

DISTRICT 1 SWPPP WORKSHEET AND SOILS NOTES LETTER

Locate all ultimate receiving waters from surface storm water discharge and ground waters of existing and proposed project.

Special Water/Impaired Water Determination

<http://pca-gis02.pca.state.mn.us/CSW/index.html>

Declare search was performed, and findings. This will determine maximum exposed stabilization schedule and additional practices to be deployed during construction. If none of the construction impairments (nutrients, turbidity,) are indicated, state this fact within the SWPPP. List all special waters within 1 mile of project. This will determine additional BMPs and maximum exposed stabilization schedule.

Add information to permit application form.

Public Water Determination

http://www.dnr.state.mn.us/waters/watermgmt_section/pwi/maps.html

Design to meet the public waters permit requirements

http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/requirements.html

http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/General_Permit_2004-0001.pdf

List Contact for DNR Public Waters 5 day notification requirement.

Design with outcome of meeting general practices as described in the DNR manual of the public work permit. Tabulate and show plan locations of Areas of Environmental Sensitivity (AES). Develop a construction plan that will comply with permit provisions.

http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

Specify native seed mixtures, and methods for proper establishment (includes maintenance of mowing, weed control, and temporary irrigation).

Specify appropriate buffers and BMPs for avoidance of listed plants and animal avoidance.

Specify time of year for work or avoidance of work

Specify number of days for exposed soil covers, and BMPS to comply

List by month stream gauge flows or list location that the information can be located that allows contractor to select appropriate month and bypass measure for installation of proposed structure

If dewatering will be required, specify locations and staging of temporary sediment traps, portable sediment traps, or potential adjacent buffers for treating the work area water.

Wetland Conservation Act Determination

<http://www.bwsr.state.mn.us/wetlands/wca/index.html>

List all receiving water wetlands and show wetland impact areas on all appropriate plan sheets. Design and schedule wetland impact order of construction. List location of wetland bank and deduction of potential credits or wetland restoration. Partial taking of wetlands requires special conditions to prevent remaining wetland components from construction impacts (it cannot be used as a temporary sediment or chemical trap). Temporary wetland impacts (less than 6 months) must be clear on means and methods available to the contractor that will meet the DNR permit submittal requirements. Must use robust SWPPP BMPs that allows return to original wetland structure and function.

Invasive terrestrial and Aquatic Organism Determination

<http://www.dnr.state.mn.us/invasives/locations.html>

If the project will occur in DNR designated infested waters areas, include in the SWPPP and special provisions source of working in water BMPs, decontamination protocols (washing of equipment and materials), locations of limited or prevention of water extractions.

Emerald Ash borer, Gypsy Moth

<http://www.mda.state.mn.us/plants/pestmanagement/eab.aspx>

<http://www.mda.state.mn.us/gypsymoth>

Design and document potentially acceptable BMPs that will prevent the spread of organisms that reflects the proposed work (non-wood work mats, prevention of spread of wood products by specifying slash mulch for water quality and sediment control, time of season

Minnesota Department of Agriculture Noxious Weed Control during construction activities. List name of local MDA or county agricultural inspector (<http://www.mda.state.mn.us/en/plants/pestmanagement/weedcontrol/caillist.aspx>)

All known infestations of noxious weeds must be controlled during construction. This can be done by topsoil quarantine, topsoil borrow source certification, weed mapping, weed spraying, and weed mowing. All herbicides will be paid for separately by work order.

<http://www.mda.state.mn.us/plants/pestmanagement/weedcontrol/fsmnwp.aspx>

Water Appropriations Permit

List Contact for DNR water appropriation 5 day work contact on SWPPP narrative sheet.

USACE Permit Requirements

Design to meet the USACE permit requirements if different from DNR and BWSR above. Typical issues that must be resolved include quality of temporary or permanent fills in waters of the United States, Navigation and timing, dredging, and spill management and countermeasures to prevent spills from occurring. List USACE contact name on SWPPP narrative sheet.

Watershed Permits, Local permits

Design to implement all local rules and regulations that are more restrictive from the federal and state requirements. List local contacts on SWPPP narrative sheet.

CERTIFICATIONS

Certification of Compliance with Federal, State, and Local Regulations

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management, sediment and erosion control, and good housekeeping practices as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, spill management, permits, notices or documentation as appropriate.

Minnesota Department of Transportation

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

Consultant Services _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

DISTRICT 1 SWPPP WORKSHEET AND SOILS NOTES LETTER

DRAWN BY: DWAYNE STENLUND CHECKED BY: XXX CERTIFIED BY: _____ LIC. NO. _____ DATE _____

STATE PROJ. NO. _____ (T.H. _____) SHEET NO. ____ OF ____ SHEETS

Potential Pollutants Generation from Scoped work

- _____ Clearing & Grading operations
- _____ Pavement operations
- _____ Storm drainage operations
- _____ Bridge operations
- _____ River/Lake/Wetland restoration/operations
- _____ Utility operations
- _____ Landscaping operations
- _____ General management operations
- _____ Maintenance operations

- ___ Sediments from soils ___ Fertilizers ___ Flocculation agents (turbid water)
- ___ Septic/sanitary waste ___ Refueling operations ___ Equipment & vehicle storage
- ___ Spills ___ Trash ___ Soil (wind or mechanical) dusts
- ___ Rock drill dusts ___ Hazardous materials ___ Toxic materials
- ___ Solvents ___ Glues (epoxies, etc) ___ Blasting
- ___ Hydrostatic testing of pipes (chlorine) ___ Use of water for cooling

- ___ Concrete washwater ___ Bituminous saw slurries
- ___ Concrete dusts ___ Bituminous millings/grindings
- ___ Cure agents ___ Bituminous binders and tack agents
- ___ Concrete slurry residues ___ Bituminous grinding
- ___ Concrete stains, paints ___ Bituminous batching

- ___ Concrete demolition
- ___ Concrete crushing
- ___ Concrete batching
- ___ Pavement marker grinding
- ___ Paints
- ___ Other (list) _____
- _____
- _____

HYDRAULIC FLOW AND ROUTING MODELS USED

- _____ EPA-SWMM
- _____ XP-SWMM
- _____ SLAMM
- _____ HEC-RAS
- _____ P8
- _____ Flowmaster
- _____ PondNet
- _____ Other

Design & Guidance Documents

- ___ Concrete Washout
- ___ Concrete Washoff
- ___ Culvert end sod/blanket
- Rolled Erosion Control Products
- Hydraulically Erosion Control Products
- Sediment Control Logs
- High performance perimeter control
- Inspection Report Form
- Sod
- Topsoil Borrow

Organization

- MPCA
- USACE
- DNR Public Waters
- DNR Water Appropriations
- County Ag Inspector
- SWPPP Designer
- CO District 1 Technical Support
- District Env. Steward
- Water Resource Engineer
- Project Engineer
- Erosion Control Supervisor
- Maintenance Engineer

Contact/Name

- Dan Sullivan
- Peter Leete
- Dwayne Stenlund
- TBD

Number

- 651-366-4294
- 651-366-3634
- 612-810-9409
- TBD

GREEN SPACE PRESERVATION

Identify areas that must be avoided, or limited access by time of year, and tabulate in the plan. These areas include rare and endangered plants, delineated wetland boundaries within ROW, critical habitats, upland buffers, de-watering water polishing level spreaders treatment vegetation, compaction avoidance locations.

Station to	Station	L/R	Area (acres)
XX + XX	XX+XX	X	XX.X
XX + XX	XX+XX	X	XX.X

SEQUENCING PROGRAM

Pond staging, temporary sediment basin/trap order of construction and sequence of construction phasing, working in waters, time of year

- Stage 1, Construct _____
- Stage 2, Construct _____
- Stage 3, Construct _____
- Stage 4, Construct _____

Site Management Plan Number	Location	Reason/Issue (examples)
1	XX + XX	Culvert outfall to river
2	XX + XX	South river abutment
3	XX + XX	Pond outfall to wetland
4	XX + XX	Center line outfall
5	XX + XX	Channel realignment
6	XX + XX	Riprap matrix
7	XX + XX	Concrete sawing

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Describe scope of work. See example SWPPP narrative.

Develop post construction Maintenance and Operations Plan that includes who will be responsible for implementation, and list location of the plan/program for storm water discharge quality.

List SWPPP Design Qualification and declaration

List Project Contacts responsible for implementation of SWPPP

List process for Contractor implementation of the SWPPP. Show location of amending for Erosion Control Supervisor name.

Tabulate all Site Management Plan locations, and the additional amendment requirement and process. Create white space and empty tabulation grid for update connections to the plan.

Prepare location linkages for SWPPP Requirements as a Table of Contents. Include location and contact for Design calculations, basis of decision matrix used for BMP selections, maximum extent practicable, design references, and non-feasibility.

From potential identified pollutants that could be generated, develop narrative direction for prevention of loss to ground and surface waters. Identify linkages to existing standard specifications and special provisions. Identify and create appropriate detail sheets to solve specific construction actions.

Develop existing and proposed drainage direction of flow.

Develop table for the following, and add to SWPPP narrative:

Total Disturbed Area	_____ (ac)
Total Existing Impervious Surface Area	_____ (ac)
Total Proposed Impervious Surface Area	_____ (ac)
Total Proposed Net Change in Impervious Surface Area	_____ (ac)

Make sure to save work in a location readily available upon request that shows all calculations that account for the change in impervious area and water treatment volumes, rates and water quality.

Tabulate critical locations for routine and rainfall inspections.

Identify soil textural types. List potential soil erosivity from soil-erodibility nomograph or table from Revised Universal Soil Loss Equation. Design plan to minimize loss of sediments and suspended solids during construction. Larger soil-K values will require increasing robust control measures.

Limit acres of erosion potential exposure by requiring completion of certain stages of construction (between balance points, bridge edges, time of year, withholding amounts.

1. Tabulate concentrated stormwater outfall ditches (last 200 linear feet)
2. Tabulate culvert pipe outfall energy dissipation BMPs to waters of the state, including water treatment systems.
3. Tabulate BMPs, from estimates made for each stage and phase of construction, traffic management, or other defined practice.
4. Tabulate on each stage of construction the sequence of temporary or permanent water quality systems, sediment trap systems.

Indicate construction sequence for filtration, biofiltration, bioretention and other infiltration/filtration systems that ensure post construction full function and performance of systems. Include the requirement that all permanent water quality treatment systems must be surveyed for project as-builts. All filtration/infiltration systems must have 5 double ring tests per acre treatment surface, or a minimum of 5 per treatment basin if less than an acre.

Table 2. K Factor Data

Textural Class	K Factor tonnes/hectare (tons/acre)		
	Average OMC*	Less than 2% OMC	More than 2% OMC
Clay	0.49 (0.22)	0.54 (0.24)	0.47 (0.21)
Clay loam	0.67 (0.30)	0.74 (0.33)	0.63 (0.28)
Coarse sandy loam	0.16 (0.07)	–	0.16 (0.07)
Fine sand	0.18 (0.08)	0.20 (0.09)	0.13 (0.06)
Fine sandy loam	0.40 (0.18)	0.49 (0.22)	0.38 (0.17)
Heavy clay	0.38 (0.17)	0.43 (0.19)	0.34 (0.15)
Loam	0.67 (0.30)	0.76 (0.34)	0.58 (0.26)
Loamy fine sand	0.25 (0.11)	0.34 (0.15)	0.20 (0.09)
Loamy sand	0.09 (0.04)	0.11 (0.05)	0.09 (0.04)
Loamy very fine sand	0.87 (0.39)	0.99 (0.44)	0.56 (0.25)
Sand	0.04 (0.02)	0.07 (0.03)	0.02 (0.01)
Sandy clay loam	0.45 (0.20)	–	0.45 (0.20)
Sandy loam	0.29 (0.13)	0.31 (0.14)	0.27 (0.12)
Silt loam	0.85 (0.38)	0.92 (0.41)	0.83 (0.37)
Silty clay	0.58 (0.26)	0.61 (0.27)	0.58 (0.26)
Silty clay loam	0.72 (0.32)	0.79 (0.35)	0.67 (0.30)
Very fine sand	0.96 (0.43)	1.03 (0.46)	0.83 (0.37)
Very fine sandy loam	0.79 (0.35)	0.92 (0.41)	0.74 (0.33)

* Organic matter content

Select Detail Sheets

Construction Exits
 Concrete Washout - Bale berm
 Concrete Washout - Wood frame
 Concrete Washout - Gutter sump inlet
 Geotextile Stockpile Sheeting
 Rock Barrel Dewatering
 Dewatering Dumpster w Floc sock
 Dewatering Bag
 Sediment Control Log wPAM
 Rock Weeper System wPAM
 Pond Baffle System
 Pond Slotted Riser
 Ditch Tee Riser Basin
 Floating Head Skimmer
 Skimmer Baffle Basin
 Pipe Slope Drain
 Grade Berms w Slope Drain
 Perimeter Filter Berms
 Rock Filter Berms
 Bio-Ditch Check
 Bioengineering Soil Stabilization

Sediment Mat, Bale Barrier
 Sediment Control Logs
 Silt Fence
 Sandbag Barrier
 Super Duty Silt Fence
 Turbidity Barrier
 Silt Curtain
 Sediment Bale Barriers
 Inlet Protection
 Culvert End Rock Weepers
 Culvert Inlet Risers
 Culvert End Sod/Blanket Stabilization
 Culvert Outfall Riprap
 Culvert Outfall TRM
 Blanket Installation
 Turf Reinforcement Mat Installation
 Sod Placement Techniques
 Sod Flume
 Wire Mesh Slope Protection

List additional detail sheets to accomplish the proposed work.

Water Quality Treatment Systems (circle all that apply)

Urban/Ultra Urban	Rural	Wild	-land
Wet ponds	Wet ponds	Wet ponds	Wet ponds (engineered wetlands)
Dry ponds	Dry ponds	Dry ponds	Dry ponds
	Interception swales	Off-line pools	
	Interruption swales	Ditch pools and riffles	
	Two stage ditches		
Compost retention blanket	Compost retention blanket	Compost retention blanket	
Filtration systems	Filtration systems	Filtration systems	
Biofiltration systems	Biofiltration systems	Biofiltration systems	
Swirl chambers			
Tree vaults			
Pervious pavements and pavers			
Detention vaults	Filter berm retention	Filter berm retention	
Other _____	Other _____	Other _____	

Permanent Water Quality Requirements

Criteria: sized correctly, remove settleable solids, remove floating debris, oils and grease, defined when constructed, defined maintenance access, protect ground and adjacent surface waters, prevent drainage or flooding of adjacent waters, prevent short circuiting, defined rate of discharge, defined emergency overflow, documented to work when construction completed.

Post-construction Maintenance Plan

Criteria for initiating maintenance operation
 Who will perform the maintenance
 Frequency of Maintenance

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STATE PROJ. NO. _____ (T.H. _____) SHEET NO. ____ OF ____ SHEETS

PAY ITEMS, ESTIMATE OF QUANTITIES AND BMP SELECTION

Item No.:	Item:	Unit:
2511.501	Random Riprap, Class ____	cubic yard [cubic meter]
2511.502	Random Riprap, Class ____	ton [metric ton]
2511.505	Hand-placed Riprap	cubic yard [cubic meter]
2511.507	Grouted Riprap	cubic yard [cubic meter]
2511.511	Granular Filter	cubic yard [cubic meter]
2511.513	Granular Filter Material	ton [metric ton]
2511.515	Geotextile Filter, Type ____	square yard [square meter]

Item No.:	Item:	Unit:
2512.517	Gabion	cubic meter [cubic yard]
2512.519	Revet Mattress	cubic meter [cubic yard]

Item No.:	Item:	Unit:
2514.501	Concrete Slope Paving	square yard [square meter]
2514.503	Aggregate Slope Paving	square yard [square meter]

Item No.:	Item:	Unit:
2515.501	Articulated Block Mat Open Cell, Type ____	square yard [square meter]
2515.502	Articulated Block Mat Closed Cell, Type ____	square yard [square meter]
2515.503	Articulated Interlocking Block Open Cell, Type ____	square yard [square meter]
2515.504	Articulated Interlocking Block Closed Cell, Type ____	square yard [square meter]
2515.515	Geotextile Filter, Type ____	square yard [square meter]

Item No.	Item	Unit
2571.501	Coniferous tree (size & root category)	tree
2571.502	Deciduous tree (size & root category)	tree
2571.503	Ornamental tree (size & root category)	tree
2571.504	Coniferous shrub (size & root category)	shrub
2571.505	Deciduous shrub (size & root category)	shrub
2571.506	Vine (age or size & root category)	vine
2571.507	Perennial (age or size & root category)	plant
2571.510	Iron Sulfate	pound (kilogram)
2571.511	Iron Sulfate	ton (metric ton)
2571.512	Activated Charcoal	pound (kilogram)
2571.513	Activated Charcoal	ton (metric ton)
2571.514	Plant Hormones	gallon (liter)
2571.515	Hydrophilic Polymers	pound (kilogram)
2571.516	Mycorrhizal Inoculum	pound (kilogram)
2571.541	Transplant tree (spade size*)	tree
2571.544	Transplant shrub	shrub
2571.546	Transplant vine	vine
2571.547	Transplant perennial	plant

NOTE: State Root Category: Seedling, Bare Root, Machine Moved, Container Grown, Balled and Burlapped
 * Spade size: 42 in [1.1 m], 60 in [1.5 m], 78 in [1.9 m], 85 in [2.1 m], 90 in [2.3 m].

Item No.:	Item:	Unit:
2572.501	Temporary Fence	linear foot [meter]
2572.502	Clean Root Cutting	linear foot [meter]
2572.503	Water	gallon [liter]
2572.504	Sandy Loam Fill	cubic yard [cubic meter]
2572.505	Prune Trees	hour
2572.506	Tree Growth Retardant	gallon [liter]

Item No.:	Item:	Unit:
2573.501	Bale Barrier	cubic yard [cubic meter]
2573.502	Silt Fence, Type ____	linear foot [meter]
2573.504	Sandbag Barrier	square foot [square meter]
2573.505	Floataion Silt Curtain, Type ____	linear foot [meter]
2573.506	Sediment Trap Excavation	cubic yard [cubic meter]
2573.507	Temporary Slope Drain	linear foot [meter]
2573.510	Water Treatment	lump sum
2573.511	Water Treatment Type ____	each
2573.515	Filter Berm Type ____	linear foot [meter]
2573.520	Sediment Removal, Backhoe	hours
2573.521	Sediment Removal, Vac Truck	hours
2573.530	Storm Drain Inlet Protection	Each
2573.531	Storm Drain Inlet Protection	lump sum
2573.533	Sediment Control Log Type ____	linear foot [meter]
2573.535	Stabilized Construction Exit	lump sum
2573.536	Wheel Wash Off	each
2573.541	Liquid Flocculant	gallon [cubic meter]
2573.542	Flocculant Sock	each
2573.543	Granular Flocculant	pound [kilogram]
2573.550	Erosion Control Supervisor	lump sum
2573.560	Culvert End Controls	each
2573.561	Culvert End Controls	lump sum

Item No.:	Item:	Unit:
2574.508	Fertilizer, Type ____	pound [kilogram]
2574.510	Iron Sulfate	pound [kilogram]
2574.512	Activated Charcoal	pound [kilogram]
2574.514	Plant Hormones	gallon [liter]
2574.515	Hydrophilic Polymers	pound [kilogram]
2574.516	Mycorrhizal Inoculum	pound [kilogram]
2574.517	Rhizobium Inoculum	pound [kilogram]
2574.518	Compost Tea	gallon[liter]
2574.525	____ Topsoil Borrow	cubic yard [cubic meter]
2574.550	Compost, Grade 2 and Grade 3	cubic yard [cubic meter]
2574.551	Compost, Grade 1	ton [metric ton]
2574.575	Subsoiling	acre [hectare]
2574.576	Lime	pound [kilogram]
2574.578	Soil Bed Preparation	acre [hectare]
2574.580	Soil Tracking	Acre[hectare]

Special Provision List of Need

Item No.:	Item:	Unit:
2575.501	Seeding	acre [hectare]
2575.502	Seed, Mixture ____, or (Species)	pound [kilogram]
2575.505	Sod, Type ____	square yard [square meter]
2575.511	Mulch Material, Type ____	ton [metric ton]
2575.512	Mulch Material, Type ____	cubic yard [cubic meter]
2575.518	Temporary Poly Covering	square yard [square meter]
2575.519	Disk Anchoring	acre [hectare]
2575.523	Erosion Control Blanket, Category ____*	square yard [square meter]
2575.525	Turf Reinforcement Mat, Category ____	square yard [square meter]
2575.526	Compost Blanket	square yard [square meter]
2575.527	Shoulder Mulch Overspray	pound [kilogram]
2575.535	Water	M gallons [cubic meter]
2575.541	Mowing	acre [hectare]
2575.545	Weed Spraying	acre [hectare]
2575.547	Weed Spray Mixture	gallon [liter]
2575.555	Turf Establishment	lump sum
2575.560	Hydraulic Tackifier, Type ____	pound [kilogram]
2575.561	Hydraulic Tackifier, Type ____	square yard [square meter]
2575.562	Hydraulic Matrix, Type ____	pound [kilogram]
2575.563	Hydraulic Matrix, Type ____	square yard [square meter]
2575.570	Rapid Stabilization Method 1 or Method 2	acre [hectare]
2575.571	Rapid Stabilization Method 3	M gallons [cubic meter]
2575.572	Rapid Stabilization Method 4	square yard [square meter]
2575.573	Rapid Stabilization Method 5	ton [metric ton]

* If maintenance applies, the Department will place the subnote, "Includes Maintenance" on the pay item shown in the summary of quantities on the plans.

Item No.:	Item:	Unit:
2577.501	Wattling	linear feet [meter]
2577.502	Brush Layering	linear feet [meter]
2577.504	Granular Channel Liner	cubic yard [cubic meter]
2577.505	Live Stakes	each
2577.506	Concrete Armor Units ____ (size)	each
2577.507	Concrete Armor Units ____ (size)	square yard [square meter]

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SOFT SOIL ACCESS

Wetland crossing with temporary permitted impacts (<6 mo.), river edge for bridge construction, wetland edge temporary permitted impacts for culvert replacement/ installation, muck soil removals, temporary pipe jacking, cleaning and abandonment filling, grouting all require means and methods to prevent compaction and loss of soil/ water pore function. Specify as a site management plan area on the appropriate plan sheet (or tabulate), and provide (incidental, special provision) access measure of light weight drivable pads or mats. Note that any temporary drive, access, staging surface must arrive and leave in a clean condition (note issue of invasive aquatic organism prevention of spread). Consider using all clearing and grubbing woody materials for conversion into slash mulch. This slash material placed in a 6 to 12 inch layer will support tremendous load bearing equipment. Special provisions have been developed and used many times.

Low load bearing soils

Station to	Station	Surface Area (sq yd)
XX + XX	XX+XX	XX
XX + XX	XX+XX	XX

STABILIZED ACCESS/EXIT POINTS (erosion prevention, sediment control, and sweeping)

1. Project exits (access) to waters.

Most critical access point is the haul or access road to the river for crossings, culvert installation or bridge construction. These access roads typically are installed within the existing ditch conveyance, or act as the drainage low point.

These areas must be kept in a perpetually stabilized condition. Tabulate into 1717 Site Management plan. Specify redundant BMPs for access road stabilization as riprap, drivable pads, slash mulch, or winter work), rapid and uniform side slope stabilization, drainage bypass of storm water conveyance (second ditch, pipe), and water perimeter controls (sediment control riprap berms, silt curtain booms). Area must be inspected daily with a written report submitted to the project engineer. All equipment within the water for more than 24 hours will require some form of decontamination cleaning prior to transport off project limits. All work is incidental.

2. Project Causeways, trestle bridges access to river equipment.

Tabulate work access into Site Management Plan. Designer should be at least aware of various environmental constructability means and methods that will be needed to construct project and design for one appropriate means and methods (to level the bids) with the requirement that the plan will be amended. Causeways must comply with USACE and DNR temporary fill requirements.

3. Project exits onto paved surfaces from paved or unpaved surfaces used by the public.

Most BMPs are not capable of preventing trackout onto paved surfaces from paved or unpaved surfaces except the wheel washoff system. All other BMPs can create additional hazards to the traveling public (bouncing rocks). This type of exit

control condition must be supplemented with pre-wetted sweeping operations. This BMP should be estimated by the each and sweeping by 1 hour per day per location every day of proposed operation.

Station	Each
XX + XX	XX
XX + XX	XX

Street Sweeping _____ Hours
Subtotal _____

At the end of each day, perimeter control in the form of a Sediment Filter Log, Type Compost should be indicated within the plan. Estimate quantity by the number of exits by the width, and multiply by the number of months of the operation.

Station to	Station	Linear Foot
XX + XX	XX+XX	XX
XX + XX	XX+XX	XX

4. Project exits onto paved surfaces from paved or unpaved surfaces not used by the public

Most BMPs are not capable of preventing trackout onto paved surfaces from un-paved surfaces except wheel washoff. As there is much lower risk of collateral damage of failed BMPS to the traveling public, the order of preference of stabilized exits is listed in 2573.3K. Typical BMPs will need to be ramped up depending on site conditions and time of year. What will work in the summer will not typically work during the spring thaw, melt and rains. Include standard detail sheet. If work is expected during spring thaw events, specify that at least one wheel washoff system will be required and show a proposed location (e.g. trackout from mucking operations to a disposal site). This type of exit control condition must be supplemented with pre-wetted sweeping operations described in the SWPPP narrative but is not estimated nor has an associated pay item. It is recommended that all woody debris from the clearing and grubbing operation be dedicated and specified as slash mulch for exits (including perimeter control, dewatering filter checks, temporary erosion control).

5. Project exits onto un-paved surfaces from unpaved surfaces used by the public.

Same as number 4 above, but estimated quantity of aggregate bed stabilization class 5 material, reclaimed bituminous millings, and include an estimated quantity of dust suppressive palliatives in the form of calcium chloride, or soybean biopolymers.

Station to	Station	Surface Area (sq yd)
XX + XX	XX+XX	XX
XX + XX	XX+XX	XX

6. Project exits onto un-paved surfaces from unpaved surfaces not used by the public.

Same as number 5 above by without specified pay items or plan locations.

6. Project exits onto contractor developed haul roads.

Specify in the SWPPP narrative that reminds the contractor of their responsibility to follow all provisions and permit requirements.

SEEDING

Specify Seeding Acres, tabulate or show on plan with symbols

Differential temporary seeding/stabilization from permanent. I recommend temporary seeding by plan location, and permanent by tabulation. Temporary soil stabilization BMPs can be shown on grading sheets, staging sheets, traffic control sheets, temporary sediment control sheets or as stand-alone.

Station to	Station	Mixture	Area (acres)
XX + XX	XX+XX	XX-XXX	XX.X
XX + XX	XX+XX	XX-XXX	XX.X

SEED MIXTURES (all now in pure live seed rates of application)

Number	Function	Rate (lbs/ac)
Subtotal		
21-111/21-112	Temporary Seeding, short term	100
21-113	Soil Building in nitrogen poor soils	110
22-112	Temporary Seeding, long term	40
22-111	Rapid Temporary seeding	30.5
25-131	Low maintenance sod turf	220
Special Provision	Northshore Gitchagami	
Special Provision	TH210 JayCooke	
Special Provision	Extreme Shade (north aspect)	
36-311	Woodland edges	
34-361	Stream/river banks	31.5
33-361	Stormwater treatment edges	35
Special Provision	Stormwater treatment side slopes	
25-141	General Roadside	
Special Provision	General Native Road Sides	
34-371	Wet general native roadsides	12.5
Special Provision	General Hybrid roadside	57
33-361	tive (wet/dry) ditches	35
25-141	General (typical ditches)	59
34-181	Lake edges	
34-181	Wetland edges	

Station to	Station	Mixture	Pounds
XX + XX	XX+XX	XX-XXX ⁵	XX.X
XX + XX	XX+XX	XX-XXX ⁵	XX.X

DISTRICT 1 SWPPP WORKSHEET AND SOILS NOTES LETTER

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WEED CONTROL

Any species defined as a “regulated invasive species” or “prohibited invasive species” under Minnesota Statute 84D and listed on the MN DNR website (<http://www.dnr.state.mn.us/invasives/laws.html>) as well as all of the following species shall be controlled:

- Reed Canary Grass *Phalaris arundinacea*
- Common Reed *Phragmites australis* (both native and non-native ecotypes)
- Crown Vetch *Coronilla varia*
- Bird’s-Foot Trefoil *Lotus corniculatus*
- Sweet Clover *Melilotus albus* and *Melilotus officinalis*
- Stinging Nettle *Urtica dioica*

Contact District 1 Roadside Vegetation Manager and DNR website for a list of known regulated invasive species. In order to avoid spreading upland and aquatic invasive species within and outside of the project site, establish staging areas for storing equipment and materials adjacent to the wetlands, blufflands and forested areas, and require the contractor to develop a Terrestrial and Aquatic Invasive and Noxious Weed Control Program. If noxious weeds are known to be present in the project area, create a preliminary map (Noxious Weed Control Plan Sheet) of weed locations for control. Require an additional updated map created by the Contractor to identify and map any additional areas of invasive and noxious weeds to be removed or controlled in accordance with the requirements established by MnDOT, the Minnesota Department of Agriculture, and other local jurisdictions, including counties, municipalities, and watersheds, and record the locations of these areas on Noxious Weed Control plan sheets. The Contractor shall record locations of areas of noxious weeds to be removed or controlled, noting the location, species, and extent on a map showing existing topography. The ultimate quantity of vegetation to be controlled shall be documented on the contractor developed Noxious Weed Control plan sheets as either a numerical count of the plants being removed or estimated based on acreage and vegetation density of areas being controlled. The plan sheets shall define methods used to control noxious weeds at each location. The Noxious Weed Control plan shall be reviewed and updated once per year and provided to the Engineer for review and acceptance. Quantities and specific types of herbicides shall be by Force Account (impossible to estimate). Additional design items:

- Acceptable practices
- DNR Decontamination Protocols
- Burial/flipping of infested terrestrial soils by 3 feet
- Quarantine of topsoil borrows and specific reuse locations
- preapproval noxious weed-free borrow sources
- Pre-construction chemical control by maintenance operations

SOIL STABILIZATION BEST PRACTICES

All exposed soils must be stabilized within the timeframes listed in the NPDES permit for construction activities. All exposed soil (includes stockpiles consisting of significant clay, silt or organic matter) stabilization practices must be estimated and tabulated over the entire area and time length of the project. The difficulty is in estimating quantities for portions not actively worked and stockpiles. Rough estimates of stockpiles requiring stabilization can be based off the estimate of topsoil depth, converted into cubic yards, conical converted into surface area. All topsoils/mucks within district with sufficient rights-of-way widths should be used for perimeter control wherever practicable. These topsoil berms used for perimeter control must be stabilized with one of the following: Type 3 straw (3500 lbs/ac) or type FRM

hydromulch (2500 lbs/ac). Standard practices for exposed temporary or permanent soils that are less than 3:1 with a slope length limit of 75 feet (and not above a special water of the state) can be stabilized with type 1 mulch at 2 tons per acre, rapid stabilization method 3 (modified to use FRM instead of Hydraulic soil stabilizer) and one of the synthetic tackifiers at a quantity 3 times the expected exposed area per year.

All exposed temporary or permanent soil slopes greater than 3:1 will require either wood fiber blanket or high performance hydraulic mulch and synthetic tackifier over the life of the contract.

See sheet for design criteria for Rolled Erosion Control Products

Rolled Erosion Control Products

TABLE OF EROSION CONTROL BLANKET

Station to	Station L/R	Location	Type	Quantity (SqYd)
xx+xx	xx+xx X	Ditch Channel	X	xx
xx+xx	xx+xx X	Backslope	X	xx
xx+xx	xx+xx X	Inslope		xx
xx+xx	xx+xx X	Pond ring	X	xx
xx+xx	xx+xx X	Bridge abutments	X	xx
Additional Quantity Multiplier:			X	xx

Total Type 00 Erosion Control Blanket: xx
 Total Type 0 Erosion Control Blanket: _____
 Total Type 3B Erosion Control Blanket: _____
 Total Type 4 Erosion Control Blanket: _____
 Total Type 6 Erosion Control Blanket: _____

SHAPING FOR EROSION CONTROL BLANKET

The ditches shall be shaped in a smooth rough graded condition to facilitate proper installation of the erosion control blanket as recommended by the product manufacturer, and installed as specified on Standard Plate xxx.xxx.

TABLE OF TURF REINFORCEMENT MAT

Station to	Station	Location	L/R	Width	(Ft) Type	Quantity
xx+xx	xx+xx X		X	X	X	xx
xx+xx	xx+xx X		X	X	X	xx
xx+xx	xx+xx X		X	X	X	xx

Total Type 1 Turf Reinforcement Mat: _____
 Total Type 2 Turf Reinforcement Mat: _____
 Total Type 3 Turf Reinforcement Mat: _____

HIGH PERFORMANCE BLANKETS AND TRANSITION MATS

Cable concrete, Reno-style gabion mattress

By Special Provision: chainlink-TRM, flexible concrete mats

COMPOST BLANKET

High performance sheet flow erosion prevention matrix composed of 2 inches of 3890 compost, grade 2 for soils with high granular or tree root composition or low in topsoil, organic matter or cohesive properties. Specify 270 cubic yards per acre, as loose fill (typically pneumatically applied by blower truck). Seeding and fertilization occurs in one operation and is not paid for separately. For slopes greater than 2:1, specify an open coir netting (special provision) with one inch square openings. Compost Blanket can be injected into riprap voids (Compost Grout Special Provision) to facilitate rapid re-establishment introduced and adjacent vegetation, and naturalization of river banks, abutments and outfalls. Compost blanket is capable of abstracting 2.5 to 8 times weight to water weight and provides high pollutant scrubbing and nutrient retention. Soils left in a rough condition due to steepness or limited access will be smoothed by the application of compost blanket. For use in conveyance systems, an Erosion Control Blanket must be included for placement over the compost blanket.

TABLE OF COMPOST BLANKET

Station to	Station L/R	Location	Thickness (in)	Quantity (cuYd)
xx+xx	xx+xx X	Ditch Channel *	X	xx
xx+xx	xx+xx X	Backslope		
xx+xx	xx+xx X	Inslope		
xx+xx	xx+xx X	Riprap		
xx+xx	xx+xx X	Bridge abutments ^X	X	xx
				xx
				xx

*Add Type 4 Erosion Control Blanket: _____
 X
 X

Water Application, Temporary Irrigation

Establishing vegetation requires three absolutes: light (energy), nutrients (food), and water. Water is typically the limiting factor for turf establishment and construction timing of operations. To maximize vegetation establishment, add 1 inch of water per week, per square yard surface area (6 gallons per sq yd per week). The ideal source is collected water from sediment basins and dewatering conservation measures. If properly managed, this will keep all water on site and create capacity for the next storm flush. There are several critical construction activities where water should be added to the contract: RSS walls, filtration/infiltration water treatment facilities, well drained sandy loams. RSS walls and filtration soils are best served with temporary irrigation (Special Provision). All known dust generating operations of rock blasting, concrete demolitions and rehabilitation, control joint cleaning, surface preparation, and street sweeping must note the need for water application.

- Watering Blanket/Sod _____ M gallons
- Haul Road Dust Control _____ M gallons
- Temporary Irrigation _____ Lump Sum
- Demolition/Crushing Dust Control _____ Incidental
- Pre-wetting Street Sweeping _____ Incidental

DISTRICT 1 SWPPP WORKSHEET AND SOILS NOTES LETTER

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HYDRAULIC EROSION CONTROL PRODUCTS

See sheet for design criteria for Hydraulic erosion control products. Not for use in conveyance channels.

For all soil types and construction conditions within District 1 specify only 3884 Fiber Reinforced Matrix. On steep slopes (>1:1), soils with silt or clay content add synthetic or polyacrylamide tackifier.

For low fertility (sandy, silty) urban soils with slopes less than 6:1, hydraulic compost matrix will provide both erosion control and fertility.

Estimated Quantities: Temporary: 3 times per year, per exposed area stage; permanent 1x exposed area, times 1.3x for area steepness and non-uniform edges

Temporary use of HECP

All stockpiles	2100 lbs/acre
Slopes	See Permanent use of HECP
Anchoring Blanket edges	2900 lbs/ac
Channels	Not permissible

Permanent use of HECP

Slope Steepness		Slope Length Limits
<4:1	Rate	2100 lbs/ac
4:1 to 3:1		2500 lbs/acre
3:1 to 2:1		2900 lbs/acre
2:1 to 1:1		3500 lbs/ac
>1:1		3900 lbs/ac
Injection into TRM	3000	No limit

TABLE OF HYDRAULIC EROSION CONTROL PRODUCTS

Station to ac)	Station L/R	Location	Type	Quantity (lbs/ ac)
xx+xx	xx+xx X	Ditch Channel	X	xx
xx+xx	xx+xx X	Backslope	X	xx
xx+xx	xx+xx X	Inslope		xx
xx+xx	xx+xx X	Pond ring	X	xx
xx+xx	xx+xx X	Bridge abutments	X	xx
Additional Quantity Multiplier:			X	xx

Total Type Natural Tackifier _____ X
 Total Type Synthetic Tackifier: _____
 Total Type Polyacrylamide Tackifier: _____
 Total Type Hydraulic Compost matix: _____
 Total Type Hydraulic Mulch: _____
 Total Type Stabilized Fiber Matrix: _____
 Total Type Bonded Fiber Matrix: _____
 Total Type Fiber Reinforced Matrix _____

Temporary Erosion Control (small areas, multiple mobilizations)

Rapid Stabilization Methods, for areas around points of storm water discharge, bridges and outfall structures, less than 2 acres of disturbed area per location.

Method 1	Areas less than 3:1, >16 feet width
Method 2	Areas less than 3:1, 0 to 16 ft width
Method 3 Modified	Modified to replace Hydraulic Mulch with Fiber Reinforced Matrix, one for one pound); Stockpiles, perimeter berms, 200 lf exposed areas around bridges, culvert outfalls, lake, wet land and stream slope edges, urban areas above curb and gutters,
Method 4	all temporary or permanent ditches for the last 200 lf, all ditches greater than 1.5%, all slopes >3:1
Method 5	ditch checks, ditch linerscrane pads, inlet and culvert rings, creek crossings, river access

Temporary Erosion Control, Areas greater than 2 acres per location

Type 1 Mulch	<3:1, slope length less than 75 ft
Type 3 Mulch	<3:1, slope length less than 75 ft, certified weed free
Category 3B Blanket	All slopes upto 1.5:1, less than 100 ft, ditches less than 5 percent
Category 4 Blanket	All slopes less than 300 feet, ditches less than 7 percent
Type FRM	All slopes less than 1:1, less than 75 feet

Longer Term Temporary Stabilization Erosion Control Methods

Plastic Sheeting (minimum 6 mil) less than 3 weeks length of service, slopes less than 2:1 and 15 feet in length

Geotextile sheeting (Class 3 or use material specified in localized area under riprap or culvert) for all slope type and steepness. Include installation detail. Also for drainage deck flumes, channel liners

TABLE OF TEMPORARY EROSION CONTROL

Station to	Station L/R	Method	Type	Quantity (lbs, yd)
xx+xx	xx+xx X	RSM		xx
xx+xx	xx+xx X	Type 1	X	xx
xx+xx	xx+xx X	Type 3		xx
xx+xx	xx+xx X	Category 3B	X	xx
xx+xx	xx+xx X	Category 4	X	xx
xx+xx	xx+xx X	Plastic	X	xx
xx+xx	xx+xx X	Geotextile	X	xx

Additional Quantity Multiplier: X X xx
 Total RSM 1 _____
 Total RSM 2 _____ X
 Total RSM 3 Modified _____
 Ttoal RSM 4 _____
 Total RSM 5 _____

Total Type Polyacrylamide Tackifier: _____
 Total Type FRM: _____
 Total Plastic Sheeting: _____
 Total Geotextile Type: _____

TEMPORARY SLOPE DRAIN

Temporary slope drains shall be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate xxx.xxx for details.

Maximum Drainage Area (acres)	Pipe Diameter (inches)
0.5	
0.75	
1.5	
2.5	
3.5	
5.0	

Source NRCS Planning and Design Manual

TABLE OF TEMPORARY SLOPE DRAIN

Station to	Station L/R	Diameter (Inch)	Quantity (Ft)
xx+xx	12 xx+xx X	x	xx
xx+xx	18 xxx+xx X	x	xx
	21		Total 12" Temporary Slope Drain: _____
	24		Total 18" Temporary Slope Drain: _____
	30		Total 21" Temporary Slope Drain: _____
			Total 24" Temporary Slope Drain: _____
			Total 30" Temporary Slope Drain: _____

TEMPORARY SEDIMENT TRAPS

Temporary sediment traps must be designed for treating runoff from 10 (or 5 acres if special or impaired) acres of disturbed soils that drain to a common location, or other areas with steep or highly erosive soils.

1. Provide live storage from runoff that could occur from a 2 year type storm (minimum of 1800 cu ft storage per drainage acre)
2. Maximize separation of inflow and outflow
3. Provide means for catching floating debris
4. Design for complete drawdown for maintenance cleanout operations
5. Provide means for surface water discharge
5. Provide stabilized emergency overflow system
6. Provide sequence stage for construction
7. Provide slope stabilization measures
8. Provide sediment removal hours (1 hour per 20 cu yd storage per year)
9. Provide additional treatment systems in high silt and clay content soils

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Gauge Flow Data		
Month	Stage Elevation	Cu FT/sec
January	xxx.xx	
February	xxx.xx	xxx
March		xxx
April	xxx	xxx
May	xxx.xx	
June	xxx.xx	
July	xxx.xx	
August	xxx.xx	xxx
September	xxx.xx	xxx
October	xxx.xx	xxx
November	xxx.xx	xxx
December	xxx.xx	xxx

BMPs for In-Water Construction

BMP	Note	Qty
Geotextiles		xx sq yd
Temporary Poly Sheeting		xx sq yd
Bale Barrier		xx LF
Sand Bags		xx sq ft
Sand Totes		xx sq ft
Sand Tubes		xx sq ft
Filter Berm Type 4 topsoil		xx LF
Filter Berm Type 2 Slash mulch		xx LF
Filter Berm Type 5 Rock		xx LF
Filter Berm, Type Muck		xx LF
Turbidity Barrier Silt Fence		xx LF
Tethered Brush Fence		xx LF
SuperDuty Silt Fence		xx LF
Riprap*		
Light Duty Flotation silt curtain	Depth _____	xx LF
Heavy Duty flotation silt curtain	Depth _____	xx LF
Soft-Walled Coffe	Depth _____	xx LF
Portable dam coffe	Depth _____	xx LF
steel plates	Depth _____	xx LF
steel sheet pile	Depth _____	xx LF
Rapid Stabilization	See elsewhere in document	

*same riprap for slope paving, used temporarily for perimeter control

NOTE: IF

LUMP SUM TURF ESTABLISHMENT is specified, make sure an equivalent **LUMP SUM STORM WATER MANAGEMENT** is also specified (special provision) that matches the area for permanent turf establishment area of construction.

SEDIMENT CONTROLS

All sediment control must be combined with erosion prevention controls to be effective. Sequence amount of soil exposed at any one time. Consider splitting the project in phases. Provide sediment traps in phased sequence. Preserve green space and upland buffers and list time limits of exposed soils. In areas with special or impaired waters provide redundant and upgraded best practices that increases probability of sediment control. Consider time of year for construction activity within 200 linear feet of a public water. Provide down-gradient sediment perimeter controls for all up-gradient land disturbance, appropriate to the proposed work.

Perimeter Control

Mill and overlay	Shoulder berms, compost filter logs
Unbonded conc overlays	reclaimed bituminous millings, shoulder berms, compost filter logs, sand bags
Bituminous cutting	sand dikes, compost filter logs
Mass grading	topsoil berms, muck berms, compost filter logs, silt fence
Utility, signalization	Compost filter logs
Stockpiles (all types)	stockpile material berms, superduty silt fence
Creeks and streams	super duty silt fence, sand totes, sheet pile
Lakes	tethered brush fence, super duty silt fence, sheet pile
Wetlands	muck berms, bale barriers, silt fence, silt curtain
In-rivers	sheet pile coffer, soft-walled coffer
On-water barges	compost filer logs, bonded impermeable berm

TABLE OF PERIMETER SEDIMENT CONTROL

Station	L/R	Location	BMP	Quantity
Xx+xx	x	x	xxx	xx
Xx+xx	x	x	xxx	xx
Xx+xx	x	x	xxx	xx
Xx+xx	x	x	xxx	xx

Inlet Defense control

All storm drain inlets must be defended from sediment and or other agents until all sources with the potential to discharge from that drainage area have been stabilized. Consider taking off line all inlets as possible (sealed plates) and direct to several at low points or provide temporary storm water conveyance to sediment traps and basins. Note key inlets that must be open for winter maintenance operations to provide public safety. The Department no longer indicates which inlet defensive measure is used. Provide an estimate of the number of inlets that exist and newly constructed. If the old and new inlet are in the same location, count as one for estimating purposes. Note that inlet defense controls are required for all stages and phases of inlet removals, sectional installation and final structure.

Types of Inlet Controls

Inlet protection with frames and grates **Inlet protection at field drops**

- Off-line
- Filter bag inserts and curb box logs
- Inlet drop catchments
- Sediment filter log ring
- Air-bladder pipe plugs (for using the structure as a sediment trap)
- Supplement with pretreatment gutter checks with sediment control logs type rock or compost

Inlet protection during milling and pavement operations

Indicate geotextile fabric insert in SWPPP narrative

Inlet protection during wet saw cutting

- Off-line
- Air-bladder pipe plugs (for using the structure as a sediment trap)

TABLE OF INLET PROTECTION

Item		Unit
Storm Drain Inlet Protection	xx	Ea
Storm Drain Inlet Protection	xx	Lump Sum

Sediment Control Logs

Sediment control logs are the work horse of the sediment control program. They can be specified for nearly every situation, add redundancy to silt fence and other practices, are easily mobilized after movement for access, good on rocky, root dominated soils, and urban projects with bituminous and concrete saw cutting.

See Sediment Control Log Guidance document for use specifications for design.

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To determine SCL spacing as ditch checks use the following equation:

Spacing (ft) = Height of SCL (ft) x 100/ditch gradient as a percent. Determine width of temporary or permanent ditch wetted perimeter, and add 3 feet.

Common sediment control logs for District 1 include the following:

Type Wood fiber sandy	High pass-through flow, inlet rings, ditch checks, <10 foot 3:1 slope/ granular stockpiles, perimeter control on veg or bare soils
Type Coir inter	Streambanks, lake wave edges, bioengineering toe armor, live stake ting
Type Wood chips control,	Medium flow, up to 25 foot, 2:1 slopes slope checks, perimeter ditch checks, pavement end perimeter control
Type Compost capacity,	Standard Specified. Lower pass-through flow, high filtration ca-
plan perimeter	concrete sawing, urban gutter checks, urban perimeter control, control on sod, perimeter control in root and rock domi-
nated soils, low	gradient ditch check logs, frozen soil perimeter
Type Rock gutter anchor,	High flow (rate limited by geotube), high performance inlet rings, checks, stockpile perimeter, geotextile sheeting perimeter toe an-
	frozen soil perimeter

TABLE OF SEDIMENT CONTROL LOG

<u>Station to</u>	<u>Station</u>	<u>Linear Foot</u>
XX + XX	XX+XX	XX
XX + XX	XX+XX	XX

DUST CONTROL

Understand the requirements of MN Stat 7011.0150. Incorporate dust control means and methods (by Special Provisions or Plan Narrative), site management plan delivery, and measured outcomes for the following items:

- Haul roads (dust control palliatives of Calcium Chloride, soybean biopolymers, water)
- Exposed granular road grades (as above for haul roads)
- Exposed sand stock piles and grades (geotextile covers, synthetic tackifiers, FRM)
- Grinding, sawing, planning, cutting, smoothing (water, and slurry management BMPs)
- Demolitions
- Rock Blasting
- Surface preparation and cleaning
- ___ Special Provision Developed
- ___ Language included within Plan Narrative

CULTURAL RESOURCE EXCAVATION

Projects with known archeological excavations or avoidance requirements must add SWPPP items specific to the site and conditions. It may not always be possible to estimate quantities and plan locations, but the following items are commonly used, and are part of a lump sum process for both storm water management and turf establishment. Site Management Plan Requirement Area.

- Entrance/exit trackout controls
- Dewatering
- Bypass operations
- Sediment control logs
- Stockpile and screening covers
- Interim stabilization covers
- Inlet protection
- Safety fence
- Secondary containment
- chemical lockdown
- portable bathroom lockdown
- permanent restoration
- Storm Water Management Lump Sum
- Turf Establishment Lump Sum

HAZARDOUS MATERIAL EXCAVATION

Projects with known hazardous excavations or avoidance requirements must add SWPPP items specific to the site and conditions. It may not always be possible to estimate quantities and plan locations, but the following items are commonly used, and are part of a lump sum process for both storm water management and turf establishment. Site Management Plan Requirement Area.

- Entrance/exit trackout wheel washoff controls
- Dewatering and DRO and other treatment train systems
- storm water bypass operations, inlets off-line system
- Sediment control logs, type compost
- Stockpiles, ground cover and screening plastic covers, sand bag anchors
- Safety fence
- Secondary containment
- chemical lockdown
- portable bathroom lockdown
- permanent restoration
- Storm Water Management Lump Sum
- Turf Establishment Lump Sum

All common plan projects related to the main construction activity must have a SWPPP commensurate to the soil disturbing activity. All projects, regardless of one or more acres of land disturbance must include and incorporate a SWPPP into the project documents. Project greater than 1 acre of land disturbance but does not create any new impervious does not need any permanent storm water treatment systems but must include measures to prevent damage to existing storm water BMPs.

SOIL BORING, POTHOLING

Typically small area of disturbance, but high risk of sediment and admixture loss during drilling and sealing operations. Slurry admixture management and final disposal must be documented that prevents loss to storm water conveyance ditches, gutters and inlets. Vegetation protection locations should be marked on the plan. Special water treatment areas and location to avoid wheel loading should be indicated in the plan. Site Management Plan Requirement Area.

- Slurry management program
- Soft soil crossing program
- Waste material disposal program
- Chemical storage management program
- Spill management program
- Interim exposed soil stabilization program

UTILITY CONSTRUCTION

LANDSCAPING

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SWPPP NARRATIVE CONTENT INFORMATION LOCATIONS CHECKLIST

Tabulations, Estimated Quantities Sheets

- BMP locations, tabulated
- Estimated quantities for
 - temporary erosion control,
 - temporary sediment control,
 - permanent sediment control, and
 - permanent erosion control
- modifiers to BMPs (includes maintenance, fertilizer ratios, natural net blanket)
- Site management Plan (SWPPP Amendment) tabulations

Clearing and Grubbing Notes, Plan Layout

- Vegetation avoidance areas
- Cultural resource protection zones
- Upland Buffer protection zones
- Staged buffer protection zones
- Areas of Environmental Sensitivity

Soils and Construction Narrative Sheets

- Soil types
- compaction prevention and mitigation measures
- soil erosive properties
- topsoil preservation
- weed control program
- stockpile issues
- Earthwork finishing operations, Turf establishment, lime, fertilizer, soil amendments
- Engineered topsoil borrows
- Blast protection protocols
- Crushing protection protocols
- concrete and bituminous management requirements
- dust control protocols
- Contractor develop haul roads, staging areas, laydown area SWPPP amendments

Environmental Commitments Narrative Sheet

- EA/EIS commitment delivery program
- Rare, threatened species
- MN Department of Agriculture terrestrial weed prevention
- USFWS Invasive species prevention of spread
- USFWS Eagle nest protection limits
- river bottom impact zones
- native plant restoration
- Visual quality
- Noise, vibration mitigation & monitoring
- Dust prevention program
- public access, maintenance of ADA
- Hazardous material management protocols
- Coast Guard/River Navigation

Construction Notes

- Pond staging sequencing
- filtration staging sequencing
- Excess material management and disposal

SWPPP Narrative Sheets

- Project scoping,
- Measuring rainfall events
- 1 mile water impact analysis,
- New impervious treatment systems,
- expected pollutants,
- timing of BMPs,
- Project sequencing,
- Interim maintenance program,
- Post-construction maintenance program link
- inspection program,
- contact lists,
- responsible parties for implementation,
- quality control program,
- good housekeeping program,
- Dewatering monitoring requirements,
- reference and cross-reference information,
- plan amendment process and
- documentation process of changes

WRE/Hydraulic Narrative Sheets

- Wetland avoidance, minimization and mitigation measures and bank credits
- Prevailing permits and implementation requirements
 - DNR
 - USACE
 - Watersheds
 - Water management organizations
 - Counties
 - Cities
- Calculations, design due diligence reference source
- Permanent water treatment descriptions
- Aquatic invasive species determination
- Dewatering permit determination
- Chemical treatment analysis
- Chemical treatment selections and APL vetting

Special Provisions

- Boiler Plate Submitting NOI and NOT
- Proof of application of NPDES permit
- Project Specific solutions _____

Details Sheets

- Bio-ditch checks
- Bioengineering soil stabilization
- Blanket installation
- Construction exits
- Concrete washout—bale berm
- Concrete washout—wood frame
- Concrete washout—gutter sump inlet
- Culvert end rock weepers
- Culvert inlet risers
- Culvert end sod/blanket stabilization
- Culvert outfall riprap
- Culvert outfall TRM
- Dewatering dumpster with floc sock
- Dewatering bag
- Ditch tee riser basin
- Floating head skimmer
- Geotextile stockpile/slope sheeting
- Grade berms with slope drain
- Inlet protection
- Pipe slope drain
- Perimeter filter berms
- Pond baffle system
- Pond slotted riser
- Rock barrel dewatering
- Rock filter berms
- Rock weeper system with PAM
- Sand bag barrier
- Sediment control log with PAM
- Sediment control logs
- Sediment mat. Bale barrier
- Sediment bale barriers
- Silt curtain
- Silt fence
- Skimmer baffle design
- Sod placement techniques
- Sod flume
- Super duty silt fence
- Turbidity barrier
- Turf reinforcement mat installation
- Wire mesh slope protection
- Other _____

DISTRICT 1 SWPPP WORKSHEET AND SOILS NOTES LETTER

DRAWN BY: DWAYNE STENLUND CHECKED BY: XXX CERTIFIED BY: _____ LIC. NO. _____ DATE _____

STATE PROJ. NO. _____ (T.H. _____) SHEET NO. ____ OF ____ SHEETS

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SP XXXX-XX IS LOCATED ON TH XX FROM XXX TO XXX IN THE CITIES OF XXXX IN XXXX COUNTY.

THE PLANNED SCOPE OF THE PROJECT INCLUDES:

(INCLUDE A DETAILED LIST OF ITEMS TO BE COMPLETED, IF IT INCLUDES BRIDGE REHAB INCLUDE WHAT REHAB WORK IS GETTING DONE I.E. REDECK, PIER REPAIRS, GIRDER REPAIR, ETC.)

SPECIAL AND IMPAIRED WATERS

THESE SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THESE SPECIAL AND IMPAIRED WATERS. THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT WILL APPLY TO ALL AREAS OF THE SITE.

WATERBODY	IMPAIRMENT(S)
LIST IMPAIRED OR SPECIAL WATERS	PHOSPHOROUS (NUTRIENT EUTROPHICATION BIOLOGICAL INDICATORS), TURBIDITY, DISSOLVED OXYGEN OR AQUATIC BIOTA (FISH BIOASSESSMENT, AQUATIC PLANT BIOASSESSMENT AND AQUATIC MACROINVERTEBRATE BIOASSESSMENT)

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP.

THE FOLLOWING WATER BODIES HAVE BEEN LISTED BY THE DNR AS BEING INFESTED BY INVASIVE SPECIES: LIST WATERBODIES HERE.

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE XXXXXX

LONG TERM MAINTENANCE AND OPERATION

MNDOT METRO DISTRICT MAINTENANCE STAFF ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEM. SEE METRO MNDOT MS4 SWPPP FOR INFORMATION REGARDING ONGOING MAINTENANCE. THE MS4 SWPPP CAN BE FOUND AT WWW.DOT.STATE.MN.US/METRO/WATERRESOURCES/PDF/SWPPP.PDF.

OR

MNDOT HAS ENTERED INTO A COOPERATIVE AGREEMENT WITH (CITY/COUNTY) THAT IDENTIFIES THE AGENCY THAT IS RESPONSIBLE FOR ONGOING MAINTENANCE. SEE AGREEMENT NUMBER ***, ON FILE WITH MNDOT, FOR MORE INFORMATION.

PROJECT PERSONNEL AND TRAINING

THIS SWPPP WAS PREPARED BY PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH MNDOT AND ARE AVAILABLE UPON REQUEST.

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

THE EROSION CONTROL SUPERVISOR IS INCIDENTAL. (ONLY USE WHEN THERE IS LESS THAN ONE ACRE OF DISTURBANCE.)

PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT INSTALLS THE PRODUCTS LISTED IN SPECIFICATION SECTION 2573.3.A.2. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY (ONLY USE WHEN THERE IS AN NPDES PERMIT)

MNDOT AND THE CONTRACTOR ARE COPERMITTEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

PROJECT CONTACTS

(ONLY USE IF THERE IS AN NPDES PERMIT)

THE PROJECT ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED. MNDOT METRO DISTRICT WATER RESOURCES STAFF ARE ALSO AVAILABLE FOR TECHNICAL ASSISTANCE.

ORGANIZATION	CONTACT NAME	PHONE
MNDOT METRO WATER RESOURCES (WRE) DESIGN	NAME	651-234-XXXX
MNDOT METRO CONSTRUCTION RESIDENT ENGINEER	NAME	651-XXX-XXXX
METRO DISTRICT MAINTENANCE CONTACT	NAME	651-XXX-XXXX
MNDOT METRO DESIGN	NAME	651-234-XXXX
MNDOT METRO WRE (EROSION CONTROL/MS4)	CAROLYN ADAMSON	651-775-0921
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	DAN SULLIVAN	651-757-2768
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	PETER LEETE	651-366-3634
WATERSHED DISTRICT	NAME	XXX-XXX-XXXX
ARMY CORP OF ENGINEERS	NAME	XXX-XXX-XXXX
COUNTY AGRICULTURE INSPECTOR	NAME	XXX-XXX-XXXX

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION:
651-649-5451 OR 800-422-0798

I HEREBY CERTIFY THAT THESE SWPPP SHEETS HAVE BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINTED NAME: _____ LICENSE # _____
DATE: _____ SIGNATURE: _____
Licensed Professional Engineer

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	<u>XX.X ACRES</u>
TOTAL EXISTING IMPERVIOUS SURFACE AREA	<u>XX.X ACRES</u>
TOTAL PROPOSED IMPERVIOUS SURFACE AREA	<u>XX.X ACRES</u>
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	<u>XX.X ACRES</u>

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2014 EDITION), OR ON FILE WITH MNDOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. XX-XX
PERMANENT EROSION CONTROL MEASURES	SHEETS NO. XX-XX
DIRECTION OF FLOW	SHEETS NO. XX-XX
FINAL STABILIZATION	SHEETS NO. XX-XX
SOILS AND CONSTRUCTION NOTES	SHEETS NO. XX-XX
DRAINAGE STRUCTURES	SHEETS NO. XX-XX
DRAINAGE TABULATION	SHEETS NO. XX-XX
STORM SEWER PROFILE SHEETS	SHEETS NO. XX-XX
STORM SEWER TABULATION	SHEETS NO. XX-XX
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. XX-XX
EROSION CONTROL TABULATION	SHEETS NO. XX-XX
TURF ESTABLISHMENT TABULATION	SHEETS NO. XX-XX
SITE MAP	SHEETS NO. XX-XX
STORMWATER TREATMENT CONSTRUCTION STAGING	SHEETS NO. XX-XX
STORMWATER CALCULATIONS	PROJECTWISE AND S:\PROJECTWISE\XXX\XXXX\XXX\XXXXXX
WATER RESOURCES NOTES	SHEET NO. XX

STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION IS STORED IN THE PROJECT'S HYDRAULICS FOLDER IN PROJECTWISE OR ON S:\PROJECTWISE. WATER RESOURCES WILL MAKE THIS INFORMATION AVAILABLE UPON REQUEST.

SITE INSPECTION AND MAINTENANCE

(ONLY USE IF THERE IS AN NPDES PERMIT)

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION. INSPECT INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA).

RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:

- A. DATE AND TIME OF INSPECTIONS
- B. NAME OF PERSONS CONDUCTING INSPECTIONS
- C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
- D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
- E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
- F. DOCUMENTS AND CHANGES MADE TO THE SWPPP

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

- A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
- B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
- C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
- D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
- E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
- F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA. ONLY USE IF THERE IS AN NPDES PERMIT

ENVIRONMENTAL REVIEW

THERE ARE/ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS/IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

THIS PROJECT IS/IS NOT LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA). THE DWSMA VULNERABILITY IS CLASSIFIED AS XXXX.

PLOTTED/REVISED: \$\$\$@DATE\$\$\$

DISTRICT #: \$\$\$@DISTRICT@\$\$
PLOT NAME: \$\$\$@PLOT\$NAME@\$\$
PATH & FILENAME: \$\$\$@PATH\$FILENAME@\$\$\$

ONLY USE IF THE PROJECT HAS PERMIT FROM THE LISTED AGENCY

LICENSED PROFESSIONAL ENGINEER

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	14 DAYS/7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	14 DAYS/7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).

3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.

4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

5. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION METHOD 2, 3, OR 4 AS DIRECTED BY THE ENGINEER. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:
 A. SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 - AUGUST 1, SEED WITH SEED MIXTURE 21-111
 B. SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 AND OCTOBER 31, SEED WITH SEED MIXTURE 21-112
 C. MULTI YEAR CONSTRUCTION 22-111

6. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES AND BLANKETS.

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. AMMEND THE SWPPP AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.

2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.

3. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND INSTALL EROSION CONTROL BMPS BEFORE PUTTING THEM INTO ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE.

4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.

5. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.

6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.

7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.

8. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE.

9. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.

10. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW- VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.

11. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES.

12. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. INSTALL THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.

13. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.

14. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO MNDOT FOR REPLACEMENT OF INLET PROTECTION DEVICES.

15. PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.

16. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

17. PROVIDE SCOUR PROTECTION AT ANY OUTFALL OF DEWATERING ACTIVITIES.

18. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

POLLUTION PREVENTION

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.

2. STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER AND WITH SECONDARY CONTAINMENT.

3. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.

4. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.

5. POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. PROPERLY DISPOSE OF ALL SANITARY WASTE.

6. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED AT.

7. LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.

8. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.

9. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER.

10. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

11. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING MNDOT RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

DRAWN BY: XXX

CHECKED BY: XXX

CERTIFIED BY _____ LIC. NO. _____ DATE _____

LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. XXXX-XX (T.H. XX)

SHEET NO. OF SHEETS

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

DISTRICT #: \$\$\$@DISTRICT@\$\$
 PLOT NAME: \$\$\$@PLOT\$NAME@\$\$
 PATH & FILENAME: \$\$\$@PATH\$FILENAME@\$\$\$

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

WATER RESOURCES NOTES

THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS, MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND WATERSHED DISTRICT PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH MNDOT METRO WATER RESOURCES. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES TO THE SIZE, ELEVATION OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE METRO WATER RESOURCES DESIGNER.
2. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.2.
3. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.
4. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.
5. THE FOLLOWING WATER RELATED PERMITS APPLY TO THIS PROJECT:

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT
WATERSHED DISTRICT	NAME
DEPARTMENT OF NATURAL RESOURCES (DNR)	NAME
ARMY CORP OF ENGINEERS	NAME

REVIEW ALL PERMITS FOR ANY SPECIAL CONDITIONS THAT WILL EFFECT CONSTRUCTION OF THE PROJECT.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. THEREFORE IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE, NON-IRRIGATION FROM MNDNR WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THIS PERMIT PRIOR TO COMMENCING DEWATERING ACTIVITIES. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

POND CONSTRUCTION NOTES

1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN A CONSTRUCTED POND.
2. WET PONDS MAY BE USED AS TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS. CLEAN OUT ALL PERMANENT STORMWATER BASINS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS.
3. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED POND BOTTOMS OR POND CORNERS. IF DISTURBED, POND BOTTOM AND POND CORNERS MUST BE RESTORED TO PRE-EXISTING CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO POND BOTTOMS MUST BE REPAIRED WITHIN 24 HOURS.

INFILTRATION CONSTRUCTION NOTES

1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN A PROPOSED OR CONSTRUCTED INFILTRATION AREA. STAKE OFF OR OTHERWISE MARK OFF INFILTRATION AREAS TO PREVENT HEAVY CONSTRUCTION VEHICLES AND EQUIPMENT FROM DRIVING THROUGH.
2. DO NOT FULLY EXCAVATE INFILTRATION BASINS UNTIL ALL UPGRADIENT LAND DISTURBANCE ACTIVITY HAS BEEN COMPLETED AND THE DRAINAGE AREA HAS BEEN STABILIZED. PROVIDE RIGOROUS EROSION PREVENTION AND SEDIMENT CONTROL BMPS, INCLUDING MAINTENANCE OF THEM, IF THE INFILTRATION AREA MUST BE COMPLETELY EXCAVATED PRIOR TO COMPLETION OF GROUND DISTURBING ACTIVITIES.
3. INSTALL SEDIMENT CONTROL BMPS AT THE TOE OF THE ADJACENT SLOPE IMMEDIATELY AFTER PLACEMENT OF AMENDED TOPSOIL.
4. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR THE CONSTRUCTION OF INFILTRATION AREAS.
5. STABILIZE SIDE SLOPES PRIOR TO PLACING ANY AMENDED TOPSOIL IN THE BOTTOM OF THE INFILTRATION AREA.
6. DO NOT DRAIN TURBID OR SEDIMENT LADEN WATER TO THE INFILTRATION AREA.
7. USE ONLY LOW IMPACT TRACKED VEHICLES WITHIN INFILTRATION AREAS.
8. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED INFILTRATION AREAS OR ADJACENT SIDE SLOPES. RESTORE DISTURBED INFILTRATION AREAS AND ADJACENT SIDE SLOPES TO PRE DISTURBANCE CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO INFILTRATION AREAS MUST BE REPAIRED WITHIN 24 HOURS. SUBSOIL THE INFILTRATION AREA TO REMOVE ANY COMPACTION CAUSED BY VEHICLE TRAFFIC.
9. EXCAVATE ANY SEDIMENT THAT WASHES INTO INFILTRATION AREAS. REMOVE AND REPLACE ANY AMENDED TOPSOIL THAT HAS SEDIMENT DEPOSITS VISIBLE AT THE SURFACE.
10. REPORT ANY SIGNS OF HIGH WATER TABLE OR COMPACTION OF THE IN PLACE SOILS TO THE ENGINEER.

FILTRATION CONSTRUCTION NOTES

1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN A CONSTRUCTED FILTRATION AREA. STAKE OFF OR OTHERWISE MARK OFF FILTRATION AREAS TO PREVENT HEAVY CONSTRUCTION VEHICLES AND EQUIPMENT FROM DRIVING THROUGH.
2. DO NOT PLACE FILTER MATERIAL IN FILTRATION BASINS UNTIL ALL UPGRADIENT LAND DISTURBANCE ACTIVITY HAS BEEN COMPLETED AND THE DRAINAGE AREA HAS BEEN STABILIZED. PROVIDE RIGOROUS EROSION PREVENTION AND SEDIMENT CONTROL BMPS IF THE FILTRATION AREA MUST BE COMPLETED PRIOR TO COMPLETION OF GROUND DISTURBING ACTIVITIES.
3. INSTALL SEDIMENT CONTROL BMPS AT THE TOE OF THE ADJACENT SLOPE IMMEDIATELY AFTER PLACEMENT OF AMENDED TOPSOIL.
4. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR THE CONSTRUCTION OF FILTRATION AREAS.
5. DO NOT DRAIN TURBID OR SEDIMENT LADEN WATER TO THE FILTRATION AREA AFTER THE FILTER MATERIAL HAS BEEN INSTALLED.
6. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED FILTRATION AREAS OR ADJACENT SIDE SLOPES. RESTORE DISTURBED FILTRATION AREAS AND ADJACENT SIDE SLOPES TO PRE DISTURBANCE CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO FILTRATION AREAS MUST BE REPAIRED WITHIN 24 HOURS.
7. EXCAVATE ANY SEDIMENT THAT WASHES INTO FILTRATION AREAS. REMOVE AND REPLACE ANY AMENDED TOPSOIL THAT HAS SEDIMENT DEPOSITS VISIBLE AT THE SURFACE.
8. REPORT ANY SIGNS OF HIGH WATER TABLE OR COMPACTION OF THE IN PLACE SOILS TO THE ENGINEER.

LANDSCAPE NOTES

1. FILTER LOGS SHALL BE PLACED, AS NEEDED, TO TRAP SEDIMENT ON THE LOWER EDGE OF BEDS OR TREE HOLES. FILTER LOGS WILL BE LEFT TO PHOTO DEGRADE.
2. TILLING FOR BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOOD CHIP WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.
3. ANY POND CORNERS OPENED DUE TO TILLING FOR SHRUB BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOOD CHIP WITHIN 24 HOURS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.

WATER RESOURCES NOTES AND STORM WATER POLLUTION PLAN NARRATIVE

DRAWN BY: XXX

CHECKED BY: XXX

CERTIFIED BY _____ LIC. NO. _____ DATE _____

LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. XXXX-XX (T.H. XX)

SHEET NO. OF SHEETS

PLOTTED/REVISED: \$\$\$@DATE\$\$\$

DISTRICT #: \$@DISTRICT@
 IPLOT NAME: \$\$\$@PLOT\$NAME\$\$\$
 PATH & FILENAME: \$\$\$@PATH\$FILENAME\$\$\$

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

SWPPPS

DISTRICT #: \$@DISTRICT@\$
IPLOT NAME: \$\$@IPLOT\$NAME\$\$
PATH & FILENAME: \$\$\$@PATH\$FILENAME\$\$\$

DISTRICT #: \$@DISTRICT@\$
IPLOT NAME: \$\$@IPLOT\$NAME\$\$
PATH & FILENAME: \$\$\$@PATH\$FILENAME\$\$\$