

How to write a Storm Water Pollution Prevention Plan

Writing a SWPPP

- We will break this down into 6 sections
 1. Collecting Pre-Construction Site Information
 2. Conducting the Site Assessment
 3. Selection of BMPs and Plan Design
 4. Certification and Permit Coverage
 5. Implementation
 6. Final Stabilization and Termination of Permit Coverage

Collecting Pre-Construction Site Information

- Obtaining the existing conditions of the site
 - Collecting Soils Information
 - Identify Receiving Waters
 - Collecting Rainfall Data
 - Developing the Site Plan
 - Preparing the Site Map
 - Approximating Slopes after Grading
 - Identify Areas of Soil Disturbance
 - Identify Drainage Patterns

Collecting Pre-Construction Site Information

- Collecting Soils Information
 - What type of soils are specific to the project site?

4.2 Contents of SWPPP

The SWPPP shall be developed to ensure compliance with the Effluent Limits in Part 3.0. The SWPPP shall include, at a minimum, the following items:

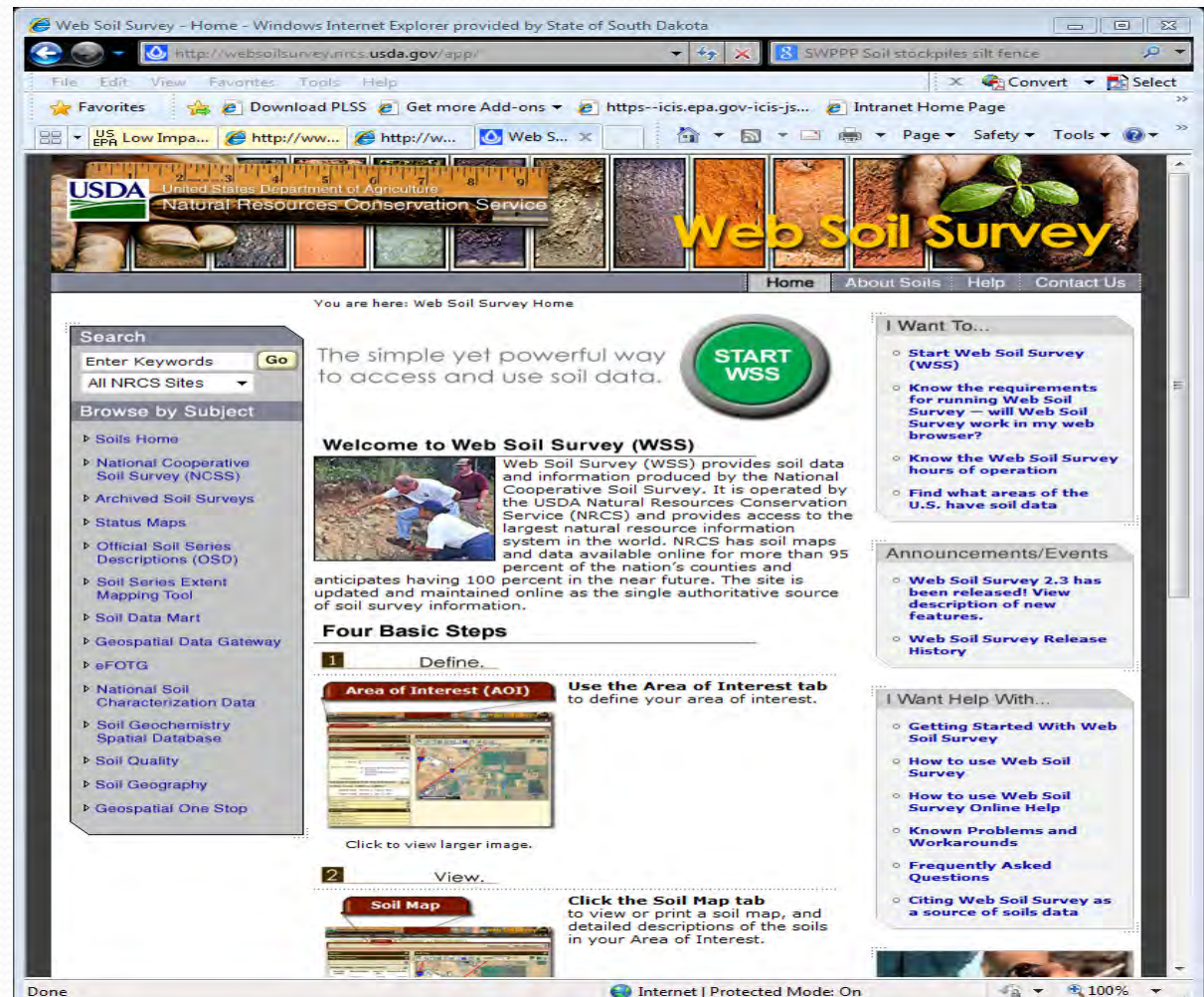
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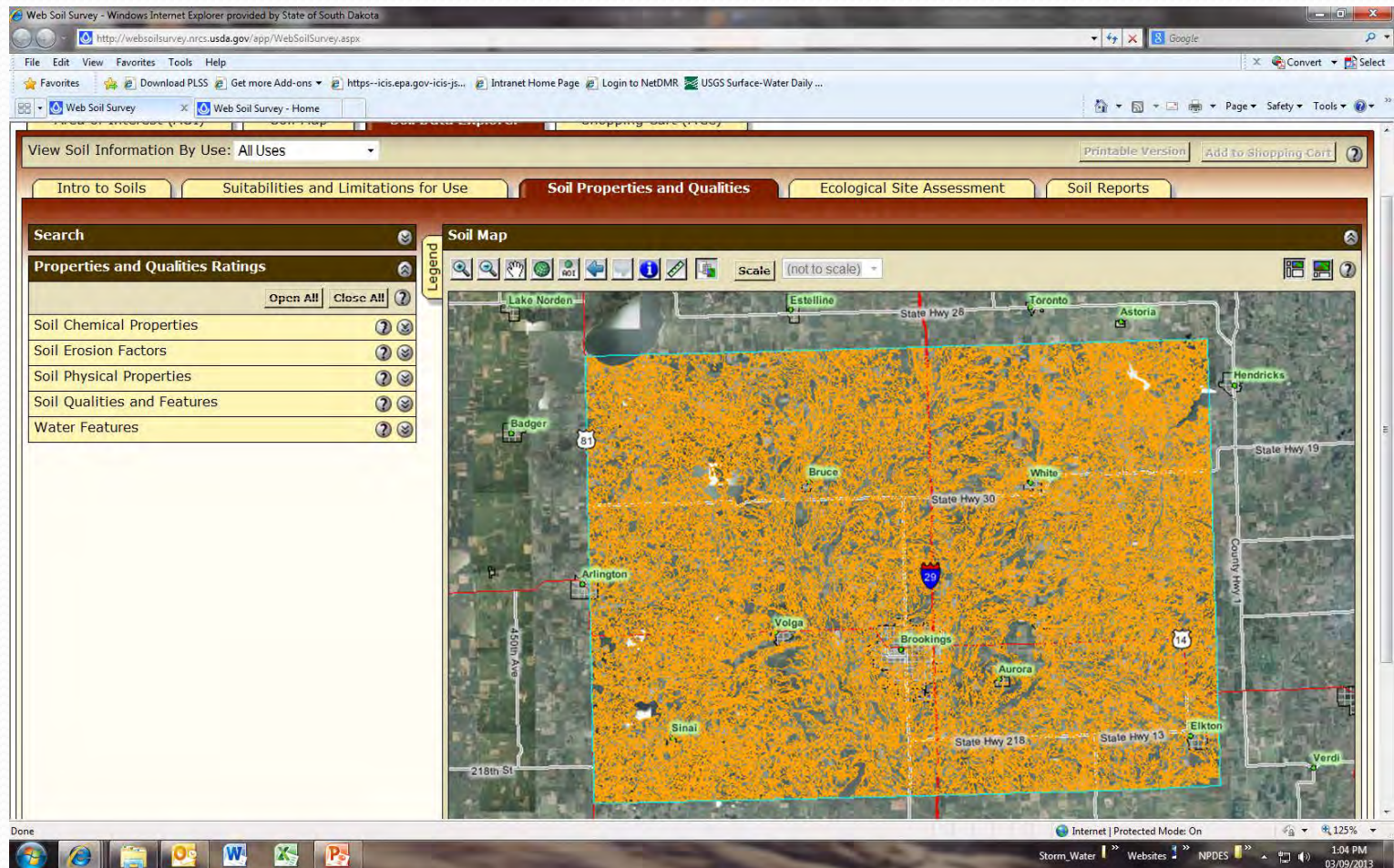
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- g. A site map indicating:

Collecting Pre-Construction Site Information

- Collecting Soils Information
 - Check the NRCS Soil Survey

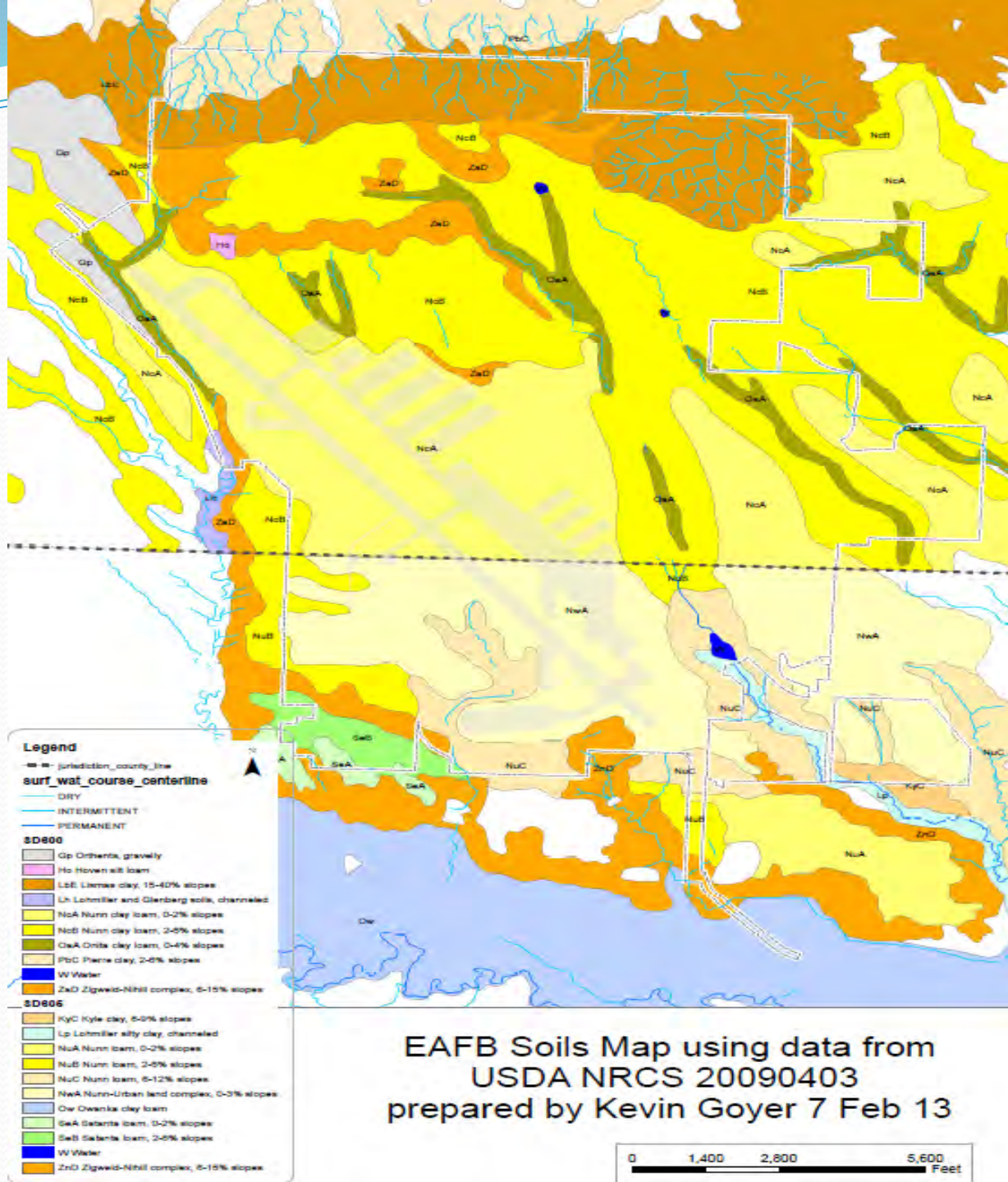


Collecting Pre-Construction Site Information



Collecting Pre-Construction Site Information

- Ellsworth Air Force Base Soils Map



1.4 Soils, Slopes, Vegetation, and Current Drainage Patterns

Instructions:

- Describe the existing soil conditions at the construction site including soil types, slopes and slope lengths, drainage patterns, and other topographic features that might affect erosion and sediment control.
- Also, note any historic site contamination evident from existing site features and known past usage of the site.
- This information should also be included on your site maps (See *SWPPP Guide*, Chapter 3.C.).
- For more information, see *SWPPP Guide*, Chapter 3.A and EPA's CGP Part 3, Subpart 3.3.C.

Soil type(s):

According to a review of the USDA Natural Resource Conservation Service soils map for Hillsborough County, New Hampshire, on-site soils consist of Ridgebury, Canton, Udorthents, and Chatfield. These soils are classified as hydrologic groups A, B, and C soils, respectively. The site consists primarily of hydrologic soil group A; therefore, the site has well-drained soils.

Slopes (describe current slopes and note any changes due to grading or fill activities):

The site is a relatively flat site (less than 2 percent slopes) and does not contain any major slopes.

Drainage Patterns (describe current drainage patterns and note any changes due to grading or fill activities):

- Preconstruction stormwater runoff flows northwest over the undeveloped site to Stormville's municipal separate storm sewer system (MS4) on Johnson Street. (See Appendix B – Pre-Construction Site Map)

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Stormwater Pollution Prevention Plan (SWPPP)
Stormville Postal and Distribution Center

- Following overlot grading, stormwater runoff will flow to the northwest corner of the site to a temporary sediment trap. Excess stormwater runoff will be diverted to the town's MS4 on Johnson Street through a raised outlet structure in the temporary sediment trap. Runoff from the adjacent property to the north will be captured by the vegetated swale and diverted to the town's MS4. (See Appendix B – Site Map)

Vegetation:

The site supports unvegetated soil areas and blocks of shrubs, grass and other undergrowth.

Collecting Pre-Construction Site Information

- Identify Receiving Waters
 - Where will the discharge from the site go?
 - Are there surface waters located on the site?

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g. A site map indicating:

- Drainage patterns with flow directions marked with arrows;
- Approximate slopes anticipated after major grading activities;
- Areas of soil disturbance, noting any phasing of construction activities;
- Location of major structural and nonstructural controls identified in the SWPPP;
- Location of areas where stabilization practices are expected to occur;
- Surface waters, including an aerial extent of wetland acreage;
- Locations where storm water is discharged to surface water;
- Locations of any spills, leaks, or soil contamination that could impact the storm water runoff from the site; and
- Areas of concern including, but not limited to: fueling stations, waste storage, and concrete washout areas. The permittee shall provide designated areas for these activities.

Instructions:

- List the waterbody(s) that would receive stormwater from your site, including streams, rivers, lakes, coastal waters, and wetlands. Describe each as clearly as possible, such as *Mill Creek, a tributary to the Potomac River*, and so on.
- Indicate the location of all waters, including wetlands, on the site map. For more information, see EPA's CGP Part 3, Subparts 3.3.B.4 and 3.3.C.6.
- Note any stream crossings, if applicable.
- List the storm sewer system or drainage system that stormwater from your site could discharge to and the waterbody(s) that it ultimately discharges to.
- If any of the waterbodies above are impaired and/or subject to Total Maximum Daily Loads (TMDLs), please list the pollutants causing the impairment and any specific requirements in the TMDL(s) that are applicable to construction sites. Your SWPPP should specifically include measures to prevent the discharge of these pollutants. For more information, see EPA's CGP Part 1, Subpart 1.3.C.5 and Part 3, Subpart 3.14.
- For more information, see *SWPPP Guide*, Chapter 3.A and 3.B.
- Also, for more information and a list of TMDL contacts and links by state, visit www.epa.gov/index/stormwater/tmdl.

Description of receiving waters and storm sewer system:

Stormwater runoff, except run-on entering the vegetated swale, will be discharged to a temporary sediment trap during construction without direct discharge to any surface waters. As an emergency overflow, the sediment trap will have a raised outlet structure connected to the town of Stormville's MS4 on Johnson Street. Run-on captured by the vegetated swale will be discharged to the MS4 on Johnson Street through a raised outlet structure.

After construction, stormwater runoff will discharge to the stormwater bioretention area, with an outlet structure connected to the MS4 on Johnson Street. The vegetated swale will remain as a permanent stormwater conveyance following construction.

The town of Stormville's MS4 discharges to Fern Creek, a tributary to the Pine River. The MS4 discharge point is 0.5 mile south of the city. Fern Creek has a reach of 4 miles and flows southeast before entering the Pine River. Fern Creek is designated for the following uses under New Hampshire's Water Quality Standards: Secondary Contact Recreation, Agricultural Water Supply, and Wildlife Habitat.

Description of impaired waters or waters subject to TMDLs:

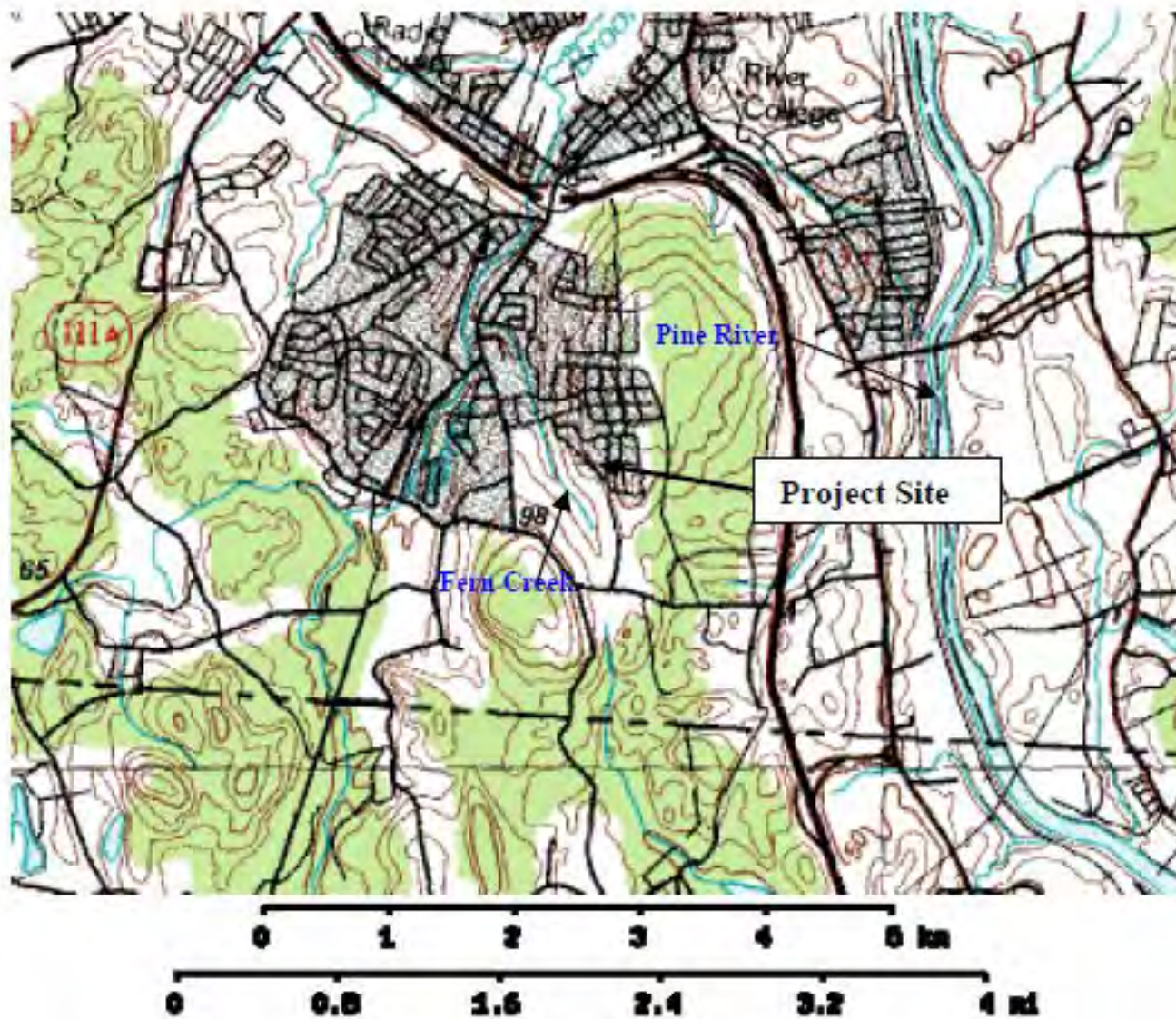
Mattock Compliance conducted a review of Fern Creek and the Pine River to determine if the above receiving waters were impaired or subject to TMDLs. Mattock Compliance first reviewed the 2006 303(d) list for the state of New Hampshire available at <http://www.des.state.nh.us/WMB/swqa/303dList.html> (accessed 01/20/06). Mattock Compliance did not identify Fern Creek or the Pine River as impaired waters or subject to TMDLs.

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To verify that Fern Creek and the Pine River are not impaired waters or subject to TMDLs, Mattock Compliance contacted Margaret Foss with the New Hampshire Department of Environmental Services. Mattock Compliance described the project location, MS4, and receiving waters during the conversation on 01/20/06 (see Appendix L – Telephone Log #1). Ms. Foss verified during the telephone call that Fern Creek and the Pine River are not impaired waters or subject to TMDLs.

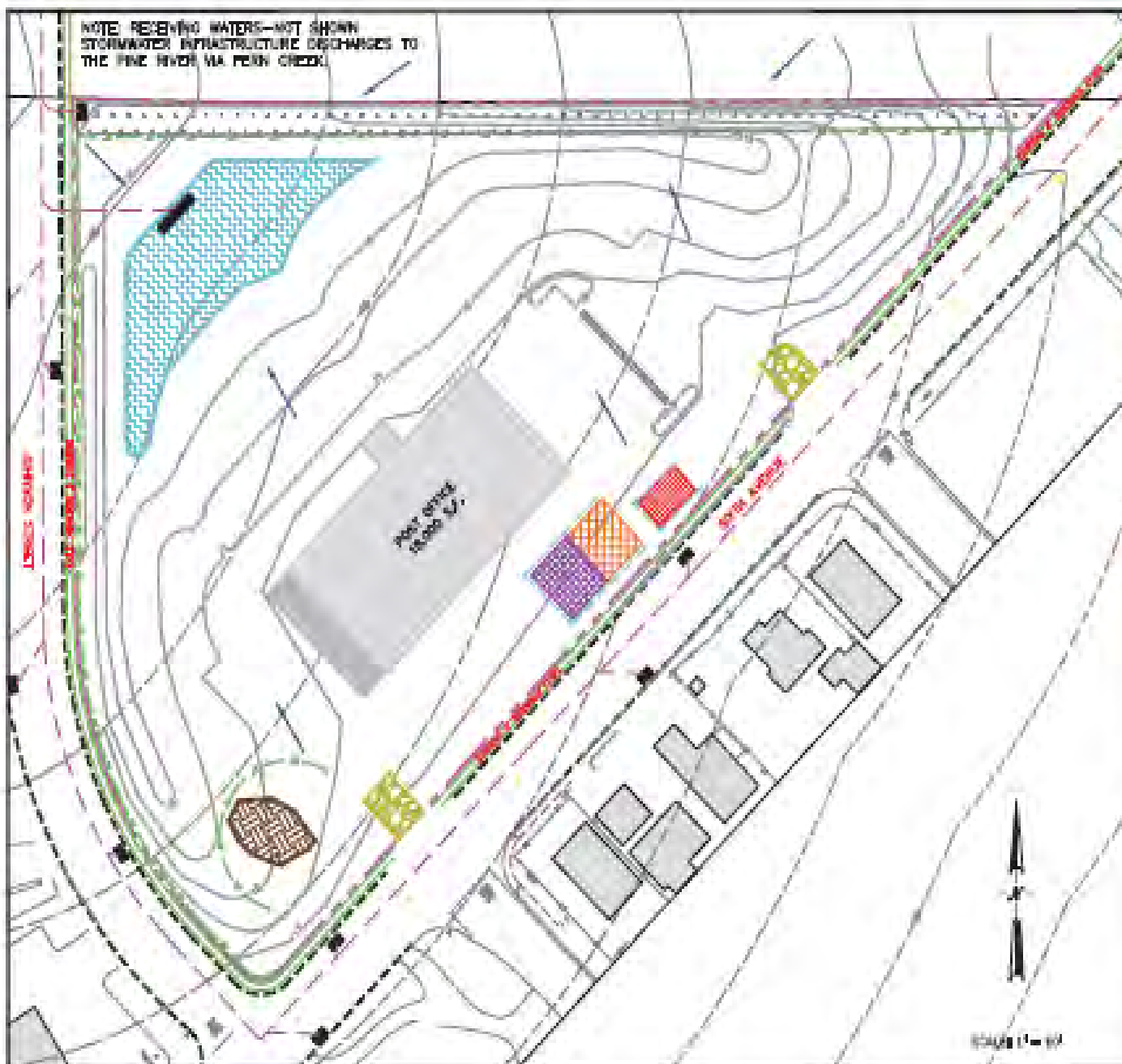
Project General Location Map



42.7168°N, 71.4658°W (NAD83/WGS84)

Stormville, New Hampshire

NOTE: RECEIVING WATERS—NOT SHOWN
STORMWATER INFRASTRUCTURE DISCHARGES TO
THE FINE RIVER VIA PEARL CREEK



LEGEND

- STORMWATER FLOW DIRECTION
- STORMWATER INFRASTRUCTURE
- SILT FENCE
- STABILIZE CONSTRUCTION ENTRANCE/EXIT
- MATERIALS STORAGE AREA
- CONCRETE WASTE MANAGEMENT
- STORM DRAIN INLET W/ CATCH BASIN INSERTS
- PROJECT BOUNDARY/DISTURBANCE LIMIT
- STAGING AREA
- TEMPORARY SEDIMENT TRAP
- GRAVEL BAG BERM
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED BUILDING
- VEGETATED SWALE
- STOCKPILE LOCATION

NOTE: ALL SPACES < 25'

ACTIVE CONSTRUCTION SITE MAP
STORMWATER POLLUTION PREVENTION PLAN

Collecting Pre-Construction Site Information

- Collecting Rainfall Data
 - How much precipitation will be expected?
 - BMPs need to be designed for a 2" storm within 24 hours
 - This means 2" for any duration storm lasting 24 hours or less
 - National Oceanic and Atmospheric Administration (NOAA)

Retrieve data for:

Nation Region State Division

Select Nation: U.S.

* Divisional data is only available for the U.S.

Select State: SOUTH DAKOTA

Select Division:

01 - Northwest
02 - North Central
03 - Northeast
04 - Black Hills
05 - Southwest
06 - Central
07 - East Central
08 - South Central
09 - Southeast

To select multiple elements hold down the ctrl key while making your selection.

Select Period Start: 01 2000

Select Period End: 01 2013

☐ Text Output: Space Delimited

☐ Interactive Graphs: All Drought

☒ Static Graphs: Precipitation

Show: All Months

Reset

Submit

Indices Output

PCP - Precipitation Index

TMP - Temperature Index

Collecting Pre-Construction Site Information

- Developing the Site Plan
 - Figure out what areas of the site need to be disturbed
 - Minimize disturbance
 - Keep cut and fill to a minimum
 - Try to reduce impacts to sensitive areas
 - Steep slopes, surface waters and conveyances, wetlands, highly erodible soils
 - Provide a narrative description of the construction activity
 - Purpose of project, major soil disturbing activities with associated time frames

Collecting Pre-Construction Site Information

- Developing the Site Plan

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- g. A site map indicating:

1.3 Nature and Sequence of Construction Activity

Instructions:

- Briefly describe the nature of the construction activity and approximate time frames (one or more paragraphs, depending on the nature and complexity of the project).
- For more information, see *SWPPP Guide*, Chapter 3.A. and EPA's CGP Part 3, Subparts 3.3.B.1 and 2, and 3.4.A.

Describe the general scope of the work for the project, major phases of construction, etc:

ACC is contracted by the USPS to build an 18,000-square-foot postal and distribution center at 3100 Sixth Avenue, Stormville, Hillsborough County, New Hampshire. ACC is responsible for overall site development and building construction. Soil disturbing activities will include clearing and grubbing; installing stabilized construction exits; installing erosion and sediment controls; grading; installation of the building foundation; excavation for utilities and parking lots; and installation of post-construction controls.

What is the function of the construction activity?

☐ Residential ☒ Commercial ☐ Industrial ☐ Road Construction ☐ Linear Utility
☐ Other (please specify):

Estimated Project Start Date: **04/05/2006**

Estimated Project Completion Date: **04/05/2007**

Collecting Pre-Construction Site Information

- Preparing the Site Map
 - The project site map should be used for the basis of the SWPPP site map

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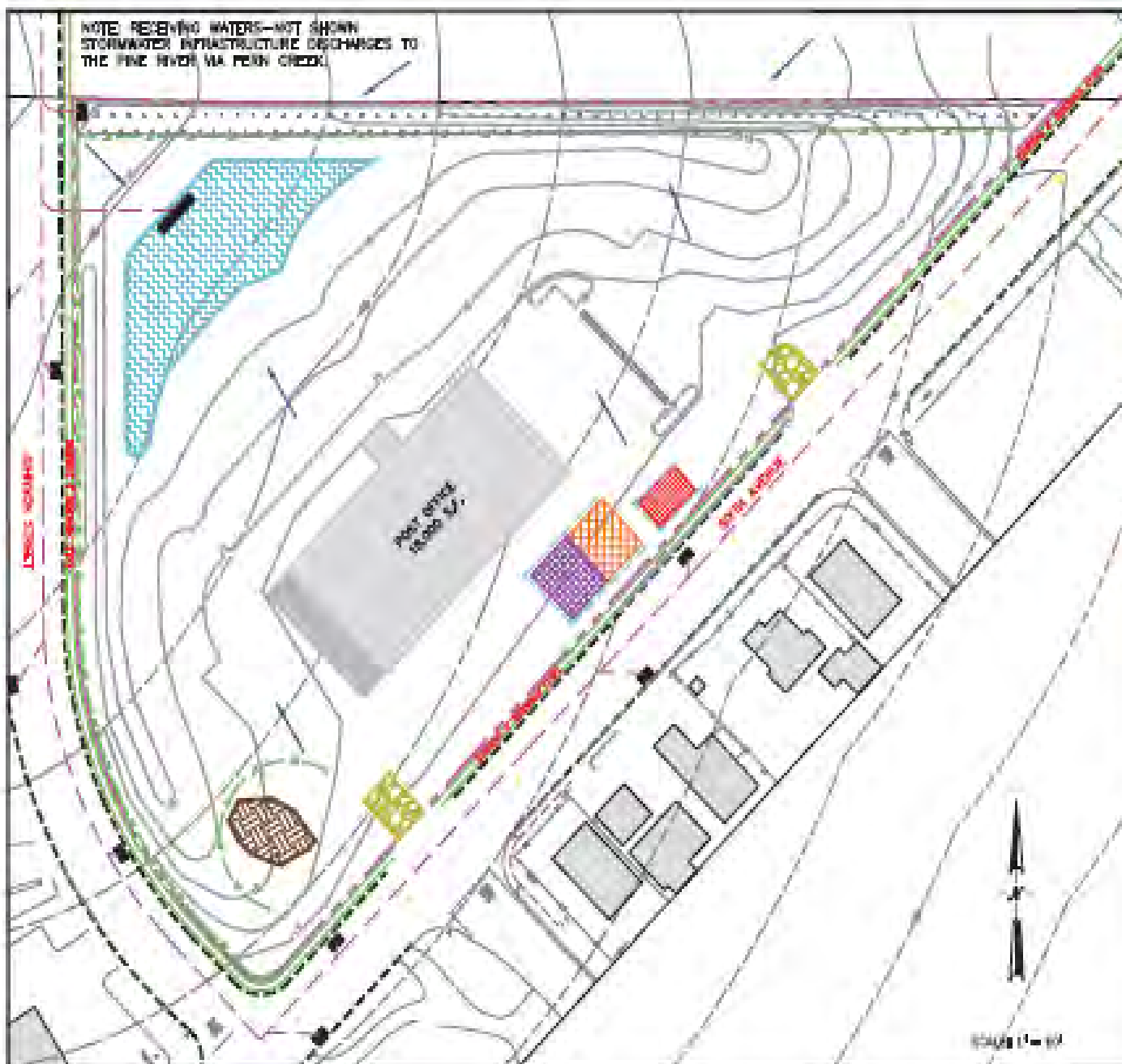
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NOTE: ALL SPACES < 20'

ACTIVE CONSTRUCTION SPEC MAP
STORMWATER POLLUTION PREVENTION PLAN

SCALE 1" = 50'

Collecting Pre-Construction Site Information

- Approximate Slopes after Grading
 - Use a topographic map for initial site conditions
 - Use your site map to indicate the revised grades
 - Use a contour map or show write out the slopes

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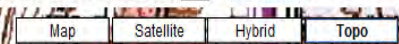
[Log on](#) | No Items in Basket | [Help](#)

11. *Chlorophyll a* (mg/g)

[DOI Disclaimer on Google Maps API](#)

Having trouble? Call: 1-888-ASK-USGS (1-888-275-8747, Select Option 2) or Write: usgsstore@usgs.gov for help.

or Find a place on the map [\[Navigation Help\]](#)



Double click to re-center, click and drag to pull the map around, zoom in and out.

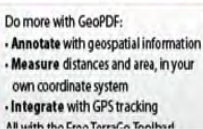
Click on a place to add a marker

Switch between Navigate and Mark Points at any time.

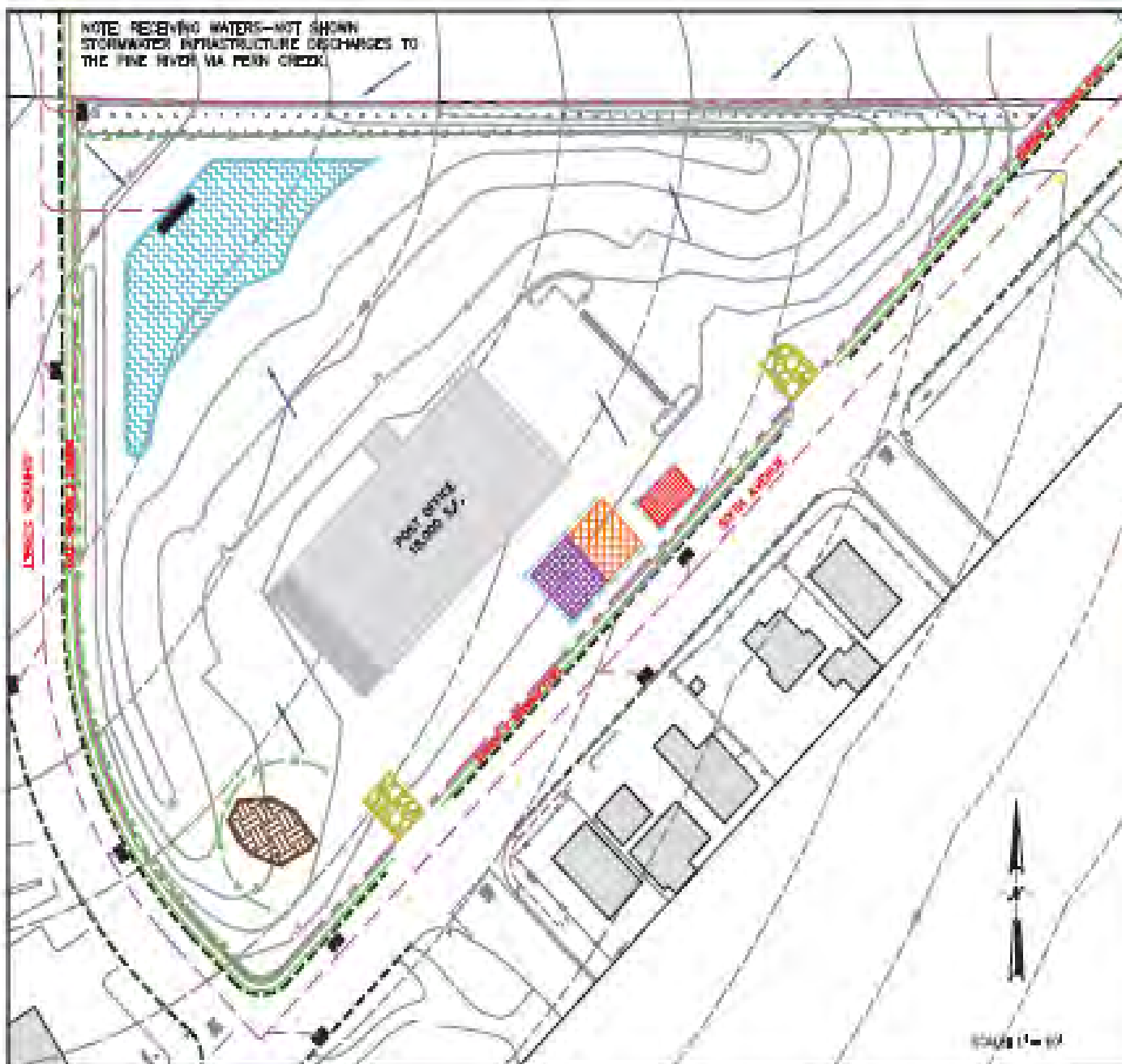
7.5 and 15 Minute

Click marker  to see an information bubble showing maps available, then click on "order", "download", or add maps your download cart.

Clear Markers Reset Map

 US Topo

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ACTIVE CONSTRUCTION SPEC MAP

STORMWATER POLLUTION PREVENTION PLAN

Collecting Pre-Construction Site Information

- Identify Areas of Soil Disturbance
 - Draw a “limits of disturbance” on the site map of where the soil disturbance will occur

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Collecting Pre-Construction Site Information

- Identify Drainage Patterns
 - Using the a topographic map and the grading plan, indicate the flow direction of runoff
 - Keep it updated during all phases of construction

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Conducting the Site Assessment

- Will utilize information collected to estimate the impact of construction activity on stormwater runoff
 - Measuring the Site Area
 - Determining the Drainage Area
 - Calculating Potential Run-on and Runoff Volumes
 - Identifying the Potential Pollutants
 - Wind Erosion

Conducting the Site Assessment

- Measuring the Site Area
 - Check the site plan or grading plan
 - Utilize the SWPPP site map
 - AutoCAD
 - Transparent graph paper

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1.5 Construction Site Estimates

Instructions:

- Estimate the area to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas.
- Calculate the percentage of impervious surface area before and after construction.
- Calculate the runoff coefficients before and after construction.
- For more information, see *SWPPP Guide*, Chapter 3.A and EPA's OGP Part 3, Subpart 3.3.B.

The following are estimates of the construction site:

Total project area:	4.36 acres
Construction site area to be disturbed:	4.36 acres
Percentage impervious area before construction:	5 %
Runoff coefficient before construction:	.0715
Percentage impervious area after construction:	21 %
Runoff coefficient after construction:	.3145

Because this site disturbs less than 5 acres, ACC also calculated the rainfall erosivity factor for the site and period of construction activity. An R factor of 103 was calculated using EPA's *Rainfall Erosivity Factor Calculator*; therefore, this project is not eligible for the rainfall erosivity waiver because the R factor was greater than 5.

Conducting the Site Assessment

- Determining the Drainage Area
 - Need to determine the drainage basins for each point of stormwater leaving the site
 - Does all stormwater on site drain to a single location or are there multiple locations?
 - Offsite and on site storm water that flows to each drain site

Conducting the Site Assessment

- Determining the Drainage Area
 - Need to determine location of discharge points for the site map

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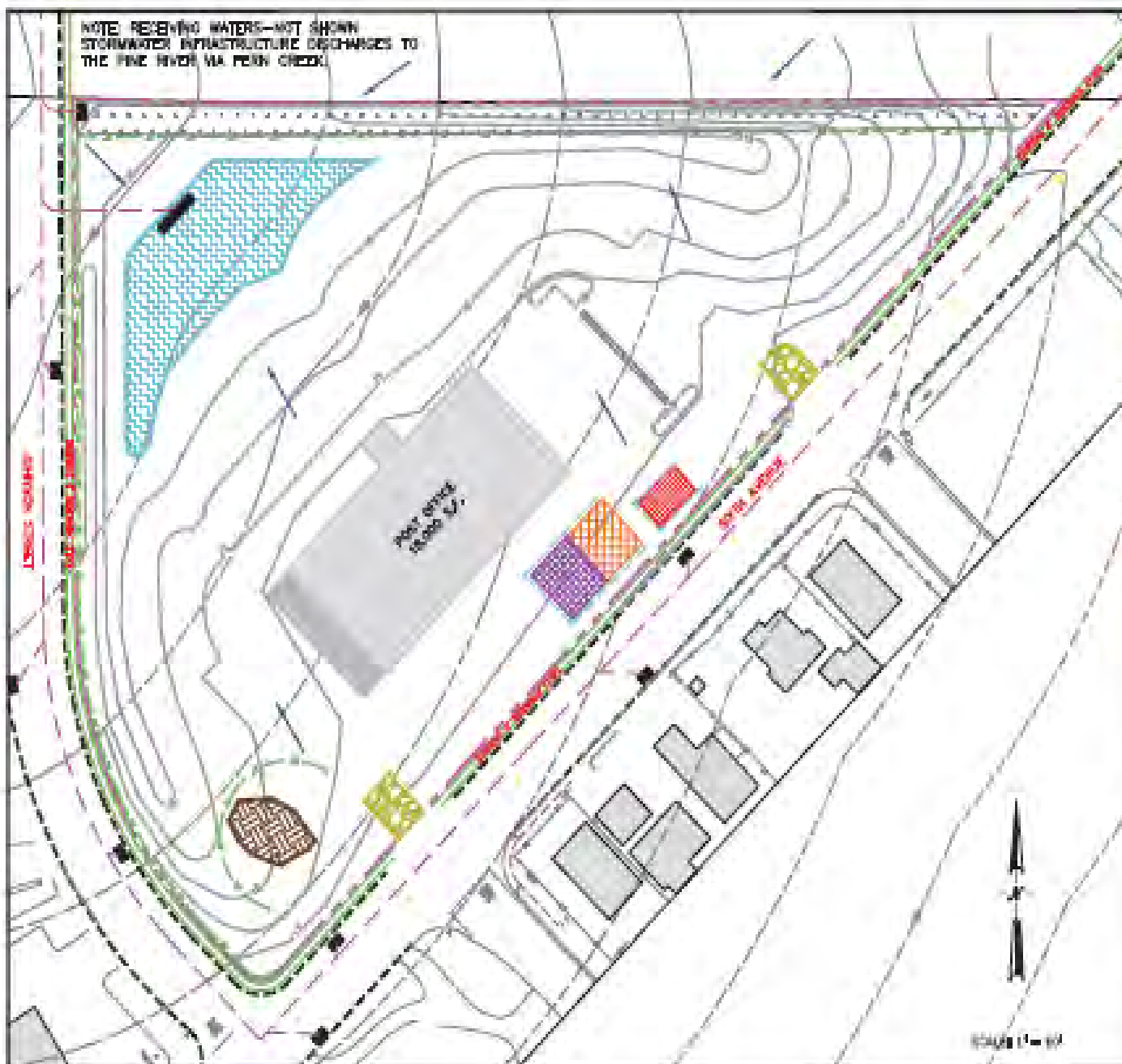
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ACTIVE CONSTRUCTION SPEC MAP

STORMWATER POLLUTION PREVENTION PLAN

Conducting the Site Assessment

- Calculating Potential Run-on and Runoff Volumes
 - Using the areas determined, calculate the runoff volumes for each location of discharge
 - To aid BMP selection, it is beneficial to divert off site runoff around the site
 - If it runs on site, it needs to be treated
 - Pick a calculation method to determine runoff
 - TR 55, Rational Method

Conducting the Site Assessment

- Calculating Potential Run-on and Runoff Volumes
 - Rational Method: $Q = CIA$
 - Q = Runoff in cubic feet per second (cfs)
 - C = Runoff coefficient
 - I = Rainfall intensity (in/hr)
 - A = Drainage area (acres)
 - 1 cfs = 1.008 acre-in/hr

Runoff Coefficient (C)

Type of Cover	Flat	Rolling 2%-10%	Hilly Over 10%
Pavement and Roofs	0.90	0.90	0.90
Earth Shoulders	0.50	0.50	0.50
Drives and Walks	0.75	0.80	0.85
Gravel Pavement	0.50	0.55	0.60
City Business Areas	0.80	0.85	0.85
Suburban Residential	0.25	0.35	0.40
Single Family Residential	0.30	0.40	0.50
Multi Units, Detached	0.40	0.50	0.60
Multi Units, Attached	0.60	0.65	0.70
Lawns, Very Sandy Soil	0.05	0.07	0.10
Lawns, Sandy Soil	0.10	0.15	0.20
Lawns, Heavy Soil	0.17	0.22	0.35
Grass Shoulders	0.25	0.25	0.25
Side Slopes, Earth	0.60	0.60	0.60
Side Slopes, Turf	0.30	0.30	0.30
Median Areas, Turf	0.25	0.30	0.30
Cultivated Land, Clay and Loam	0.50	0.35	0.60
Cultivated Land, Sand and Gravel	0.25	0.30	0.35
Industrial Areas, Light	0.50	0.70	0.80
Industrial Areas, Heavy	0.60	0.80	0.90
Parks and Cemeteries	0.10	0.15	0.25
Playgrounds	0.20	0.25	0.30
Woodland and Forests	0.10	0.15	0.20
Meadows and Pasture Land	0.25	0.30	0.35
Pasture with Frozen Ground	0.40	0.45	0.50
Unimproved Areas	0.10	0.20	0.30

Figure 2-4.2

Runoff Coefficients for the Rational Method — 10-Year Return Frequency

Conducting the Site Assessment

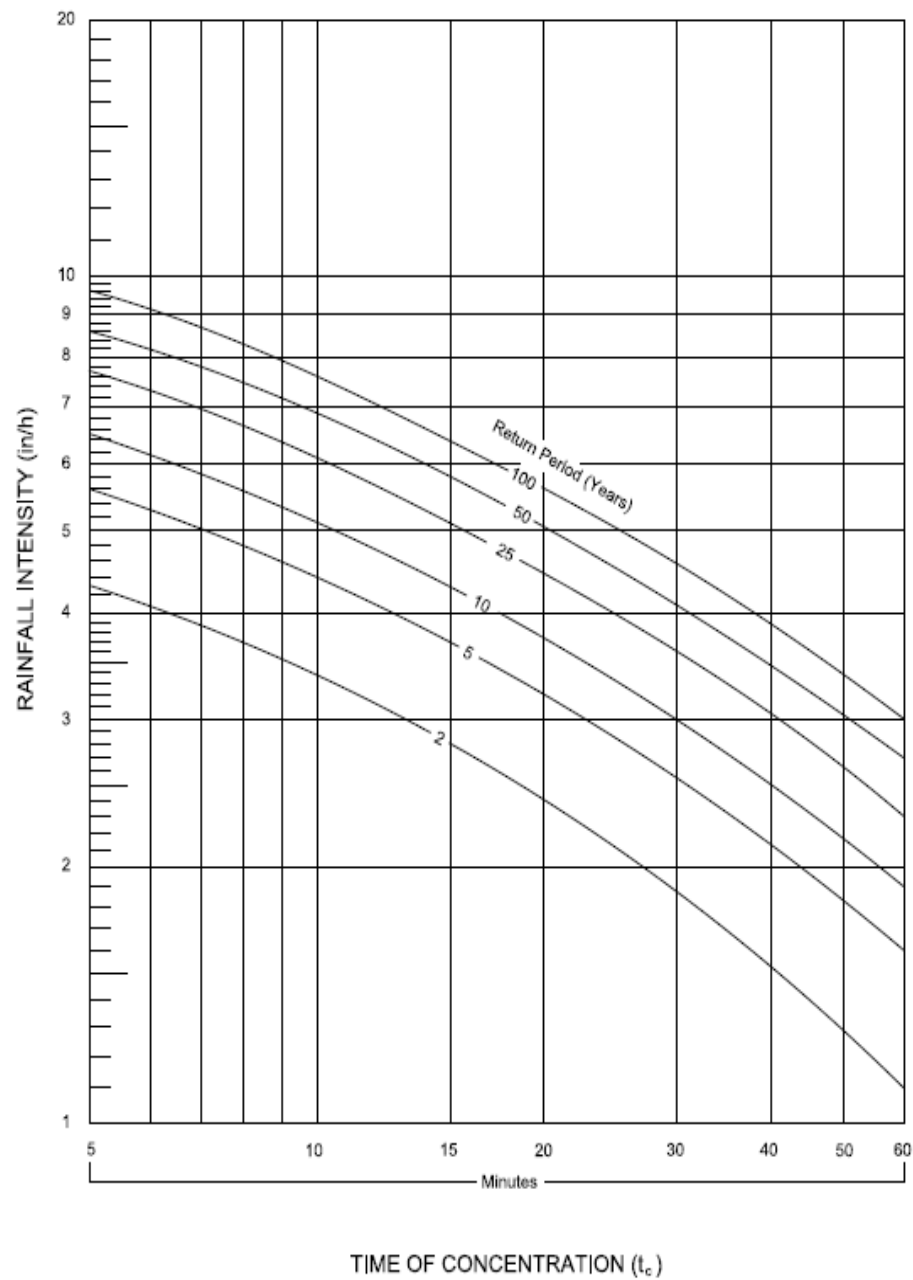
- Need to come up with a weighted “C” value

- $C = \frac{A_1C_1 + A_2C_2 + A_3C_3}{\sum A}$

- Need to find rainfall intensity
 - See the South Dakota Drainage Manual
 - May need to interpolate data

Return Period	Duration (min)	Belle Fourche	Rapid City	Custer	Mobridge	Pierre	Winner	Aberdeen	Huron	Watertown	Mitchell	Sioux Falls	Yankton
2-yr	5	4.2	4.3	4.2	4.5	4.6	4.7	4.7	4.9	5.0	5.0	5.2	5.2
	10	3.2	3.4	3.3	3.6	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.1
	15	2.6	2.8	2.8	3.0	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.5
	30	1.6	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.4
	60	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.6
5-yr	5	5.5	5.6	5.5	5.8	5.8	6.0	6.0	6.2	6.2	6.2	6.3	6.3
	10	4.2	4.4	4.4	4.6	4.7	4.9	4.9	5.0	5.1	5.1	5.2	5.2
	15	3.5	3.7	3.7	3.9	4.0	4.1	4.1	4.3	4.3	4.3	4.4	4.4
	30	2.3	2.5	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.1
	60	1.5	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.0
10-yr	5	6.4	6.5	6.4	6.7	6.7	6.8	6.8	7.0	7.1	7.1	7.1	7.1
	10	4.9	5.1	5.1	5.3	5.5	5.6	5.6	5.8	5.8	5.8	5.9	5.9
	15	4.1	4.3	4.3	4.5	4.6	4.8	4.8	4.9	4.9	4.9	5.0	5.0
	30	2.8	2.9	2.9	3.0	3.1	3.3	3.3	3.4	3.4	3.5	3.6	3.6
	60	1.8	1.9	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4
25-yr	5	7.7	7.7	7.7	7.9	8.0	8.1	8.1	8.3	8.3	8.3	8.3	8.3
	10	5.9	6.1	6.1	6.3	6.5	6.6	6.6	6.8	6.9	6.9	6.9	6.9
	15	4.9	5.1	5.1	5.3	5.5	5.6	5.6	5.8	5.8	5.8	5.9	5.9
	30	3.4	3.6	3.6	3.7	3.8	3.9	3.9	4.1	4.1	4.2	4.3	4.3
	60	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8
50-yr	5	8.6	8.6	8.6	8.9	9.0	9.1	9.1	9.2	9.3	9.3	9.3	9.3
	10	6.7	6.9	6.9	7.1	7.3	7.5	7.5	7.7	7.7	7.7	7.7	7.7
	15	5.6	5.8	5.8	5.9	6.1	6.3	6.3	6.5	6.5	6.5	6.6	6.6
	30	3.9	4.1	4.1	4.1	4.3	4.5	4.5	4.6	4.6	4.7	4.8	4.8
	60	2.5	2.7	2.7	2.7	2.8	2.9	2.9	3.0	3.0	3.1	3.2	3.2
100-yr	5	9.6	9.6	9.6	9.8	10.0	10.1	10.1	10.2	10.2	10.2	10.2	10.2
	10	7.5	7.6	7.6	7.9	8.1	8.3	8.3	8.5	8.5	8.5	8.5	8.5
	15	6.2	6.4	6.4	6.6	6.8	7.0	7.0	7.2	7.2	7.2	7.3	7.3
	30	4.3	4.6	4.6	4.6	4.8	5.0	5.0	5.1	5.1	5.3	5.3	5.3
	60	2.8	3.0	3.0	3.0	3.2	3.3	3.3	3.4	3.4	3.5	3.6	3.6

Figure 7.13-F — RAINFALL INTENSITY DATA FOR SOUTH DAKOTA



Rapid City, SD

Figure 7.13-I — RAPID CITY IDF CURVE

Conducting the Site Assessment

- Pre construction site conditions
 - 2.1 acres of grassed area with heavy soil
 - 0.4 acres of a warehouse roof
 - Overland flow slope = 2.8%
- Post construction site conditions
 - 1.4 acres of grass area with heavy soil
 - 0.4 acres of a warehouse roof
 - 0.7 acre parking lot
 - Overland flow slope = 2.8%

Conducting the Site Assessment

- Find the weighted “C” values

- Preconstruction

- Grassed Area, $C = 0.22$

- Concrete Parking Lot, $C = 0.90$

$$C = \frac{2.1 * 0.22 + 0.4 * 0.90}{2.5} = 0.33$$

- Post construction

- Grassed Area, $C = 0.22$

- Concrete Parking Lot, $C = 0.90$

- Warehouse Roof, $C = 0.90$

$$C = \frac{1.4 * 0.22 + 0.4 * 0.90 + 0.7 * 0.90}{2.5} = 0.52$$

Conducting the Site Assessment

- Rainfall Intensity Value
 - 2 year storm, $I = 4.3$ in/hr
 - 10 year storm, $I = 6.5$ in/hr
 - 100 year storm, $I = 9.6$ in/hr

Conducting the Site Assessment

- Pre Construction Runoff

- $Q = CIA$

- $Q_2 = 0.33 * 4.3 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 3.58 \text{ cfs}$

- $Q_{10} = 0.33 * 6.5 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 5.41 \text{ cfs}$

- $Q_{100} = 0.33 * 9.6 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 7.98 \text{ cfs}$

- Post Construction Runoff

- $Q = CIA$

- $Q_2 = 0.52 * 4.3 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 5.63 \text{ cfs}$

- $Q_{10} = 0.52 * 6.5 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 8.52 \text{ cfs}$

- $Q_{100} = 0.33 * 9.6 \text{ in/hr} * 2.5 \text{ acres} * 1.008 = 12.58 \text{ cfs}$

Conducting the Site Assessment

- Increase in runoff
 - For a 2 year storm, 2.05 cfs
 - For a 10 year storm, 3.11 cfs
 - For a 100 year storm, 4.60 cfs

Conducting the Site Assessment

- Identifying the Potential Pollutants
 - Consider every potential pollutant associated with the project
 - Visible and nonvisible pollutants

4.2 Contents of SWPPP

The SWPPP shall be developed to ensure compliance with the Effluent Limits in Part 3.0. The SWPPP shall include, at a minimum, the following items:

1. Site Description

Each SWPPP shall provide the information indicated below:

- a. A description of the overall project and the type of construction activity;
- b. A description of potential pollutant sources;
- c. Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other construction activities during the life of the project;
- d. A description of the intended sequence of activities which disturb soil;
- e. A description of the soil within the disturbed area(s);
- f. The name of the surface water(s) at or near the disturbed area that could potentially receive discharges from the project site; and
- g. A site map indicating:

1.8 Potential Sources of Pollution

Instructions:

- Identify and list all potential sources of sediment, which may reasonably be expected to affect the quality of stormwater discharges from the construction site.
- Identify and list all potential sources of pollution, other than sediment, which may reasonably be expected to affect the quality of stormwater discharges from the construction site.
- For more information, see *SWPPP Guide*, Chapter 3.A and EPA's CGP Part 3, Subpart 3.1.B.

Potential sources of sediment to stormwater runoff:

- Clearing and grubbing operations
- Grading and site excavation operations
- Vehicle tracking
- Topsoil stripping and stockpiling

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Stormville Postal and Distribution Center

- Landscaping operations

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Combined Staging Area—small fueling activities, minor equipment maintenance, sanitary facilities, and hazardous waste storage.
- Materials Storage Area—general building materials, solvents, adhesives, paving materials, paints, aggregates, trash, and so on.
- Construction Activity—paving, curb/gutter installation, concrete pouring/mortar/stucco, and building construction
- Concrete Washout Area

For all potential construction site pollutants, see Table 2 below.

Table 2. Potential construction site pollutants

Material/Chemical	Physical Description	Stormwater Pollutants	Location*
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic	Herbicides used for noxious weed control
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous	Newly seeded areas
Plaster	White granules or powder	Calcium sulphate, calcium carbonate, sulfuric acid	Building construction
Cleaning solvents	Colorless, blue, or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Black solid	Oil, petroleum distillates	Streets and roofing
Concrete	White solid/grey liquid	Limestone, sand, pH, chromium	Curb and gutter, building construction
Glue, adhesives	White or yellow liquid	Polymers, epoxies	Building construction
Paints	Various colored liquid	Metal oxides, stoddard solvent, talc, calcium carbonate, arsenic	Building construction
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter
Wood preservatives	Clear amber or dark brown liquid	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads and building construction
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area

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Material/Chemical	Physical Description	Stormwater Pollutants	Location*
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates	Secondary containment/staging area
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Leaks or broken hoses from equipment
Sanitary toilets	Various colored liquid	Bacteria, parasites, and viruses	Staging area

* (Area where material/chemical is used on-site)

Selection of BMPs and Plan Design

- Appropriate BMPs need to be selected for the site
 - Selecting and Describing the BMPs
 - Stabilization
 - Selecting Erosion and Sediment Control BMPs
 - Wind Erosion – Dust Control
 - Selecting Other Pollutant BMPs
 - Selecting Storm Water Management BMPs
 - Indicating BMP Locations on the Site Map
 - Incorporating Local Requirements
 - Preparing the Inspection and Maintenance Plan
 - Coordinating the Controls with Construction Activities

Selection of BMPs and Plan Design

- Selecting and Describing the BMPs
 - What BMPs will be most effective
 - Description
 - Purpose
 - Basis for selection
 - Size, materials needed, and installation instructions

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

(2) Structural Diversion Practices

The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

Selection of BMPs and Plan Design

- Temporary and Permanent Stabilization
 - Description and schedule of stabilization practices

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

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The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

b. Storm Water Management

The SWPPP shall include a description of best management practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. Such practices may include structural methods such as storm water ponds, open

c. Other Controls

(1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.

(2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

2.4 Stabilize Soils

Instructions:

- Describe controls (e.g., interim seeding with native vegetation, hydroseeding) to stabilize exposed soils where construction activities have temporarily or permanently ceased. Also describe measures to control dust generation. Avoid using impervious surfaces for stabilization whenever possible. (For more information, see *SWPPP Guide*, Chapter 4, ESC Principle 4, EPA's CGP Part 3, Subpart 3.13.D.)
- Also, see EPA's *Seeding BMP Fact Sheet* at www.epa.gov/npdes/stormwater/menuofbmps/construction/seeding

Temporary Stabilization

BMP Description: Hydromulching will provide immediate protection to exposed soils where construction will cease for more than 14 days and over the winter months. Straw mulch and wood fiber will be mixed with a tackifier (amount specified per manufacturer's instructions) and applied uniformly by machine with an application rate of 90–100 pounds (2–3 bales) per 1,000 square feet or 2 tons (100–200 bales) per acre. If the tackifier does not appear effective in anchoring the mulch to the disturbed soil, crimping equipment will be used to provide additional binding to the soil. The mulch will cover 75 to 90 percent of the ground surface. In areas, where hydromulching is inaccessible, straw mulch will be applied by hand with an application rate of 90–100 pounds (2–3 bales) per 1,000 square feet.

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Winter stabilization will occur between November 15 and March 15. All disturbed areas are scheduled to be stabilized well before winter; however, if any vegetated areas show signs of erosion, mulch will be applied at the same rate as described above.

☐ Permanent

☒ Temporary

<i>Installation Schedule:</i>	Portions of the site where construction activities will temporarily cease for more than 14 days will be stabilized with mulch. Winter stabilization will occur between November 15 th and March 15.
<i>Maintenance and Inspection:</i>	Mulched areas will be inspected weekly and after storm events to check for movement of mulch or erosion. If washout, breakage, or erosion occurs, the surface will be repaired, and new mulch will be applied to the damaged area.
<i>Responsible Staff:</i>	ACC

Permanent Stabilization

BMP Description: Permanent stabilization will be done immediately after the final design grades are achieved but no later than 14 days after construction ceases. Native species of plants will be used to establish vegetative cover on exposed soils. Permanent stabilization will be completed in accordance with the final stabilization procedures in Section 7.

☒ Permanent

☐ Temporary

<i>Installation Schedule:</i>	Portions of the site where construction activities have permanently ceased will be stabilized, as soon as possible but no later than 14 days after construction ceases.
<i>Maintenance and Inspection:</i>	All seeded areas will be inspected weekly during construction activities for failure and after storm events until a dense cover of vegetation has been established. If failure is noticed at the seeded area, the area will be reseeded, fertilized, and mulched immediately. After construction is completed at the site, permanently stabilized areas will be monitored until final stabilization is reached.
<i>Responsible Staff:</i>	ACC

Selection of BMPs and Plan Design

- Selecting Erosion and Sediment Control BMPs
 - Erosion control protects the soil surface
 - Sediment control is trapping eroded sediment

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

(2) Structural Diversion Practices

The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

b. Storm Water Management

The SWPPP shall include a description of best management practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. Such practices may include structural methods such as storm water ponds, open

c. Other Controls

(1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.

(2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

Conducting the Site Assessment

- Wind Erosion – Dust Control
 - Wind erosion causes removal and re-deposition of soil on the site
 - Saltation – fine and medium particles, lifted short distances in the air and dislodge more particles on impact
 - Suspension – very fine particles are suspended in the air as a result of saltation
 - Surface Creep – large particles moving along the soil surface after being dislodged by saltation

Dust Control

BMP Description: Dust from the site will be controlled by using a mobile pressure-type distributor truck to apply potable water to disturbed areas. The mobile unit will apply water at a rate of 300 gallons per acre and minimized as necessary to prevent runoff and ponding.

Installation Schedule:

Dust control will be implemented as needed once site grading has been initiated and during windy conditions (forecasted or actual wind conditions of 20 mph or greater) while site grading is occurring. Spraying of potable water will be performed no more than three times a day during the months of May–September and

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	once per day during the months of October–April or whenever the dryness of the soil warrants it.
<i>Maintenance and Inspection:</i>	At least one mobile unit will be available at all times to distribute potable water to control dust on the project area. Each mobile unit will be equipped with a positive shutoff valve to prevent over watering of the disturbed area. For vehicle and equipment maintenance practices, see Section 3, Part 3.4.
<i>Responsible Staff:</i>	ACC

Selection of BMPs and Plan Design

- Selecting Other Pollutant BMPs
 - BMPs to address paints, concrete, vehicle tracking, nutrients, heavy metals, and housekeeping

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

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The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

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(1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.

(2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

Selection of BMPs and Plan Design

- Selecting Other Pollutant BMPs
 - These areas need to be shown on the site map

4.2 Contents of SWPPP

The SWPPP shall be developed to ensure compliance with the Effluent Limits in Part 3.0. The SWPPP shall include, at a minimum, the following items:

1. Site Description

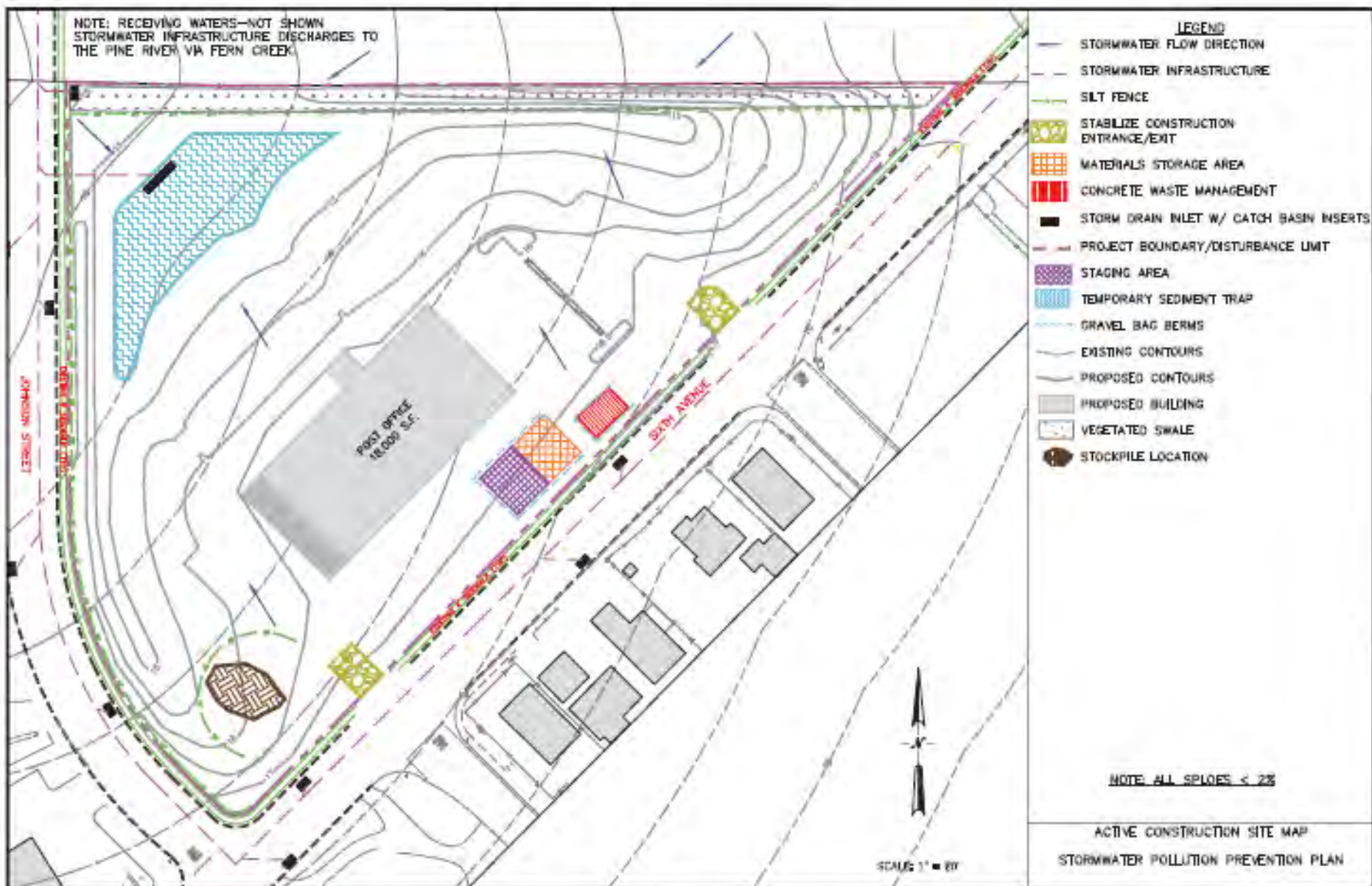
Each SWPPP shall provide the information indicated below:

- a. A description of the overall project and the type of construction activity;
- b. A description of potential pollutant sources;
- c. Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other construction activities during the life of the project;
- d. A description of the intended sequence of activities which disturb soil;
- e. A description of the soil within the disturbed area(s);
- f. The name of the surface water(s) at or near the disturbed area that could potentially receive discharges from the project site; and

g. A site map indicating:

- (1) Drainage patterns with flow directions marked with arrows;
- (2) Approximate slopes anticipated after major grading activities;
- (3) Areas of soil disturbance, noting any phasing of construction activities;
- (4) Location of major structural and nonstructural controls identified in the SWPPP;
- (5) Location of areas where stabilization practices are expected to occur;
- (6) Surface waters, including an aerial extent of wetland acreage;
- (7) Locations where storm water is discharged to surface water;
- (8) Locations of any spills, leaks, or soil contamination that could impact the storm water runoff from the site; and
- (9) Areas of concern including, but not limited to: fueling stations, waste storage, and concrete washout areas. The permittee shall provide designated areas for these activities.

NOTE: RECEIVING WATERS—NOT SHOWN
STORMWATER INFRASTRUCTURE DISCHARGES TO
THE PINE RIVER VIA FERN CREEK



Selection of BMPs and Plan Design

- Selecting Storm Water Management BMPs
 - Divert flow around the site and away from potential pollutant sources

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

(2) Structural Diversion Practices

The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

b. Storm Water Management

The SWPPP shall include a description of best management practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. Such practices may include structural methods such as storm water ponds, open

c. Other Controls

(1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.

(2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

2.3 Control Stormwater Flowing onto and through the Project

Instructions:

- Describe structural practices (e.g., diversions, berms, ditches, storage basins) including design specifications and details used to divert flows from exposed soils, retain or detain flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. (For more information, see *SWPPP Guide*, Chapter 4, ESC Principle 3.)

Vegetated Swale

BMP Description: A vegetated swale will be installed along the northern perimeter of the site to capture stormwater run-on from the adjacent property. The swale will convey stormwater to a raised storm drain inlet in the northwest corner of the site. The inlet will be raised 1 foot above the bottom of the swale to allow for infiltration of the run-on. The vegetated swale will have a trapezoidal shape with a slope ratio of 2:1. The bottom of the swale will be at least 2 feet above the seasonal high water table and bedrock. The slopes of the swale will be stabilized with a dense cover of water-tolerant, erosion-resistant grasses, mulch and erosion control blankets immediately after final grade is reached. The vegetated swale will remain as a permanent stormwater structure after construction is complete. For design specifications, see Figure 1.

<i>Installation Schedule:</i>	The vegetated swale will be installed before site grading operations begin at the construction site.
<i>Maintenance and Inspection:</i>	The swale will be inspected for erosion and structural failures weekly and immediately after storm events. Before vegetation has been established in the swale, it will be inspected for erosion and accumulation of debris and sediment. Remove debris, sediment, and repair erosion and embankments immediately.
<i>Responsible Staff:</i>	ACC

ACC

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Stormwater Pollution Prevention Plan (SWPPP) Stormville Postal and Distribution Center



Figure 1. Vegetated swale

Design Specifications

- The swale will have side slopes no steeper than 2:1 and a minimum length of 100 feet, per Stormville's erosion and sediment control requirements [REG 25.40 (b)(1-2)].
- The slopes of the swale will be stabilized with a dense cover of water-tolerant, erosion-resistant grasses, per Stormville's erosion and sediment control requirements [REG 25.40 (b)(5)].
- The bottom of the swale will be at least 2 feet above the seasonal high water table and bedrock, per Stormville's erosion and sediment control requirements [REG 25.40 (b)(6)].
- The swale will have a positive drainage to convey runoff to the storm drain inlet.

Selection of BMPs and Plan Design

- Selecting Storm Water Management BMPs
 - Post construction stormwater BMPs

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

(2) Structural Diversion Practices

The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

b. Storm Water Management

The SWPPP shall include a description of best management practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. Such practices may include structural methods such as storm water ponds, open

c. Other Controls

- (1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.
- (2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

Selection of BMPs and Plan Design

- Indicating BMP Locations on the Site Map
 - Once the BMPs and their location are selected, they need to be added to the site map

4.2 Contents of SWPPP

The SWPPP shall be developed to ensure compliance with the Effluent Limits in Part 3.0. The SWPPP shall include, at a minimum, the following items:

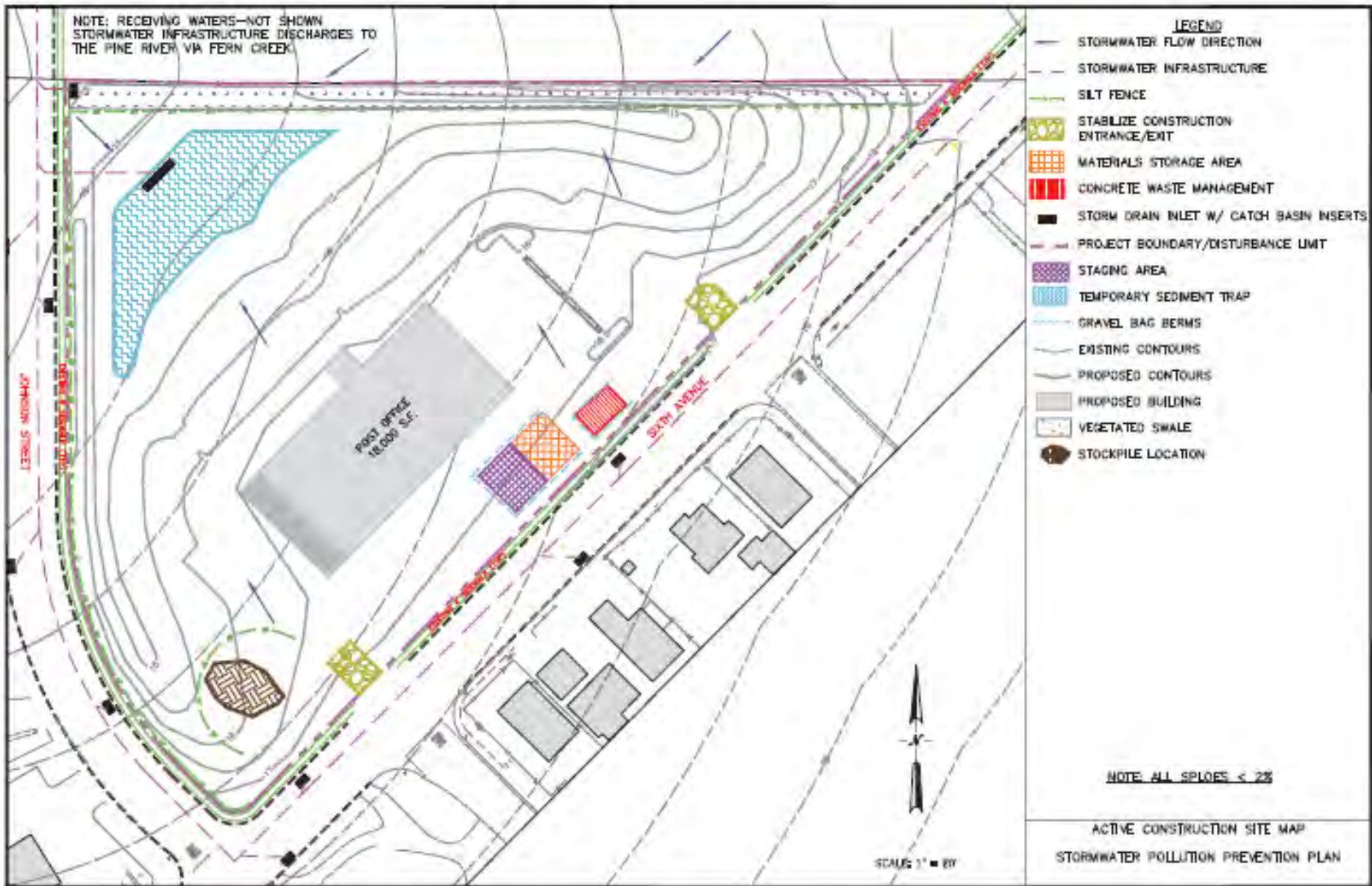
1. Site Description

Each SWPPP shall provide the information indicated below:

- a. A description of the overall project and the type of construction activity;
- b. A description of potential pollutant sources;
- c. Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other construction activities during the life of the project;
- d. A description of the intended sequence of activities which disturb soil;
- e. A description of the soil within the disturbed area(s);
- f. The name of the surface water(s) at or near the disturbed area that could potentially receive discharges from the project site; and

g. A site map indicating:

- (1) Drainage patterns with flow directions marked with arrows;
- (2) Approximate slopes anticipated after major grading activities;
- (3) Areas of soil disturbance, noting any phasing of construction activities;
- (4) Location of major structural and nonstructural controls identified in the SWPPP;
- (5) Location of areas where stabilization practices are expected to occur;
- (6) Surface waters, including an aerial extent of wetland acreage;
- (7) Locations where storm water is discharged to surface water;
- (8) Locations of any spills, leaks, or soil contamination that could impact the storm water runoff from the site; and
- (9) Areas of concern including, but not limited to: fueling stations, waste storage, and concrete washout areas. The permittee shall provide designated areas for these activities.



Selection of BMPs and Plan Design

- Incorporating Local Requirements
 - Be sure to check with the city, county, or federal authority to see if there are any additional local requirements

2. Controls

For each major activity identified in the site description, the SWPPP shall describe the necessary control measures, along with the timeframe for implementing the controls and who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls

(1) Stabilization Practices

The SWPPP shall include a description and schedule of interim and permanent stabilization practices. The SWPPP shall also include a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures will be initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated in accordance with Section 3.9.

(2) Structural Diversion Practices

The SWPPP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural diversion practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.

b. Storm Water Management

The SWPPP shall include a description of best management practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. Such practices may include structural methods such as storm water ponds, open

c. Other Controls

(1) The SWPPP shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP. This includes minimizing tracking of sediments off-site and generation of dust.

(2) The SWPPP shall include a description of chemicals, construction materials, and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls to minimize pollutants from these materials, including storage practices to minimize exposure of the materials to storm water, and spill prevention measures and response.

d. Compliance with Local Requirements

Permittees shall include applicable local erosion and sediment requirements in their SWPPP. The SWPPP shall be modified if the permittee is notified the local requirements have changed.

1.11 Applicable Federal, Tribal, State or Local Programs

Instructions:

- Note other applicable federal, tribal, state or local soil and erosion control and stormwater management requirements that apply to the construction site. See EPA's CGP Part 3.9.
- An Alteration of Terrain Application has been submitted to New Hampshire DES (see Appendix D). To complete this application, ACC reviewed the EPA fact sheet *Storm Water Permit Basics: New Hampshire Digging Needs a Federal Permit*, which is also included in Appendix D.
- The SWPPP complies with Stormville's erosion and sediment control requirements, including the requirement that sediment traps be designed for a minimum of 1,800 cubic feet of storage per acre of drainage area [REG 24.56].
- The SWPPP also complies with erosion and sediment control requirement that vegetated swales must have a minimum length of 100 feet, be vegetated with water-tolerant, erosion-resistant grasses, and be at least 2 feet above the seasonal high water table and bedrock [REG 25.40 (b)(1-6)].

Selection of BMPs and Plan Design

- Preparing the Inspection and Maintenance Plan
 - For when the SWPPP is implemented, thorough inspections and appropriate maintenance procedures are required
 - Develop an inspection checklist
 - BMPs must be maintained to be in effective working condition

3. Maintenance

All erosion and sediment control measures and other protective measures identified in the SWPPP shall be maintained in effective operating condition. If site inspections required in Section 3.12 identify BMPs that are not operating effectively, maintenance shall be performed in accordance with Section 3.3.

Selection of BMPs and Plan Design

- Coordinating the Controls with Construction Activities
 - Use the planned sequence of construction activity
 - Determine a schedule for implementing and removing BMPs

4.2 Contents of SWPPP

The SWPPP shall be developed to ensure compliance with the Effluent Limits in Part 3.0. The SWPPP shall include, at a minimum, the following items:

1. Site Description

Each SWPPP shall provide the information indicated below:

- a. A description of the overall project and the type of construction activity;
- b. A description of potential pollutant sources;
- c. Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other construction activities during the life of the project;
- d. A description of the intended sequence of activities which disturb soil;
- e. A description of the soil within the disturbed area(s);
- f. The name of the surface water(s) at or near the disturbed area that could potentially receive discharges from the project site; and

g. A site map indicating:

- (1) Drainage patterns with flow directions marked with arrows;
- (2) Approximate slopes anticipated after major grading activities;
- (3) Areas of soil disturbance, noting any phasing of construction activities;
- (4) Location of major structural and nonstructural controls identified in the SWPPP;
- (5) Location of areas where stabilization practices are expected to occur;
- (6) Surface waters, including an aerial extent of wetland acreage;
- (7) Locations where storm water is discharged to surface water;
- (8) Locations of any spills, leaks, or soil contamination that could impact the storm water runoff from the site; and
- (9) Areas of concern including, but not limited to: fueling stations, waste storage, and concrete washout areas. The permittee shall provide designated areas for these activities.

2.2 Phase Construction Activity

Instructions:

- Describe the intended construction sequencing and timing of major activities, including any opportunities for phasing grading and stabilization activities to minimize the overall amount of disturbed soil that will be subject to potential erosion at one time. Also, describe opportunities for timing grading and stabilization so that all or a majority of the soil disturbance occurs during a time of year with less erosion potential (i.e., during the dry or less windy season). (For more information, see SWPPP Guide, Chapter 4, ESC Principle 2.) It might be useful to develop a separate, detailed site map for each phase of construction.
- Also, see EPA's *Construction Sequencing BMP Fact Sheet* at http://www.epa.gov/npdes/stormwater/menuofbmps/construction/cons_seq

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Stormwater Pollution Prevention Plan (SWPPP)
Stormville Postal and Distribution Center

BMP Description: The proposed site is too small for phased grading to be practical. To minimize erosion during grading activities, grading and site work will be conducted in late April and May after snowmelt and during periods of predicted dry weather. The areas of the site that will remain vegetated after construction will be graded first and stabilized with hydromulch or seeding immediately after grading activities are completed. All other areas of the construction site will be stabilized if site work is not planned for more than 14 days. To minimize potential erosion from the site, only areas necessary to construct the vegetated swale, sediment trap, and construction exits will be disturbed initially. These areas will be cleared, grubbed, and graded and the above measures will be installed. These areas will be stabilized immediately after construction but no later than 14 days after construction ceases. Overall grubbing, clearing, grading will be conducted over a 2-week period in May to limit erosion from the site. Areas graded during this time period will be stabilized with hydromulch immediately after construction but no later than 14 days after construction ceases.

Installation Schedule:	For a timeline of construction activity, see Section 1.3.
Responsible Staff:	ACC

Selection of BMPs and Plan Design

- Coordinating the Controls with Construction Activities
 - Six principles to consider
 1. Install perimeter BMPs before the land is disturbed
 2. Don't disturb an area until it is necessary
 3. Cover or stabilize as soon as possible
 4. Time construction activities to reduce weather impacts
 5. Filtration BMPs shouldn't be installed until upstream areas have been stabilized
 6. Don't remove controls until after upstream areas are stabilized

Certification and Permit Coverage

- Certifying the SWPPP
- Submitting the Notice of Intent
- SWPPP Location
- Public Access

Certification and Permit Coverage

- Certifying the SWPPP
 - The owner or an authorized representative must sign and certify the SWPPP

Organization	Authorized Representative
Corporation	Responsible Corporate Officer
Partnership or Sole Proprietorship	General Partner or the Proprietor
Municipality, State, Federal, or Public Entity	Principal Executive Officer or Ranking Elected Official

Certification and Permit Coverage

- Certifying the SWPPP
 - The certification statement is written out in the permit

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 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 there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SECTION 8: CERTIFICATION AND NOTIFICATION

Instructions:

- The SWPPP should be signed and certified by the construction operator(s). Attach a copy of the NOI and permit authorization letter received from EPA or the state in Appendix D.
- For more information, see EPA's CGP Part 3, Subpart 3.12.A-D and Appendix G, Section 11.

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 gathered and evaluated 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.

Name: Joe Butler Title: Owner

Signature: Joe Butler Date: 3/12/04

Certification and Permit Coverage

- Submitting the Notice of Intent
 - The SWPPP must be developed **PRIOR** to the submittal of the NOI
 - It does not need to be submitted

4.0 STORM WATER POLLUTION PREVENTION PLAN

4.1 Deadlines for SWPPP Preparation and Compliance

The Storm Water Pollution Prevention Plan, also referred to as “the SWPPP,” shall be developed **prior** to the submittal of the NOI and shall be implemented for all construction activity.

For permitted sites that had been covered under the July 1, 2002 General Permit, and reauthorized under this General Permit, the SWPPP shall be updated to reflect the conditions and requirements of this General Permit by **July 1, 2010**.

Certification and Permit Coverage

- Submitting the Notice of Intent
 - The NOI must be submitted 15 days prior to when work at the site commences
 - The information in the NOI is reviewed
 - Upon approval, an approval letter and permit cover page will be mailed to the site owner
 - A full copy of the permit can be sent on request
 - The NOI and approval letter need to be added in the SWPPP

Certification and Permit Coverage

- SWPPP Location
 - The SWPPP must be kept on the project site for the duration of the project
 - Along with any supporting material
 - The SWPPP needs to be available if a regulatory agency requests a copy
 - The SWPPP (along with all other reports and data) must be kept by the owner for 3 years after the project is completed

Certification and Permit Coverage

- Public Access
 - The approval letter and permit cover page must be posted on site for public viewing
 - The SWPPP and supporting materials are available to the public
 - The permittee may claim certain portions of their SWPPP confidential
 - Records that may contain trade secrets

Implementation

- Managing the SWPPP during the construction activity
 - Keeping the SWPPP Current
 - Implementing the BMPs
 - Inspecting and Maintaining the BMPs
 - Maintaining Records of Construction Activities
 - Updating and Amending the SWPPP
 - Requirements for SWPPP Amendments
 - Releases of Reportable Quantities

Implementation

- Keeping the SWPPP current

4.3 Keeping SWPPPs Current

1. The permittee shall amend the SWPPP whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the potential for the discharge of pollutants to the waters of the state. The SWPPP shall also be amended if the SWPPP proves to be ineffective at minimizing pollutants present in the storm water.
2. The Secretary may notify the permittee at any time that the SWPPP does not meet the minimum requirements of this Section. This notification will identify the provisions of the General Permit that are not being met by the SWPPP and identify which provisions require modifications in order to meet the minimum requirements. Within seven (7) days of notification, the permittee shall make the required changes to the SWPPP and shall submit to the Secretary a written certification that the requested changes have been made. The Secretary may take appropriate enforcement action for the period of time the permittee was operating under a SWPPP that did not meet the minimum requirements of this General Permit.
3. If the inspections required in Section 3.12 identify necessary changes to the SWPPP, the SWPPP shall be revised and the changes implemented no later than seven (7) calendar days following the inspection.

Implementation

- Implementing the BMPs
 - Before soil disturbing activities begin
 - Need to install the selected BMPs
 - Training for installation
 - Proper placement
 - Stress the importance of proper installation

Implementation

- Inspecting and Maintaining the BMPs
 - Use inspection and maintenance plan
 - Training for inspectors
 - Ensure proper installation
 - Recognize BMP deficiencies
 - Documentation of BMP deficiencies or failures
 - Corrective actions need to be made within 7 days
 - If change of BMP is needed, SWPPP must be amended

Implementation

- Inspecting and Maintaining the BMPs

3.12 Site Inspections

1. An inspection of the site shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of storm that is 0.5 inches or greater, or a snowmelt event that causes surface erosion. Once a site has been temporarily stabilized and construction has ceased for the winter, such inspections shall be conducted at least once per month.
2. The inspections shall be conducted by personnel who are familiar with the General Permit conditions and with the proper installation and operation of storm water controls.
3. The inspection shall include disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system, and erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly and sediment is not tracked off-site.

4. The permittee shall maintain records of each inspection and resulting maintenance activities, including:
 - a. Date and time of inspections;
 - b. Name(s) and title(s) of personnel conducting the inspections;
 - c. Findings of inspections;
 - d. Corrective actions taken;
 - e. Dates and amount of all rainfall events greater than 0.5 inches in 24 hours; and
 - f. Documentation of any changes made to the SWPPP.

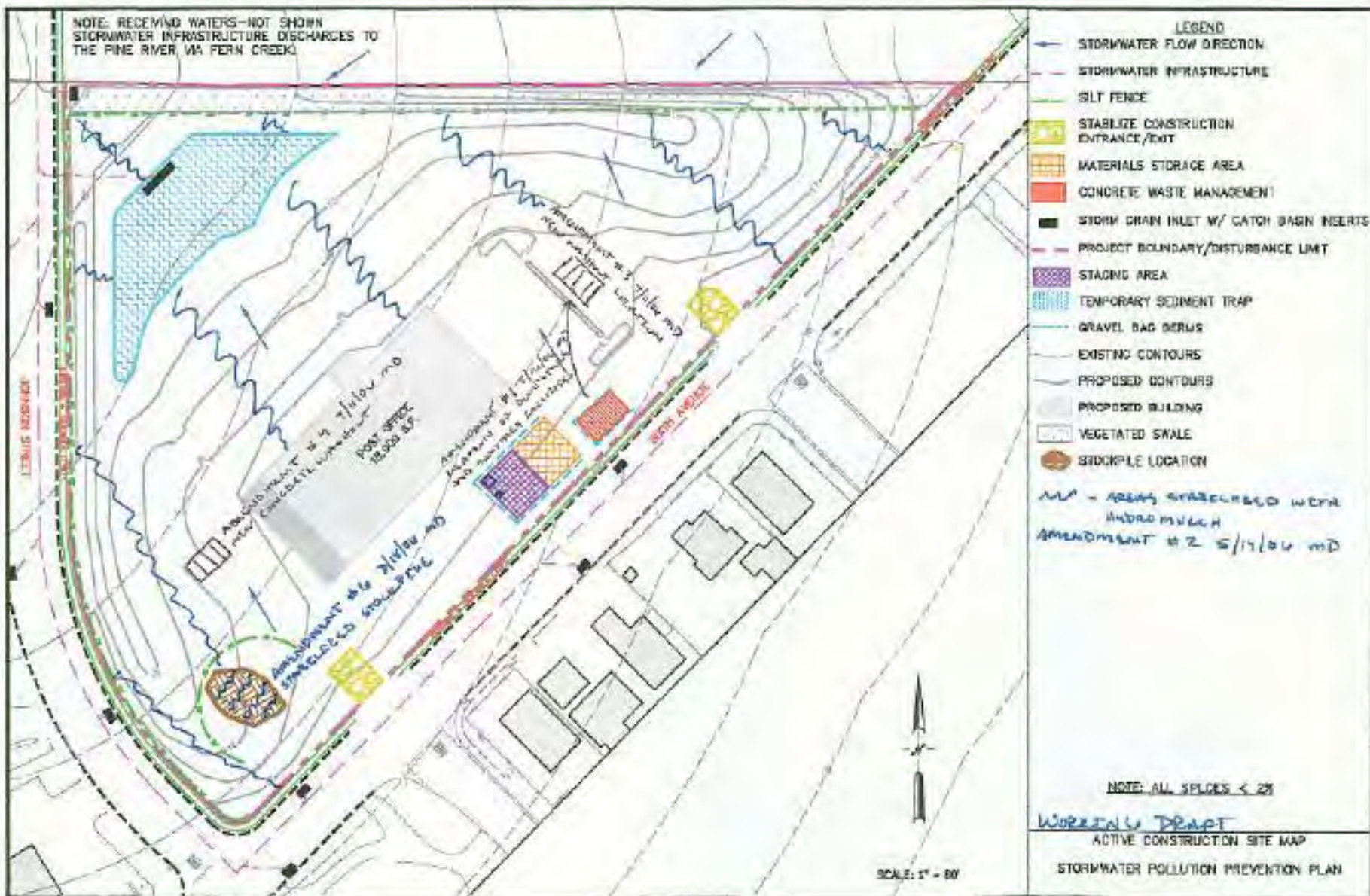
Where an inspection does not identify any incidents of non-compliance, the report shall contain a certification that the site is in compliance with the SWPPP and this General Permit. The report shall be signed in accordance with the signatory requirements in Section 6.9.

5. The SWPPP shall be revised if the site inspections identify any non-compliance with the effluent limits. The changes shall be implemented at the site within seven (7) calendar days following the inspection.

Implementation

- Maintaining Records of Construction Activities
 - All records of inspection and maintenance need to be in the SWPPP
 - Records are also needed for:
 - Dates of major grading activities
 - Dates when construction activities end
 - Temporary or Permanently
 - Dates of when stabilization occurs

NOTE: RECEIVING WATERS—NOT SHOWN
STORMWATER INFRASTRUCTURE DISCHARGES TO
THE PINE RIVER VIA FERN CREEK



Implementation

- Updating and Amending the SWPPP
 - The SWPPP must reflect the current construction site features and operations
 - If changes are needed, the SWPPP must be amended
 - Changes need to be made if the SWPPP doesn't meet the permit requirements
 - Changes in the construction schedule
 - SWPPP must address these changes
 - Amendments Log in Appendices

SWPPP Amendment Log

Project Name: Stormville Postal and Distribution Center
SWPPP Contact: Martina Davis

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	ADDED LOCATION OF THE SITE DUMPSTERS AND GASEPARK FACILITIES TO THE SITE MAP	5/16/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER
2	INDICATED ON THE SITE MAP AREAS THAT HAVE BEEN STABILIZED WITH HYDROMULCH	5/17/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER
3	MOVED THE CONCRETE WASHOUT AREA TO A NEW LOCATION, AS DIRECTED ON THE SITE MAP.	7/11/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER
4	ADDED A SECOND CONCRETE WASHOUT AREA TO THE SITE. THE NEW WASHOUT IS SW OF THE BUILDING. SEE SITE MAP. REVISED SECTION 3, PART 3.3 TO INCLUDE SECOND CONCRETE WASHOUT AREA	7/11/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER
5	REVISED SECTION 2, PART 2.1 TO INCLUDE TEMPORARY STABILIZATION FOR THE SLOPS OF THE TOPSOIL STOCKPILE	7/18/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER
6	INDICATED ON THE SITE MAP THAT THE TOPSOIL STOCKPILE HAS BEEN STABILIZED WITH HYDROMULCH.	7/19/06	MARTINA DAVIS COMPLIANCE / INSPECTION OFFICER

Implementation

- Requirements for SWPPP Amendments
 - Changes must be made within 7 days following an inspection
 - A signed certification that changes have been made
 - If a state inspection finds deficiencies in the SWPPP
 - Corrective Action Log kept in the Appendices

Corrective Action Log

Project Name: Stormville Postal and Distribution Center
SWPPP Contact: Martina Davis

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible person
4/14/06	Martina Davis	Silt fence on northwest side of project along Johnson St needs back in	Reinstall silt fence 4/16 - Bill Rustler	4/16 Bill Rustler
4/18/06	Martina Davis	Sediment tracked onto street	Sweep street; clean curb-tracking pad 4/20 - Bill Rustler	4/19 Bill Rustler
4/18/06	Martina Davis	Silt fence torn - northwest corner	Repair silt fence 4/20 - Bill Rustler	4/19 Bill Rustler
}				
7/10/06	Martina Davis	Concrete washout next to storm drain - too small	Move washout to new location as marked on map. Install new washout. 7/15 - Bill Rustler	7/13 Bill Rustler
7/17/06	Martina Davis	Tarp on stockpile not effective	Remove tarp and hydro-mulch stockpile 7/19 - Bill Rustler	7/18 Bill Rustler
7/17/06	Martina Davis	Storm drain inlet protection along Johnson St needs maintenance	Clean/replace inlet protection 7/19 - Bill Rustler	7/19 Bill Rustler

Implementation

- Releases of Reportable Quantities
 - Spills of hazardous materials or chemicals exceeding the Reportable Quantity level must be reported
 - Call the DENR Ground Water Quality Program (605-773-3296) or Emergency Management (605-773-3231) within 24 hours
 - Within 14 days of the release, modify the SWPPP
 - Description and date of release
 - Why the release happened
 - Description to prevent future spills
 - Description of spill response procedures
 - Submit a written description of the release to DENR

Final Stabilization and Termination of Permit Coverage

- Final Stabilization
- Terminating Permit Coverage

Final Stabilization and Termination of Permit Coverage

- Final Stabilization
 - **Final stabilization is achieved when there is a uniform perennial vegetative cover with a density of 70% of the native cover for unpaved areas**
 - On sites with no natural vegetation, no vegetative stabilization is required
 - Ag land must be returned to its pre-construction condition

Final Stabilization and Termination of Permit Coverage

- Terminating Permit Coverage
 - Permit coverage can be terminated once final stabilization is reached
 - Notice of Termination form must be filled out and signed by the site owner or authorized representative
 - DENR will process the termination form and send out a letter verifying termination