFFERDAM
- PROPOSED TEMPORARY STREAM CROSSING

0' 30' 60' 90'
SCALE: 1" = 30'

PA 042324
717-627-4440
landstudies.com
land@landstudies.com
315 North Street
Lititz, PA 17543
Land Studies

PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612

SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN
PROPOSED CONDITIONS

REVISIONS		
NO.	DATE	DESCRIPTION
1	9/6/2024	LCD TECHNICAL COMMENTS
2	10/17/2024	DEP, CH 105
3	11/18/2024	LCD TECHNICAL COMMENTS
4	12/6/2024	LCD TECHNICAL COMMENT
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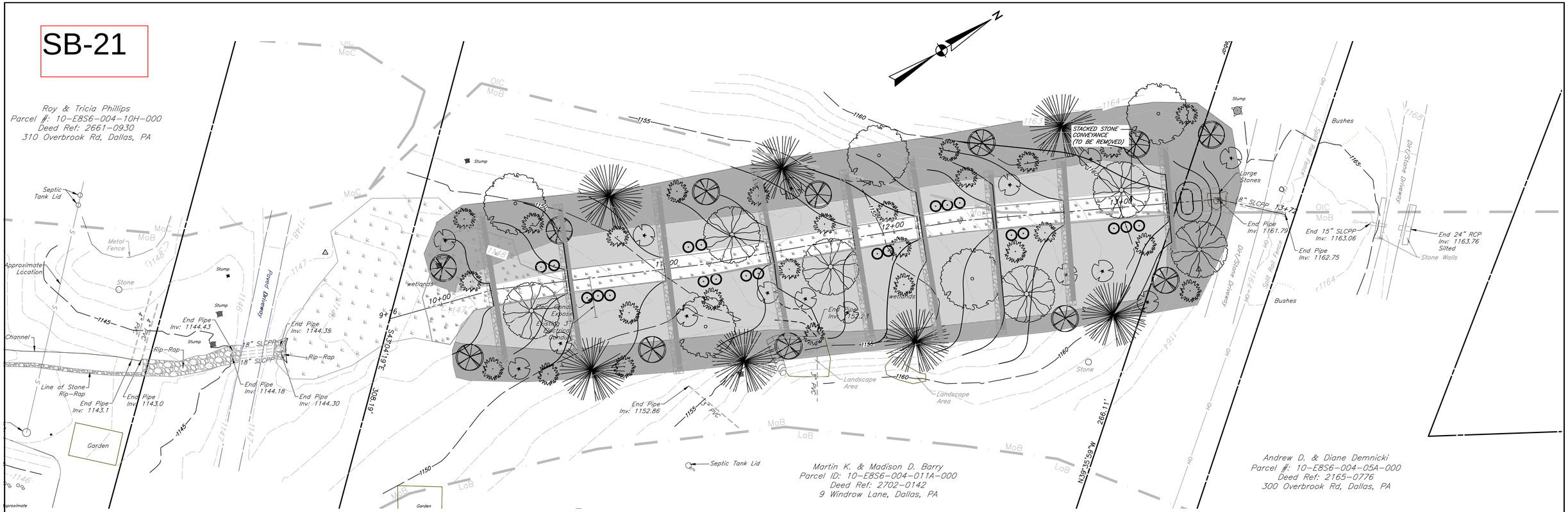
SIGNATURE BLOCK

PROJECT NUMBER: D-1612.1-21
DRAWN BY: KS
CHECKED BY: EL
DATE: 01/12/24
SCALE: 1" = 30'

SHEET NUMBER:
12
OF 31

F150

SB-21



PLANT SCHEDULE

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	ZONE	SIZE
	6	RIVER BIRCH	BETULA NIGRA	ZONE 1, ZONE 2	MIN. 12–14' HEIGHT (MULTI-STEM)
	7	BLACK GUM	NYSSA SYLVATICA	ZONE 2	MIN. 2–2 ½" CALIPER
	5	IRONWOOD	CARPINUS CAROLINIANA	ZONE 2	MIN. 2–2 ½" CALIPER
	12	CRANBERRY BUSH	CRANBERRY VIBURNUM V. TRILOBUM	ZONE 2	MIN. 3' HEIGHT
	26	ARROWWOOD	VIBURNUM DENTATUM	ZONE 1, ZONE 2	MIN. 2' HEIGHT
	21	PUSSY WILLOW	SALIX DISCOLOR	ZONE 1	MIN. 2' HEIGHT
	15	RED OSIER DOGWOOD	CORNUS STOLONIFERA	ZONE 1, ZONE 2	MIN. 2' HEIGHT

ZONE 1

TREES ARE LARGE AND WOODY, PROVIDE SHADE, WOOD DEBRIS, AND SOIL STABILITY

- ERNST(122) FACW WETLAND MEADOW MIX
- RIVER BIRCH
- ARROWWOOD
- RED OSIER DODWOOD
- PUSSY WILLOW

ZONE 2

TREES ARE LESS DENSE THAN ZONE 1 WITH MORE SHRUBS. FILTERS RUNOFF

- ERNST(213) PA NORTHERN ALLEGHENY PLATEAU RIPARIAN MIX
- RIVER BIRCH
- RED OSIER DOGWOOD
- BLACK GUM
- ARROWWOOD
- IRONWOOD
- CRANBERRY BUSH

PROPOSED WETLANDS

- ERNST – 131 OBL WETLAND MIX

NOTES:
1. BRUSH AND WOODY MATERIAL MAY BE CHIPPED AND SPREAD ON SITE TO AID IN ACHIEVING VEGETATIVE STABILITY. LARGE WOOD MAY ALSO BE INCORPORATED TO INCREASE ROUGHNESS OF THE FLOODPLAIN AND INCREASE HABITAT DIVERSITY.
2. ALL TREES SHALL BE PROTECTED FROM BUCK ANTLER RUBBING UNTIL THE TREE IS WELL ESTABLISHED (4 TO 5 INCH DIAMETER)
3. SHRUBS WILL BE BROWSED BY DEER AND SHALL BE PROTECTED WITH 4 FT FENCE UNTIL MATURITY.
4. NO PLANTINGS OUTSIDE THE LIMIT OF DISTURBANCE (LOD)
5. ALL GRADE CONTROL LOGS SHALL EXTEND FOR A HORIZONTAL DISTANCE OF TWO (2) FEET BELOW GRADE
6. CONTRACTOR SHALL USE ROT RESISTANT LOGS.

LEGEND

- Adjoiner Property Line
- Iron Pin, Rebar / Concrete Monument — Property Line
- Edge of Stream
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- GV / GM — Gas Line, Vale, Meter
- X — Fence
- Field Line
- Tree Line
- Existing Wetlands
- Existing Trees
- 355 PROPOSED INDEX CONTOUR
- 352 PROPOSED INTERMEDIATE CONTOUR
- PROPOSED WETLAND BENCH AREA: 4,594.84 S.F.
- LOG SILL GRADE CONTROL STRUCTURE

0 10' 20' 40' 60'
SCALE: 1" = 20'
(HORIZONTAL)

0 2' 4' 8' 16'
SCALE: 1" = 4'
(VERTICAL)

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN	CHECKED
JER	BCU
DRAWN	CHECKED
FT	BCU
DATE: SEPT. 20, 2024	SURVEY DATE: JULY 2024
	FIELD BOOK: TRIMBLE

SEAL

SEAL
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — BRADLEY UNDERKOFFLER — ENGINEER — PE094861

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE AT WINDROW LANE
STREAM RESUFACE PROJECT – P37
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: LANDSCAPE PLAN

SCALE	DWG. NO.
AS SHOWN	L-1
PROJECT NO. 11138.14	SHEET NO. 4 OF 8
REV.	

Dwg. Name: 1113814-C01.DWG Plotted: 9/20/2024 1:14 PM

F151

ATTACHMENT F: BMP SR17 Plans























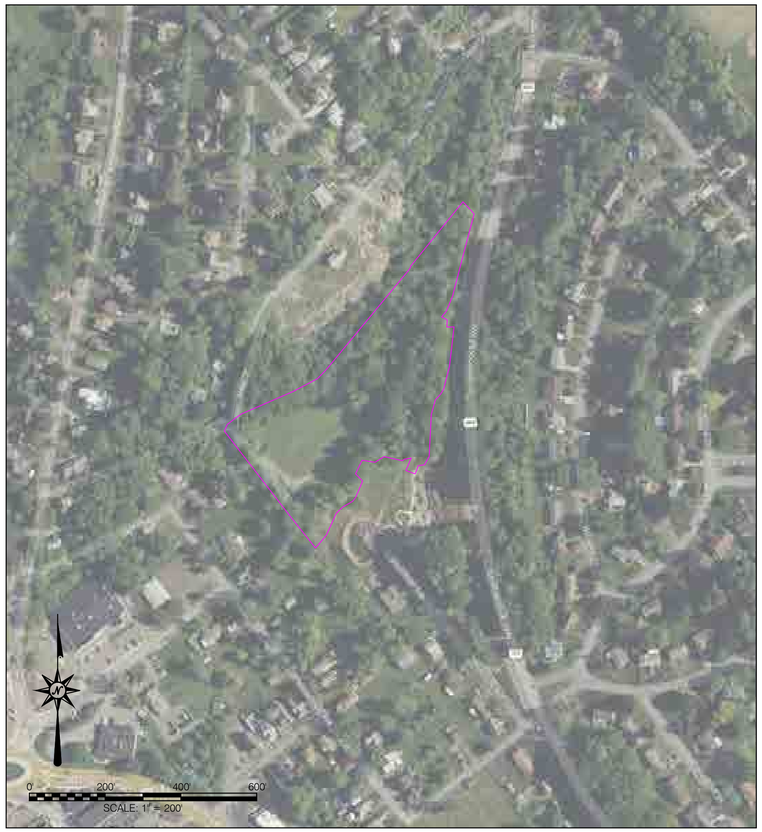








UNT TO TOBY CREEK STREAM STABILIZATION
AT DALLAS TOWNSHIP PARK
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

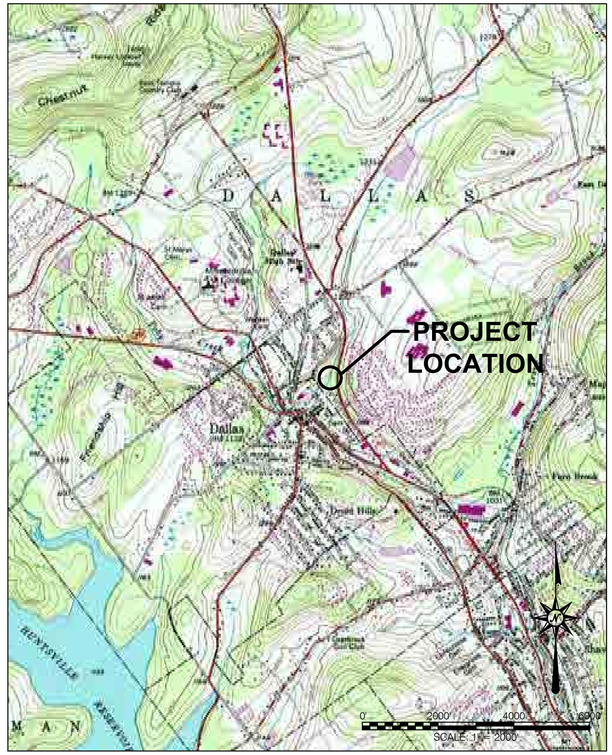


SITE MAP
1" = 200'

Sheet Index

Sheet Number	Sheet Title
1	COVER
2	GENERAL NOTES
3	EXISTING CONDITIONS
4	EROSION & SEDIMENT CONTROL PLAN
5	DETAILS
6	EROSION & SEDIMENT CONTROL DETAILS
7	EROSION & SEDIMENT CONTROL NOTES

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POCS SERIAL #20232782450
DATE: 10/05/2023



LOCATION MAP
1" = 2,000'
SOURCE : USGS 7.5 MINUTE QUADRANGLE - KINGSTON, PA

Land Studies

717-627-4440
fax: 717-627-4660

landstudies.com
land@landstudies.com

315 North Street | Lititz, PA 17543

PA 042324

CLIENT ADDRESS:

DALLAS TOWNSHIP - MARTIN BARRY, MANAGER
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612
PHONE: (570)-674-2000
EMAIL: MBARRY@DALLASTWP.ORG

PROJECT ADDRESS:

DALLAS TOWNSHIP PARK
55 SOUTHSIDE AVE
DALLAS, PA 18612

12/1/2025

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ISAIAH K. MARTIN
ENGINEER
PENNSYLVANIA

9
OF 31

PROJECT:	UNT TO TOBY CREEK STREAM STABILIZATION
PROJECT #:	D-1612.1-21 | PLAN DATE: 01/12/24
COUNTY:	LUZERNE | REVISION: 12/1/25

SURVEY AND GENERAL PLAN NOTES

1. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT THE STREAMBANK STABILIZATION AND PEDESTRIAN BRDIGE PORTION OF THE PHASE 2 IMPROVEMENTS AT THE DALLAS TOWNSHIP SOUTHSIDE NATURE PARK (SEE DALLAS TOWNSHIP PARK IMPROVEMENTS PHASE 2 PLAN SET).
2. LANDSTUDIES INC. ASSUMES NO LIABILITY FOR USE OR REUSE OF THESE PLANS BY ANY INDIVIDUAL OR ENTITY OTHER THAN LANDSTUDIES' CLIENT.
3. REVISIONS MADE TO THIS PLAN SHALL NOT BE THE RESPONSIBILITY OF LANDSTUDIES INC. REVISIONS, SUBSTITUTION OF MATERIALS, OR OTHER CHANGES REQUIRES WRITTEN PERMISSION FROM LANDSTUDIES AND MAY BE SUBJECT TO GOVERNING BODY APPROVAL. SUCH APPROVAL OF REVISIONS OR FIELD CHANGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. EXISTING SITE FEATURES AND TOPOGRAPHIC SURVEY HAS BEEN PROVIDED NORTHEAST SURVEYORS, LLC., RECEIVED 04/26/22. CONTACT INFO:
   RANDY PERRY
   NORTHEAST SURVEYORS, LLC.
   116 EAST CENTER HILL ROAD,
   DALLAS, PA 18612
   NESURVEYORS@FRONTIER.COM
5. SUPPLEMENTAL TREE SURVEY WAS PROVIDED BY LANDSTUDIES, INC. FOR MAJOR EXISTING TREES AROUND ANTICIPATED PARK IMPROVEMENTS. TREE SURVEY PROVIDED FOR DESIGN REFERENCE ONLY AND DOES NOT COVER THE ENTIRE PROJECT AREA. CONTRACTOR TO VERIFY EXISTING TREES TO REMAIN WITH LANDSTUDIES PRIOR TO START OF CONSTRUCTION.
6. ALL ELEVATIONS ARE BASED ON NAVD 88 FROM CONTROL SET AT ELEVATION 1139.75' (SEE PLAN SHEET 3).
7. NO KNOWN UTILITIES WERE IDENTIFIED WITHIN THE EXCAVATION LIMITS SHOWN ON THE PLAN.
8. FLUVIAL SYSTEMS ARE DYNAMIC AND CHANGE OVER TIME. THE EXISTING CONDITIONS TYPOGRAPHY REPRESENTS THE CONDITIONS AT THE TIME OF THE FIELD SURVEY. DESIGN MODIFICATIONS MAY BE NECESSARY TO ACCOMMODATE CHANGES IN THE SITE CONDITIONS AT THE TIME OF CONSTRUCTION. LANDSTUDIES SHALL BE CONSULTED TO VERIFY THE EXISTING SITE CONDITIONS AND IDENTIFY CONSTRUCTION MODIFICATIONS THAT MAY BE NECESSARY BASED ON THOSE CONDITIONS.
9. EXISTING 100-YR FLOODPLAIN LINES AS SHOWN ON THESE PLANS WERE OBTAINED FROM FEMA'S NATIONAL FLOOD HAZARD LAYER (NFHL) COUNTY DATA ON 4/18/2022. THE SITE IS NOT IN A DETAILED STUDY AREA ZONE AE.
10. LANDSTUDIES, INC. COMPLETED AN ENCROACHMENT ANALYSIS ON 6/8/2022 TO DEFINE THE FLOODWAY IN THE PROJECT AREA. THESE AREA SHOWN ON THE PLANS.
11. PREDOMINANT SOILS WITHIN THE PROJECT AREA ARE MORRIS CHANNERY SILT LOAM. SOILS INFORMATION WAS OBTAINED FROM THE USDA NRCS'S WEB SOIL SURVEY.

WETLAND INFORMATION

1. ALL WETLANDS DEPICTED ON THE PLANS WERE DELINEATED DURING PHASE 1 PER THE "REGULATED WATERS DELINEATION (RWD) REPORT" AS PREPARED BY BARRY ISETT & ASSOCIATES INC, DATED MARCH 23, 2020.
2. LANDSTUDIES, INC. COMPLETED A WETLAND PRESENCE/ABSENCE DETERMINATION ON THE PHASE 2 PROJECT AREA, INCLUDING A FIELD INVESTIGATION ON 3/21/2022. THE RESULTS OF THE INVESTIGATION INDICATE NO WETLANDS WITHIN THE PHASE 2 PROJECT LIMITS.

REGULATORY INFORMATION

1. THIS PROPOSED PLAN SERVES AS AN AMENDMENT TO THE PREVIOUSLY AUTHORIZED WATER OBSTRUCTION AND ENCROACHMENT **PERMIT #: E4002221-012**.
2. THE PREVIOUSLY AUTHORIZED STREAM CROSSING (ITEM 1 OF THE PERMIT) OF UNT TO TOBY CREEK (80-FT SPAN STEEL BEAM PEDESTRIAN BRIDGE) WILL REMAIN AS PREVIOUSLY DESIGNED AND IS SHOWN AT STREAM STA. 7+50 ON THIS PLAN FOR LAYOUT PURPOSES ONLY. THE ASSOCIATED WALKING TRAIL AND RIPRAP APRONS WILL REMAIN AS PREVIOUSLY DESIGNED (ITEMS 2 & 3 OF THE PERMIT).
3. THE DESIGN OF THE STREAMBANK STABILIZATION WILL NO LONGER UTILIZE COIR LOGS BUT WILL INCORPORATE TARGETED GRADING TECHNIQUES TO CREATE STABLE CONDITIONS ALONG THE UNT TO TOBY CREEK.
4. A SECOND PEDESTRIAN BRIDGE IS PROPOSED AT STREAM STA. 4+20. THIS BRIDGE AND ABUTMENTS ARE PROPOSED TO SPAN THE 100-YR FLOODPLAIN IN THIS AREA AND BE OF THE SAME STEEL BEAM CONSTRUCTION AS THE PREVIOUSLY PERMITTED PEDESTRIAN BRIDGE. THE PROPOSED WALKING TRAIL WILL ALSO CONNECT TO THIS BRIDGE.

RESTORATION NOTES

1. STREAMBANK STABILIZATION REQUIRES DYNAMIC IMPLEMENTATION APPROACHES TO ACHIEVE OPTIMAL RESTORATION CONDITIONS. THE CONTRACTOR PERFORMING THE WORK SHALL HAVE RELATIVE EXPERIENCE WORKING WITH FLUVIAL SYSTEMS ON STREAM AND FLOODPLAIN RESTORATIONS. THE CONTRACTOR SHALL UNDERSTAND THAT VARIATIONS OF SOILS AND GROUNDWATER ELEVATION MAY IMPACT SITE AND SOIL CONDITIONS AND SHALL COORDINATE WITH THE ENGINEER TO IMPLEMENT ADAPTIVE MANAGEMENT STRATEGIES TO HANDLE SITE SPECIFIC CONDITIONS ARISING DURING CONSTRUCTION OR WHICH HAVE CHANGED SINCE THE INITIAL ASSESSMENT AND DATA COLLECTION UPON WHICH THE DESIGN IS BASED. ANY ADAPTIVE MANAGEMENT STRATEGIES THAT MAY BE IMPLEMENTED SHALL BE CONSIDERED INCIDENTAL TO THE STABILIZATION CONSTRUCTION.
2. TO THE EXTENT PRACTICAL, WORK SHALL BE PERFORMED DURING LOW-FLOW CONDITIONS, AVOIDING PERIODS DURING OR IMMEDIATELY FOLLOWING HEAVY PRECIPITATION.
3. TO THE EXTENT PRACTICAL, WORK SHALL BE PERFORMED FROM THE STREAMBANK, MINIMIZING BOTH THE DISTURBANCE TIME AND DISTURBANCE AREA OF THE STREAM CHANNEL.
4. TO THE EXTENT PRACTICAL, ALL NATIVE VEGETATION (FORBS, GRASSES, TREES AND SHRUBS) SHALL BE PRESERVED. IN EFFORTS TO PRESERVE, NATIVE TREES AND SHRUBS SHALL BE WORKED AROUND AND/OR TRANSPLANTED IF SITE CONDITIONS PERMIT OR GRADING REVISIONS WILL BE WITHIN AN ACCEPTABLE TOLERANCE. PROJECT DESIGNER SHALL FIELD VERIFY.
5. WHENEVER POSSIBLE, STREAM & FLOODPLAIN GRADING AND STABILIZATION SHALL BE COMPLETED IN PORTIONS ACCORDING TO A DAILY DISTURBANCE ZONE ESTABLISHED AT THE BEGINNING OF EACH WORK DAY TO MINIMIZE THE AMOUNT OF TOTAL DISTURBANCE.
6. STREAM & FLOODPLAIN EXCAVATION SHALL BE SEQUENCED IN A MANNER THAT TIME SPENT IN ACTIVE FLOW SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE. IN-STREAM WORK SHALL OCCUR ONLY DURING LOW FLOW CONDITIONS.
7. THE STREAM CHANNEL SHALL NOT BE USED AS AN ACCESS ROAD EXCEPT WHEN EACH OF THE FOLLOWING CONDITIONS OCCUR:
   a. PERMITTED BY DEP.
   b. SPECIFIED OTHERWISE IN THE CONSTRUCTION SEQUENCE
   c. SPECIAL CONDITIONS WARRANT (SUCH AS LIMITED ACCESS IN THE FLOODPLAIN DUE TO THE PRESENCE OF WETLANDS, THE PRESENCE OF THREATENED/ENDANGERED SPECIES, OR WHEN DISTURBANCE OF THE RIPARIAN BUFFER IS MORE DETRIMENTAL THAN DISTURBANCE OF THE STREAM CHANNEL).
8. WHEN UTILIZING THE STREAM CHANNEL FOR ACCESS, THE FREQUENCY OF TRIPS SHALL BE CONSIDERED AND THE TYPE OF EQUIPMENT SHALL BE SELECTED TO AVOID AND MINIMIZE DISTURBANCE TO THE STREAM CHANNEL.

PROJECT INSPECTION MILESTONES

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE PROJECT DESIGNER AT LEAST ONE WEEK PRIOR TO THE ANTICIPATED START OF EACH ACTIVITY SO THAT NECESSARY SITE INSPECTIONS CAN BE MADE AND GUIDANCE PROVIDED. THE PROJECT DESIGNER MAY REQUIRE ADDITIONAL INSPECTION POINTS OR MULTIPLE INSPECTIONS OF A GIVEN FEATURE THROUGH THE COURSE OF CONSTRUCTION.

1. PRIOR TO CLEARING/GRUBBING
2. STAKEOUT
3. E&S CONTROLS
4. START OF EXCAVATION
5. START OF FIRST CHANNEL BANK GRADING SECTION
6. START OF FIRST FLOODPLAIN BENCH GRADING SECTION
7. START OF FIRST SOIL LIFT CONSTRUCTION
8. ADDITIONAL REVIEW OF FLOODPLAIN, CHANNEL, AND STRUCTURE INSTALLATION AS REQUESTED BY THE PROJECT DESIGNER
9. PRIOR TO SEEDING AND MATTING
10. SEED, LABEL AND WEIGHT
11. AFTER SEEDING AND MATTING
12. TREE, SHRUB, PLUG MATERIAL ONSITE PRIOR TO AND FOLLOWING PLANTING
13. PRIOR TO DEMOBILIZATION

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PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612

SHEET TITLE:
GENERAL NOTES

REVISIONS

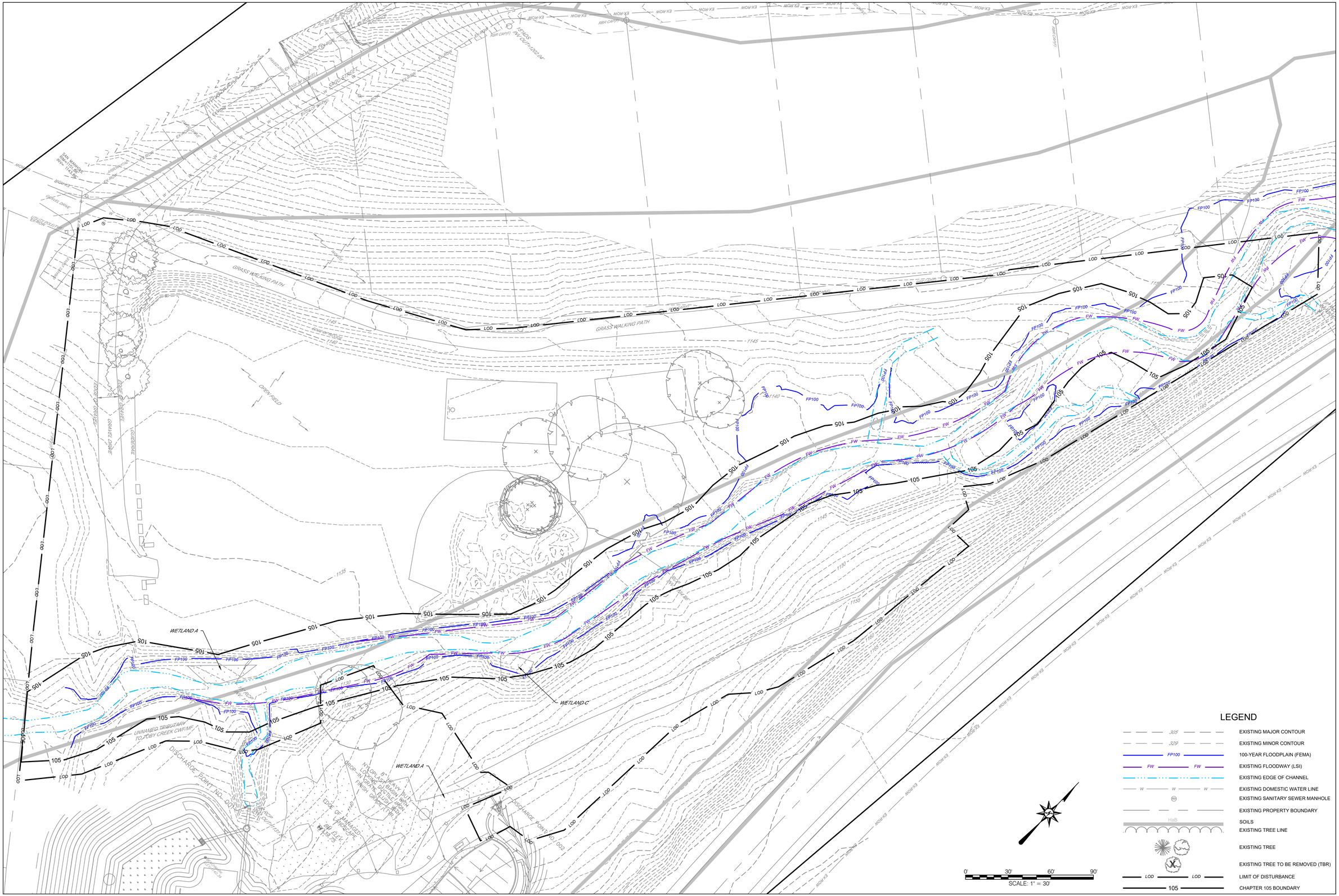
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SIGNATURE BLOCK

PROJECT NUMBER: D-1612.1-21
DRAWN BY: KS
CHECKED BY: BE
DATE: 01/12/24
SCALE: Custom

SHEET NUMBER:
10
OF 31

F158



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Land Studies

PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612

SHEET TITLE:
EXISTING CONDITIONS

REVISIONS		
NO.	DATE	DESCRIPTION
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2	11/18/2024	LCD TECHNICAL COMMENTS
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PROJECT NUMBER: D-1612.1-21
DRAWN BY: KS
CHECKED BY: EL
DATE: 01/12/24
SCALE: 1" = 30'

SHEET NUMBER:
11
OF 31

F159

E-4 ROCK CONSTRUCTION ENTRANCE

E-6 CONCRETE WASHOUT

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 1

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 2

E-2 TEMPORARY PUMP AROUND BYPASS TPB PHASE 3

TEMPORARY STAGING AND STOCKPILE AREA

D-2 CHANNEL BANK GRADING

D-4 PEDESTRIAN FOOTBRIDGE (FINAL DESIGN BY OTHERS)

D-1 FLOODPLAIN BENCH GRADING

E-5 SANDBAG DIVERSION DAM

E-7 TEMPORARY STREAM CROSSING

CHANNEL BANK GRADING IN THIS AREA TO TIE INTO PROPOSED STORMWATER / MANAGEMENT/ FACILITY GRADING (SEE PLANS TITLED DALLAS TOWNSHIP PARK IMPROVEMENTS - PHASE 2).

STREAMBANK GRADING SHALL TIE INTO GRADING OF THE PROPOSED BRIDGE ABUTMENTS IN THIS AREA

SEE "DALLAS TOWNSHIP PARK PEDESTRIAN BRIDGE AND STREAMBANK STABILIZATION" PLAN SET DATED 7/23/21 AND REVISED 9/30/21 BY BARRY ISETT & ASSOCIATED FOR BRIDGE DESIGN.

WETLAND A

WETLAND C

COVERED PAVILION

REST ROOMS

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 100-YEAR FLOODPLAIN (FEMA)
- EXISTING FLOODWAY (LSI)
- EXISTING EDGE OF CHANNEL
- EXISTING DOMESTIC WATER LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING PROPERTY BOUNDARY
- SOILS
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED (TBR)
- LIMIT OF DISTURBANCE
- CHAPTER 105 BOUNDARY
- PROPOSED FILTER SOCK
- PROPOSED FLOODPLAIN BENCH GRADING
- PROPOSED STREAMBANK GRADING
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY PUMP-AROUND BYPASS SYSTEM
- PROPOSED COFFERDAM
- PROPOSED TEMPORARY STREAM CROSSING

0' 30' 60' 90'
SCALE: 1" = 30'

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PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
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SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN
PROPOSED CONDITIONS

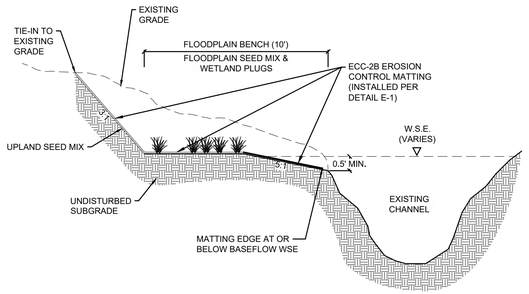
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DRAWN BY: KS
CHECKED BY: EL
DATE: 01/12/24
SCALE: 1" = 30'

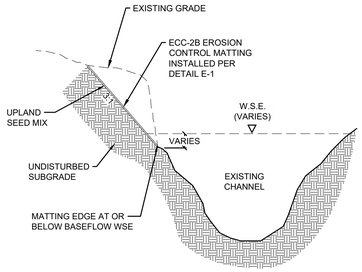
SHEET NUMBER:
12
OF 31

F160



NOTES:
1. 5:1 SLOPE SHALL TIE-IN TO EXISTING CHANNEL BANKS A MINIMUM OF 0.5' BELOW BASEFLOW W.S.E.
2. 3:1 SLOPE SHALL TIE-IN TO THE EXISTING OVERBANK AREA. THIS SLOPE MAY BE FIELD ADJUSTED DURING CONSTRUCTION TO FIT CURRENT CONDITIONS. SLOPE SHALL BE NO STEEPER THAN 2:1 BUT MAY BE LESS THAN 3:1 WHERE APPLICABLE.
3. TARGET ELEVATION FOR THE FLOODPLAIN BENCH SHALL BE 0.5' ABOVE THE NORMAL WATER SURFACE.

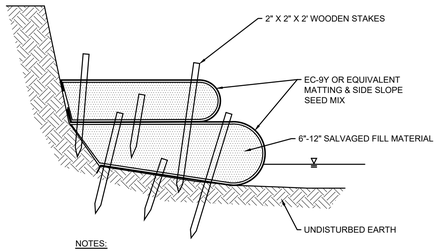
D-1 FLOODPLAIN BENCH GRADING
NOT TO SCALE



NOTES:
1. 3:1 SLOPE SHALL TIE-IN TO EXISTING CHANNEL BANKS BELOW BASEFLOW W.S.E. DEPTH WILL VARY BUT MAXIMUM 0.5' BELOW W.S.E
2. 3:1 SLOPE SHALL TIE-IN TO THE EXISTING OVERBANK AREA. THIS SLOPE MAY BE FIELD ADJUSTED DURING CONSTRUCTION TO FIT CURRENT CONDITIONS. SLOPE SHALL BE NO STEEPER THAN 2:1 BUT MAY BE LESS THAN 3:1 WHERE APPLICABLE.

D-2 CHANNEL BANK GRADING
NOT TO SCALE

CROSS SECTION



NOTES:

BANK STABILIZATION SOIL LIFT SHALL BE UTILIZED ANYWHERE A FILL SCENARIO IS ENCOUNTERED TO ACHIEVE THE DESIGNED STREAMBANK SLOPE. THIS WILL TYPICALLY BE A 3:1 SLOPE, BUT VARIABILITY IS ALLOWED UP TO A 2:1 SLOPE MAXIMUM. THE SOIL LIFT SHOULD TIE INTO THE EXISTING STREAMBANK NEAR THE TOP OF BANK.

SOIL LIFT MAY BE USED IN COMBINATION WITH A CUT SCENARIO TO ACHIEVE DESIRED STABLE STREAMBANKS.

PLACE 6"-12" OF SALVAGED FILL MATERIAL FOR THE EXTENT OF THE PROPOSED SOIL LIFT AND FOLD MATTING OVER TOWARD EXISTING CHANNEL BANK TO ENCAPSULATE THE SOIL LIFT.

WHERE PROPOSED FLOODPLAIN BENCH ELEVATION REQUIRES GREATER THAN 12", CONSECUTIVE LIFTS SHALL BE USED TO ACHIEVE PROPOSED GRADE. CONSECUTIVE LIFTS SHALL BE PLACED SO BANK MAINTAINS A 3:1 SIDE SLOPE.

THE TARGET FLOODPLAIN BENCH ELEVATION SHALL BE 0.5' ABOVE NORMAL WATER SURFACE.

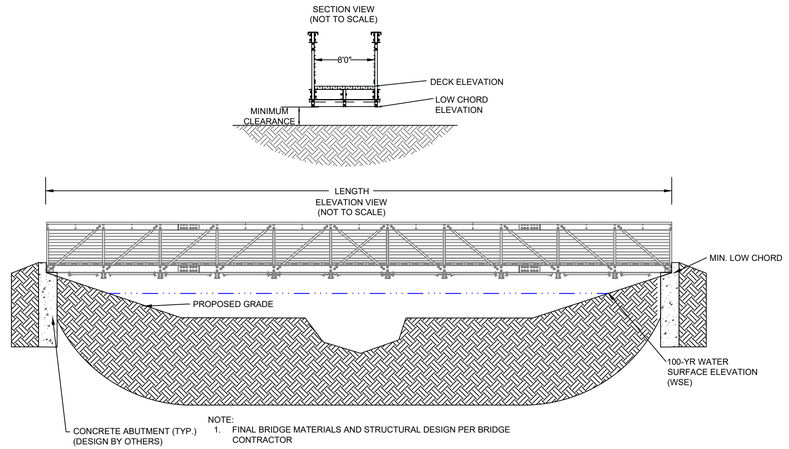
KEY EXCESS MATTING INTO FILL MATERIAL.

FASTEN MATTING IN PLACE WITH WOODEN STAKES, DRIVING STAKE THROUGH SOIL LIFT(S) AND INTO UNDISTURBED EARTH AS SHOWN ON DETAIL.

MATTING SHALL BE SHINGLED SO THAT THE MATTING ON AN UPSTREAM SOIL LIFTS SITS ABOVE THE MATTING ON A DOWNSTREAM SOIL LIFT IN ORDER TO PREVENT SCOUR.

ALTERNATIVE SOIL LIFT CONSTRUCTION APPROACH MAY BE UTILIZED AS APPROVED BY DESIGN ENGINEER.

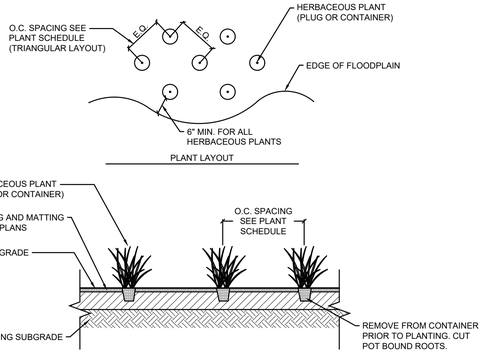
D-3 BANK STABILIZATION SOIL LIFT
NOT TO SCALE



NOTE:
1. FINAL BRIDGE MATERIALS AND STRUCTURAL DESIGN PER BRIDGE CONTRACTOR

TIMBER PEDESTRIAN BRIDGE SCHEDULE				
	STATION	LENGTH	MIN. LOW CHORD ELEV.	100-YR WSE
UPSTREAM BRIDGE	4+25	45'	1143.00'	1142.00'

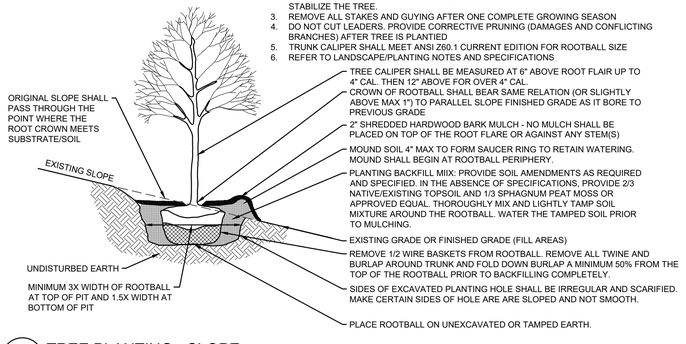
D-4 PEDESTRIAN FOOTBRIDGE
NOT TO SCALE



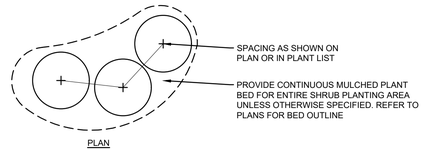
NOTES:
1. PLUG PLANTINGS ARE INTENDED TO PROVIDE ADDITIONAL HERBACEOUS COVER WITHIN THE FLOODPLAIN IMMEDIATELY FOLLOWING CONSTRUCTION.
2. PLUGS PLANTINGS SHALL BE CONCENTRATED IN THE MOST SATURATED AREAS WHERE SEED ESTABLISHMENT MAY BE MORE DIFFICULT.
3. FINAL PLANTING LOCATIONS MAY BE ESTABLISHED AT THE DIRECTION OF THE PLAN PREPARER BASED ON SITE CONDITIONS AND IN ACCORDANCE WITH THE DETAIL

L-1 WETLAND PLUG PLANTING
NOT TO SCALE

NOTES:
1. PLANTS SHALL BE SET VERTICALLY, NOT PERPENDICULAR TO SLOPE
2. STAKING OF TREE MAY BE REQUIRED IF ROOT BALL OF TREE BECOMES LOOSE DURING PLANTING. THE OWNER'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO REQUIRE THAT TREES ARE STAKED OR TO REJECT STAKING AS AN ALTERNATIVE WAY TO STABILIZE THE TREE.
3. REMOVE ALL STAKES AND GUYING AFTER ONE COMPLETE GROWING SEASON
4. DO NOT CUT LEADERS. PROVIDE CORRECTIVE PRUNING (DAMAGES AND CONFLICTING BRANCHES) AFTER TREE IS PLANTIED
5. TRUNK CALIPER SHALL MEET ANSI Z60.1 CURRENT EDITION FOR ROOTBALL SIZE
6. REFER TO LANDSCAPE/PLANTING NOTES AND SPECIFICATIONS

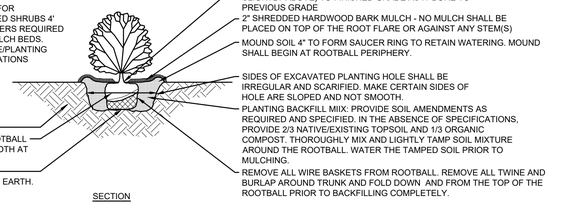


L-2 TREE PLANTING - SLOPE
NOT TO SCALE



PLAN

NOTES:
1. ROOTBALL OF CONTAINERIZED SHRUBS SHALL BE SCARIFIED PRIOR TO TOPSOIL BACKFILL
2. SAUCERS REQUIRED FOR INDIVIDUALLY MULCHED SHRUBS 4' OR LARGER. NO SAUCERS REQUIRED FOR CONTINUOUS MULCH BEDS.
3. REFER TO LANDSCAPE/PLANTING NOTES AND SPECIFICATIONS



SECTION

L-3 SHRUB PLANTING
NOT TO SCALE

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PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
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SHEET TITLE:
DETAILS

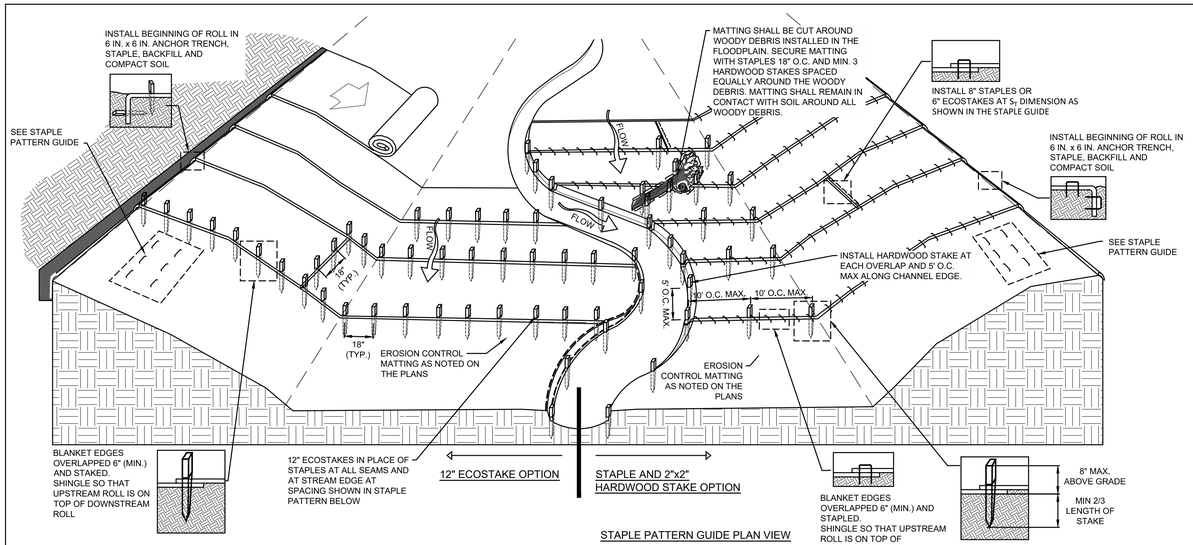
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SIGNATURE BLOCK

PROJECT NUMBER: D-1612.1-21
DRAWN BY: KS
CHECKED BY: EL
DATE: 01/12/24
SCALE: Custom

SHEET NUMBER: 13 OF 31

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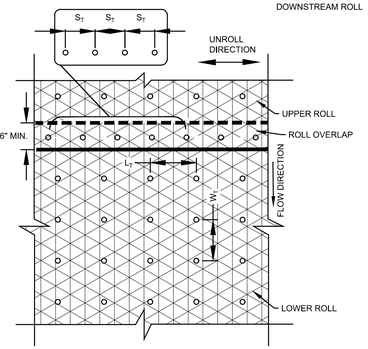


NOTES

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF SEED AS MAY BE DETAILED OR SPECIFIED IN THESE PLANS. GROUND SURFACE MUST BE SUFFICIENT TO ALLOW INTIMATE CONTACT OF THE RECP WITH THE SOIL OVER THE ENTIRETY OF THE INSTALLATION.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES SPACED AT S_T APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING AND FOLD THE ROLL OVER DOWNSLOPE. SECURE RECPS OVER SOIL WITH A ROW OF STAPLES/STAKES/PINS SPACED AT S_T APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS DOWN UNLESS APPROVED OTHERWISE BY THE PROJECT DESIGNER. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE UNLESS APPROVED OTHERWISE BY THE PROJECT DESIGER.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH MINIMUM OF 6" OVERLAP.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE OVERLAPPED WITH THE UPSTREAM MAT ATOP THE DOWNSTREAM MAT (SHINGLE STYLE), THE OVERLAP SHALL BE 6" MINIUMUM.
6. AT THE TERMINAL END, SECURE EACH MAT ACROSS THE WIDTH WITH A ROW OF STAPLES/STAKES SPACED AT S_T. IF EXPOSED TO FLOW, FOOT TRAFFIC, WIND UPLIFT OR OTHER DISRUPTION, TRENCH THE TERMINAL END IN AS SHOWN IN DETAIL.
7. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
8. FASTENERS SHALL PROVIDE A MINIMUM OF TWENTY POUNDS OF PULLOUT RESISTANCE. MINIMUM OF 8" STAPLES OR 6" ECOSTAKES SHALL BE USED. IN LOOSE OR FLOODPLAIN SOILS, LONGER STAPLES MAY BE NECESSARY AS DIRECTED BY THE PROJECT DESIGNER AT THE TIME OF MATTING INSTALLATION.
9. HARDWOOD STAKES SHALL BE MIN 2"X2"X18".
10. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. **DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.**

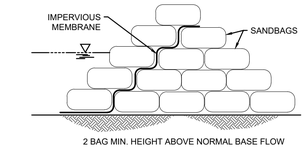
E-1 EROSION CONTROL BLANKET INSTALLATION - FLOODPLAIN
NOT TO SCALE

STAPLE PATTERN GUIDE PLAN VIEW

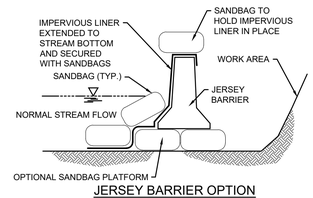


8", 8 GAUGE STAPLES OR 6" ECOSTAKES, AS APPROPRIATE FOR FIELD CONDITIONS OR AS DIRECTED BY THE PROJECT DESIGNER

	STAPLE PATTERN
DIMENSION	FLOODPLAIN BOTTOM AND SLOPES 3:1 OR STEEPER
W_T	18"
L_T	24"
S_T	18"
NOMINAL FREQUENCY	3.5 / SY MIN.

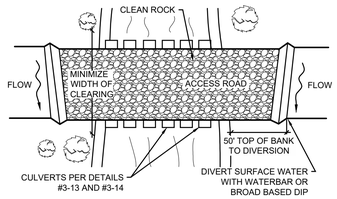


STACKED SANDBAGS OPTION



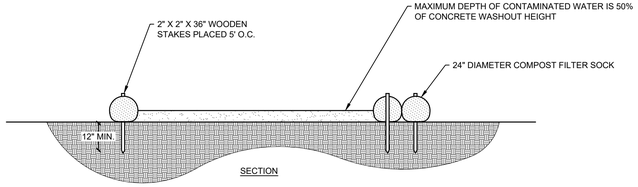
JERSEY BARRIER OPTION

E-5 SANDBAG DIVERSION DAM OR COFFERDAM (STD DTL #3-15)
NOT TO SCALE

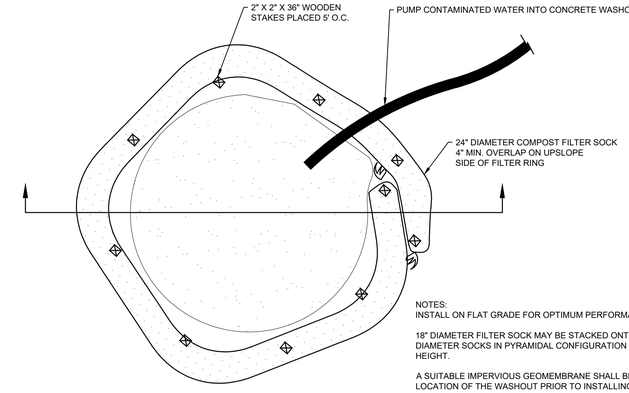


NOTES:
1. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO SEDIMENT REMOVAL FACILITY.
2. CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING REQUIREMENTS
3. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.

E-7 TEMPORARY STREAM CROSSING PLAN VIEW (STD DTL #3-12)
NOT TO SCALE



SECTION



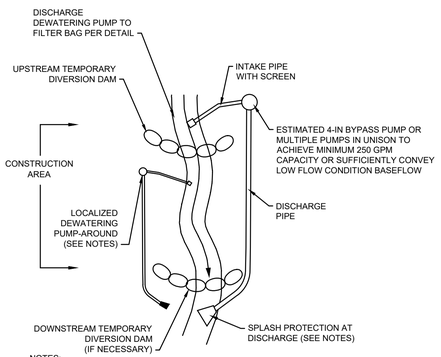
NOTES:
INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.

18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

PLAN

E-6 COMPOST SOCK CONCRETE WASHOUT
NOT TO SCALE



NOTES:

PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM BOTTOM TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM. DO NOT EXCAVATE A SUMP AREA WITHIN THE STREAM CHANNEL FOR THE PUMP INTAKE.

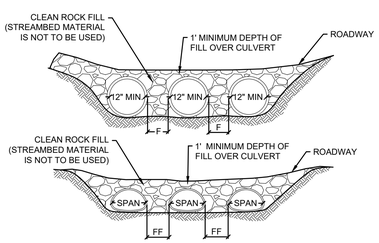
PUMPED WATER MUST BE DISCHARGED ONTO AN ENERGY DISSIPATING DEVICE SUCH AS PLYWOOD, PLASTIC, ROCK, STANDING WATER POOL, FOUNTAIN OR OTHER DEVICE TO MINIMIZE THE OPPORTUNITY FOR EROSION OR INCREASING TURBIDITY.

PUMP AROUND BYPASS SHOULD ONLY BE IMPLEMENTED IF THE PUMP CAPACITY CAN EFFECTIVELY MANAGE THE EXISTING BASEFLOW DISCHARGE.

LOCALIZED PUMPS SHALL BE USED TO DEWATER THE IMMEDIATE WORK AREA. SEDIMENT-LADEN WATER SHALL BE DISCHARGED THROUGH A PUMPED WATER FILTER BAG IN ACCORDANCE WITH DETAIL.

FOR SPLASH PROTECTION, DISCHARGE OUTLET MAY BE SET UPON PLASTIC SHEETING AND ORIENTED UPWARD TO CREATE FOUNTAIN-EFFECT, WHICH FALLS ON PLASTIC SHEETING BEFORE ENTERING STREAM DOWNSTREAM OF PROJECT SITE. ALTERNATIVE SPLASH PROTECTION SHALL BE APPROVED BY DESIGN ENGINEER.

E-2 TEMPORARY PUMP AROUND BYPASS SYSTEM
NOT TO SCALE



CROSS-SECTIONS

NOTES:

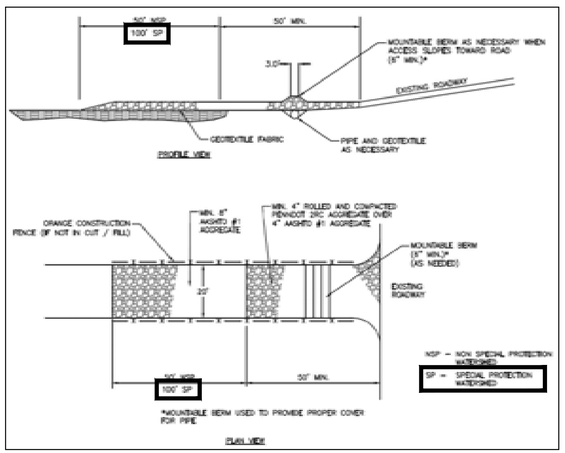
1. MULTIPLE PIPES AND MULTIPLE SPAN BRIDGES AND CULVERTS WHICH MAY TEND TO COLLECT DEBRIS, CONTRIBUTE TO THE FORMATION OF ICE JAMS AND INCREASE HEAD LOSSES SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. CROSSINGS OF LESS THAN 15 FEET SHALL BE BY ONE SPAN, EXCEPT WHERE CONDITIONS MAKE IT IMPRACTICAL TO AFFECT THE CROSSING WITHOUT MULTIPLE SPANS (SECTION 105.162).
2. SEE TABLE 3.5 OF THE PA DEP EROSION CONTROL MANUAL FOR DISTANCE VALUES 'F' AND 'FF'. FOR ARCH PIPES, USE CLOSEST AVAILABLE STANDARD SIZES THAT PROVIDE THE SAME WATERWAY OPENING AREA SHOULD SIZES WITHIN THE TABLE BE UNAVAILABLE.
3. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE STANDARD CONSTRUCTION DETAIL #3-12).
4. PIPES SHALL EXTEND BEYOND THE TOE OF THE ROADWAY.
5. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.

MAINTENANCE

1. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
3. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.

AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED.

E-3 TEMPORARY STREAM CROSSING MULTIPLE PIPES (STD DTL #3-14)
NOT TO SCALE



NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
5. DETAIL TAKEN FROM PA DEP "ALTERNATIVE E&S BMPs AND PCSM SCMs", LAST REVISED OCT 29, 2024.

E-4 ROCK CONSTRUCTION ENTRANCE (DEP APPROVED ALTERNATIVE)
NOT TO SCALE

TEMPORARY CONTROL MEASURES

1. FILTER SOCK
   1.1. FILTER SOCK SHALL BE LOCATED AS SHOWN ON THE PLANS AND DOWN SLOPE OF ANY SPOIL AREAS OR DISTURBED AREAS WITH THE POTENTIAL TO RESULT IN SEDIMENT-LADEN RUNOFF LEAVING THE SITE.
2. TEMPORARY SEEDING
   2.1. TEMPORARY SEEDING SHALL BE APPLIED TO ALL DISTURBED AREAS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

Botanical Name	Common Name	Application Rate	Season/color
Secale cereale	CEREAL RYE	36 LBS/AC	JULY - MARCH
OR			
Avena sativa	OATS	36 LBS/AC	APRIL - JUNE

3. TEMPORARY STABILIZATION MATTING (EROSION CONTROL BLANKET) SHALL BE APPLIED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE PLAN NOTES AND DETAILS UPON ACHIEVING FINAL GRADE OR AS NECESSARY TO PROVIDE TEMPORARY STABILIZATION:
   3.1. APR. 1 TO SEPT 1 - EAST COAST EROSION CONTROL (ECC-2B) OR APPROVED EQUIVALENT.
   3.2. SEPT. 1 TO APR 1 - EAST COAST EROSION CONTROL (EC-4Y) OR APPROVED EQUIVALENT.

ALT 3 where specifying fill banks:
   3.3. MATTING SHALL BE APPLIED TO ALL FLOODPLAIN AREAS AS SHOWN ON THE PLANS AND NOTED BELOW:
      3.3.1. APR. 1 TO SEPT 1 - EAST COAST EROSION CONTROL (ECC-2B) OR APPROVED EQUIVALENT.
      3.3.2. SEPT. 1 TO APR 1 - EAST COAST EROSION CONTROL (EC-4Y) OR APPROVED EQUIVALENT.
   3.4. EAST COAST EROSION CONTROL (EC-9Y) OR APPROVED EQUIVALENT MATTING SHALL BE UTILIZED FOR SOIL LIFTS / FILL BANKS.

4. DURING NON-GERMINATING PERIODS, TEMPORARY STABILIZATION ON OVERBANK AREAS SHALL BE ACHIEVED THROUGH MULCHING. SEE THE MULCHING SPECIFICATION BELOW.

PERMANENT CONTROL MEASURES

1. PERMANENT VEGETATION COVER
   1.1. ALL DISTURBED AREAS THAT ARE NOT PROPOSED TO BE ROCK COVER SHALL BE COVERED WITH VEGETATION IN ORDER TO MINIMIZE EROSION.
   1.2. PERMANENT COVER SHALL BE APPLIED PER THE SEEDING & PLANT SCHEDULES ON SHEET 7.
2. MULCH
   2.1. STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE TO DISTURBED OVER-BANK SEEDING AREAS TO HELP ESTABLISH A PERMANENT PLANT COVER AND TO PREVENT EROSION.
   2.2. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING MEANS;
      2.2.1. A TRACTOR-DRAWN IMPLEMENT DESIGNED TO CRIMP THE STRAW INTO THE SOIL (A TRACKED VEHICLE SHOULD NOT BE USED FOR THIS PURPOSE)
      2.2.2. 'SYNTHETIC BINDERS APPLIED PER MANUFACTURER'S RECOMMENDATIONS
      2.2.3. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETTING STAPLED OVER MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
3. LIME AND FERTILIZER
   3.1. LIME AND FERTILIZER SHALL BE APPLIED TO UPLAND TURF AREAS AS REQUIRED BY SOIL TESTING TO OBTAIN A UNIFORM EROSION RESISTANCE PERENNIAL VEGETATIVE COVERAGE.
   3.2. IN THE ABSENCE OF SOIL TESTING, 6 TONS OF AGRICULTURAL LIMESTONE PER ACRE AND 1,000 LBS OF 10-10-20 FERTILIZER PER ACRE IS RECOMMENDED FOR PERMANENT TURF SEEDING.
   3.3. TO AVOID POTENTIAL FOR INTRODUCING EXCESS NUTRIENTS TO THE WATERWAY, IN NO INSTANCE SHALL LIME AND FERTILIZER BE APPLIED WITHIN THE RESTORATION FOOTPRINT INCLUDING THE FLOODPLAIN FLOOR AND SIDE SLOPES.
   3.4. IN NO INSTANCE SHALL FERTILIZER OR LIME BE APPLIED TO AREAS WHERE NATIVE SEED MIXES ARE SPECIFIED.

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PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612

SHEET TITLE:
EROSION & SEDIMENT CONTROL DETAILS

REVISIONS		
NO.	DATE	DESCRIPTION
1	11/18/2024	LCD TECHNICAL COMMENTS
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SIGNATURE BLOCK

PROJECT NUMBER: D-1612.1-21
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DATE: 01/12/24
SCALE: Custom

SHEET NUMBER:
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OF 31
F162

E&S PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, AND A REPRESENTATIVE FROM THE APPLICABLE REGULATORY AUTHORITIES TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE ALLOWED TO DISCHARGE INTO THE RESTORED FLOODPLAIN IN AN ECOLOGICALLY BENEFICIAL MANNER. SEEPS AND SPRINGS SHALL NOT BE PIPED OR CHANNELIZED.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.

NURSE CROP SEED MIX

Botanical Name	Common Name	Application Rate	Timing
Secale cereale	CEREAL RYE	30 LBS/AC	JULY - MARCH
	OR		
Avena sativa	OATS	20 LBS/AC	APRIL - JUNE

NOTES:
1. NURSE CROP TO BE SEEDED IN ADDITION TO PERMANENT SEEDING WITH FLOODPLAIN SEED MIX, AND UPLAND SEED MIX ONLY. NURSE CROP IS NOT TO BE SEEDED ANYWHERE THE TURF GRASS SEED MIX IS INSTALLED.
2. ANNUAL RYE SHALL NOT BE USED IN THE FLOODPLAIN SEEDING OR UPLAND SLOPE SEEDING AREAS.

EROSION AND SEDIMENT CONTROL - CONSTRUCTION SEQUENCE

U.S. FISH AND WILDLIFE MANDATORY AVOIDANCE MEASURE: THE PROPOSED PROJECT IS IN THE VICINITY OF A LONG-EARED NORTHERN BAT MATERNITY ROOST(S), CAPTURE, OR DETECTION. TO ENSURE TAKE IS NOT REASONABLY CERTAIN TO OCCUR, DO NOT CONDUCT TREE REMOVAL FROM MAY 15 TO AUGUST 15. THE U.S. FISH AND WILDLIFE SERVICE DETERMINED TAKE IS NOT REASONABLY CERTAIN TO OCCUR FROM TREE REMOVAL IF ACTIVITIES ARE AVOIDED DURING THE PUP SEASON (I.E., THE RANGE OF TIME WHEN FEMALES ARE CLOSE TO GIVING BIRTH (I.E., TWO WEEKS PRIOR TO BIRTH) AND HAVE NON-VOLANT (I.E., UNABLE TO FLY) YOUNG). FOR MORE INFORMATION, SEE THE INTERIM VOLUNTARY GUIDANCE FOR THE NORTHERN LONG-EARED BAT: FOREST HABITAT MODIFICATION, AVAILABLE HERE: HTTPS://WWW.FWS.GOV/LIBRARY/COLLECTIONS/INTERIMHABITAT-MODIFICATION-GUIDANCE.

PART 1 - SEE "UNT TO TOBY CREEK STREAM STABILIZATION AT DALLAS TOWNSHIP PARK", AS PREPARED BY LANDSTUDIES INC, LAST REVISED 11/18/2024 FOR FULL PLANS, DETAILS, AND SPECIFICATIONS FOR THE CHAPTER 105 IMPROVEMENTS.

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING) THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE REGULATORY OFFICIALS, AND THE PROJECT DESIGNER TO AN ON-SITE PRE-CONSTRUCTION MEETING.
2. UPON INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE OWNER SHALL PROVIDE NOTIFICATION TO ALL APPROPRIATE REGULATORY OFFICIALS.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.
4. INSTALL ORANGE CONSTRUCTION FENCE AROUND RAIN GARDEN BOTTOMS IF THESE FACILITIES ARE CONSTRUCTED PRIOR TO THE STREAM WORK.
5. INSTALL ROCK CONSTRUCTION ENTRANCE AT THE ACCESS DRIVE OFF OF SAGO ROAD.
6. INSTALL ANY FILTER SOCK AND SILT FENCE AS SHOWN ON PLANS AND AS NECESSARY BASED ON CONSTRUCTION PHASING. FILTER SOCKS AND SILT FENCE MUST BE INSTALLED DOWNHILL OF ANY DESTABILIZED AREA AT THE TEMPORARY STOCKPILE LOCATIONS. STRIP TOPSOIL FROM STOCKPILE LOCATIONS FOR REDISTRIBUTION.
7. PRIOR TO CLEARING AND GRUBBING, THE PROJECT DESIGNER AND CONTRACTOR SHALL WALK THE SITE TO IDENTIFY TREES TO REMAIN AND ANY SPECIAL GRADING CONSIDERATIONS.
8. COMMENCE CLEARING AND GRUBBING.
9. A PUMP-AROUND BYPASS IS NECESSARY FOR ANY WORK THAT WILL BE CONDUCTED IN AREAS WITH ACTIVE FLOW. CONSTRUCTION ACTIVITIES OUTSIDE OF THE ACTIVE FLOW MAY BE CONDUCTED WITHOUT USE OF THE PUMP-AROUND BYPASS IF THE ACTIVITIES ARE CONDUCTED PRIOR TO FINAL CONNECTION WITH ACTIVE STREAM FLOW. INSTALL TPB-1 AND BEGIN PUMP-AROUND BYPASS IN ACCORDANCE WITH THE PLANS AND DETAIL E-2. THOUGH IT MAY BE NECESSARY DURING INSTALLATION, CONTRACTOR SHALL MINIMIZE VEHICLE TRAFFIC IN THE STREAM PRIOR TO BYPASS SYSTEM BECOMING OPERATIONAL. ADDITIONAL LOCALIZED PUMPING MAY BE UTILIZED TO DE-WATER IN THE IMMEDIATE VICINITY OF WHERE WORK IS BEING DONE. DE-WATERING AND DISCHARGE SPLASH PROTECTION SHALL TAKE PLACE IN ACCORDANCE WITH PUMP-AROUND BYPASS SYSTEM DETAIL. ALTERNATIVE SOLUTIONS SHALL BE APPROVED BY THE ENGINEER. BYPASS PUMP SHALL PROVIDE CAPACITY TO SUFFICIENTLY CONVEY LOW FLOW CONDITION BASEFLOW. MULTIPLE PUMPS MAY BE USED IF NECESSARY. AS THE REACH IS DEWATERED, FISHES WITHIN THE DEWATERED AREA SHALL BE CAPTURED UTILIZING A SEINE OR OTHER NET, PLACED IN BUCKETS WITH WATER, AND IMMEDIATELY RELOCATED OUTSIDE OF THE WORK AREA.
10. WHEN ALL E&S CONTROLS HAVE BEEN INSTALLED, BEGIN REMAINING CONSTRUCTION IN ACCORDANCE WITH PLANS. CONTRACTOR SHALL TAKE CARE TO MINIMIZE DISTURBED AREAS AND IMPLEMENT STABILIZATION EFFORTS IN ACCORDANCE WITH THE PLAN SET, DISTURBING ONLY AS MUCH AREA AS CAN REASONABLY BE STABILIZED THE SAME DAY.
11. THE CONTRACTOR SHALL BEGIN GRADING AT THE DOWNSTREAM EXTENTS PROGRESSING UP-VALLEY, EXCAVATING TO PROPOSED GRADE WHILE TAKING CARE TO AVOID COMPACTION OF THE FLOODPLAIN FOOTPRINT.
12. STOCKPILING AND SPOIL AREA GRADING SHALL OCCUR IN CONJUNCTION WITH FLOODPLAIN GRADING. EXCAVATED MATERIAL MAY BE TEMPORARILY STOCKPILED AT THE LOCATIONS SHOWN ON THE PLAN PRIOR TO BEING HAULED TO THE PROPOSED SPOIL AREA. ALL EXCAVATED MATERIAL SUITABLE FOR USE AS TOPSOIL, AS DETERMINED BY THE ENGINEER, SHALL BE STOCKPILED FOR LATER USE AS TOP-DRESSING TO ACHIEVE FINAL GRADING OF SPOIL AREAS. WHEN ENCOUNTERED, GRAVEL MATERIALS MAY BE TEMPORARILY STOCKPILED TO BE INCORPORATED INTO PROPOSED CHANNEL AND FLOODPLAIN FEATURES AT THE DIRECTION OF THE ENGINEER.
13. ONCE FINAL GRADE HAS BEEN ACHIEVED, STABILIZATION MUST OCCUR WITHIN 48 HOURS (OR BY THE END OF THE WORKDAY IF RAIN IS FORECASTED). STABILIZE THE FLOODPLAIN BY APPLYING TEMPORARY AND PERMANENT SEED AND MATTING IN ACCORDANCE WITH THE CONTROL MEASURES OUTLINED ON THIS PLAN.
14. END TPB-1 AND BEGIN TPB-2.
15. REPEAT ABOVE STEPS/PATTERNS AS MANY TIMES AS IS APPLICABLE TO THE PROJECT.
16. END TPB-2.
17. INSTALL BRIDGE ABUTMENTS AS APPROPRIATE PER PUMP AROUND PHASING AS CONSTRUCTION PROGRESSES UPSTREAM.

PART 2 - SEE "POST CONSTRUCTION STORMWATER MANAGEMENT PLAN DALLAS TOWNSHIP PARK IMPROVEMENTS PHASE 2" AS PREPARED BY LANDSTUDIES INC, LAST REVISED 11/18/2024 FOR FULL PLANS, DETAILS, AND SPECIFICATIONS FOR THE CHAPTER 105 IMPROVEMENTS.

18. **THE GRAVEL PATH, ASSOCIATED E&S CONTROLS, AND ASSOCIATED GRADING ON THE EAST SIDE OF THE WATERCOURSE NEEDS TO INSTALLED IN CONJUNCTION WITH THE 105 BANK STABILIZATION WORK, AS THE TEMPORARY STREAM CROSSINGS WILL BE NEEDED IN ORDER TO ACCESS THAT PORTION OF THE SITE.**
   - 18.1. INSTALL FILTER SOCK GROUP #3 AND GROUP #6. DO NOT GRUB AND/OR STRIP TOPSOIL TO PLACE FILTER SOCK/FENCE.
   - 18.2. INSTALL GRAVEL PATH AND ASSOCIATED GRADING.
19. INSTALL FILTER SOCK GROUP #1, GROUP #4, AND #5 AS SHOWN ON PLANS . DO NOT GRUB AND/OR STRIP TOPSOIL TO PLACE FILTER SOCK/FENCE.
20. PRIOR TO ANY CLEARING OR GRUBBING, PROJECT DESIGNER OR CLIENT REPRESENTATIVE SHALL FLAG TREES TO REMAIN.
21. DEMOLISH/REMOVE EXISTING SITE FEATURES, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - 21.1. GUARDRAIL, CONCRETE BIN BLOCKS, GRAVEL PARKING AREA, RUBBLE PILE, ASPHALT COURTS
22. CLEAR AND GRUB ANY VEGETATION IN THE AREA OF EW-1.
23. BEGIN INSTALLATION OF THE STORM PIPE AND STRUCTURES, WORKING UPSTREAM FROM EW-1 TO SAGO ST CONNECTION.
   - 23.1. THE RIP-RAP PLUNGE POOL/STILLING BASIN FOR EW-1 SHALL BE INSTALLED WITH THE ENDWALL STRUCTURE.
24. CLEAR AND GRUB ANY VEGETATION IN THE AREA OF THE PROPOSED PARKING LOT. STRIP TOPSOIL ONLY WITHIN THE AREA OF THE PROPOSED PARKING LOT AND STOCKPILE AT THE LOCATION SHOWN ON THE PLAN. IMMEDIATELY PLACE FILTER SOCK ON THE DOWN SLOPE SIDE OF THE STOCKPILE AND PROVIDE TEMPORARY STABILIZATION OF THE STOCKPILE.
   - 24.1. STOCKPILES SHOULD NOT EXCEED 35 FEET IN HEIGHT WITH SIDE SLOPES NOT STEEPER THAN 2:1.
25. ROUGH GRADE PROPOSED ENTRANCE DRIVE AND PROPOSED PARKING LOT.
   - 25.1. IF NEEDED, FILL CAN BE EXCAVATED FROM BMP-001 AND/OR BMP-002 LOCATIONS AS APPROPRIATE.
26. ESTABLISH BUILDING PADS AND BEGIN BUILDING CONSTRUCTION.
27. CONSTRUCT SANITARY SEWER AND WATER LATERALS IN ACCORDANCE WITH THE PLANS PREPARED BY LAIRD LA, PLLC.
   - 27.1. THE TOTAL LENGTH OF EXCAVATED TRENCH OPEN AT ANY ONE TIME SHOULD NOT BE GREATER THAN THE TOTAL LENGTH OF UTILITY LINE THAT CAN BE PLACED IN THE TRENCH AND BACK-FILLED IN ONE WORKING DAY.
   - 27.2. NO MORE THAN 50 LINEAL FEET OF OPEN TRENCH SHOULD EXIST WHEN UTILITY LINE INSTALLATION CEASES AT THE END OF THE WORKDAY.
28. PLACE STONE BASE ON GRADED DRIVE AND PARKING LOT.
29. INSTALL FILTER SOCK #2.
30. CONSTRUCT RAIN GARDENS BMP-001 & BMP-002.
   - 30.1. REFER TO BMP CONSTRUCTION SEQUENCE NOTES ON SHEET 2.
   - 30.2. CONTRACTOR TO NOTIFY LICENSED PROFESSIONAL FOR CRITICAL STAGE OVERSIGHT ITEMS AT LEAST 24 HOURS IN ADVANCE AS DEFINED ON SHEET 2.
31. INSTALL GRAVEL WALKING PATHS.
32. ONCE FINAL GRADE HAS BEEN ACHIEVED, STABILIZATION MUST OCCUR WITHIN 48 HOURS (OR BY THE END OF THE WORKDAY IF RAIN IS FORECASTED). STABILIZE THE WORK AREA BY APPLYING PERMANENT SEED AND MATTING IN ACCORDANCE WITH THE MEASURES OUTLINED ON THIS PLAN.
33. PLANT PLUGS, SHRUBS AND TREES IN ACCORDANCE WITH THE LANDSCAPE PLAN.
34. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL OF E&S BMPS/PERIMETER CONTROLS.
35. REMOVE ORANGE CONSTRUCTION FENCE, SILT SOCK, AND ROCK CONSTRUCTION ENTRANCE. PERMANENTLY SEED AND STABILIZE AREAS DISTURBED DURING REMOVAL.
36. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, THE OWNER AND/OR OPERATOR SHALL SUBMIT A NPDES PERMIT NOTICE OF TERMINATION TO THE LOCAL COUNTY CONSERVATION DISTRICT.

UPLAND SEED MIX

% OF MIX	BOTANICAL NAME	COMMON NAME
20.0%	*Schizachyrium scoparium*	Little Bluestem
20.0%	*Bouteloua curipendula*	Sideoats Grama
10.8%	*Panicum rigidulum*	Redtop Panicgrass
10.0%	*Elymus virginicus*	Virginia Wild Rye
10.0%	*Elymus riparius*	Riverbank Wildrye
9.7%	*Panicum clandestinum*	Deertongue
5.0%	*Carex vulpinoidea*	Fox Sedge
3.0%	*Juncus effusus*	Soft Rush
2.0%	*Agrostis perennans*	Autumn Bentgrass
2.0%	*Heliopsis helianthoides*	Oxeye Sunflower
2.0%	*Verbena hastata*	Blue Vervain
1.8%	*Asclepias incarnata*	Swamp Milkweed
0.7%	*Aster prenanthoides*	Zigzag Aster
0.5%	*Eupatorium perfoliatum*	Boneset
0.5%	*Monarda fistulosa*	Wild Bergamot
0.5%	*Vernonia noveboracensis*	New York Ironweed
0.5%	*Helenium autumnale*	Common Sneezeweed
0.4%	*Eupatorium fistulosum*	Joe Pye Weed
0.3%	*Aster novae-angliae*	New England Aster
0.3%	*Solidago rugosa*	Wrinkleleaf Goldenrod

NOTES:
1. APPLICATION RATE: 26 LBS/ACRE.
2. TO BE SEEDED WITH NURSE CROP

FLOODPLAIN SEED MIX

%	Botanical name	Common Name
28.80%	*Carex vulpinoidea*	Fox Sedge
20.00%	*Elymus virginicus*	Virginia Wildrye
8.00%	*Carex lurida*	Lurid Sedge
7.00%	*Carex scoparia*	Blunt Broom Sedge
5.50%	*Panicum rigidulum*	Redtop Panicgrass
5.00%	*Carex frankii*	Frank's Sedge
4.00%	*Verbena hastata*	Blue Vervain
4.00%	*Juncus effusus*	Soft Rush
3.00%	*Bromus altissimus*	Wild Bromegrass
2.20%	*Asclepias incarnata*	Swamp Milkweed
2.00%	*Heliopsis helianthoides*	Oxeye Sunflower
2.00%	*Carex stipata*	Awl Sedge
1.00%	*Bidens cernua*	Nodding Bur Marigold
1.00%	*Carex intumescens*	Star Sedge
1.00%	*Eupatorium perfoliatum*	Boneset
1.00%	*Glyceria striata*	Fowl Mannagrass
0.80%	*Vernonia noveboracensis*	New York Ironweed
0.70%	*Helenium autumnale*	Common Sneezeweed
0.70%	*Zizia aurea*	Golden Alexanders
0.50%	*Scirpus cyperinus*	Woolgrass
0.40%	*Aster novae-angliae*	*New England Aster*
0.40%	*Lobelia siphilitica*	*Great Blue Lobelia*
0.30%	*Aster prenanthoides*	*Zigzag Aster*
0.30%	*Eupatorium fistulosum*	*Joe Pye Weed*
0.20%	*Aster puniceus*	*Purplestem Aster*
0.20%	*Aster umbellatus*	*Flat Topped White Aster*

NOTES:
1. APPLICATION RATE: 26 LBS/ACRE.
2. TO BE SEEDED WITH NURSE CROP

LANDSCAPE NOTES

1. THE LANDSCAPE CONTRACTOR SHALL UTILIZE THE LANDSCAPE PLANS (AND TECHNICAL SPECIFICATIONS) IN THE IMPLEMENTATION OF THE LANDSCAPE WORK FOR THIS PROJECT.
2. ALL DISTURBED AREAS SHALL BE SEEDED, SODDED, MULCHED OR LANDSCAPED UNLESS INDICATED OTHERWISE.
3. REFER TO LANDSCAPE PLANS AND/OR EROSION AND SEDIMENT CONTROL PLAN FOR SEEDING LIMITS.
4. PROTECT STRUCTURES, UTILITIES, PAVED SURFACES AND OTHER EXISTING IMPROVEMENTS INCLUDING LAWNS/VEGETATED AREAS AND PLANT MATERIAL FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR, RESTORE AND REPLACE DAMAGED MATERIALS IN KIND OR AS APPROVED BY THE OWNER.
5. PRECAUTIONS SHALL BE TAKEN DURING CONSTRUCTION TO ENSURE THE PROTECTION OF ALL EXISTING TREES TO REMAIN. THESE EFFORTS SHALL ENSURE THAT EQUIPMENT DOES NOT DAMAGE TREE TRUNKS OR BRANCHES, ROOT ZONES ARE NOT COMPACTED BY VEHICLES OR CONSTRUCTION MATERIAL, AND THAT GRADE LEVEL WITHIN THE DRIP LINE OF EXISTING TREES IS NOT CHANGED UNLESS APROVED OTHERWISE. DURING CONSTRUCTION, PROTECTIVE FENCING MUST BE PLACED AROUND THE OUTSIDE OF THE DRIP LINE OF ALL TREES TO BE PRESERVED AS IDENTIFIED ON PLANS AND PER TREE PROTECTION DETAIL SHOWN ON THE PLANS. TREAT, REPAIR OR REPLACED DAMAGED PLANT MATERIAL IN LIKE KIND, UNLESS APPROVED OTHERWISE BY THE OWNER.
6. ALL TREES AND SHRUBS TO BE REMOVED SHALL HAVE ALL STUMPS AND ROOTS REMOVED BY MEANS OF STUMP GRINDING AND/OR MECHANICAL REMOVAL UNLESS INDICATED OTHERWISE. ALL BIODEGRADABLE PLANT MATERIAL FROM THE REMOVAL PROCESS SHALL BE COLLECTED AND REMOVED FROM THE SITE UNLESS INDICATED OTHERWISE.
7. REMOVE SURPLUS SOIL, UNDESIRABLE FOREIGN MATERIAL, WASTE MATERIAL INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH AND DEBRIS AND LEGALLY DISPOSE OF THEM AS APPROVED BY THE OWNER.
8. CONTRACTOR SHALL VERIFY FINISHED GRADES ARE MET/PROPER DRAINAGE SHALL OCCUR PRIOR TO LAYOUT OF PLANT MATERIAL AND PLANTING. LANDSTUDIES SHALL BE CONTACTED TO APPROVE FINAL GRADES PRIOR TO PLANTING.
9. ALL PLANT SUBSTITUTIONS SHALL BE APPROVED BY LANDSTUDIES, INC. AND THE OWNER SHOULD LANDSTUDIES DEEM APPROPRIATE. PLANT SUBSTITUTIONS MAY BE SUBJECT TO MUNICIPAL APPROVAL AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY REQUIRED APPROVAL. THE INTENT OF LANDSCAPE DESIGN IS TO PRIMARILY USE PLANTS NATIVE TO THE PIEDMONT REGION OF THE CHESAPEAKE BAY WATERSHED.
10. BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
11. REQUIREMENTS FOR PLANT MATERIAL INCLUDING BUT NOT LIMITED TO MEASUREMENT, BRANCHING, GRADING, QUALITY, BALLING AND BURLAPPING, SHALL CONFORM TO THE STANDARDS RECOMMENDATIONS AND STANDARDS LISTED IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, CURRENT EDITION AS AMENDED, PUBLISHED BY AMERICAN HORT (FORMALLY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION OR ANLA.)
12. ALL PLANTINGS AND PLANTING PROCEDURES INCLUDING STAKING AND GUYING OF TREES SHALL CONFORM TO GOOD NURSERY AND LANDSCAPE PRACTICE AND THE STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMAN.
13. UNLESS OTHERWISE SPECIFIED, ALL PLANT MATERIAL SHALL BE TYPICAL OF THEIR OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, HAVE WELL DEVELOPED BRANCHES, BE DENSELY FOLIATED, VIGOROUS IN GROWTH, AND POSSESS HEALTHY ROOT SYSTEMS. ALL PLANT MATERIAL SHALL BE FREE OF DISEASE, INSECTS, INSECT EGGS AND LARVAE. PROVIDE SINGLE TRUNK STANDARD TREES UNLESS NOTED OTHERWISE.
14. ALL CONTAINER GROWN NURSERY STOCK SHALL BE HEALTHY, VIGOROUS, WELL ROOTED, AND ESTABLISHED IN THE CONTAINER IN WHICH IT IS GROWING. CONTAINER GROWN NURSERY STOCK SHALL HAVE A WELL-ESTABLISHED ROOT SYSTEM REACHING THE SIDES OF THE CONTAINER TO MAINTAIN A FIRM BALL WHEN THE CONTAINER IS REMOVED, BUT SHALL NOT HAVE EXCESSIVE ROOT GROWTH ENCIRCLING THE INSIDE OF THE CONTAINER
15. ALL PLANTS TO BE NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE PROJECT.
16. CONTRACTOR SHALL VERIFY ALL PLANT COUNTS AND LOCATIONS PRIOR TO ORDERING MATERIALS. LANDSTUDIES AND THE OWNER ACCEPT NO RESPONSIBILITY FOR TYPOGRAPHICAL ERRORS OR QUANTITY MISCOUNTS. THE CONTRACTOR IS RESPONSIBLE TO INSTALL ALL PLANTINGS AS INDICATED/REQUIRED, AND SHALL NOTIFY LANDSTUDIES OF ANY DISCREPANCIES PRIOR TO THE START OF WORK.
17. TREES AND SHRUBS SHALL BE PLANTED DURING APPROVED TIMES OF THE YEAR. CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY ANY SPECIES ON THE PLANT LIST THAT REQUIRE PLANTING DURING SPECIFIC TIMES OF THE YEAR AND OBTAINING APPROVAL BY THE OWNER AND LANDSTUDIES PRIOR TO PLANTING. PLANT DURING PERIODS NORMAL FOR OPTIMUM GROWTH, AS DETERMINED BY SEASON, WEATHER CONDITIONS, AND ACCEPTED PRACTICE. DO NOT PERFORM PLANTING WHEN GROUND IS FROZEN, SNOW COVERED, OR IN AN UNSATISFACTORY CONDITION.
18. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED SUCH RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, POOR SOILS OR OBSTRUCTIONS, NOTIFY LANDSTUDIES BEFORE PLANTING.
19. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED (AS MAY BE SPECIFIED OR DETAILED) TO FILL THE ENTIRE PLANTING BED AREA OR PIT UNLESS INDICATED OTHERWISE. INDIVIDUAL PLANTS NOT LOCATED WITHIN A BED SHALL HAVE A MULCHED CIRCLE. THE SIZE OF THE MULCHED CIRCLE SHALL BE DETERMINED ACCORDING TO THE OVERALL PLANT SIZE OR CALIPER. CONSULT LANDSTUDIES FOR CLARIFICATION IF REQUIRED. NO MULCH SHALL BE APPLIED AGAINST THE FOLIAGE, STEM, OR TRUNK OF ANY PLANT. MULCH SHALL BE ORGANIC, NATURAL, SHREDDED HARDWOOD BARK, UNLESS APPROVED OTHERWISE. MULCH DEPTH SHALL BE BETWEEN 2-3 INCHES.
20. PLANT MATERIAL INSTALLED WITHIN THE FLOODPLAIN SEED MIX AREA AS SHOWN ON THE PLANS SHALL NOT RECEIVE MULCH.
21. WATER ALL PLANTING INDIVIDUALLY WITH AN OPEN-ENDED GARDEN HOSE UPON COMPLETION OF PLANTING OPERATIONS. DO NOT USE MECHANICAL SPRINKLERS TO WATER PLANTS. MAINTAIN PROPER IRRIGATION TO ENSURE PLANT ESTABLISHMENT.

RIPARIAN BUFFER PLANT LIST

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES:
1. RIPARIAN BUFFER TREES AND SHRUBS SHALL BE INSTALLED IN STABILIZATION GRADING AREAS 3:1 OR LESS. RIPARIAN BUFFER TREES AND SHRUBS SHALL NOT BE INSTALLED WHERE FLOODPLAIN BENCH IS GRADED.
2. RIPARIAN BUFFER PLANTS TO BE INSTALLED POST SEEDING AND MATTING IN AREAS AS DIRECTED BY THE ENGINEER.
3. NO RIPARIAN BUFFERS PLANTS SHALL BE PLACED ON ANY SWM FACILITY BERMS OR WITHIN 15' OF PROPOSED BRIDGE OR TRAILS.
4. LIKE SPECIES SHALL BE EQUALLY DISTRIBUTED THROUGHOUT THE PROJECT AREA.
5. TREE SPACING SHALL BE NO CLOSER THAN 15' AND SHRUBS SPACING SHALL BE NO CLOSER THAN 5'.

WETLAND PLUGS PLANT LIST

Botanical Name	Common Name	Qty	Size	Spacing
Asclepias Incarnata	Swamp Milk Weed	50	DP50	24" O.C. min.
Aster novi-belgii	New York Aster	50	DP50	24" O.C. min.
Carex stricta	Tussock Sedge	50	DP50	24" O.C. min.
Carex lurida	Lurid Sedge	50	DP50	24" O.C. min.
Chelone glabra	White Turtlehead	50	DP50	24" O.C. min.
Eupatorium coelestinum	Mistflower	50	DP50	24" O.C. min.
Eupatorium dubium	Three Nerved Joe Pye Weed	50	DP50	24" O.C. min.
Iris versicolor	Blue Flag	50	DP50	24" O.C. min.
Juncus effusus	Soft Rush	50	DP50	24" O.C. min.
Liatris spicata	Blazing Star	50	DP50	24" O.C. min.
Lobelia cardinalis	Cardinal Flower	50	DP50	24" O.C. min.
Peltandra virginica	Arrow Arum	50	DP50	24" O.C. min.
Penstemon digitalis	White Beardtongue	50	DP50	24" O.C. min.
Sagittaria Latofolia	Duck Potato	50	DP50	24" O.C. min.
Saururus Cernuus	Lizard's Tail	50	DP50	24" O.C. min.
Scirpus Atrovirens	Green Bulrush	50	DP50	24" O.C. min.
Scirpus Cypernus	Woolgrass	50	DP50	24" O.C. min.
Scirpus pungens	Three Square Bulrush	50	DP50	24" O.C. min.
Scirpus validus	Soft Stem Bulrush	50	DP50	24" O.C. min.

NOTES:
1. QUANTITY ASSUMED 35% OF FLOODPLAIN BOTTOM TO WETLAND PLUGS
2. PLUGS TO BE INSTALLED POST SEEDING AND MATTING WITHING THE FLOODPLAIN SEED MIX AREA AND ALONG THE TOE OF SLOPE AND EDGE OF WATER IN WETTEST LOCATIONS WITH SPACING NO CLOSER THAN 24" O.C.
3. RANDOM DISTRIBUTION OF SPECIES SHALL OCCUR WITH NO LESS THAN 3 SPECIES PER 100 SQUARE FEET.
4. CONTRACTOR SHALL INSTALL PLANTS IN LOCATIONS WITH SOIL CONDITIONS SUITABLE FOR EACH SPECIES.

PA 042324
717-627-4440
landstudies.com
land@landstudies.com
315 North Street
Lititz, PA 17543
Land studies

PROJECT:
UNT TO TOBY CREEK STREAM STABILIZATION
DALLAS TOWNSHIP
105 LT. MICHAEL CLEARY DR.
DALLAS, PA 18612

SHEET TITLE:
EROSION & SEDIMENT CONTROL NOTES

REVISIONS

NO.	DATE	DESCRIPTION
1	11/18/2024	LCD TECHNICAL COMMENTS
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SIGNATURE BLOCK

PROJECT NUMBER: D-1612.1-21
DRAWN BY: KS
CHECKED BY: EL
DATE: 01/12/24
SCALE: Custom

ATTACHMENT F: BMP SR21 Plans













DALLAS AREA MUNICIPAL AUTHORITY
DALLAS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

STORMWATER BMP IMPROVEMENTS
OVERBROOK

UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 6/10/2024 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20241624004

THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

UTILITY LIST

COMPANY: DALLAS TOWNSHIP
ADDRESS: 105 LT MICHAEL CLEARY DR
DALLAS, PA. 186121639
CONTACT: GARY VANDEUTSCH
EMAIL: GVANDEUTSCH@DALLASTWP.ORG
PHONE: 570-674-2006

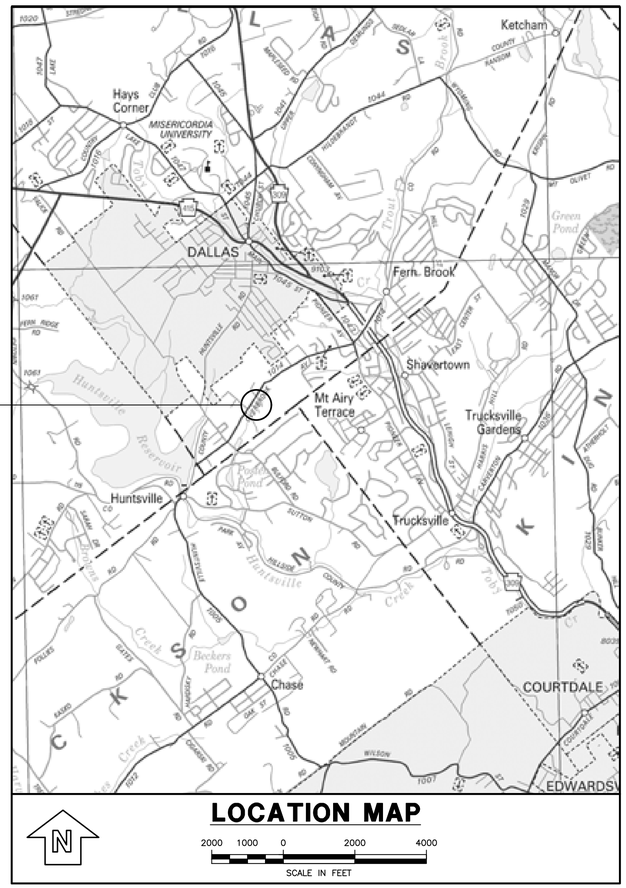
COMPANY: DALLAS AREA MUNICIPAL AUTHORITY
ADDRESS: 101 MEMORIAL HWY
SHAVERTOWN, PA. 187089603
CONTACT: AUTHORITY PERSONNEL
EMAIL: 570-696-1133

COMPANY: DALLAS SCHOOL DISTRICT
ADDRESS: 2000 CONYGHAM AVENUE
DALLAS, PA. 18612
CONTACT: CHRIS GALLAGHER
EMAIL: CGALLAGHER@DSDHS.COM
PHONE: 570-760-1415

COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI DR
WILKES BARRE, PA. 18711
CONTACT: AMANDA NIXON
EMAIL: ANIXON@UGI.COM
PHONE: 570-829-8874

COMPANY: UGI UTILITIES INC
ADDRESS: 1 UGI CENTER
WILKES BARRE, PA. 18711
CONTACT: JONATHAN GENSEL
EMAIL: JGENSEL@UGI.COM
PHONE: 570-407-0648

PROJECT LOCATION



DRAWING INDEX

1 OF 8	TITLE SHEET
2 OF 8	EXISTING CONDITIONS AND DEMOLITION
3 OF 8	PROPOSED CONDITIONS
4 OF 8	SITE DETAILS
5 OF 8	EROSION AND SEDIMENT CONTROL PLAN
6 OF 8	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
7 OF 8	X-SECTIONS (1 OF 2)
8 OF 8	X-SECTIONS (2 OF 2)

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

RELEASED BY: BRADLEY UNDERKOFFLER, P.E.

DESIGN	CHECKED
JER	BCU
DRAWN	CHECKED
FT	BCU
DATE: JULY 2024	SURVEY DATE: JULY 2024
	FIELD BOOK: TRIMBLE

SEAL

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: TITLE SHEET

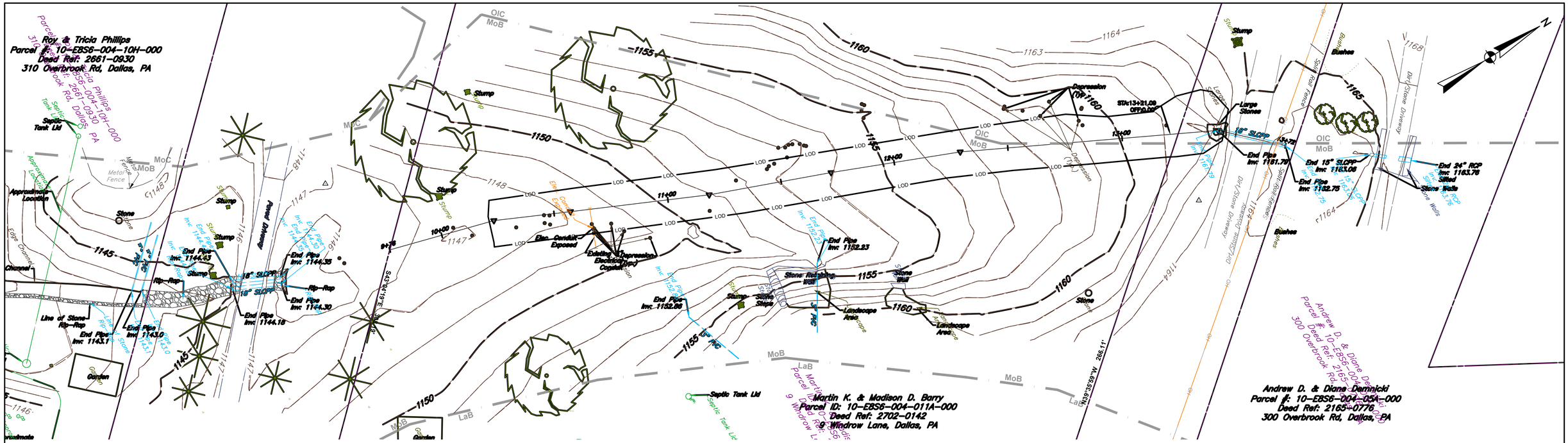
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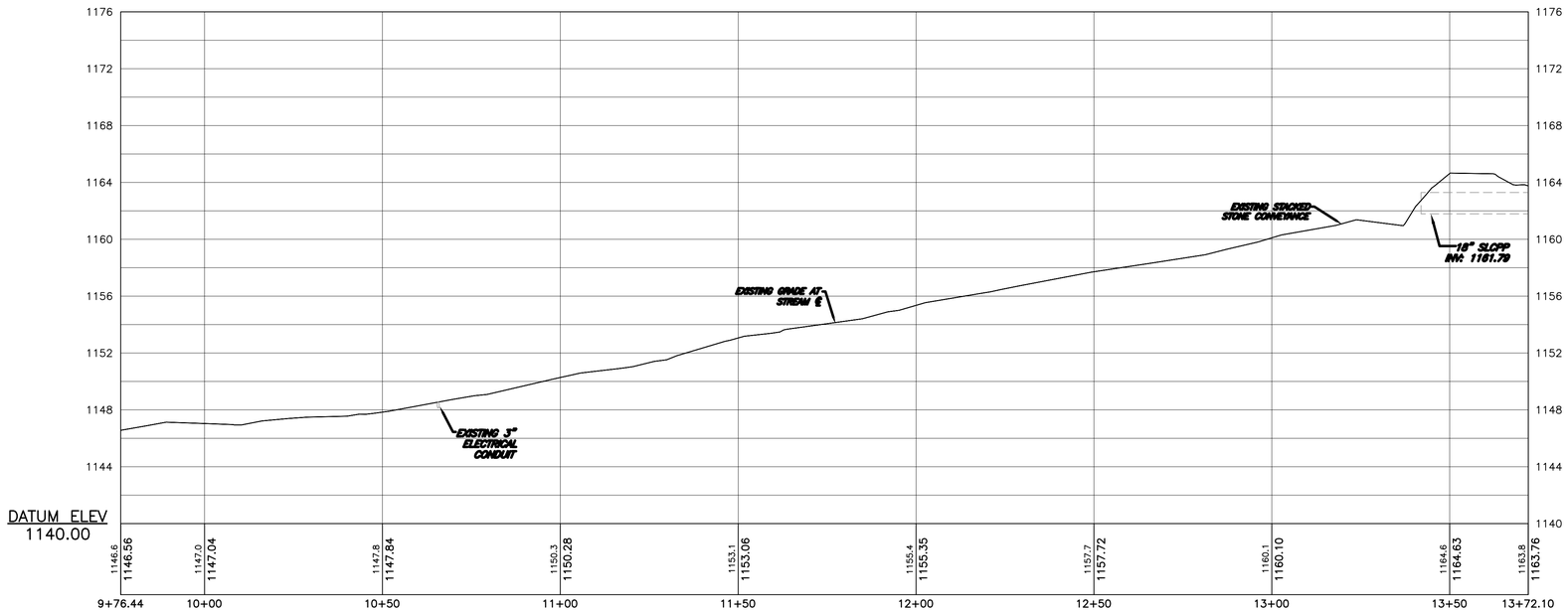
DWG. NO.

PROJECT NO.	SHEET NO.	REV.
11138.14	1 OF 6	

F 68

Dwg. Name: 1113814-D01.DWG Plotted: 7/29/2024 11:52 AM





LEGEND

- Adjoiner Property Line
- Property Line
- Edge of Stream
- Easements
- Index Contour (355)
- Intermediate Contour (352)
- Gas Line
- Fence
- Field Line
- Tree Line
- FEMA 100 Year Floodplain
- Soils boundary Line
- Existing Wetlands

*NOTE: BRUSH AND WOODY MATERIAL MAY BE CHIPPED AND SPREAD ON SITE TO AID IN ACHIEVING VEGETATIVE STABILITY. LARGE WOOD MAY ALSO BE INCORPORATED TO INCREASE ROUGHNESS OF THE FLOODPLAIN AND INCREASE HABITAT DIVERSITY.

SOILS

CKA - CLARKSBURG SILT LOAM, 0 TO 5 PERCENT SLOPES
DbA - DUFFIELD SILT LOAM, 0 TO 3 PERCENT SLOPES
DbB - DUFFIELD SILT LOAM, 3 TO 8 PERCENT SLOPES

TO BE REMOVED

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN	CHECKED
JER	BCU
DRAWN	CHECKED
FT	BCU
DATE: JULY 2024	SURVEY DATE: JULY 2022
	FIELD BOOK: TRIMBLE

SEAL

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021


TITLE
EXISTING CONDITIONS

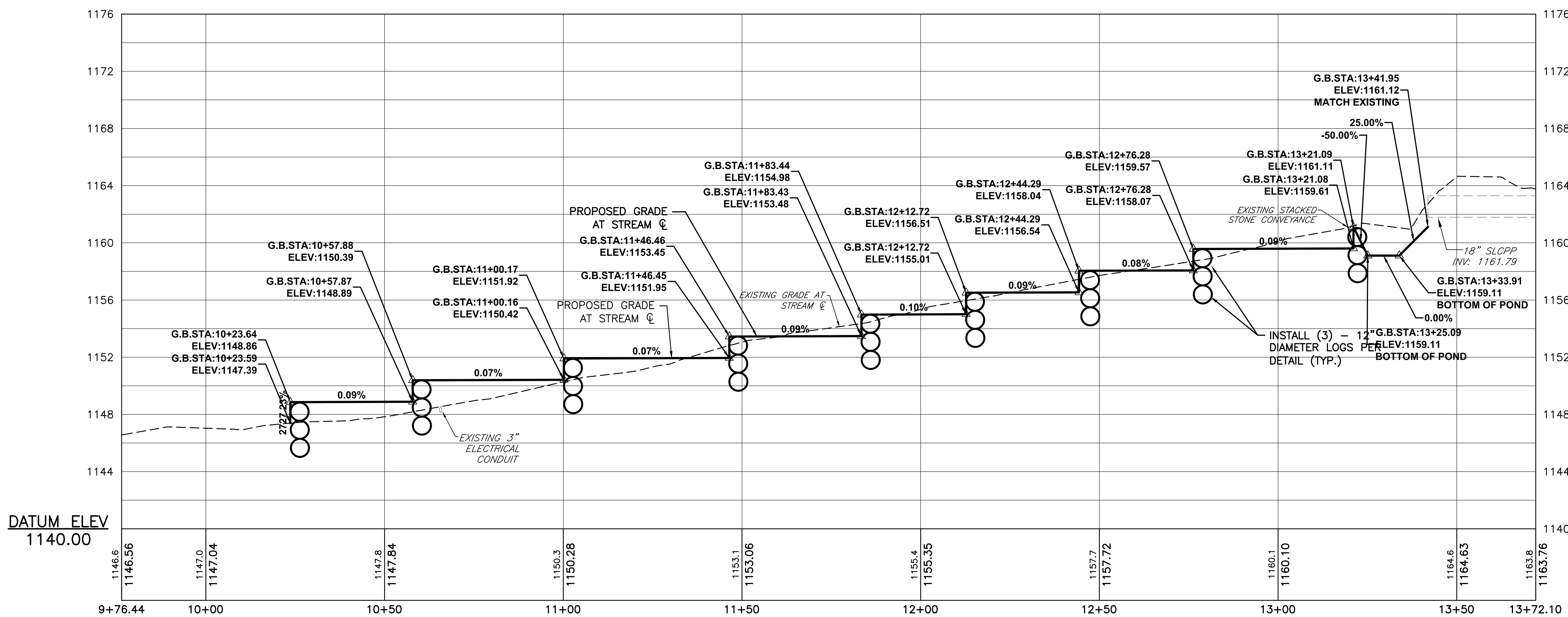
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DWG. NO.

PROJECT NO. 11138.14
SHEET NO. 2 OF 6
REV.

Dwg. Name: 1113814-C01.DWG Plotted: 7/29/2024 11:52 AM





LEGEND

- Adjoiner Property Line
- Property Line (Iron Pin, Rebar; Concrete Monument)
- Edge of Stream
- Easements
- 355 Index Contour
- 352 Intermediate Contour
- Gas Line (Gas Valve; Gas Meter)
- Fence
- Field Line
- Tree Line
- Existing Wetlands
- Existing Trees
- 355 PROPOSED INDEX CONTOUR
- 352 PROPOSED INTERMEDIATE CONTOUR
- PROPOSED WETLAND BENCH
- LOG SILL GRADE CONTROL STRUCTURE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN JER	CHECKED BCU
DRAWN FT	CHECKED BCU
DATE JULY 2024	SURVEY DATE JULY 2024
	FIELD BOOK TRIMBLE

SEAL

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESURFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

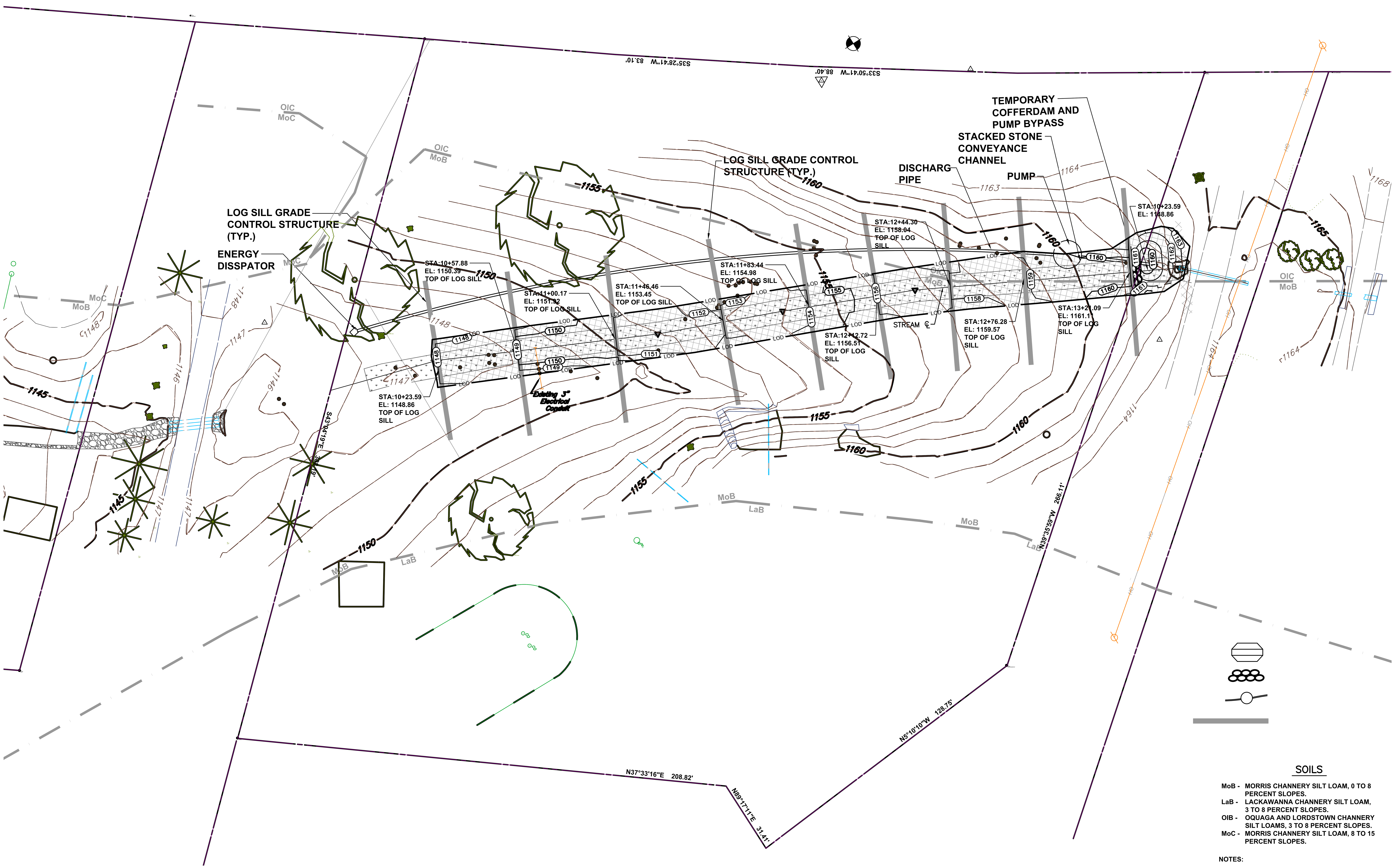
TITLE
PROPOSED CONDITIONS

SCALE 0 10' 20' 40' 60'
SCALE: 1" = 20'
DWG. NO.

PROJECT NO. 11138.14 | SHEET NO. 3 OF 6 | REV.

F170

Dwg. Name: 1113814-C01.DWG Plotted: 7/29/2024 11:52 AM



SOILS

MoB - MORRIS CHANNERY SILT LOAM, 0 TO 8 PERCENT SLOPES.
LaB - LACKAWANNA CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES.
OIB - OQUAGA AND LORDSTOWN CHANNERY SILT LOAMS, 3 TO 8 PERCENT SLOPES.
MoC - MORRIS CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES.

NOTES:

ALL 3:1 SLOPES FROM CHANNEL BOTTOM TO BANKFUL HEIGHT TO HAVE NAG C125BN CONTROL MATTING

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN	CHECKED
JER	BCU
DRAWN: FT	CHECKED: BCU
DATE: JULY 2024	SURVEY DATE: JULY 2022
	FIELD BOOK: TRIMBLE

SEAL

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESURFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

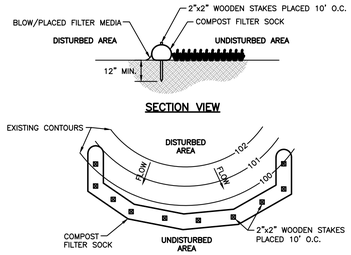
ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
EROSION AND SEDIMENT CONTROL PLAN

SCALE 0 50' 100' 200' 300'
SCALE: 1" = 100'
DWG. NO.
PROJECT NO. 11138.14
SHEET NO. 4 OF 6
REV.

F171

Dwg. Name: 1113814-C01.DWG Plotted: 7/29/2024 11:52 AM

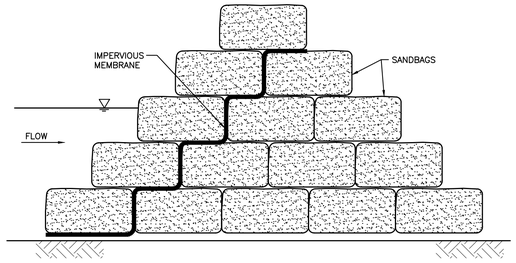


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL

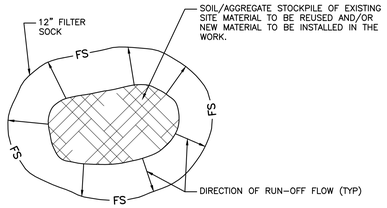
NO SCALE



NOTE: 2 BAG MINIMUM HEIGHT ABOVE NORMAL BASE FLOW

SAND BAG COFFERDAM DETAIL

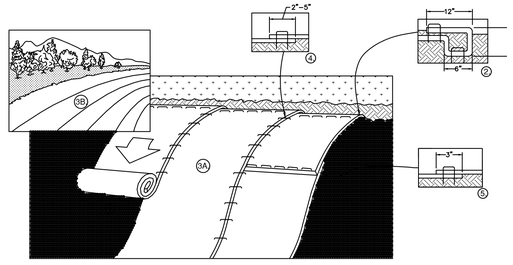
NO SCALE



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

MATERIAL STOCKPILE

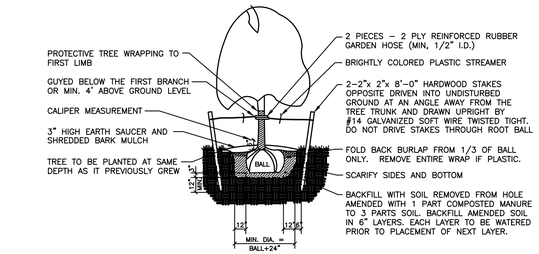
NO SCALE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EMBANKMENT PROTECTION

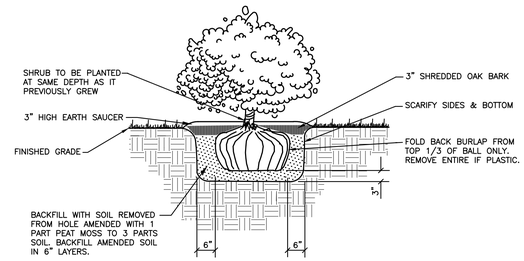
NO SCALE



(NOTE: TREE PLANTING DETAIL TYPICAL FOR BOTH DECIDUOUS AND EVERGREEN TREES.)

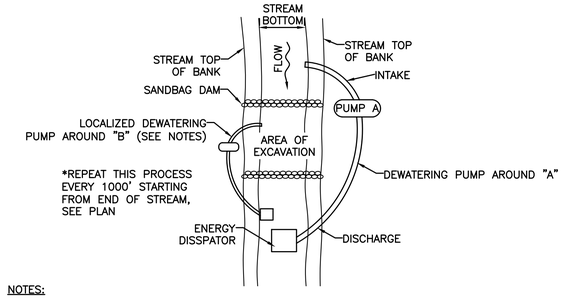
TREE PLANTING DETAIL

NO SCALE



B & B SHRUB PLANTING DETAIL

NO SCALE



NOTES:

GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION.

PUMP "A" AND HOSE SHALL BE SIZED ACCORDINGLY BY THE CONTRACTOR TO HANDLE THE MEAN ANNUAL FLOW OF 1.7 CFS.

BYPASS PUMP "A" INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM THE BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS.

WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A PUMPED WATER FILTER BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY SURFACE WATER.

LOCALIZED PUMP "B" SHALL BE USED TO DEWATER THE IMMEDIATE WORK AREA. SEDIMENT-LADEN WATER SHALL BE DISCHARGED THROUGH A PUMPED WATER FILTER BAG IN ACCORDANCE WITH DETAIL.

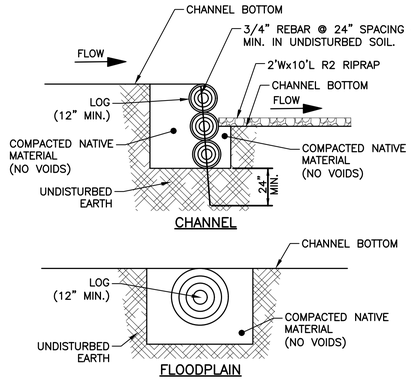
HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAMBANK.

ALL DISTURBED AREAS WITHIN 50 FEET OF TOP-OF-BANK SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED.

APPROPRIATE STREAMBANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.

TEMPORARY COFFERDAM & PUMP BYPASS AROUND IN-CHANNEL WORK AREAS

NOT TO SCALE



LOG SILL GRADE CONTROL STRUCTURE

NO SCALE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

RELEASED BY: BRADLEY UNDERKOFFLER, P.E.

DESIGN	CHECKED
JER	BCU
DRAWN	CHECKED
FT	BCU
DATE: JULY 2024	SURVEY DATE: JULY 2022
	FIELD BOOK: TRIMBLE

SEAL

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SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: SITE DETAILS (1 OF 2)

SCALE 0 50' 100' 200' 300' — SCALE: 1" = 100'

DWG. NO.

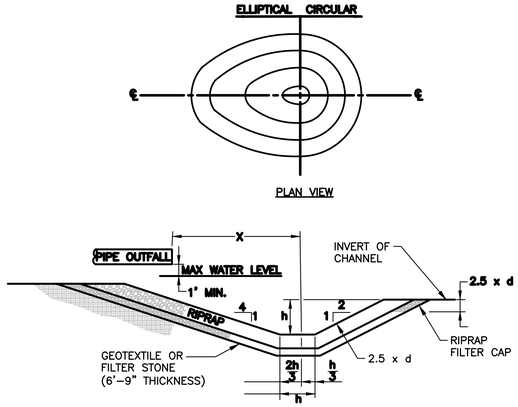
PROJECT NO. 11138.14

SHEET NO. 5 OF 6

REV.

F.72

Dwg. Name: 1113814-D01.DWG Plotted: 7/29/2024 11:53 AM



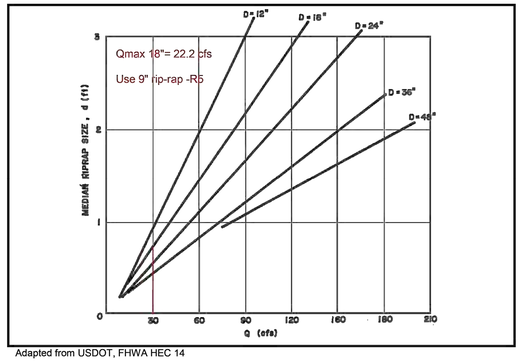
OUTLET NO.	x(ft)	h(ft)	(R)	d(in)
N STILLING BASIN	8.5	2	R	9

RIPRAP THINCKNESS SHALL BE 1.5 TIMES THE DIAMETER OF THE STONE SIZE.

DETERMINE THE d50 SIZE (d) FOR THE STILLING BASIN FROM FIGURE 9.7 USING THE DISCHARGE AND THE PIPE DIAMETER.

SILTING BASIN

FIGURE 9.7
d_{50} Stone Size for Stilling Basins



Adapted from USDOT, FHWA HEC 14

Calculate the required basin depth (h) by the formula:

$$h = D^{1/3}\left[0.148\ \frac{Q}{Dd^{1/2}} - 1.82\ (d)\right]^{2/3}$$

where: h = Basin depth (ft)
D = Inside diameter of the pipe (ft)
d = d_{50} stone size of the riprap (ft)
Q = Design discharge (cfs)

Calculate the distance (X) in feet from the end of the discharge pipe to the "center" of the basin by using the following formula: $X = (V^2/2g)^{0.5}\left[(1+m/p)^{0.5} + 1 + m/2p\right]p^{0.5}$

where: v = Discharge velocity (fps)
g = Acceleration due to gravity (32.2 ft/sec^2)
m = Depth of water (ft) in the basin during maximum pipe discharge (i.e. h + channel flow depth)
p = Vertical distance (ft) from inside crown of the pipe to the maximum water surface

NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN	CHECKED
JER	BCU
DRAWN	CHECKED
FT	BCU
DATE: JULY 2024	SURVEY DATE: JULY 2024
	FIELD BOOK: TRIMBLE

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OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
SITE DETAILS (2 OF 2)

SCALE 0 50' 100' 200' 300'
SCALE: 1" = 100'

DWG. NO.

PROJECT NO. 11138.14

SHEET NO. 6 OF 6

REV.

F-73

Dwg. Name: 1113814–D01.DWG Plotted: 7/29/2024 11:53 AM

A. GENERAL STATEMENT OF THE PROJECT

THE 142 TODDY DRIVE BASIN RETROFIT PROJECT INVOLVES IMPROVEMENTS TO THE STORMWATER BASIN. THE IMPROVEMENTS ARE LOCATED ON PRIVATE PROPERTY IN EAST EARL TOWNSHIP, LANCASTER COUNTY, PENNSYLVANIA.

THE LIMIT OF DISTURBANCE ASSOCIATED WITH THE PROJECT IS 0.63 ACRES.

B. FEATURES OF THE PROJECT

1. THE LOCATIONS OF AFFECTED PROPERTY LINES, AND THE OTHER SIGNIFICANT PHYSICAL FEATURES HAVE BEEN SHOWN ON THE ATTACHED PLANS.
2. THE PROJECT WAS DESIGNED TO DEVELOP A DRY EXTENDED DETENTION BASIN IN ORDER TO PROMOTE WATER QUALITY AND, REDUCE EROSION, IN AN EXISTING DRAINAGE AREA WHILE MINIMIZING THE EXTENT OF THE EARTH DISTURBANCE.
3. THE PROJECT SITE IMPROVEMENTS WILL BE PRIMARILY ACCESSED FROM PREVIOUSLY DISTURBED AREAS IN ORDER TO MINIMIZE SOIL COMPACTION.
4. THE PROJECT DOES NOT CREATE ANY ADDITIONAL IMPERVIOUS AREAS.
5. THE E & S PLAN WAS DESIGNED TO MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE, MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES, AND MINIMIZE THE AMOUNT OF SOIL COMPACTION. THE CONTRACTOR SHALL PERFORM ALL ACTIVITIES WITH THE INTENT TO MINIMIZE SOIL COMPACTION, EXCEPT FOR THE PERMANENT LINER.

C. NOTES FOR SEQUENCE OF CONSTRUCTION

1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE OF STAGING OF EARTHMOVING ACTIVITIES. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
2. BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE LANCASTER COUNTY CONSERVATION DISTRICT.
3. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIALS OR WASTES AT THE SITE.
4. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE LANCASTER COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS.
5. ANTICIPATED START OF CONSTRUCTION – FALL 2023.
6. EACH STEP IN THE CONSTRUCTION SEQUENCE SHALL BE COMPLETED BEFORE INITIATION OF THE NEXT STEP.
7. FAILURE TO CORRECTLY INSTALL SEDIMENT CONTROL FACILITIES OR FAILURE TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE OR FAILURE TO TAKE CORRECTIVE ACTIONS TO IMMEDIATELY RESOLVE FAILURES OF SEDIMENT CONTROL FACILITIES MAY RESULT IN ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS DEFINED IN SECTION 602 OF THE CLEAN STREAMS LAW OF PENNSYLVANIA. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

D. CONSTRUCTION SEQUENCE

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN PREPARER, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
2. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. THE CONTRACTOR MUST MAINTAIN A SURPLUS OF FILTER SOCK, STRAW BALES & STAKES, ORANGE CONSTRUCTION SAFETY FENCING, AND AASHTO #1 AT THE STABILIZED ROCK CONSTRUCTION ENTRANCE / STAGING AREA / EQUIPMENT CLEANING AREA.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY DEP PRIOR TO IMPLEMENTATION.
5. THE LIMITS OF DISTURBANCE (LOD), STREAMS AND WETLANDS SHOULD BE MARKED PRIOR TO DISTURBANCE ACTIVITIES (I.E. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.)
6. UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO–PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.
7. THROUGHOUT THE PROJECT DURATION, REPAIR AND PATCH ALL DISTURBED IMPERVIOUS AREAS IMMEDIATELY. AT ALL TIMES, SEED AND STABILIZE ALL DISTURBED NON–IMPERVIOUS AREAS IMMEDIATELY TO ACHIEVE A MINIMUM 70% UNIFORM, PERENNIAL VEGETATIVE COVER.
8. INSTALL THE STABILIZED ROCK CONSTRUCTION ENTRANCE / STAGING AREA / EQUIPMENT CLEANING AREA AS PER THE PLAN DETAILS. DESIGNATE THE AFOREMENTIONED AREA AS SUCH WITH SIGNAGE.
9. LOCATE AND DENOTE THE STOCKPILE AREA WITH SIGNAGE AND THE FILTER SOCK AS PER THE PLAN DETAILS.
10. WITH ALL EROSION AND SEDIMENT CONTROLS IN PLACE AND FUNCTIONING AS INTENDED, THE CONTRACTOR SHOULD PREPARE FOR AND BEGIN INSTALLATION OF THE BASIN AS PER THE PLAN VIEW AND PLAN DETAILS.
11. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY).
    a. IF EXCAVATED MATERIAL IS TO BE STORED ON–SITE, A MATERIAL STOCKPILE SHALL BE UTILIZED IN THE LOCATION DENOTED ON THE PLANS. THE STOCKPILE SHALL MEET THE REQUIREMENTS OF THE MATERIAL STOCKPILE DETAIL.
12. INSTALL SURROUNDING EMBANKMENTS, INLET AND OUTLET CONTROL STRUCTURES AND RIP RAP APRON OUTLET PROTECTION.
13. GRADE SUBSOIL IN BOTTOM OF BASIN AND INSTALL IMPERMEABLE LINER. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
14. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIAL SEEDING AND MULCHING OPERATIONS.
15. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY E&S BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS MUST BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS SHOULD BE DONE ONLY DURING THE GERMINATING SEASON. LANCASTER COUNTY CONSERVATION DISTRICT SHOULD BE CONTACTED PRIOR TO CONVERSION OR REMOVAL OF PRIMARY E&S BMPS AND MAY REQUIRE A SITE INSPECTION.
16. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
17. WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS. COMPLETION CERTIFICATES ARE NEEDED TO ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE APPROVED E&S PLAN.

E. TEMPORARY CONTROL MEASURE

1. PUMPED WATER FILTER BAG
   a. ALL MATERIAL TO MEET PUMPED WATER FILTER BAG SPECIFICATIONS.
   b. THE PUMPED WATER FILTER BAG IS TO MEET APPLICATION REQUIREMENTS.

4. ROCK CONSTRUCTION ENTRANCE
   a. ALL MATERIAL TO MEET ROCK CONSTRUCTION ENTRANCE SPECIFICATIONS.
   b. THE ROCK CONSTRUCTION ENTRANCE IS TO MEET APPLICATION REQUIREMENTS.

3. ROCK FILTER OUTLET
   a. ALL MATERIAL TO MEET ROCK FILTER OUTLET SPECIFICATIONS.
   b. THE ROCK FILTER OUTLET IS TO MEET APPLICATION REQUIREMENTS.

4. TEMPORARY EROSION AND SEDIMENT CONTROL MATTING (NAG S75)
   a. ALL MATERIAL TO MEET TEMPORARY EROSION AND SEDIMENT CONTROL MATTING (NAG S75) SPECIFICATIONS.
   b. THE TEMPORARY EROSION AND SEDIMENT CONTROL MATTING (NAG S75) IS TO MEET APPLICATION REQUIREMENTS.

F. PERMANENT CONTROL MEASURES

1. PERMANENT GRASS OR LEGUME COVER
   a. ALL DISTURBED AREAS, THAT ARE NOT TO BE PAVED OR STONED, SHALL BE COVERED WITH GRASS OR A LEGUME IN ORDER TO MINIMIZE EROSION. THE GRASS OR LEGUME SHALL AS NEARLY AS POSSIBLE MATCH THE GROUND COVER THAT EXISTED PRIOR TO CONSTRUCTION. SEED SHALL BE SELECTED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

G. MAINTENANCE

1. ALL SEDIMENT AND EROSION CONTROL FACILITIES SHALL BE CHECKED FOR DAMAGE WEEKLY AND AFTER EACH STORM. ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIRS, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY.
2. ANY PERMANENT SEEDED AREAS THAT BECOME ERODED SHALL HAVE THE TOPSOIL REPLACED, THE GRASS RESOWN, AND MULCH REAPPLIED OR, AT THE DIRECTION OF THE OWNER, SOD MAY BE INSTALLED.
3. A STOCKPILE OF ROCK MATERIAL (AASHTO #1 AND #57) WILL BE STORED ON SITE FOR THE PURPOSE OF MAINTAINING BMPS.
4. ALL SEDIMENT REMOVED FROM BMPS SHALL BE SPREAD OUT WITHIN NON–SENSITIVE AREAS WITHIN THE LIMIT OF DISTURBANCE AND PERMANENTLY STABILIZED.

H. STANDARD E&S PLAN NOTES

1. A COPY OF THE APPROVED DRAWINGS (STAMPED SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
2. BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE LANCASTER COUNTY CONSERVATION DISTRICT.
3. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE CONSTRUCTION SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS DOCUMENT.
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
5. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BMPS TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF DEP.
6. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
7. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
8. UNTIL THE SITE IS STABILIZED, ALL E&S BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL E&S BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
9. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
10. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
11. ALL EXCAVATION FOR UTILITY LINE INSTALLATION SHALL BE LIMITED TO THE AMOUNT THAT CAN BE EXCAVATED, INSTALLED, BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY. ALL EXCAVATED MATERIAL SHALL BE DEPOSITED ON THE UPSLOPE SIDE OF THE TRENCH.
12. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

I. MATERIAL NOTES

1. ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260, §§260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
2. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR DEP FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
3. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
4. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
5. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
6. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
7. RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE – CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS FILL MATERIAL, CONCRETE, REMOVED E&S BMPS, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. THE CONTRACTOR IS RESPONSIBLE FOR PLANNING AND IMPLEMENTING HOUSEKEEPING MEASURES, MATERIALS MANAGEMENT, AND LITTER CONTROLS. WHENEVER POSSIBLE, RECYCLING OF EXCESS MATERIAL IS REQUIRED, RATHER THAN DISPOSAL.

J. STABILIZATION NOTES

1. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2H:1V OR FLATTER.
2. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES – 6 TO 12 INCHES ON COMPACTED SOILS – PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL 3:1 OR GREATER SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
3. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES."
4. STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE. STRAW MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
5. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
6. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
7. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
8. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.

K. RECOMMENDED MULCHING SPECIFICATIONS

1. MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE, AND DURING OFF–SEASON OPERATIONS. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:
   a. MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW APPLIED AT THE RATE OF 3 TONS PER ACRE. MULCH BLOWER SHALL NOT GRIND OR CHOP THE MATERIAL. WOODCHIPS, FREE OF INSECTS AND DISEASE ARE PERMITTED AT A RATE OF 4–6 TONS PER ACRE.
   b. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% TO 95% OF THE SOIL SURFACE WILL BE COVERED.
   c. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE SLOPE.
      1) PEG AND TWINE – DRIVE 8" TO 10" PEGS TO WITHIN 2" TO 3" OF THE SOIL SURFACE EVERY 4' IN ALL DIRECTIONS. TAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE THE MULCH TO THE SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS–CROSS OR SQUARE PATTERN, AND SECURE THE TWIN AROUND EACH BEG WITH TWO OR MORE ROUND TURNS.
      2) MULCH NETTING – STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE DEGRADABLE NETTING IN AREAS TO BE MOWED.
      3) MULCH MATERIALS AND BINDERS SHALL BE ROLLED IN PLACE BY TRACKED VEHICLE OR OTHER SUITABLE EQUIPMENT.
   d. APPLICATIONS SHOULD BE HEAVIER AT EDGES WERE WIND CATCHES THE MULCH. IN VALLEYS AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
   e. WOOD–FIBER OR PAPER–FIBER MULCH AT THE RATE OF 1,500 LBS PER ACRE, OR PER MANUFACTURER RECOMMENDATION, MAY BE APPLIED BY A HYDROSEDDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
   f. OTHER:
      1) WHERE EXCESSIVE SOIL EROSION, TRACKING OR FLOWING OF SEDIMENT IS EVIDENT OR ANTICIPATED, A MINIMUM OF 4" OF CRUSHED STONE SHALL BE PLACED WITHIN THE AFFECTED AREA AND MAINTAINED UNTIL PERMANENT STABILIZATION IS PROVIDED. ADDITIONAL STONE SHALL BE PLACED AS REQUIRED UNTIL STABILIZATION IS ACHIEVED. CRUSHED STONE SHALL CONFORM TO AASTO DESIGNATION M43. SIZE NO. 2 (2–1/2" TO 1–1/2").

L. CHANNEL NOTES

1. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
2. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS–SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER–EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.

M. SOILS / RECEIVING STREAM / GEOLOGY

SOILS

THE USDA–SCS (UNITED STATES DEPARTMENT OF AGRICULTURE – UNITED STATES SOIL CONSERVATION SERVICE), WEB SOIL SURVEY (HTTP://WEBSOILSURVEY.NRCS.USDA.GOV) DEFINES THE PROJECT SITE SOILS AS FOLLOWS:

- CKA CLARKSBURG SILT LOAM, 0 TO 5 PERCENT SLOPES
- DBB DUFFIELD SILT LOAM, 3 TO 8 PERCENT SLOPES
- HAB HAGERSTOWN SILT LOAM, 3 TO 8 PERCENT
- HBC HAGERSTOWN SILT CLAY LOAM, 8 TO 15 PERCENT SLOPES

GEOLOGY

THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DCNR) INTERACTIVE MAP DEFINES THE PROJECT SITE GEOLOGY AS FOLLOWS:

- (Czc) ZOOKS CORNER FORMATION
- – THE ZOOKS CORNER FORMATION IS DEFINED AS A SUCCESSION OF MEDIUM GRAY, VERY FINELY CRYSTALLINE SILTY AND SANDY DOLOMITE, SHALY LAMINAE, AND MINOR AMOUNTS OF GRAY LIMESTONE
- – BEDDING IS THIN TO THICK AND INCLUDES CROSS LAMINAE, RIPPLE MARKS, MUD CRACKS, AND GRADED BEDDING.

INSTRUCTIONS FOR ADDRESSING GEOLOGIC FORMATION

GIVEN THAT THE PROJECT SITE IS UNDERLAIN WITH A CARBONATE–BASED GEOLOGIC FORMATION, IN THE EVENT THAT A SUBSIDENCE FEATURE IS ENCOUNTERED, THE CONTRACTOR MUST CONTACT A QUALIFIED, LICENSED PROFESSIONAL SO THE THAT A LOCATION SPECIFIC REPAIR CAN BE DEVELOPED.

N. THERMAL IMPACTS

1. DURING CONSTRUCTION THERMAL IMPACTS WILL BE MINIMIZED THROUGH THE USE OF FILTER SOCKS AND VEGETATIVE STABILIZATION AS SOON AS FINAL GRADING HAS OCCURRED OR IF TEMPORARY CESSATION (4 DAYS OR MORE) HAS TAKEN PLACE ON DISTURBED SOIL.
2. THERMAL IMPACTS ON THE PROJECT PARCEL WILL BE ACCOMODATED VIA SURFACE OVERLAND FLOW OVER VEGETATIVE SURFACES.
3. NO IMPERVIOUS SURFACES ARE PROPOSED FOR THIS PROJECT, ENSURING THAT NO ADDITIONAL THERMAL IMPACTS ARE CREATED.

O. O&M NOTES

1. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION).
2. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED.
3. INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE.
4. MOW AND TRIM VEGETATION 1–2 TIMES PER YEAR OUTSIDE OF THE GROWING SEASON (I.E. ONLY MOW IN EARLY SPRING OR LATE FALL). MOWER HEIGHT SHOULD BE SET BETWEEN 8–12 INCHES. MOW ONLY WHEN BASIN IS DRY TO AVOID RUTTING.
5. INSPECT FOR LITTER; REMOVE PRIOR TO MOWING.
6. REMOVE INVASIVE PLANTS AS NEEDED OR CAREFULLY APPLY SELECTED HERBICIDE TO INVASIVE PLANTS AS NEEDED.
7. INSPECT FOR UNIFORMITY IN CROSS–SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
8. INSPECT BASIN INLET (CURB CUTS, PIPES, ETC.) AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED.
9. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT.
10. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.

APPLICATION	SPECIES	APPLICATION RATE	LIMING RATE +	% PURE LIVE SEED	FERTILIZER	SEEDING DATES
TEMPORARY	ANNUAL RYE	48 LBS./AC	2000 LBS/AC	98%	5–5–5* @ 1000 LBS/AC	NOT AFTER OCT. 15
PERMANENT	PERENNIAL RYE	19 LBS/AC	4 TONS	98%	SEE NOTE 1 BELOW	BETWEEN JUNE 1 AND OCT 15
	KENTUCKY BLUE GRASS	29 LBS/AC		98%		
	CREEPING RED FESCUE	53 LBS/AC		98%		
NATIVE DETENTION AREA MIX	ERNMX–183 DEERTONGUE 47% VIRGINIA WILDRYE 25% FOX SEDGE 20% AUTUMN BENTGRASS 5% TICKLEGRASS 2% PATH RUSH 1%	22 LBS./AC	NONE	97%	NONE	BETWEEN MARCH 31 AND JUNE 1 AND AUGUST 1 AND OCT 15

\+ AGRICULTURAL–GRADE LIMESTONE * COMMERCIAL GRADE FERTILIZER

1. FERTILIZER AND LIME SHALL BE AS FOLLOWS:
   1.1 PERMANENT SEEDING
   10–10–20 ANALYSIS COMMERCIAL FERTILIZER @ 1000 LBS./AC
   AGRICULTURAL LIME @ 6 TONS PER ACRE
   1.2 TEMPORARY SEEDING
   10–10–10 ANALYSIS IBDU FERTILIZER @ 500 LBS./AC
   AGRICULTURAL LIME @ 1 TON PER ACRE
2. SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW. SEE MULCH NOTES, SECTION H ABOVE.

SEEDING SCHEDULE

NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN JER	CHECKED BCU
DRAWN FT	CHECKED BCU
DATE JULY 2024	SURVEY DATE JULY 2024 / FIELD BOOK TRIMBLE

SEAL

SEAL

CLIENT & PROJECT
DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708–9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE
E&S NOTES AND DETAILS

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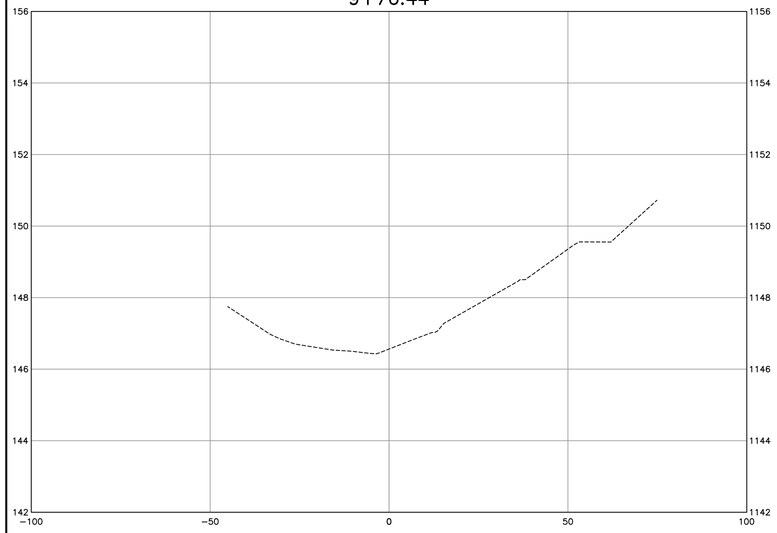
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PROJECT NO. 11138.14 | SHEET NO. 7 OF 6 | REV.

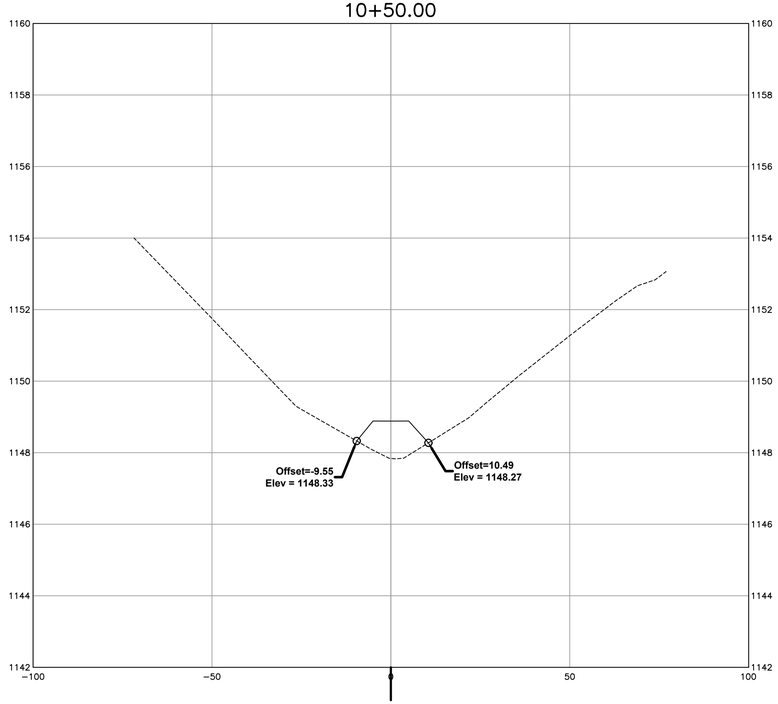
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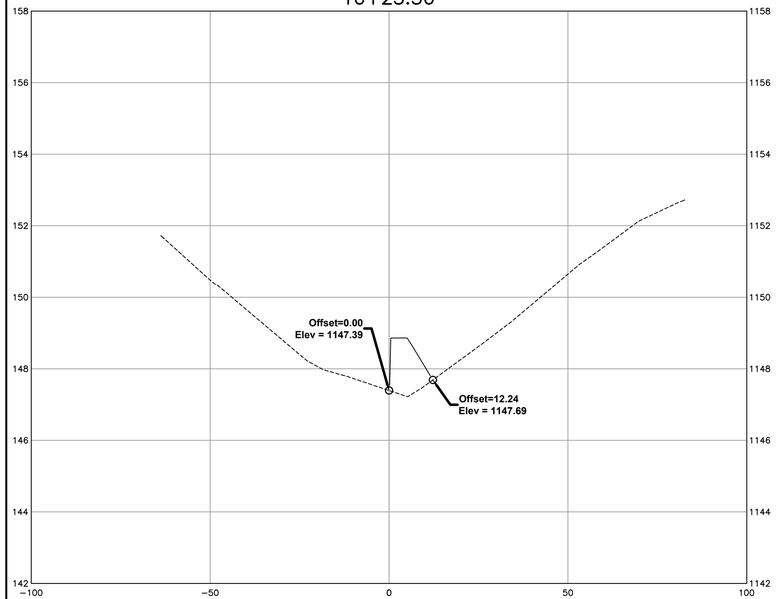
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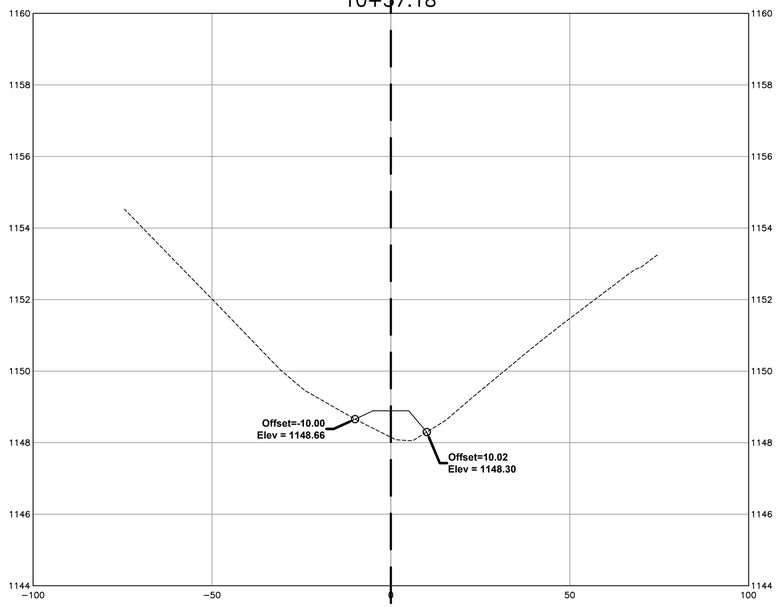
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TITLE

X−SECTIONS (1 OF 4)

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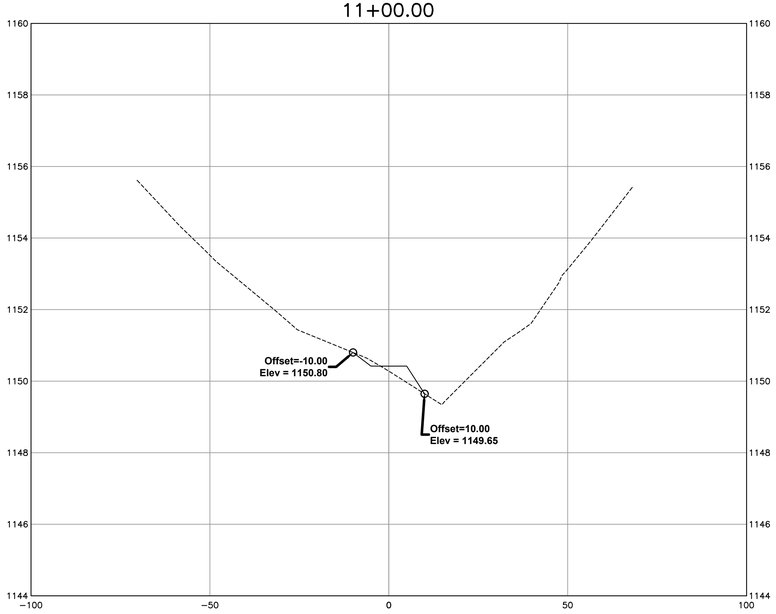
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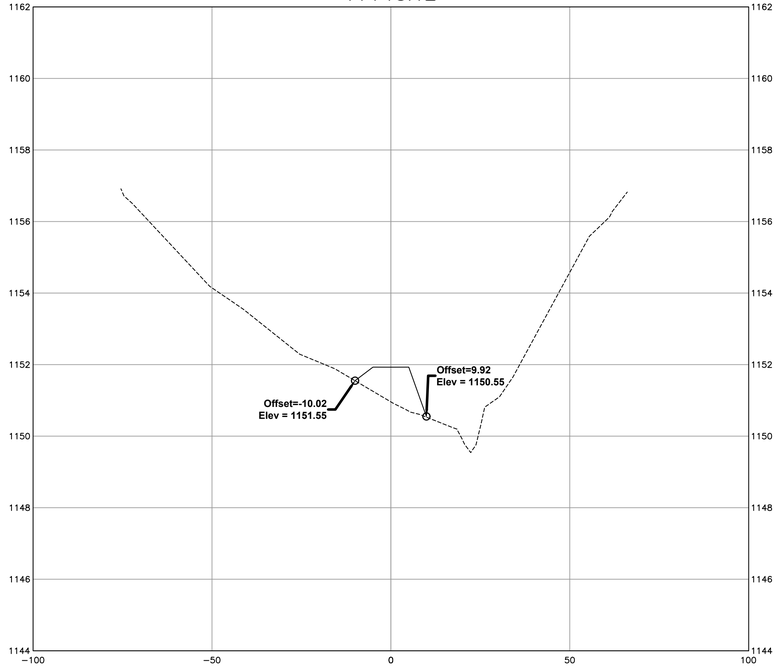
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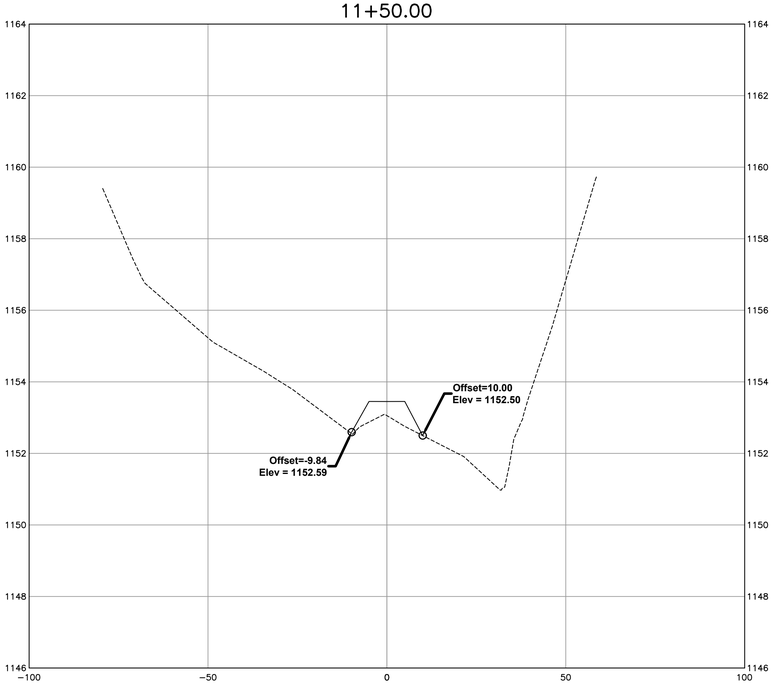
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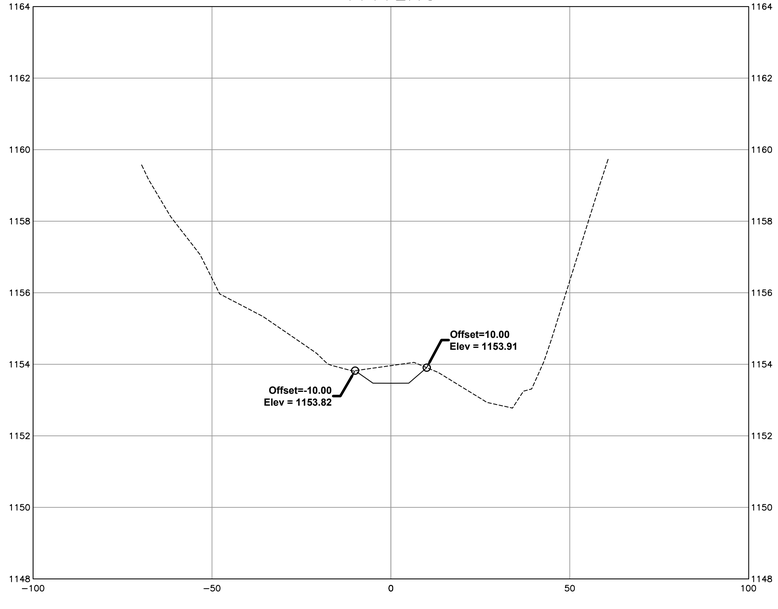
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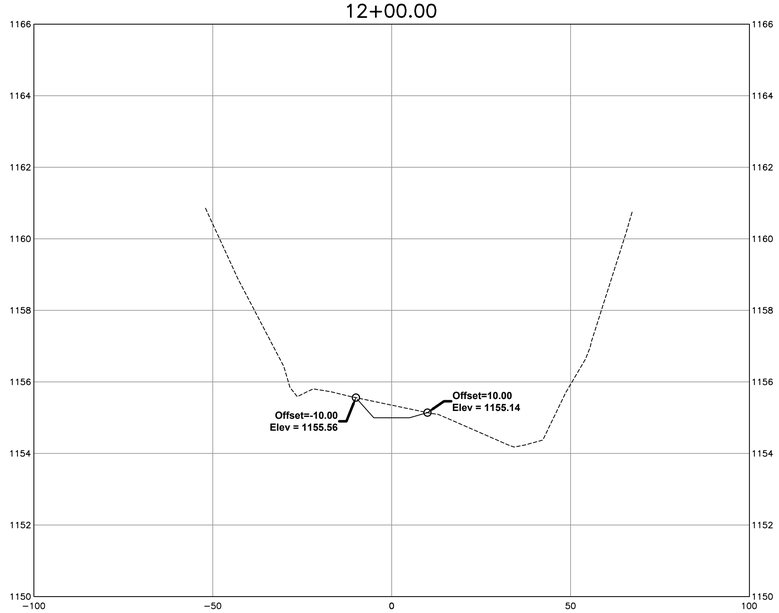
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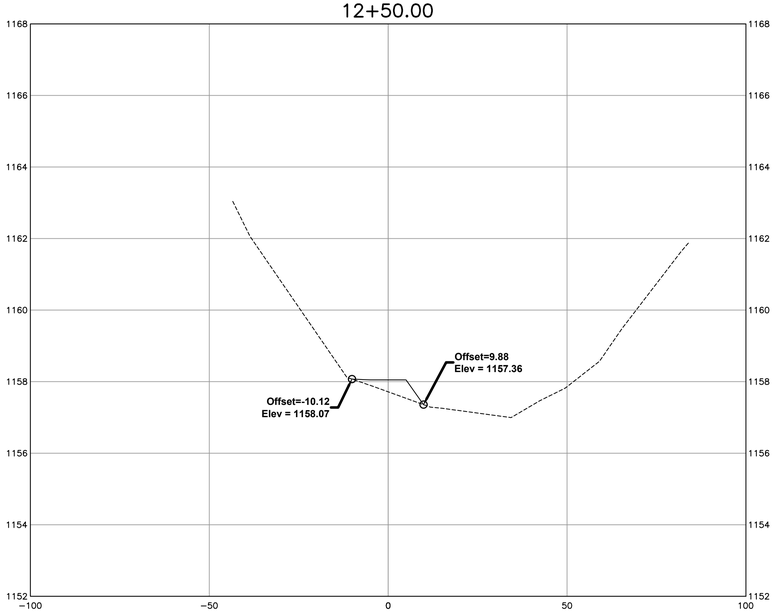
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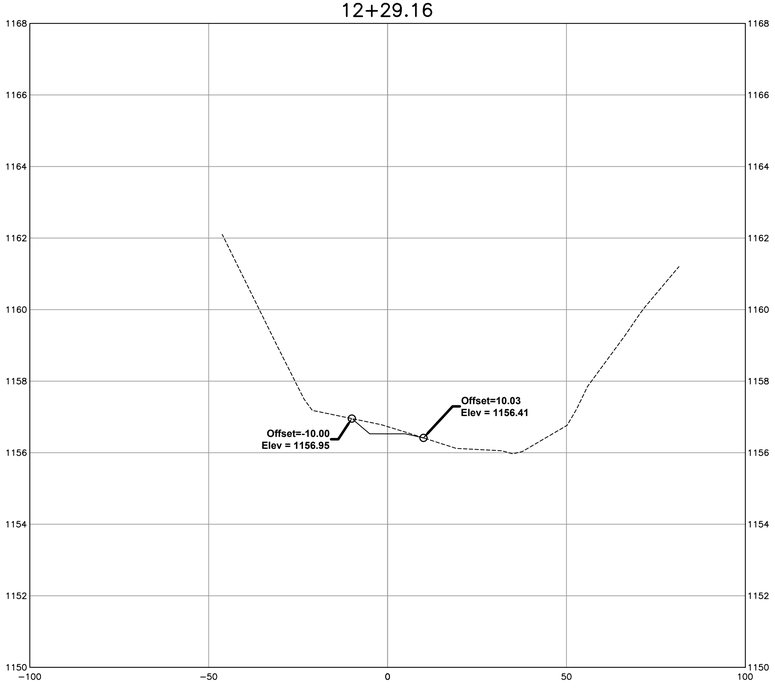
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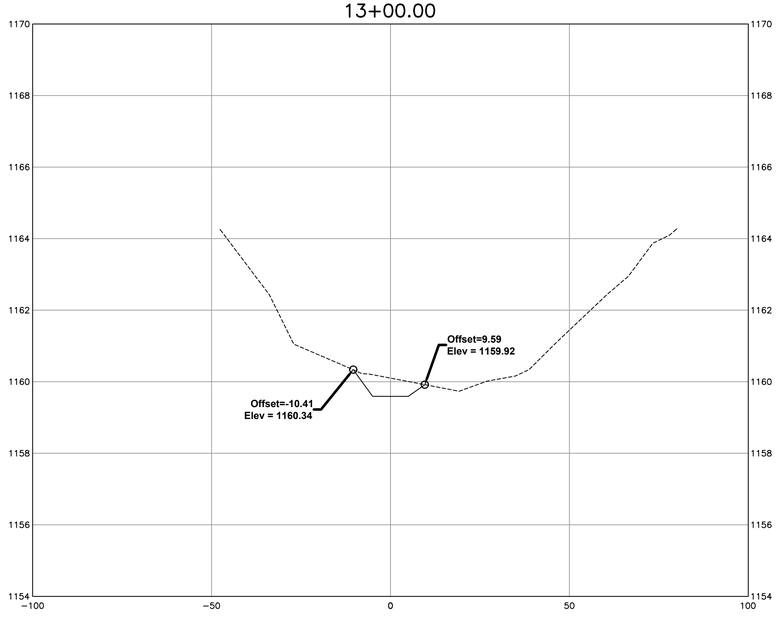
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DESIGN: JER	CHECKED: BCU
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SEAL

SEAL

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SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE: X-SECTIONS (3 OF 4)

SCALE: 0 50' 100' 200' 300' — SCALE: 1" = 100'

DWG. NO.

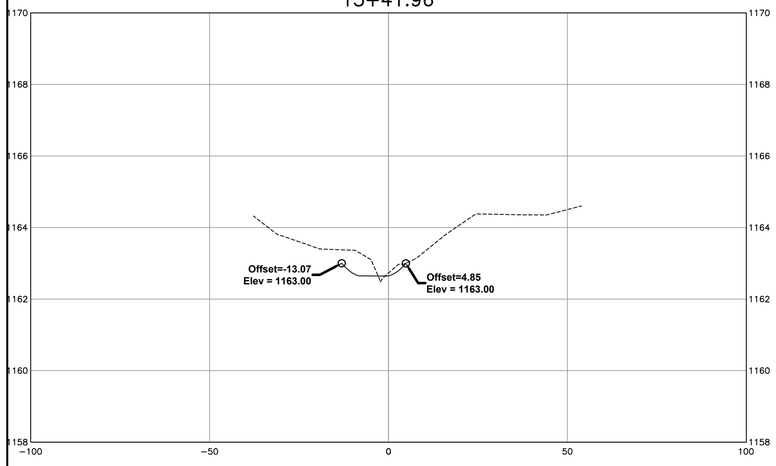
PROJECT NO. 11138.14

SHEET NO. ---- OF 6

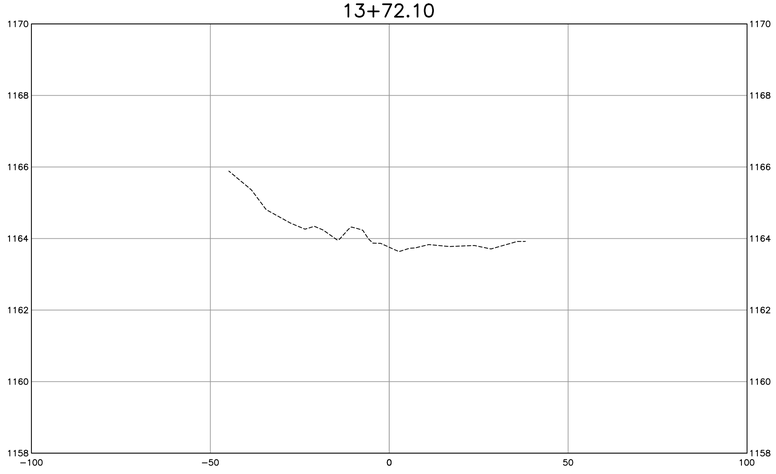
REV.

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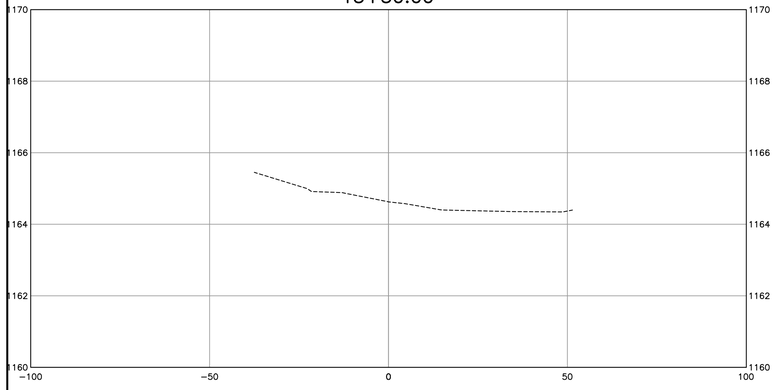
13+41.96



13+72.10



13+50.00



NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

BRADLEY UNDERKOFFLER, P.E.
RELEASED BY

DESIGN **JER**	CHECKED **BCU**
DRAWN **FT**	CHECKED **BCU**
DATE **JULY 2024**	SURVEY DATE **JULY 2024**
	FIELD BOOK **TRIMBLE**

SEAL

SEAL

CLIENT & PROJECT

DALLAS AREA MUNICIPAL AUTHORITY
101 MEMORIAL HIGHWAY
SHAVERTOWN, PENNSYLVANIA 18708-9603

OVERBROOK AVENUE
STREAM RESUFACE PROJECT
DALLAS TOWNSHIP, LUZERNE COUNTY, PA

ARRO
108 West Airport Road
Lititz, Pennsylvania 17543
Tel 717.569.7021

TITLE

X−SECTIONS (4 OF 4)

SCALE 0 50' 100' 200' 300'
SCALE: 1" = 100'

DWG. NO.

PROJECT NO. 11138.14

SHEET NO. ---- OF 6

REV.

ATTACHMENT G: DAMA Intergovernmental Cooperation Agreement

INTERGOVERNMENTAL COOPERATION AGREEMENT FOR THE PREPARATION, CREATION, AND IMPLEMENTATION OF THE REGIONAL CHESAPEAKE BAY POLLUTANT REDUCTION PLAN ("MS4") IN CERTAIN MUNICIPALITIES SITUATED IN LUZERNE COUNTY, PENNSYLVANIA

THIS AGREEMENT is made this 3rd day of October 2017, by and among the DALLAS AREA MUNICIPAL AUTHORITY ("DAMA") and the BOROUGH OF DALLAS, the TOWNSHIP OF DALLAS, and the TOWNSHIP OF KINGSTON and all other municipalities executing this Intergovernmental Cooperation Agreement ("MUNICIPALITIES") for the preparation of a plan for the implementation of a regional stormwater management and pollution reduction program for certain Back Mountain municipalities in Luzerne County, Pennsylvania, consistent with the Chesapeake Bay Pollutant Reduction Plan and a Plan of Dallas Area Municipal Authority ("DAMA") entitled **SECOND ADDENDUM TO INTERGOVERMENTAL COOPERATION AGREEMENT ("SECOND ADDENDUM")**. The goal of the plan is to achieve water quality of those water courses lying and being within such municipalities, which are tributary to the Susquehanna River.

AUTHORIZATION

THIS AGREEMENT is authorized by the *Pennsylvania Intergovernmental Cooperation Act*, and it is entered into pursuant to applicable Pennsylvania law, including, but not limited to the *Pennsylvania Intergovernmental Cooperation Act*, Act 1996-17, P.L. 1158, *53 Pa. C.S.A. §2301, et seq.*

RECITALS

WHEREAS, Municipalities discharging stormwater within the Chesapeake Bay watershed are required to prepare and implement a Chesapeake Bay Pollutant Reduction Plan ("CBPRP"), a draft of which is attached hereto, incorporated as an addendum and made a part hereof, and marked as Schedule "A"; and

WHEREAS, DAMA is assisting the Municipalities in their compliance with the process of preparing a watershed-based pollutant reduction plan; and

WHEREAS, as an alternative to the costs to be borne individually by each of the Municipalities in the preparation and development of their own stormwater management plans, the Municipalities have elected to adopt the stormwater plan prepared by DAMA, which is consistent with the "CBPRP" (Schedule "A"); a draft of which is attached hereto, incorporated herein and marked Schedule "B" and made a part hereof to control stormwater and improve water quality, as required as a mandatory part of the regional pollutant reduction plan; and

WHEREAS, the stormwater management plan prepared by DAMA (Schedule "B") is considered by the Municipalities to provide adequately for certain of the Municipalities' MS4 responsibilities. Accordingly, the aforesaid "CBPRP" (Schedule "A") and the DAMA Stormwater Management Plan (Schedule "B"), together with this Intergovernmental Cooperation Agreement, and any amendments thereof are hereby to be adopted and enacted by an Ordinance of this Municipality as a portion of a regional watershed-based pollutant reduction plan, stormwater discharge plan, and water quality improvement plan of all of the affected Municipalities; all in accordance with the Chesapeake Bay Pollution Reduction Plan ("CBPRP"); and

WHEREAS, the purpose of this Agreement is to set forth herein the accord of the several participating Municipalities to cooperate with DAMA, as its delegate, to comply with, prepare, plan, and implement certain of the rules and regulations of the Chesapeake Bay Pollutant Reduction Plan ("CBPRP"); all within the scope of the DAMA stormwater management plan, as presently constituted on this date and as may be amended hereafter; and

WHEREAS, the parties hereto agree and acknowledge that nothing in this Agreement, nor the resultant actions from it, shall prohibit, prevent, or interfere with any ability or obligation to comply with applicable Pennsylvania law and regulation, Federal law and regulation, applicable regulatory agency rules and policies, permit requirements, DEP directives, or United States Environmental Protection Agency directives, and local ordinances; and

NOW, THEREFORE, the parties hereto, in consideration of the mutual promises, covenants, and undertakings herein stated, each binding itself and representing that it has proper legal authority to enter into this Agreement, and each undertaking to be legally bound hereby, agree as follows.

(1) RECITALS:

All of the Recitals hereto are incorporated by reference as if fully set forth at length herein.

(2) ORGANIZATION:

The Municipalities agree that DAMA shall be responsible for coordinating the planning, implementation and development of the "CBPRP" (Schedule "A") and the DAMA stormwater management Plan (Schedule "B") in their separate municipal jurisdictions, limited only by the terms and provisions stated in such Plans and any amendment thereof.

(3) MUNICIPALITY FUNCTIONS, POWERS, AND RESPONSIBILITY:

The Municipalities' functions, powers and responsibilities shall include, but not limited to:

(a) The Municipalities agree to take any and all legislative or other acts necessary to implement the purposes of this Agreement.

(b) The Municipalities shall timely submit MS4 Annual Status Reports as required by existing law and regulations. Each Municipality shall, contemporaneously upon submission to DEP, provide DAMA with a digital or hard copy of the Municipality's MS4 Annual Status Report.

(c) The Municipalities agree to provide to DAMA for its review any land development plans and applications for stormwater permits received by the Municipality and required by the *Pennsylvania Municipalities Planning Code*, 53 P.S. §10101, et seq., that may impact in any water courses within its geographical jurisdiction, particularly, any stormwater and/or pollutant discharges.

(d) The Municipalities shall cooperate in any application by DAMA for grants or other funding that can be used to fund the regional stormwater discharges and pollutant reduction plan's implementation and/or the actions and activities undertaken pursuant to this Agreement.

(4) ENFORCEMENT ACTIONS:

If any compliance or enforcement action (including the pursuit of a civil penalty, issuance of an Notice of Violation ("NOV"), Order, or any other compliance notice or action) is initiated by either the Commonwealth of Pennsylvania or the Federal Government in any way related to the implementation actions and activities undertaken pursuant to this Agreement and the relevant Municipality MS4 requirements, DAMA shall, in its sole discretion, discuss the enforcement action, whether any one or more

Municipalities are responsible for the alleged violation(s), and determine what DAMA's response action(s) shall be. Where an act of malfeasance, misfeasance, negligence, or other misconduct of a Municipality results in the Municipality or DAMA incurring a civil penalty, issuance of an NOV or other compliance action, a fine, or a damages award of any kind, or other breach of the terms of this Agreement the responsible Municipality, as determined by DAMA, shall indemnify and hold harmless DAMA with respect thereto. Should DAMA become aware of a potential compliance issue or question, it shall send written notice to all relevant Municipalities within three (3) business days, which notice shall include any and all correspondence (including hard, electronic, or telephone call notes/summary) from or with a regulatory entity (including, but not limited to, a County Conservation District, DEP, the United States Environmental Protection Agency, Federal Emergency Management Agency, Pennsylvania Emergency Management Agency, and U.S. Army Corps of Engineers). DAMA shall convene a special meeting in accordance with applicable law, and within ten (10) calendar days of issuance of the notice referenced herein, in an effort to resolve the dispute. In the event that DAMA and a Municipality are unable to resolve the dispute, DAMA may unilaterally terminate the Agreement as to any such Municipality.

(5) RATES:

For the purposes of funding and covering the costs of all preparation, planning, remedial inspections work undertaken by DAMA pursuant to this Agreement, DAMA shall charge reasonable and uniform rates to all ratepayers within each Municipality's borders. DAMA agrees to develop and implement reasonable and uniform rates and rules and regulations in accordance with the Municipality Authorities Act, 53 Pa. C.S. §5601, et seq. with respect to the planning and administration of all work done by DAMA hereunder. Notice to the Municipalities of such rates shall be first given before assessed.

(6) EFFECTIVE DATE AND TERM:

(i) The effective date of this Agreement shall be October 5th, 2017; and

(ii) The term of this Agreement shall be perpetual, beginning on the effective date hereof, unless earlier terminated by the written consent of all parties hereto and following the payment and discharge of all debts incurred by DAMA related to any work or services performed by it in accordance with this Agreement.

(7) APPLICABLE LAW:

The parties agree and affirm that Pennsylvania law applies to this Intergovernmental Cooperation Agreement and all matters covered by and addressed by this Agreement. It is acknowledged and agreed that the sole and exclusive jurisdiction and venue for any dispute relating to any matter covered by this Agreement and/or regarding any dispute over the enforcement or interpretation of this Agreement shall rest with the Luzerne County Court of Common Pleas. The parties hereby submit to the exclusive jurisdiction of that Court.

(8) INTEGRATION:

This Agreement contains the entire agreement between the parties, together with Schedule "A" and Schedule "B" affixed to the Agreement. There are no understandings or agreements, verbal or otherwise, in relation hereto, except those expressly and specifically set forth herein. The parties have not relied upon any statement, projection, disclosure, report, information or any other representation or warranty, except for those as may be specifically and expressly set forth in this Agreement.

(9) NO ORAL MODIFICATION:

This Agreement may not be modified, except in a writing executed by all parties. This Agreement shall be amended only in such writing, by duly authorized representatives of all parties, and such revision(s) must be approved by official action of each Municipality and as required by any applicable law of the Commonwealth of Pennsylvania.

(10) FEES AND COSTS:

Unless otherwise expressly stated herein, the parties agree to bear their own fees and costs in connection with or incurred related to the matters between them and relating to this Agreement.

(11) SIGNATURES:

The parties hereto, and the undersigned individuals and/or representatives, represent and warrant that they have the authority to enter into this Agreement and be legally bound hereby.

IN WITNESS WHEREOF, the parties hereto have caused this Intergovernmental Cooperation Agreement for the implementation of the ("CBPRP") and the DAMA stormwater management plan in compliance with the Chesapeake Bay Pollutant Reduction Plan to be executed and effective on the 5th day of March, 2017.

ATTEST:

Council Secretary

BOROUGH OF DALLAS

By: _____
Council President

APPROVED this 20 day of September, 2017 by Mayor of Borough of Dallas

ATTEST:

Board Secretary

TOWNSHIP OF DALLAS

By: _____
Chairman
Board of Supervisors

ATTEST:

Board Secretary

TOWNSHIP OF KINGSTON

By: _____
Chairman
Board of Supervisors

ATTEST:

Board Secretary

DALLAS AREA MUNICIPAL AUTHORITY

By: _____
Chairman
Board of Directors

First Addendum
(Schedule A)
is CBPRP

SECOND ADDENDUM TO
INTERGOVERNMENTAL COOPERATION AGREEMENT

THIS AGREEMENT dated as of the 31 day of October, 2017 between DALLAS AREA MUNICIPAL AUTHORITY, a Pennsylvania municipality authority organized and existing under the *Pennsylvania Municipality Authorities Act* of 1945, as amended (hereinafter called "DAMA") and DALLAS TOWNSHIP, DALLAS BOROUGH and KINGSTON TOWNSHIP, each of which is a political subdivision of the Commonwealth of Pennsylvania (hereinafter called "Municipalities")

WITNESSETH:

1. DAMA was organized by the Borough of Dallas and the Township of Kingston and Dallas, Pennsylvania (hereinafter referred to as the "Municipalities") for the purpose of providing sewer and sewerage services to the Municipalities. Subsequently, the Articles of Incorporation of the Authority have been amended to include providing other services to the Municipalities; most recently storm water management consistent with Act 68 of 2013.

2. At the request of the Municipalities, DAMA has developed a Chesapeake Bay Pollution Reduction Plan (CBPRP) to meet prevailing mandates of the Pennsylvania Department of Environmental Protection (PADEP) regulations of Municipal Separate Storm Sewer Systems (MS4).

3. To meet the goals of the CBPRP and to meet present and future MS4 regulations, DAMA will be responsible for activities for the Municipalities to comply with Minimum Control Measures (MCM) #1 (Public Education), MCM #2 (Public Involvement) and MCM #3 (Illicit Discharges).

4. MCM #4 (Construction Water Runoff Control), MCM #5 (Post Construction Runoff Control), and MCM #6 (Municipal Operations, Pollution Prevention/Good Housekeeping) will remain the responsibility of the Municipalities.

5. Maintenance of the existing storm water infrastructure and Best Management Practices (BMP), with the exception of those modified by the Pollutant Reduction Plan (CBPRP), will remain the responsibility of the Municipalities (Pages 16, 17 and 18 of the PRP list specific maintenance requirements for the existing BMPs). These pages are included with this

SCHEDULE "B"

Agreement (Schedule "A"), and the responsible party for each BMP will develop a program to comply with the maintenance schedule.

6. The (CBPRP) developed for the Townships of Dallas and Kingston and the Borough of Dallas by T&M Associates lists the existing Best Management Practices (BMP). They consist of fifty nine (59) dry detention basins, twelve (12) extended dry detention basins, eight (8) wet ponds, three (3) underground dry detention and one (1) rain garden.

7. Dallas Area Municipal Authority (DAMA) will be responsible for the design and installation of the BMPs described in the CBPRP.

8. The CBPRP proposes to retrofit eight (8) dry detention basins to extended dry detention basins and install ten (10) new extended dry detention basins; thereby creating a total of extended dry detention basins to thirty (30) to be completed at the expense of DAMA.

9. The CBPRP also proposes to install vegetated open channels in five (5) neighborhoods, construct forest buffers in three (3) areas, and undertake stream bank restoration in seven (7) areas totaling four thousand seven hundred and seventy (4770) feet and install forest buffers in three (3) areas; all to be completed at the expense of DAMA.

10. Dry extended detention basins, forest buffers and vegetated open channels require considerable maintenance to remain affective. DAMA will be responsible for the maintenance of these BMPs (Pages 25 through 32 of the CBPRP) contain specific maintenance requirements for these, as well as other, BMPs. These pages are included with this agreement (Schedule "A"), and DAMA will develop a program to comply with the required maintenance schedule, with the exception of the previous parking lot(s), the maintenance of which will remain the responsibility of the municipalities. Stream bank restoration requires little maintenance, but DAMA will monitor these BMPs for damage after major weather events.

11. Actual BMP O&M activities will be recorded and documented by each municipality and DAMA for inclusion in the Annual MS4 Status Report.

12. The following summary is a statement of the responsibilities hereunder to be assumed by the respective parties. Such responsibilities can be revised and amended in the event of any modification or revision of DEP's rules and regulations at any future time or, in the event, the respective parties agree collectively to amend the Agreement.

MCM 1(all)	DAMA
MCM 2(all)	DAMA
MCM 3.1	DAMA/Municipality
MCM 3.2	DAMA
MCM 3.3	DAMA
MCM 3.4	DAMA
MCM 3.5	Municipality
MCM 3.6	DAMA
MCM 4(all)	Municipality
MCM 5.1	Municipality
MCM 5.2	Municipality
MCM 5.3	Municipality/DAMA
MCM 6.1	Municipality/DAMA
MCM 6.2	Municipality/DAMA
MCM 6.3	DAMA

13. This Addendum, marked Schedule "B" constitutes DAMA's stormwater management plan consistent with "CBPRP", and it is incorporated into and made as integral part of the Intergovernmental Cooperation Agreement between the parties to which it is affixed.

ATTACHMENT H: Proposed BMP Project Descriptions

BMP-P1: Wet Pond/Wetland
(Latitude: 41° 20' 11.25" N Longitude: 075° 58' 14.44" W)
(Receiving Waters: Toby Creek)
The analysis evaluated the construction of a new wet pond/wetland basin located at Dallas Borough Park. Construction activities include excavating the bottom of the wet pond/wetland to desired elevation, grading and preparing subsoil, basin walls to be constructed 8ft deep and at a 2.5:1 ratio, add outlet structure with rip rap, add overflow structure, applying and grading planting soil, and seeding, plant and mulching.

Drainage Area (Acres): 20.35
Total Suspended Solids Reduction (lbs/year): 6,978.42
Total Nitrogen Reduction (lbs/year): 5.09
Total Phosphorus (lbs/year): 2.67

BMP-P2: Wet Pond/Wetland
(Latitude: 41° 20' 16.52" N Longitude: 075° 58' 12.58" W)
(Receiving Waters: Toby Creek)
The analysis evaluated the construction of a new wet pond/wetland basin located at Lackawanna Ave. Construction activities include excavating the bottom of the wet pond/wetland to desired elevation of 11ft berm with a 3:1 ratio, grading and preparing subsoil, installing inflow and outflow structures as well as an emergency spillway applying and grading planting soil, and seeding, plant and mulching.

Drainage Area (Acres): 2.68
Total Suspended Solids Reduction (lbs/year): 169.13
Total Nitrogen Reduction (lbs/year): 0.13
Total Phosphorus (lbs/year): 0.08

BMP-P3: Rain Garden
(Latitude: 41° 20' 18.65" N Longitude: 075° 57' 37.47" W)
(Receiving Waters: Trib 63043 to Toby Creek)
The analysis evaluated the construction of a new dry extended detention basin located at Dallas Township Park. Construction activities include excavating rain garden to proposed depth, backfill rain garden with amended soil, complete final grading, plant vegetation, and mulch and install erosion protection where necessary.

Drainage Area (Acres): 0.94
Total Suspended Solids Reduction (lbs/year): 294.47
Total Nitrogen Reduction (lbs/year): 0.42
Total Phosphorus (lbs/year): 0.13

BMP-P4: Wet Pond/Wetland
(Latitude: 41° 20' 16.34" N Longitude: 075° 57' 36.52" W)
(Receiving Waters: Trib 63043 to Toby Creek)
The analysis evaluated the construction of a new wet pond/wetland basin located at Dallas Nature Playground. Construction activities include excavating the bottom of the wet pond/wetland to desired elevation, grading and preparing subsoil, applying and grading planting soil, and seeding, plant and mulching.

Drainage Area (Acres): 7.59 (Wetland) 21.00 (Bioswale)
Total Suspended Solids Reduction (lbs/year): 1,788.25 (Wetland) 6,857.08 (Bioswale)
Total Nitrogen Reduction (lbs/year): 0.99 (Wetland) 10.39 (Bioswale)
Total Phosphorus (lbs/year): 0.65 (Wetland) 3.17 (Bioswale)

BMP-B1: Dry Extended Detention Basin
(Latitude: 41° 21' 27.88" N Longitude: 075° 58' 32.52" W)
(Receiving Waters: Trib 63044 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located at Ridgeway Dr. at Irem Golf Course. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 8ft, modifying basin grading keeping berm at 3:1, upgrading the outlet structure and pipe, installing a 2ft x 3ft gabion wall sediment forebay, install a new type M-inlet outlet structure and increasing the spillway invert.

Drainage Area (Acres): 14.56
Total Suspended Solids Reduction (lbs/year): 2,916.92
Total Nitrogen Reduction (lbs/year): 1.64
Total Phosphorus (lbs/year): 0.29

BMP-B7: Dry Extended Detention Basin
(Latitude: 41° 20' 47.89" N Longitude: 075° 58' 32.16" W)
(Receiving Waters: Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located at the Misericordia University Tennis Courts. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 5 ft while maintaining a 3:1 ratio, modifying basin grading, adding a 2ft x 3ft gabion wall forebay, upgrading the outlet structure and pipe, adding rip rap to the inlet and outlet structures, and increasing the spillway invert with crest elevation of 1244.25ft to hold back 100 year flood elevation of 1244.2ft.

Drainage Area (Acres): 6.64
Total Suspended Solids Reduction (lbs/year): 2,200.84
Total Nitrogen Reduction (lbs/year): 1.57
Total Phosphorus (lbs/year): 0.24

BMP-B16: Dry Extended Detention Basin
(Latitude: 41° 20' 28.06" N Longitude: 075° 59' 43.88" W)
(Receiving Waters: Trib 63030 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located at 474 Yalick Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 3 ft, modifying basin grading keeping a 3:1 ratio, upgrading the outlet structure and pipe, adding rip rap to inlet and outlet structures, add 3ft x 2ft gabion wall forebay and increasing the spillway invert with a crest elevation of 1290.75ft 100 year flood elevation of 1290.62ft.

Drainage Area (Acres): 2.31
Total Suspended Solids Reduction (lbs/year): 467.53
Total Nitrogen Reduction (lbs/year): 0.24
Total Phosphorus (lbs/year): 0.05

BMP-B33: Dry Extended Detention Basin
(Latitude: 41° 20' 0.73" N Longitude: 075° 56' 22.15" W)
(Receiving Waters: Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Lincoln St. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 8ft, modifying basin grading keeping a 3:1 ratio, adding a 3 ft x 2ft gabion wall forebay, upgrading the outlet structure and pipe, adding rip rap to inlet structure, and increasing the spillway invert with a crest elevation of 1170.25ft 100 year flood elevation of 1170.5ft.

Drainage Area (Acres): 14.85
Total Suspended Solids Reduction (lbs/year): 3,513.83
Total Nitrogen Reduction (lbs/year): 2.14
Total Phosphorus (lbs/year): 0.36

BMP-B34: Dry Extended Detention Basin
(Latitude: 41° 20' 5.82" N Longitude: 075° 56' 5.57" W)
(Receiving Waters: Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Roosevelt St. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 5.5 ft, modifying basin grading with a 3:1 slope, adding a 3x2 gabion forebay, upgrading the outlet structure and pipe, and increasing the spillway invert with a crest elevation of 1265.33ft 100 year flood elevation of 1265.47ft

Drainage Area (Acres): 7.03
Total Suspended Solids Reduction (lbs/year): 1,639.92
Total Nitrogen Reduction (lbs/year): 1.01
Total Phosphorus (lbs/year): 0.17

BMP-B35: Dry Extended Detention Basin
(Latitude: 41° 19' 58.17" N Longitude: 075° 56' 19.92" W)
(Receiving Waters: Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Lincoln St. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height to 8.3 ft, modifying basin grading with a 3:1 ratio on the berm walls, adding a 3x2 gabion forebay, upgrading the outlet structure and pipe, and increasing the spillway with a crest elevation of 1200.67ft 100 year flood elevation of 1200.55.

Drainage Area (Acres): 6.27
Total Suspended Solids Reduction (lbs/year): 1,228.73
Total Nitrogen Reduction (lbs/year): 0.63
Total Phosphorus (lbs/year): 0.12

BMP-B41: Dry Extended Detention Basin
(Latitude: 41° 21' 8.25" N Longitude: 075° 58' 24.43" W)
(Receiving Waters: Trib 63044 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Wedgewood Wy. The basin will be retrofitted from a dry detention basin to a dry extended detention basin. This basin was evaluated to be constructed so that no modifications to the structure were necessary. The basin walls are at a 3:1 ratio and are at 14 ft in height. The basin is has now been maintained by DAMA and is functioning as designed as a dry extended detention basin.

Drainage Area (Acres): 1.22
Total Suspended Solids Reduction (lbs/year): 259.17 (B41) 233.25 (B42)
Total Nitrogen Reduction (lbs/year): 0.14 (B41) 0.13 (B42)
Total Phosphorus (lbs/year): 0.03 (B41) 0.02 (B42)

BMP-B45: Dry Extended Detention Basin
(Latitude: 41° 21' 13.09" N Longitude: 075° 58' 22.26" W)
(Receiving Waters: Trib 63044 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Masonic Dr. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 1.69
Total Suspended Solids Reduction (lbs/year): 474.38
Total Nitrogen Reduction (lbs/year): 0.33
Total Phosphorus (lbs/year): 0.05

BMP-B51: Dry Extended Detention Basin
(Latitude: 41° 20' 23.08" N Longitude: 075° 59' 49.02" W)
(Receiving Waters: Trib 63030 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located at 474 Yalick Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 4.45
Total Suspended Solids Reduction (lbs/year): 1,093.89
Total Nitrogen Reduction (lbs/year): 0.98
Total Phosphorus (lbs/year): 0.20

BMP-B71: Dry Extended Detention Basin
(Latitude: 41° 19' 38.09" N Longitude: 075° 54' 42.58" W)
(Receiving Waters: Trib 63036 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Wakefield Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 7.82
Total Suspended Solids Reduction (lbs/year): 1,597.74
Total Nitrogen Reduction (lbs/year): 0.87
Total Phosphorus (lbs/year): 0.15

BMP-B72: Dry Extended Detention Basin
(Latitude: 41° 19' 40.64" N Longitude: 075° 54' 29.99" W)
(Receiving Waters: Trib 63036 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Alfred Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 19.43
Total Suspended Solids Reduction (lbs/year): 3,252.16
Total Nitrogen Reduction (lbs/year): 1.60
Total Phosphorus (lbs/year): 0.31

BMP-B74: Dry Extended Detention Basin
(Latitude: 41° 19' 23.88" N Longitude: 075° 54' 44.58" W)
(Receiving Waters: Trib 63036 to Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Ivy Dr. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 7.78
Total Suspended Solids Reduction (lbs/year): 1,524.53
Total Nitrogen Reduction (lbs/year): 0.79
Total Phosphorus (lbs/year): 0.15

BMP-B79: Dry Extended Detention Basin
(Latitude: 41° 18' 16.7" N Longitude: 075° 56' 11.27" W)
(Receiving Waters: Toby Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Lantern Hill Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 12.17
Total Suspended Solids Reduction (lbs/year): 2,322.34
Total Nitrogen Reduction (lbs/year): 1.17
Total Phosphorus (lbs/year): 0.22

BMP-B80: Dry Extended Detention Basin
(Latitude: 41° 18' 6.22" N Longitude: 075° 56' 23.93" W)
(Receiving Waters: Huntsville Creek)
The analysis evaluated a basin retrofit at a pre-existing basin located off Lantern Hill Rd. The basin will be retrofitted from a detention basin to a dry extended detention basin. Construction activities include lowering and leveling the basin bottom, increasing the berm height, modifying basin grading, upgrading the outlet structure and pipe, and increasing the spillway invert.

Drainage Area (Acres): 43.68
Total Suspended Solids Reduction (lbs/year): 7,772.74
Total Nitrogen Reduction (lbs/year): 3.85
Total Phosphorus (lbs/year): 0.73

BMP-SR17: Stream Restoration
(Latitude: 41° 20' 19.87" N Longitude: 075° 57' 35.73" W)
The analysis evaluated a stream restoration project and buffer along an unnamed tributary to Toby Creek located within the Dallas Nature Playground on Dallas Township property. Construction activities include up to 910 linear feet of streambank restoration, vegetative stabilization, and the establishment of 35 feet of riparian buffer on each side of the stream.

Liner Feet of Stream Restoration: 910
Total Suspended Solids Reduction(lbs/yr): 104,650

BMP-SR21: Stream Restoration
(Latitude: 41° 19' 0.06" N Longitude: 075° 57' 48.61" W)
The analysis evaluated a stream restoration project and buffer along Overbrook Ave. Construction activities include up to 400 linear feet of streambank restoration, vegetative stabilization, and the establishment of 35 feet of riparian buffer on each side of the stream.

Liner Feet of Stream Restoration: 400
Total Suspended Solids Reduction (lbs/yr): 46,000

Calculations Methodology:

Drainage area acreage was delineated using GIS with a DEM overlaid onto the stormwater system data.

Landcover was determined by using the 2019 NICD Landcover dataset within the Model My Watershed software.

Loading rates were derived from Model My Watershed using the Watershed Multi-Year Worksheet.

BMP Effectiveness was derived from PA DEP Document 3800-PM-BCW0100m BMP Effectiveness Values.

BMP Calculations:

BMP TSS Removal =
$((A_{LDM} \times LTSS_{LDM}) + (A_{MDM} \times LTSS_{MDM}) + (A_{HDM} \times LTSS_{HDM}) + (A_F \times LTSS_F) + (A_{HP} \times LTSS_{HP}) + (A_W \times LTSS_W)) \times E_{TSS}$
BMP TN Removal = $((A_{LDM} \times LTN_{LDM}) + (A_{MDM} \times LTN_{MDM}) + (A_{HDM} \times LTN_{HDM}) + (A_F \times LTN_F) + (A_{HP} \times LTN_{HP}) + (A_W \times LTN_W)) \times E_{TN}$
BMP TP Removal = $((A_{LDM} \times LTP_{LDM}) + (A_{MDM} \times LTP_{MDM}) + (A_{HDM} \times LTP_{HDM}) + (A_F \times LTP_F) + (A_{HP} \times LTP_{HP}) + (A_W \times LTP_W)) \times E_{TP}$

For BMPs in sequence the following equation was used:
Upstream BMP TSS Removal =
$((A_{LDM} \times LTSS_{LDM}) + (A_{MDM} \times LTSS_{MDM}) + (A_{HDM} \times LTSS_{HDM}) + (A_F \times LTSS_F) + (A_{HP} \times LTSS_{HP}) + (A_W \times LTSS_W)) \times E_{TSS}$
Upstream BMP TSS Baseline =
$(A_{LDM} \times LTSS_{LDM}) + (A_{MDM} \times LTSS_{MDM}) + (A_{HDM} \times LTSS_{HDM}) + (A_F \times LTSS_F) + (A_{HP} \times LTSS_{HP}) + (A_W \times LTSS_W)$

Down Stream BMP TSS Removal =
$((A_{LDM} \times LTSS_{LDM}) + (A_{MDM} \times LTSS_{MDM}) + (A_{HDM} \times LTSS_{HDM}) + (A_F \times LTSS_F) + (A_{HP} \times LTSS_{HP}) + (A_W \times LTSS_W) +$ (Upstream BMP TSS Baseline – Upstream BMP TSS Removal) $\times E_{TSS}$

Upstream BMP TN Removal =
$((A_{LDM} \times LTN_{LDM}) + (A_{MDM} \times LTN_{MDM}) + (A_{HDM} \times LTN_{HDM}) + (A_F \times LTN_F) + (A_{HP} \times LTN_{HP}) + (A_W \times LTN_W)) \times E_{TN}$
Upstream BMP TN Baseline =
$(A_{LDM} \times LTN_{LDM}) + (A_{MDM} \times LTN_{MDM}) + (A_{HDM} \times LTN_{HDM}) + (A_F \times LTN_F) + (A_{HP} \times LTN_{HP}) + (A_W \times LTN_W)$

Downstream BMP TN Removal =
$((A_{LDM} \times LTN_{LDM}) + (A_{MDM} \times LTN_{MDM}) + (A_{HDM} \times LTN_{HDM}) + (A_F \times LTN_F) + (A_{HP} \times LTN_{HP}) + (A_W \times LTN_W) +$ (Upstream BMP TN Baseline $-$ Upstream BMP TN Removal) $\times E_{TN}$

Upstream BMP TP Removal =
$((A_{LDM} \times LTP_{LDM}) + (A_{MDM} \times LTP_{MDM}) + (A_{HDM} \times LTP_{HDM}) + (A_F \times LTP_F) + (A_{HP} \times LTP_{HP}) + (A_W \times LTP_W)) \times E_{TP}$
Upstream BMP TP Baseline =
$(A_{LDM} \times LTP_{LDM}) + (A_{MDM} \times LTP_{MDM}) + (A_{HDM} \times LTP_{HDM}) + (A_F \times LTP_F) + (A_{HP} \times LTP_{HP}) + (A_W \times LTP_W)$

Downstream BMP TP Removal =
$((A_{LDM} \times LTP_{LDM}) + (A_{MDM} \times LTP_{MDM}) + (A_{HDM} \times LTP_{HDM}) + (A_F \times LTP_F) + (A_{HP} \times LTP_{HP}) + (A_W \times LTP_W) +$ (Upstream BMP TP Baseline $-$ Upstream BMP TP Removal) $\times E_{TP}$

Can be found on pages F2-F4
A_{LDM} $-$ *Area in acres LD_Mixed*
A_{MDM} $-$ Area in acres MD_Mixed
A_{HDM} $-$ Area in acres HD_Mixed
A_F $-$ Area in acres Forrest
A_{HP} $-$ Area in acres Hay_Past
A_W $-$ Area in acres Wetland

Can be found on Pages D4, D7 & D10
$LTSS_{LDM}$ $-$ Loading of TSS in LD_Mixed
$LTSS_{MDM}$ $-$ Loading of TSS in MD_Mixed
$LTSS_{HDM}$ $-$ Loading of TSS in HD Mixed
$LTSS_F$ $-$ Loading of TSS in Forrest
$LTSS_{HP}$ $-$ Loading of TSS in Hay_Past
$LTSS_W$ $-$ Loading of TSS in Water

LTN_{LDM} $-$ Loading of TN in LD_Mixed
LTN_{MDM} $-$ Loading of TN in MD_Mixed
LTN_{HDM} $-$ Loading of TN in HD Mixed
LTN_F $-$ Loading of TN in Forrest
LTN_{HP} $-$ Loading of TN in Hay_Past
LTN_W $-$ Loading of TN in Water

LTP_{LDM} $-$ Loading of TP in LD_Mixed
LTP_{MDM} $-$ Loading of TP in MD_Mixed
LTP_{HDM} $-$ Loading of TP in HD Mixed
LTP_F $-$ Loading of TP in Forrest
LTP_{HP} $-$ Loading of TP in Hay_Past
LTP_W $-$ Loading of TP in Water

Can be found on pages F2-F4

E_{TSS} – BMP Effectiveness value for TSS Removeal
E_{TN} – BMP Effectiveness value for TN Removeal
E_{TP} – BMP Effectiveness value for TP Removeal