LS 832

STORM WATER POLLUTION PREVENTION PLAN

A. Summary

This section includes the implementation of the required Storm Water Pollution Prevention Plan (SWPPP) for the project regardless of whether the project site disturbs one or more acres. If the site disturbed area is less than one acre, however the Contractor anticipates disturbing one acre or more then the Contract shall file the Notice of Intent (NOI) with the Ohio EPA. If the NOI is not filed with the Ohio EPA by the City then the Contractor shall be responsible to file the NOI. If the NOI is submitted by the Contractor then the Contractor is responsible to submit the Notice of Termination (NOT) upon acceptance of the project by the City.

B. Project Conditions

The Contractor shall review the SWPPP as shown on the project plans. If a SWPPP is not included in the plan set then the BMPs listed in Section C shall apply as applicable to the Contractor's work. At their own expense, the Contractor may adjust the SWPPP based on their planned construction activities with prior approval by the City Engineer. Revised SWPPPs are subject to the review by Cuyahoga Soil and Water Conservation District.

The SWPPP is to be in effect at all times. The Contractor is responsible for the SWPPP implementation including the installation of Best Management Practices (BMPs), maintenance, and removal at the completion of the project.

Restore damaged improvements to their original condition, as acceptable to property owners, at no additional cost to the City.

C. BMPs

- **Inlet Protection within the Pavement of the Right of Way**

All inlet protection for catch basins and inlets located within the pavement of the right of way shall be Flex Storm Inlet filters by ADS. The Contractor shall be responsible to measure each inlet and catch basin to assure the proper fit.

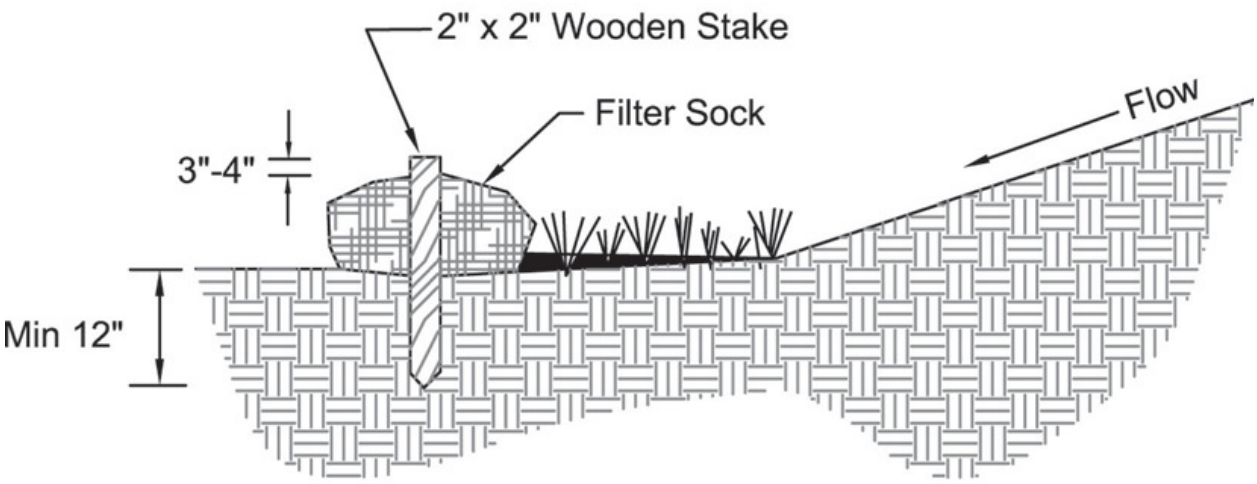
- **Filter Sock**

Drainage Area: Generally filter socks are limited to ¼ to ½ acre drainage area per 100 foot of the sediment barrier. Specific guidance is given in the chart below.

Maximum Slope Length above Filter Sock and Sock Diameter

Ratio (H:V)	**8”**	**12”**	**18”**	**24”**
Less than 50:1	125	250	300	350
50:1 to 10:1	100	125	200	250
10:1 to 5:1	75	100	150	200
5:1 to 2:1		50	75	100
Greater than 2:1		25	50	75

(Not to Scale)



SECTION

1. Materials – Compost used for filter socks shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well-decomposed source of organic matter and consist of a particles ranging from 3/8" to 2".

2. Filter Socks shall be 3 or 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products.

INSTALLATION:
3. Filter socks will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional socks shall be provided at the top and as needed midslope.

4. Filter socks intended to be left as a permanent filter or part of the natural landscape, shall be seeded at the time of installation for establishment of permanent vegetation.

5. Filter Socks are not to be used in concentrated flow situations or in runoff channels.

MAINTENANCE:
6. Routinely inspect filter socks after each significant rain, maintaining filter socks in a functional condition at all times.
7. Remove sediments collected at the base of the filter socks when they reach 1/3 of the exposed height of the practice.
8. Where the filter sock deteriorates or fails, it will be repaired or replaced with a more effective alternative.
9. Removal – Filter socks will be dispersed on site when no longer required in such as way as to facilitate and not obstruct seedings.

- **Construction Entrance**

1. Stone Size—ODOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.

2. Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft.

3. Thickness -The stone layer shall be at least 10 inches thick.

4. Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.

5. Geotextile -A geotextile shall be laid over the entire area prior to placing stone. Use Mirafi US 200 or approved equal.

6. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.

7. Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.

8. Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.

9. Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.

10. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.

11. Removal—Remove only the top 3 to 4 inches of stone. Install 1" thick layer of No. 8 stone over the No. 2 Stone. Place topsoil up to final grade (the original grade) and place hydroseed the areas.

- Dust Control

Calcium Chloride - This chemical may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Liquid application of a 35% calcium chloride solution is common. Note: application rates should be strictly in accordance with suppliers' specified rates.

Street Cleaning - Paved areas that have accumulated sediment from construction sites should be cleaned daily, or as needed, utilizing a street sweeper or bucket -type loader or scraper.

- Turf Reinforced Matting

1. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2" -3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed TRM will have direct contact with the soil surface.
2. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.

Slope Installation

3. Excavate top and bottom trenches (12" x6"). Intermittent erosion check slots (6" x6") may be required based on

slope length. Excavate top anchor trench 2' x 3' over crest of the slope.
4. If intermittent erosion check slots are required install TRM in 6" x6" slot at a maximum of 30' centers or the mid point of the slope. TRM should be stapled into trench on 12" centers.
5. Install TRM in top anchor trench, anchor on 12" spacings, backfill and compact soil.
6. Unroll TRM down slope with adjacent rolls overlapped a minimum of 3". Anchor the seam every 18". Lay the TRM loose to maintain direct soil contact, do not pull taught.
7. Overlap roll ends a minimum of 12" with upslope TRM on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
8. Install TRM in bottom anchor trench (12" x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependant on slope. Refer to manufacturer's anchor guide.

Channel Installation

9. Excavate initial anchor trench (12" x6") across the lower end of the project area.
10. Excavate intermittent check slots (6" x6") across the channel at 30' intervals along the channel.
11. Excavate longitudinal channel anchor slots (4" x4") along both sides of the channel to bury the edges. Whenever possible extend the TRM 2'-3' above the crest of channel side slopes.
12. Install TRM in initial anchor trench (downstream) anchor every 12", backfill and compact soil.
13. Roll out TRM beginning in the center of the channel toward the intermittent check slot. Do not pull taught. Unroll adjacent rolls upstream with a 3" minimum overlap (anchor every 18") and up each channel side slope.
14. At top of channel side slopes install TRM in the longitudinal anchor slots, anchor every 18".
15. Install TRM in intermittent check slots. Lay into trench and secure with anchors every 12", backfill with soil and compact.
16. Overlap roll ends a minimum of 12" with upstream TRM on top for a shingling effect. Begin all new rolls in an intermittent check slot, double anchored every 12".
17. Install upstream end in a terminal anchor trench (12" x6"); anchor every 12", backfill and compact.
18. Complete anchoring throughout channel at 2.5 per square yard using suitable ground anchoring devices (U shaped wire staples, metal geotextile pins, plastic stakes, and triangular wooden stakes). Anchors should be of sufficient

length to resist pullout. Longer anchors may be required in loose sandy or gravelly soils.

Concrete Washout

Provide a concrete washout station at each site location that is associated with concrete work. Concrete washout bags are acceptable as long as they are maintained.

Removal of Improvements: Remove existing above-grade and below-grade structures and obstructions, as indicated and as necessary to facilitate new construction, per CMS Item 202.

D. Disposal Of Waste Materials

- Burning is not permitted on Owner's property.
- Remove waste materials and unsuitable or excess topsoil from Owner's property.
- All waste materials shall be completely removed from public property.

E. Method of Measurement

Payment for the SWPPP shall be lump sum payment and considered full compensation for all labor, equipment, and material. The City will compensate the Contractor for this item based on the percentage of work completed per Payment Application.

F. Basis of Payment

For City funded projects, the City will pay for accepted quantities at the contract unit price as follows:

Item	Unit	Description
LS832	**Lump Sum**	**SWPPP**

NOTE: If there is not a line item for SWPPP then the work is considered incidental to the contract and no separate payment will be provided.

END OF SECTION LS 832