



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES  
EROSION AND SEDIMENT CONTROL (E&S) MODULE 1**

Applicant: 222 Church Road LLC

Project Site Name: 222 Church Road

Surface Water Name(s): Tookany Creek

Surface Water Use(s): WWF, MF

**E&S PLAN INFORMATION**

1. Describe the existing topographic features of the project site and the immediate surrounding area.

The site currently exists as a residential property containing one existing dwelling, a driveway with connections to both Church Road and Harrison Avenue, and other minor miscellaneous surface features. The site generally drains overland from north to south, with the entire site draining towards Tookany Creek located just downstream of the southern edge of the development area. A portion of Church Road and adjacent residential properties that front Church Road drain through the development property. The project site is bounded by other residential properties and Church Road to the north, other residential properties to the east, Township owned land and Tookany Creek to the south, and other residential properties and Harrison Ave to the west.

2. Complete the following table for soils present at the project site.

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
UugB	Urban Land - Udorthents	3.17	C	93.2	>5	<input type="checkbox"/>
UugD	Urban Land - Udorthents	0.18	C	5.3	>5	<input type="checkbox"/>
Ha	Hatboro Silt Loam	0.05	B	1.5	0-0.5	<input checked="" type="checkbox"/>

Discuss any soil limitations and how the E&S Plan was designed to address those limitations.

Should soil limitations be encountered, a qualified geotechnical engineer will be consulted prior to proceeding with construction in the area with the limitations. Appropriate earthwork construction techniques listed below may be employed where applicable:

1. Cutbanks Cave - Areas of cut shall be stabilized as soon as possible during earth moving operations in accordance with the notes found on the E&S Plans. At no point should slopes exceed 2H:1V except where proper shoring measures are utilized to prevent cave in.
2. Corrosive to Concrete/Steel - A majority of storm drainage piping are proposed to be HDPE to minimize risk of corrosion.
3. Droughty - During construction, a water source such as a hose connection to public water supply or a water tanker truck may be utilized as needed to maintain sufficient soil moisture levels.
4. Easily Erodible - Earth disturbance areas shall be stabilized as soon as possible during earth moving operations in accordance with the notes found on the E&S Plans.
5. Depth to Saturated Zone/Seasonal High Water Table - Any groundwater encountered during construction shall be directed towards an appropriate E&S BMP such as compost filter sock or a sediment trap or pumped through a filter bag prior to discharging from the site.
6. Hydric/Hydric Inclusions - No wetlands are present on the development property.
7. Low Strength/Landslide Prone - Earth disturbance areas shall be stabilized as soon as possible during earth moving operations in accordance with the notes found on the E&S Plans. At no point should slopes exceed 2H:1V except where proper shoring measures are utilized.
8. Slow Percolation - Areas of ponded water shall be directed towards an appropriate E&S BMP such as compost filter sock or a sediment trap or pumped through a filter bag prior to discharging from the site.
9. Piping - Areas of ponded water shall be directed towards an appropriate E&S BMP such as compost filter sock or a sediment trap or pumped through a filter bag, as applicable. Basin outlet pipes will be installed with anti-seep collars. Utility pipes and conduits shall be installed with appropriate bedding materials.
10. Poor Source of Topsoil - Soil tests should be performed by a qualified individual such as a geotechnical engineer or soil scientist to determine suitability for topsoil. If soil is determined to be unsuitable then topsoil shall be imported and distributed amongst landscape areas as necessary.

**11. Frost Action - Due to grading limitations of soils during winter months, the contractor shall not grade these soils during frosting or icing conditions.**

**12. Wetness - Areas of ponded water shall be directed towards an appropriate E&S BMP such as compost filter sock or a sediment trap or pumped through a filter bag prior to discharging from the site. Lime application may be utilized as a last resort and only under the direction of a qualified individual such as a geotechnical engineer or soil scientist.**

If Hydric soils are present, is a wetland determination attached to this module?  Yes  No  N/A

If soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards in the space provided below, 2) identify the extent of soil contamination on an E&S Plan Drawing that is attached to this module, and 3) describe the methods that will be used to avoid or minimize disturbance of the contaminated soils in the space provided below.

**No soils on site have any known contaminants that exceed Act 2 standards.**

3. Describe the characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

**For the past 5 years and past 50 years the site has existed as an existing residential property.**

**The proposed development will subdivide the existing residential property into 10 Lots. Lots 1 thru 8 will be each be developed with a proposed residential dwelling, Lot 9 will remain primarily as existing and retain the existing residential dwelling, and Lot 10 will be dedicated to the Township for preservation of open space and existing resources. A portion of the property will also be dedicated to the Township as part of the Harrison Avenue cul-de-sac extension.**

4. Describe the volume and rate of runoff from the project site and its upstream watershed area.

**The pre-development condition of the site consists of an existing dwelling with driveways and other miscellaneous surface features. The entire site drains overland from north to south and flows overland to Tookany Creek. Point of Discharge (POD) #1 has been defined as the portion of the site that drains to Tookany Creek upstream of the recently constructed Township trail crossing of Tookany Creek. POD #2 has been defined as the portion of the site that drains to on-site wetland (Wetland A) and ultimately Tookany Creek downstream of the the recently constructed Township trail crossing of Tookany Creek. Portions of Church Road and other residential properties along Church Road drain through the project site and flow to POD #1 and #2.**

**The post-development conditions maintain the same POD's and general drainage patterns. A portion of the area draining to POD #2 has been diverted to POD #1 where there is greater potential to manage the volume and peak rate of runoff prior to discharging from the project site. Within POD #1, a Bioretention Basin (BMP ID 001) is proposed to retain and infiltrate runoff thereby managing the volume, peak rate, and water quality of runoff. This Bioretention Basin will be constructed as Sediment Trap #1 during the E&S Phase and includes a level spreader at the basin discharge as energy dissipation. The stormwater management system proposed will reduce the volume and peak rate of runoff to the receiving waters.**

5. Check boxes to indicate all BMPs that will be installed or implemented, identify plan numbers for the BMPs, and describe any deviations from the E&S Manual.

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input checked="" type="checkbox"/> Rock Construction Entrance	27, 28	26	100' Long for ABACT
<input type="checkbox"/> Rock Construction Entrance with Wash Rack			
<input type="checkbox"/> Rumble Pad			
<input type="checkbox"/> Wheel Wash			
<input type="checkbox"/> Temporary and Permanent Access Roads			
<input type="checkbox"/> Waterbar			
<input type="checkbox"/> Broad-based Dip			
<input type="checkbox"/> Open-top Culvert			
<input type="checkbox"/> Water Deflector			
<input type="checkbox"/> Roadside Ditch			
<input type="checkbox"/> Ditch Relief Culvert			
<input type="checkbox"/> Turnout			
<input checked="" type="checkbox"/> Compost Sock Sediment Trap	27, 28	26	N/A
<input type="checkbox"/> Temporary Stream Crossing			
<input type="checkbox"/> Temporary Wetland Crossing			
<input type="checkbox"/> Turbidity Barrier (Silt Curtain)			
<input type="checkbox"/> Dewatering Work Areas			
<input checked="" type="checkbox"/> Pumped Water Filter Bag	27, 28	26	Filter sock ring provided to meet ABACT
<input type="checkbox"/> Sump Pit			
<input type="checkbox"/> Waste Management			
<input checked="" type="checkbox"/> Concrete Washout	27, 29	26	N/A
<input checked="" type="checkbox"/> Compost Filter Sock	27, 29	26	N/A
<input type="checkbox"/> Compost Filter Berm			
<input type="checkbox"/> Weighted Sediment Filter Tube			
<input type="checkbox"/> Rock Filter Outlet			
<input type="checkbox"/> Silt Fence (Filter Fabric Fence)			
<input type="checkbox"/> Reinforced Silt Fence			
<input type="checkbox"/> Super Silt Fence (Super Filter Fabric Fence)			

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input type="checkbox"/> Sediment Filter Log (Fiber Log)			
<input type="checkbox"/> Wood Chip Filter Berm			
<input type="checkbox"/> Straw Bale Barrier			
<input type="checkbox"/> Rock Filter			
<input type="checkbox"/> Vegetative Filter Strip			
<input type="checkbox"/> Inlet Filter Bag			
<input type="checkbox"/> Stone Inlet Protection			
<input type="checkbox"/> Runoff Conveyance (Channel)			
<input type="checkbox"/> Bench			
<input type="checkbox"/> Top-of-Slope Berm			
<input type="checkbox"/> Temporary Slope Pipe			
<input type="checkbox"/> Sediment Basin			
<input checked="" type="checkbox"/> Sediment Trap	<b>27, 29</b>	<b>26</b>	<b>N/A</b>
<input checked="" type="checkbox"/> Riprap Apron	<b>27, 29</b>	<b>26</b>	<b>N/A</b>
<input type="checkbox"/> Flow Transition Mat			
<input type="checkbox"/> Stilling Basin (Plunge Pool)			
<input type="checkbox"/> Stilling Well			
<input type="checkbox"/> Energy Dissipater			
<input type="checkbox"/> Drop Structure			
<input type="checkbox"/> Earthen Level Spreader			
<input checked="" type="checkbox"/> Structural Level Spreader	<b>27, 29</b>	<b>26</b>	<b>N/A</b>
<input type="checkbox"/> Surface Roughening			
<input type="checkbox"/> Vegetative Stabilization			
<input checked="" type="checkbox"/> Erosion Control Blanket	<b>27, 28</b>	<b>26</b>	<b>N/A</b>
<input type="checkbox"/> Soil Binders			
<input type="checkbox"/> Sodding			
<input type="checkbox"/> Cellular Confinement Systems			
<input type="checkbox"/> Alternative:			
<input type="checkbox"/> Alternative:			

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

<b>Site Access BMPs</b>									
<b>BMP Name</b>	<b>No.</b>	<b>Length (ft)</b>	<b>Width (ft)</b>	<b>% Slope</b>	<b>Spacing (ft)</b>	<b>Length of Upslope Drainage (ft)</b>	<b>Culvert Diameter (in)</b>	<b>Soil Type in Ditch</b>	<b>E&amp;S Manual Figure/Detail No.</b>
Rock Construction Entrance (RCE)									
RCE with Wash Rack									
Temporary and Permanent Access Roads – Crowned Roadway									
Temporary and Permanent Access Roads – Insloped Roadway									
Waterbar									
Broad-based Dip									
Open-top Culvert									
Water Deflector									
Roadside Ditch									
Ditch Relief Culvert									
<b>Sediment Barriers / Filters</b>									
<b>BMP Name</b>	<b>DA (ac)</b>	<b>Diameter (in)</b>	<b>Storage Capacity (cf)</b>	<b>Trap Height (in)</b>	<b>% Slope</b>	<b>Slope Length Above Barrier (ft)</b>	<b>Barrier Height (in)</b>	<b>E&amp;S Manual Figure/Detail No.</b>	
Compost Sock Sediment Trap									
Compost Filter Sock									
Compost Filter Berm									
Silt Fence (Filter Fabric Fence)									
Super Silt Fence									
Sediment Filter Log									
Weighted Sediment Filter Tube									
Straw Bale Barrier									
Wood Chip Filter Berm									
Toe-of-Slope Berm									

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

<b>Runoff Conveyance BMPs</b>													
BMP Name	Temporary	Design Storm	DA (ac)	Multiplier	Qr (cfs)	Q (cfs)	Manning's n	Va (fps)	V (fps)	D (ft)	d (ft)	Flow Depth Ratio	E&S Manual Figure/Detail No.
Vegetated Channel	<input type="checkbox"/>												
Sodded Channel	<input type="checkbox"/>												
Riprap Channel	<input type="checkbox"/>												
<b>Energy Reduction BMPs</b>													
BMP Name	Downstream Distance to Drainage Course (ft)		Downstream % Slope	DA (ac)	Discharge (cfs)	Manhole Depth (ft)	Inflow Pipe Diameter (in)	Outlet Pipe Diameter (in)	E&S Manual Figure/Detail No.				
Level Spreader													
Drop Structure													
<b>Stilling Basins / Wells</b>													
BMP Name	Pipe Diameter (in)	Discharge (cfs)	Well Diameter (in)	Depth of Well Below Invert (ft)	Basin Depth (ft)	Median Riprap Size (in)	Distance from Discharge Pipe to Basin Center (ft)	E&S Manual Figure/Detail No.					
Stilling Basin													
Stilling Well													
<b>Other BMPs</b>													
BMP Name	DA (ac)	Pipe Diameter (in)	Berm Height (in)	Length (ft)	% Slope	Vertical Spacing (ft)	Channel Depth (ft)	Riprap Size	Riprap Thickness (in)	Initial Width (ft)	Terminal Width (ft)	E&S Manual Figure/Detail No.	
Temporary Slope Pipe													
Bench													
Rock Filter													
Riprap Apron													

For selected BMPs not identified in Table 1, report the name of the BMP and the Figure or Detail No. from the E&S Manual that will be used for design and implementation (PAG-01 only).

BMP Name	E&S Manual Figure/Detail No.	BMP Name	E&S Manual Figure/Detail No.

6.  All applicable Standard E&S Worksheets from Appendix B of the E&S Manual have been completed and are attached.
7.  Other worksheets or calculations equivalent to Appendix B of the E&S Manual have been completed and are attached.
8. Identify the E&S Plan Drawing number(s) that describes the sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.  
**Refer to Sheet 27 - Erosion and Sediment Control Plan**
9.  Supporting E&S calculations have been completed and are available upon request (PAG-01 only).
10.  Supporting E&S calculations are attached to the NOI/application.
11.  Plan drawings consist of standard Figures/Construction Details in E&S Manual (PAG-01 only).
12.  Plan drawings have been developed for the project and are attached to the NOI/application.
13.  BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).
14. Identify the following information relating to temporary stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, and 8) liming rate.  
**E&S Plan Drawing No(s): Refer to Sheet 28 - Erosion and Sediment Control Details (1)**
15. Identify the following information relating to permanent stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, 9) anchor material, 10) anchoring method, 11) rate of anchor material application, 12) topsoil placement depth, and 13) seeding season dates.  
**E&S Plan Drawing No(s): Refer to Sheet 28 - Erosion and Sediment Control Details (1)**
16. Describe the procedures that will be taken to ensure that recycling or disposal of materials associated with or from the project site will be conducted properly.  
**The contractor/developer shall be responsible for proper disposal or recycling of all waste produced by construction activities. Anticipated materials include building debris, asphalt and concrete, and E&S BMP's such as compost filter socks, erosion control matting, inlet protection filter bags, pumped water filter bags, and baffle walls. The operator shall remove from the site, recycle, or dispose of all excess building materials and wastes in accordance with the Department's solid waste management regulations at 25 PA. Code 260.1 et seq. and 287.1 et seq. The contractor shall not illegally bury, dump, or discharge any building material or wastes at this site. This information is also included within the E&S Plans, Sheet 26 - Erosion and Sediment Control Notes.**
17. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. If such formations or conditions exist, identify BMPs that will be implemented to avoid or minimize potential pollution.  
**There are no known naturally occurring formations or soil conditions that have the potential to cause pollution during earth disturbance activities.**
18. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.  
**There is a potential for thermal impacts to surface waters in instances where surface runoff is directly conveyed to a receiving stream without adequate attenuation or cooling. To avoid thermal impacts during earth disturbance activities, the following measures are proposed: a sediment trap, a compost filter sock sediment trap, and subsurface stormwater piping. The sediment traps will help control runoff volume and peak rate thereby providing**

additional cooling time prior to discharging. The subsurface stormwater piping will provide shading and cooling of runoff prior to discharging.



