

# MEMORANDUM

To: Elizabeth Mahoney, Pennsylvania Department of Environmental Protection (PA DEP)

From: Beth Uhler, Center for Watershed Protection (CWP)

Date: July 10, 2025

Re: Amendment to the West Norriton Township Pollutant Reduction Plan- Stony Creek, Indian Creek and Unnamed Tributaries to Schuylkill River (to be submitted to PA DEP with 2025 Annual MS4 Status Report)

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## INTRODUCTION

West Norriton Township has a [Pollutant Reduction Plan \(PRP\) for Stony Creek, Indian Creek, and unnamed tributaries to Schuylkill River](#) as part of National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requirements. These streams were listed by the 2014 Pennsylvania Integrated Water Quality Report as impaired for siltation due to cause unknown, turbidity, and/or water flow/variability. The PRP (prepared by CEDARVILLE Engineering Group, LLC and last revised August 2019) was approved by the Pennsylvania Department of Environmental Protection (PA DEP) in a letter dated October 17, 2019.

Since the PRP has approved, the Township has pursued three new projects to achieve the required 10% sediment reduction:

- 1) Centennial Park Stream Restoration
- 2) Norriton Dog Park Managed Release Concept (MRC) Basin
- 3) Norriton Dog Park Stream Restoration

In addition, the Township will no longer implement the Jeffersonville Golf Club Stream Restoration Phase II to meet the current PRP requirements, but may consider the project at a future date.

This memorandum serves as an addendum to the original approved PRP and includes updated pollutant reduction calculations and project descriptions. The original PRP can be found on the Township website [here](#).

## PUBLIC PARTICIPATION

Per PA DEP FAQ #21 from the "MS4 NPDES Permits Frequently Asked Questions (FAQ) Version 1.8" (Final, January 25, 2017, Revised, May 2024), major revisions such as modification of the location, type or number of proposed Best Management Practices, or changes to the storm sewershed map (as compared to the original PRP or TMDL Plan approved by DEP), will require public participation and PA DEP review. The PRP changes proposed by the Township are considered major revisions and thus, the Township is going through the required public participation process again.

West Norriton Township made this memorandum documenting the PRP amendment available to the public to review and provide comment for thirty (30) days, initiated by a public notice to be published in the Times Herald on July 14, 2025. The PRP amendments will also presented for comment at the Board of Commissioners meeting on August 12, 2025. A copy of the public notice published in the Times Herald, the BOC meeting minutes, and the response to any public comment received will be enclosed with this memorandum once available.

## EXISTING POLLUTANT LOADING

The Centennial Park Stream Restoration project is located within the original Planning Area from the PRP dated August 2019. Both of the Norriton Dog Park BMPs are not located within that original Planning Area. Therefore, the drainage area treated by the Norriton Dog Park BMPs has been added to the Planning Area and existing pollutant loading. Refer to Table 1.0 for updated existing sediment loading and Figure 1.0 for the Planning Area associated with the Norriton Dog Park BMPs. The pollutant reduction from existing BMPs has not changed.

Table 1.0 Updated Existing Sediment Loading for Stormwater Outfalls to Sediment Impaired Streams

Receiving Waters Impaired by Sediment	HUC 12	Category	Area (ac)	TSS [Sediment] (lbs/yr)
Stony Creek/Indian Creek/UNT to Schuylkill River	Stony Creek/Mingo Creek-Schuylkill River	Impervious, Developed	<b>686.03</b>	1,261,618.18
		Pervious, Developed	<b>917.89</b>	243,202.84
SUBTOTAL:			<b>1,603.92</b>	<b>1,504,821.02</b>
Existing BMP Reduction:				51,558.22
<b>TOTAL:</b>				<b>1,453,262.80</b>
<b>Required 10% Reduction:</b>				<b>145,323.28</b>

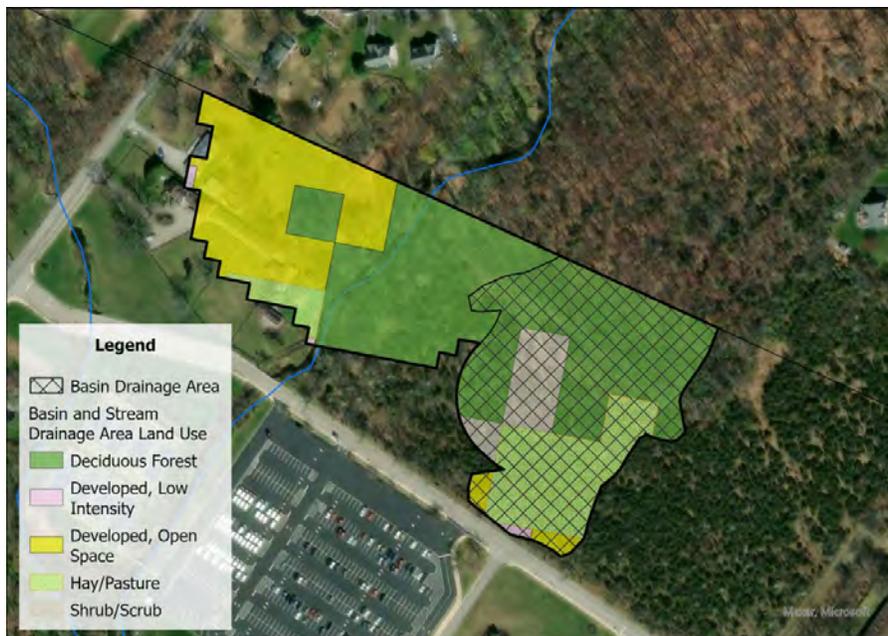


Figure 1- Planning Area addition for the drainage areas to the Norriton Dog Park BMPs

# POLLUTANT LOAD REDUCTIONS

The Township has pursued three new projects to achieve the required 10% sediment reduction. Table 2.0 includes updated sediment reductions as 11.72%, exceeding the minimum required with the changes in **bold**. Supporting calculations are enclosed as well as a site plan for each BMP. Full plan sets are available upon request. Each of the three new projects is also described in more detail below.

Table 2.0 Updated Sediment Load Reductions from Proposed BMPs

HUC12	BMP Name	Drainage Area (ac)/ Linear Feet (LF)	TSS Reduction	
			Lbs/yr	% Reduction
Mingo Creek-Schuylkill River	Jeffersonville Golf Club Stream Restoration Phase I	944 LF	42,366.72	2.92
	<b>Jeffersonville Golf Club Stream Restoration Phase II</b>	<b>350 LF</b>	<b>19,582.87</b>	<b>1.34</b>
	Blue Dove Basin Retrofit	45.39	33,070.94	2.28
	<b>Centennial Park Stream Restoration</b>	<b>734 LF</b>	<b>32,941.92</b>	<b>2.27</b>
Stony Creek	Burnside Village Basin Retrofit	87.56	34,289.67	2.36
	Alexander Drive Basin Retrofit	37.81	15,263.94	1.05
	<b>Norriton Dog Park MRC Basin</b>	<b>4.38</b>	<b>2,501.70</b>	<b>0.17</b>
	<b>Norriton Dog Park Stream Restoration</b>	<b>220</b>	<b>9,873.60</b>	<b>0.68</b>
<b>TOTAL:</b>			<b>170,308.49</b>	<b>11.72</b>

## Centennial Park Stream Restoration

A stream restoration project is proposed along a 734 linear foot section of a headwater tributary of Indian Creek within the Township-owned Centennial Park. The project site exhibits accelerated channel erosion with maintained turf up to the banks. The project includes streambank stabilization and floodplain benches. The length of the proposed stream restoration will be approximately 734 feet, achieving a total sediment reduction of 32,841.82 lbs/yr. Reductions were quantified using the sediment removal efficiency rate of 44.88 lbs/ft/yr for Stream Restoration. The impaired stream is Indian Creek, which is located in the Mingo Creek/Schuylkill River HUC 12. This project is scheduled to begin construction in August 2025.

## Norriton Dog Park Stream Restoration

A stream restoration project was completed along a 220 linear foot section of Kepner Creek as part of the development of the Township-owned Norriton Dog Park. The project site exhibited accelerated channel erosion along one bank. The project includes streambank stabilization with a floodplain bench. The length of the

proposed stream restoration will be approximately 220 feet, achieving a total sediment reduction of 9,873.60 lbs/yr. Reductions were quantified using the sediment removal efficiency rate of 44.88 lbs/ft/yr for Stream Restoration. The impaired stream is Stony Creek, which is located in the Mingo Creek/Schuylkill River HUC 12. This project was constructed in Fall 2024. The development of the dog park required an NPDES Permit for Stormwater Discharges from Construction Activities since the amount of earth disturbance was greater than one acre. This project was above and beyond the NPDES Permit requirements.

**Norriton Dog Park Managed Release Concept (MRC) Basin**

A new MRC basin was implemented as part of the development of the Township-owned Norriton Dog Park. The development of the dog park required an NPDES Permit for Stormwater Discharges from Construction Activities since the amount of earth disturbance was greater than one acre. This project was above and beyond the NPDES Permit requirements. The drainage area to the MRC basin is 4.38 acres, achieving a total sediment reduction of 2,501.70 lbs/yr. There are no effectiveness value for MRC basins; the Bioretention-Raingarden (A/B soils with underdrain) is the BMP type listed with the most similar functionality. Therefore, reductions were quantified using the sediment removal efficiency rate of 80% for a “Bioretention-Raingarden (A/B soils with underdrain)” from the PA DEP BMP Effectiveness Values table. The impaired stream is Stony Creek, which is located in the Mingo Creek/Schuylkill River HUC 12. This project was constructed in Fall 2024.

## FUNDING

The funding mechanisms for the implementation of the new BMPs are included in Table 3.0.

Table 3.0 Updated BMP Funding Mechanisms

Proposed BMP	Property Owner	Funding Mechanism
Centennial Park Stream Restoration	West Norriton Township	Township Capital Reserves & PA DCED Watershed Restoration & Protection Program (WRPP) Grant
Norriton Dog Park MRC Basin	West Norriton Township	Township ARPA funding & PA DCED COVID-19 ARPA Pandemic Response Grant
Norriton Dog Park Stream Restoration	West Norriton Township	Township ARPA funding & PA DCED COVID-19 ARPA Pandemic Response Grant

## OPERATIONS & MAINTENANCE

To ensure the long-term effectiveness of these proposed BMPs, operation and maintenance (O&M) is crucial. Table 4.0 outlines the responsible party and the necessary O&M practices required for each proposed BMP (Pennsylvania Stormwater BMP Manual, December 30, 2006). Note that since the original PRP, the property owner of Blue Dove Basin has changed.

Table 4.0 Updated BMP O&M Responsibilities

BMP	Owner	Responsible Party for O&M	O&M Responsibilities
Burnside Village Basin Retrofit	West Norriton Township	West Norriton Township	<ul style="list-style-type: none"> <li>• Inspect at least 2x per year</li> <li>• Clean inlets at least 2x per year</li> <li>• Maintain vegetation</li> <li>• Remove invasive species</li> <li>• Prohibit vehicular access</li> <li>• Avoid excessive compaction by mowers</li> <li>• Drain-down time &lt; 72 hours</li> <li>• Mow as appropriate (remove clippings)</li> <li>• Remove accumulated sediment</li> </ul>
Blue Dove Basin Retrofit	Benchmark Excavating, LLC	Benchmark Excavating, LLC & West Norriton Township	
Alexander Drive Basin Retrofit	West Norriton Township	West Norriton Township	
Jeffersonville Golf Club Stream Restoration Phase I	West Norriton Township	West Norriton Township	<ul style="list-style-type: none"> <li>• Inspect at least 2x per year</li> <li>• Avoid excess use of fertilizers, pesticides, or other chemicals</li> <li>• Mow surrounding area as appropriate (remove clippings)</li> <li>• Remove invasive species</li> <li>• Remove debris</li> </ul>
Centennial Park Stream Restoration	West Norriton Township	West Norriton Township	
Norriton Dog Park Stream Restoration	West Norriton Township	West Norriton Township	
Norriton Dog Park MRC Basin	West Norriton Township	West Norriton Township	<ul style="list-style-type: none"> <li>• Prune/weed as needed while vegetation is being established</li> <li>• Remove detritus annually</li> <li>• Perennial plantings may be cut down at the end of the growing season</li> <li>• Re-spread mulch when erosion is evident and replenish as needed. Mulch may need replaced every 2-3 years</li> <li>• Inspect basin at least two times per year for sediment buildup, erosion, vegetative conditions, etc.</li> <li>• During periods of extended drought, plants may require watering</li> <li>• Trees and shrubs should be inspected 2x per year to evaluate health.</li> </ul>

## CONCLUSION

The required ten (10) percent sediment reduction has been achieved (and exceeded) through the implementation of the projects described above. It is anticipated that these BMPs will be finished construction by Fall 2025.

Please contact Beth Uhler at [beu@cwpc.org](mailto:beu@cwpc.org) or 484-680-0806 if you have any questions or would like additional assistance.

cc: Jason Bobst, West Norriton Township Manager

Enclosures: Updated PRP Calculations, Norriton Dog Park BMP Plan, Centennial Park Stream Restoration Plan

**Conversion from NLCD 2011 Land Use Designation to Impervious and Pervious Areas**

**MUNICIPALITY:** West Norriton Township  
**MS4 SEWER SHED:** Indian Creek/Stoney Creek/UNT to Schuylkill  
**COUNTY:** Montgomery

**Developed Land:**

<b>Land Use<sup>1</sup></b>	<b>Area (ac)</b>	<b>% Impervious<sup>2</sup></b>	<b>Impervious Area (ac)</b>	<b>Pervious Area (ac)</b>
Developed, Open Space	619.47	19	117.70	501.77
Developed, Low Intensity	609.11	49	298.46	310.65
Developed, Medium Intensity	234.23	79	185.04	49.19
Developed, High Intensity	84.83	100	84.83	0.00
Hay/Pasture	16.54	0	0.00	16.54
Cultivated Crops	0.82	0	0.00	0.82
Shrub/Scrub	1.83	0	0.00	1.83
Mixed Forest	4.01	0	0.00	4.01
Deciduous Forest	33.08	0	0.00	33.08
<b>Total</b>	<b>1603.92</b>		<b>686.03</b>	<b>917.89</b>

1. NLCD 2011 Land Use and Areas

2. Highest % of impervious used from each NLCD 2011 definition per PADEP

**Existing Loads using Chesapeake Bay Loading Rates**

**MUNICIPALITY:** West Norriton Township  
**MS4 SEWER SHED:** Indian Creek/Stoney Creek/UNT to Schuylkill  
**COUNTY:** Montgomery

**Developed Land:**

Land Use	Area (ac)	Pollutant Loading Rates <sup>1</sup>			Pollutant Load		
		TN (lbs/ac/yr)	TP (lbs/ac/yr)	TSS [Sediment] (lbs/ac/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Impervious, Developed	686.03	23.06	2.28	1,839.00	15819.96	1564.16	1261618.18
Pervious, Developed	917.89	20.72	0.84	264.96	19018.58	771.02	243202.84
<b>Indian Creek Total Pollutant Load</b>					<b>34,838.54</b>	<b>2,335.18</b>	<b>1,504,821.02</b>

**Pollutant Load Reduction by Existing BMPs**

MUNICIPALITY: West Norriton Township  
 MS4 SEWER SHED: Indian Creek, UNT to Schuylkill River, Stony Creek  
 COUNTY: Montgomery

Existing BMP Name	BMP Drainage Area (ac)	Pollutant Reduction by BMPs		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Oakland Basin	60.48	195.58	8.27	26,436.67
Fairways Basin	7.14	24.38	1.18	3,981.39
Wawa Basin	3.99	15.41	0.94	3,423.95
Yocum Roofing Basin	1.9	6.68	0.34	1,191.51
Burnside Village Basin	37.81	71.93	6.33	6,857.71
Blue Dove Basin	45.39	44.11	5.42	6,614.20
Alexander Drive Basin	37.81	31.24	2.79	3,052.79
<b>Total</b>	<b>194.52</b>	<b>389.33</b>	<b>25.27</b>	<b>51,558.22</b>

PRP MS4 Sewershed	Storm sewershed Area (ac)	Existing Pollutant without BMPs			Pollutant Load with Existing BMPs		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)
Indian Creek, UNT to Schuylkill River, Stony Creek	1603.92	34838.54	2335.18	1504821.02	34,449.21	2,309.91	1,453,262.80
<b>Total</b>	<b>1603.92</b>	<b>34,838.54</b>	<b>2,335.18</b>	<b>1,504,821.02</b>	<b>34,449.21</b>	<b>2,309.91</b>	<b>1,453,262.80</b>

**Pollutant Removal Reductions using PA DEP BMP Effectiveness Value Table**

BMP NAME: Dog Park MRC Basin  
MUNICIPALITY: West Norriton Township  
MS4 SEWERSHED: Indian Creek/Stony Creek/UNT Schuylkill River  
COUNTY: Montgomery  
BMP TYPE: Proposed BMP  
LOCATION: Eagle Drive  
GPS LOCATION: Lat: 40.1496 / Long: -75.3619  
TOTAL DRAINAGE AREA TREATED (ac): 4.38  
BMP EFFECTIVENESS VALUE TYPE: Bioretention/raingarden A/B soils with Underdrain

Developed Land Imp/Pervious Calculations:

Land Use <sup>1</sup>	Area (ac)	% Impervious <sup>2</sup>	Impervious Area (ac)	Pervious Area (ac)
Developed, Open Space	0.13	19	0.02	0.11
Developed, Low Intensity	0.03	49	0.01	0.02
Hay/Pasture	1.21	0	1.21	
Shrub/Scrub	0.54	0	0	0.54
Deciduous Forest	2.47	0	0	2.47
<b>Total</b>	<b>4.38</b>		<b>1.25</b>	<b>3.13</b>

13.78	1.90	2396.22
17.46	0.89	656.57

Developed Land - Pollutant Reduction:

Land Use	Area (ac)	Pollutant Loading Rates <sup>3</sup>			BMP Effectiveness Value <sup>4</sup>			Pollutant Load Reduction		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment]	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment]	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment]
Impervious_Developed	1.25	21.15	1.46	1,839.00	70%	75%	80%	18.50	1.46	1838.12
Pervious_Developed	3.13	14.09	0.36	264.96	70%	75%	80%	30.88	0.90	663.59
<b>Total Pollutant Reduction</b>								<b>49.37</b>	<b>2.36</b>	<b>2,501.70</b>

- NLCD 2011 Land Use and Areas
- Highest % of impervious used from each NLCD 2011 definition per PADEP
- From PADEP PRP Instructions Attachment B - Developed Land Loading Rates for PA Counties
- Per PADEP NPDES BMP Effectiveness Values Table

**Sediment Load Reduction by Proposed BMPs**

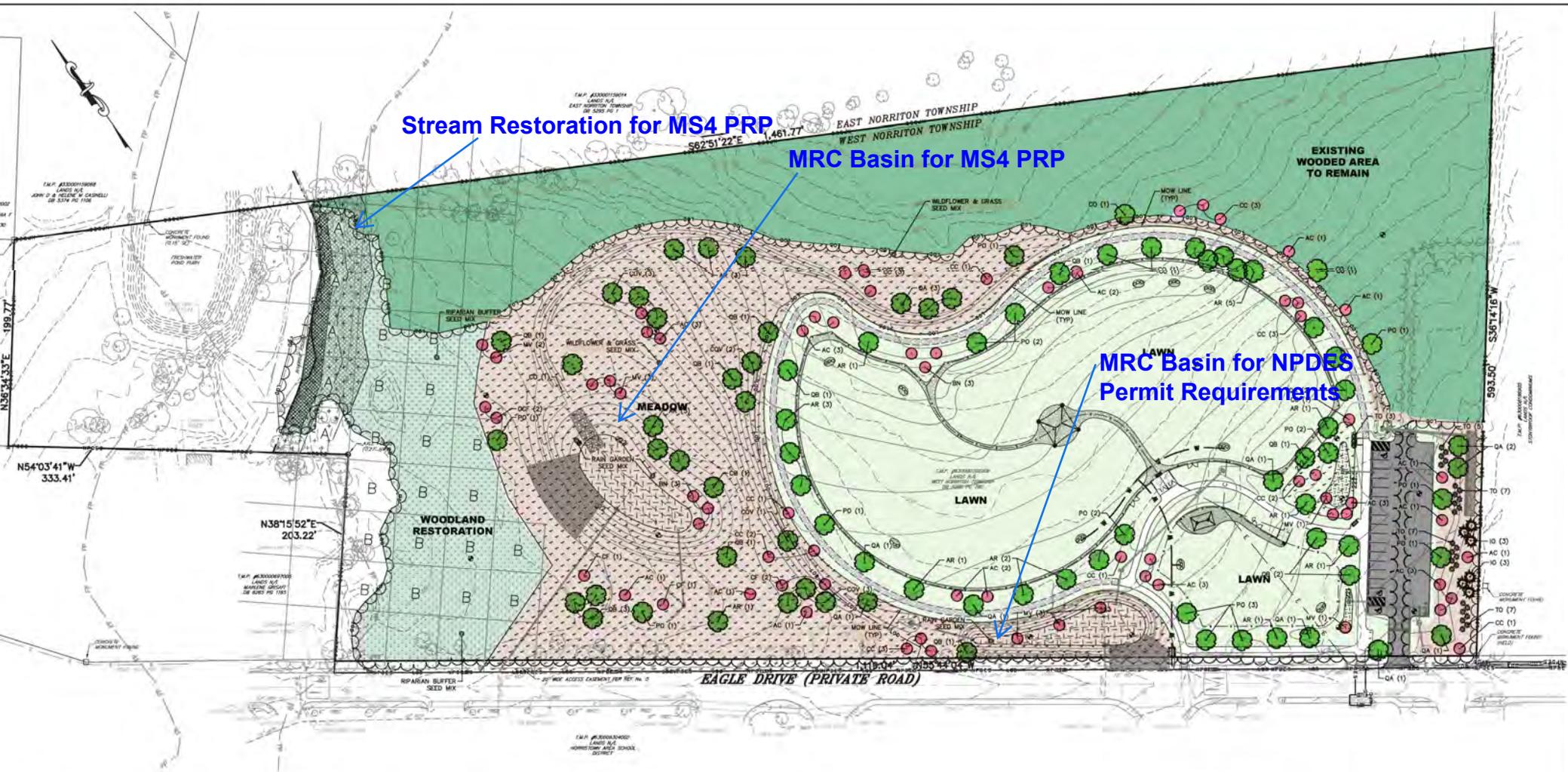
MUNICIPALITY: West Norriton Township  
 MS4 SEWER SHED: Indian Creek, UNT to Schuylkill River, Stony Creek  
 COUNTY: Montgomery

BMP Name	BMP Drainage Area (ac) / Stream Restoration Length (L.F.)	Pollutant Reduction by BMPs								
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)						
Jeffersonville GC Stream Restoration Phase I	944	70.80	64.19	42,366.72	2.92%					
Burnside Village Basin Retrofit (Dry Extended Detention Basin)	87.67	489.82	35.69	34,289.67	2.36%					
Blue Dove Basin Retrofit (Dry Extended Detention Basin)	45.39	561.51	56.96	33,070.94	2.28%					
Alexander Drive Basin Retrofit (Dry Extended Detention Basin)	37.81	472.07	32.84	15,263.94	1.05%					
Norriton Dog Park WRC Basin (bioretention/raingarden A/B with Underdrain)	4.38	49.37	2.36	2,501.70	0.17%					
Centennial Park Stream Restoration	734	55.05	49.91	32,941.92	2.27%					
Norriton Dog Park Stream Restoration	220	16.50	14.96	9,873.60	0.68%					
<b>Total</b>		<b>1715.1</b>	<b>256.912</b>	<b>170,308.49</b>	11.72%					
MS4 Sewershed	Storm Sewershed Area (ac)	Existing Pollutant without Proposed BMPs			Pollutant Load with Proposed BMPs			% Reduction		
		TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	TSS [Sediment] (lbs/yr)	TN	TP	TSS [Sediment]
Indian Creek/Stony Creek/UNT to Schuylkill River	1,603.92	34,449.21	2,309.91	1,453,262.80	32,734.09	2,053.00	1,282,954.31	4.98%	11.12%	11.72%
Total	1,594.79	34,449.21	2,309.91	1,453,262.80	32,734.09	2,053.00	1,282,954.31	4.98%	11.12%	11.72%

Stream Restoration for MS4 PRP

MRC Basin for MS4 PRP

MRC Basin for NPDES Permit Requirements

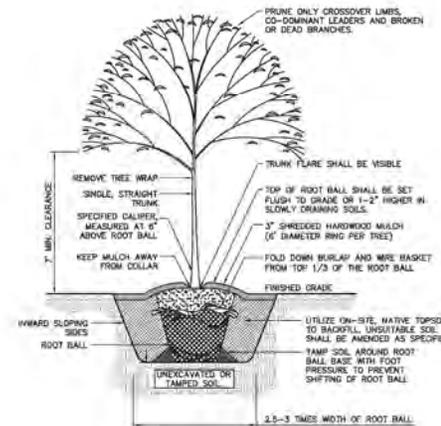


**SCHEDULE**

QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	NOTES
23	ACER RUBRUM OCTOBER GLORY	RED MAPLE	2 1/2" - 3" CAL	B&B	
7	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" - 3" CAL	B&B	
9	QUERCUS	SHAGBARK HICKORY	2 1/2" - 3" CAL	B&B	
15	PLATANUS X ACERFOLIA EXCLAMATION	EXCLAMATION LONDON PLANTREE	2 1/2" - 3" CAL	B&B	
14	QUERCUS ALBA	WHITE OAK	2 1/2" - 3" CAL	B&B	
12	SAURURUS BICOLOR	SWAMP WHITE OAK	2 1/2" - 3" CAL	B&B	
<b>DRINKING WATER TREES</b>					
27	AMELANCHIER CANADENSIS	SMOKED BERRY	8" MIN HT	B&B	MULTI-STEM
5	BETULA NERA	RED BIRCH	8" MIN HT	B&B	MULTI-STEM
20	CERCIS CANADENSIS	RED BUD	8" MIN HT	B&B	MULTI-STEM
4	CORNUS LORNA 'CHOROE CHEE'	FLOWERING DOGWOOD	2 1/2" CAL	B&B	
10	MANGNOLIA VITIFORMIS	SWEETWY MAGNOLIA	8" MIN HT	B&B	MULTI-STEM
<b>SHRUB TREES</b>					
6	LEX OPACIA	AMERICAN HOLLY	8-10" MIN HT	B&B	
26	THUJA OCCIDENTALIS GREEN GIANT	GREEN GIANT ARBORVITAE	8-12" MIN HT	B&B	6" O.C. SPACING

**GENERAL LANDSCAPE NOTES**

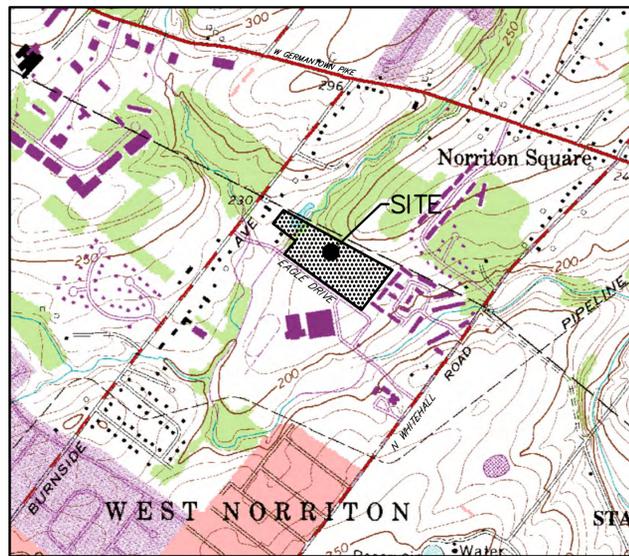
- PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED INCLUDING ALL LABOR, MATERIALS, PLANTS EQUIPMENT, INCIDENTALS AND CLEAN UP.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.
- PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, WELL DEVELOPED BRANCHES, BE DENSELY FOLIATED, HAVE VIGOROUS ROOT SYSTEMS AND BE FREE OF DEFECTS AND INJURIES.
- ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE WELFARE OF THE PLANT MATERIAL SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIAL.
- ALL PLANT MATERIAL SHALL BE QUANTIFIED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISIONS SHALL BE MADE FOR A GUARANTEE OF AT LEAST ONE (1) YEAR FOR TREES AND SHRUBS. REPLACEMENT SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCESSFUL PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
- INsofar as it is PRACTICABLE, PLANT MATERIALS SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE (3) DAY PERIOD AFTER DELIVERY.
- QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE 1990 "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN INC., OR LATEST EDITION.
- ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK FILLING PROCEDURES, NOTHING BUT SUITABLE TOPSOIL, FREE OF DRY SOIL, STIFF CLAY, LITTER, ETC., SHALL BE USED FOR PLANTING.
- PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WHEN THE WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTING OPERATIONS SHALL OCCUR BETWEEN APRIL 1, THROUGH JUNE 15 AND SEPTEMBER 1 THROUGH NOVEMBER 1 OF EACH CALENDAR YEAR. IF FAVORABLE PLANTING CONDITIONS EXTEND BEYOND DATES INDICATED HEREIN, AN EXTENSION MAY BE GRANTED BY THE LANDSCAPE ARCHITECT RESPONSIBLE FOR THESE PLANS.
- SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH A LEVEL THAT AFTER SETTLEMENT, A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANT IN THE CENTER OF THE PLANTING PIT.
- EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE NATURAL CHARACTER OF THE PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
- LANDSCAPING CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO PLACEMENT OF LANDSCAPE MATERIAL. CONTRACTOR SHALL NOT PLACE LANDSCAPING MATERIAL ON TOP OF UTILITY PIPING.
- PLAN QUANTITIES SUPERSEDE PLANT LIST.
- THE LANDSCAPE PLAN IS INTENDED FOR LANDSCAPE PURPOSES ONLY.



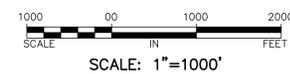
**TREE PLANTING DETAIL**  
NOT TO SCALE



VANIA ONE CALL SYSTEM, INC.  
LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREIN HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS. THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY SLOMRE & ASSOCIATES INC.  
ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.A.C. 202, NO. 287 DECEMBER 10, 1974, AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50. SLOMRE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.  
811  
IF YOU DO ANYWHERE IN PENNSYLVANIA CALL 1-800-242-1178  
IF YOU ARE IN ANOTHER STATE YOU MUST BE CONTACTED DIRECTLY  
FOR REQUIRED SERVICE INFORMATION VISIT  
WWW.PAONECALL.COM  
SERIAL NO. 20223342712



U.S.G.S. LOCATION MAP



**FLOODPLAIN SEED MIX**

SEED MIX SHALL BE ERNMX-154, AS PROVIDED BY ERNST CONSERVATION SEEDS, OR APPROVED EQUAL CONSISTING OF THE FOLLOWING SPECIES AT 20 LBS/ACRE:

- 23% CAREX VULPINOIDEA, PA ECOTYPE
- 20.5% PANICUM CLANDESTINUM "TOGA"
- 20% ELYMUS VIRGINICUS, PA ECOTYPE
- 10% ANDROPOGON GERARDII "NIAGRA"
- 4.2% CAREX LUPULINA, PA ECOTYPE
- 4% CAREX LURIDA, PA ECOTYPE
- 3% JUNCUS EFFLUSUS, PA ECOTYPE
- 3% VERBENA HASTATA, PA ECOTYPE
- 2% HELIOPSIS HELIANTHOIDES, PA ECOTYPE
- 1% ASCLEPIAS INCARNATA, PA ECOTYPE
- 1% CINNA ARUNDINACEA, PA ECOTYPE
- 0.6% EUPATORIUM PERFORIATUM, PA ECOTYPE
- 0.4% ASTER NOVAE-ANGLIAE, PA ECOTYPE
- 0.4% ASTER UMBELLATUS, PA ECOTYPE
- 0.3% HELENIUM AUTUMNALE, PA ECOTYPE
- 0.2% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE
- 0.3% ONOCLEA SENSIBILIS
- 0.3% PYCNANTHEMUM TENUIFOLIUM
- 0.3% SCORPUS ATROVIRENS, PA ECOTYPE
- 0.3% SCORPUS CYRILLINUS, PA ECOTYPE
- 0.2% CHELONE GLABRA, PA ECOTYPE
- 0.2% PENTHURUM SEDOIDES, PA ECOTYPE
- 0.2% SOLIDAGO RIGIOSA, PA ECOTYPE
- 0.1% CAREX STRICTA, PA ECOTYPE
- 0.1% LOBELIA SIPHILITICA, PA ECOTYPE
- FOX SEDGE, PA ECOTYPE
- DEER TONGUE "TOGA"
- VIRGINIA WILD RYE, PA ECOTYPE
- BIG BLUESTEM "NIAGRA"
- HOP SEDGE, PA ECOTYPE
- LURID SEDGE, PA ECOTYPE
- SOFT RUSH
- BLUE VERVAIN, PA ECOTYPE
- OKEYE SUNFLOWER, PA ECOTYPE
- SWAMP MILKWEED, PA ECOTYPE
- WOOD REDGRASS, PA ECOTYPE
- BONESET, PA ECOTYPE
- NEW ENGLAND ASTER, PA ECOTYPE
- FLAT TOPPED WHITE ASTER, PA ECOTYPE
- COMMON SNEEZEWEED, PA ECOTYPE
- WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE
- SENSITIVE FERN
- NARROWLEAF MOUNTAIN MINT
- GREEN SULRUSH, PA ECOTYPE
- WOOLGRASS, PA ECOTYPE
- TURTLEHEAD, PA ECOTYPE
- DITCH STONECROP, PA ECOTYPE
- WRINKLELEAF GOLDENROD, PA ECOTYPE
- TUSSOCK SEDGE, PA ECOTYPE
- GREAT BLUE LOBELIA, PA ECOTYPE

COVER CROP SHALL CONSIST OF GRAIN RYE AT 30 LBS/ACRE

**GENERAL SURVEY NOTES:**

- PROPERTY KNOWN AS TAX PARCEL #630000702009 AS SHOWN ON THE TAX MAP OF THE TOWNSHIP OF WEST NORRITON, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA. CONTAINING (67,852 IN SQ FT OR 15.10 ACRES), MORE OR LESS.
- THIS PLAN IS BASED ON A FIELD SURVEY PERFORMED BY GILMORE & ASSOCIATES, INC. ON NOVEMBER 11, 2022, AND THE REFERENCED INFORMATION LISTED HEREON. IT WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT.
- SUBJECT TO COVENANTS, RESTRICTIONS AND/OR EASEMENTS EITHER WRITTEN OR IMPLIED.
- VERTICAL DATUM IS NAVD83 AND WAS ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE KEYNET-GPS VIRTUAL REFERENCE STATION SYSTEM.
- HORIZONTAL DATUM IS BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (NAD 83) ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE KEYNET-GPS VIRTUAL REFERENCE STATION SYSTEM.
- THE SITE IS LOCATED PARTIALLY WITHIN ZONE X (NO BASE FLOOD ELEVATIONS DETERMINED) AND PARTIALLY WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF 0.2% ANNUAL CHANCE FLOODPLAIN) PER FLOOD INSURANCE RATE MAP OF MONTGOMERY COUNTY, PANEL No. 283 OF 451, MAP No. 4209102036, MAP EFFECTIVE DATE: MARCH 2, 2016.
- NO WETLANDS HAVE BEEN DELINEATED BY GILMORE & ASSOCIATES INC. ACCORDING TO THE NATIONAL WETLANDS INVENTORY [US DEPT. OF INTERIOR]. WETLANDS DO EXIST ON THIS SITE:  
- R50BH: TRIBUTARY TO WEST BRANCH STONEY CREEK  
- PUBH: FRESHWATER POND BEING USED FOR STORMWATER MANAGEMENT.
- EXISTING TREE LOCATIONS AS SHOWN BASED ON WEST NORRITON TOWNSHIP GIS TREE INVENTORY DATA.

**REFERENCES:**

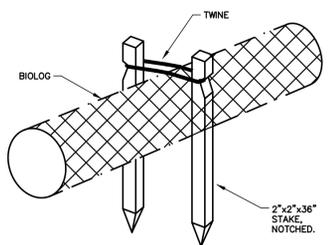
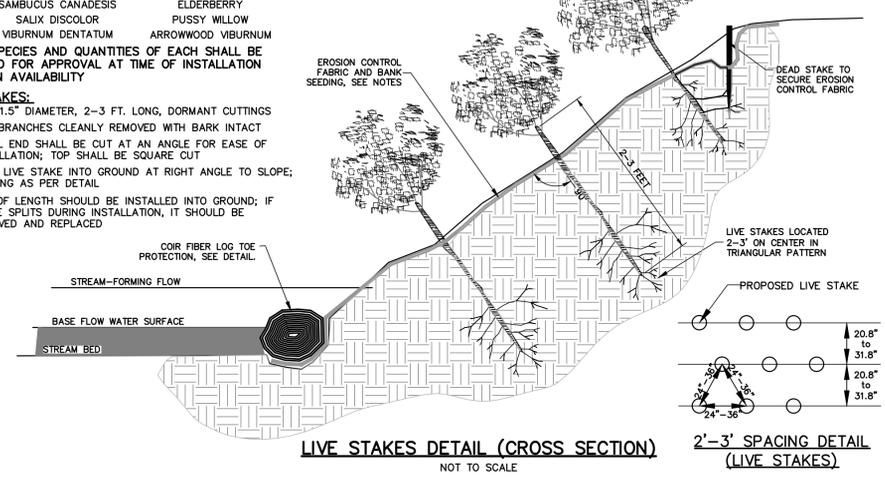
- TAX MAP FOR THE TOWNSHIP OF WEST NORRITON, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA.
- PLAN ENTITLED "PLAN OF SUBDIVISION PREPARED FOR BURNSIDE RESERVE" DATED JULY 2, 1999, LAST REVISED SEPTEMBER 14, 2000, PREPARED BY URWILER & WALTER, INC. OR TELFORD PA, AND RECORDED IN THE MONTGOMERY COUNTY RECORDER OF DEEDS IN PLAN BOOK A059 PG 354.
- PLAN ENTITLED "SUBDIVISION AND OPEN SPACE PLAN PREPARED FOR GWYNEDD GLEN, INC. EAST NORRITON TWP & WEST NORRITON TWP., DATED OCTOBER 9, 1998, PREPARED BY URWILER & WALTER, INC. OF TELFORD, PA, AND RECORDED IN THE MONTGOMERY COUNTY RECORDER OF DEEDS IN PLAN BOOK 059 PAGE 00018.
- PLAN ENTITLED "THE RESERVE AT STONEY CREEK" DATED MARCH 4, 2005, LAST REVISED MARCH 30, 2015, PREPARED BY ROBERT E. BLUE CONSULTING ENGINEERS OF BLUE BELT, PA.
- DEED BOOKS AS NOTED.

**LEGEND**

	EXISTING	PROPOSED
CURB	[Symbol]	[Symbol]
EDGE OF PAVE	[Symbol]	[Symbol]
PROPERTY LINE	[Symbol]	[Symbol]
TOWNSHIP LINE	[Symbol]	[Symbol]
MAJOR CONTOURS	[Symbol]	[Symbol]
MINOR CONTOURS	[Symbol]	[Symbol]
SPOT ELEVATION	[Symbol]	[Symbol]
FENCE LINE	[Symbol]	[Symbol]
TREE LINE	[Symbol]	[Symbol]
WATERS OF US	[Symbol]	[Symbol]
ORDINARY HIGH WATER LINE	[Symbol]	[Symbol]
100-YR FLOODPLAIN	[Symbol]	[Symbol]
STORM LINE	[Symbol]	[Symbol]
SOIL BOUNDARY	[Symbol]	[Symbol]
LIMIT OF DISTURBANCE	[Symbol]	[Symbol]
COMPOST FILTER SOCK-SIZE	[Symbol]	[Symbol]
TREE PROTECTION FENCE	[Symbol]	[Symbol]
TOPSOIL STOCKPILE	[Symbol]	[Symbol]
JUTE NETTING W/ LIVE STAKES	[Symbol]	[Symbol]
COIR FIBER LOG/BIOLOG	[Symbol]	[Symbol]
ENDWALL	[Symbol]	[Symbol]
CONIFEROUS TREE	[Symbol]	[Symbol]
DECIDUOUS SHADE TREE	[Symbol]	[Symbol]

- LIVE STAKES SHALL CONSIST OF THE FOLLOWING SPECIES, CLUSTERED BY SPECIES IN GROUPS OF 15-25:**
- | KEY | BOTANICAL NAME         | COMMON NAME        |
|-----|------------------------|--------------------|
| CA  | CORNUS AMOMUM          | SILKY DOGWOOD      |
| CS  | CORNUS SERICEA         | RED TWIG DOGWOOD   |
| PH  | PHYSCARPUS OPULIFOLIUS | NINEBARK           |
| SC  | SAMBUCUS CANADENSIS    | ELDERBERRY         |
| SD  | SALIX DISCOLOR         | PUSSY WILLOW       |
| VD  | VIBURNUM DENTATUM      | ARROWWOOD VIBURNUM |
- \*NOTE: SPECIES AND QUANTITIES OF EACH SHALL BE SUBMITTED FOR APPROVAL AT TIME OF INSTALLATION BASED ON AVAILABILITY**

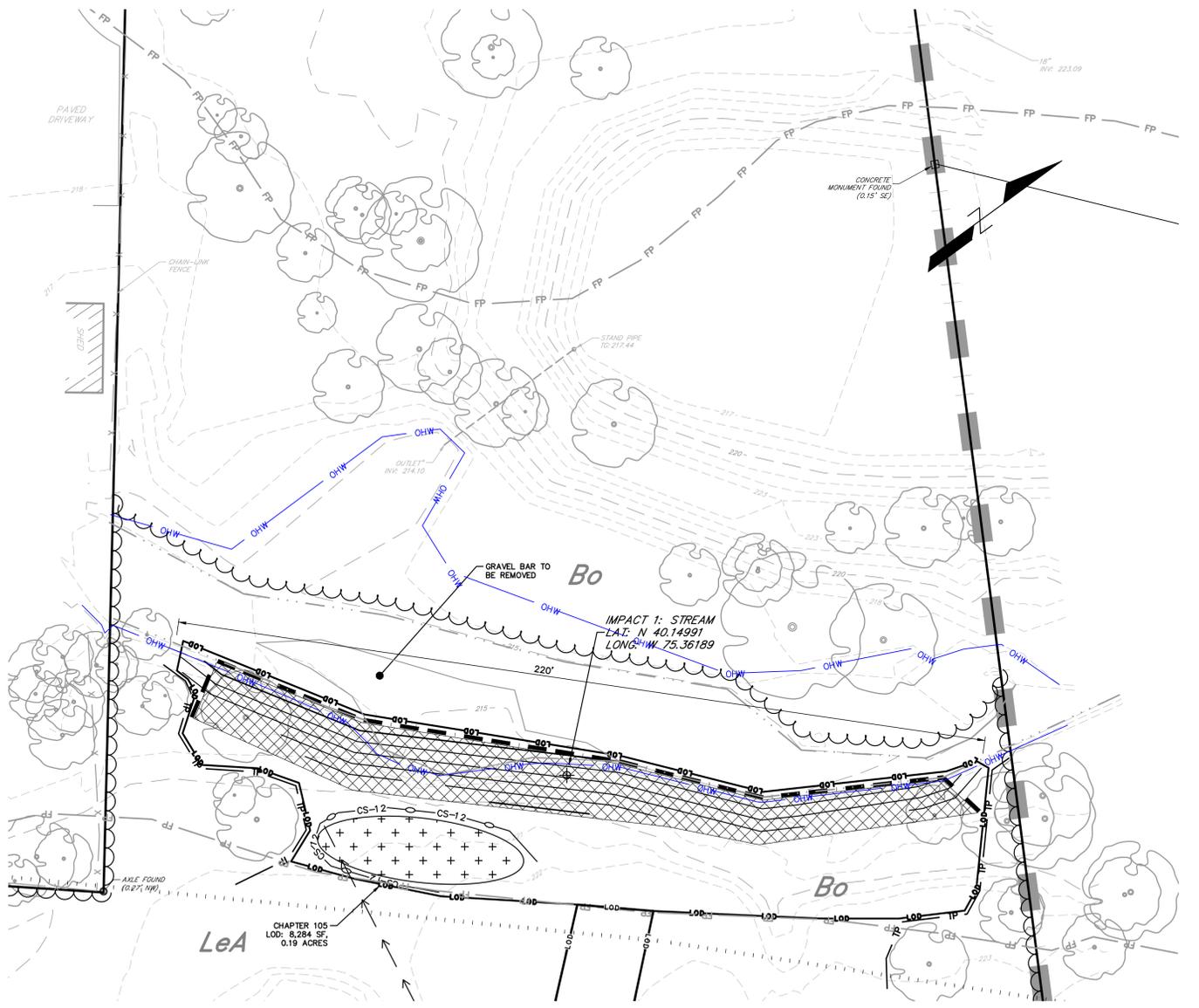
- LIVE STAKES:**
- 0.5"-1.5" DIAMETER, 2-3 FT. LONG, DORMANT CUTTINGS
  - SIDE BRANCHES CLEANLY REMOVED WITH BARK INTACT
  - BASAL END SHALL BE CUT AT AN ANGLE FOR EASE OF INSTALLATION; TOP SHALL BE SQUARE CUT
  - TAMP LIVE STAKE INTO GROUND AT RIGHT ANGLE TO SLOPE; SPACING AS PER DETAIL
  - 4/5 OF LENGTH SHOULD BE INSTALLED INTO GROUND; IF STAKE SPLITS DURING INSTALLATION, IT SHOULD BE REMOVED AND REPLACED



**COIR-FIBER LOG (BIOLOG) TIE-DOWN DETAIL**

- NOTES:**
- DRIVE STAKES THRU NETTING WITH NOTCHES ABOVE LOG.
  - TIE TWINE BETWEEN STAKES OVER THE LOG, THEN DRIVE THE STAKES IN UNTIL LOG IS SECURE.
  - STAKES SHALL BE A MAXIMUM OF 10' ON CENTER. ADDITIONAL STAKES SHALL BE INSTALLED ON STREAM SIDE OF LOG, MIDWAY BETWEEN TIE-DOWN STAKES.
  - AFTER LOG IS SECURE, INSTALL SOFT RUSH (*JUNCUS EFFLUSUS*) PLUGS INTO LOG AT 10' ON CENTER.

I, SHARON K. DOTTS, PE, CPESC, DO HEREBY CERTIFY, PURSUANT TO THE PENALTIES OF 18 PA. C.S.A. SEC. 4904, TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THAT THE INFORMATION CONTAINED IN THE ACCOMPANYING PLANS, SPECIFICATIONS, AND REPORTS HAVE BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE, IS TRUE AND CORRECT, AND IS IN CONFORMANCE WITH CHAPTER 105 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



**WORK WITHIN STREAM CORRIDOR GENERAL NOTES:**

NO WORK MAY COMMENCE FOR THE STREAM CROSSING UNTIL CHAPTER 105 & USACE AUTHORIZATION IS OBTAINED.

- A. STAGING**
- STREAM WORK MAY PROCEED INDEPENDENTLY, EITHER CONCURRENTLY OR SEQUENTIALLY, WITH WORK ON THE DOG PARK.
  - THE CONTRACTOR SHALL ESTABLISH A SCHEDULE FOR CONSTRUCTION ACCESS, LAYDOWN AND MATERIAL STORAGE, AND EQUIPMENT STORAGE AREAS THAT SHALL BE COMPLETED PRIOR TO THE START STREAM CHANNEL OR WETLANDS AREA WORK.
  - THE CONTRACTOR SHALL ESTABLISH A SCHEDULE FOR WORK WITHIN THE STREAM CHANNEL THAT MINIMIZES DISTURBANCE AND MAXIMIZES THE STABILIZATION OF THE STREAM CHANNEL THAT WILL OCCUR EACH DAY POSSIBLE OR PRACTICAL. THE CONTRACTOR SHALL ESTABLISH A SCHEDULE THAT MINIMIZES THE TOTAL TIME TO COMPLETE THE CONSTRUCTION AND STABILIZE THE STREAM CROSSING.
  - THE CONTRACTOR SHALL HAVE ALL MATERIALS AND EQUIPMENT AT THE APPROPRIATE STAGING AREA FOR THE PROPOSED WORK PRIOR TO BEGINNING THE STREAM WORK.
- B. ESC MEASURES FOR CHANNEL WORK**
- NORMAL STREAM FLOW IN MINOR STREAMS THAT ARE DEFINED AS A WIDTH OF EQUAL OR LESS THAN TEN FEET (10') WIDE AT NORMAL FLOW DEPTH IN SWALES, DITCHES, CHANNELS, AND WATERWAYS SHALL BE BYPASS PUMPED PAST THE WORK ZONE AT THE TIME THE CROSSING IS BEING CONSTRUCTED. SHOULD THERE BE BASE FLOW AT THE BEGINNING OF STREAM CROSSING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A BYPASS PIPE OR PIPES OF SUFFICIENT SIZE TO CONVEY THE NORMAL STREAM FLOW OVER THE WORK AREA OR TEMPORARY SAND BAG DAMS SHALL BE INSTALLED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE CONSTRUCTION AREA AT THE STREAM CROSSING AND THE NORMAL FLOW SHALL BE BYPASS PUMPED AROUND THE STREAM CROSSING. WHENEVER POSSIBLE THE WORK SHOULD BE SCHEDULED FOR THE LOW FLOW SEASON.
  - ALL PUMPED WATER FROM THE EXCAVATED AREAS MUST BE FILTERED PRIOR TO BEING DISCHARGED INTO THE WATERS OF THE UNITED STATES. A FILTER BAG, DESILTING DEVICE OR OTHER APPROVED DESILTING DEVICE SHALL BE USED TO FILTER THE PUMPED WATER. THE FILTER BAG OR OTHER APPROVED DEVICE SHALL BE LOCATED IN A WELL-VEGETATED AREA WITH A SLOPE NOT EXCEEDING FIVE PERCENT (5%). SEE "PUMPED WATER FILTER BAG DETAIL" OF ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.
  - ALL IN-CHANNEL EXCAVATIONS SHALL BE ACCOMPLISHED FROM THE TOP OF THE BANKS WHERE POSSIBLE. WHERE WORK CAN NOT BE ACCOMPLISHED FROM THE TOP OF BANKS, TEMPORARY DAMS SHALL BE CONSTRUCTED UPSTREAM AND DOWNSTREAM OF WORK AREA BEFORE ANY EQUIPMENT WORKS IN THE CHANNEL. UPON COMPLETION OF THE STREAM CROSSING, ALL DISTURBED AREAS SHALL BE RESTORED TO THE PRECONSTRUCTION CONDITION AND STABILIZED.
  - ALL EXCAVATED CHANNEL MATERIALS THAT WILL BE USED AS BACKFILL SHALL BE PLACED IN A TEMPORARY STOCKPILE OUTSIDE THE STREAM CHANNEL AND ANY WETLAND AREAS. A COMPOST SOCK FILTER DEVICE SHALL BE INSTALLED BETWEEN THE TEMPORARY STOCKPILE AND THE WETLANDS/WATERWAY. TOPSOIL, STREAM BED MATERIAL, AND SUBSOILS SHALL BE STOCKPILED SEPARATELY. ALL EXCAVATED MATERIAL NOT PLANNED TO BE USED FOR BACKFILL OR RESTORATION SHALL BE IMMEDIATELY REMOVED TO AN APPROVED DISPOSAL SITE.
- C. SPECIFIC SEQUENCE OF CONSTRUCTION:**
- WORK ON THE STREAM SHALL TAKE PLACE DURING PERIODS OF LOW OR NO FLOW IN THE WATERWAY.
  - CLEAR & GRUB ACCESS LANE FROM DOG PARK AREA AND WORK ZONE FOR STREAM AS SHOWN ON PLAN. STRIP TOPSOIL AND STOCKPILE AT TOP OS SLOPE WHERE INDICATED.

- REMOVE GRAVEL BAR AND STOCKPILE SEPARATELY FROM TOPSOIL. GRAVEL MAY BE USED TO RE-ESTABLISH BED LOAD AS NEEDED AT COMPLETION OF WORK.
- INSTALL COIR FIBER LOG AT TOP OF SLOPE AS SHOWN ON PLANS. ANCHOR EROSION CONTROL FABRIC (ECF) UNDER LOG, KEEPING IT ROLLED BACK UNTIL GRADING IS COMPLETED. EROSION CONTROL FABRIC SHALL BE WOVEN JUTE NETTING WITH UNIFORM OPEN PLAIN WEAVE MESH:
  - MESH SHALL BE APPROXIMATELY 50% OPEN AREA, WEIGHING APPROXIMATELY 20 oz. PER SQUARE YARD.
  - NETTING SHALL BE UNDYED, FLEXIBLE, NON-TREATED BIODEGRADABLE JUTE OR COIR FIBERS WOVEN INTO DIMENSIONALLY STABLE UNIFORM MESH.
- REGRADE BANK AS SHOWN ON PLANS TO PROVIDE 3:1 SLOPE MINIMUM. DIG ANCHOR TRENCHES) AT TOP OF SLOPE PER MANUFACTURER'S RECOMMENDATIONS.
- RESPREAD TOPSOIL OVER GRADED EMBANKMENT. SEED SLOPE WITH FLOODPLAIN SEED MIX, AS NOTED, AND MULCH WITH 3 TON PER ACRE STRAW MULCH.
- UNROLL JUTE NETTING ALONG SLOPE AND ANCHOR IN TRENCH ALONG TOP OF SLOPE PER DETAIL.
- TAMP LIVE STAKES INTO THE GROUND, USING DEAD BLOW HAMMER, AT RIGHT ANGLE TO THE SLOPE AND DIVERTED DOWNSTREAM.
  - LIVE STAKES SHALL BE STORED IN A DARK AREA AT A CONSTANT TEMPERATURE OF NO GREATER THAN 38°F.
  - LIVE STAKES SHALL BE SHIPPED AND STORED IN SEALED PLASTIC CONTAINERS. THE CONTAINERS SHALL CONTAIN SUFFICIENT MOISTURE TO SUSTAIN 100% MOISTURE.
  - LIVE STAKES SHALL BE INSTALLED IMMEDIATELY AFTER DELIVERY WHILE STILL DORMANT.
  - PLANTING SHALL OCCUR DURING THE GROWING SEASON AFTER THE AVERAGE TEMPERATURE IS NO LESS THAN 44°F AND NO GREATER THAN AN AVERAGE OF 70°F.
  - ALL PLANTINGS SHALL BE CORRECTLY WATERED AFTER INSTALLATION.
- LIVE STAKES SHALL BE INSTALLED AT TRIANGULAR SPACING OF 2' TO 3' ON CENTER. STAKES SHOULD BE PLACED IN SPECIES GROUPS OF 15-25 PER GROUP.
- STAKES SHALL BE ORIENTED WITH BUDS UPWARD, BASAL END DOWNWARD. IF STAKE SPLITS DURING INSTALLATION, IT SHALL BE REMOVED AND REPLACED. AN IRON BAR MAY BE USED TO MAKE PILOT HOLE IN FIRM SOIL.
- 4/5 OF THE LENGTH OF THE LIVE STAKE SHALL BE INSTALLED INTO THE GROUND. SOIL SHALL BE FIRMLY PRESSED AROUND STAKE AFTER INSTALLATION.
- RESERVED GRAVEL AND/OR BED MATERIAL SHALL BE USED TO RESTORE ANY AREAS OF THE STREAM BED DISTURBED DURING THE WORK. ALL OTHER DISTURBED AREAS SHALL BE SCARIFIED TO A DEPTH 6" AND STABILIZED WITH SEED AND MULCH.
- UPON STABILIZATION OF THE STREAM BED AND BANKS, TEMPORARY PUMP, FILTER BAG, AND COFFERDAMS (IF USED) SHALL BE REMOVED. DISTURBED AREAS FOR THIS REMOVAL SHALL BE RESTORED WITH FLOODPLAIN WILDLIFE SEED MIX.
- BEFORE ANY TEMPORARY EROSION CONTROL MEASURE CAN BE REMOVED, THE DISTURBED AREA TO THAT CONTROL MUST ACHIEVE FINAL STABILIZATION, DEFINED AS UNIFORM VEGETATIVE COVERAGE OR DENSITY OF 70% ACROSS THE DISTURBED AREA.
- AS DISTURBED AREAS ARE STABILIZED WORKING FROM LOW AREAS TO HIGH AREAS, REMOVE THE EROSION AND SEDIMENT CONTROLS. ALL AREAS DISTURBED DURING THE REMOVAL OF SUCH CONTROLS MUST BE RESTORED AND STABILIZED IMMEDIATELY.

PENNSYLVANIA ONE CALL SYSTEM, INC.  
925 Irwin Run Road  
West Mifflin, Pennsylvania  
15122 • 1076

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776  
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH

SERIAL NO. 20223342712

REV.	DATE	BY	DESCRIPTION
1	09/26/23	BMS	RESPONSE TO WCD LTR DATED 7-28-23

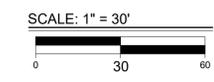
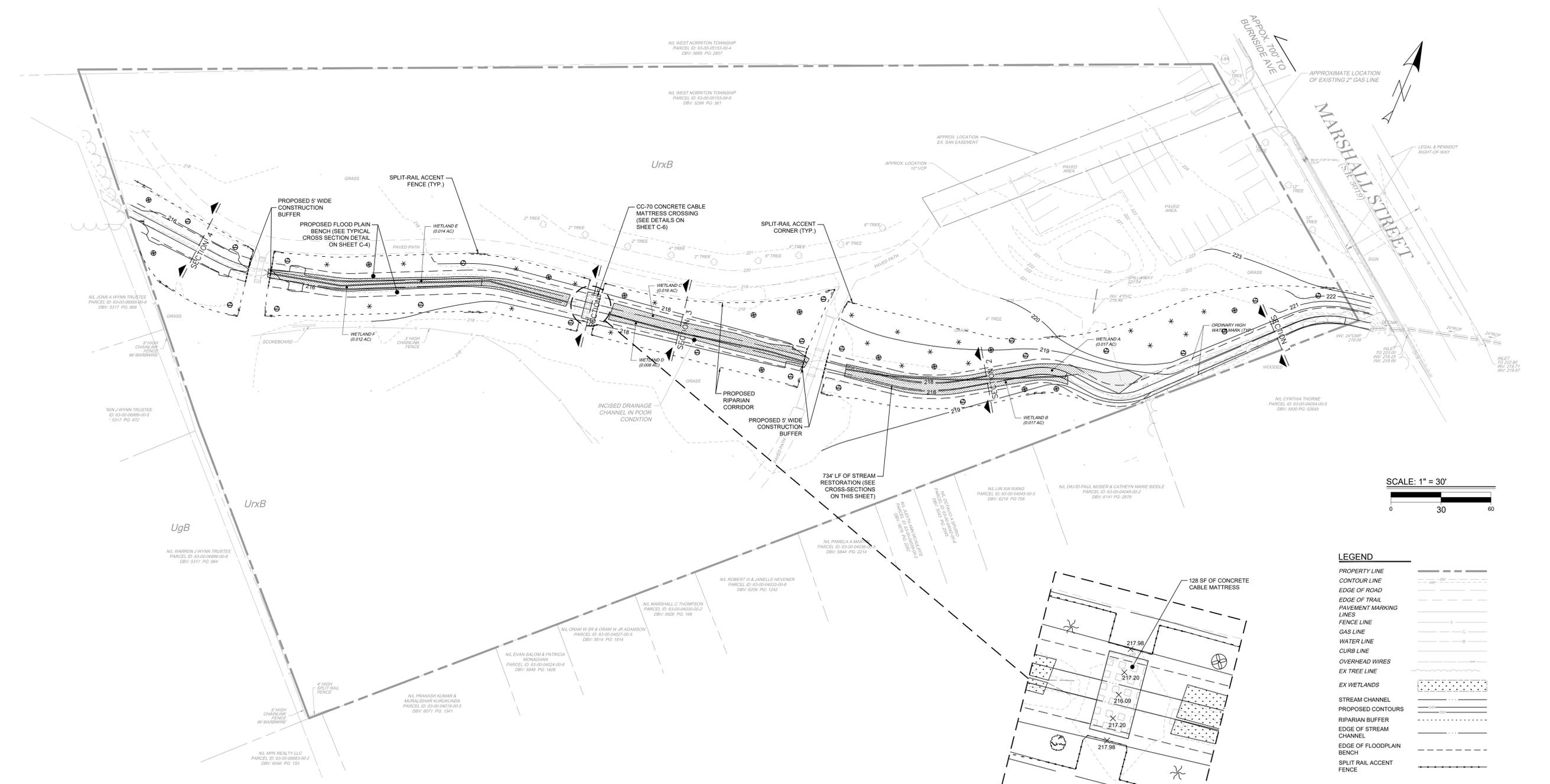
LAND DEVELOPMENT PLANS  
**VAN LANDEGHEM DOG PARK**  
WEST NORRITON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA  
**STREAMBANK STABILIZATION PLAN**

**GILMORE & ASSOCIATES, INC.**  
ENGINEERS & CONSULTING SERVICES

PROJECT No.: 21-10070  
OWNERS INFO: WEST NORRITON TOWNSHIP  
1630 W. MARSHALL STREET  
JEFFERSONVILLE, PA 19403  
(610) 631-0450

MUNICIPAL FILE No.: N/A  
TAX MAP PARCEL No.: 63-00-00702-00-9  
TOTAL AREA: 15.10 AC. TOTAL LOTS: 1  
DATE: 6/20/2023 SCALE: 1"=20'  
DRAWN BY: MMI CHECKED BY: SKD  
SHEET NO. OF 18

\\NBI-gilmore\local\SERVER\MUNICIPAL\2021\2110070-Van Landeghem Dog Park\DESIGN\CAD\Production Drawings\2110070-STREAM.dwg Layout: Plan Plotted By: adelta, on Tue Oct 17, 2023 at 10:27am

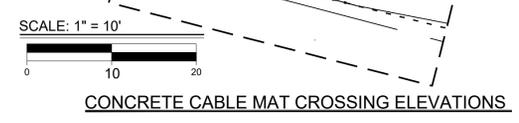
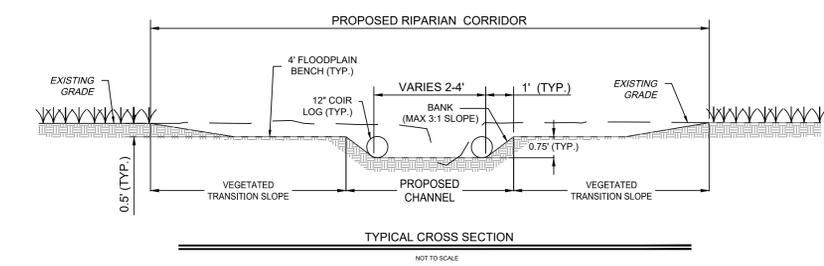


**LEGEND**

- PROPERTY LINE
- CONTOUR LINE
- EDGE OF ROAD
- EDGE OF TRAIL
- PAVEMENT MARKING LINES
- FENCE LINE
- GAS LINE
- WATER LINE
- CURB LINE
- OVERHEAD WIRES
- EX TREE LINE
- EX WETLANDS
- STREAM CHANNEL
- PROPOSED CONTOURS
- RIPARIAN BUFFER
- EDGE OF STREAM CHANNEL
- EDGE OF FLOODPLAIN BENCH
- SPLIT RAIL ACCENT FENCE

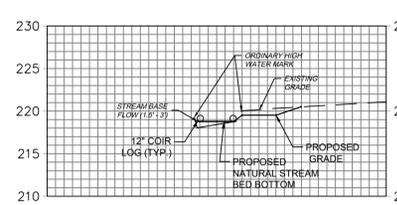
**DEPTH OF FLOW AT X-SECTIONS**

X-SECTION	DEPTH OF FLOW (INCHES)
SECTION 1	18-36
SECTION 2	0-4
SECTION 3	0-4
SECTION 4	0-4
SECTION 5	0-4

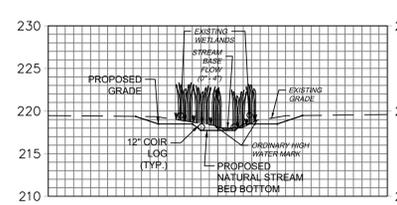


**STREAM RESTORATION QUANTITIES**

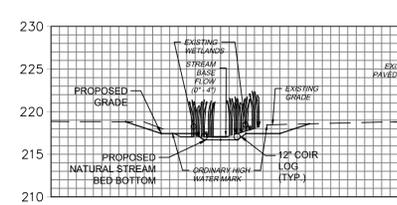
ITEM	QUANTITY
NATURAL STREAM RESTORATION LENGTH	734 LF



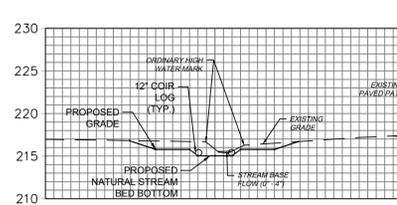
SECTION 1 - STA. 1+13 TO 2+55



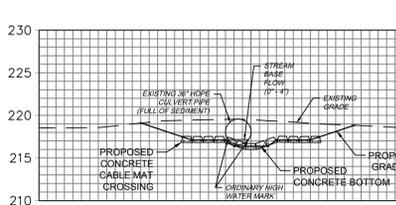
SECTION 2 - STA. 3+07 TO 4+54



SECTION 3 - STA. 4+67 TO 7+93



SECTION 4 - STA. 8+07 TO 8+85



SECTION 5 - STA. 5+98.73

DATE: 1/20/23

REVISIONS:

MARK: COMMENT: 30% DESIGN REVIEW

**ceg**  
 CIVIL ENGINEERING - ENVIRONMENTAL SERVICES  
 SURVEYING - CONSTRUCTION  
 159 East High Street, Suite #500 | Pottstown, PA 19464  
 610.705.4500 (Office) | 610.705.4900 (Fax)

SUBMITTED IN: WEST NORRITON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

PROJECT NAME: WEST NORRITON TOWNSHIP CENTENNIAL PARK STREAM RESTORATION

DESIGNED BY: STA  
 DRAWN BY: STA  
 CHECKED BY: BMF/JC  
 PROJECT NO: 0233-22-0293  
 DATE: 1/20/23  
 SCALE: AS NOTED

SHEET 3 OF 8

**C-3**