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# **POLLUTION REDUCTION PLAN**



**PENN TOWNSHIP COMMISSIONERS**

**PENN TOWNSHIP  
WESTMORELAND COUNTY, PENNSYLVANIA**

**June, 2017**

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# POLLUTION REDUCTION PLAN SUMMARY

## INTRODUCTION

On behalf of Penn Township, The EADS Group, Inc. (EADS) has prepared the following Pollutant Reduction Plan (PRP) to meet the current Department of Environmental Protection requirements. Penn Township's MS4 discharges to several surface waters impaired for nutrients and/or sediment. These include, Turtle Creek, Brush Creek, Bushy Run, Lyons Run, Byers Run, Coal Run and various tributaries.

Historically, Penn Township has been very proactive in adopting and updating their stormwater ordinance so that they conform to current DEP water quality requirements. There are currently in excess of 100 publicly or privately owned stormwater detention facilities located in the township. Recently the township in association with the county conservation district has begun a program to retrofit many of the older facilities in the township. To date three (3) ponds have been retrofitted and seven (7) more are scheduled to be retrofitted in 2017, these will be discussed in more detail in the following report.

The township is also developing a plan to retrofit two additional ponds and construct one new pond and collection system in the Harrison Park Area. These will be discussed in more detail in the following report.

## METHODOLOGY

**Urban Area** – The urbanized areas of Penn Township are part of the Pittsburgh, PA Urban Area. The urbanized areas of the township are shown on the mapping.

**Drainage Basins** – As part of our evaluation it was decided to divide the township into two (2) drainage basins:

- The Turtle Creek Basin receives flow from the northern part of the township and includes discharges to Turtle Creek, Lyons Run and Byers Run.
- The Brush Creek Basin receives flow from the southern part of the township and includes discharges to Brush Creek, Bushy Run, Coal Run and their tributaries.
- Kiskiminetas-Conemaugh River Basin receives flow from a very small portion of the eastern part of the township. The township does not have any facilities that directly discharge into an impaired stream in this basin. Additionally, the impairment is for Appendix A-Metals, pH (4a); therefore, this basin will not be considered further in this plan.

**Sewersheds** – For calculation purposes, the Drainage Areas were divided in 56 sewersheds. The acreage for each sewershed was determined from the GIS mapping. The sewersheds are shown on the attached mapping.

**Calculating Existing Pollutant Loads** – The DEP Simplified Method was used with the loading rates coming from the “Developed Land Loading Rates for PA Counties” table and the impervious and pervious area percentages pulled from the “Statewide MS4 Land Cover Estimates” table.

**Reductions** – A ten percent (10%) reduction in sediment and a five percent (5%) reduction for nutrient (TP) impairments are required. We used the presumptive approach in which it is assumed that a 10% sediment reduction will also accomplish 5% TP reduction.

**Estimated Sediment Reduction** – Using the percentages listed in the “BMP Effectiveness Values” table, the sediment reduction due to the existing (retrofitted) BMPs and proposed BMPs was calculated.

### **EXISTING BMPs**

Penn Township, in conjunction with the Westmoreland Conservation District, has begun to retrofit many of the existing detention ponds in the township to “better control and retain the stormwater runoff” from their tributary areas. In 2016, three (3) basins were retrofitted and are shown on the attached mapping. All three were located in the Brush Creek Basin. However, only two (2), Cortina Marie 1 & 2, are tributary to an impaired stream therefore the third pond located at the intersection of Raymaley Road and Hyland Road is not included in the PRP Plan.

### **PROPOSED BMPs**

To meet the reduction requirements Penn Township proposes the following over the next five years:

- Street Sweeping – The township proposes to increase their street sweeping program to 25 times per year on the affected streets.
- New Wet Ponds/Detention Basins – At this time, construction is underway on three developments in the Urbanized Area that drain to impaired streams. These developments include four (4) new ponds designed to the current standards. These ponds are shown on the attached mapping. One new pond will be located in the Turtle Creek Basin and three will be located in the Brush Creek Basin.
- Retrofits (County Program) – As part of the afore-mentioned retrofit program, seven (7) ponds are scheduled to be retrofitted in 2017. These ponds are shown on the attached mapping. Three ponds are located in the Turtle Creek Basin and four are located in the Brush Creek Basin. The retrofit plans and bid documents are attached under Section E.
- Retrofits (Township Program) – The Harrison Park area of Penn township has experienced numerous instances of flooding over the years and the township, with the assistance of the EADS Group, is developing a plan to alleviate these issues. Part of the proposed solution is to retrofit the Lazar Pond’s and the Berlin Dam’s outfall structures to better control and retain the stormwater runoff from their respective watersheds; thereby, converting both structures to Dry Extended Detention Basins. Both of these structures are directly upstream from Harrison Park and are believed to contribute to the flooding problems. The plan is in the preliminary design phase but it is anticipated the work will be completed during 2017-2018.
- Adella Court – The Adella Court Pond is another proposed facility to help deal with the afore-mentioned flooding in the Harrison Park Area. Currently a substantial amount of runoff from cultivated fields discharges directly onto properties located along Martha Avenue. This project proposes to construct drainage swells along the edges of the fields to collect the water before it leaves the agricultural property. The runoff would then be piped down Damien Court to a new dry extended detention pond located on township property between Adella Court and Berlin Road (see the attached Conceptual Plan in Section E).

## FUNDING SOURCES

- Street Sweeping – Penn Township already has a street sweeping program in place with just an increase in frequency being required. This will be paid for with township general funds.
- New Wet Ponds/Detention Basins – The *Sterling Oaks, Brookhaven 1 & 2 and Sandy Hill Meadows ponds* are being constructed at the developer's expense and will be turned over to the township upon completion.
- Retrofits (County Program) – Penn Township makes no financial contributions to the retrofits of the *Oak Farms Estates, WCIDC 1 & 2, Penntowne, Deerfield Drive A & B and Country Farms ponds*. The fees paid by the Conservation District are recovered from grant monies awarded for the retrofit and are already in place. The Township's contributions are strictly limited to in-kind services during construction via employees and equipment. An example of the township's commitment of in-kind work from a previous year is attached in Section F. These ponds are owned by the township.
- Retrofits (Township Program) – The Township would pay for the engineering and construction of the retrofits on the *Berlin and Lazar ponds* out of their yearly engineering and construction budgets. These ponds are owned by the township.
- Adella Court – This project is in the very early stages of preliminary development and moving forward the township will be exploring funding options through such sources as PENNVEST.

## OPERATION AND MAINTENANCE

Street Sweeping: Streets in urbanized areas

Responsible Party – Penn Township

Frequency – 25 times per year (on average two times per month)

Action - The collection and removal of paper, leaves, and other visible debris that collect in the gutters.

New and Retrofitted Wet Ponds/Extended Detention Basins:

Outlet Structure(s): Check for clogging and excessive debris

Responsible Party – Penn Township

Frequency – Two times per year or after major rain events.

Action – Remove accumulated debris.

Basin/Pond: Check for clogging and excessive debris

Responsible Party – Penn Township

Frequency – Two times per year or after major rain events.

Action – Basin bottoms, riprap or gabion structures. 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 as necessary to sustain the system, but all detritus should be removed from the basin. Vegetated areas should be inspected annually for erosion. Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.

## **CONCLUSION**

- **Turtle Creek Basin** – The existing sediment loading for this basin was calculated to be 538,858.41 lb/yr; therefore, the 10% required reduction would equal 53,885.84 lb/yr. Through a combination of Street Sweeping, the addition of one new pond (Sterling Oaks) and the retrofit of three ponds (Oak Farms Estates and WCIDC 1 & 2) the calculated reduction would be 58,151.05 lb/yr. The proposed reductions in this basin would exceed the required reductions by 4,265.21 lb/yr. See the following summary chart for a detailed breakdown.
- **Brush Creek Basin** – The existing sediment loading for this basin was calculated to be 1,291,340.52 lb/yr; therefore, the 10% required reduction would equal 129,134.05 lb/yr. Through a combination of Street Sweeping, the addition of three new ponds (Brookhaven 1 & 2 and Sandy Hill Meadows) built by developers, one new pond (Adella Court) and collection system built by the township, the retrofit of four ponds (Penntowne, Deerfield Drive A & B and Country Farms) with the county and two ponds in Harrison Park (Berlin and Lazar) the calculated reduction would be 134,129.85 lb/yr. The proposed reductions in this basin would exceed the required reductions by 4,995.80 lb/yr. See the following summary chart for a detailed breakdown.

In conclusion, Penn Township, through a combination of street sweeping, new storm water ponds and retrofitting existing storm water ponds, would exceed the mandatory 10% sediment reduction by **9,261.01 lb/yr**. By exceeding the 10% sediment reduction the township will also meet or exceed the 5% reduction for nutrient (TP).

**Turtle Creek Watershed (Northern Section of Township)  
Summary**

Sewershed	Waterway	Impairment	Percent Reduction	Sediment Loading w/o BMP (lb/yr)	Existing BMP (y/n)	Sediment Removed by Existing BMP (lb/yr)	Final Loading (lb/yr)	Reduction Proposed BMP (lb/yr)	
1	Turtle Creek	Nutrients/ Siltation	10%	15,083.08	n	0.00	15,083.08	190.06	
2	Turtle Creek	Nutrients/ Siltation	10%	14,674.54	n	0.00	14,674.54	3,199.84	
3	Turtle Creek	Nutrients/ Siltation	10%	22,131.55	n	0.00	22,131.55	155.33	
4	Turtle Creek	Nutrients/ Siltation	10%	17,116.38	n	0.00	17,116.38	296.37	
13	Turtle Creek	Nutrients/ Siltation	10%	91,930.69	n	0.00	91,930.69	32,239.91	
<b>Sub-total</b>							<b>160,936.24</b>		
5	Byers Run	Siltation	10%	45,742.29	n	0.00	45,742.29	421.30	
6	Byers Run	Siltation	10%	62,454.83	n	0.00	62,454.83	497.53	
30	Byers Run	Siltation	10%	188,223.84	n	0.00	188,223.84	296.90	
<b>Sub-total</b>							<b>296,420.96</b>		
7	Lyons Run	Siltation	10%	8,809.42	n	0.00	8,809.42	91.42	
8	Lyons Run	Siltation	10%	32,781.74	n	0.00	32,781.74	20,078.47	
9	Lyons Run	Siltation	10%	12,655.32	n	0.00	12,655.32	271.67	
10	Lyons Run	Siltation	10%	9,405.79	n	0.00	9,405.79	144.38	
11	Lyons Run	Siltation	10%	3,751.99	n	0.00	3,751.99	86.55	
12	Lyons Run	Siltation	10%	7,142.39	n	0.00	7,142.39	0.00	
14	Lyons Run	Siltation	10%	6,954.56	n	0.00	6,954.56	181.32	
<b>Sub-total</b>							<b>81,501.21</b>		
<b>Total</b>				<b>538,858.41</b>		<b>0.00</b>	<b>538,858.41</b>		
							<b><u>Required Reduction</u></b>	<b><u>53,885.84</u></b>	
							<b><u>Proposed Reductions</u></b>	<b><u>58,151.05</u></b>	
							<b><u>Difference</u></b>	<b><u>-4,265.21</u></b>	

**Brush Creek Watershed (Southern Section of Township)  
Summary**

<b>Sewershed</b>	<b>Waterway</b>	<b>Impairment</b>	<b>Percent Reduction</b>	<b>Sediment Loading w/o BMP (lb/yr)</b>	<b>Existing BMP (y/n)</b>	<b>Sediment Removed by Existing BMP (lb/yr)</b>	<b>Final Loading (lb/yr)</b>	<b>Reduction Proposed BMP (lb/yr)</b>
31	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	16,750.10	n	0.00	16,750.10	104.64
36	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	29,156.55	n	0.00	29,156.55	437.33
37	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	6,658.72	n	0.00	6,658.72	125.39
38	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	6,564.80	n	0.00	6,564.80	172.50
41	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	4,094.78	n	0.00	4,094.78	106.39
43	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	4,888.38	n	0.00	4,888.38	34.35
52	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	60,318.22	n	0.00	60,318.22	1,827.96
53	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	27,714.92	n	0.00	27,714.92	268.78
55	Brush Creek & its Tributaries	Nutrients/ Siltation	10%	33,223.15	n	0.00	33,223.15	9,573.58
	<b>Sub-total</b>						<b>189,369.62</b>	<b>12,650.92</b>
54	Coal Run	Siltation	10%	14,308.26	n	0.00	14,308.26	8,657.18
56	Coal Run	Siltation	10%	125,938.05	n	0.00	125,938.05	1,741.35
	<b>Sub-total</b>						<b>140,246.32</b>	<b>10,398.53</b>
15	Bushy Run & its Tributaries	Siltation	10%	30,372.77	n	0.00	30,372.77	650.03
16	Bushy Run & its Tributaries	Siltation	10%	56,552.15	y	34,091.89	22,460.26	629.97
17	Bushy Run & its Tributaries	Siltation	10%	4,395.32	n	0.00	4,395.32	72.19
18	Bushy Run & its Tributaries	Siltation	10%	12,030.77	n	0.00	12,030.77	7,185.88

Sewershed	Waterway	Impairment	Percent Reduction	Sediment Loading w/o BMP (lb/yr)	Existing BMP (y/n)	Sediment Removed by Existing BMP (lb/yr)	Final Loading (lb/yr)	Reduction Proposed BMP (lb/yr)
19	Bushy Run & its Tributaries	Siltation	10%	13,411.35	n	0.00	13,411.35	389.15
20	Bushy Run & its Tributaries	Siltation	10%	17,092.90	n	0.00	17,092.90	389.23
21	Bushy Run & its Tributaries	Siltation	10%	47,362.36	n	0.00	47,362.36	5,195.03
22	Bushy Run & its Tributaries	Siltation	10%	4,122.96	n	0.00	4,122.96	4,430.91
23	Bushy Run & its Tributaries	Siltation	10%	2,174.18	n	0.00	2,174.18	40.12
24	Bushy Run & its Tributaries	Siltation	10%	549.41	n	0.00	549.41	104.34
25	Bushy Run & its Tributaries	Siltation	10%	103,153.78	n	0.00	103,153.78	2,335.23
26	Bushy Run & its Tributaries	Siltation	10%	14,317.65	n	0.00	14,317.65	222.20
27	Bushy Run & its Tributaries	Siltation	10%	239,788.99	n	0.00	239,788.99	82,981.07
28	Bushy Run & its Tributaries	Siltation	10%	21,253.43	n	0.00	21,253.43	417.27
29	Bushy Run & its Tributaries	Siltation	10%	17,402.83	n	0.00	17,402.83	353.06
32	Bushy Run & its Tributaries	Siltation	10%	8,264.70	n	0.00	8,264.70	288.77
33	Bushy Run & its Tributaries	Siltation	10%	5,376.75	n	0.00	5,376.75	76.60
34	Bushy Run & its Tributaries	Siltation	10%	6,705.68	n	0.00	6,705.68	152.44
35	Bushy Run & its Tributaries	Siltation	10%	8,025.21	n	0.00	8,025.21	160.11
39	Bushy Run & its Tributaries	Siltation	10%	3,517.19	n	0.00	3,517.19	36.48
40	Bushy Run & its Tributaries	Siltation	10%	3,991.47	n	0.00	3,991.47	76.60
42	Bushy Run & its Tributaries	Siltation	10%	9,147.52	n	0.00	9,147.52	36.48

Sewershed	Waterway	Impairment	Percent Reduction	Sediment Loading w/o BMP (lb/yr)	Existing BMP (y/n)	Sediment Removed by Existing BMP (lb/yr)	Final Loading (lb/yr)	Reduction Proposed BMP (lb/yr)
44	Bushy Run & its Tributaries	Siltation	10%	7,832.68	n	0.00	7,832.68	98.79
45	Bushy Run & its Tributaries	Siltation	10%	47,709.86	n	0.00	47,709.86	489.46
46	Bushy Run & its Tributaries	Siltation	10%	57,218.96	n	0.00	57,218.96	1,171.56
47	Bushy Run & its Tributaries	Siltation	10%	11,110.39	n	0.00	11,110.39	112.32
48	Bushy Run & its Tributaries	Siltation	10%	84,642.73	n	0.00	84,642.73	1,332.06
49	Bushy Run & its Tributaries	Siltation	10%	43,399.06	n	0.00	43,399.06	417.27
50	Bushy Run & its Tributaries	Siltation	10%	29,607.35	n	0.00	29,607.35	433.30
51	Bushy Run & its Tributaries	Siltation	10%	85,286.06	n	0.00	85,286.06	802.47
	<b>Sub-total</b>						<b>961,724.58</b>	<b>111,080.41</b>
<b>Total</b>				<b>1,325,432.40</b>		<b>34,091.89</b>	<b>1,291,340.52</b>	
						<b>Required Reduction</b>	<b><u>129,134.05</u></b>	
						<b>Proposed Reductions</b>		<b><u>134,129.85</u></b>
						<b>Difference</b>	<b><u>-4,995.80</u></b>	



**SECTION A**

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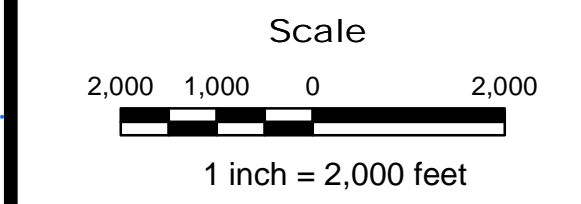
**PUBLIC PARTICIPATION**

**SECTION B**

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**MAPS**





- Legend**
- Ponds
  - New pond to be completed
  - Retrofitted (2016)
  - To be retrofitted this year (2017)
  - NOI Outfalls
  - MS4 Stormshed
  - Stream
  - Stream - Impaired
  - Brush Creek Basin
  - Kiskiminetas - Conemaugh Basin
  - Turtle Creek Basin
  - Urban\_Areas\_2010
  - Municipality Boundaries
  - County Road
  - Private Road
  - State Road
  - Township Road
  - Penn Township Roads

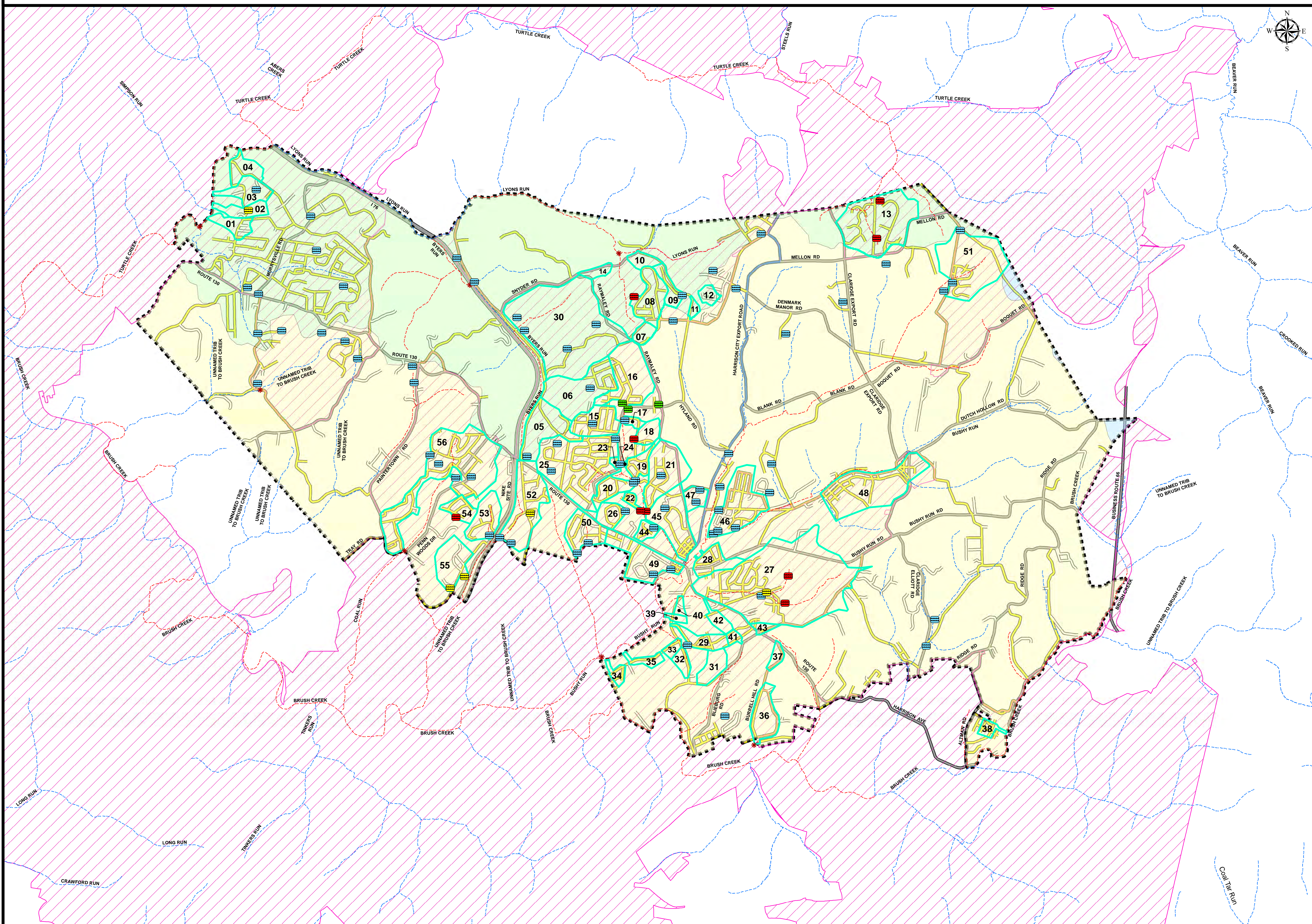
**PENN TOWNSHIP  
 MS4 REPORT AND  
 POLLUTANT REDUCTION PLAN**

**INDEX MAP**

**PENN TOWNSHIP  
 WESTMORELAND COUNTY, PA**

**SHEET 1**

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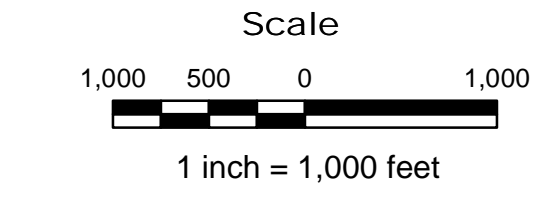
# STORM SEWERSHED MAP



11045 PARKER DRIVE  
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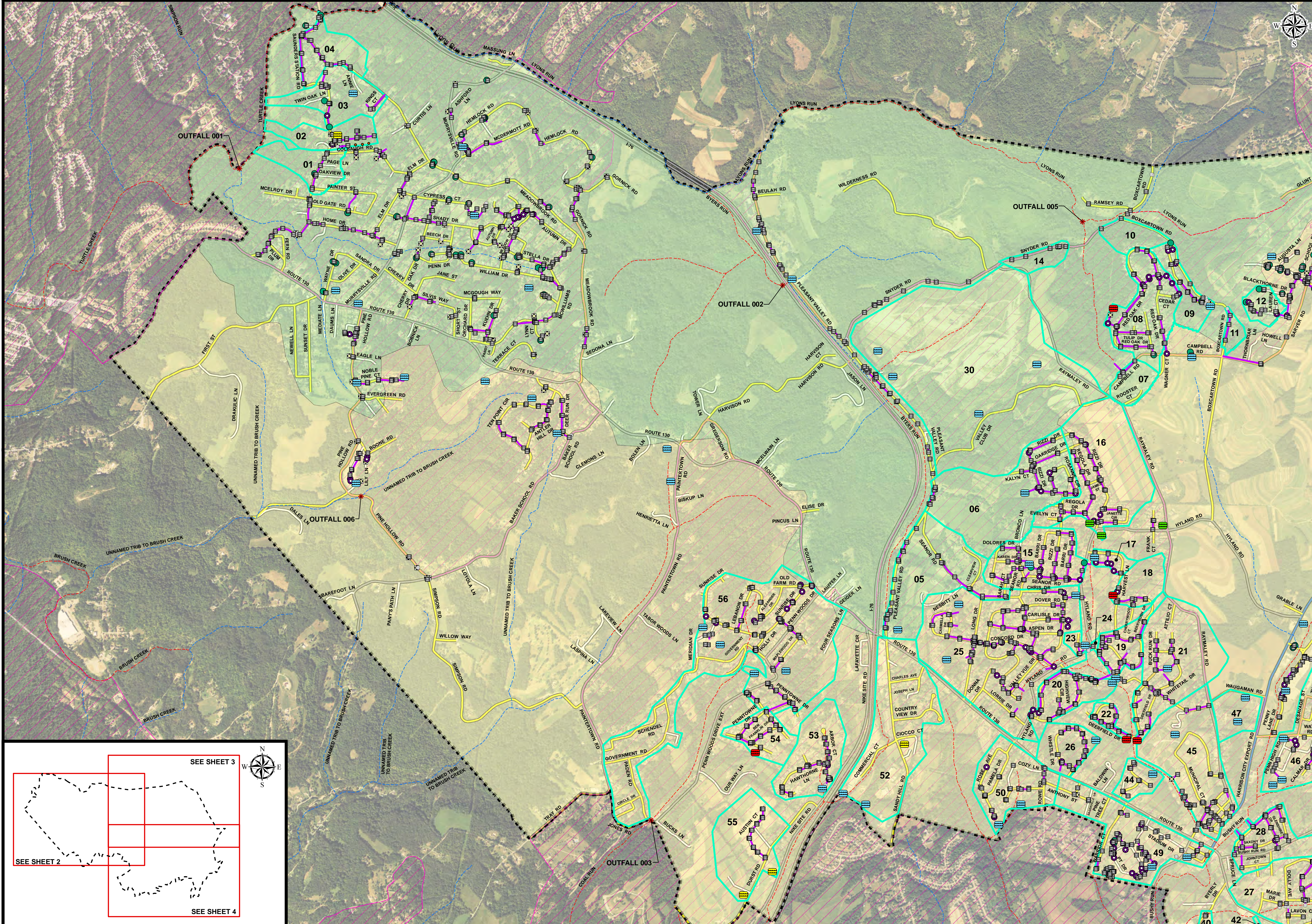


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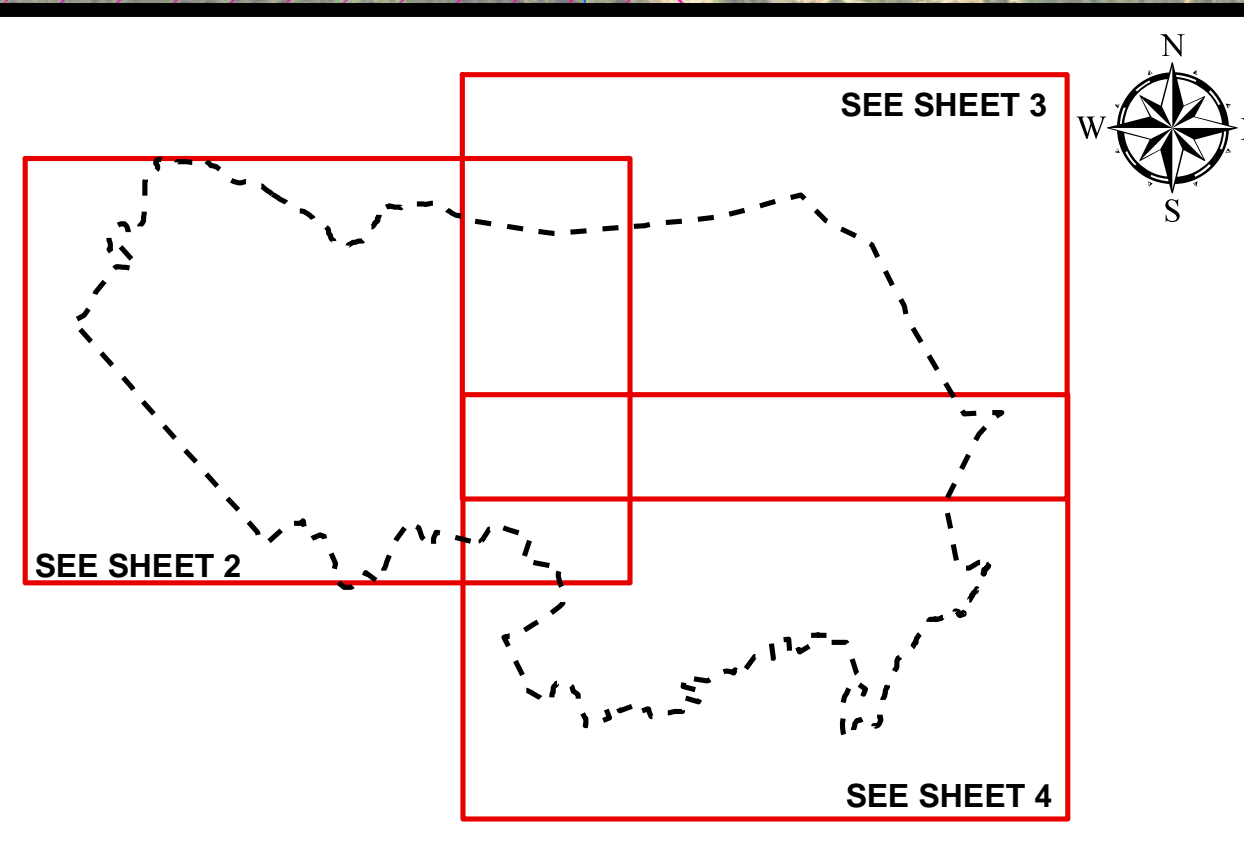


## Legend

- Ponds
- New pond to be completed
- Retrofitted (2016)
- To be retrofitted this year (2017)
- Stormwater Inlets
- Stormwater Manholes
- Stormwater Observation Point
- Stormwater End Pipe
- Stormwater Outfalls
- Stormwater Mains
- Grass Swell
- NOI Outfalls
- MS4 Stormshed
- Stream
- Stream - Impaired
- Brush Creek Basin
- Kiskiminetas - Conemaugh Basin
- Turtle Creek Basin
- Urban\_Areas\_2010
- Municipality Boundaries
- County Road
- Private Road
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PENN TOWNSHIP  
MS4 REPORT AND  
POLLUTANT REDUCTION PLAN

## STORM SEWERSHED MAP

PENN TOWNSHIP  
WESTMORELAND COUNTY, PA

SHEET 2

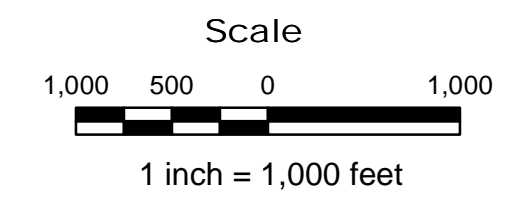
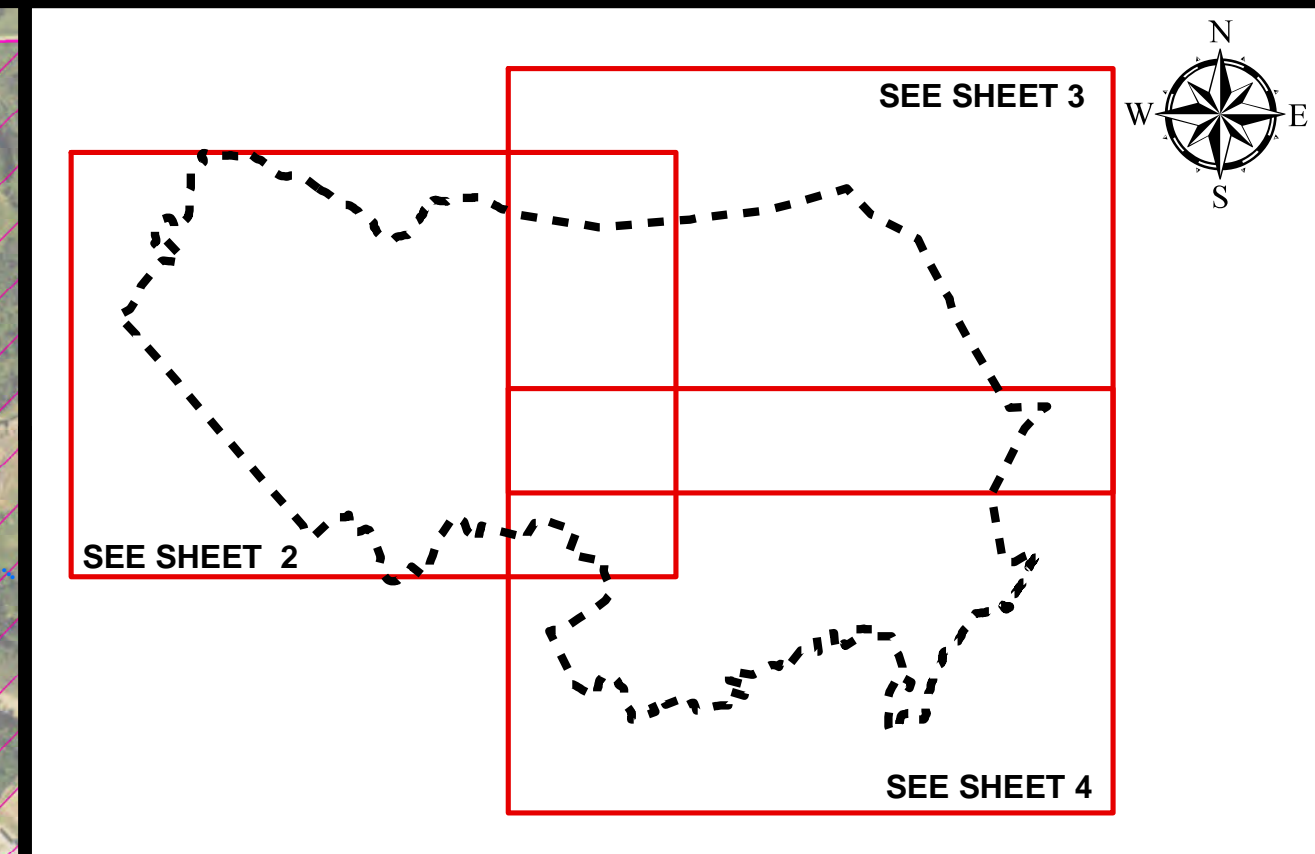


# STORM SEWERSHED MAP





























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Date: 6/12/2017  
Drawn By: HEO Checked By: DRC



## Legend

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-  Stormwater Inlets
-  Stormwater Manholes
-  Stormwater Observation Point
-  Stormwater End Pipe
-  Stormwater Outfalls
-  Stormwater Mains
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-  Grass Swell
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-  Stream
-  Stream - Impaired
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-  Private Road
-  State Road
-  Township Road
-  Penn Township Roads



PENN TOWNSHIP  
MS4 REPORT AND  
POLLUTANT REDUCTION PLAN

## STORM SEWERSHED MAP

PENN TOWNSHIP  
WESTMORELAND COUNTY, PA

SHEET 3

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# STORM SEWERSHED MAP




























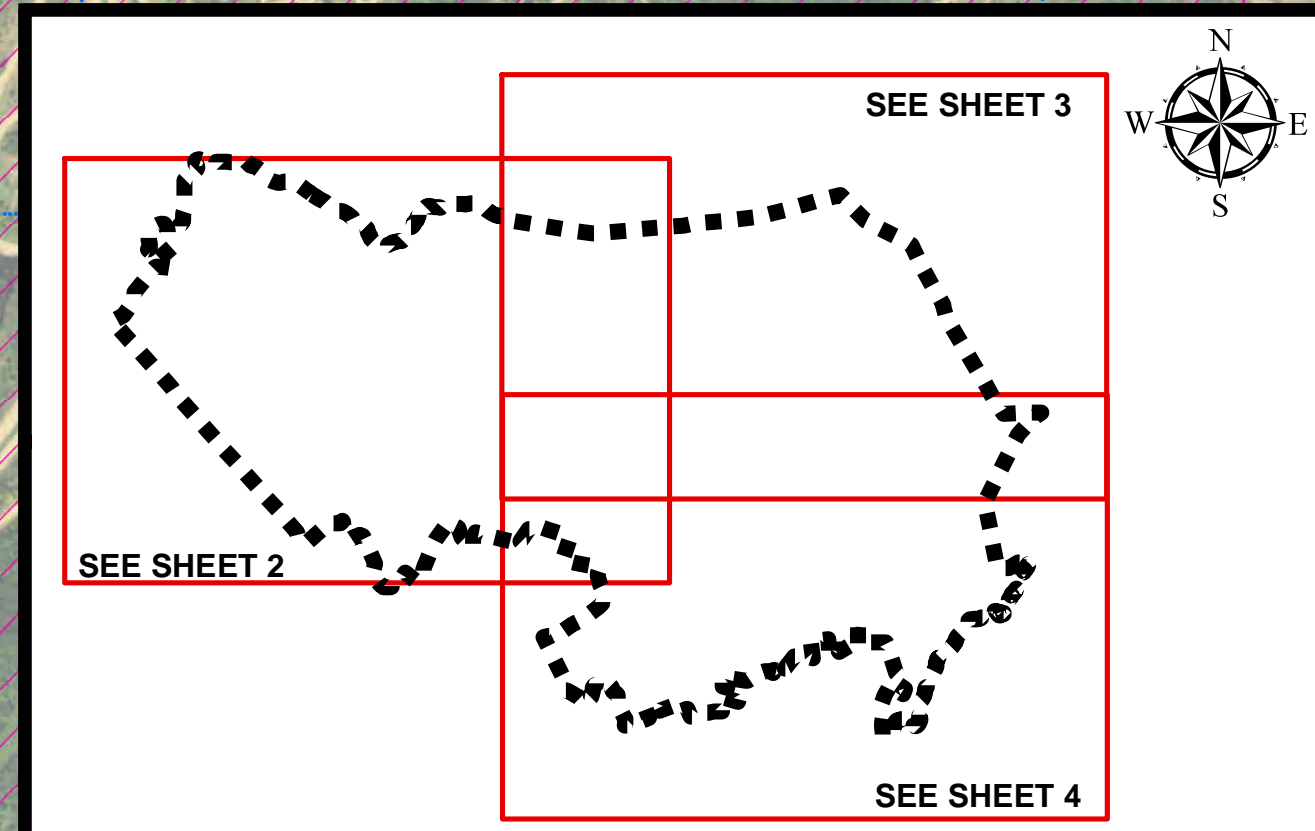
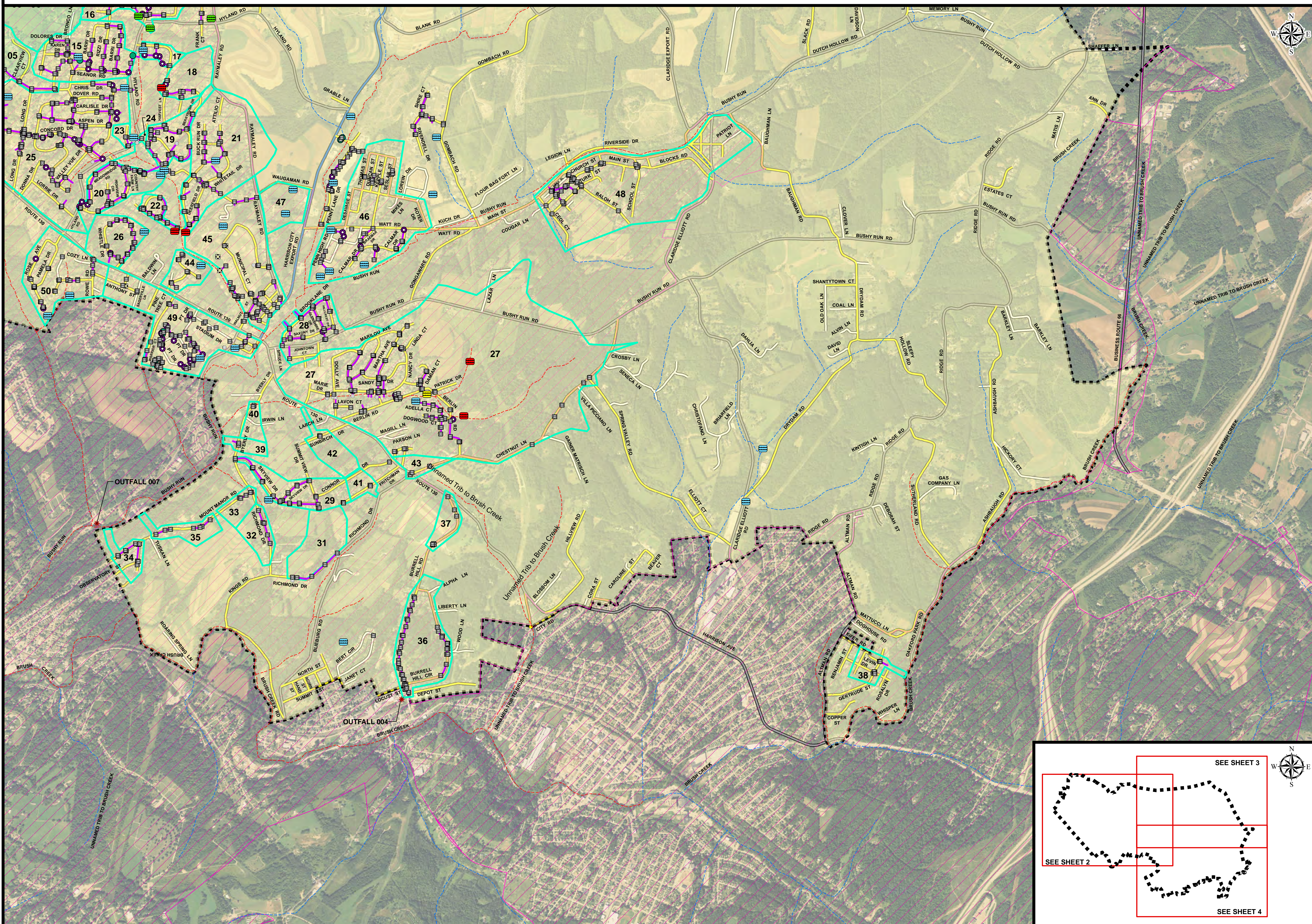
11045 PARKER DRIVE  
N. HUNTINGDON, PA 15642  
Phone: 412-754-0801  
Fax: 412-954-0860  
www.eadsgroup.com

Date: 6/20/2017  
Drawn By: SMC Checked By: DRC



## Legend

-  Ponds
-  New pond to be completed
-  Retrofitted (2016)
-  To be retrofitted this year (2017)
-  Stormwater Inlets
-  Stormwater Manholes
-  Stormwater Observation Point
-  Stormwater End Pipe
-  Stormwater Outfalls
-  Stormwater Mains
-  Grass Swell
-  NOI Outfalls
-  00 MS4 Stormshed
-  Stream
-  Stream - Impaired
-  Brush Creek Basin
-  Kiskiminetas - Conemaugh Basin
-  Turtle Creek Basin
-  Urban\_Areas\_2010
-  Municipality Boundaries
-  County Road
-  Private Road
-  State Road
-  Township Road
-  Penn Township Roads



PENN TOWNSHIP  
MS4 REPORT AND  
POLLUTANT REDUCTION PLAN

## STORM SEWERSHED MAP

PENN TOWNSHIP  
WESTMORELAND COUNTY, PA

SHEET 4

Path: R:\6100 PENN TWP\GIS and Mapping\GIS Map Services\MS4\Report Maps\Storm Sewershed Map - Sheet 4 - 24x36.mxd



**SECTION C**

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**POLLUTANTS OF CONCERN**

Penn Township - Westmoreland County			
MS4 Name	Impaired Stream	Requirements	Other Cause(s) of Impairment
PENN TWP	Bushy Run	Appendix E-Siltation (5)	
	Brush Creek	Appendix A-Metals, pH (4a), Appendix E-Siltation (5)	
	Turtle Creek	Appendix A-Metals, pH (4a), Appendix E-Nutrients, Siltation, Suspended Solids (5)	Other Habitat Alterations (4c)
	Coal Run	Appendix E-Siltation (5)	
	Kiskiminetas-Conemaugh River Watersheds TMDL	Appendix A-Metals, pH (4a)	
	Byers Run	Appendix E-Siltation (5)	
	Unnamed Tributaries to Brush Creek	Appendix E-Nutrients (5)	
	Lyons Run	Appendix E-Siltation (5)	



**SECTION D**

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**EXISTING LOADING FOR POLLUTANTS OF CONCERN**

**Turtle Creek Watershed (Northern Section of Township)**  
**Loading Calculations**

<b>Sewershed</b>	<b>Acres</b>	<b>Impervious Acres (13%)</b>	<b>Pervious Acres (87%)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading w/o BMP (lb/yr)</b>
1	32.12	4.1756		1839	7,678.93
			27.9444	264.96	7,404.15
				Total	15,083.08
2	31.25	4.0625		1839	7,470.94
			27.1875	264.96	7,203.60
				Total	14,674.54
3	47.13	6.1269		1839	11,267.37
			41.0031	264.96	10,864.18
				Total	22,131.55
4	36.45	4.7385		1839	8,714.10
			31.7115	264.96	8,402.28
				Total	17,116.38
5	97.41	12.6633		1839	23,287.81
			84.7467	264.96	22,454.49
				Total	45,742.29
6	133	17.29		1839	31,796.31
			115.71	264.96	30,658.52
				Total	62,454.83
7	18.76	2.4388		1839	4,484.95
			16.3212	264.96	4,324.47
				Total	8,809.42
8	69.81	9.0753		1839	16,689.48
			60.7347	264.96	16,092.27
				Total	32,781.74
9	26.95	3.5035		1839	6,442.94
			23.4465	264.96	6,212.38
				Total	12,655.32
10	20.03	2.6039		1839	4,788.57
			17.4261	264.96	4,617.22
				Total	9,405.79

Sewershed	Acres	Impervious Acres (13%)	Pervious Acres (87%)	Loading Rates (lbs/acre/yr)	Sediment Loading w/o BMP (lb/yr)
11	7.99	1.0387		1839	1,910.17
			6.9513	264.96	1,841.82
				Total	3,751.99
12	15.21	1.9773		1839	3,636.25
			13.2327	264.96	3,506.14
				Total	7,142.39
13	195.77	25.4501		1839	46,802.73
			170.3199	264.96	45,127.96
				Total	91,930.69
14	14.81	1.9253		1839	3,540.63
			12.8847	264.96	3,413.93
				Total	6,954.56
30	400.83	52.1079		1839	95,826.43
			348.7221	264.96	92,397.41
				Total	188,223.84
<b>Total</b>	<b>1147.52</b>	<b>149.1776</b>	<b>998.3424</b>		<b>538,858.41</b>

**Brush Creek Watershed (Southern Section of Township)  
Loading Calculations**

<b>Sewershed</b>	<b>Acres</b>	<b>Impervious Acres (13%)</b>	<b>Pervious Acres (87%)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading w/o BMP (lb/yr)</b>	
15	64.68	8.4084		1839	15,463.05	
				56.2716	264.96	14,909.72
				Total		30,372.77
16	120.43	15.6559		1839	28,791.20	
				104.7741	264.96	27,760.95
				Total		56,552.15
17	9.36	1.2168		1839	2,237.70	
				8.1432	264.96	2,157.62
				Total		4,395.32
18	25.62	3.3306		1839	6,124.97	
				22.2894	264.96	5,905.80
				Total		12,030.77
19	28.56	3.7128		1839	6,827.84	
				24.8472	264.96	6,583.51
				Total		13,411.35
20	36.4	4.732		1839	8,702.15	
				31.668	264.96	8,390.75
				Total		17,092.90
21	100.86	13.1118		1839	24,112.60	
				87.7482	264.96	23,249.76
				Total		47,362.36
22	8.78	1.1414		1839	2,099.03	
				7.6386	264.96	2,023.92
				Total		4,122.96
23	4.63	0.6019		1839	1,106.89	
				4.0281	264.96	1,067.29
				Total		2,174.18
24	1.17	0.1521		1839	279.71	
				1.0179	264.96	269.70
				Total		549.41

<b>Sewershed</b>	<b>Acres</b>	<b>Impervious Acres (13%)</b>	<b>Pervious Acres (87%)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading w/o BMP (lb/yr)</b>
25	219.67	28.5571		1839	52,516.51
			191.1129	264.96	50,637.27
				Total	103,153.78
26	30.49	3.9637		1839	7,289.24
			26.5263	264.96	7,028.41
				Total	14,317.65
27	510.64	66.3832		1839	122,078.70
			444.2568	264.96	117,710.28
				Total	239,788.99
28	45.26	5.8838		1839	10,820.31
			39.3762	264.96	10,433.12
				Total	21,253.43
29	37.06	4.8178		1839	8,859.93
			32.2422	264.96	8,542.89
				Total	17,402.83
31	35.67	4.6371		1839	8,527.63
			31.0329	264.96	8,222.48
				Total	16,750.10
32	17.6	2.288		1839	4,207.63
			15.312	264.96	4,057.07
				Total	8,264.70
33	11.45	1.4885		1839	2,737.35
			9.9615	264.96	2,639.40
				Total	5,376.75
34	14.28	1.8564		1839	3,413.92
			12.4236	264.96	3,291.76
				Total	6,705.68
35	17.09	2.2217		1839	4,085.71
			14.8683	264.96	3,939.50
				Total	8,025.21
36	62.09	8.0717		1839	14,843.86
			54.0183	264.96	14,312.69
				Total	29,156.55

Sewershed	Acres	Impervious Acres (13%)	Pervious Acres (87%)	Loading Rates (lbs/acre/yr)	Sediment Loading w/o BMP (lb/yr)
37	14.18	1.8434	12.3366	1839	3,390.01
				264.96	3,268.71
				Total	6,658.72
38	13.98	1.8174	12.1626	1839	3,342.20
				264.96	3,222.60
				Total	6,564.80
39	7.49	0.9737	6.5163	1839	1,790.63
				264.96	1,726.56
				Total	3,517.19
40	8.5	1.105	7.395	1839	2,032.10
				264.96	1,959.38
				Total	3,991.47
41	8.72	1.1336	7.5864	1839	2,084.69
				264.96	2,010.09
				Total	4,094.78
42	19.48	2.5324	16.9476	1839	4,657.08
				264.96	4,490.44
				Total	9,147.52
43	10.41	1.3533	9.0567	1839	2,488.72
				264.96	2,399.66
				Total	4,888.38
44	16.68	2.1684	14.5116	1839	3,987.69
				264.96	3,844.99
				Total	7,832.68
45	101.6	13.208	88.392	1839	24,289.51
				264.96	23,420.34
				Total	47,709.86
46	121.85	15.8405	106.0095	1839	29,130.68
				264.96	28,088.28
				Total	57,218.96
47	23.66	3.0758	20.5842	1839	5,656.40
				264.96	5,453.99
				Total	11,110.39

Sewershed	Acres	Impervious Acres (13%)	Pervious Acres (87%)	Loading Rates (lbs/acre/yr)	Sediment Loading w/o BMP (lb/yr)
48	180.25	23.4325	156.8175	1839	43,092.37
				264.96	41,550.36
				Total	84,642.73
49	92.42	12.0146	80.4054	1839	22,094.85
				264.96	21,304.21
				Total	43,399.06
50	63.05	8.1965	54.8535	1839	15,073.36
				264.96	14,533.98
				Total	29,607.35
51	181.62	23.6106	158.0094	1839	43,419.89
				264.96	41,866.17
				Total	85,286.06
52	128.45	16.6985	111.7515	1839	30,708.54
				264.96	29,609.68
				Total	60,318.22
53	59.02	7.6726	51.3474	1839	14,109.91
				264.96	13,605.01
				Total	27,714.92
54	30.47	3.9611	26.5089	1839	7,284.46
				264.96	7,023.80
				Total	14,308.26
55	70.75	9.1975	61.5525	1839	16,914.20
				264.96	16,308.95
				Total	33,223.15
56	268.19	34.8647	233.3253	1839	64,116.18
				264.96	61,821.87
				Total	125,938.05
<b>Total</b>	<b>2822.56</b>	<b>366.9328</b>	<b>2455.6272</b>		<b>1,325,432.40</b>

**SECTION E**

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**SELECTED BMPs**



## **EXISTING BMPs**

Penn Township, in conjunction with the Westmoreland Conservation District, has begun to retrofit many of the existing detention ponds in the township to “better control and retain the stormwater runoff” from their tributary areas. In 2016, three (3) basins were retrofitted and are shown on the attached mapping. All three were located in the Brush Creek Basin. However, only two (2), Cortina Marie 1 & 2, are tributary to an impaired stream therefore the third pond located at the intersection of Raymaley Road and Hyland Road is not included in the PRP Plan.

## **PROPOSED BMPs**

To meet the reduction requirements Penn Township proposes the following over the next five years:

- Street Sweeping – The township proposes to increase their street sweeping program to 25 times per year on the affected streets.
- New Wet Ponds/Detention Basins – At this time, construction is underway on three developments in the Urbanized Area that drain to impaired streams. These developments include four (4) new ponds designed to the current standards. These ponds are shown on the attached mapping. One new pond will be located in the Turtle Creek Basin and three will be located in the Brush Creek Basin.
- Retrofits (County Program) – As part of the afore-mentioned retrofit program, seven (7) ponds are scheduled to be retrofitted in 2017. These ponds are shown on the attached mapping. Three ponds are located in the Turtle Creek Basin and four are located in the Brush Creek Basin. The retrofit plans and bid documents are attached under Section E.
- Retrofits (Township Program) – The Harrison Park area of Penn township has experienced numerous instances of flooding over the years and the township, with the assistance of the EADS Group, is developing a plan to alleviate these issues. Part of the proposed solution is to retrofit the Lazar Pond’s and the Berlin Dam’s outfall structures to better control and retain the stormwater runoff from their respective watersheds; thereby, converting both structures to Dry Extended Detention Basins. Both of these structures are directly upstream from Harrison Park and are believed to contribute to the flooding problems. The plan is in the preliminary design phase but it is anticipated the work will be completed during 2017-2018.
- Adella Court – The Adella Court Pond is another proposed facility to help deal with the afore-mentioned flooding in the Harrison Park Area. Currently a substantial amount of runoff from cultivated fields discharges directly onto properties located along Martha Avenue. This project proposes to construct drainage swells along the edges of the fields to collect the water before it leaves the agricultural property. The runoff would then be piped down Damien Court to a new dry extended detention pond located on township property between Adella Court and Berlin Road (see the attached Conceptual Plan in Section E).

**Turtle Creek Watershed (Northern Section of Township)  
Summary of Proposed BMPs**

<b>Sewershed</b>	<b>Waterway</b>	<b>BMP</b>	<b>Effectiveness</b>	<b>Tributary Area (Acre)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading (lb/yr)</b>	<b>Estimated Sediment Reduction (lb/yr)</b>
1	Turtle Creek	Street Sweeping	0.09	1.15	1839		190.06
2	Turtle Creek	Street Sweeping	0.09	0.93	1839		154.11
		Extended Detention Pond (Sterling Oaks)	0.6			5,076.22	3,045.73
3	Turtle Creek	Street Sweeping	0.09	0.94	1839		155.33
4	Turtle Creek	Street Sweeping	0.09	1.79	1839		296.37
13	Turtle Creek	Street Sweeping	0.09	5.53	1839		914.82
		Wet Ponds (WCIDC Park 3 - Ponds 1 & 2)	0.6			52,208.48	31,325.09
<b>Sub-total</b>							<b>36,081.50</b>
5	Byers Run	Street Sweeping	0.09	2.55	1839		421.30
6	Byers Run	Street Sweeping	0.09	3.01	1839		497.53
30	Byers Run	Street Sweeping	0.09	1.79	1839		296.90
<b>Sub-total</b>							<b>1,215.73</b>
7	Lyons Run	Street Sweeping	0.09	0.55	1839		91.42
8	Lyons Run	Street Sweeping	0.09	3.85	1839		637.65
		Wet Pond (Oak Farm Estates)	0.6			32,401.38	19,440.83
9	Lyons Run	Street Sweeping	0.09	1.64	1839		271.67
10	Lyons Run	Street Sweeping	0.09	0.87	1839		144.38
11	Lyons Run	Street Sweeping	0.09	0.52	1839		86.55
12	Lyons Run	Street Sweeping	0.09	0.00	1839		0.00
14	Lyons Run	Street Sweeping	0.09	1.10	1839		181.32
<b>Sub-total</b>							<b>20,853.82</b>
<b>Total</b>							<b>58,151.05</b>

**Turtle Creek Watershed (Northern Section of Township)  
Ponds**

**Ponds to be Retrofitted in 2017 (County Program)**

BMP	Acres	Impervious Acres (13%)	Pervious		Sediment Loading (lb/yr)	Effectiveness	Estimated Sediment Reduction (lb/yr)
			Acres (87%)	Loading Rates (lbs/acre/yr)			
Oak Farm Estates Pond	69	8.97		1839	16,495.83	0.6	19,440.83
			60.03	264.96	15,905.55		
				Total	32,401.38		
WCIDC Park 3 - Ponds 1 & 2	111.18	14.4534		1839	26,579.80	0.6	31,325.09
			96.7266	264.96	25,628.68		
				Total	52,208.48		
<b>New Ponds</b>							
Sterling Oaks Pond	10.81	1.4053		1839	2,584.35	0.6	3,045.73
			9.4047	264.96	2,491.87		
				Total	5,076.22		

**Brush Creek Watershed (Southern Section of Township)  
Summary of Proposed BMPs**

<b>Sewershed</b>	<b>Waterway</b>	<b>BMP</b>	<b>Effectiveness</b>	<b>Tributary Area (Acre)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading (lb/yr)</b>	<b>Estimated Sediment Reduction (lb/yr)</b>
31	Brush Creek & its Tributaries	Street Sweeping	0.09	0.63	1839		104.64
36	Brush Creek & its Tributaries	Street Sweeping	0.09	2.64	1839		437.33
37	Brush Creek & its Tributaries	Street Sweeping	0.09	0.76	1839		125.39
38	Brush Creek & its Tributaries	Street Sweeping	0.09	1.04	1839		172.50
41	Brush Creek & its Tributaries	Street Sweeping	0.09	0.64	1839		106.39
43	Brush Creek & its Tributaries	Street Sweeping	0.09	0.21	1839		34.35
52	Brush Creek & its Tributaries	Street Sweeping	0.09	4.22	1839		698.14
		Wet Pond(Sandy Hill Meadow)	0.6			1,883.04	1,129.82
53	Brush Creek & its Tributaries	Street Sweeping	0.09	1.62	1839		268.78
55	Brush Creek & its Tributaries	Street Sweeping	0.09	1.84	1839		303.97
		Dry Extended (Brookhaven 1 & 2)	0.6			15,449.35	9,269.61
<b>Sub-total</b>							<b>12,650.92</b>
54	Coal Run	Street Sweeping	0.09	1.24	1839		204.65
		Wet Pond(Penntowne)	0.6			14,087.56	8,452.53
56	Coal Run	Street Sweeping	0.09	10.52	1839		1,741.35
<b>Sub-total</b>							<b>10,398.53</b>

<b>Sewershed</b>	<b>Waterway</b>	<b>BMP</b>	<b>Effectiveness</b>	<b>Tributary Area (Acre)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading (lb/yr)</b>	<b>Estimated Sediment Reduction (lb/yr)</b>
15	Bushy Run & its Tributaries	Street Sweeping	0.09	3.93	1839		650.03
16	Bushy Run & its Tributaries	Street Sweeping	0.09	3.81	1839		629.97
17	Bushy Run & its Tributaries	Street Sweeping	0.09	0.44	1839		72.19
18	Bushy Run & its Tributaries	Street Sweeping	0.09	0.86	1839		142.10
		Wet Pond (Country Farm)	0.6			11,739.63	7,043.78
19	Bushy Run & its Tributaries	Street Sweeping	0.09	2.35	1839		389.15
20	Bushy Run & its Tributaries	Street Sweeping	0.09	2.35	1839		389.23
21	Bushy Run & its Tributaries	Street Sweeping	0.09	2.45	1839		405.26
		Wet Pond (Deerfield B)	0.6			7,982.95	4,789.77
22	Bushy Run & its Tributaries	Street Sweeping	0.09	1.24	1839		204.65
		Wet Pond (Deerfield A)	0.6			7,043.78	4,226.27
23	Bushy Run & its Tributaries	Street Sweeping	0.09	0.24	1839		40.12
24	Bushy Run & its Tributaries	Street Sweeping	0.09	0.63	1839		104.34
25	Bushy Run & its Tributaries	Street Sweeping	0.09	14.11	1839		2,335.23
26	Bushy Run & its Tributaries	Street Sweeping	0.09	1.34	1839		222.20

<b>Sewershed</b>	<b>Waterway</b>	<b>BMP</b>	<b>Effectiveness</b>	<b>Tributary Area (Acre)</b>	<b>Loading Rates (lbs/acre/yr)</b>	<b>Sediment Loading (lb/yr)</b>	<b>Estimated Sediment Reduction (lb/yr)</b>
27	Bushy Run & its Tributaries	Street Sweeping	0.09	12.80	1839		2,118.50
		Berlin Dam	0.6			77,951.14	46,770.69
		Lazar Pond	0.6			46,958.52	28,175.11
		Adella Court Pond	0.6			9,861.29	5,916.77
28	Bushy Run & its Tributaries	Street Sweeping	0.09	2.52	1839		417.27
29	Bushy Run & its Tributaries	Street Sweeping	0.09	2.13	1839		353.06
32	Bushy Run & its Tributaries	Street Sweeping	0.09	1.74	1839		288.77
33	Bushy Run & its Tributaries	Street Sweeping	0.09	0.46	1839		76.60
34	Bushy Run & its Tributaries	Street Sweeping	0.09	0.92	1839		152.44
35	Bushy Run & its Tributaries	Street Sweeping	0.09	0.97	1839		160.11
39	Bushy Run & its Tributaries	Street Sweeping	0.09	0.22	1839		36.48
40	Bushy Run & its Tributaries	Street Sweeping	0.09	0.46	1839		76.60
42	Bushy Run & its Tributaries	Street Sweeping	0.09	0.22	1839		36.48
44	Bushy Run & its Tributaries	Street Sweeping	0.09	0.60	1839		98.79
45	Bushy Run & its Tributaries	Street Sweeping	0.09	2.96	1839		489.46
46	Bushy Run & its Tributaries	Street Sweeping	0.09	7.08	1839		1,171.56

Sewershed	Waterway	BMP	Effectiveness	Tributary Area (Acre)	Loading Rates (lbs/acre/yr)	Sediment Loading (lb/yr)	Estimated Sediment Reduction (lb/yr)
47	Bushy Run & its Tributaries	Street Sweeping	0.09	0.68	1839		112.32
48	Bushy Run & its Tributaries	Street Sweeping	0.09	8.05	1839		1,332.06
49	Bushy Run & its Tributaries	Street Sweeping	0.09	2.52	1839		417.27
50	Bushy Run & its Tributaries	Street Sweeping	0.09	2.62	1839		433.30
51	Bushy Run & its Tributaries	Street Sweeping	0.09	4.85	1839		802.47
<b>Sub-total</b>							<b>111,080.41</b>
<b>Total</b>							<b>134,129.85</b>

**Brush Creek Watershed (Southern Section of Township)  
Ponds**

**Ponds that were Retrofitted in 2016 (Existing BMP)**

BMP	Acres	Impervious Acres (13%)	Pervious		Sediment Loading (lb/yr)	Effectiveness	Estimated Sediment Reduction (lb/yr)
			Acres (87%)	Loading Rates (lbs/acre/yr)			
Cortina Marie 1	54	7.02		1839	12,909.78	0.6	15,214.56
			46.98	264.96	12,447.82		
				Total	25,357.60		
Cortina Marie 2	67	8.71		1839	16,017.69	0.6	18,877.33
			58.29	264.96	15,444.52		
				Total	31,462.21		

**Ponds to be Retrofitted in 2017 (County Program)**

Country Farms	25	3.25		1839	5,976.75	0.6	7,043.78
			21.75	264.96	5,762.88		
				Total	11,739.63		
Deerfield A	15	1.95		1839	3,586.05	0.6	4,226.27
			13.05	264.96	3,457.73		
				Total	7,043.78		
Deerfield B	17	2.21		1839	4,064.19	0.6	4,789.77
			14.79	264.96	3,918.76		
				Total	7,982.95		
Penntowne Pond	30	3.9		1839	7,172.10	0.6	8,452.53
			26.1	264.96	6,915.46		
				Total	14,087.56		

**Ponds to be Retrofitted within the Next Five Years (Township Program)**

Berlin Road Dam	166	21.58		1839	39,685.62	0.6	46,770.69
			144.42	264.96	38,265.52		
				Total	77,951.14		
Lazar Pond	100	13		1839	23,907.00	0.6	28,175.11
			87	264.96	23,051.52		
				Total	46,958.52		

**New Ponds**

Brook Haven 1 (Dry Extended)	23.8	3.094		1839	5,689.87	0.6	6,705.68
			20.706	264.96	5,486.26		
				Total	11,176.13		
Brook Haven 2 (Dry Extended)	9.1	1.183		1839	2,175.54	0.6	2,563.94
			7.917	264.96	2,097.69		
				Total	4,273.23		
Sandy Hill Meadows (Wet Pond)	4.01	0.5213		1839	958.67	0.6	1,129.82
			3.4887	264.96	924.37		
				Total	1,883.04		
Adella Court (Dry Extended)	21	2.73		1839	5,020.47	0.6	5,916.77
			18.27	264.96	4,840.82		
				Total	9,861.29		

115,774.35







BIDS FOR

**"PENN TOWNSHIP STORMWATER BASIN RETROFITS"**

April 2017

PREPARED BY:

Westmoreland Conservation District  
218 Donohoe Road  
Greensburg, PA 15601  
PHONE: (724) 837-5271 FAX: (724) 837-4127

**SECTION A**  
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**Westmoreland Conservation District  
PENN TOWNSHIP STORMWATER BASIN RETROFITS**

**INFORMATION FOR BIDDERS**

**I. SCOPE OF WORK:** The Westmoreland Conservation District (Grantee) proposes to:

Work in conjunction with Penn Township and Westmoreland County Industrial Development Corporation to retrofit seven existing basins to better retain stormwater, as indicated in the contract documents and specifications. This work includes all materials and labor to complete the project as specified.

**II. VISIT TO SITE:** A site showing will occur on May 4, at 8am, starting at the Deerfield Drive basins. Before submitting a proposal, each Bidder shall visit the locations of the proposed work and examine all of the existing conditions, and in general, determine to his own satisfaction the character and extent of the work to be done under this contract. The bidder shall make themselves familiar with the specifications, information, site condition, etc., before submitting his bid in order that no misunderstanding shall exist in regard to the nature and character of the work to be done. No allowance will be made for any claim that a bid was based upon incomplete information as to the nature and character of the site or the work involved.

**III. BIDS:** Bids will be received no later than **9:00 A.M. Monday, May 8, 2017**, at the Westmoreland Conservation District, 218 Donohoe Road, Greensburg, Pennsylvania 15601. Attn: Rob Cronauer, and marked **“PENN TOWNSHIP STORMWATER BASIN RETROFITS”**.

No bid will be considered complete which does not contain a price for each unit as well as the total cost based upon the estimated quantities. Unit prices are also to be submitted for the purpose of additions or deductions and alternate evaluation, in the event the scope of the work is changed from that described in the specifications and contract documents for any unit of work. No bid will be considered which is not based upon the contract documents and specifications, or which is not properly made out and signed in writing by the bidder or an authorized agent of the bidder, or which is not accompanied by proper deposits.

**Pennsylvania Prevailing Wage Rates may apply to this work. A Labor & Industry Wage Rate Determination has been issued and is serial #17-03127 Any questions regarding prevailing wage should be directed to PA Department of Labor and Industry.**

**V. ACCEPTANCE OR REJECTION OF BIDS:** The Westmoreland Conservation District reserves the right to reject any or all proposals; to accept any bid; to waive any informality in bids received; or to withhold final award on the contract.

The grantee also reserves the right to reject the bid of a bidder who has previously failed to perform properly or complete on time, contracts of a similar nature, or who does not have the necessary qualifications to perform the contract, such as:

- A. Maintenance of a permanent place of business.
- B. Agent or a bonafide representative for at least one (1) year.

- C. Adequacy of plant and equipment to carry out the work properly and expeditiously.
- D. Suitable financial status to meet obligations incidental to the work.
- E. Appropriate technical experience.

However, it remains the primary intent and purpose of the grantee to award the contract to the lowest "responsible" bidder, based on the evaluation of the alternates within the contract documents and specifications.

**VI. WITHDRAWAL OF BIDS:** No bid will be allowed to be withdrawn, for any reason, after it has been deposited with the grantee, before **9:00 A.M. May 8, 2017**

**VII. CERTIFICATES OF INSURANCE:** The bidder to whom the contract is awarded shall take out and maintain during the life of the contract, adequate Workman's Compensation Insurance for all employees employed on the project and, in case any work is sublet, the contractor shall require the subcontractor to provide Workmen's Compensation Insurance for the latter's employees unless such employees are covered by the protection afforded by the contractor.

The successful bidder shall also take out and maintain for the life of the contract any Public Liability and Property Damage Insurance as shall protect the owner, the contractor and any subcontractor performing the work covered by the contract from claims for damages for personal injuries, including wrongful death, as well as claims for property damages which may arise from operations under the contract, whether such operation be by himself or by any subcontractor or anyone directly or indirectly employed by either of them and name Westmoreland Conservation District, Penn Township, and Westmoreland County Industrial Development Corporation as an additional insured. Coverage limit minimum \$1,000,000 / \$3,000,000.

The form of the Insurance and the Surety thereon shall be satisfactory to the District. The amount of the Insurance shall not be less than that specified in the contract documents.

Three (3) copies of the Certificate of Insurance shall be furnished to the District by the contractor.

**VIII. TIME ALLOWED FOR INITIATION AND COMPLETION OF THE CONTRACT:** All work under the contract including cleanup, restoration and removal of all equipment is to be complete on or before **July 31, 2017**.

In submitting a bid, the bidder shall consider and shall include all necessary provisions for completing the work within the time fixed by the contractor. Any bidder upon request shall submit to the grantee complete and reliable information relative to equipment and organization proposed to be used on the work, plans of operation and a definite schedule for various portions of the work to assure completion of the contract within the time specified.

The contractor shall not be charged with any excess cost when the delay in completion is due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, such as Acts of God, or public enemy, Acts of Government, fires, floods, epidemics, quarantine restriction, general strikes throughout the trade and freight embargoes not caused or participated in by the contractor nor for delay caused by the grantee by failure to give possession of the site, by change in the plans and specifications, or by requiring the suspension of the work under the contract. If delay in completion is due to such unforeseeable causes beyond the control and without the fault or negligence of the contractor, the contractor shall give immediate notice to the grantee of the causes

of said delay and if said causes are unforeseeable, beyond the control and without the fault or negligence of the contractor, the grantee will extend the time for completion for a reasonable period of time based upon the causes of delay. Such extension of time, however, shall not entitle the contractor to any additional compensation as a result of said delays.

If for any reasons other than those referred to above, any portion of the work remains incomplete after the contract date specified for the completion, for each and every work day that any portion of the work remains incomplete, the grantee shall have the right to deduct from the moneys due the contractor as liquidated damages per the contract documents.

**X. BONDS.**

Contracts entered into under these procedures shall be accompanied by the following bonds in form and substance satisfactory to the District:

(a) A performance bond in an amount equal to 110% of the contract price, guaranteeing the work to be completed in accordance with the contract.

(b) A maintenance bond in an amount equal to 100% of the contract price, or such other amount deemed adequate by WCD, to insure functionality of all improvements, work and materials for a period of at least 12 months upon substantial completion of the work as written in the contract.

**XI. CHANGES WHILE BIDDING:** During the bidding period, bidders may be furnished addenda for additions to or changes on the plans and/or in the Specifications, such addition and/or changes shall be included in the work covered by the Proposal and become a part of the contract documents.

**XII. AWARD OF CONTRACT:** Bids shall be submitted on the basis of a single contract award to the successful bidder, whose proposal shall be based on doing all of the work and furnishing and installing all the material herein specified. The grantee will evaluate and award the contract based on cost criteria of new material, recycling and/or use of removed material.

**XIII. BASIS OF BIDS:** This work comprises the items listed in the bid and the approximate quantities listed. These quantities are listed only as a guide for the contractor in the preparation of his bid. Determination of the actual quantities for each item remains the responsibility of the contractor. Payments to the contractor shall be made in accordance with the terms of the contracts.

**XVI. PROTECTION OF UTILITY LINES:** Contractor is to assume the responsibility of contacting the utilities determined by the contractor to be within the project area. Any and all costs incurred in the temporary relocation and the correction of damage to any utility, including materials completely in-place are to be borne by the contractor. The contractor must comply with PA "One-Call" requirements.

# SECTION C

## BID FORM

### PENN TOWNSHIP STORMWATER BASIN RETROFITS

DATE: \_\_\_\_\_

FROM: \_\_\_\_\_

CONTRACTOR'S COMPANY

ADDRESS

CITY, STATE, ZIP

TELEPHONE NUMBER

AUTHORIZED AGENT (print and sign)

TO: **Rob Cronauer**  
**Westmoreland Conservation District**  
**218 Donohoe Road**  
**Greensburg, PA 15601**

Having carefully examined the drawings, specifications and contract documents for this Project, as well as the premises and conditions affecting the work, the undersigned agrees to furnish all labor, materials, equipment and supervision, and to perform all work required by and in strict accordance with, the above named documents for the unit prices for work, including overhead and profit of the following items and quantities:

#### **BID SCHEDULE**

<u>ITEM DESCRIPTION</u>	<u>QTY. UNIT</u>	<u>TOTAL PRICE</u>
1. Oak Farm Estates Basin (all components <i>except</i> the orifice plate)	<u>1</u> L.S.	\$ _____
Oak Farm Estates Basin ( <i>only</i> the orifice plate)	<u>1</u> L.S.	\$ _____
2. WCIDC Park 3 Basin 1	<u>1</u> L.S.	\$ _____
3. WCIDC Park 3 Basin 2	<u>1</u> L.S.	\$ _____
4. Deerfield Drive Basin A	<u>1</u> L.S.	\$ _____
5. Deerfield Drive Basin B	<u>1</u> L.S.	\$ _____
6. Country Farms Basin	<u>1</u> L.S.	\$ _____
7. Penntowne Basin	<u>1</u> L.S.	\$ _____

**TOTAL BASE \$** \_\_\_\_\_

(TOTAL BASE BID in Words \_\_\_\_\_ )

**FORM OF AGREEMENT BETWEEN  
GRANTEE AND CONTRACTOR**

The basis of payment is  
based upon prices and installed quantities.

---

**AGREEMENT**

made this \_\_\_\_\_ day of May \_\_\_\_\_ in the year of  
Two Thousand and Seventeen.

BETWEEN

WESTMORELAND CONSERVATION DISTRICT, the Grantee, and  
\_\_\_\_\_, the Contractor.

The Grantee and the Contractor agree as set forth below.

---

**ARTICLE 1**

**THE CONTRACT DOCUMENTS**

The Contractor Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda issued prior to execution of this Agreement and all Modifications issued subsequent thereto. These form the Contract, and all are fully a part of the Contract as if attached to this Agreement or repeated herein.

**ARTICLE 2**

**THE WORK**

The Contractor shall perform all the Work required by the Contract Documents for the  
**PENN TOWNSHIP STORMWATER BASIN RETROFITS**

**ARTICLE 3**

**TIME OF COMMENCEMENT AND COMPLETION**

The work to be performed under this Contract will be completed by **July 31, 2017**. Failure to complete all the work specified in this contract by **July 31, 2017** shall cause a reduction of any moneys due to the Contractor in the amount of \$500.00 per day for each day the that the work



remains incomplete. This amount per day is and will be construed as liquidated damages for failure to complete the work by the specified date.

**ARTICLE 4**

**CONTRACT SUM**

The grantee will pay the Contractor for the performance of the work, subject to additions and deductions by Change Order as provided in the Conditions of the Contract, in current funds, the **Contract sum as identified on the approved bid form (Section C).**

**ARTICLE 5**

**FINAL PAYMENT**

Final payment, constituting the entire unpaid balance of the Contract Sum, will be paid by the Grantee to the Contractor after Substantial Completion of the work provided the work has been completed, and the Contract fully performed. Final payment will only be made upon Grantee receiving funds from the Department of Environmental Protection, Growing Greener Program.

**This Agreement Executed the Day and Year First Written Above.**

**GRANTEE**

**CONTRACTOR**

WESTMORELAND CONSERVATION DISTRICT

\_\_\_\_\_  
Gregory M. Phillips  
Manager/CEO

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## SECTION E

### CONTRACT PROVISIONS

#### GENERAL REQUIREMENTS OF CONTRACT:

1. DEFINITIONS: The following terms and expressions used in the Contract Documents shall be understood as follows:

Wherever the word "Contractor" is used in this contract, it shall be understood to mean the party of the second part of the agreement, or the second party's legal representative.

Wherever the word "Grantee" is used in this contract, it shall mean the Westmoreland Conservation District or its legal representative acting in an authorized capacity.

Wherever the word "Engineer" is used in this contract, it shall be understood to mean the duly appointed Westmoreland Conservation District, for the work designated in this contract, acting within the scope of the duties entrusted to him, and as stated in the Contract.

Wherever the words "Inspector" or "Resident Engineer" are used, they shall be understood to mean the representative of the Engineer assigned to the inspection of materials and workmanship under this contract.

Wherever the word "Subcontractor" is used, it shall be understood to mean persons, firms, or corporations having a direct contract with the Contractor and including those who furnish materials worked to a special design in accordance with the Specifications but not including those who merely furnish materials not so worked.

Wherever the words, "Plans" or "Drawings" are used, they shall be understood to mean the Contract Drawings and Designs accompanying the Specifications and such detail and supplementary drawings as may be furnished from time to time.

Wherever in the Specifications or upon the Drawings, the words "as directed" "as required", "as permitted" or words of like effect are used, it shall be understood that the direction, requirement, or permission of the Engineer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import, shall mean approved by, acceptable or satisfactory to the Engineer.

2. ENGINEER TO DECIDE: All work under this contract shall be done to the satisfaction of the Engineer, who shall in all cases determine quality, acceptability, and fitness of all work, materials, equipment and appliances, which are to be paid for thereunder. In the event any dispute arises with reference to the true meaning, intent and effect of the Drawings, Specification, Proposal, Advertisement, Information for Bidders, or the terms and provisions of the Contract proper, or any part or parts thereof, or in cases any claim shall be made by the Contractor, or by anyone in his behalf, either during the progress of the work or after its completion, for or on account of any matter or thing arising out of or relating in any manner to the said Contract, including the Specifications, Drawings, Bid Form, Advertisements, Information for Bidders or the Contract proper, or to the fulfillment or nonfulfillment or breach thereof, including any claims for damages, or delay in the completion of this agreement, in every such case the dispute or claim shall be submitted to the

Grantee through the Engineer for decision, and the award or decision thereon shall be the final decision and binding on all parties hereto; and such award or decision, in case any question should arise, shall be a condition precedent to the right of the Contractor to receive any money thereunder.

3. CONTRACT AND CONTRACT DOCUMENTS: The Plans, Specifications, and Addenda, hereinafter enumerated shall form a part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The Table of Contents, Titles, Headings, Running Headlines, etc., contained herein, and in said Documents, are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or amplify the interpretation of the provision to which they refer. Whenever the term "Contract" or "Contract Documents" is used, it shall mean and include these Plans, Advertisement for Bids, Information for Bidders, Bid Form, Agreement, Bonds and Addenda. In case of any conflict or inconsistency between the provision of this Contract and those of the Specifications, the provision of the Contract shall govern.

4. LINES AND GRADES: The Contractor shall be given initial horizontal and vertical control. The Contractor must carefully preserve bench marks, reference points and stakes, and in case of destruction or removal, he will be charged with resulting expense arising out of any mistake that may be caused by their dislocation.

The Contractor shall employ a competent Civil Engineer or Surveyor satisfactory to the Grantee and Engineer to lay out the work from the bench marks, points and lines noted on the drawings and established at the site, and he shall take as a basis the figures on the drawings, check dimensions and shall lay out all structures, fill areas, cut areas, and embankment, test and check all elevations and levels, locate levels and plum lines of walls, beams and columns and other parts of the construction as the work progresses. He shall also establish a datum point from which all grades and elevations are to be taken. All work of every description for its correctness, and all expenses in connection with this work shall be paid for by the Contractor. The Engineer employed shall be a Registered Professional Civil Engineer or Registered Professional Surveyor and his name and registration number shall be submitted to the Engineer.

The work may be checked by the Grantee and, in the event of discrepancies, Grantee's decision shall be final.

5. WORKING DRAWINGS: The Plans furnished prospective bidders are intended to give the complete scope and details of the proposed work.

6. CONTRACTOR THOROUGHLY INFORMED: The Contractor hereby declares that he has read each clause in the Contract Documents and hereby agrees that he will comply with all terms herein set forth; also that he has thoroughly examined the Contract Plans for the work to be done under this Contract; that he has examined the location of the proposed work, and fully understands the character of the work to be done under this Contract.

7. MATERIALS AND WORKMANSHIP: All materials, equipment, appliances and workmanship, unless otherwise specified, shall be the best of their respective kinds, and be in conformity and harmony with the general intent and requirements of the Contract Documents to secure the best standard of work for the purpose of the design. All the work contemplated and described in the Contract Documents shall be done in a thoroughly workmanlike manner, and shall produce results as specified in this Contract, all to the satisfaction of the Engineer. If at any time before the commencement or during the progress of the work, the materials and appliances to be used appear to the Engineer as insufficient or improper for securing the quality of the work required,

he may order the Contractor to improve their character and the Contractor shall conform to such orders. The failure of the Engineer to demand such improvement shall not release the Contractor from his obligation to secure the quality of the work specified. The Contractor shall use such plant and equipment as are required to execute properly the work within the time fixed in this Contract. Where no requirements are specified for materials or for the methods of testing materials or equipment, they shall be in accordance with the latest Standard or tentative specifications of the A.S.T.M., or the latest designation or other applicable construction codes. All work conducted shall be in compliance with the latest Pennsylvania Department of Transportation Publication 408 Specification, as amended, unless otherwise specified.

8. STATUS AND AUTHORITY OF THE ENGINEER: The Engineer's decision shall be final and binding in the interpretation of the Plans and Specifications, the ordering of additions to or deduction from the Work, and the determination of procedure. He shall in all cases determine the amount, quality, acceptability, and fitness of any and all work and materials which are to be paid for under the Contract, and shall have authority to reject all work and materials which do not conform to the Contract requirements. He shall determine all other questions that may arise in relation to the execution of the Work. He shall have authority to halt the Work whenever such action may be necessary to secure the safe and proper execution of the Contract. He shall adjust and decide any difference or conflicts that may arise between the Contractor and other contractors for concurrent work. In every case, the Engineer's decision shall be final and binding and shall be a condition precedent to the right of the Contractor to receive any money thereunder, in case of a dispute.

9. RIGHT OF INSPECTION: The Contractor shall permit the Engineer, his assistants, inspectors, and properly authorized persons to enter upon and have free access to the Work at all times, and all places of manufacture where materials for the work are being made, and for the purpose of giving lines and elevations and to measure and inspect the work or materials.

10. WORK COMPLETE: If any workmanship, equipment or materials required which are obviously necessary in order to carry out the full intent and meaning of the Plans and Specifications, or to secure satisfactory results in the construction and operation of the Work, although the same may not be either directly or indirectly so specified, the Contractor hereby agrees to consider and provide for the same in his proposal for the Work as fully as if they were so specified and shall do so without subsequent charge or claim for extra compensation therefore.

11. LABOR SKILLS: The Contractor shall employ only competent and skilled men and first-class mechanics and artisans on all parts of the Work, and shall in his absence have on the ground at all times during the progress of the Work, a responsible and qualified representative in charge, duly authorized to receive and execute all requests of the Engineer.

12. EMPLOYMENT OF LABOR: The Contractor, in the construction of the Work, shall give employment preference to local residents, insofar as possible, providing such local residents are qualified and prove satisfactory to execute the same economically and to advantage. Superintendents, foremen and skilled labor regularly employed by the Contractor or Subcontractor are exempt from this provision. If requested, the Contractor shall furnish the Engineer with a list of all employees engaged upon the Work, their permanent addresses, and a statement of length of time each has been employed.

13. ACCIDENT PREVENTION: Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws of Pennsylvania and the Municipal Building and Construction codes shall be observed. Machinery and equipment and other

hazards shall be guarded in accordance with the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America to the extent that such provisions are not inconsistent with applicable laws or regulations.

14. CONTRACTOR'S INSURANCE: The Contractor shall not commence Work under this Contract until he has obtained all the insurance required under this Paragraph and information to bidders section, and such insurance has been approved by the Grantee, nor shall the Contractor allow any subcontractor to commence Work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

A. COMPENSATION INSURANCE: The Contractor shall take out and maintain during the life of this Contract at his own expense, Workmen's Compensation Insurance for all of his employees employed at the site of the project. If any work is sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under the Workmen's Compensation stature, the Contractor shall provide, and shall cause each subcontractor to provide, adequate insurance for the protection of his employees not otherwise protected.

The Contractor shall accept insofar as the Work covered by the Contract is concerned, the provision of the Workmen's Compensation Act of 1915 and any supplements or amendments thereof, including any which may hereafter be passed, and shall insure his liability thereunder, or file with the Grantee, a certificate of exemption from insurance from the Bureau of Workmen's Compensation of the Department of Labor and Industry.

B. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: The Contractor shall take and maintain during the life of this Contract at his own expense such Public Liability and Property Damage Insurance as shall protect the Grantee and Contractor and any subcontractor performing work covered by this Contract, from claims for damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them.

The successful bidder shall also take out and maintain for the life of the contract any Public Liability and Property Damage Insurance as shall protect the owner, the contractor and any subcontractor performing the work covered by the contract from claims for damages for personal injuries, including wrongful death, as well as claims for property damages which may arise from operations under the contract, whether such operation be by himself or by any subcontractor or anyone directly or indirectly employed by either of them and name Westmoreland Conservation District and it's before mentioned partners as an additional insured. Coverage limit minimum \$1,000,000 / \$3,000,000.

C. INSURANCE: Automobiles, trucks, and tractors and similar equipment shall be covered by public liability and property damage in amounts as specified under Subparagraph (b) of this Paragraph. The Contractor shall furnish the Grantee with satisfactory proof of coverage in the insurance required.

15. RESPONSIBILITY FOR ACCIDENTS AND DELAYS: The Contractor shall be deemed and considered an independent Contractor in respect to the Work covered by the Contract, and shall assume all risks and responsibilities for casualties of every description in connection with the Work, except that he shall not be held liable or responsible for delays or damage to the Work caused by



acts of God, acts of Public enemy, acts of Government, quarantine restrictions, general strikes throughout the trade, or by freight embargoes not caused or participated in by the Contractor. The Contractor shall have charge and control of the entire Work until completion and acceptance of the same by the party of the first part. The Contractor shall alone be liable and responsible for, and shall pay for, any and all loss or damage sustained by any person or party either during the performance or subsequent to the completion of the Work under this Agreement, by reason of injury to persons and damage to property, buildings and adjacent work, that may occur either during the performance of the Work covered by this Contract or that may be sustained as a result of or in consequence thereof, irrespective of whether or not such injury or damage be due to negligence or the inherent nature of the Work.

16. RESPONSIBILITY FOR WORK LOSS AND DAMAGE: The Contractor shall assume all responsibility for the Work, and shall take all precautions for preventing injury to property in or about the Work, shall bear all losses resulting from that amount of character of the Work being different, or because the nature of the premises in or on which the Work is done is different, from what was estimated or expected, or on account of the weather, elements or other similar causes; and he shall assume the defense of and indemnify and hold blameless the Grantee, its officers and agents from all claims, relating to any violations of law by the Contractor, his subcontractors, or his employees, and to invention, patents and patent rights used during the Work, or to injuries to any person, corporation, or property received or sustained by, or in consequences of any improper materials or implements of labor used therein, or defect in the apparatus, ways, works, machinery or plant, or to any act, omission or neglect of the Contractor, or agents, of employees therein.

17. RESPONSIBILITY FOR DAMAGE TO WORK OF OTHER CONTRACTORS: The Contractor shall assume all responsibility for and shall take all precautions for preventing injury to work completed or in progress by other Contractors in or about the Work. He shall cover and protect such work from damage, and all injury to the same before the completion of this Contract shall be made good by him. In the event this is not done immediately, the Engineer is hereby authorized to determine and deduct the cost of the damage from the partial and final estimates.

18. DAMAGES TO BE PAID: The Contractor shall pay to the Grantee all expenses, losses, and damages as determined by the Engineer incurred by the Grantee in consequence of any defect, omission or error of the Contractor, his agent, subcontractors or employees, or the making good thereof. The Engineer is hereby authorized to deduct the same, as determined from the partial and final estimates.

19. CLEARING GROUND: The Contractor shall maintain the site in a neat condition. No undesirable accumulation of debris or materials shall be allowed.

On or before the completion of the Work, the Contractor shall, without additional compensation, excepting as otherwise specifically directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove from the premises all lumber, shoring, debris, surplus materials of every kind, plant, machinery and other construction equipment installed by him; shall effectively remove and dispose of in a satisfactory manner all sanitary facilities or accumulations of any organic refuse from any ground occupied by him within the limits of the property of the Grantee, or of private persons or corporation, and the adjacent property which may have been affected by his operations, shall leave the streets and sidewalks in a neat and satisfactory condition. The Engineer may have such work done at the expense of the contractor if he shall refuse to comply within three (3) days, with an order in writing to this effect.

20. OCCUPATION OF PRIVATE LAND: The Contractor shall not, without consent from the proper parties, enter or occupy with men, materials, or equipment, any land outside of the rights-of-way or property of the Owner.

21. ORDER AND DIRECTION OF WORK: The Work to be done under this Contract shall be under the general inspection of the Engineer. The order or sequence of execution of the Work and its general conduct shall be subject to the review and approval by the Engineer or during the absence of an inspector, will not be paid for except when such is authorized to be done in such a manner by the Engineer.

22. WORK IN BAD WEATHER: During freezing, stormy or inclement weather, no work shall be done except such as can be performed satisfactorily and in a manner to produce acceptable results.

23. VIOLATION OF CONTRACT: If the Contractor shall abandon the Work, or in the opinion of the Engineer, shall neglect or fail to execute the Work with promptness and diligence, or unreasonably delay the Work so that it may not be completed within the contract time; or if he shall neglect or refuse to furnish suitable materials in place of any which may be rejected by the Engineer as unsuitable, or shall refuse or neglect to furnish and supply a sufficiency of properly skilled workmen and necessary equipment or either; or if he shall execute any of the Work improperly, carelessly, or in bad faith, and refuse to remove any of the Work which, in the opinion of the Engineer, is defective and unsuitable, and to replace it with Work that is in accordance with the Contract requirements; or, if the Contractor shall make default in the performance of any of the terms, conditions, and provisions of the Contract; then and in that event the Grantee may notify the Contractor in writing to remedy his neglect or default and require said Contractor to comply with the terms, conditions and provisions of the Contract which he is violating. If said notification be without effect twenty-four (24) hours after delivery thereof, then and in that event the Grantee shall have the right to declare the Contractor in default and notify him to discontinue all work or any part thereof; and thereupon the Contractor shall discontinue work or any part thereof; and thereupon the contractor shall discontinue such work or such part thereof as the Grantee may designate, whereupon the Grantee may be contract or otherwise, as it may determine, complete the Work or such part thereof and charge the entire expense of completing the Work, or part thereof to the Contractor; and for such completion the Grantee for itself or its Contractors may take possession of an use or cause to be used in the completion of the Work or part thereof any such materials, equipment, machinery, implements, and tools of every description as may be found upon the site of said Work.

All expenses incurred under this section may be deducted and paid for by the Grantee out of any money then due to become due the Contractor under this Contract, or any part thereof; and in such accounting the Grantee shall not be held to obtain the lowest figures for the Work of completing the Contract or any part thereof, or for insuring its proper completion but all sums actually paid therefore shall be charged to the Contractor.

In case the expenses so charged are less than the sum which would have been payable under this Contract, if the Work had been completed by the Contractor, the Contractor shall be entitled receive the difference; and in case such expenses shall exceed the said sum, the contractor shall pay the amount of excess to the Grantee upon completion of the Work without further demand being made therefore.

24. CLEANING AND FINAL INSPECTION: The entire Work under construction shall be kept clean during construction, and as the Work approaches completion the Contractor shall systematically and thoroughly clean and make any needed repairs to all portions of it.

25. STATEMENTS FOR COMPARING BIDS: The Contractor agrees that the statements as to the quantities and items of Work and materials made in the Contract Documents or indicated on the Plans are approximate only, and are presented for the purpose of providing a guideline for preparation of the bids and not for final estimate offered for the Work under this Contract; and he further agrees that he has satisfied himself as to the actual quantities involved in the Work; and that he will make no claim for anticipated profits, or loss of profit, because of a difference between the quantities of Work actually performed or of the material actually furnished and the quantities stated for purposes of guidelines in preparation of bids in the Contract Documents.

26. VERBAL STATEMENT NOT BINDING: It is understood that the written terms and provisions of this Agreement shall supersede all prior oral statements of the Grantee, Engineer, or other representatives of the Grantee and such statements shall not be effective or be construed as entering into or forming part of, or altering in any way whatsoever, the written Agreement. No change herein shall be effective until the same has been approved by the Grantee and transmitted in writing through the Engineer to the Contractor.

27. SUITS AND CLAIMS: The Contractor agrees to fully indemnify, protect, and save harmless the Grantee, its officers or agents from any and all liability, and from all suits and actions of every kind and description brought against them, or any of them, for or on account of any loss sustained by any person or party either during the performance or subsequent to the completion of the Work covered by this Agreement, by reason of injuries to person and damage to property, buildings, or adjacent work, that may occur during the performance or subsequent to the completion of said Work, or that may be sustained as a result or consequence thereof, irrespective of whether or not such injuries or damage are due to negligence or to the inherent nature of the Work. The term "Work" as used herein shall be deemed to include Work of repair or maintenance performed under this Agreement, irrespective of whether or not the same is required by the terms herein. The Contractor further agrees that in the event of such suits or claims being brought against the Contractor or the Grantee, or both, he will, before the final estimate is paid to him, furnish bonds or security approved by a representative of the Grantee, indemnifying the Grantee against all claims, suits, expenses and damages for or on account of the injury of any persons or damage to any property in connection with the performance of the Work included in the contract. The amount of such security shall be sufficient to cover the liability under such suits or claims pending, filed, or on which notice is given or indicated.



## SECTION F GENERAL NOTES AND SPECIFICATIONS

1. All references to the Engineer on the Plans and in the Contract Documents will mean the duly authorized representative of the Westmoreland Conservation District (grantee) or unless otherwise noted.
2. The Contractor is responsible for obtaining all permits for the transportation of materials and equipment on State and local roads.
3. The contractor must notify the PA. "One Call" System at 1-800-242-1776 at least three working days prior to the commencement of any work. The One-Call verification must be submitted to the Engineer. Also it is the sole responsibility of the contractor to notify the owner of any utility located within the work area that is not a member of the One-Call System.
4. All work mentioned under this Contract must be completed on or before **July 31, 2017**. If the Contractor fails to complete the project by the specified date liquidated damages in the amount of Five Hundred Dollars (\$500.00) per day will be assessed. These damages will be assessed each day the entire project remains incomplete after the specified completion date.
5. All regulations of the Occupational Safety and Health Administration (OSHA) are in effect during the life of the Contract. The grantee will not be liable for any citation received by the Contractor or any representative thereof. It is the sole responsibility of the Contractor to have his individuals comply with all OSHA standards.
6. All construction methods and material will comply with the current Municipal Construction Standards, PennDOT Road Construction Standards (RC) and the PennDOT Specification Publication form 408, latest edition, unless otherwise noted by on Plans, Contract Documents or specified by the Engineer.
7. Any work required for the relocation of private utilities will be done by and at the expense of the respective owners, unless otherwise noted on the Plans. The Contractor is to cooperate with the utility companies to schedule work in such a manner as to avoid any work conflicts.
8. Disposal of unsuitable excavation whether on site or off site will be at a location approved by the grantee. This is to include all material resulting from demolition of existing drainage structures. If the waste site is on private property the Contractor will secure written permission from the property owner describing a restoration plan.
9. If a common borrow excavation source is required the source must be approved by the grantee. If the borrow site is on private property the Contractor will secure written permission from the property owner describing a restoration plan
10. No burning is permitted on this project. In addition the Contractor will take precautions to minimize dust. The Contractor will supply a water truck, if necessary, to control dust.
11. The cost of all work and material necessary for the completion of any bid item will be considered incidental to the unit cost of that item. This shall include but not be limited to; clearing and grubbing, excavation, erosion control, raking, seeding, mulching, cleanup, removal and replacement of mail boxes, fences, post, and guide rail. Also replacement of damaged landscaping and traffic control devices.

## **G. PROJECT SPECIFICS**

### **PENN TOWNSHIP STORMWATER BASIN RETROFITS**

This project involves retrofitting 7 existing stormwater basins within Penn Township. The Westmoreland Conservation District is partnering with Penn Township and Westmoreland County Industrial Development Corporation to better control stormwater. These existing basins do not retain stormwater to their maximum potential, therefore we are proposing to retrofit them in-order to do so. All of these basin are on property owned and operated by the above mentioned partners. Landowner agreements have been obtained for access to the property. The contractor should work in conjunction with the partners to complete this project.

The contractors bid price should include all aspects of the project. Including mobilization, materials, final stabilization, etc....The following is a break-down of project specifics for each of the seven basins. Any questions regarding specifics of this project should be addressed to Rob Cronauer at (724) 837-5271.

**ALL OUTLET BARREL MEASUREMENTS ARE APPROXIMATE AND ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ACCURACY.**

#### **#1 Oak Farm Estates \*(see also associated plan/detail sheets)**

This basin has a two part bid to potentially make adjustments based on budgetary restrictions. Should the project need to be limited, this basin will only have the orifice plate installed.

**A. Riser structure** – The existing riser will need to be retrofitted. The large hole in the riser (~14in.) will be reduced to 6in. with a steel plate with attached trash rack. The outlet structure is to have orifice reducing steel plate (1/4" min.) installed as per drawing. All steel plating should be painted to reduce rusting.

**B. Berms** – Berm within the basin will be created as per plans in-order to create permanent pool (forebay) inside of the basin. It shall be established with material (clay) found on-site. This could be topped with the material accumulated with the sediment removal.

**C. Sediment removal** – This basin has an accumulation of sediment and debris. Approximately 500 cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

**D. Outlet barrel** – The existing outlet barrel must be completely removed. A new outlet barrel (approx. 60ft. of 24in.) should be installed. The new barrel is to be of the High Performance (gray) HDPE pipe with an anti-seep collar installed. Care must be taken during this installation, to include proper compaction around and above the pipe installation. The connection to the riser structure must be sealed with grout.

**E. Stabilization** – The project's disturbed areas must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

#### **#2 WCIDC Park 3 Basin 1 \*(see also associated plan/detail sheets)**

**A. Riser structure** – The existing riser structures will be modified as per plan. The riser with the lower elevation 12in. hole will be completely sealed with concrete. The adjacent riser will have the upper (approx. 4ft. high) 12in. hole completely blocked with a steel plate bolted to the riser with stainless steel hardware.

### **#3 WCIDC Park 3 Basin 2 \*(see also associated plan/detail sheets)**

**A. Riser structure** – The existing riser structures will be modified as per plan. The riser with the lower elevation 12in. hole will be completely sealed with concrete. The adjacent riser will have the 12in. hole reduced to a 6in. hole using a sch.40 pipe encased in concrete. In addition, the risers will be extended an additional 3ft. in height using steel banding. The existing trash rack will be converted to sit on top of the newly elevated risers.

**B. Sediment removal** – This basin has an accumulation of sediment and debris. Approximately 325 cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

**C. Stabilization** – The project's disturbed areas must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

### **#4 Deerfield Drive Basin A\*(see also associated plan/detail sheets)**

**A. Riser structure** – The existing riser should be removed. The new riser should be installed as per drawing. Care should be taken to install the riser on stable, compacted material. A basket type grate should be installed on the riser that is elevated (see drawings/picture) to reduce clogging potential. The outlet structure is to have orifice reducing steel plate (1/4" min.) installed as per drawing. In addition, the plate should have a trash rack installed to prevent the clogging of the orifice. All steel plating should be painted to reduce rusting. Minor, infield adjustments may need to be made concerning exact/final elevations of the riser and 2" outlet holes.

**B. Sediment removal** – This basin has an accumulation of sediment and debris. Approximately 160 cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

**C. Outlet barrel** – The existing outlet barrel must be completely removed. A new outlet barrel (approx. 40ft. of 18in.) should be installed. The new barrel is to be of the HDPE pipe with an anti-seep collar installed. Care must be taken during this installation, to include proper compaction around and above the pipe installation. The connection to the riser structure must be sealed with grout.

**D. Stabilization** – The project's disturbed areas must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

### **#5 Deerfield Drive Basin B \*(see also associated plan/detail sheets)**

**A. Riser structure** – The existing riser should be removed. The new riser should be installed as per drawing. Care should be taken to install the riser on stable, compacted material. A basket type grate should be installed on the riser that is elevated (see drawings/picture) to reduce clogging potential. The outlet structure is to have orifice reducing steel plate (1/4" min.) installed as per drawing. In addition, the plate should have a trash rack installed to prevent the clogging of the orifice. All steel plating should be painted to reduce rusting. Minor, infield adjustments may need to be made concerning exact/final elevations of the riser and 2" outlet holes.

**B. Sediment removal** – This basin has an accumulation of sediment and debris. Approximately 300cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

**C. Stabilization** - The project's disturbed areas must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

**#6 Country Farms Basin \*(see also associated plan/detail sheets)**

**A. Riser structure** - The existing riser will need to have the bottom orifice completely blocked with a steel plate. In addition it will be grouted to ensure a water tight seal. The other hole (upper) in the riser (~20in.) will be reduced to 10in. with a steel plate with attached trash rack. The outlet structure is to have orifice reducing steel plate (1/4" min.) installed as per drawing. All steel plating should be painted to reduce rusting. Finally the riser has an existing flat inlet grate. It must have a raised grate installed.

**B. Sediment removal** - This basin has an accumulation of sediment and debris. Approximately 250 cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

**C. Stabilization** - The project's disturbed areas must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

**#7 Penntowne Basin \*(see also associated plan/detail sheets)**

**A. Riser structure** - The orifice in the riser (~16in.) will be reduced to 4in. with a steel plate with attached trash rack. The outlet structure is to have orifice reducing steel plate (1/4" min.) installed as per drawing. All steel plating should be painted to reduce rusting. In addition, a row (4 holes) of 2in. hole should be drilled in the existing riser.

**B. Sediment removal** - This basin has an accumulation of sediment and debris. Approximately 360 cu.yds. of material should be removed and placed in the waste area (on-site) shown on the plans. Depths vary, and direction on excavation areas will be given on-site by the Westmoreland Conservation District. Material should be graded to resemble (blend in) existing contours.

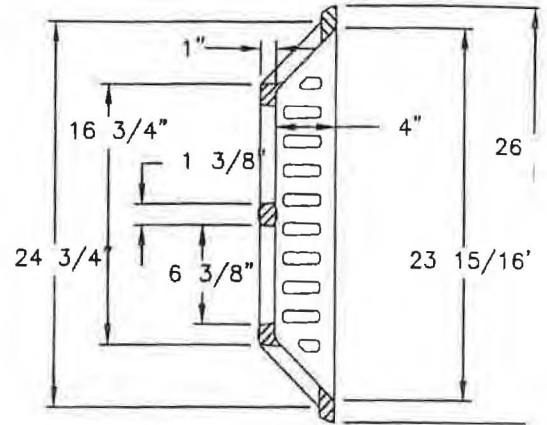
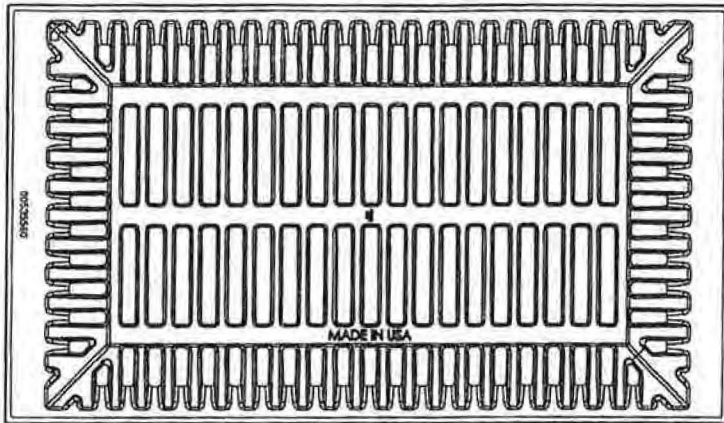
**C. Stabilization** - The project's disturbed areas (inside the basin) must be stabilized with standard seeding and mulching. Seed should be a "contractors mix" variety and covered with min. 3 tons/acre hay mulch.

**END OF SECTION G**

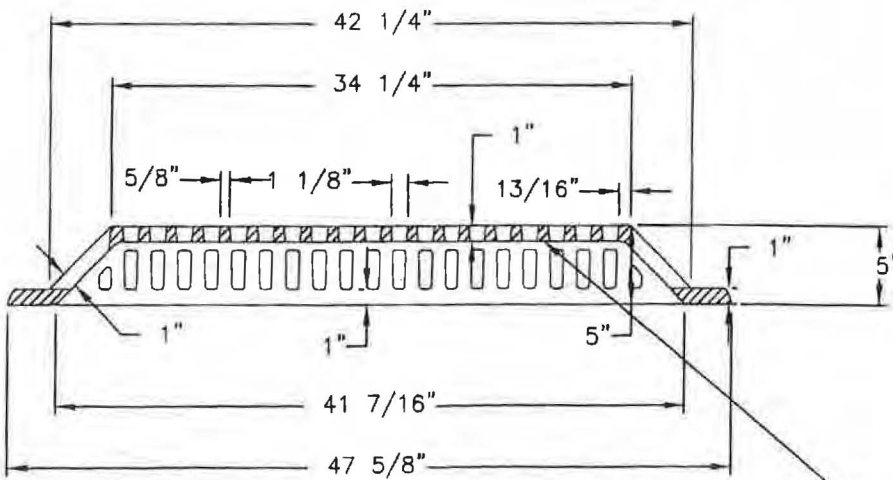
See attached maps for specific location of basins

53550 BEEHIVE Grate

Example



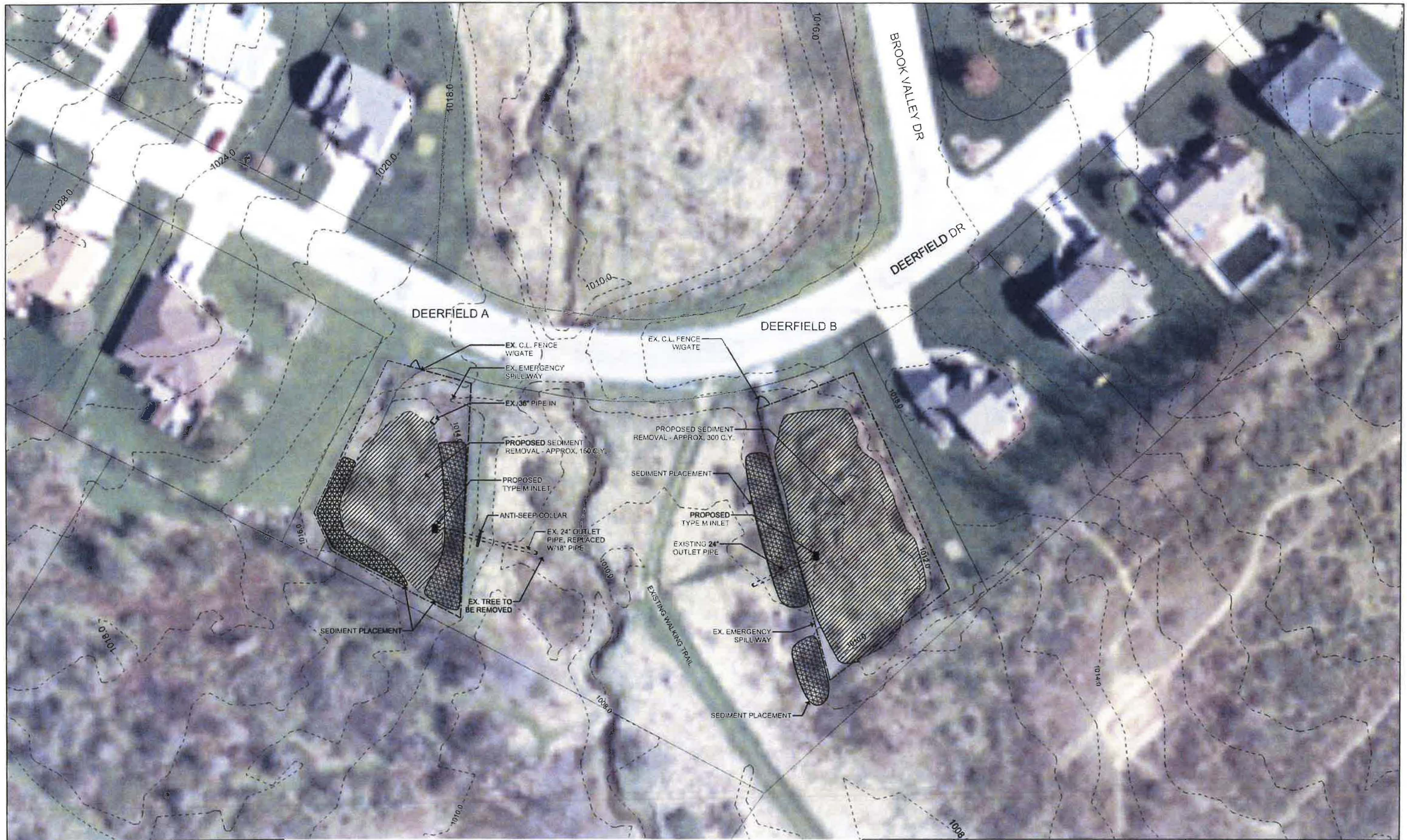
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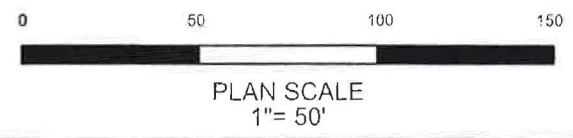
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 5355 0  
 MO/DAY/YR  
 PROD.NO.  
 RECYCLED SYMBOL





DONOHUE CENTER  
 218 DONOHUE ROAD  
 GREENSBURG, PA 15601  
 PHONE: 724-837-5271  
 FAX: 724-552-0143

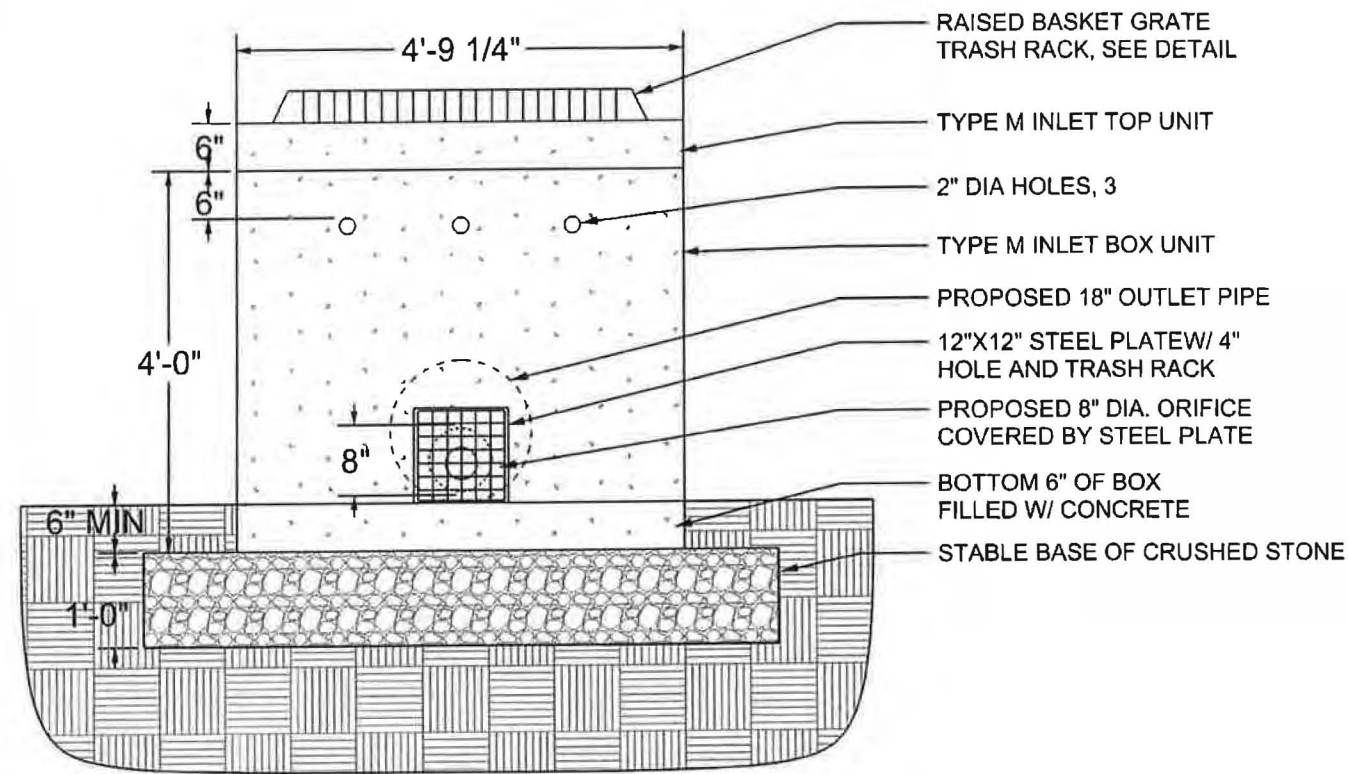


PROJECT:  
 TURTLE CREEK WATERSHED  
 STORMWATER RETROFITS

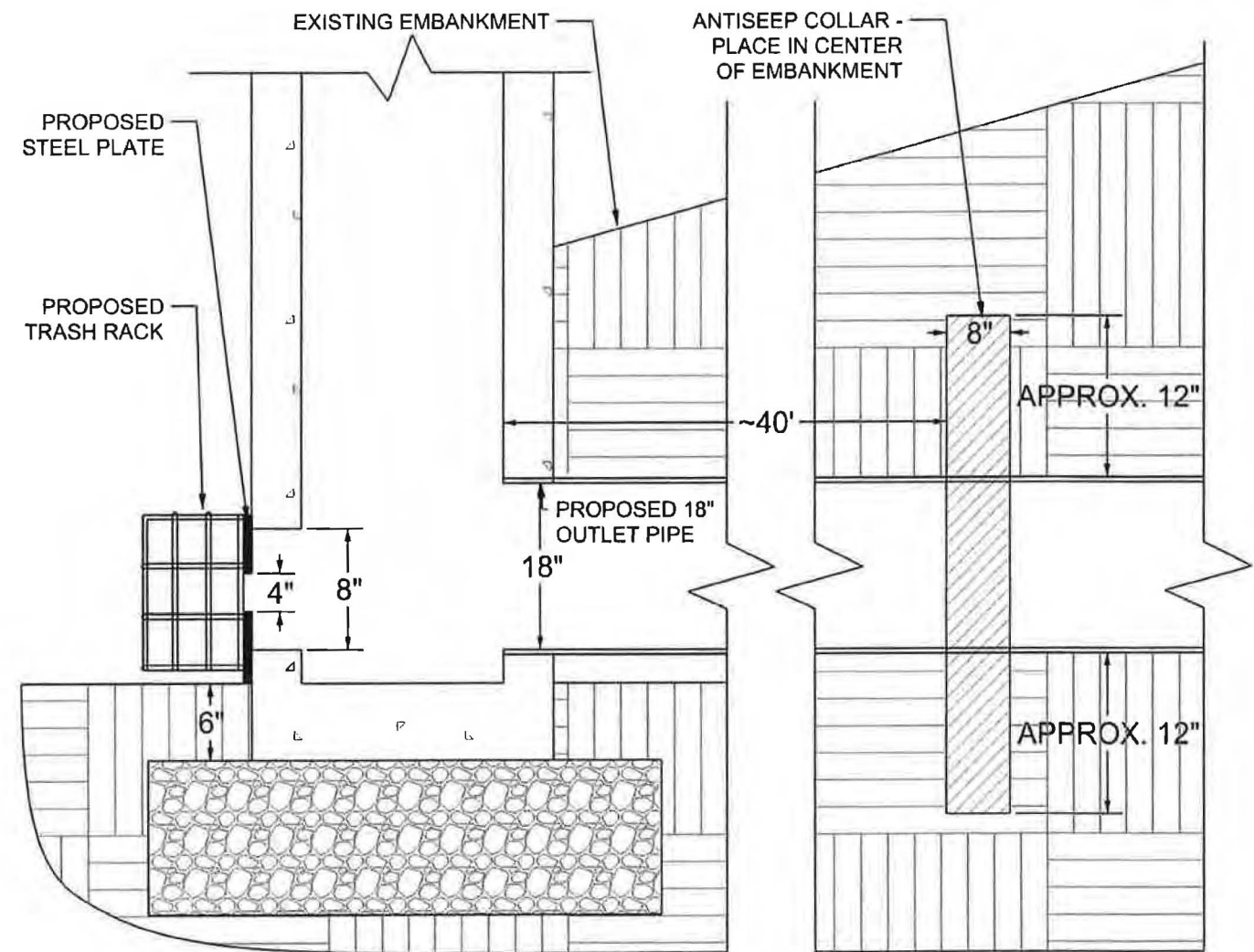
DEERFIELD  
 DRIVE  
 PONDS

1

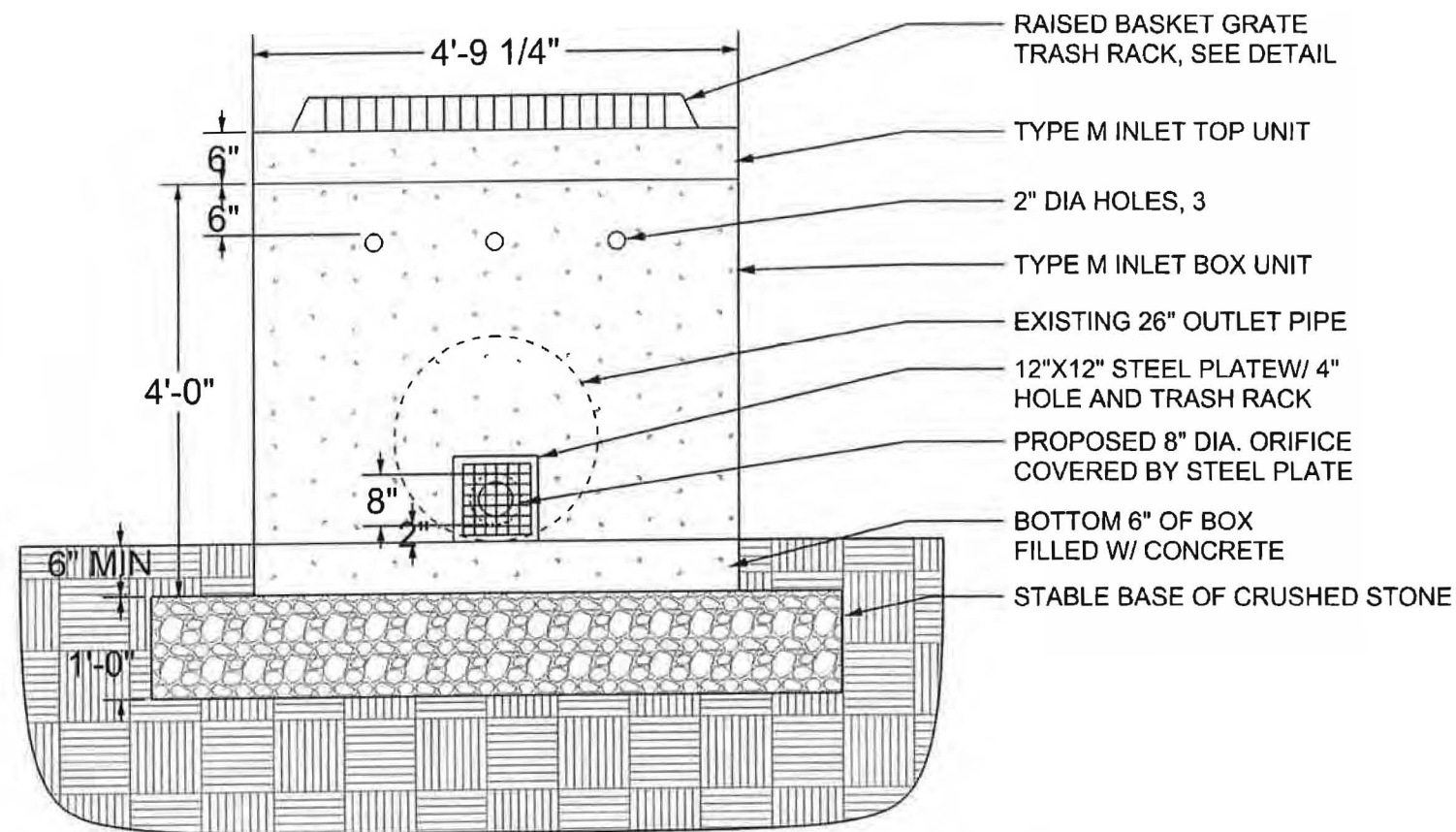




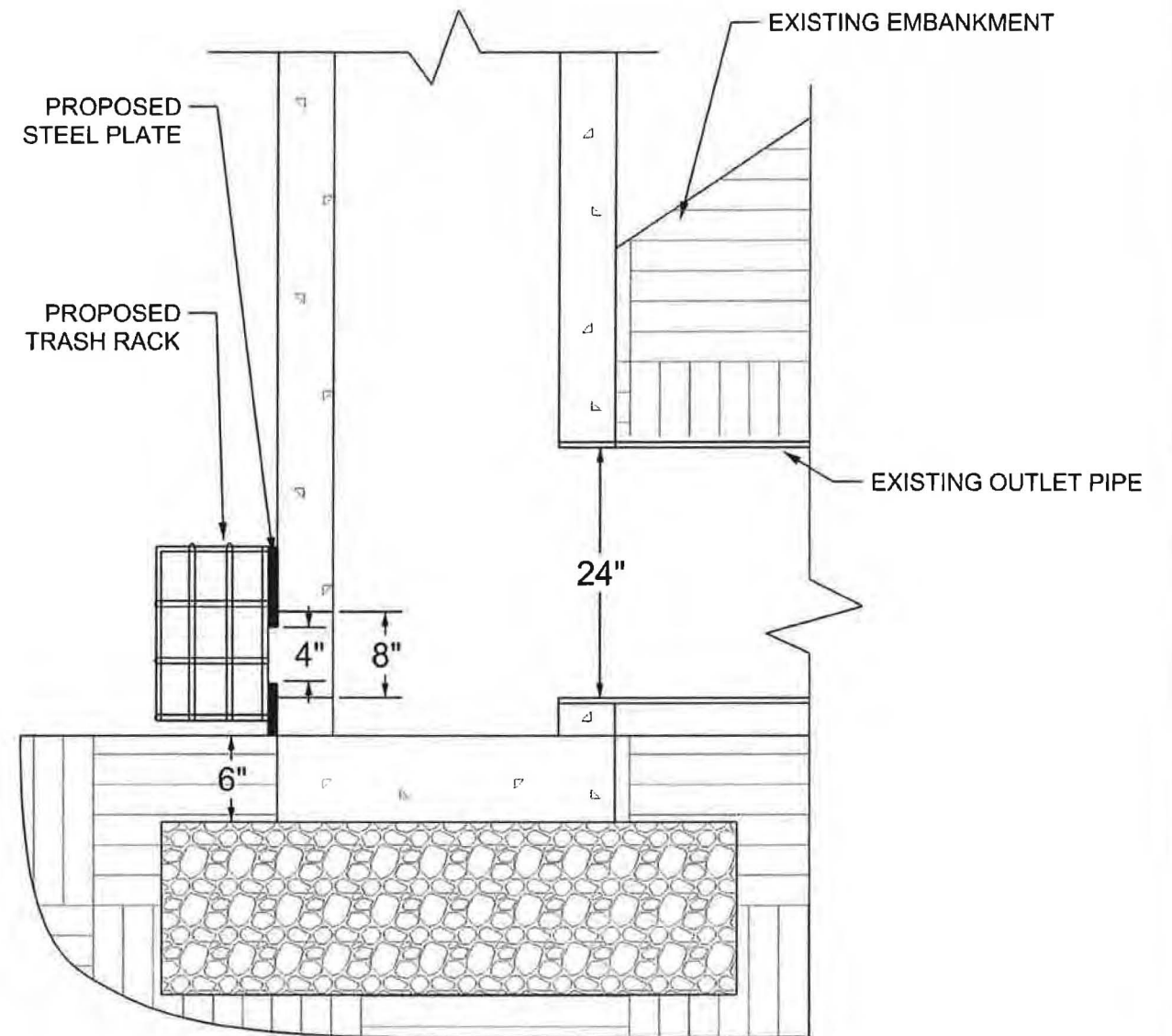
**OUTLET RISER FRONT VIEW  
DEERFIELD A**



**SIDE VIEW - ENLARGEMENT/SECTION**

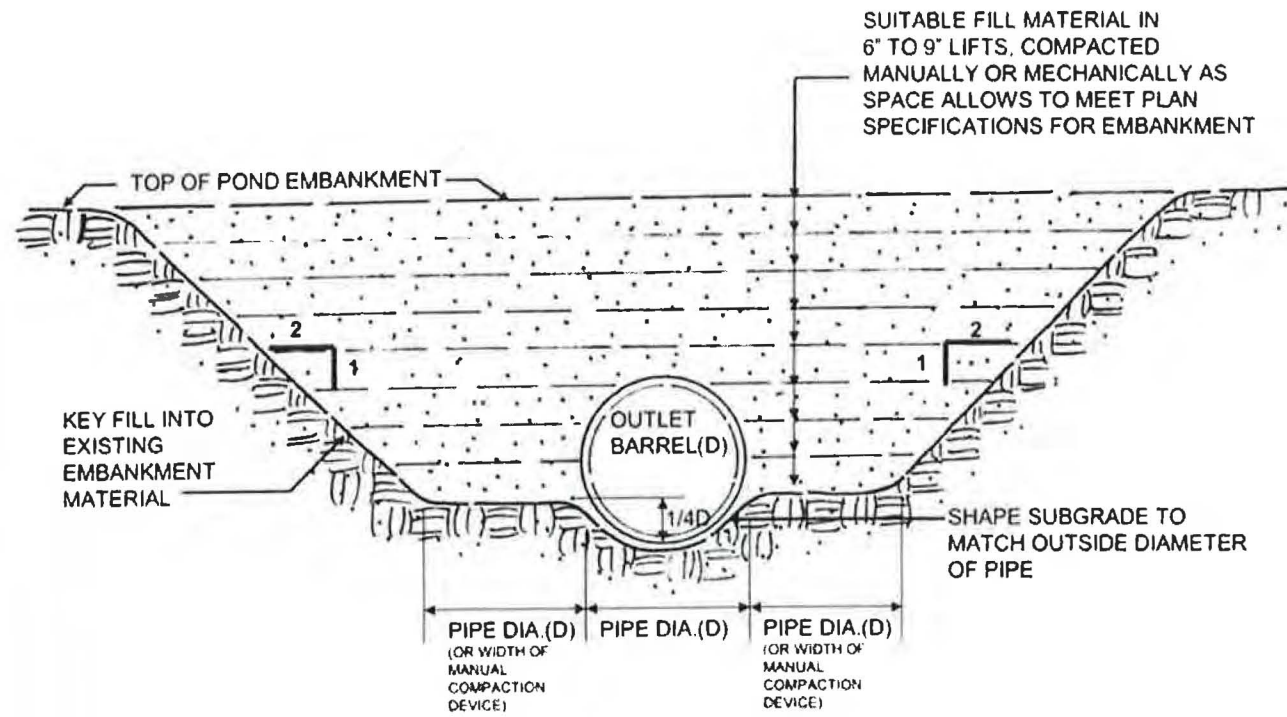


## PROPOSED OUTLET RISER DEERFIELD B



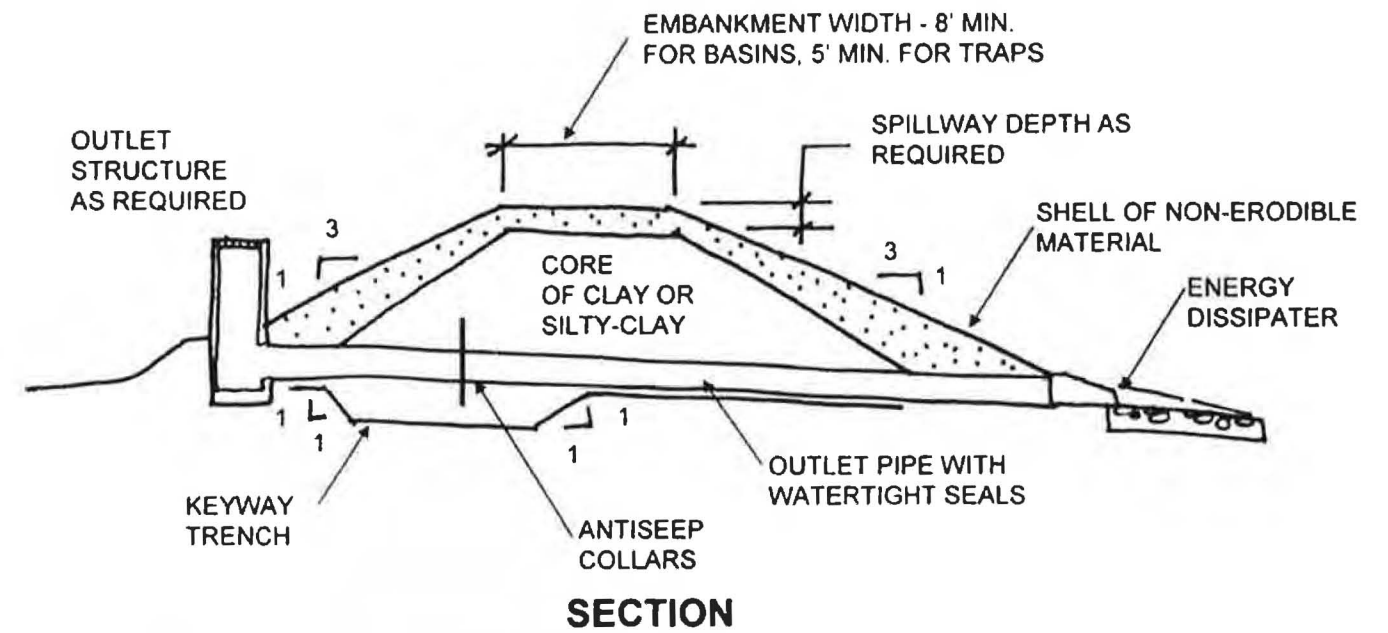
## SIDE VIEW - ENLARGEMENT/SECTION





Typical Outlet Barrel Installation in a Pond Embankment

NTS



SECTION

- TOPSOIL SHOULD BE STRIPPED IN AREA OF EMBANKMENT
- EMBANKMENT SHALL BE CONSTRUCTED IN 6" TO 9" LIFTS AND COMPACTED
- EMBANKMENT SHALL BE STABILIZED WITH VEGETATION

EMBANKMENT

WCD 1/2008 N T S





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PLAN SCALE  
 1" = 50'

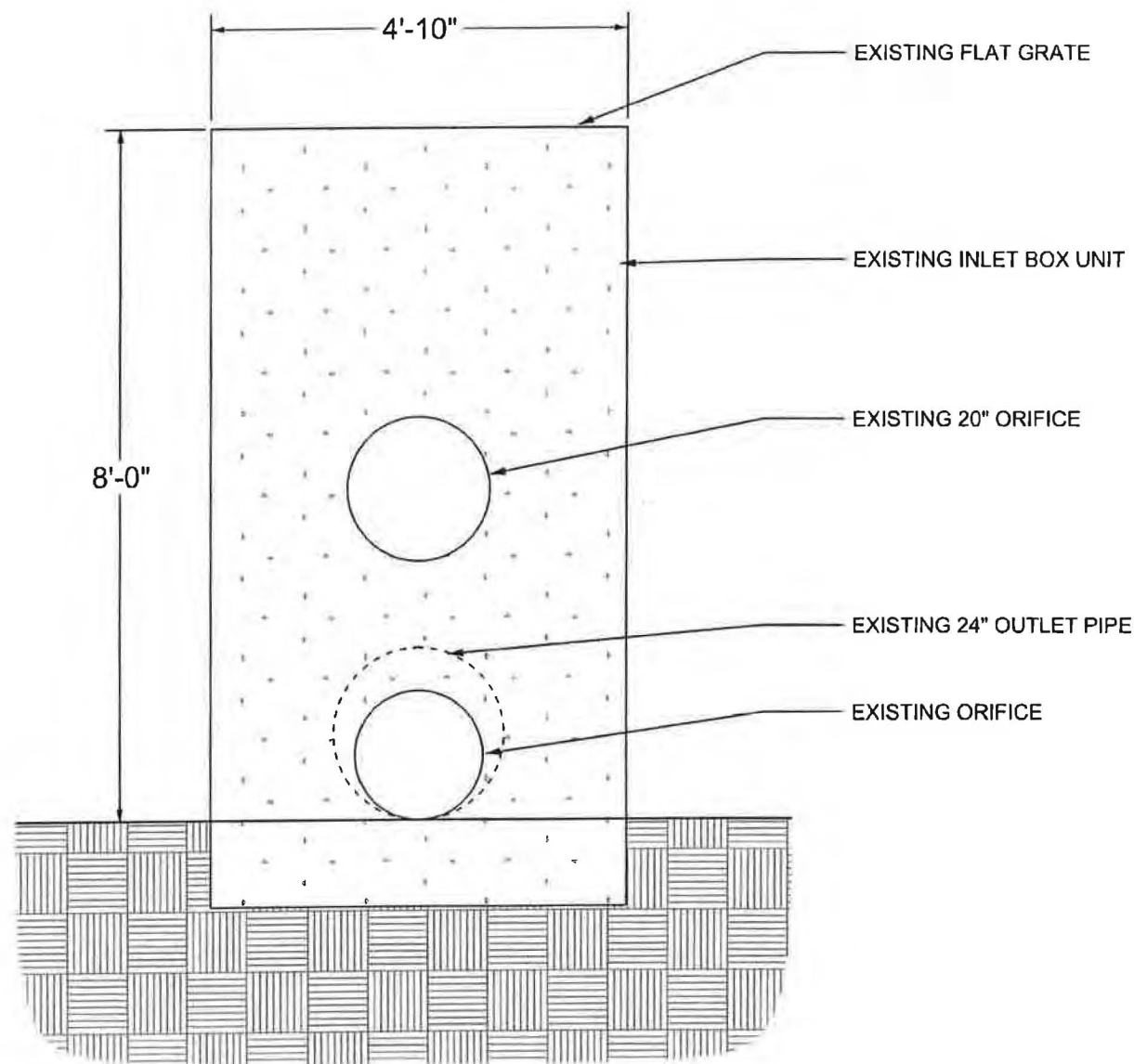


PROJECT:  
 TURTLE CREEK WATERSHED  
 STORMWATER RETROFITS

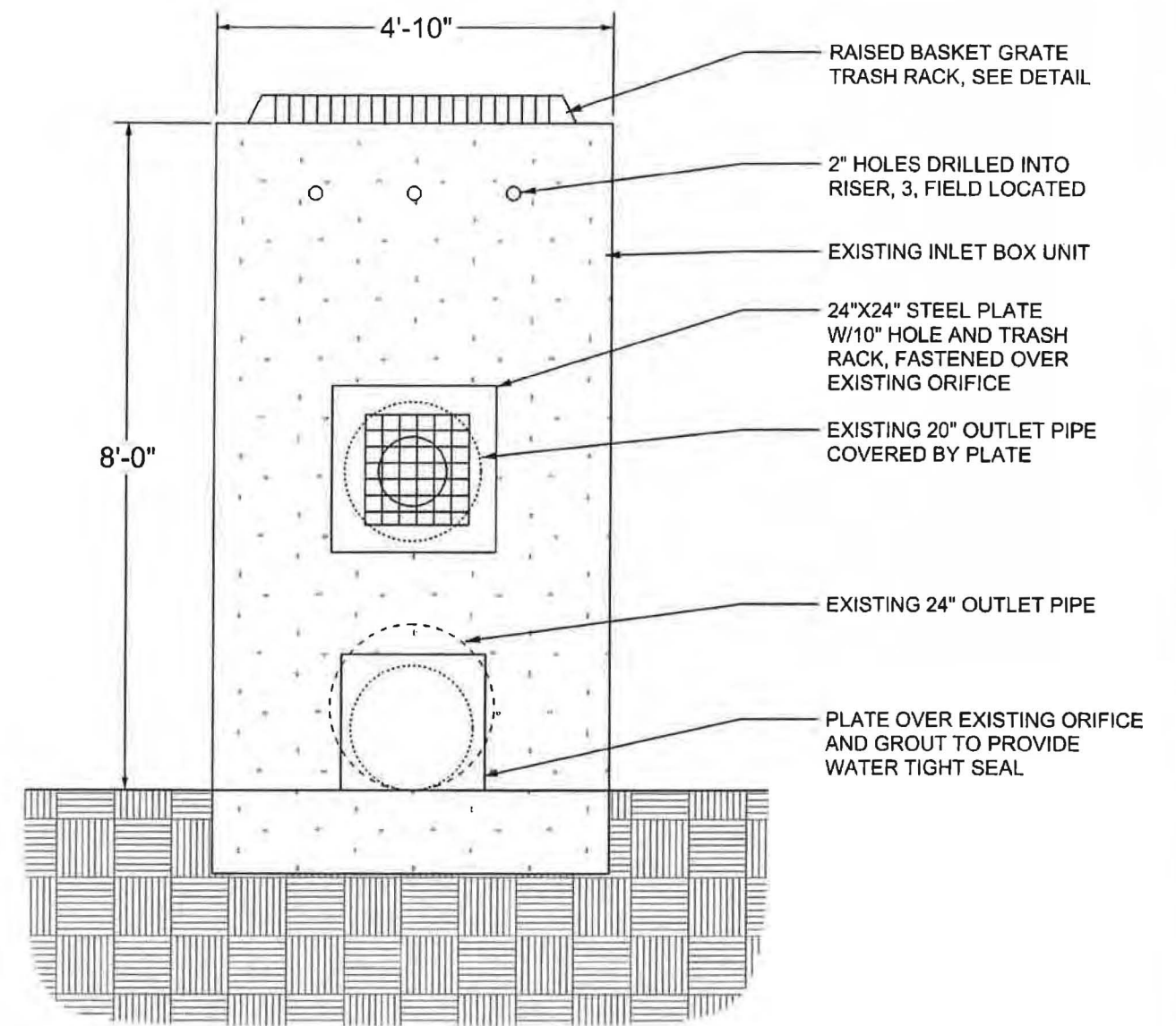
COUNTRY  
 FARMS  
 POND

1



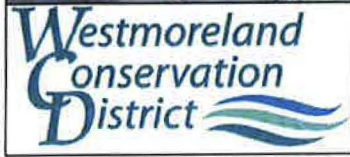


EXISTING OUTLET - FRONT

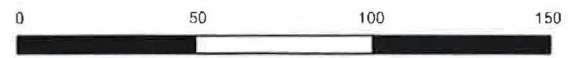


PROPOSED OUTLET - FRONT

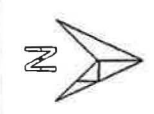




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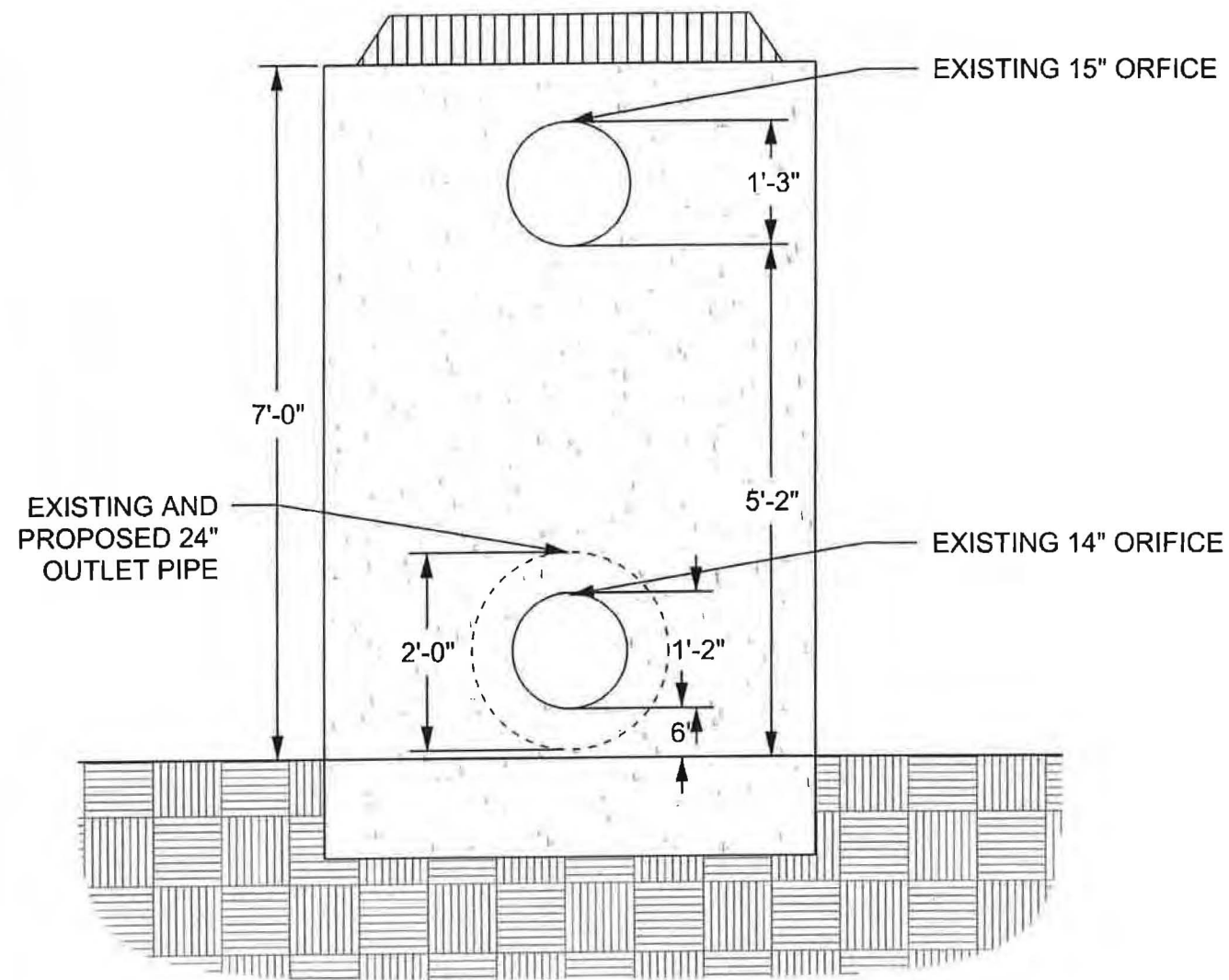


PROJECT:  
 TURTLE CREEK WATERSHED  
 STORMWATER RETROFITS

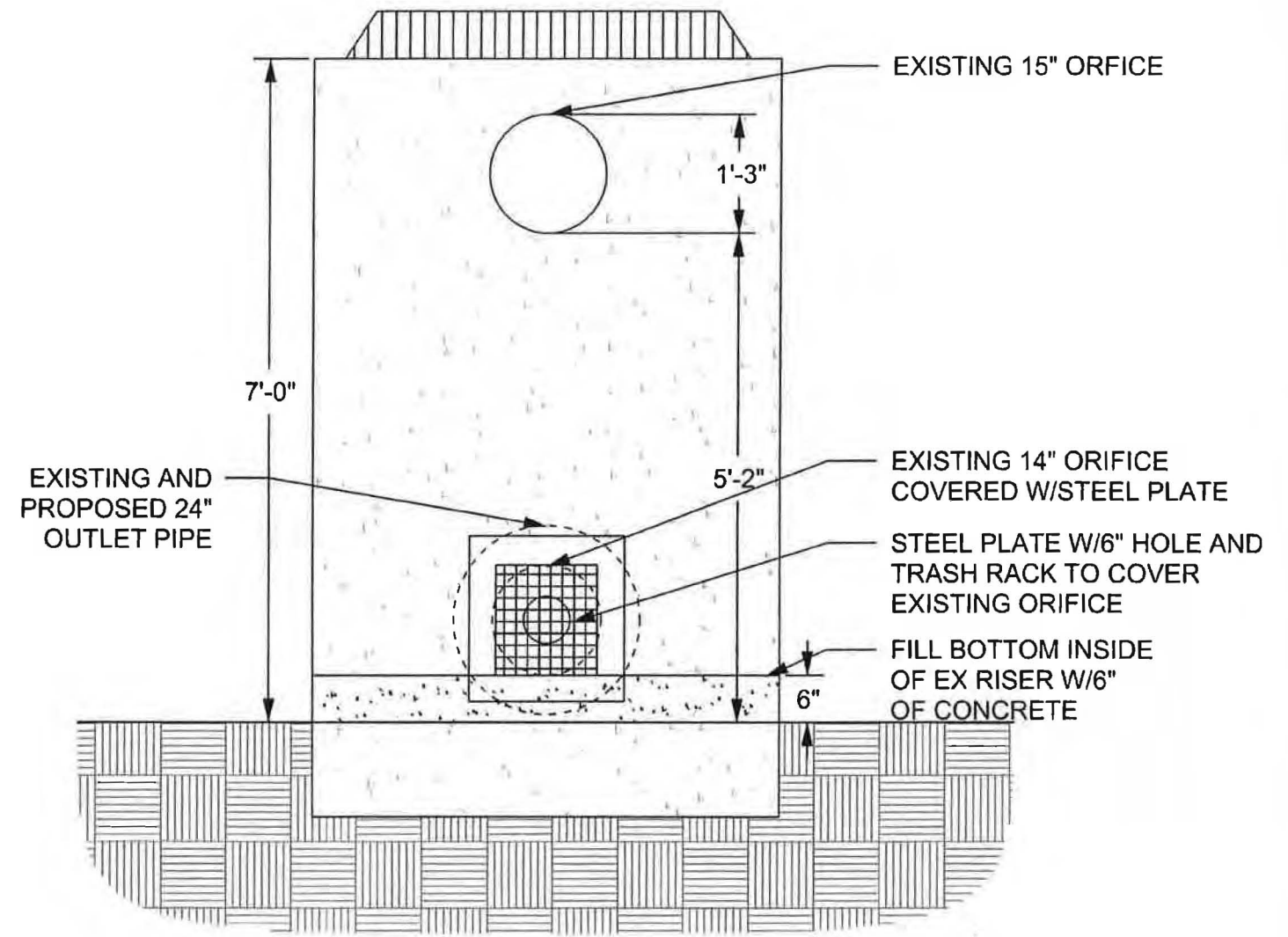
OAK FARM  
 ESTATES  
 POND

1

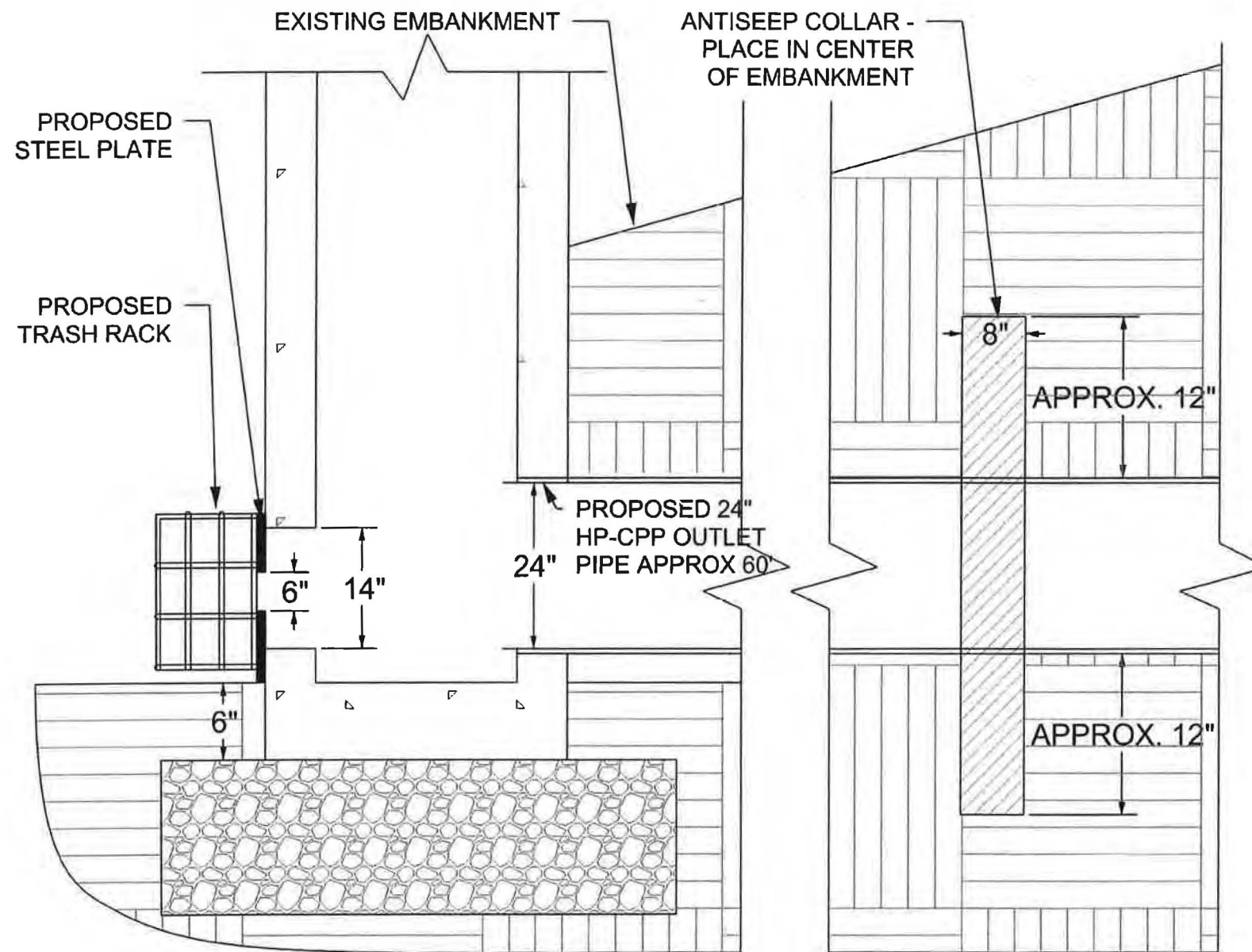




EXISTING RISER - FRONT

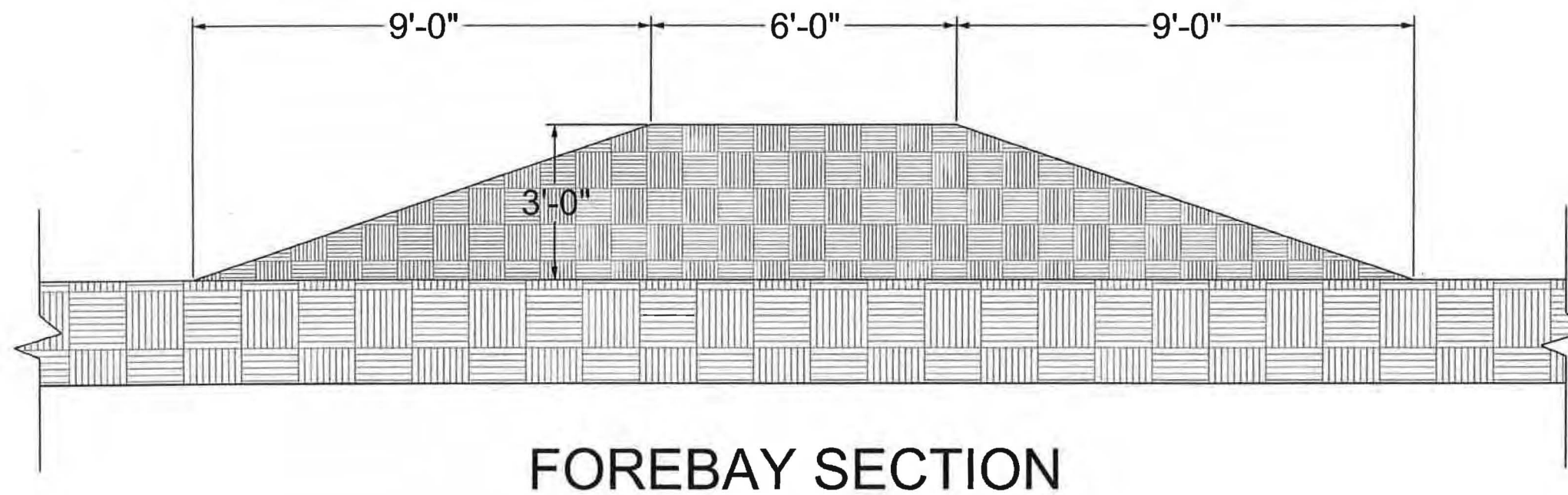
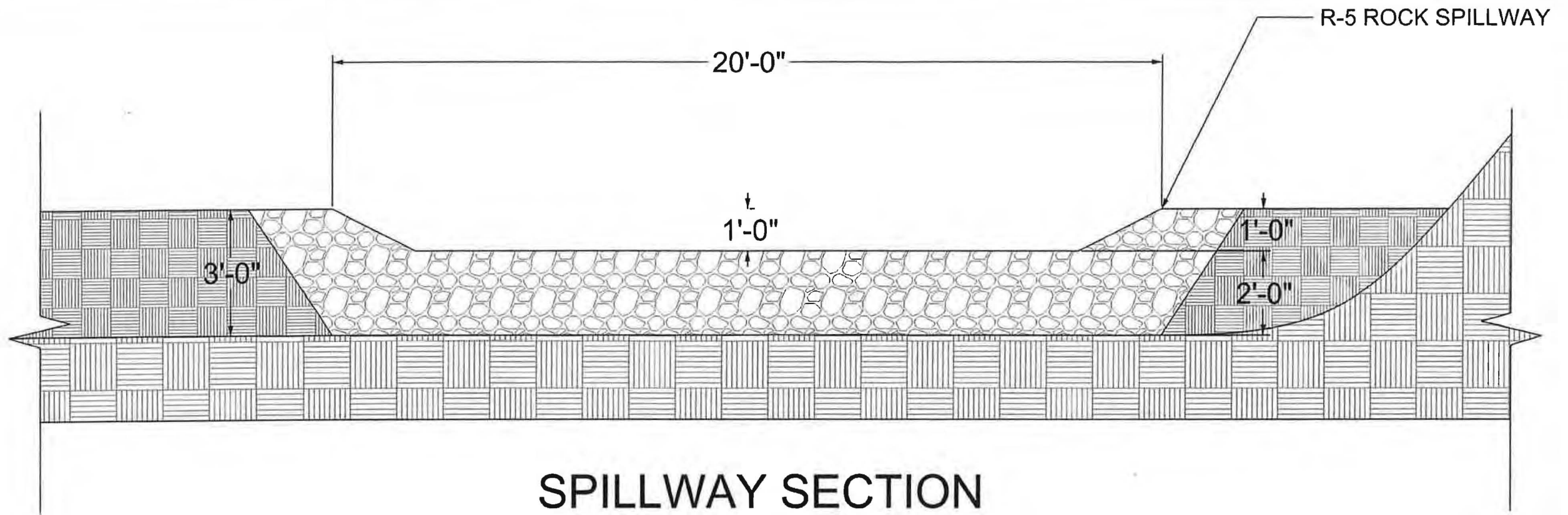


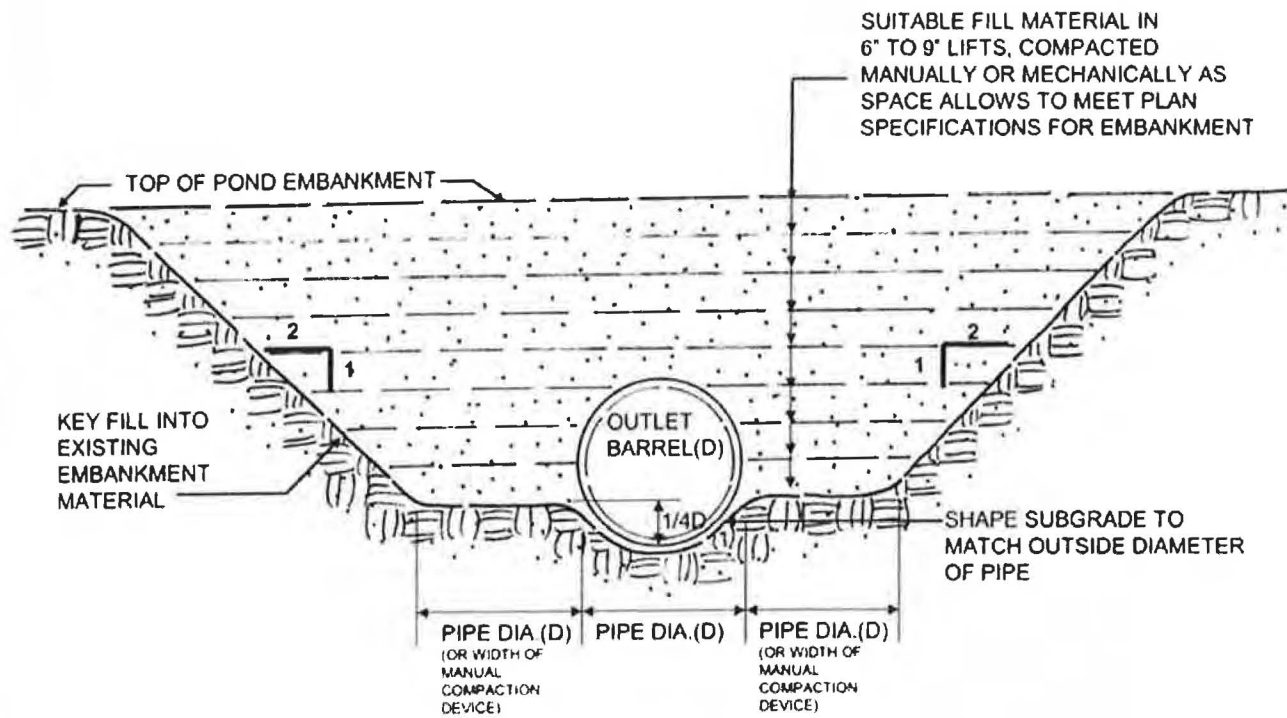
PROPOSED RISER - FRONT



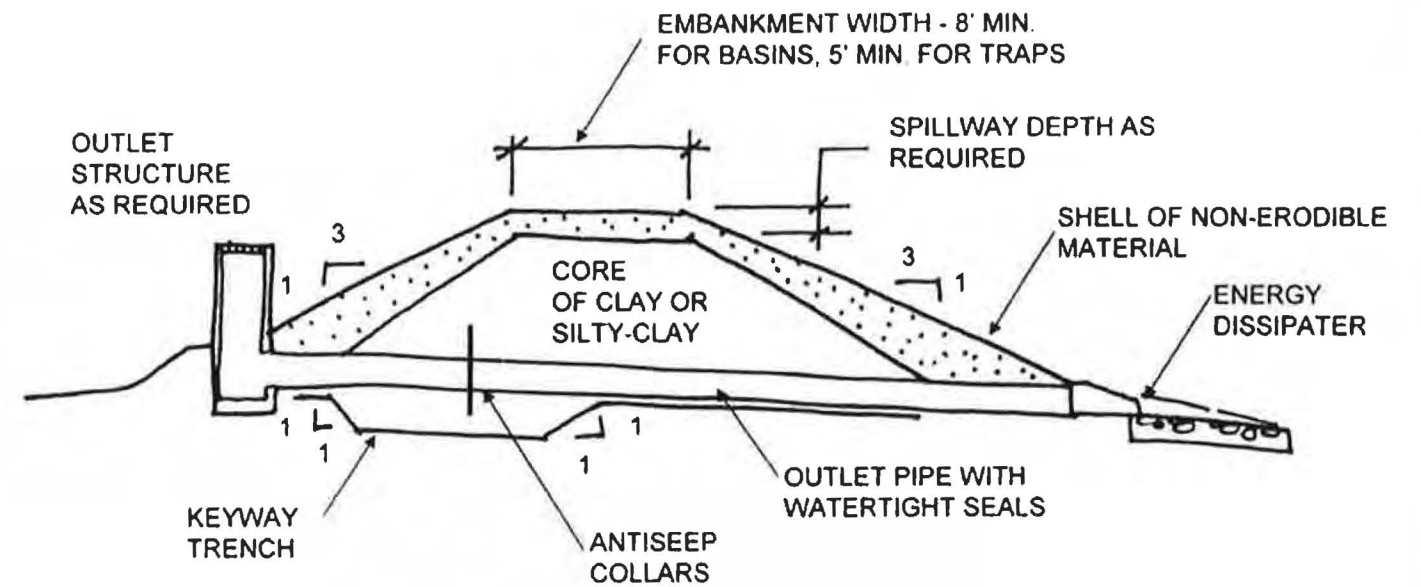
SIDE VIEW - ENLARGEMENT/SECTION







Typical Outlet Barrel Installation in a Pond Embankment  
NTS



**SECTION**

- TOPSOIL SHOULD BE STRIPPED IN AREA OF EMBANKMENT
- EMBANKMENT SHALL BE CONSTRUCTED IN 6" TO 9" LIFTS AND COMPACTED
- EMBANKMENT SHALL BE STABILIZED WITH VEGETATION

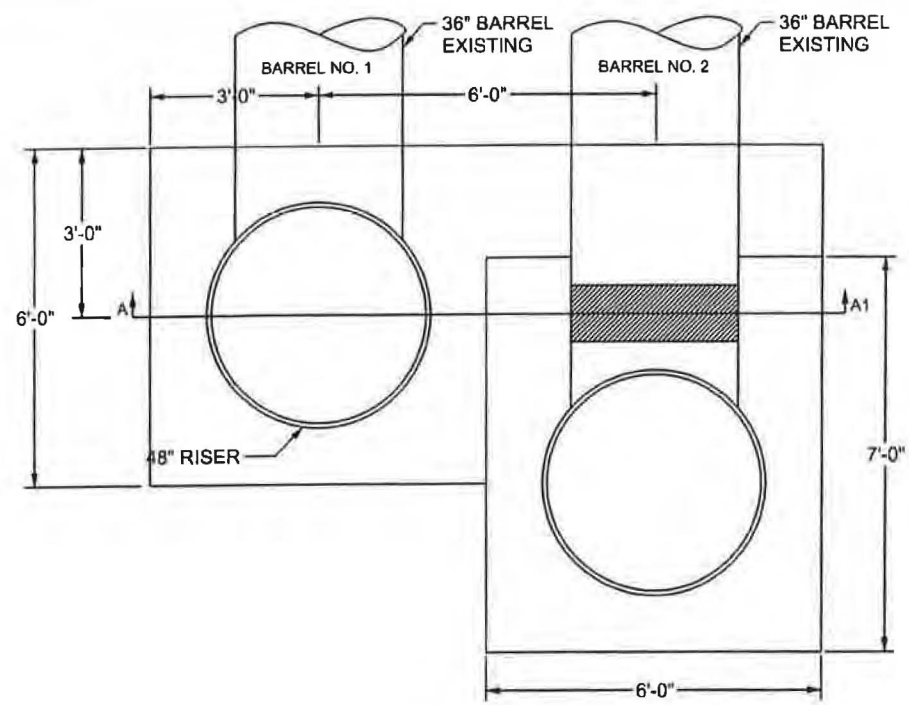
**EMBANKMENT**

WCD 1/2008 N T. S

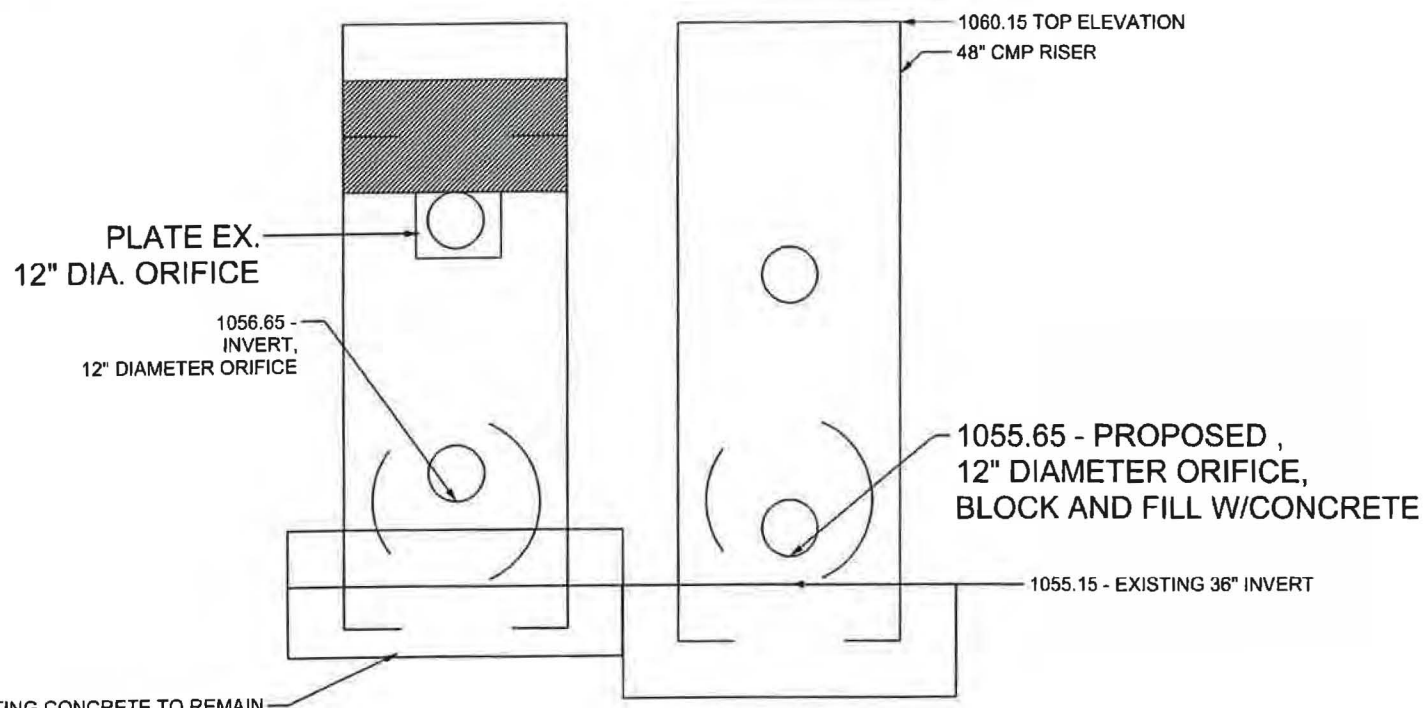




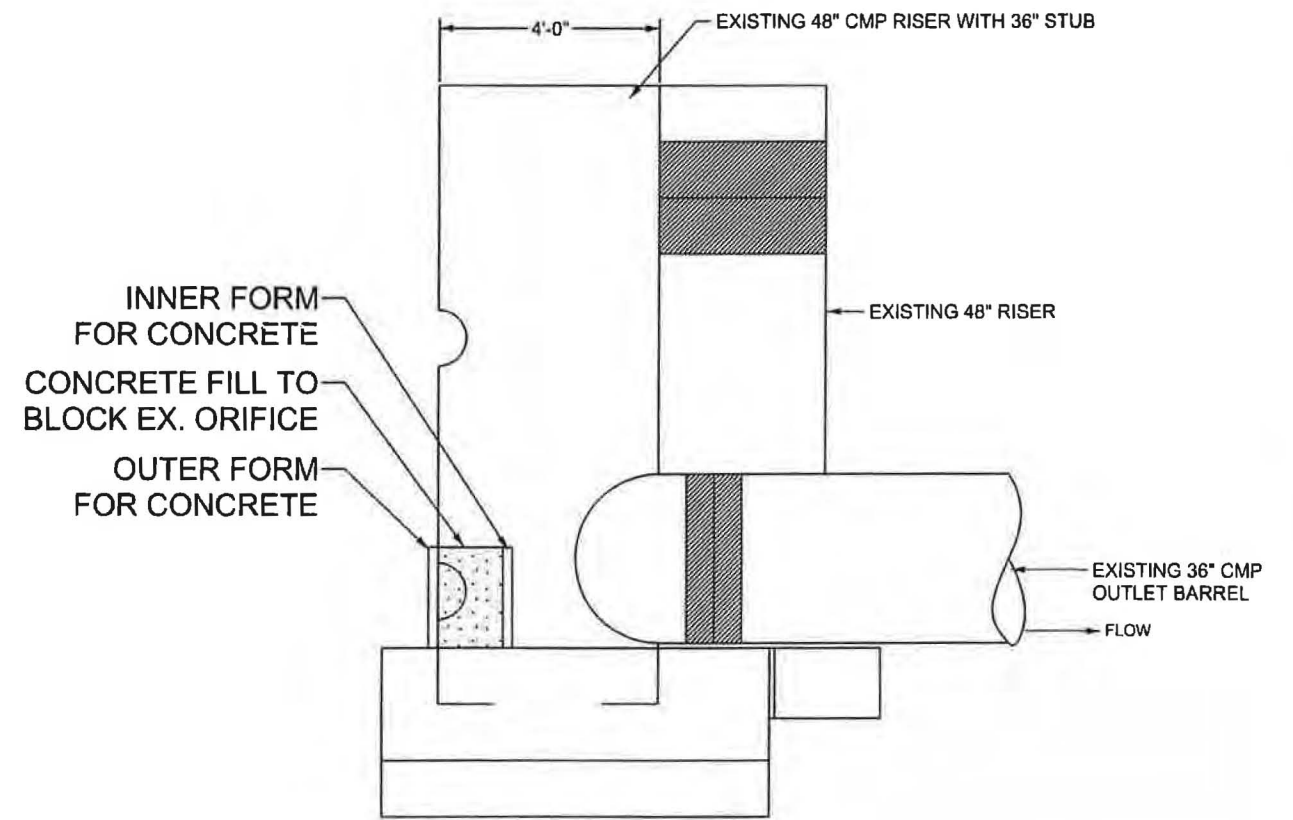




PLAN

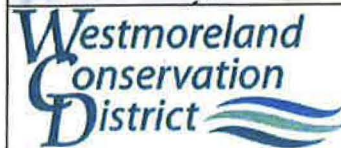


FRONT ELEVATION



SOUTHWEST ELEVATION

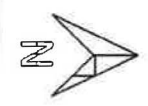




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PLAN SCALE  
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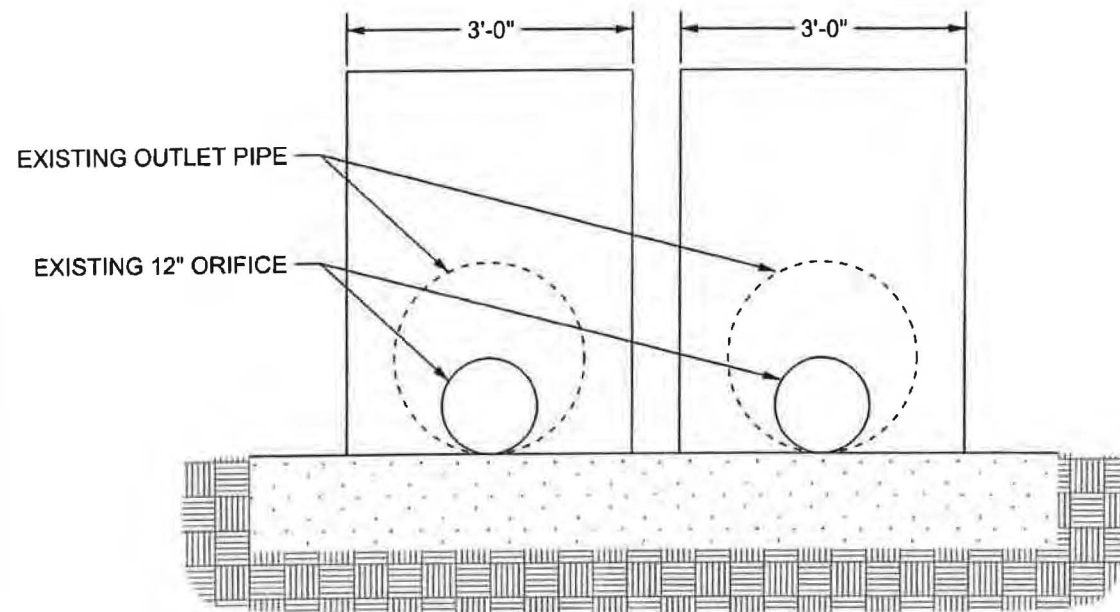


PROJECT:  
 TURTLE CREEK WATERSHED  
 STORMWATER RETROFITS

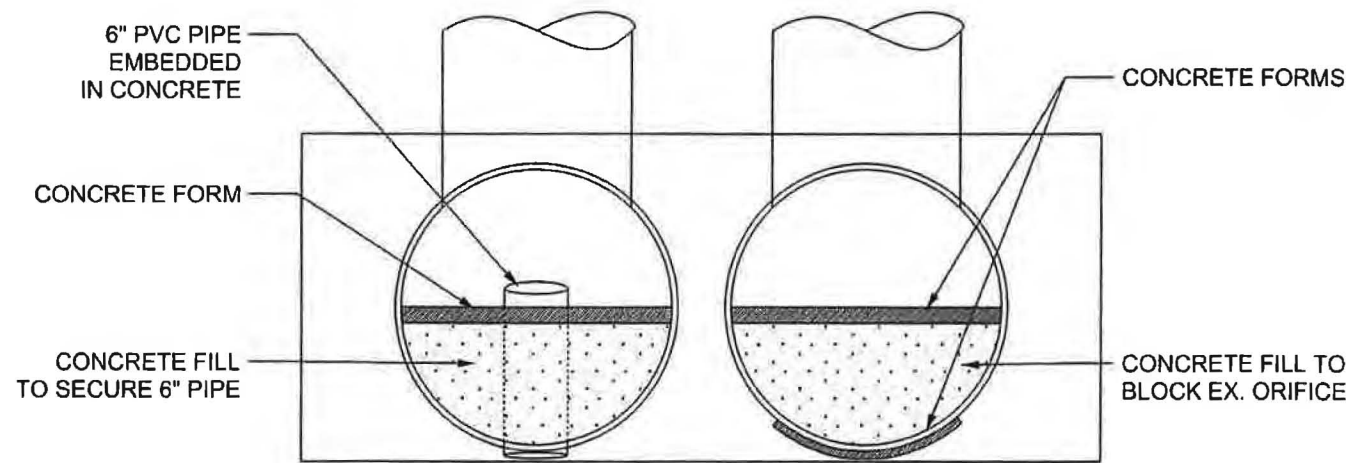
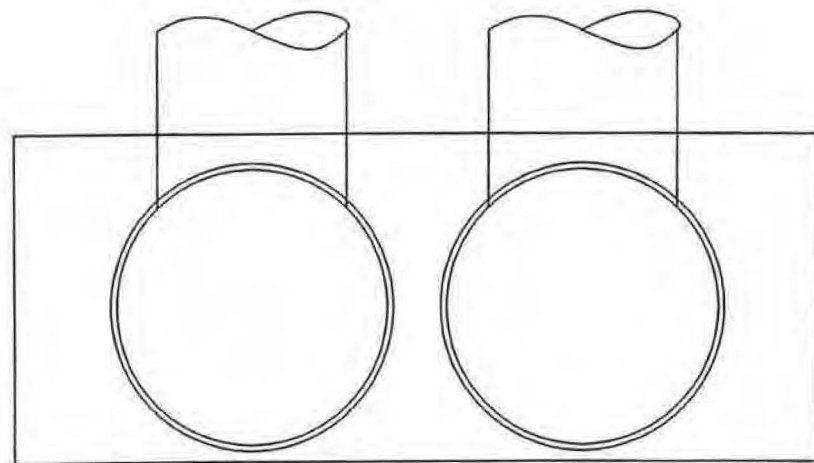
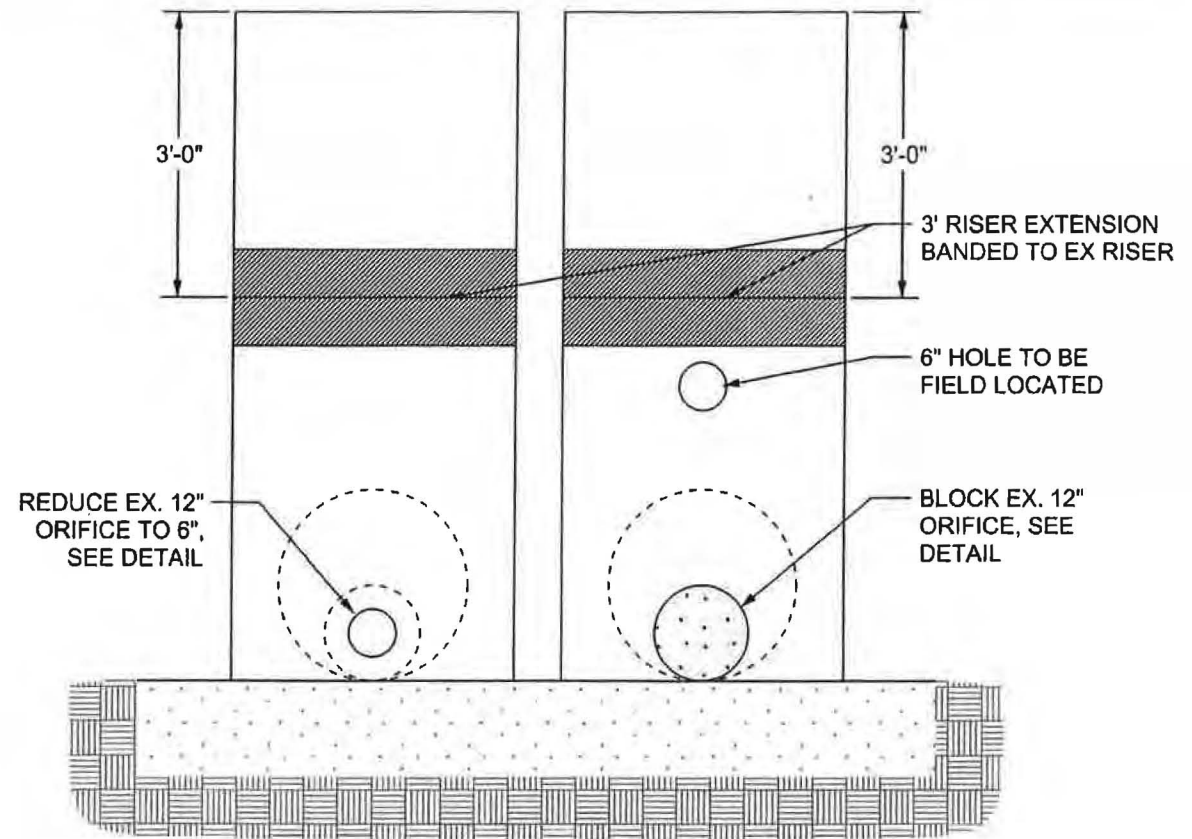
WCIDC PARK 3  
 POND 2

1





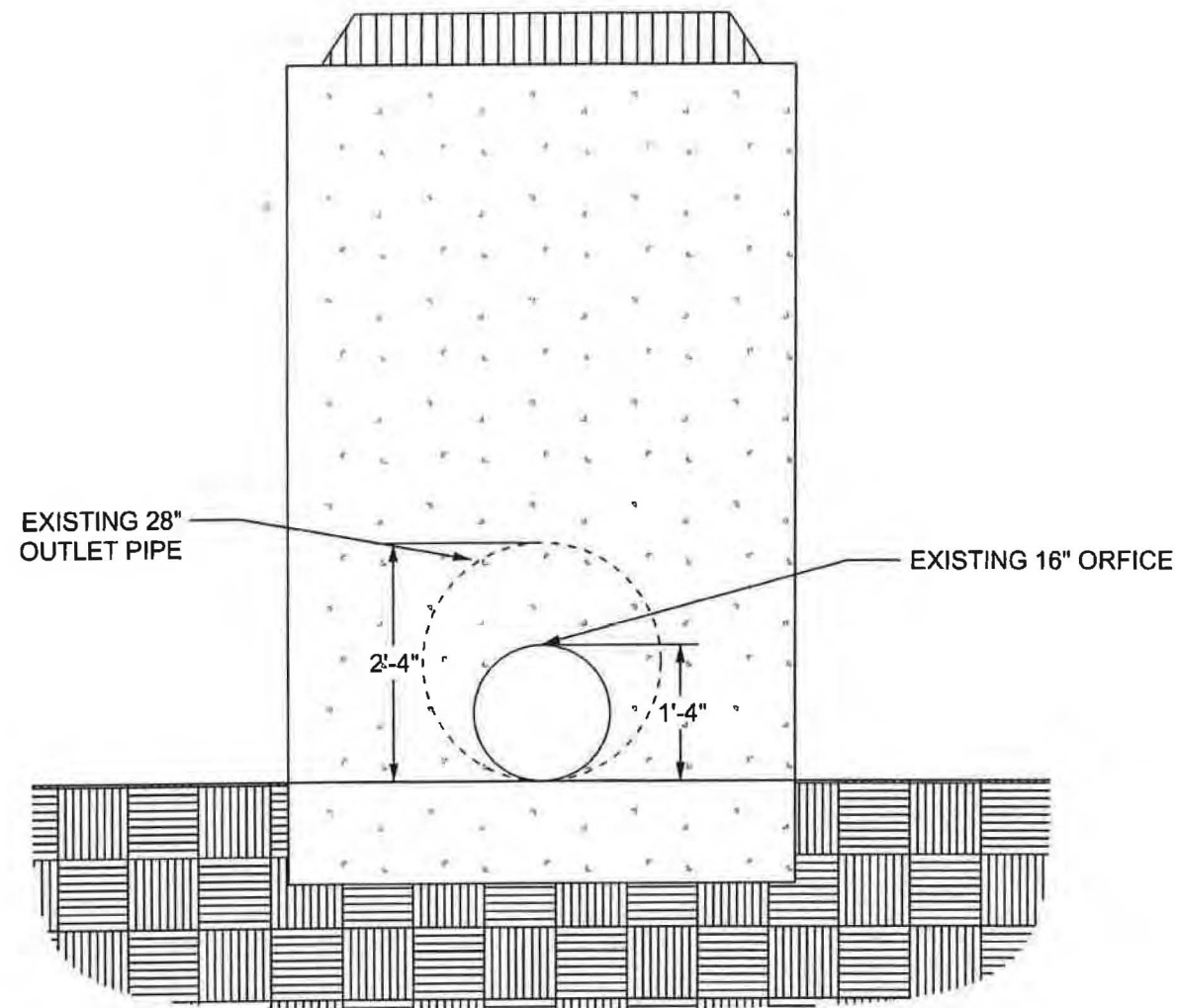
NOTE: EXISTING TRASH RACK TO TRANSFER TO PIPE EXTENSIONS



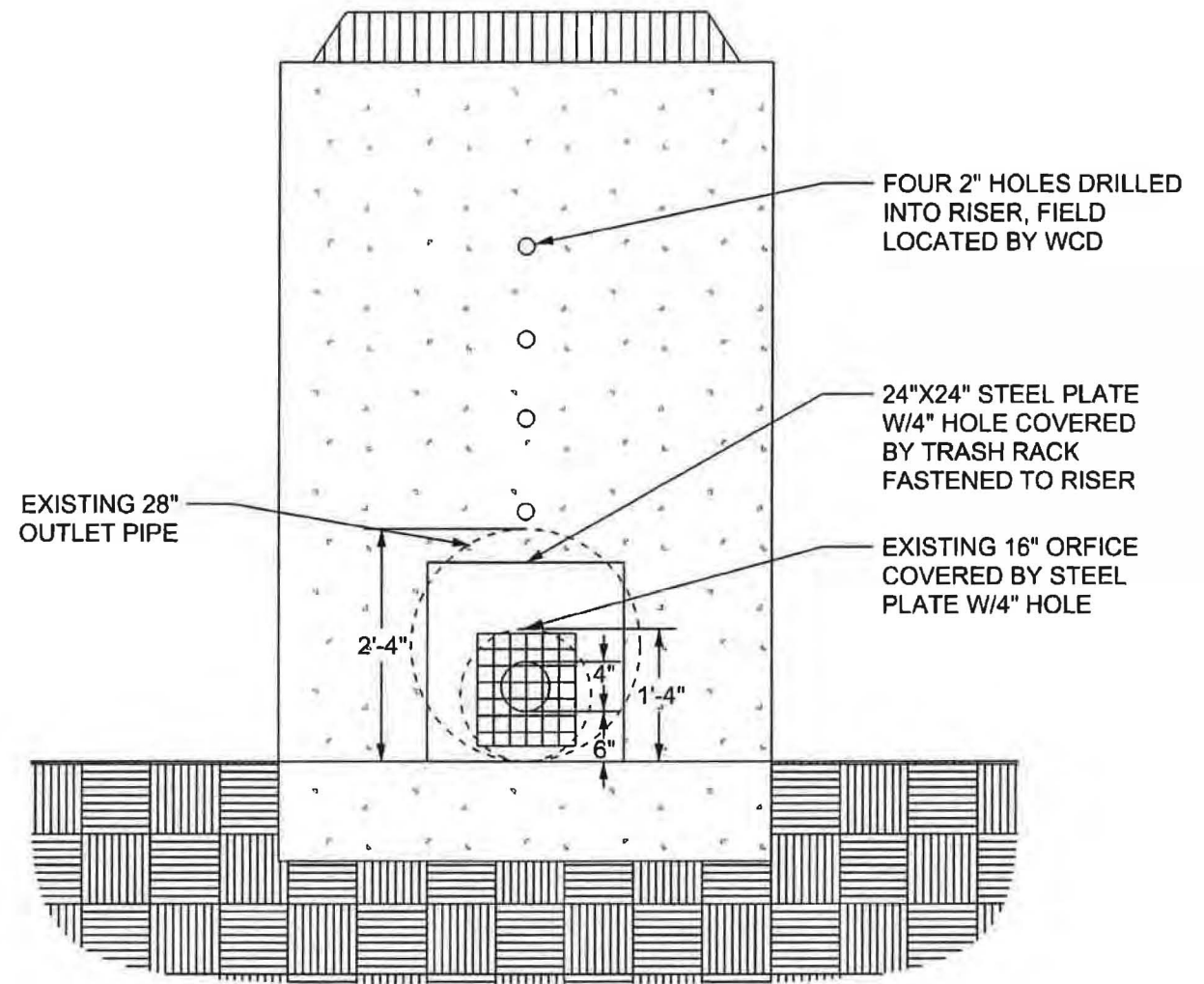






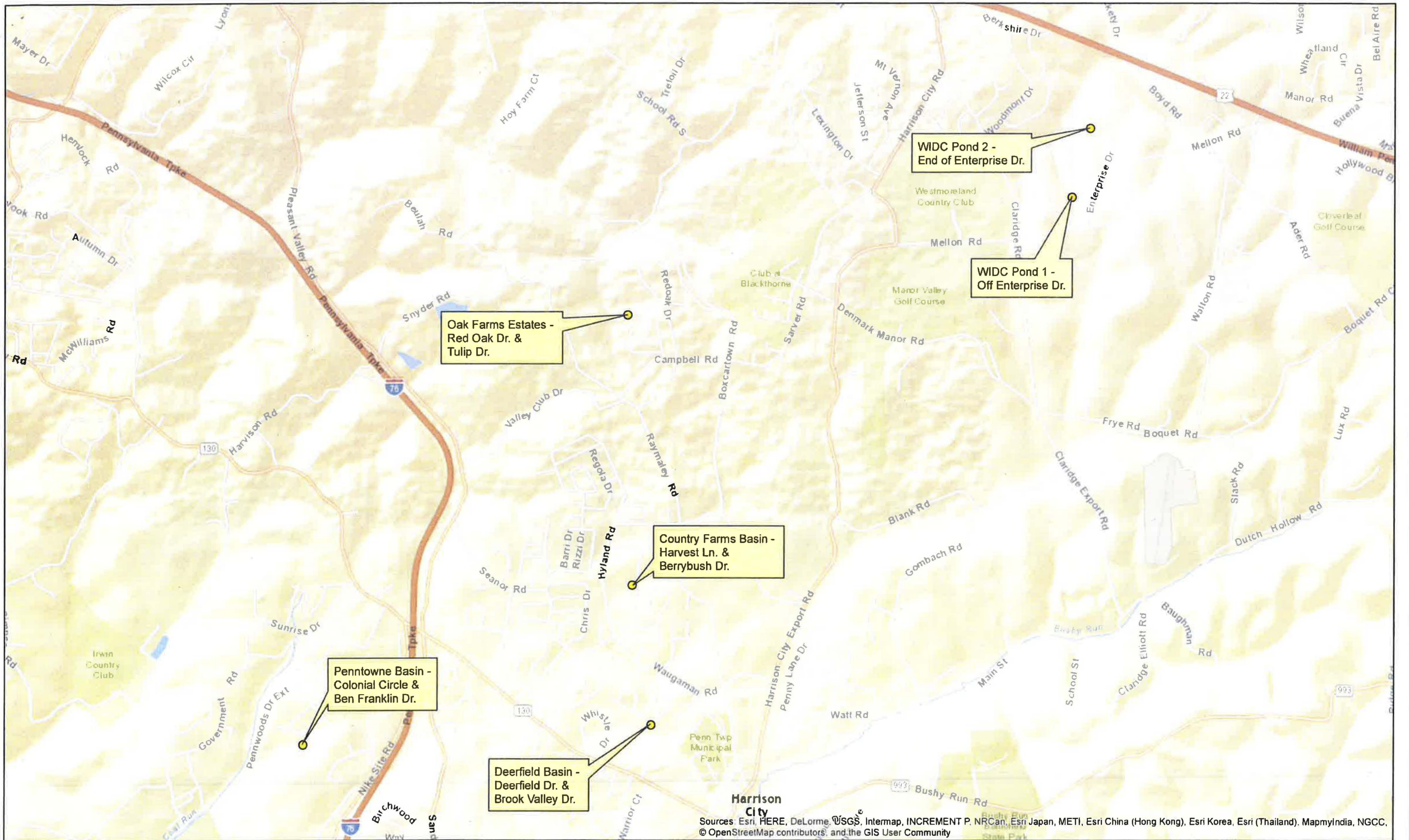


EXISTING RISER - FRONT



PROPOSED RISER - FRONT





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community



# Penn Township Stormwater Basin Retrofits





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**ADELLA COURT POND – CONCEPTUAL PLAN**



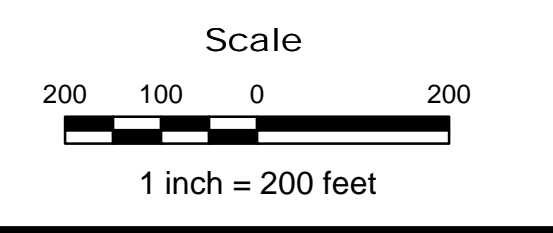
# ADELLA COURT POND - CONCEPTUAL PLAN






















11045 PARKER DRIVE  
N. HUNTINGDON, PA 15642  
Phone: 412-754-0801  
Fax: 412-954-0860  
www.eadsgroup.com

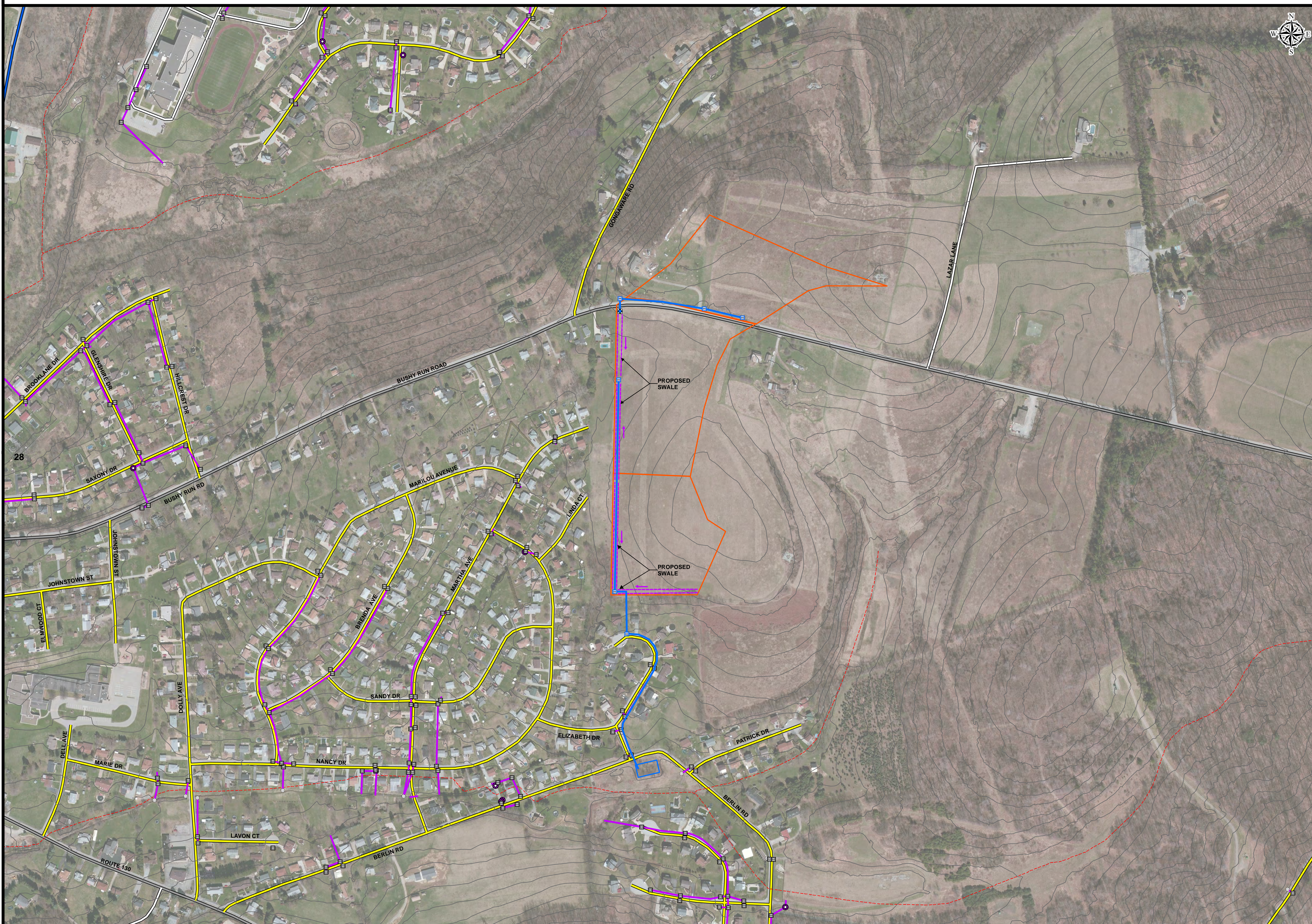


Date: 6/20/2017  
Drawn By: SMC Checked By: DRC



## Legend

-  ADELLA COURT INLETS
-  ADELLA COURT OUTFALL
-  ADELLA COURT STORM LINE
-  ADELLA CT SWALE
-  ADELLA CT DRAINAGE AREA
-  ADELLA COURT PONDS
-  Stormwater Inlets
-  Stormwater Manholes
-  Stormwater Observation Point
-  Stormwater End Pipe
-  Stormwater Outfalls
-  Stormwater Mains
-  Stream
-  Stream - Impaired
-  County Road
-  Private Road
-  State Road
-  Township Road
-  Penn Township Roads



PENN TOWNSHIP  
MS4 REPORT AND  
POLLUTANT REDUCTION PLAN

**ADELLA COURT  
POND  
CONCEPTUAL PLAN**

PENN TOWNSHIP  
WESTMORELAND COUNTY, PA

**SHEET 5**

Path: R:\6100 PENN TWP\GIS and Mapping\GIS Map Services\MS4 Report Maps\Adella Court Pond Conceptual Plan - Sheet 5 - 24x36.mxd



**SECTION F**

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**FUNDING SOURCES**

## FUNDING SOURCES

- Street Sweeping – Penn Township already has a street sweeping program in place with just an increase in frequency being required. This will be paid for with township general funds.
- New Wet Ponds/Detention Basins – The *Sterling Oaks, Brookhaven 1 & 2 and Sandy Hill Meadows ponds* are being constructed at the developer's expense and will be turned over to the township upon completion.
- Retrofits (County Program) – Penn Township makes no financial contributions to the retrofits of the *Oak Farms Estates, WCIDC 1 & 2, Penntowne, Deerfield Drive A & B and Country Farms ponds*. The fees paid by the Conservation District are recovered from grant monies awarded for the retrofit and are already in place. The Township's contributions are strictly limited to in-kind services during construction via employees and equipment. An example of the township's commitment of in-kind work from a previous year is attached in Section F. These ponds are owned by the township.
- Retrofits (Township Program) – The Township would pay for the engineering and construction of the retrofits on the *Berlin and Lazar ponds* out of their yearly engineering and construction budgets. These ponds are owned by the township.
- Adella Court – This project is in the very early stages of preliminary development and moving forward the township will be exploring funding options through such sources as PENNVEST.



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**SAMPLE FUNDING COMMITMENT FROM PREVIOUS RETROFIT PROGRAM**



# PENN TOWNSHIP COMMISSIONERS

TELEPHONE  
724/744-2171

2001 MUNICIPAL COURT  
HARRISON CITY, PENNSYLVANIA 15636-1349

FAX  
724/744-2172

October 1, 2015

To: Rob Cronauer, Watershed Specialist  
Westmoreland Conservation District

From: Scot E. Fodi, Director of Public Works  
Penn Township

Re: Stormwater Basin Retrofit: Municipal Contribution

As a follow up to Alex Graziani's correspondence of June 24, 2014, allocating funds to assist with the retrofit of four stormwater basins in Penn Township, I can offer the following information:

Basins	Crew Wage (8-hr Day)	Equipment Rate (8-hr day)	Total Contribution
4	\$ 1,208	\$ 520.00	
<b>Pond Maintenance</b>			
	(one crew, 8 hour day, 4x/year):	\$	4,832
<b>Equipment Use</b>			
	(8 hour day, 4x/year):	\$	2,080
<b>Planning/Preparation/Site Meetings:</b>			
	(Staff Mtgs: DPW & Community Planning):	\$	1,500
<b>Total Township Contribution:</b>			\$ 8,412

These costs incurred by the Township are consistent with our operations throughout a calendar year on the four (4) retrofitted basins as well as all remaining basins owned by Penn. Please use this correspondence for submission to the Department of Environment Protection to receive payment.



**SECTION G**

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**RESPONSIBLE PARTIES FOR O&M OF BMPs**



## OPERATION AND MAINTENANCE

Street Sweeping: Streets in urbanized areas

Responsible Party – Penn Township

Frequency – 25 times per year (on average two times per month)

Action - The collection and removal of paper, leaves, and other visible debris that collect in the gutters.

New and Retrofitted Wet Ponds/Extended Detention Basins:

Outlet Structure(s): Check for clogging and excessive debris

Responsible Party – Penn Township

Frequency – Two times per year or after major rain events.

Action – Remove accumulated debris.

Basin/Pond: Check for clogging and excessive debris

Responsible Party – Penn Township

Frequency – Two times per year or after major rain events.

Action – Basin bottoms, riprap or gabion structures. 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 as necessary to sustain the system, but all detritus should be removed from the basin. Vegetated areas should be inspected annually for erosion. Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.