Ms. Karen Cahill
New York State Department of Environmental Conservation
Division of Environmental Remediation
5786 Widewaters Parkway
Syracuse, New York 13214-1867

Date: June 16, 2023
Subject: Krutulis Property Site (Site No. 727009)
Predesign Investigation Work Plan

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Dear Ms. Cahill,

Arcadis of New York, Inc. (Arcadis) is submitting this predesign investigation work plan (Work Plan) on behalf of the Bristol Myers Squibb Company (BMS) for a predesign investigation at the Krutulis Property Site located at 848 Marsh Mill Road, Kirkville, New York (site). The site location is illustrated on **Figure 1**. A site plan is provided as **Figure 2**. The Work Plan was requested by the New York State Department of Environmental Protection (NYSDEC) in a letter dated April 7, 2023, granting BMS an exemption from wetland permitting requirements for the PDI investigation work located within the regulated 100-foot wetland adjacent area at the site. The predesign investigation is an element of the injection-based enhanced reductive dichlorination (ERD) remedy that will be performed at the site in accordance with the November 1, 2022, Remedy Optimization Work Plan. The PDI results will inform the final ERD remedy design.

Predesign Investigation Scope

Nine soil borings will be advanced to a depth of approximately 35 feet bgs using a small, track-mounted direct-push technology (DPT) drill rig in the vicinity of existing monitoring well MW-3D. The borings will be installed at an approximate 30-foot spacing working outward from well MW-3D toward the adjacent soil and grab groundwater sampling points where chlorinated volatile organic compounds (CVOCs) were detected at elevated concentrations during a 2007 site investigation. As shown on **Figure 2**, all borings are located within the 100-foot wetland adjacent area, and not within the wetland itself.

Three soil samples will be collected from each boring within the following depth ranges: 5 to 15-foot bgs, 15 to 25-foot bgs, and 25 to 35-foot bgs. Two groundwater samples will be collected from each boring: one from the 10 to 20-foot bgs depth range and the other from the 20 to 30-foot bgs depth range. Soil samples will be collected from the depth exhibiting the greatest CVOC impacts within each of these intervals, as indicated by field measured photoionization detector (PID) screening results or visual evidence of impacts. Grab groundwater samples will be collected either using a well point sampler attached to the drilling tooling, or a temporary screen installed in the borehole. Groundwater and soil samples will be analyzed for CVOCs by EPA Method 8260. Up to 4 soil samples will also be collected from the borings during the investigation and submitted for grain size distribution analysis to inform design of the final ERD remedy.

Samples from the initial nine borings will be analyzed on rush turnaround (i.e., 24 or 48 hr) and the results will be reviewed to determine whether the plume source area is adequately delineated for the purposes of the ERD remedy design. If the results indicate that additional delineation is necessary, then up to six additional soil borings will be advanced where needed to fill data gaps. These borings will be located within the project limits of

disturbance shown on Figure 2, and within the 100-foot wetland adjacent area. As before, the wetland itself will not be disturbed.

Drilling rods will be decontaminated by high pressure steam cleaning prior to first use, between boring locations/sampling intervals and upon completion of the project prior to demobilization. Decontamination will be performed in a temporary decontamination pad constructed by the drillers outside of the 100-foot buffer area surrounding the wetland. Reusable sampling equipment may also be decontaminated by pressure washing or by washing in a solution of Alconox or Liquinox detergent. Borings will be abandoned following completion in accordance with New York State regulations by pressure grouting with a cement/bentonite grout slurry injected from the base of the borehole to just below ground surface.

PDI activities will comply with the following conditions, as stipulated by the NYSDEC.

- All ruts created by machinery within the 100-foot wetland adjacent area will be repaired upon completion of the PDI.
- Any areas of bare soil where existing vegetation was removed by machinery will be seeded and mulched upon completion of the PDI.
- Compost filter socks, weighted sediment filter tubes, and erosion and sedimentation control (E&SC) measures will be installed between the wetland and the PDI work area to prevent any spoils or sediment from drilling activities from entering the wetland.
- Equipment/machinery will be refueled at least 100 feet from the wetland.
- All spoils (e.g., soil cuttings from drilling and purge water from groundwater sampling) will be containerized in 55-gallon drums that will be staged in the upland area at the northeast side of the site, outside of the 100-foot buffer area surrounding the wetland.

The proposed layout of E&SC measures and areas that may require repair and/or seeding/mulch are illustrated on **Figure 2**. Details for the proposed E&SC measures are provided on **Figure 3**.

Arcadis held a site walk with the drillers who will be performing the PDI work in February 2023. During the site walk it was determined that only limited trimming of vegetation and no tree removal would be necessary to access the boring locations within the project limits of disturbance.

Schedule

The PDI work is scheduled for late July early August 2023, and will last between one and two weeks. Performing the investigation during the summer will allow time for the ground within wetland adjacent area to dry out and firm up. This will provide easier access for drilling equipment with less rutting and disturbance to the ground surface within the work area. Performing the PDI work in July should not delay the overall ERD remedy implementation schedule, as the wetland permitting/approvals required to install the ERD injection wells/points will not be in place until the beginning of November 2023.

Ms. Karen Cahill
New York State Department of Environmental Conservation
June 16, 2023

Sincerely,
Arcadis of New York, Inc.

Matthew Swensson
Principal Environmental Engineering Specialist
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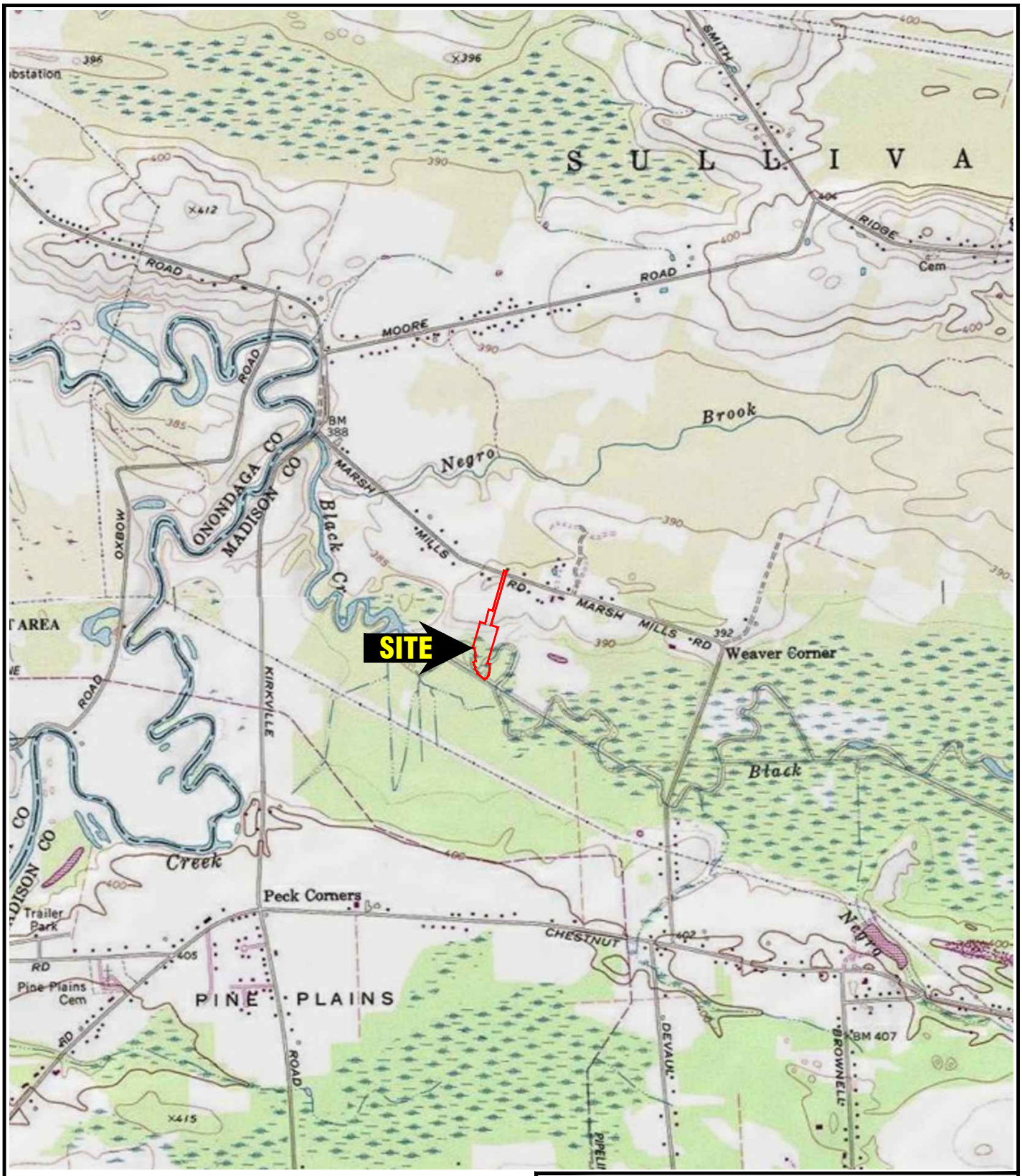
Enclosures:

- Figure 1 – Site Location Map
- Figure 2 – Predesign Investigation Plan
- Figure 3 – Erosion and Sedimentation Control BMP Details



SOURCE: USGS TOPO MAPS (MAP SERVICE) - COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED

0 2000' 4000'

GRAPHIC SCALE

KRUTULIS PROPERTY SITE
STATE SUPERFUND PROGRAM SITE NO. 727009
848 MARSH MILL ROAD
KIRKVILLE, NEW YORK

SITE LOCATION MAP

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FIGURE
1

LEGEND:

- EXISTING ELEVATION CONTOUR (200)
- FIELD DELINEATED WETLAND
- AQUATIC RESOURCE ID (W1)
- PROPOSED PREDESIGN INVESTIGATION BORING LOCATION
- ACCESS ROAD CENTERLINE
- SOIL TYPE BOUNDARY AND ID (GaA)
- 12-INCH COMPOST FILTER SOCK (12 — 12) — 1 / D-1
- WEIGHTED SEDIMENT FILTER TUBE — 2 / D-1
- NYSDEC REGULATED FRESHWATER WETLAND ADJACENT AREA
- DETAIL REFERENCE NUMBER (X) / DRAWING REFERENCE NUMBER (X)
- TEMPORARY ACCESS ROAD
- TEMPORARY WORKSPACE
- LIMITS OF DISTURBANCE (LOD)

NYSDEC PRE-DESIGN NOTES:

1. REPAIR ANY RUTS CREATED BY MACHINERY IN THE BUFFER AREA;
2. SEED AND MULCH AREAS AS A RESULT OF THE MACHINERY USE IN THE BUFFER;
3. INSTALL SILT FENCE OR WEIGHTED SEDIMENT FILTER TUBES TO CONFINE ANY SPOILS FROM THE DRILLING ENTERING THE WETLAND;
4. NO FUELING OF MACHINERY TO BE CONDUCTED WITHIN 100 FEET OF THE WETLAND; AND
5. REMOVE ANY SPOILS FROM WETLAND OR 100 FOOT BUFFER AREA.

EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROLS ARE APPROXIMATE AND MAY BE ADJUSTED BY AN ENVIRONMENTAL INSPECTOR BASED ON ACTUAL WORK ACTIVITIES AND FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
2. IMMEDIATELY AFTER FINAL GRADING IS PERFORMED, ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SEEDING RESTORATION TABLE ON FIGURE D-1.
3. COMPOST FILTER SOCK MAY BE SUBSTITUTED WITH APPROPRIATELY SIZED SILT FENCE AT THE CONTRACTOR'S DISCRETION. ALL SILT FENCE SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE ECS MANUAL.
4. PORTIONS OF COMPOST FILTER SOCK OR WEIGHTED SEDIMENT FILTER TUBE MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY AND REPLACED AT THE END OF THE WORKDAY TO FACILITATE SITE ACCESS. AT NO TIME SHALL EQUIPMENT DRIVE OVER FILTER TUBES OR SOCKS.
5. THE ENTIRE PLAN VIEW AREA IS LOCATED WITHIN A FEMA 100-YEAR FLOODPLAIN BOUNDARY.
6. PROPOSED PRE-DESIGN INVESTIGATION BORING LOCATIONS ARE APPROXIMATE AND MAY BE SUBJECT TO CHANGE.

EROSION CONTROL DEVICES QUANTITIES

TYPE	LENGTH (FEET)	WIDTH (FEET)	NO.
12-INCH COMPOST FILTER SOCK	270	-	-
WEIGHTED SEDIMENT FILTER TUBE	320	-	-

MINIMUM MATERIAL QUANTITIES HAVE BEEN REPORTED IN TABLE. CONTINGENCIES HAVE NOT BEEN INCLUDED.

0 30' 60'
GRAPHIC SCALE

KRUTULIS PROPERTY SITE
STATE SUPERFUND PROGRAM SITE NO. 727009
848 MARSH MILL ROAD
KIRKVILLE , NEW YORK

PREDESIGN INVESTIGATION PLAN

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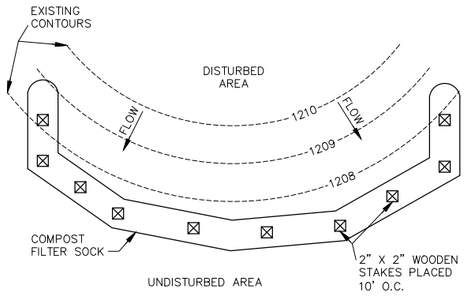
FIGURE 2

C:\Users\ROconnors\ARCADIS\ESCPs - General\BMS Krutulis Farms\CAD\01-DWG\Krutulis-G05-Preliminary Site Plan.dwg LAYOUT: 2 SAVED: 4/24/2023 2:59 PM ACADVER: 24.2S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 4/24/2023 4:04 PM BY: CONNORS, RILEY

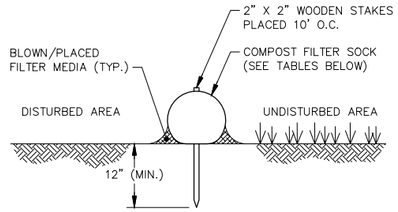
XREFS:
Krutulis-X-Border
Krutulis-X-Contours

IMAGES:
Krutulis-X-Aerial.jpg

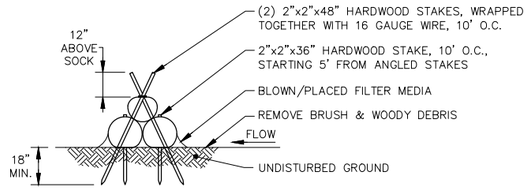
UPLAND SEED MIX REQUIREMENTS FOR PERMANENT STABILIZATION			
	PRODUCT	VARIETY	SEEDING RATE (LBS/ACRE PLS)
SEED MIX	RED CLOVER[1] OR	ACCLAIM, RALLY, RED HEAD II, RENEGADE	8[2]
	COMMON WHITE CLOVER[1]	COMMON	8
	PLUS		
	CREEPING RED FESCUE	COMMON	20
	PLUS		
	SMOOTH BROMEGRASS OR	COMMON	2
	PERENNIAL RYE	PENNFINE/LINN	5
FERTILIZER	5–5–10 (OR EQUIVALENT)	–	600
AGRICULTURAL LIME[3]	GROUND AGRICULTURAL LIMESTONE	–	VARIES
MULCH	HAY OR STRAW	AIR–DRIED; FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS	4000
[1] ADD INOCULANT IMMEDIATELY PRIOR TO SEEDING.			
[2] MIX 4 LBS EACH OF EMPIRE AND PARDEE OR 4 LBS OF BIRDSFOOT AND 4 LBS WHITE CLOVER PER ACRE.			



PLAN



SECTION



STACKING DETAIL

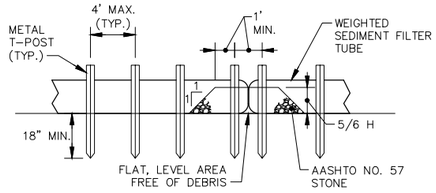
COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25% – 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
PH	6.0 – 8.0
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	100% PASSING A 1" SCREEN; 10–50% PASS A 3/8" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS					
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI–FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI–FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO–DEGRADABLE	PHOTO–DEGRADABLE	BIO–DEGRADABLE	PHOTO– DEGRADABLE	PHOTO– DEGRADABLE
SOCK DIAMETERS	12"	12"	12"	12"	12"
	18"	18"	18"	18"	18"
		24"	24"	24"	24"
		32"	32"	32"	32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G–155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

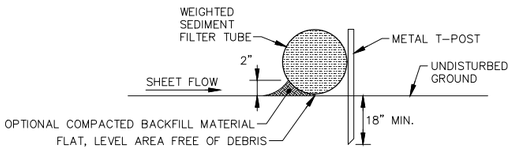
NOTES:

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.
2. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN IN THE TABLE 5.2 ON PAGE 5.8 OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED AS IDENTIFIED IN THE ESCP.
5. SOCKS SHALL BE INSPECTED BI–WEEKLY. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED, OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
7. CONTRACTOR SHALL ENSURE THAT ACTUAL COMPOST FILTER SOCK DIMENSIONS MEET SPECIFIED DESIGN DIMENSIONS.
8. SWITCHGRASS MAY BE USED AS AN ALTERNATIVE TO COMPOST FOR FILLING SOCKS. PRE–FILLED SWITCHGRASS SOCKS ARE ALSO AN APPROVED ALTERNATIVE, AND MANUFACTURER GUIDELINES SHALL BE FOLLOWED FOR INSTALLATION. SWITCHGRASS SOCK IS A DIRECT REPLACEMENT FOR COMPOST SOCK AND SHOULD FOLLOW THE SAME STANDARDS. SOCKS CAN BE FILLED WITH A COMBINATION OF SWITCHGRASS AND COMPOST. THERE IS NO RESTRICTION ON THE RATIO OF SWITCHGRASS TO COMPOST.
9. IN AREAS WHERE STAKING IS NOT FEASIBLE (E.G., PAVEMENT, HIGH BEDROCK), SOCKS SHALL BE ANCHORED WITH SANDBAGS, CINDERBLOCKS, OR EQUIVALENT.

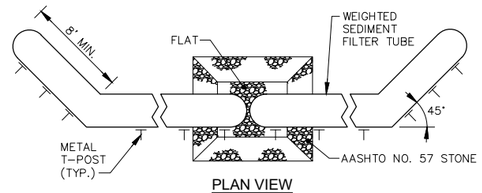
1 COMPOST FILTER SOCK
NOT TO SCALE



FRONT VIEW



SECTION VIEW



PLAN VIEW

NOTES:

1. A SEDIMENT TUBE PLACEMENT AREA SHALL BE PREPARED SO THAT IT IS FREE OF ALL DEBRIS, INCLUDING ROCKS, STICKS, ROOTS, ETC. A 2" LAYER OF AASHTO #57 STONE SHALL BE PLACED WHERE THE LOGS COME TOGETHER. ENDS OF TUBES MAY BE OVERLAPPED ACCORDING TO MANUFACTURER'S SPECIFICATIONS INSTEAD OF THE AASHTO #57 STONE.
2. SEDIMENT TUBES SHALL BE PLACED AT EXISTING LEVEL GRADE. ENDS SHALL BE EXTENDED UPSLOPE AT 45 DEGREES TO THE MAIN FILTER LOG ALIGNMENT FOR A MINIMUM OF 8 FEET.
3. SEDIMENT TUBES SHALL BE INSPECTED BI–WEEKLY.
4. SEDIMENT DEPOSITS SHALL BE CLEANED FROM THE LOG WHEN IT REACHES HALF THE HEIGHT OF THE TUBE.
5. DAMAGED TUBES SHALL BE REPLACED WITHIN 24 HOURS OF INSPECTION. A SUPPLY OF TUBES SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.

2 WEIGHTED SEDIMENT FILTER TUBE
NOT TO SCALE

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EROSION AND SEDIMENTATION CONTROL BMP DETAILS

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FIGURE 3