Storm Water
Pollution Prevention Plan

For Remediation of

DEPEW VILLAGE LANDFILL SITE
NYSDEC Site 9-15-105
State Superfund Site

Rutherford Place
Village of Depew
Erie County, New York

Village of Depew, Site Owner
NYSDEC, Remediation Site Operator

October 2012

Prepared for:

Russo Development, Inc
Prime Remediation Contractor

Ken W. Kloeber
Consulting Engineers ENVIRONMENTAL SOLUTIONS • CIVIL & SANITARY ENGINEERING • PLANNING & DESIGN
PO BOX 140 • BOSTON NY 14025 • 716-864-0012 • Fax 775-860-3804 • KloeberEng@aol.com

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Erie County, New York

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(Prime Remediation Contractor)

3710 Milestrip Road
Blasdell, NY 14219

Prepared by
Ken W. Kloeber Consulting Engineers
PO Box 140
Boston, NY 14025-0140

716-864-0012
KloeberEng@aol.com

October 2012

TABLE of CONTENTS

TABLE of CONTENTS

APPENDICES

I INTENT, IMPORTANCE, and USAGE of this SWPPP

IMPORTANT NOTICE

The terms of the remediation contract requires the contractor to maintain a current, updated SWPPP on the remediation site as the official plan and log book of inspections. One copy of this SWPPP is identified "***Log Book***" for that purpose and must be maintained on site and available for inspection during business hours.

The Site Operator (Village of Depew) or remediation site Operator (NYSDEC) shall have the SWPPP be amended whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP;

OR

2. The SWPPP is found to be ineffective in:
   - Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit;

   OR
   - Achieving the general objectives of controlling pollutants in storm water discharges from permitted construction activity;

OR

3. Any new contractor or subcontractor becomes involved that will implement any measures in the SWPPP.

Note:

All changes or modifications to this SWPPP must be documented in Appendix F (*Record of Revisions to the SWPPP*.)

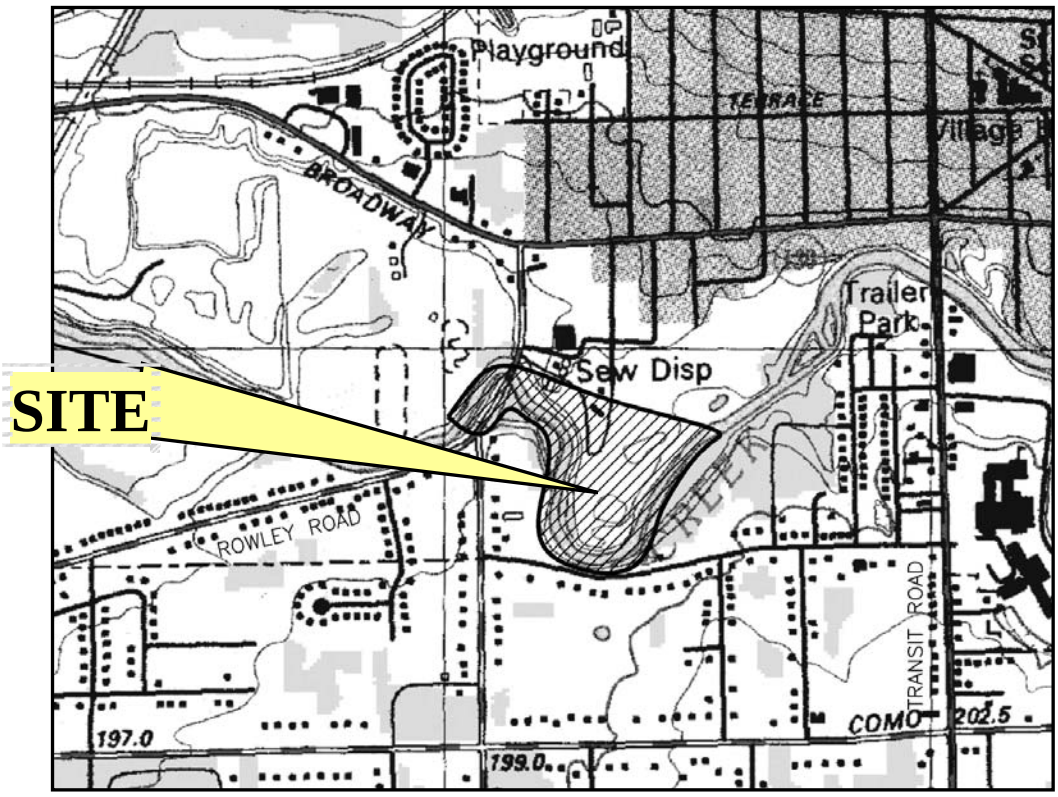
All routine and special inspection reports must be maintained current in Appendix G.

II DESCRIPTION of SITE and PROJECT

2.1 Site Name and Location

Village of Depew Landfill Remediation Site
Southerly Extension of Rutherford Place
Depew NY 14043

SITE LOCATION



2.2 Type and Size of Project

- NYSDEC remediation project to remove lead-contaminated soil resulting from the former Village of Depew landfill (and adjacent areas) at the extension of Rutherford Place and along Zubrick Road in the Village of Depew and the Town of Cheektowaga; Erie County, NY.

- The project is not subject to permitting under the NYS *SPDES General Permit for Storm Water Discharges* (GP-0-10-001.) However the technical requirements of that permit are used to define the

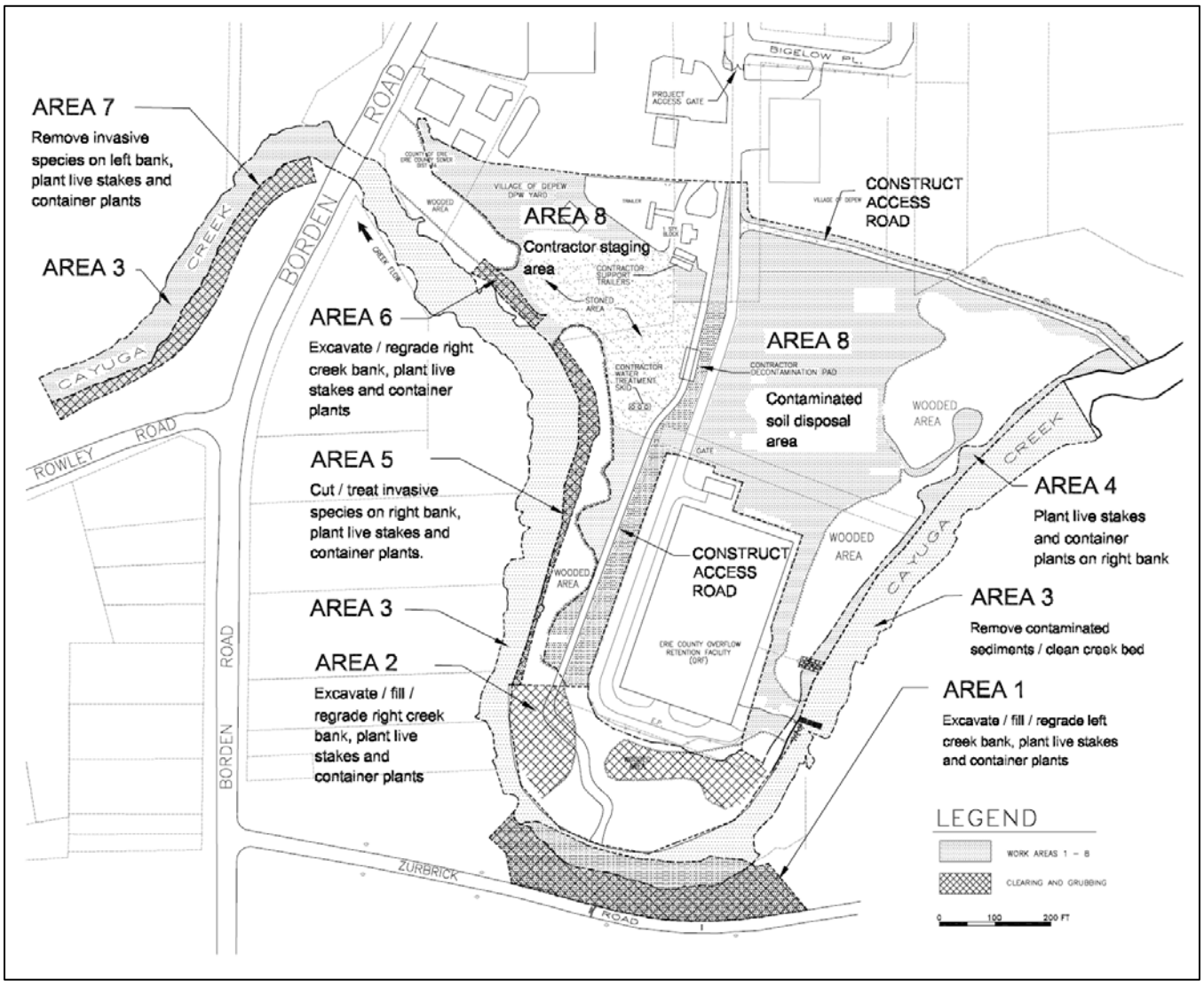
- Environmental remediation under the State Superfund Site program, resulting in no substantive change in post-construction storm water runoff. As such, this is an *"Erosion and Sediment Control-only SWPPP"* as defined by *Appendix B-Table A* of the *SPDES General Permit for Storm Water Discharges* (see Appendix A of this SWPPP.)

- The site is:

  - Designated Class 2 on the *NYS Registry of Inactive Hazardous Waste Sites.*
  - Being remediated under the State Superfund Site program.
  - 20 acres, consisting of the former landfill, the immediately adjacent Cayuga Creek and its bed and banks, and the associated aquatic environment.
  - Has been divided into eight sub-areas for the purpose of identifying work zone limits, the types of remediation to be performed, and the ultimate restoration goal to be accomplished.

- The sub areas of the remediation site are depicted below and described on the table of *LAND DISTURBANCE.*

SITE SUB AREAS



LAND DISTURBANCE

Area	Location	Land Disturbing Activities
1	Left bank of Cayuga Creek below Zurbrick Road - located across the creek from the southerly tip the landfill site.	Excavating contaminated soil from the creek bank, replacing with toe rip rap and fill on 4:1 slope, topsoiling, and planting live poles and container plants. ≅ 1.5 acres of major disturbance.
2	Right bank of Cayuga Creek south of the county ORF, comprising the south-most tip of the landfill site.	Excavating contaminated soil from creek bank, replacing with toe rip rap and benway weirs, and fill on 3:1 slope, topsoiling, and planting live stakes and container plants. ≅ 2.0 acres of major disturbance.
3	Cayuga Creek bed, wrapping around the east, south, and west sides of the landfill site, extending downstream below the Borden Road bridge to Rowley Road.	Excavating and cleaning contaminated deposits, power washing / mechanical scrubbing above Area 1/2; replacing granular material to pre-existing elevations. ≅ 5 acres of minor disturbance.
4	Right bank of Cayuga Creek along the east side of the landfill site, to approximately the raw water inlet for the ORF.	Planting live stakes and container plants to reinforce the existing creek bank. ≅ 0.5 acre of minor disturbance.
5	Right bank of Cayuga Creek, along the west side of the landfill site, immediately west of and extending just north of the county ORF.	Removing invasive species, planting of live stakes and container plants to reinforce the existing creek bank. ≅ 0.3 acre of minor disturbance.
6	Right bank of Cayuga Creek down stream of Area 5, adjacent to the village DPW yard.	Excavating contaminated soil from creek bank to a 3:1 slope and topsoiling, and planting live stakes and container plants. ≅ 0.1 acre of major disturbance.
7	Left bank of Cayuga Creek, directly adjacent to the portion of Area 3 that is downstream of the Borden Road bridge.	Planting of live stakes and container plants on the existing creek bank. ≅ 0.5 acre of minor disturbance.
8	Village DPW yard and landfill area north of the county ORF.	Contractor staging areas - construction of access to the creek; Landfill - disposal of dewatered contaminated soils, creek bed deposits, and removed invasive species in the area north of the ORF, covering with fill and grading to max. 3:1 slope, and topsoiling. The staging and access road areas ≅ 8 acres (some of which is currently stoned.) The disposal area is ≅ 2.0 acres of major disturbance.

2.3 Remediation Site Owner and Operator, and Prime Contractor

Remediation Site Owner:
Village of Depew
Depew Municipal Building
85 Manitou Street
Depew, NY 14043
716-683-1400

Remediation Site Operator:
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7017
518-402-9814

Remediation Site Prime Contractor:
Russo Development, Inc.
3710 Miletrip Road
Blasdell, New York 14219
716- 844-4745

2.4 Soils

The underlying soils are (see ***Soils Map***)

SOILS CLASSIFICATIONS

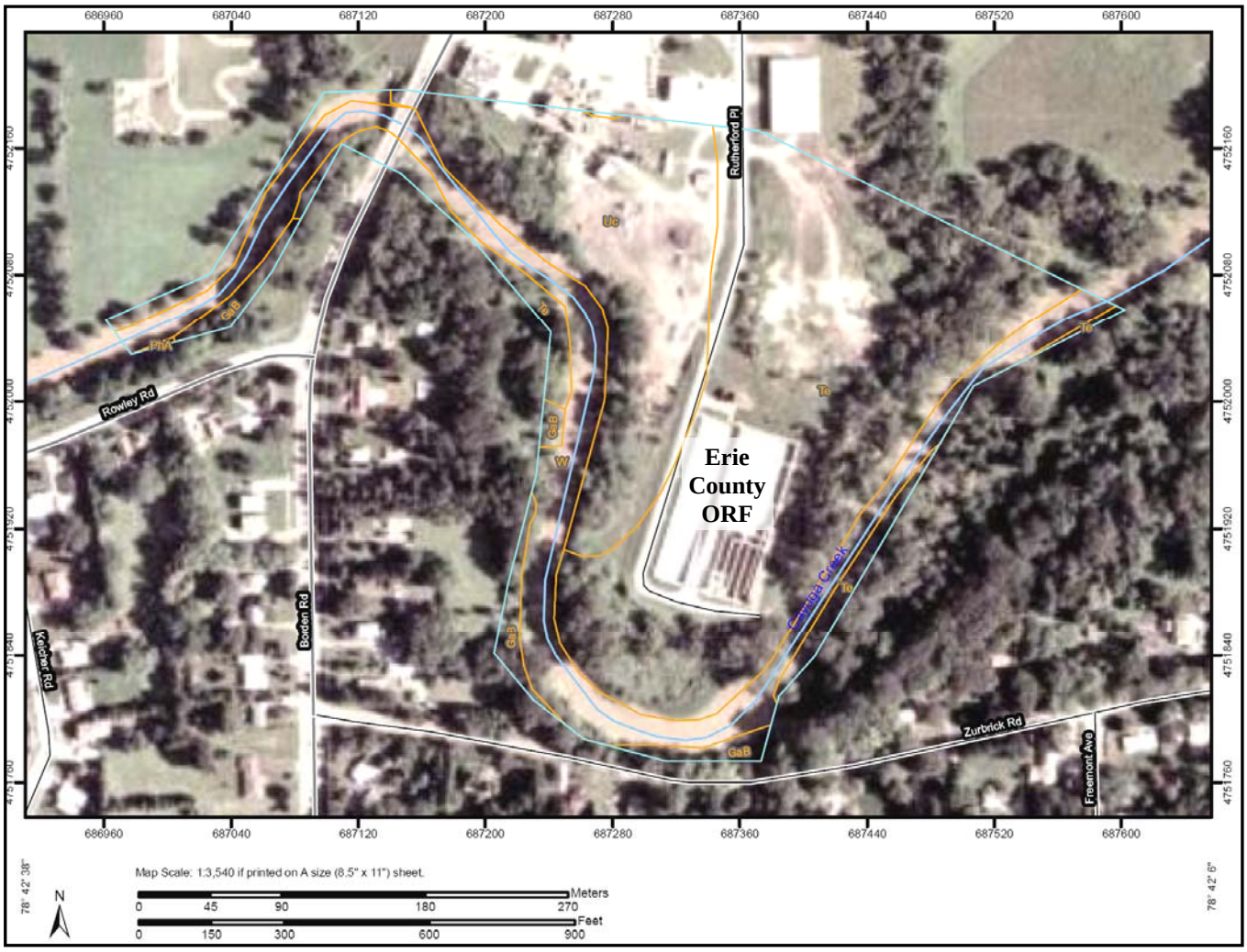
Map Symbol	Soil Unit	Approximate Coverage	Hydrologic Soil Group (drained setting)
GaB	*Galen very fine sandy loam*	3 %	A
Te	*Teel silt loam*	55 %	B
Uc	*Udorthents, smoothed*	24 %	--
W	*Water Surface*	18 %	--

The hydrologic soil group ratings of the native soils are A and B, considering that they are on or adjacent to the creek and are likely in a drained setting.

This means that the sandy-loamy soils have a higher infiltration rate and generate lower storm water runoff volume and peaks, than if the site consisted of tighter, more-clayey soils. Consequently, there is greater water transmission through the soil column, and thus a potential for developing water seeps as the final slopes are constructed along the Cayuga Creek banks, and while the final turf stabilization is being established.

SOILS MAP

Source: USDA WebSoilSurvey



An Erie County Division of Sewerage Management overflow retention facility (ORF) occupies the south-central portion of the upland site extension toward Cayuga Creek, and is excluded from the project area.

The surface soils on much of the site have been disturbed due to the Village land fill activities, the circa 2001 Corps of Engineers work along Zurbrick Road to stabilize the southerly bank of Cayuga Creek, and when constructing the county ORF. Nevertheless, undisturbed portions of the site contain native soils that are highly erodible once the existing vegetative cover is removed during the remediation of the creek banks, and preparing the former landfill area to dispose of the excavated contaminated soil and creek bed deposits.

The soil setting is critical to implementing an effective erosion and sediment control plan for this site. Since most of the land disturbance will be on the banks of Cayuga Creek, there are challenges in being able to avoid erosion into the waterway. Because there is no buffer between the work areas (having disturbed, erodible soils) and the directly adjacent water body, the usual erosion and sediment control methods (like silt fencing and sediment collection) will not be as appropriate as they are on a conventional upland construction site.

2.5 Cultural Resources

According to the NYSDEC there are no known cultural resources that the remediation will impact.

2.6 Construction Phasing

For specific work tasks, see the initial project schedule (next page -- to be revised periodically) Generally, the following sequence is anticipated from start of construction:

Area 8 - Contractor staging area

Mobilize equipment, project trailers, install utilities, etc.
Install catch basin inlet protection.
Stabilize contractor staging area(s), equipment decontamination pad, WWTF pad, etc.
Establish site Exclusion (contaminated) Zone, Contractor Support (clean, equipment staging area) Zone, and Contamination Reduction (transition) Zone and stabilize against erosion with stone as needed.
Construct stabilized access road to Areas 1 & 2 as required.

Area 8 – Contaminant disposal area

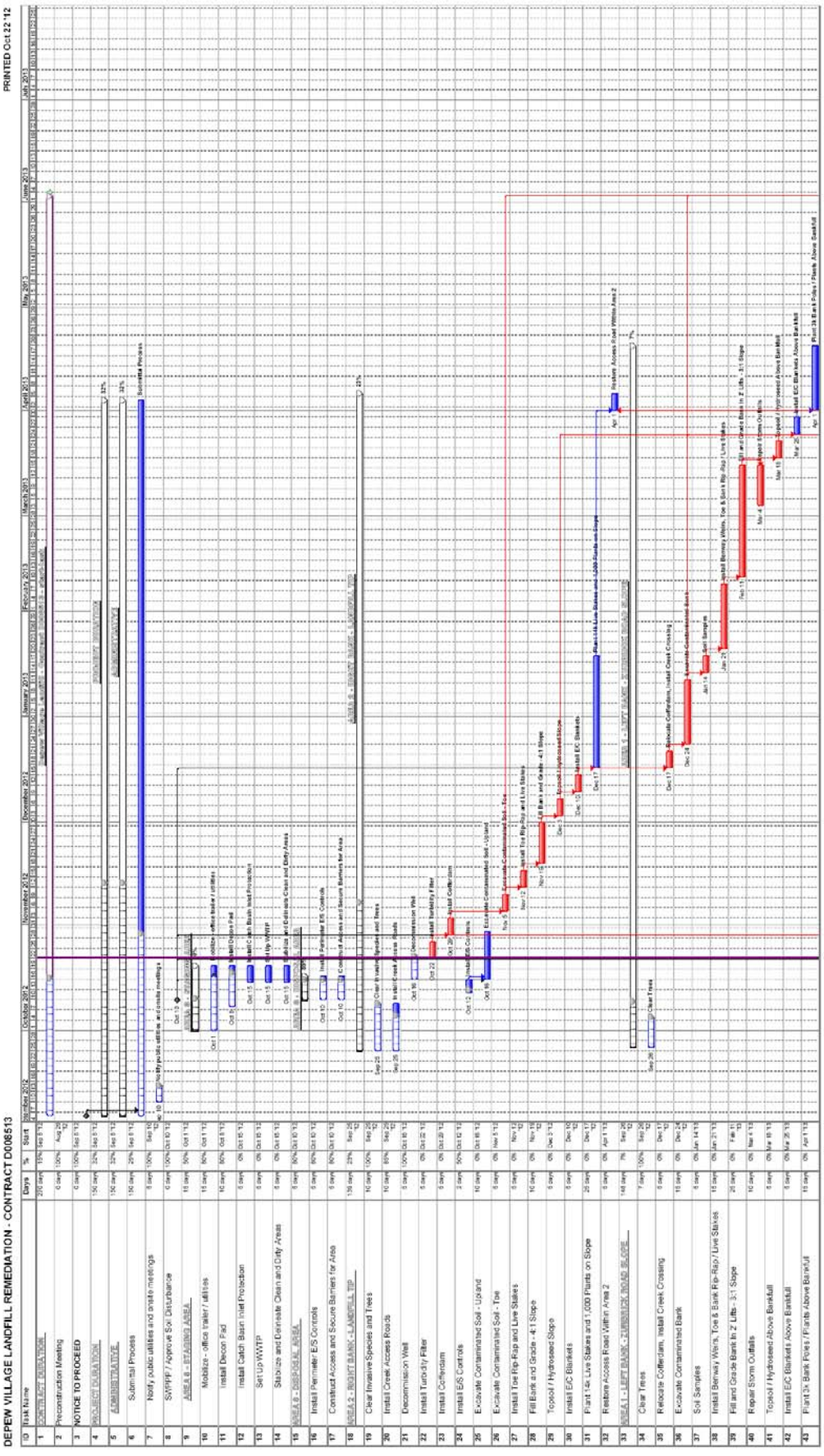
Install access road, erosion controls, berm around area.

Area 6 – Right creek bank

Place erosion and sediment controls on upland areas (silt barriers, runoff diversions).
Excavate contaminated soil on existing slope to 3:1 and dispose of in landfill area.
Fine grade and topsoil, hydroseed, and install erosion control blankets.
Plant live stakes and container plants on slope.

Area 2 – Right creek bank

Clear selected vegetation (non-soil-disturbing activities).
Place E/S controls on upland areas (runoff diversions).
Clear and grub (soil-disturbing activities.)
Install cofferdam in creek between Area 1 and Area 2.
Excavate contaminated soil on existing slope and truck to disposal area.
Install rip-rap toe protection.
Fill slope at 4:1 grade to top of bank and fine grade.
Topsoil and hydroseed the slope, install erosion control blankets.
Plant live stakes and container plants on slope.


DEPEW VILLAGE LANDFILL REMEDIATION - CONTRACT D0006513
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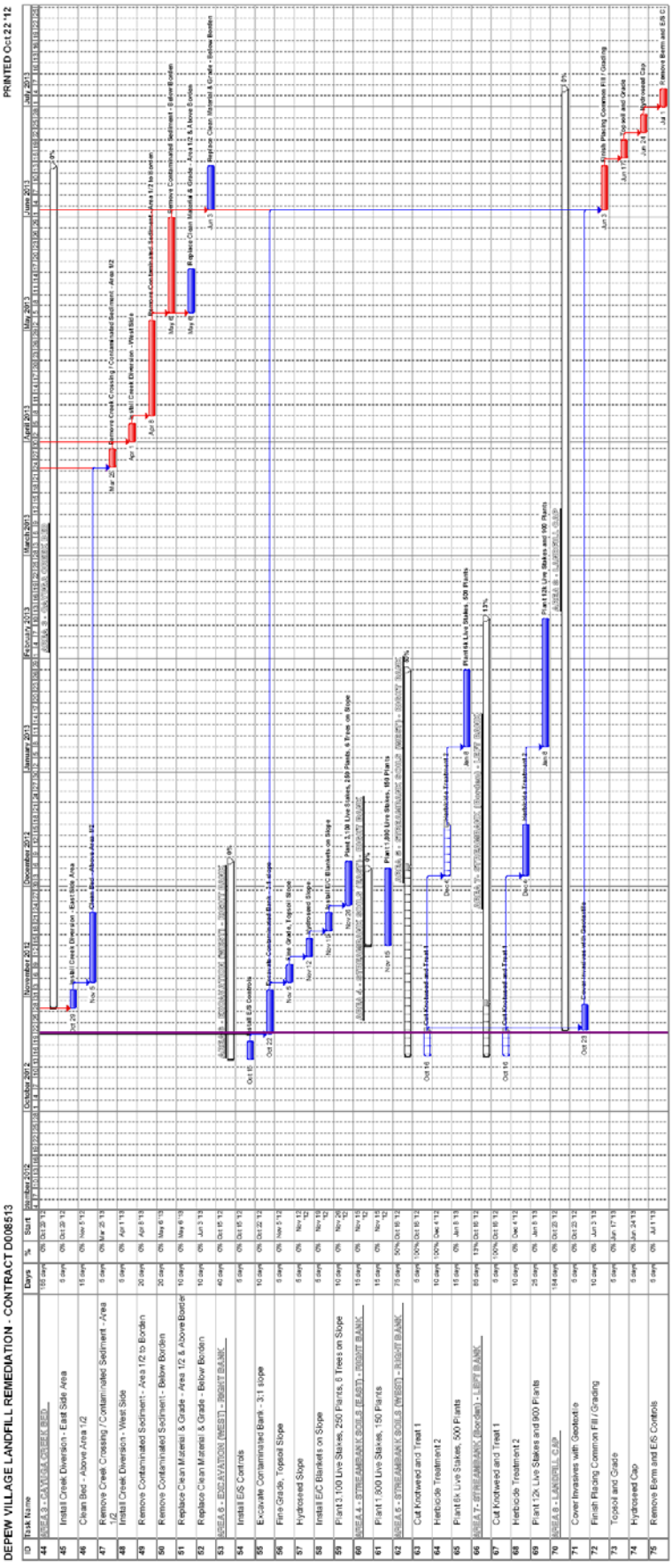


Area 1 – Left creek bank

Place E/S controls on upland areas (runoff diversions.)
Clear and grub (soil-disturbing activities.)
Relocate cofferdam to work on Area 1.
Excavate contaminated soil on existing slope and dispose of in landfill area.
Install toe protection and benway weirs, and rip rap to bank full elevation at 3:1 slope.
Place fill, topsoil and place erosion above rip rap, and hydroseed the slope.
Place erosion control blankets and plant live stakes and container plants on slope.
Remove cofferdam and creek crossing, and clean creek of contaminated sediment.
Remove/grade Area 2 access road to creek, and topsoil.
Restore and hydroseed access road within Area 2.

Area 3 – Creek bed (will be accomplished upstream to downstream in stages)

Install flow diversion to dewater creek work zone above Area 1/2.
Power wash / mechanically brush bedrock areas where possible.
Excavate sediments from creek bed and dispose of in landfill area.

Excavate creek sediment in Area 1/2 while removing cofferdam and temporary crossing.

Install flow diversion to dewater work areas in stages to below Area 1/2, to Borden Road bridge, and below bridge alongside Area 7:

1. Excavate and dispose of creek-bed sediments in landfill (Area 8.)
2. Power wash any remaining boulders.

Replace excavated sediment in all areas with clean, graded gravel.

Area 4 – Left creek bank east of landfill

Clear minor vegetation as required.
Plant live stakes and container plants on existing slope.

Area 5 – Right creek bank west of landfill

Remove invasive species and dispose of in landfill (Area 8.)
Treat roots/stalks with herbicide.
Plant live stakes and container plants on existing slope.

Area 7 – Left creek bank downstream of Borden Road bridge

Remove invasive species and dispose of in landfill (Area 8.)
Treat roots/stalks with herbicide.
Plant live stakes and container plants on existing slope.

Area 8 – Contractor staging and contaminant disposal areas

Cover invasive plants with geotextile and six-inches of fill.
Cover remaining excavated material with fill.
Topsoil and grade, and hydroseed the cap.
Remove erosion controls and perimeter berm.

III MINIMUM EROSION and SEDIMENT CONTROL PRACTICES to be INSTALLED

3.1 Temporary controls:

- Sediment transport barriers
  Installed down slope of disturbed soils to control transporting sediment from beyond the work area.

- Extended-duration erosion control blanket.
  Installed above the rock armoring and the creek bank-full elevation (≅635') to maintain slopes while permanent turf and plantings become established.

- Permanent erosion control blankets.
  Installed below the creek bank-full elevation where there is no rock armoring the slope to protect the bank from shear stress during high creek flows.

- Storm water runoff diversions.
  The goal is to control surface runoff near its source and prevent storm water from eroding the disturbed soil working faces above the creek (Areas 1, 2, and 6.)

- Stabilized construction access roads.
  To control dust, and to prevent soil erosion and tracking of contaminated soil to clean areas of the site.

- Stabilized construction access.
  To control dust, and to prevent soil erosion and tracking of soil off site.

- Equipment wash-down/decontamination pad.
  To prevent/control runoff or discharges to the creek, or transporting contaminated material from the excavation zones to offsite areas.

- Sandbag flow diversions to isolate work area in creek bed.
  To isolate a dry work area and contain any contaminated water where it can be collected and treated at the WWTP.

- Cofferdams to divert normal and erosive creek flows
  To isolate a dry work area and to contain any contaminated water where it can be collected and treated at the WWTP.

- Temporary mulch
  If required to stabilize disturbed soil if they will be left idle while working in other area(s).

- Temporary stabilized creek crossing.
  To control erosion of the creek bed and avoid moving sediment and contamination downstream while earth moving in Area 1.

Initial placing and schedule:

- Prior to soil disturbance.
- As construction progresses on the creek banks and in the creek bed.

Time frames for temporary controls to remain in place:

- Removed upon completion of final grading and after permanent controls are established (see construction phasing and project schedule.)

3.2 Permanent controls:

Area 1
- Rip-rap toe protection, benway weirs at the toe, and rip-rap armoring up to the creek bank-full elevation (635').
- Topsoil and hydroseed to establish permanent turf, planting live poles and container plants on the creek bank to stabilize the slope.
- Rock outlet protection at the repaired storm drains on the slope.

Area 2
- Rip-rap toe protection.
- Permanent erosion-control blankets installed on the slope above and anchored underneath the rip-rap toe protection.
- Topsoil and hydroseed to establish permanent turf on the bank.
- Planting live stakes and plants, and establishing turf on the regraded creek bank.

Area 3
- None – not applicable.

Area 4
- Planting live stakes and container plants to stabilize creek-bank soils.

Area 5
- Planting live stakes and container plants to stabilize creek-bank soils.

Area 6
- Topsoil, hydroseed, and permanent erosion control blankets.
- Permanent turf on the creek bank.
- Planting live stakes and container plants to stabilize creek-bank soils.

Area 7
- Planting live stakes and container plants to stabilize the creek bank.

Area 8 (construction assess/haul roads and contractor staging area)

- Topsoil, hydroseed, and permanent turf (access road within Area 2.)
- Stabilized stone base in the staging area (for future Village DPW use.)
- Stabilized stone base on the access road to the edge of Area 2, and the access road north of the landfill to the creek (both remain in place for future Village DPW use.)

Area 8 (disposal area)

- Topsoil, hydroseed, and turf established on the landfill cap.

3.3 Temporary and Permanent Soil Stabilization Plan

- **Specific Location and Sizes of Permanent Erosion Control Practices**

  The locations of the permanent E/S controls that are identified in Section 3.2 are shown by the Contract Documents and by the approved submittals by the contractor to the owner's representative, Ecology and Environment Engineering, PC. Select contract drawings are reproduced in Appendix C of this SWPPP. The contractor MUST utilize these methods, materials and procedures because they are part of the remediation contract.

- **Specific Location and Sizes of Temporary Erosion Control Practices**

  The locations of temporary E/S controls will vary according to how well the sequence of remediation progresses. For example, if conditions allow the contractor to complete Area 1 with no delay, there will be no need to temporarily stabilize the disturbed soil. If however, the construction is delayed or the contractor moves onto Area 1, any soil left on Area 2 must be temporarily stabilized if it will remain disturbed.

  Submittal #14 in Appendix C shows the general location of ***minimum*** temporary erosion control measures. Other measures may be necessary based upon the conditions encountered and the sequence of the work.

- **Dimensions, Materials, Specifications, and Installation Details**

  Contractor shall follow details and procedures contained in the latest edition of *NYS Standards and Specifications for Erosion and Sediment Control*, (NYS "Blue Book") which is incorporated by reference into this SWPPP.

  Contractor shall follow procedures contained in the Contract Documents. For convenience, copies of applicable drawings and details are in Appendix B (temporary controls) and Appendix C (permanent controls.) However the specifications in the *Project Manual* and the original contract drawings govern the work. If there is a any conflict between those and the SWPPP, the contractor shall request a clarification from the Owner's Engineer.

Contractor shall follow manufacturers and suppliers recommended installation procedures for all erosion and sediment control products (See Appendix BB CC EE for typical products, materials, methods and procedures.)

- **O&M Requirements of Erosion and Sediment Control Practices**

  The Engineer will record all site inspections in Appendix G of the on-site *SWPPP Log Book*, and the contractor and subcontractors shall:

  Maintain all E/S controls in proper working order and in good, serviceable condition.

  Follow the inspection and maintenance procedures and specifications.

  Repair or replace any E/S controls that are inoperable or as ordered by the Engineer or the SWPPP Qualified Inspector.

3.4 Maintenance and Inspection Schedule

Inspections will be performed by Ken W. Kloeber Consulting Engineers (the project *Qualified Inspector)* and will consist of (see forms in Appendix G):

- Routine ongoing inspections
- Precipitation inspections within 24-hours rain events of one-half-inch or greater
- Monthly record of inspections to document any deficiencies and their corrections

3.5 Pollution prevention measures during construction

The proximity of Cayuga Creek to potential pollution sources makes it critical the contractor take preventive measures to prevent contamination of storm water runoff by hazardous materials (lead), fuel, hydraulic fluid, and other possible discharges.

- The contractor shall control any nuisance pollution from paper, trash, litter, scrap, and vegetation, including any excess material from soil disturbance, invasive species, and any extraneous materials that are not directly associated with the construction project.

- The contractor shall prepare adequately sized areas to stage both “clean” and “contaminated” heavy equipment, and the areas shall be clearly and semi-permanently delineated (construction fence, barriers, or other approved means), and clearly marked.

- Equipment leaving work the areas shall be washed at the decontamination pad, with the wash water pumped to the on-site WWTP.

- Runoff and other water collecting in or originating from contaminated areas shall collected and be contained, and shall be treated at the WWTP before discharge to the creek.

- The contractor shall use the existing stabilized entrance, and stabilized access roads for construction site access, and soil deposited on paved areas shall be removed daily to broom-clean condition when it becomes a nuisance. Dust shall be controlled using water trucks as necessary.

- The contractor shall control refueling areas by using a portable fuel truck or approved on-site tank in a stabilized upland location, away from potential storm water discharges, and must maintain spill kits on site in the job site trailer/vehicle and on the fuel truck.

3.6 Storm water discharges associated with other than construction activities

- None planned or reasonably anticipated.

3.7 Elements of the SWPPP that deviate from the current technical standards

- None planned or reasonably anticipated

- However the nature of the remediation site, the proximity of the creek, and remediation work in the creek itself, elevates this to a project with a high need to carefully apply site pollution prevention measures and temporary erosion/sediment controls. The unique nature of the site and the excavation and filling activities necessitates the application of control measures more protective than used on more-typical construction sites. An example is the contractor using a movable cofferdam to excavate the creek-bed sediment without transporting contaminated material downstream.

3.8 Post-Construction Storm Water Management Practices

- There is no anticipated post-construction storm water management, with the exception of the stone-stabilized staging area and stabilized access roads that will remain for future use by the Village of Depew DPW.

3.9 Hydraulic and hydrologic analysis of structural components

- The project is a remediation of lead-contaminated soil along Cayuga Creek, and there will be no substantive change in post-construction storm water runoff. As such, no hydraulic/hydrologic analysis is necessary or appropriate.

APPENDIX A

General Permit for Storm Water Discharges from Construction Activities; GP-0-10-001

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

from

CONSTRUCTION ACTIVITY

Permit No. GP-0-10-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2010 Expiration Date: January 28, 2015

William R. Adriance
Chief Permit Administrator

William R. Adriance — January 28, 2010
Authorized Signature — Date

Address: NYS DEC
Div. Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES

FROM CONSTRUCTION ACTIVITIES

TABLE OF CONTENTS

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application - This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

B. Maintaining Water Quality - It shall be a violation of this permit and the *ECL* for any *discharge* to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

C. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph D. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater discharges from *construction activities*.

(Part I. C)

3. Notwithstanding paragraphs C.1 and C.2 above, the following non-stormwater *discharges* may be authorized by this permit: discharges from fire fighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated groundwater or spring water; uncontaminated discharges from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who discharge as noted in this paragraph, and with the exception of flows from fire fighting activities, these discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with water quality standards in Part I.B.

D. <u>Activities Which Are Ineligible for Coverage Under This General Permit</u> - All of the following are **<u>not</u>** authorized by this permit:

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection C.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII, subparagraph K of this permit;

4. *Discharges* from *construction activities* that adversely affect a listed, or proposed to be listed, endangered or threatened species, or its critical habitat;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects that:

    a. are tributary to waters of the state classified as AA or AA-s; and

(Part I. D. 6)

b. disturb one or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects that:
   a. are tributary to waters of the state classified as AA or AA-s; and

   b. disturb two or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.

8. *Construction activities* that adversely affect a property that is listed or is eligible for listing on the State or National Register of Historic Places (Note: includes Archeological sites), unless there are written agreements in place with the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) or other governmental agencies to mitigate the effects, or there are local land use approvals evidencing the same.

Part II. OBTAINING PERMIT COVERAGE

A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the address below in order to be authorized to *discharge* under this permit. The NOI form shall be one which is associated with this permit, signed in accordance with Part VII.H. of this permit.

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

(Part II. A.2)

This requirement does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of Owner or Operator).

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. <u>Permit Authorization</u>

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied <u>all</u> of the following criteria:

    a. project review pursuant to the State Environmental Quality Review Act (SEQRA) have been satisfied, when SEQRA is applicable,

    b. where required, all necessary Department permits subject to the *Uniform Procedures Act (UPA)* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Regional Office in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

    c. the final SWPPP has been prepared, and

    d. an NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

(Part II. B. 3)

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

i. Five (5) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 and/or 3, or

ii. Sixty (60) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has not been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 or 3.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

i. Five (5) business days from the date the Department receives a complete NOI and signed "MS4 SWPPP Acceptance" form,

4. The Department may suspend or deny an *owner's or operator's* coverage under this permit if the Department determines that the SWPPP does not meet the permit requirements.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (NOT) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-10-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form and inspection reports at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department.

(Part II. C. 2)

The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

    a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

    b. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control.

    c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

    d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

    e. The *owner or operator* shall include the requirements above in their SWPPP.

4. The Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements.

(Part II. C)

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4,* the *owner or operator* shall notify the *MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *MS4* prior to commencing construction of the post-construction stormwater management practice.

D. Permit Coverage for Discharges Authorized Under GP-0-08-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-08-001), a*n owner or operator* of *construction activity* with coverage under GP-0-08-001, as of the effective date of GP-0-10-001, shall be authorized to *discharge* in accordance with GP-0-10-001 unless otherwise notified by the Department.

E. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1.. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

   Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*.

(Part III. A)

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the pollutants in stormwater discharges and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

    a. whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater *discharges* from the site;

    b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and

    c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP.

(Part III. A. 6)

The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

> "I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

8. The SWPPP must include documentation supporting the determination of permit eligibility with regard to Part I.D.8. (Historic Places or Archeological Resource). At a minimum, the supporting documentation shall include the following:

(Part III. A. 8)

a. Information on whether the stormwater discharge or *construction activities* would have an effect on a property (historic or archeological resource) that is listed or eligible for listing on the State or National Register of Historic Places;

b. Results of historic resources screening determinations conducted. Information regarding the location of historic places listed, or eligible for listing, on the State or National Registers of Historic Places and areas of archeological sensitivity that may indicate the need for a survey can be obtained online by viewing the New York State Office of Parks, Recreation and Historic Places (OPRHP) online resources located on their web site at: http://nysparks.state ny.us/shpo/online-tools/ (using The Geographic Information System for Archeology and National Register). OPRHP can also be contacted at: NYS OPRHP, State Historic Preservation Office, Peebles Island Resources Center, P.O. Box 189, Waterford, NY 12188-0189, phone: 518-237-8643;

c. A description of measures necessary to avoid or minimize adverse impacts on places listed, or eligible for listing, on the State or National Register of Historic Places. If the *owner or operator* fails to describe and implement such measures, the stormwater *discharge* is ineligible for coverage under this permit; and

d. Where adverse effects may occur, any written agreements in place with OPRHP or other governmental agency to mitigate those effects, or local land use approvals evidencing the same.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Where erosion and sediment control practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project;

(Part III. B. 1)

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s), wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater discharge(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each construction activity that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of final stabilization;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

(Part III. B. 1)

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6., to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards.

2. Post-construction stormwater management practice component - All construction projects identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). If the Design Manual is revised during the term of this permit, an *owner or operator* must begin using the revised version of the Design Manual to prepare their SWPPP six (6) months from the final revision date of the Design Manual.

   Where post-construction stormwater management practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard.

   At a minimum, the post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project;

(Part III. B. 2)

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. The dimensions, material specifications and installation details for each post-construction stormwater management practice;

d. Identification of any elements of the design that are not in conformance with the Design Manual. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards;

e. A hydrologic and hydraulic analysis for all structural components of the stormwater management control system;

f. A detailed summary (including calculations) of the sizing criteria that was used to design all post-construction stormwater management practices. At a minimum, the summary shall address the required design criteria from the applicable chapter of the Design Manual; including the identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required based on the design criteria or waiver criteria included in the Design Manual; and

g. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.g. above.

(Part III. C)

C. Required SWPPP Components by Project Type - Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Owner or Operator Maintenance Inspection Requirements

1. The *owner or operator* shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *owner or operator* can stop conducting the maintenance inspections. The *owner or operator* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *owner or operator* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

(Part IV. C)

C. <u>Qualified Inspector Inspection Requirements</u> - The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, <u>with the exception of</u>:

    a. the construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E;

    b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E;

    c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

    d. construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

    a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

(Part IV. C. 2)

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1..

(Part IV. C. 3)

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

    a. Date and time of inspection;

    b. Name and title of person(s) performing inspection;

    c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

    d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

    e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

    f. Identification of all erosion and sediment control practices that need repair or maintenance;

    g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

    h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2., the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1. The NOT form shall be one which is associated with this general permit, signed in accordance with Part VII.H.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

(Part V. A. 2)

a. Total project completion - All construction activity identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT, certify that all disturbed areas have achieved *final stabilization;* and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall also have the MS4 sign the "MS4 Acceptance" statement on the NOT. The *owner or operator* shall have the principal executive officer, ranking elected official, or duly authorized representative from the *regulated, traditional land use control MS4*, sign the "MS4 Acceptance" statement. The MS4 official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The MS4 can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector's* final site inspection certification(s) required in Part V.3.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

(Part V. A. 5)

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has modified their deed of record to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention - The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves *final stabilization*. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

B. Addresses - With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate Department Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply - The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied.

(Part VII. A)

The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

B. Continuation of the Expired General Permit - This permit expires five (5) years from the effective date. However, coverage may be obtained under the expired general permit, which will continue in force and effect, until a new general permit is issued. Unless otherwise notified by the Department in writing, an *owner or operator* seeking authorization under the new general permit must submit a new NOI in accordance with the terms of such new general permit.

C. Enforcement - Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate - The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to minimize or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information - The *owner or operator* shall make available to the Department for review and copying or furnish to the Department within five (5) business days of receipt of a Department request for such information, any information requested for the purpose of determining compliance with this permit. This can include, but is not limited to, the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form, executed maintenance agreement, and inspection reports. Failure to provide information requested by the Department within the request timeframe shall be a violation of this permit.

The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review the NOI, SWPPP or inspection reports. Copying of documents will be done at the requester's expense.

G. Other Information - When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any other report, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s)

changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or impervious area), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. <u>Signatory Requirements</u>

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        i. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

        ii. the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

    b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

    c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

        i. the chief executive officer of the agency, or

(Part VII. H. 1. c)

ii. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Part VII.H.1.;

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

   c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. <u>Property Rights</u> - The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity.*

J. <u>Severability</u> - The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

(Part VII. K)
K. <u>Denial of Coverage Under This Permit</u>

1. At its sole discretion, the Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Regional Water Engineer, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. Any *owner or operator* authorized by this permit may request to be excluded from the coverage under this permit by applying for an individual permit or another general permit. In such cases, the *owner or operator* shall submit an individual application or an alternative general permit application in accordance with the requirements of this general permit, 40 CFR 122.26(c)(1)(ii) and 6 NYCRR Part 621, with reasons supporting the request, to the Department at the address for the appropriate Department Office (see addresses in Appendix F).The request may be granted by issuance of an individual permit or another general permit at the discretion of the Department.

3. When an individual SPDES permit is issued to a discharger authorized to discharge under a general SPDES permit for the same discharge(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. <u>Proper Operation and Maintenance</u> - The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. <u>Inspection and Entry</u> - The *owner or operator* shall allow the Department or an authorized representative of EPA, the State, or, in the case of a construction site which discharges through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

(Part VII. M)

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

N. Permit Actions - At the Department's sole discretion, this permit may, at any time, be modified, suspended, revoked, or renewed. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions - Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports – Article 17 of the ECL provides for a civil penalty of $37,500 per day per violation of this permit. Articles 175 and 210 of the New York State Penal Law provide for a criminal penalty of a fine and/or imprisonment for falsifying forms and reports required by this permit.

R. Other Permits – Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "Construction Activity(ies)" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

Groundwater - means waters in the saturated zone. The saturated zone is a subsurface zone in

which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct construction activities are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

i. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
ii. Designed or used for collecting or conveying stormwater;
iii. Which is not a *combined sewer*; and
iv. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from construction activity.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the construction activity is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in Parts 700 et seq of this Title.

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means construction activity that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* and *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4

Figure 1 - New York City Watershed East of the Hudson

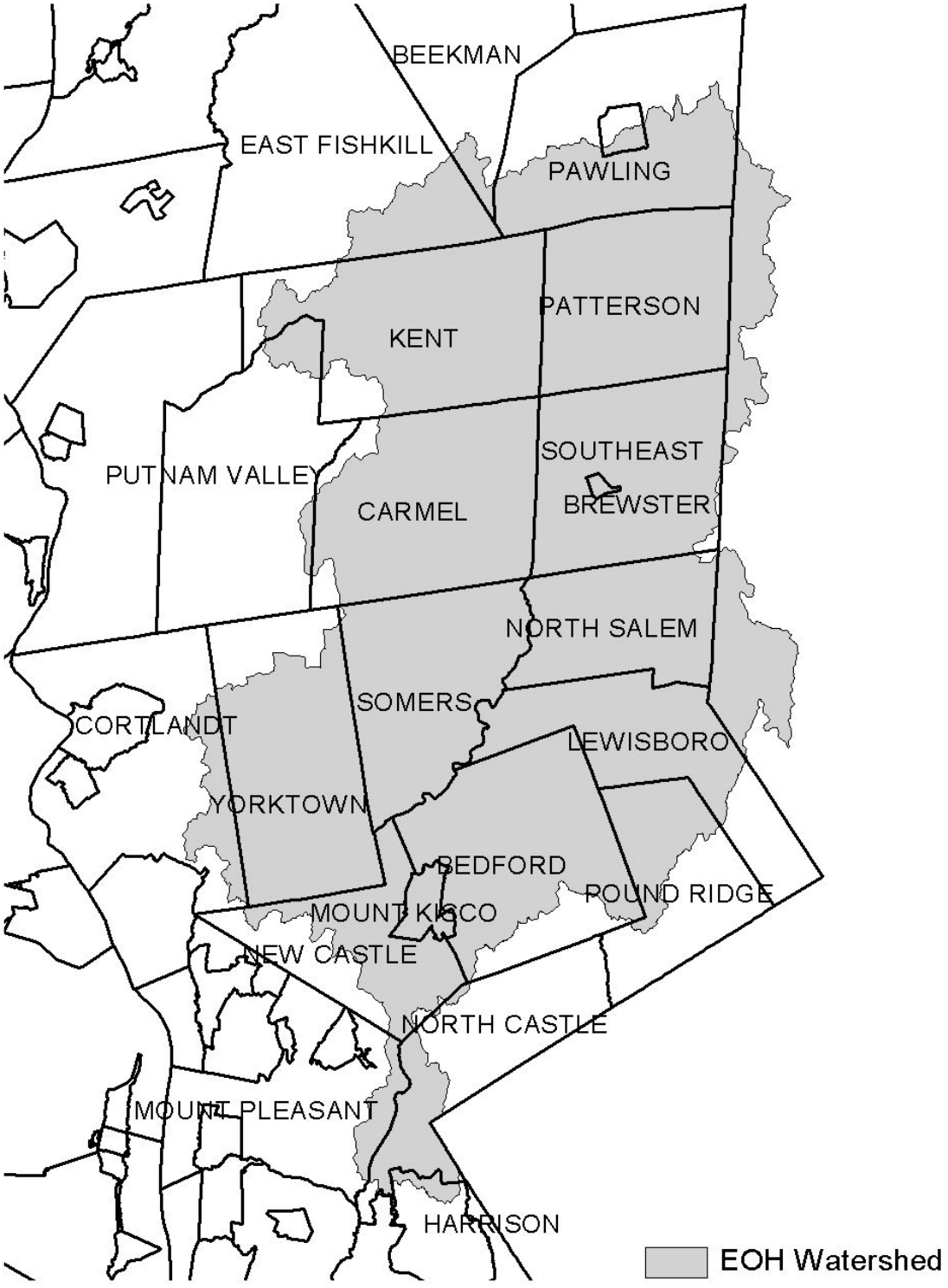
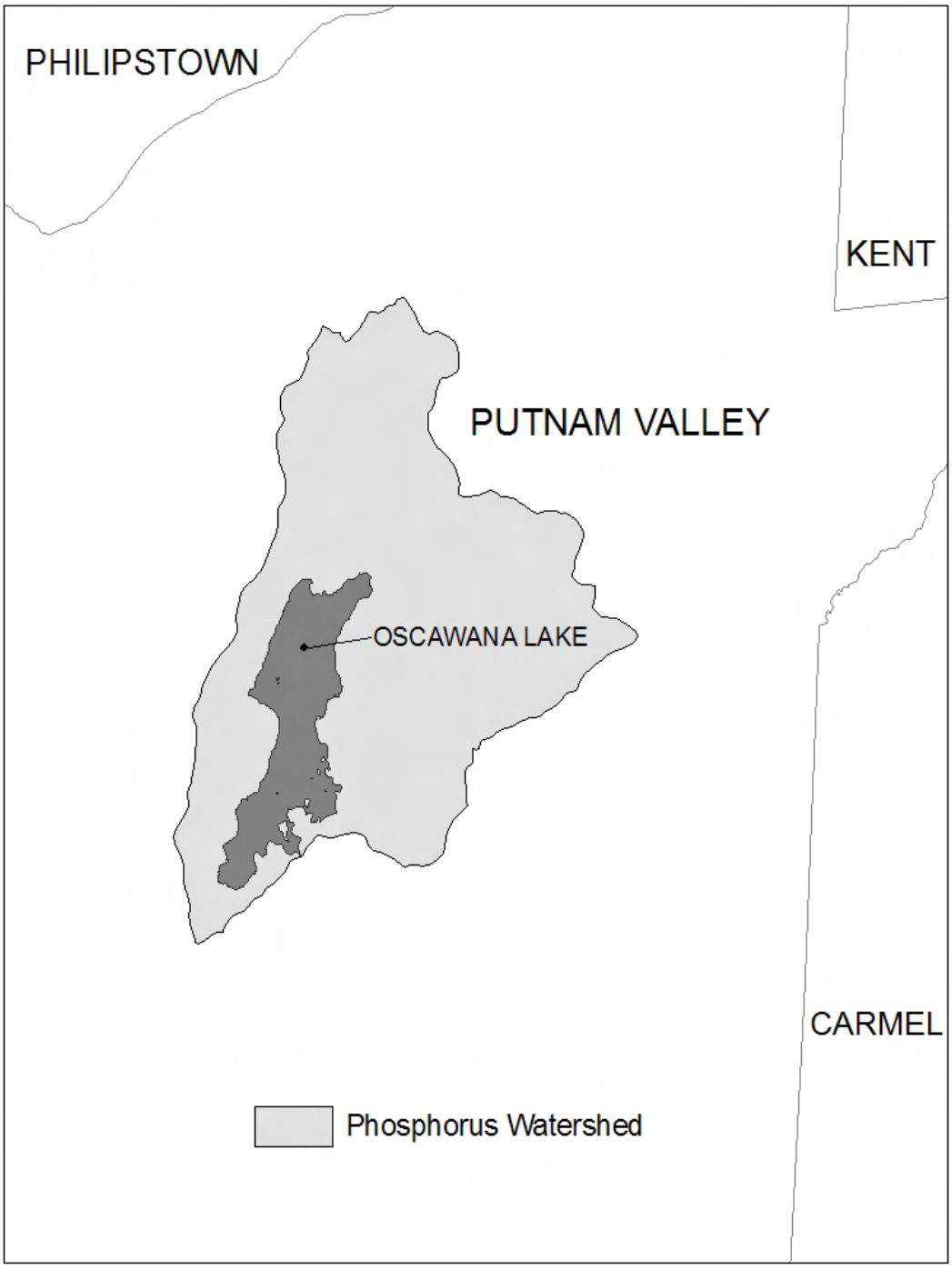


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed



APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivision construction activities that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond
Albany	Basic Creek Reservoir
Bronx	Van Cortlandt Lake
Broome	Whitney Point Lake/Reservoir
Broome	Beaver Lake
Broome	White Birch Lake
Chautauqua	Chautauqua Lake, North
Chautauqua	Chautauqua Lake, South
Chautauqua	Bear Lake
Chautauqua	Chadakoin River and tribs
Chautauqua	Lower Cassadaga Lake
Chautauqua	Middle Cassadaga Lake
Chautauqua	Findley Lake
Clinton	Great Chazy River, Lower, Main Stem
Columbia	Kinderhook Lake
Columbia	Robinson Pond
Dutchess	Hillside Lake
Dutchess	Wappinger Lakes
Dutchess	Fall Kill and tribs
Dutchess	Rudd Pond
Erie	Rush Creek and tribs
Erie	Ellicott Creek, Lower, and tribs
Erie	Beeman Creek and tribs
Erie	Murder Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs
Erie	Little Sister Creek, Lower, and tribs
Essex	Lake George (primary county listed as Warren)
Genesee	Black Creek, Upper, and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem
Genesee	Tonawanda Creek, Upper, and minor tribs
Genesee	Little Tonawanda Creek, Lower, and tribs
Genesee	Oak Orchard Creek, Upper, and tribs
Genesee	Bowen Brook and tribs
Genesee	Bigelow Creek and tribs
Greene	Schoharie Reservoir
Greene	Sleepy Hollow Lake
Herkimer	Steele Creek tribs
Kings	Hendrix Creek
Lewis	Mill Creek/South Branch and tribs
Livingston	Conesus Lake
Livingston	Jaycox Creek and tribs
Livingston	Mill Creek and minor tribs
Monroe	Genesee River, Lower, Main Stem
Monroe	Genesee River, Middle, Main Stem
Monroe	Black Creek, Lower, and minor tribs
Monroe	Buck Pond
Monroe	Long Pond
Monroe	Cranberry Pond
Monroe	Mill Creek and tribs
Monroe	Shipbuilders Creek and tribs
Monroe	Minor tribs to Irondequoit Bay
Monroe	Thomas Creek/White Brook and tribs
Nassau	Glen Cove Creek, Lower, and tribs
Nassau	LI Tribs (fresh) to East Bay
Nassau	East Meadow Brook, Upper, and tribs
Nassau	Hempstead Bay
Nassau	Hempstead Lake
Nassau	Grant Park Pond
Niagara	Bergholtz Creek and tribs
Oneida	Ballou, Nail Creeks
Onondaga	Ley Creek and tribs
Onondaga	Onondaga Creek, Lower and tribs
Onondaga	Onondaga creek, Middle and tribs
Onondaga	Onondaga Creek, Upper, and minor tribs
Onondaga	Harbor Brook, Lower, and tribs
Onondaga	Ninemile Creek, Lower, and tribs
Onondaga	Minor tribs to Onondaga Lake
Ontario	Honeoye Lake
Ontario	Hemlock Lake Outlet and minor tribs
Ontario	Great Brook and minor tribs
Oswego	Lake Neatahwanta
Putnam	Oscawana Lake
Putnam	Lake Carmel
Queens	Jamaica Bay, Eastern, and tribs (Queens)
Queens	Bergen Basin
Queens	Shellbank Basin
Rensselaer	Snyders Lake
Richmond	Grasmere, Arbutus and Wolfes Lakes
Saratoga	Dwaas Kill and tribs
Saratoga	Tribs to Lake Lonely
Saratoga	Lake Lonely
Saratoga	Schuyler Creek and tribs
Schenectady	Collins Lake

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Schoharie	Engleville Pond		
Schoharie	Summit Lake		
St. Lawrence	Black Lake Outlet/Black Lake		
Steuben	Lake Salubria		
Steuben	Smith Pond		
Suffolk	Millers Pond		
Suffolk	Mattituck (Marratooka) Pond		
Suffolk	Tidal tribs to West Moriches Bay		
Suffolk	Canaan Lake		
Suffolk	Lake Ronkonkoma		
Tompkins	Cayuga Lake, Southern End		
Tompkins	Owasco Inlet, Upper, and tribs		
Ulster	Ashokan Reservoir		
Ulster	Esopus Creek, Upper, and minor tribs		
Warren	Lake George		
Warren	Tribs to L.George, Village of L George		
Warren	Huddle/Finkle Brooks and tribs		
Warren	Indian Brook and tribs		
Warren	Hague Brook and tribs		
Washington	Tribs to L.George, East Shore of Lake George		
Washington	Cossayuna Lake		
Wayne	Port Bay		
Wayne	Marbletown Creek and tribs		
Westchester	Peach Lake		
Westchester	Mamaroneck River, Lower		
Westchester	Mamaroneck River, Upper, and minor tribs		
Westchester	Sheldrake River and tribs		
Westchester	Blind Brook, Lower		
Westchester	Blind Brook, Upper, and tribs		
Westchester	Lake Lincolndale		
Westchester	Lake Meahaugh		
Wyoming	Java Lake		
Wyoming	Silver Lake		

Note: The list above identifies those waters from the final New York State "2008 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated May 26, 2008, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD, PO BOX 220 WARRENSBURG, NY 12885-0220 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX B

Temporary Controls and Measures Required by the Contract and by Approved Submittals
(Reference the full-size contract documents for greater clarity)

Erosion Control

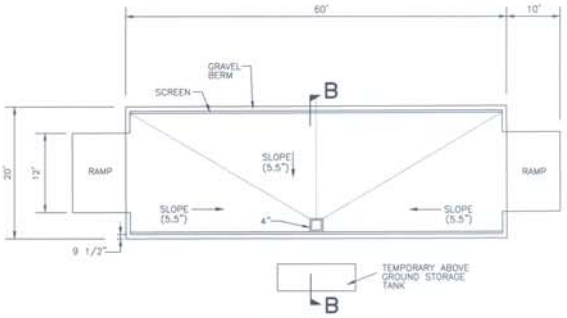
Stabilized construction access road (contract plan sheet)
Submittal #14 - Erosion and Surface Water Control Plan
Submittal #23 – Extended-duration erosion control blankets

Sediment Control

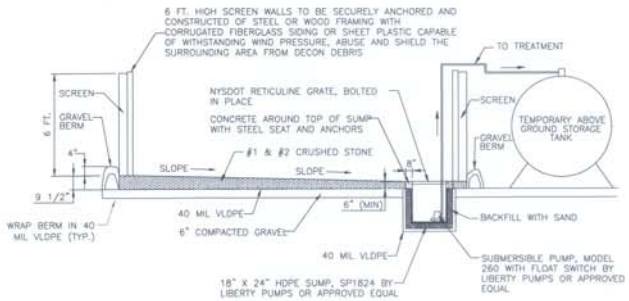
Typical dewatering cell (contract plan sheet)

Site Pollution Prevention

Equipment decontamination pad (contract plan sheet)
Berm surrounding landfill cap (contract plan sheet)
Submittal #25 - Site layout
Submittal #12 - Area #8 Soil disposal layout diagram
Submittal #13 - Decontamination pad submittal
Submittal #26 - Cofferdam Submittal and Placement
Submittal #16 - Wastewater treatment plant



PLAN VIEW



DECONTAMINATION PAD

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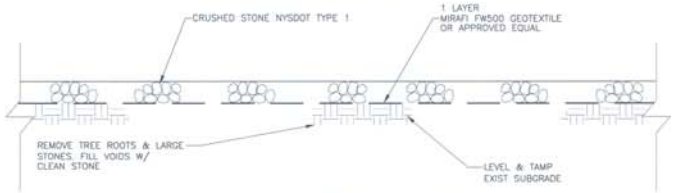
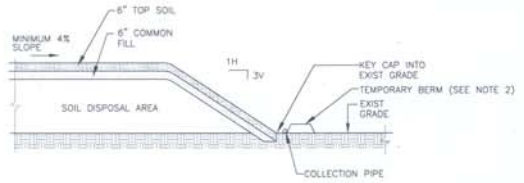


STONED AREAS AT AREA 8

SCALE: 1" = 1'-0"

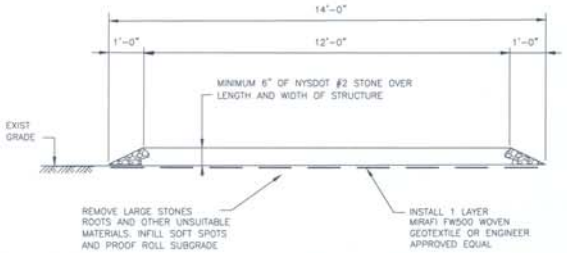


SECTION THROUGH LANDFILL CAP

SCALE: 1/4" = 1'-0"

NOTES:

1. LANDFILL CAP OVER INVASIVE SPECIES ROOT BALLS SHALL BE COVERED WITH A GEOTEXTILE FABRIC, 2.5" OF COMMON FILL, AND 6" OF TOPSOIL.
2. INSTALL TEMPORARY BERM AROUND SOIL DISPOSAL AREA UNTIL CAPPED.



STABILIZED CONSTRUCTION ACCESS ROAD SECTION

NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. LENGTH – VARIES, SEE PLANS FOR PROPOSED ACCESS ROAD INFORMATION.
2. THICKNESS – NOT LESS THAN 6 INCHES.
3. WIDTH – 12 FT. MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
4. GEOTEXTILE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
5. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
6. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED DURING THE PROJECT AND AFTER EACH RAIN EVENT.
8. CONTRACTOR SHALL TRANSITION FROM THE EXISTING ROAD TO THE NEW PROPOSED ACCESS ROAD BY MATCHING EXISTING GRADE.

DWG NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO.	DATE	DWN	APP'D	DESCRIPTION
0	12/16/11	KMK	TRH	ISSUED FOR CONSTRUCTION
REVISIONS				

ecology and environment engineering p.c.

DESIGNED BY: C. SCHIFFERLI P.E.
CHECKED BY: T. HEINS P.E.
DRAWN BY: KM KRAJEWSKI/JJ KOHLER
APPROVED BY: T. HEINS P.E.

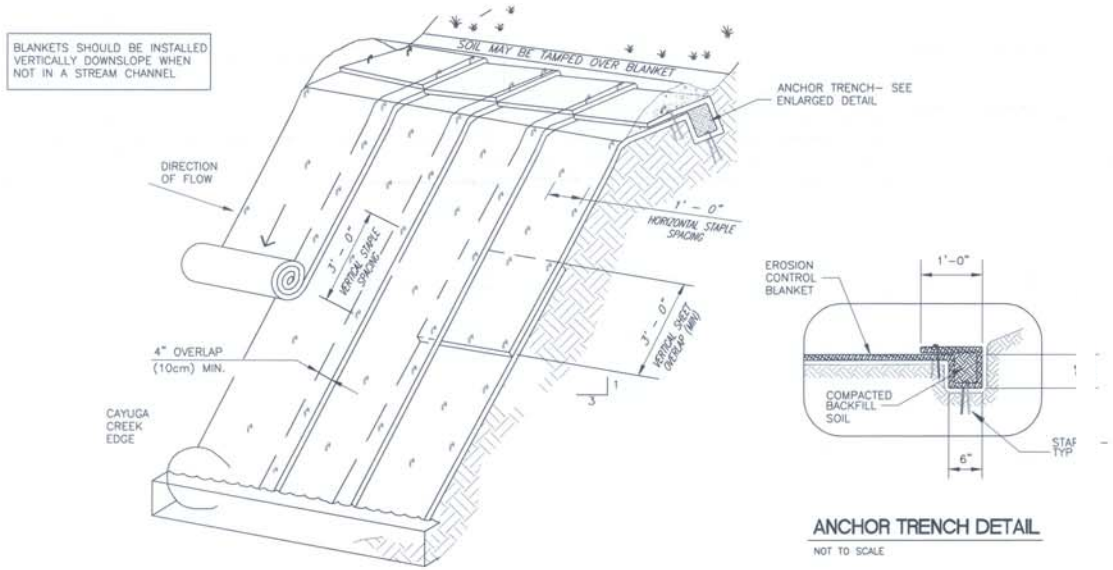
DEPEW VILLAGE LANDFILL SITE

NYSDEC CONTRACT No. D008513

VILLAGE OF DEPEW — ERIE COUNTY — NEW YOR

MISCELLANEOUS DETAILS

SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.
NOTED	5/19/11	C-14.dwg	Sheet 16 of 16



ANCHOR TRENCH DETAIL

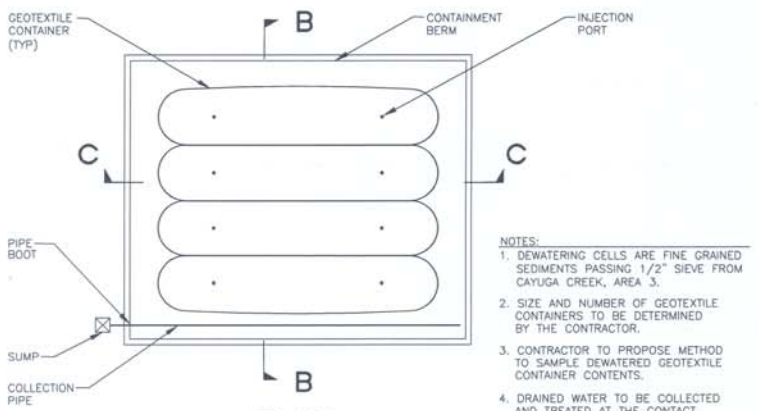
NOT TO SCALE

AREAS 1, EROSION CONTROL BLANKET SLOPE INSTALLATION (TYP)

NOT TO SCALE

NOTES

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. HOLES IN BLANKET SHALL BE FILLED WITH SOIL UNTIL LEVEL.
3. LAY BLANKETS LOOSELY AND STAKE WITH BIODEGRADABLE STAKES TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. REFER TO SHEET 14 FOR ESTIMATED EROSION CONTROL BLANKET QUANTITIES.



TYPICAL DEWATERING CELL DETAIL

NOT TO SCALE

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	REVISIONS				

ecology and environment engineering p.c.

DESIGNED BY C. SCHIFFERLI P.E.

CHECKED BY [illegible] P.E.

DRAWN BY KMK KM KRAJEWSKI/JJ KOHLER

APPROVED BY T HEINS P.E. TRH

STATE OF NEW YORK GERARD A. STROBEL P.E. LICENSED PROFESSIONAL ENGINEER

DEPEW VILLAGE LANDFILL SITE

NYSDEC CONTRACT No. D008513

VILLAGE OF DEPEW ERIE COUNTY NEW YORK

MISCELLANEOUS SECTIONS AND DETAILS

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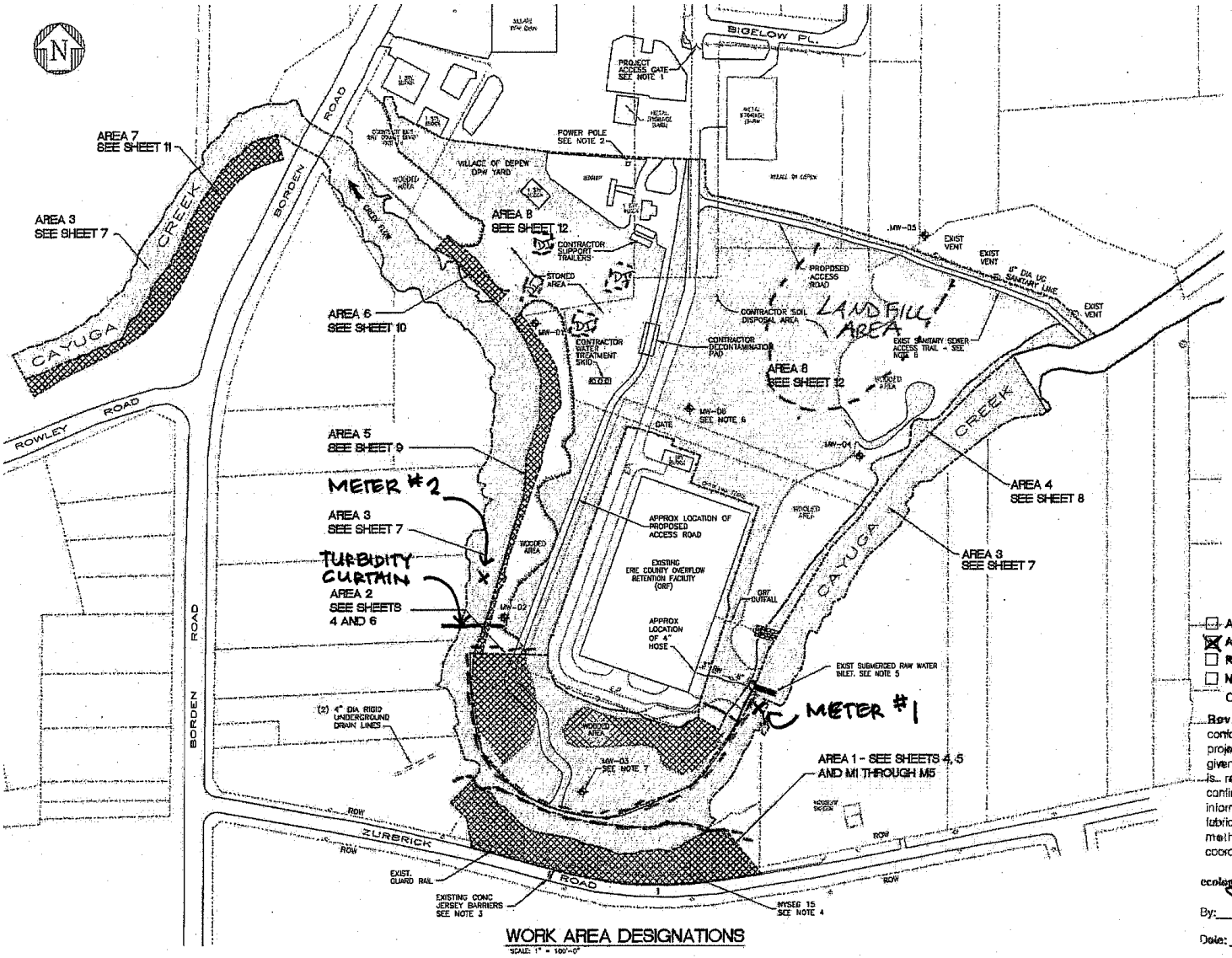


WORK AREA DESIGNATIONS

"SCALE: 1" = 100'-0"

WORK AREA DESIGNATIONS

AREA 1: ZURBRICK ROAD STREAM BANK REMEDIATION AND RECONSTRUCTION
AREA 2: DEPEW LANDFILL TIP REMEDIATION AND RECONSTRUCTION
AREA 3: CAYUGA CREEK FINE-GRAINED SEDIMENT REMOVAL
AREA 4: DEPEW LANDFILL STREAM BANK RESTORATION
AREA 5: DEPEW LANDFILL STREAM BANK RESTORATION
AREA 6: DEPEW LANDFILL EXCAVATION AND STREAM BANK RESTORATION
AREA 7: CAYUGA CREEK STREAM BANK RESTORATION
AREA 8: DEPEW LANDFILL SOIL CAP

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE PROJECT ACCESS LOCATION WITH VILLAGE OF DEPEW DPW.
2. CONTRACTOR MUST CONTACT UTILITY TO DETERMINE IF AVAILABLE POWER IS ADEQUATE AND PROVIDE A METERED CONNECTION.
3. CONTRACTOR SHALL PROTECT ZURBRICK ROAD AND PREVENT THROUGH TRAFFIC DURING REMEDIAL AND RECONSTRUCTION WORK. RECONSTRUCTION OF ROADWAY IS NOT A PART OF THIS CONTRACT.
4. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, OVERHEAD POWER LINES AND DRAINAGE STRUCTURES DURING EXCAVATION AND RESTORATION OF AREA 1.
5. CONTRACTOR SHALL PROTECT EXISTING ORF OUTFALL AND RAW WATER INLET DURING REMEDIATION OF STREAM SEDIMENTS AND RESTORATION OF AREA 4.
6. CONTRACTOR SHALL FIELD VERIFY LOCATION OF AND PROTECT EXISTING 6" UNDERGROUND SANITARY LINE, MONITORING WELLS AND LANDFILL VENTS DURING CONSTRUCTION OF ACCESS ROAD AND SOIL CAP FOR AREA 8.
7. CONTRACTOR SHALL DECOMMISSION EXISTING MW-03 IN COMPLIANCE WITH NYSDEC CP-43 GROUNDWATER MONITORING WELL DECOMMISSIONING GUIDELINES LATEST REVISION.
8. INSTALL 11 BENDWAY WEIRS ALONG SOUTHERN BANK OF CAYUGA CREEK IN AREA 1 FOLLOWING THE WORK SHOWN ON SHEETS M1 THROUGH M5. REFERENCE "PLAN VIEW-BENDWAY WEIRS" ON SHEET 16.
9. THE ENTIRE AREA 8 WORK AREA, WITH THE EXCEPTION OF WOODED AREA, ROADS AND STRUCTURES, WILL BE COVERED BY AN APPROPRIATE CAP AS SHOWN ON SHEET 12.

LEGEND

— WORK AREA

— PROPOSED CLEARING AND GRUBBING AREA

- SILT FENCE INSTALLATION

☐ Approved
☒ Approved as Noted
☐ Revise and Resubmit
☐ Not Approved
Other _____

Review and **Approval** is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication process or to the means and methods of construction; and for coordination of the work of all trades.

ecology and environment engineering, p.c.

By: _____

Date: 10/5/12

RECEIVED OCT 0 1 2012

SCALE IN FEET
0 100 200 300

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

DWG NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO	DATE	BY	APP'D	DESCRIPTION
0	12/16/11	KMK	TRH	ISSUED FOR CONSTRUCTION
REVISIONS				

ecology and environment engineering p.c.

DESIGNED BY	CHECKED BY
C. SCHIFFERLI P.E.	HL LITTLE P.E.
DRAWN BY	APPROVED BY
KM KRAJEWSKI/JJ KOHLER	T HEINS P.E.

DEPEW VILLAGE LANDFILL SITE
NYSDEC CONTRACT No. D006513
VILLAGE OF DEPEW — ERIE COUNTY — NEW YOR

WORK AREA DESIGNATIONS

SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.
NOTED	5/19/11	C-1.dwg	Sheet 3 of 16

FIGURE 1 - EROSION AND SEDIMENT CONTROL

Tensar International Corporation
5401 St. Wendel-Cynthiana Road
Poseyville, Indiana 47633
Tel. 800.772.2040
Fax 812.867.0247
www.nagreen.com

Material and Performance Specification
SC150BN Erosion Control Blanket

Description

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 18 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a 100% biodegradable woven natural organic fiber netting. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (commonly referred to as Leno weave) to form an approximate 0.50 x 1.0 (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The SC150BN shall meet Type 3.B specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) *FP-03 Section 713.17*

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.28 in (7.11 mm)
Resiliency	ECTC Guidelines	86%
Water Absorbency	ASTM D1117	169%
Mass/Unit Area	ASTM 6475	9.66 oz/yd^2 (328 g/m^2)
Swell	ECTC Guidelines	46%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.42 oz-in
Light Penetration	ECTC Guidelines	14.1%
Tensile Strength –MD	ASTM D6818	164.4 lbs/ft (2.44 kN/m)
Elongation – MD	ASTM D6818	7.2%
Tensile Strength – TD	ASTM D6818	226.8 lbs/ft (3.36 kN/m)
Elongation – TD	ASTM D6818	10.1%

Material Content		
Matrix	70% Straw Fiber 30% Coconut Fiber	0.5 lbs/yd^2 (0.27 kg/m^2) 0.15 lbs/yd^2 (0.08 kg/m^2)
Netting	Leno Woven 100% biodegradable jute 100% biodegradable jute	9.3 lb/1000 ft^2 (4.5 kg/100 m^2) 7.7 lb/1000 ft^2 (3.76 kg/100 m^2)
Thread	Biodegradable	

Maximum Permissible Shear Stress	
Unvegetated Shear Stress	2.10 lbs/ft^2 (100 Pa)
Unvegetated Velocity	8.00 ft/s (2.44 m/s)

Standard Roll Sizes			
Width	6.67 ft (2.03 m)	8.0 ft (2.4 m)	15.5 ft (4.72 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)	90 ft (27.43 m)
Weight ± 10%	52.22 lbs (23.69 kg)	65.25 lbs (29.61 kg)	101.1 lbs (45.86 kg)
Area	80 yd^2 (66.9 m^2)	100 yd^2 (83.61 m^2)	155 yd^2 (129.6 m^2)
	Leno Weave Top only	Leno Top and Bottom	Leno Top and Bottom

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.063
20-50 ft	0.051	0.055	0.092
≥ 50 ft (15.2 m)	0.10	0.080	0.120

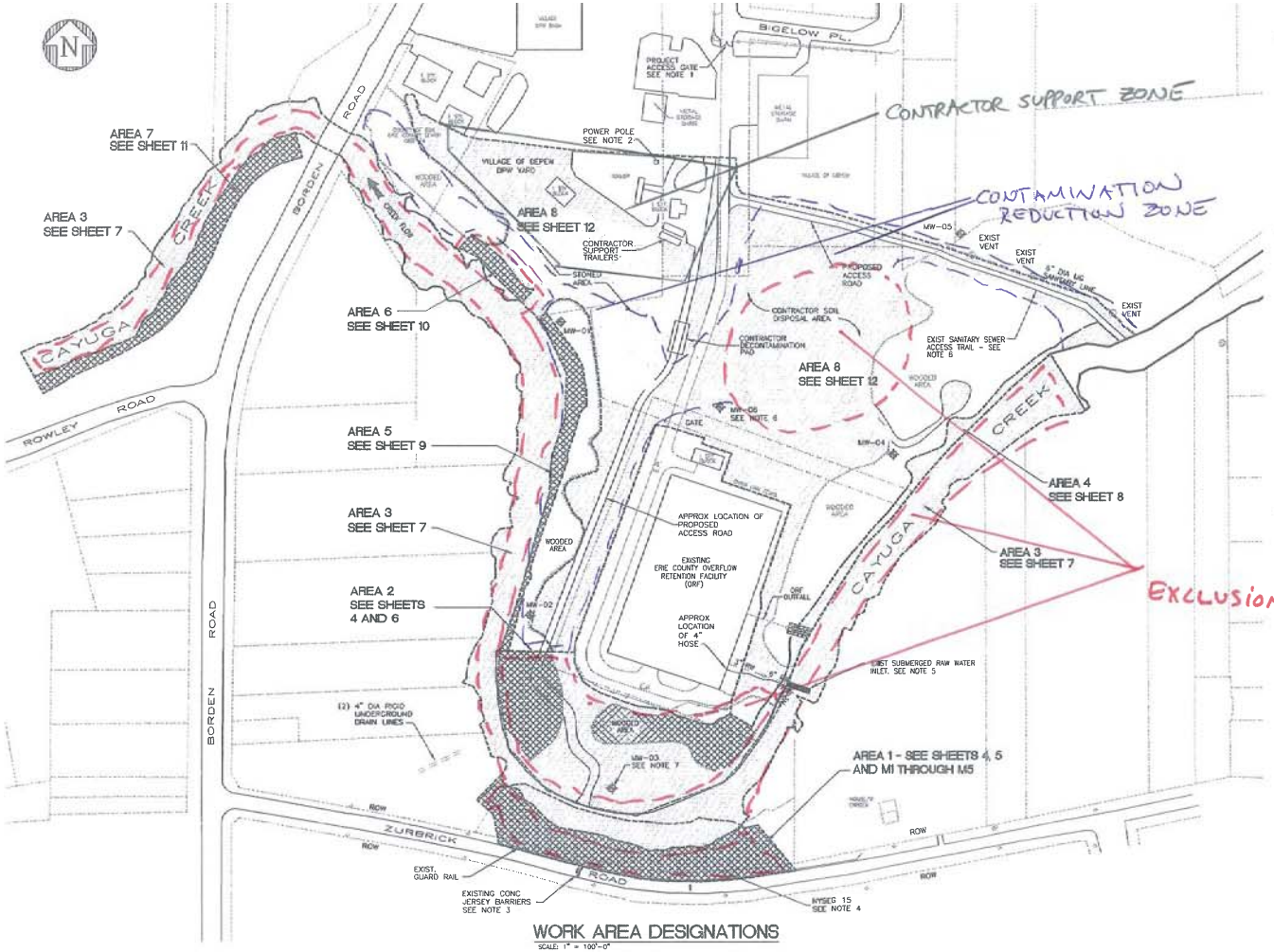
Roughness Coefficients- Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.050
0.50 – 2.0 ft	0.050 – 0.018
≥ 2.0 ft (0.60 m)	0.018

Bench Scale Testing (NTPEP)		
Test Method	**Parameters**	**Results**
ECTC 2 Rainfall	50 mm (2 in)/hr-30 min 100mm (4 in)/hr-30 min 150 mm (6 in)/hr-30 min	SLR** = 9.98 SLR** = 13.01 SLR** = 16.95
ECTC 3 Shear Res.	Shear at 0.50 inch soil loss	2.27 lbs/ft^2
ECTC 4 Germination	Top Soil, Fescue, 21 day incubation	723% improvement of biomass

* Bench Scale tests should not be used for design purposes
** Soil Loss Ratio = Soil Loss Bare Soil/Soil Loss with RECP

Proud Participant of:

Tensar International Corporation warrants that at the time of delivery the product furnished hereunder shall conform to the specification stated herein. Any other warranty including merchantability and fitness for a particular purpose, are hereby executed. If the product does not meet specifications on this page and Tensar is notified prior to installation, Tensar will replace the product at no cost to the customer. **This product specification supersedes all prior specifications for the product described above is and is not applicable to any products shipped prior to January 1, 2011.**



WORK AREA DESIGNATIONS

SCALE: 1" = 100'-0"

WORK AREA DESIGNATIONS

AREA 1: ZURBRICK ROAD STREAM BANK REMEDIATION AND RECONSTRUCTION
AREA 2: DEPEW LANDFILL TIP REMEDIATION AND RECONSTRUCTION
AREA 3: CAYUGA CREEK FINE-GRAINED SEDIMENT REMOVAL
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GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE PROJECT ACCESS LOCATION WITH VILLAGE OF DEPEW DPW.
2. CONTRACTOR MUST CONTACT UTILITY TO DETERMINE IF AVAILABLE POWER IS ADEQUATE AND PROVIDE A METERED CONNECTION.
3. CONTRACTOR SHALL PROTECT ZURBRICK ROAD AND PREVENT THROUGH TRAFFIC DURING REMEDIAL AND RECONSTRUCTION WORK. RECONSTRUCTION OF ROADWAY IS NOT A PART OF THIS CONTRACT.
4. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, OVERHEAD POWER LINES AND DRAINAGE STRUCTURES DURING EXCAVATION AND RESTORATION OF AREA 1.
5. CONTRACTOR SHALL PROTECT EXISTING ORF OUTFALL AND RAW WATER INLET DURING REMEDIATION OF STREAM SEDIMENTS AND RESTORATION OF AREA 4.
6. CONTRACTOR SHALL FIELD VERIFY LOCATION OF AND PROTECT EXISTING 6" UNDERGROUND SANITARY LINE, MONITORING WELLS AND LANDFILL VENTS DURING CONSTRUCTION OF ACCESS ROAD AND SOIL CAP FOR AREA 8.
7. CONTRACTOR SHALL DECOMMISSION EXISTING MW-03 IN COMPLIANCE WITH NYSDEC CP-43 GROUNDWATER MONITORING WELL DECOMMISSIONING GUIDELINES LATEST REVISION.
8. INSTALL 11 BENDWAY WEIRS ALONG SOUTHERN BANK OF CAYUGA CREEK IN AREA 1 FOLLOWING THE WORK SHOWN ON SHEETS M1 THROUGH M5. REFERENCE "PLAN VIEW-BENDWAY WEIRS" ON SHEET 16.
9. THE ENTIRE AREA 8 WORK AREA, WITH THE EXCEPTION OF WOODED AREA, ROADS AND STRUCTURES, WILL BE COVERED BY AN APPROPRIATE CAP AS SHOWN ON SHEET 12.

LEGEND

WORK AREA

PROPOSED CLEARING AND GRUBBING AREA

EXCLUSION ZONES (AREAS 1, 2, 3, 8 (LANDFILL AREA), 6)

SCALE IN FEET
0 100 200 300

DWG NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO	DATE	DSN	APPD	DESCRIPTION
0	3/14/11	KMK	TRH	ISSUED FOR CONSTRUCTION
REVISIONS				

ecology and environment engineering p.c.

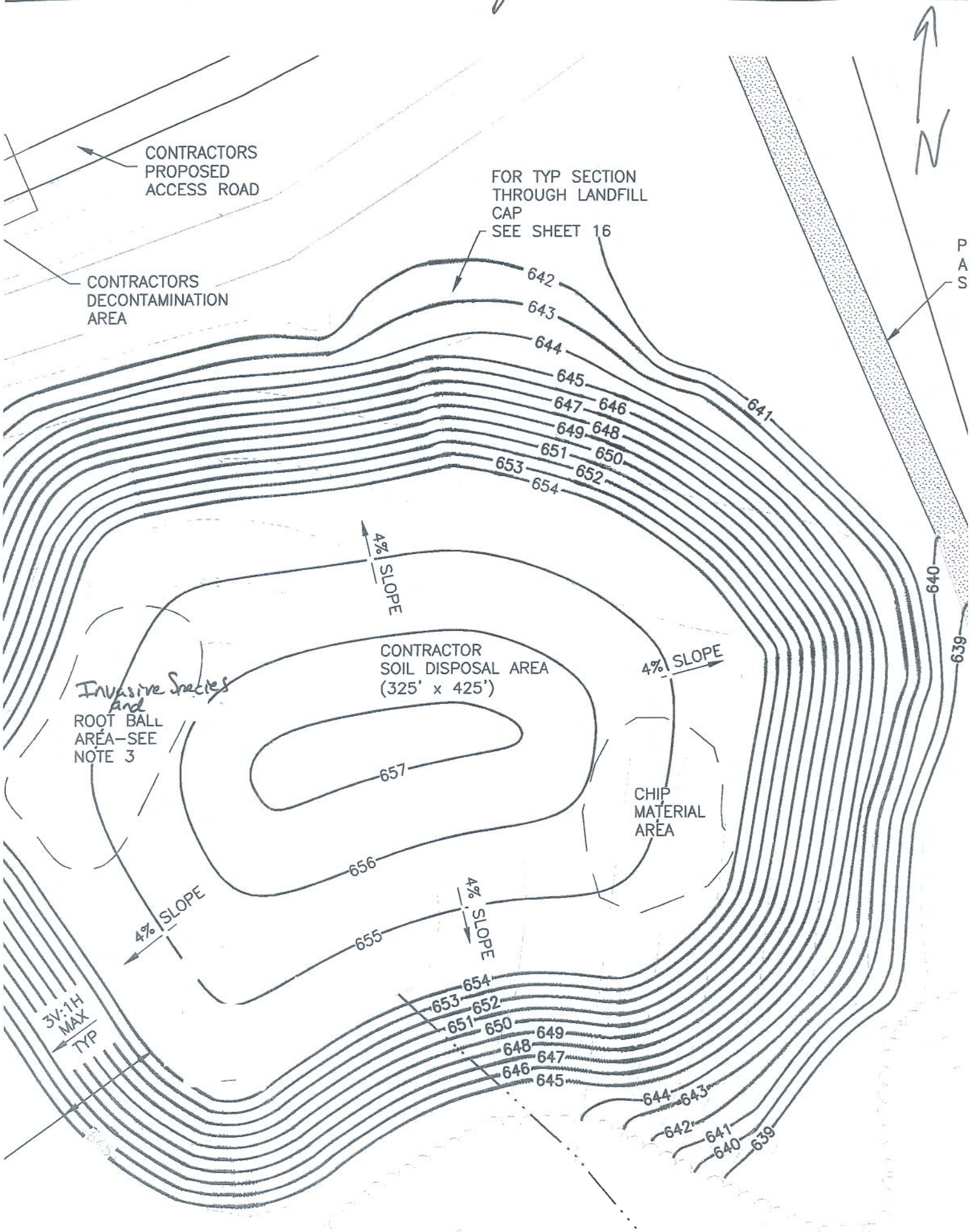
DESIGNED BY	CHECKED BY
C. SCHIFFERLI P.E.	HL LITTLE P.E.
DRAWN BY	APPROVED BY
KM KRAJEWSKI/JJ KOHLER	T HEINS P.E.

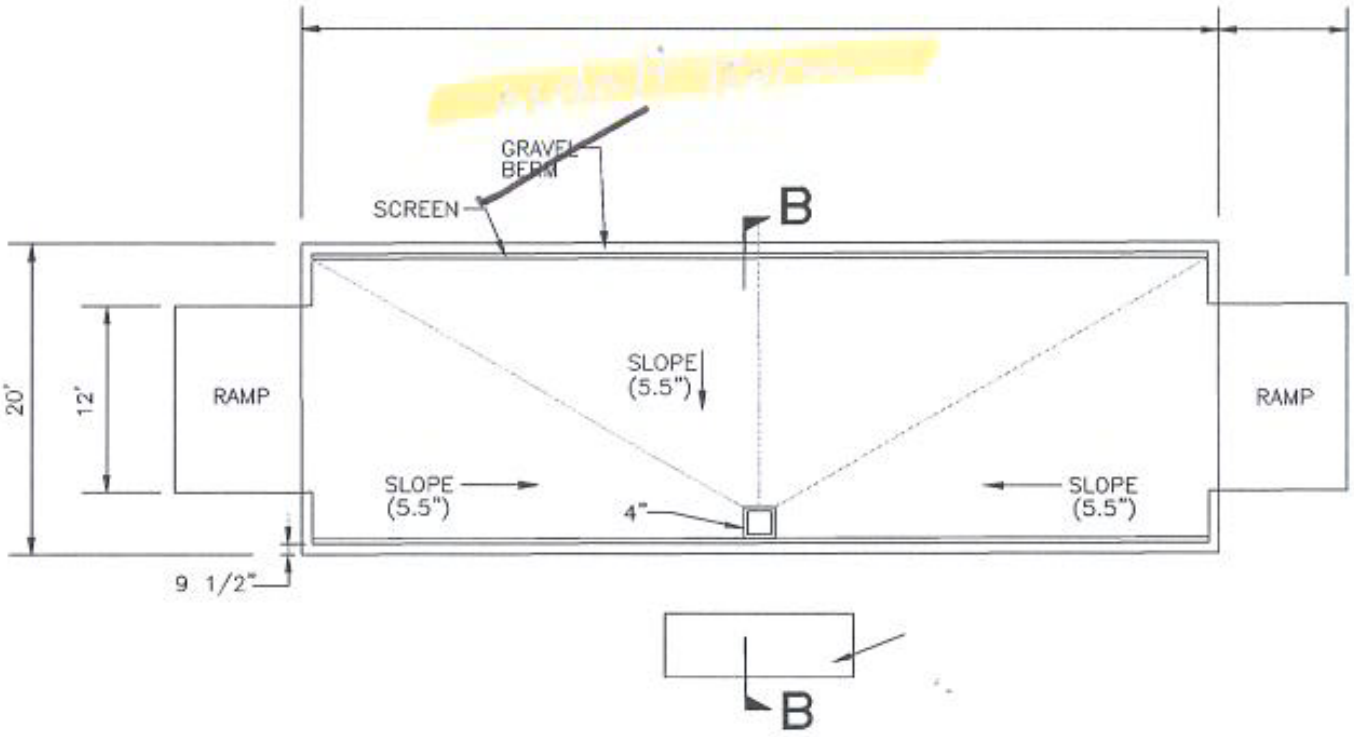
DEPEW VILLAGE LANDFILL SITE
NYSDEC CONTRACT No. D006513
VILLAGE OF DEPEW — ERIE COUNTY — NEW YORK

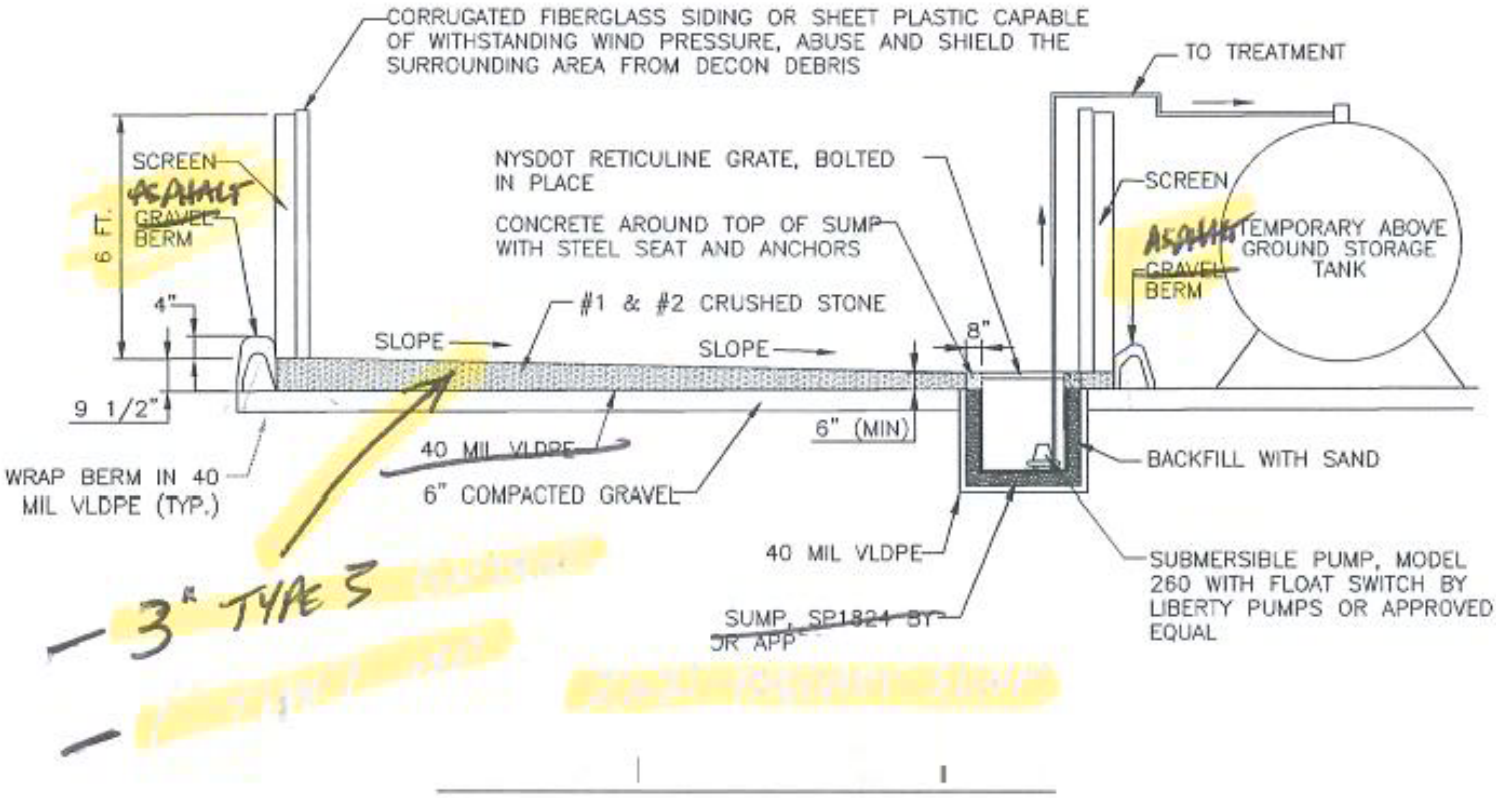
WORK AREA DESIGNATIONS

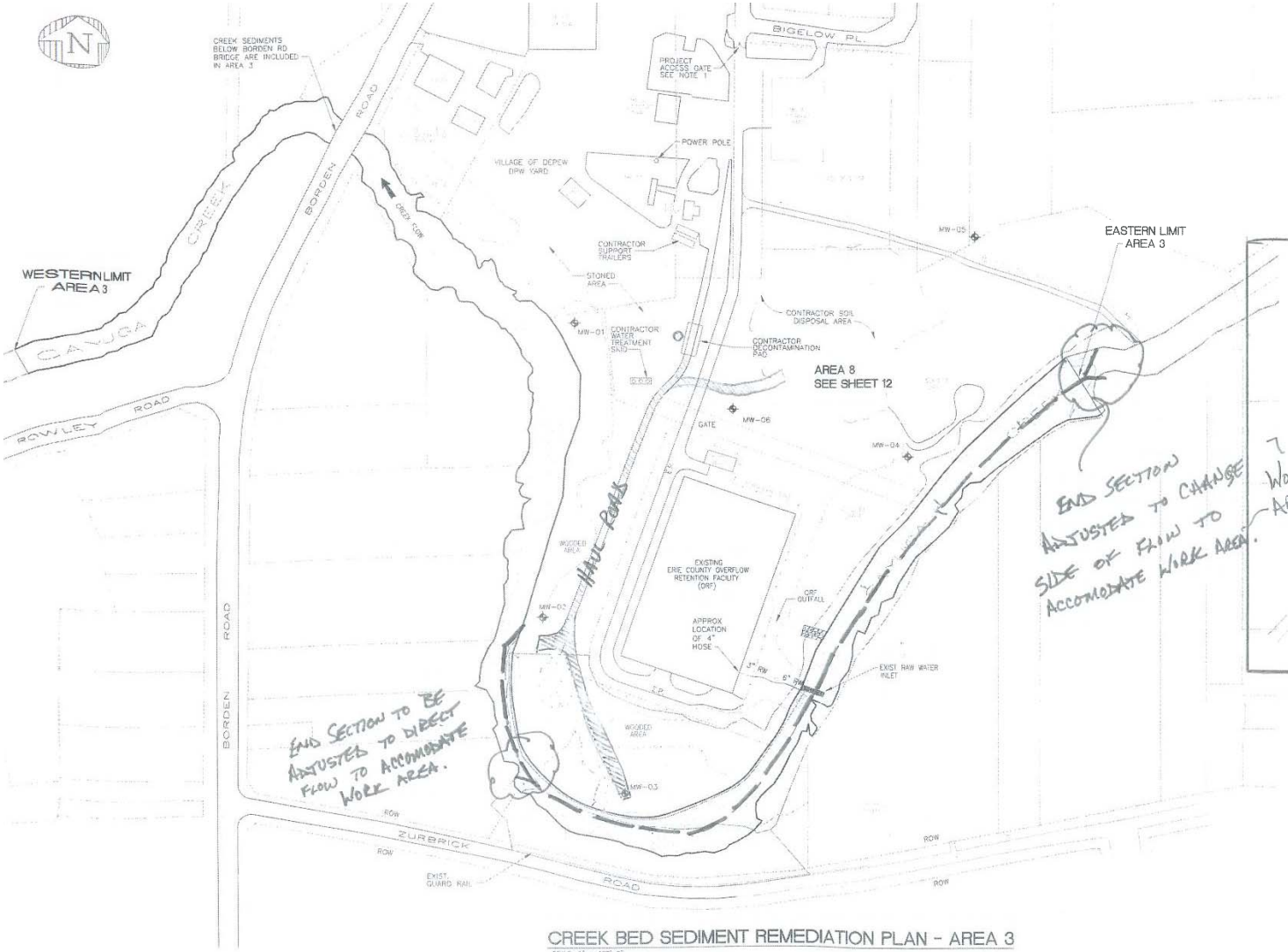
SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.	REV
NOTED	5/30/01	C-1.dwg	Sheet 3 of 16	0

Area 8- Soil Disposal Area




GRAVEL BERM
SCREEN
B
20'
12'
RAMP
SLOPE (5.5")
RAMP
SLOPE (5.5")
4"
SLOPE (5.5")
9 1/2"
B


CORRUGATED FIBERGLASS SIDING OR SHEET PLASTIC CAPABLE OF WITHSTANDING WIND PRESSURE, ABUSE AND SHIELD THE SURROUNDING AREA FROM DECON DEBRIS
TO TREATMENT
SCREEN
ASPHALT
GRAVEL BERM
6 FT.
NYSDOT RETICULINE GRATE, BOLTED IN PLACE
CONCRETE AROUND TOP OF SUMP WITH STEEL SEAT AND ANCHORS
SCREEN
ASPHALT
GRAVEL BERM
TEMPORARY ABOVE GROUND STORAGE TANK
4"
#1 & #2 CRUSHED STONE
SLOPE
SLOPE
8"
9 1/2"
6" (MIN)
BACKFILL WITH SAND
WRAP BERM IN 40 MIL VLDPE (TYP.)
40 MIL VLDPE
6" COMPACTED GRAVEL
40 MIL VLDPE
SUBMERSIBLE PUMP, MODEL 260 WITH FLOAT SWITCH BY LIBERTY PUMPS OR APPROVED EQUAL
SUMP, SP1824 BY OR APP
3" TYPE S



CREEK BED SEDIMENT REMEDIATION PLAN - AREA 3

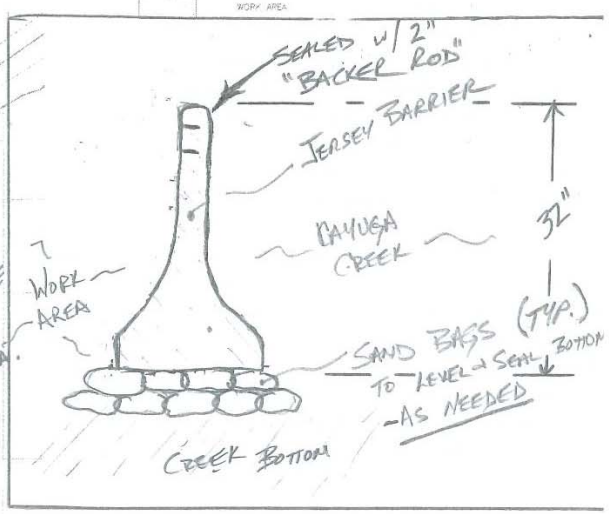
SCALE 1" = 100'-0"

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE PROJECT ACCESS LOCATION WITH VILLAGE OF DEPEW DPW.
2. ALL FINE-GRAINED SEDIMENTS REMOVED FROM THE CREEK SHALL BE TRANSPORTED TO THE SOIL DISPOSAL AREA. SEE TYPICAL DEWATERING CELL DETAIL, SHEET 15.
3. PEBBLES AND COBBLES REMOVED LARGER THAN 1/2" SCREEN SIZE SHALL BE RETURNED TO THE STREAM AREA FROM WHICH THEY WERE REMOVED.
4. CONTRACTOR SHALL PROTECT EXIST ORF OUTFALL AND RAW WATER INLET DURING REMEDIATION OF STREAM SEDIMENTS.
5. THE SCOPE OF WORK FOR AREA 3 INCLUDES THE REMOVAL OF THE SEDIMENTS FROM THE CREEK BED. EXCAVATED SEDIMENTS WILL BE PUMPED TO GEOTEXTILE TUBES LOCATED ON THE NORTH SIDE OF THE DEPEW VILLAGE LANDFILL, DEWATERED, AND DISPOSED OF ON THE DEPEW VILLAGE LANDFILL.

LEGEND

WORK AREA



- 'WORK AREA' WILL BE MAINTAINED TO KEEP THE EXCAVATION DEWATERED W/ PUMPS. ALL WATER REMOVED FROM EXCAVATION WILL BE PROCESSED THROUGH WWTP.

- COFFER DAM WILL BE CONSTRUCTED DOWN EASTERN (UPSTREAM) LEG OF AREA 3 AND THROUGH AREA 1 & AREA 2 TO ALLOW WORK TO PROGRESS. (APPROX TOTAL 1900 LF / 800 LF AREA 3)

SCALE IN FEET
1 100 200 300

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

DWG NO	DATE	DESCRIPTION

REFERENCE DRAWINGS

NO.	DATE	DWN	APPD	DESCRIPTION
0	12/16/11	KMK	TRH	ISSUED FOR CONSTRUCTION

REVISIONS

ecology and environment engineering p.c.

DESIGNED BY C. SCHIFFERLI P.E. | OVERSEEN BY HE WITKER P.E.
DRAWN BY KM KRAJEWSKI/JJ KOHLER | APPROVED BY T HEINS P.E. TRH

DEPEW VILLAGE LANDFILL SITE
NYSDEC CONTRACT No. D008513
VILLAGE OF DEPEW | ERIE COUNTY | NEW YORK

CREEK BED SEDIMENT REMEDIATION PLAN - AREA 3

SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.	REV.
NOTED	5/19/11	C-5.dwg	Sheet 7 of 16	0

WATER TREATMENT
WORK PLAN and OPERATIONS MANUAL

Depew Village Landfill Site
Contract Number: D008513
Site Number 9-15-105
Village of Depew
Town of Cheektowaga
Erie County
New York

Prepared for:

New York State
Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7017

Prepared by:

Russo Development, Inc.
3710 Mile Strip Road
Blasdell, New York 14219

Groundwater & Environmental Services, Inc.
495 Aero Drive
Suite 3
Cheektowaga, New York 14225

September 30, 2012

TABLE OF CONTENTS

FIGURES

ATTACHMENTS

1.0 INTRODUCTION

Russo Development, Inc. (Russo) has been contracted by the New York State Department of Environmental Conservation (NYSDEC) to implement remedial and restoration activities at the Depew Village Landfill Site in the Village of Depew, Erie County, NY (the Site). Russo has subcontracted Groundwater & Environmental Services, Inc. (GES) to design and install the water treatment system. This Water Treatment Work Plan provides the details of the proposed contact water recovery and treatment system that will be constructed and operated to complete this work. This Dewatering and Water Treatment Work Plan satisfies the Technical Submittal requirements for Submittal #02401-1.6. All work specified herein will be conducted in accordance with the site-specific Health and Safety Plan (HASP) and applicable Job Safety Analyses.

All work will include the necessary measures in addition to those required by Federal, State, and local laws and regulations and the requirements to dewater and treat water due to site activities. This work shall proceed in accordance with New York State Law, and all necessary permits to complete the work will be obtained and maintained at the site during performance of all work. All work performed as part of this Work Plan shall be completed as specified in the Contract Documents.

1.1 Site Background

Based upon the NYSDEC's project specific web site, www.dec.ny.gov/chemical/59707.html, the Village of Depew operated a landfill between 1940 and 1961. During operations, the landfill received approximately 10,000 tons per year of municipal solid waste and other wastes from unknown sources. An on-site incinerator processed much of the waste, and ash was disposed of within the landfill.

Environmental problems at the site were first uncovered in 2001, when the U.S. Army Corps of Engineers (USACE) began an Emergency Streambank Protection Project on a section of Zurbrick Road across from the Depew Village Landfill on the opposite side of Cayuga Creek. USACE discovered that the stream bank contained fill materials with hazardous lead concentrations as high as 86,000 parts per million. Subsequent investigations indicated that the lead contamination extended to the north, beyond the tip of the peninsula into the landfill. NYSDEC listed the site as a Class 2 site in New York's Registry of Inactive Hazardous Waste Disposal Sites. A Class 2 site is a site where hazardous waste presents a significant threat to public health and/or the environment and requires action.

To facilitate cleanup of the site, NYSDEC has identified two operable units (OUs) whereas OU1 is the landfill and OU2 is the stream bank, Cayuga Creek sediments, and the slope under the affected section of Zurbrick Road.

2.0 WATER RECOVERY AND TREATMENT SYSTEM

The following sections outline the proposed water recovery and treatment system that will be designed, installed, and operated by the Russo/GES team to facilitate implement soil processing activities at the site. Process Flow Diagram depicting the proposed treatment system are attached as **Figure 1**.

2.1 Recovery System

The work in this section will conform to the requirements set forth in "New York Guidelines for Urban Erosion and Sediment Control" Third Printing 10/91 USDA - Soil Conservation Service, as well as NYSDEC's Document entitled New York State Standards and Specifications for Erosion and Sediment Control, August 2005 and any other applicable city, county, and state regulations. Surface waters within intrusive work areas will be diverted into settling (infiltration) basins and/or into other approved drainage ways provided approved methods are used to reduce the amount of sediment contained in the water prior to discharge. E&S controls include the use of earthen berms and silt fencing in the various work areas. At the completion of the remedial work, ditches shall be backfilled and the ground surface restored to original conditions unless otherwise directed by the engineer. Silt fence will be installed along Cayuga Creek proximate to intrusive work areas. Excavations will have a earthen berm formed on the downward creek side of the excavation to prevent any perched or surface water from entering Cayuga Creek. The berms will be formed in a manner to divert any water into a lower settling area of the excavation. This water will then be collected via a vacuum truck and then transported to the onsite waste water treatment plant (WWTP) for treatment.

2.2 Treatment System Design Parameters

All equipment was designed to treat a maximum flow rate of 100 gallons per minute (gpm).

Flow Rate: 50 - 100 gpm
Total Flow: 1,875,000 million gallons of water

Flow Breakdown (from Section 02401-5 of bid specification)

Source	Volume (gallons)
Pore water – sediment	1,200,000
Pore water – soil	90,000
Decontamination	120,000
5-yr, 24-hr storm	35,000

Solids Loading: 100 to 10,000 µg/L

Metals Loading:

Iron	1875 µg/L	(data from Cayuga Creek with 50% SF)
Lead	42 µg/L	(data from Cayuga Creek with 50% SF)

Notes:

1. The solids loading rate was estimated based on other soil excavation dewatering projects completed by GES.
2. Metals loading concentrations are based upon samples collected from Cayuga Creek: the maximum observed concentrations were increased an additional 50% to provide a factor of safety.

2.3 Primary Treatment Components

The contact water treatment system will include solids removal, suspended solids filtration, and dissolved phase VOC and SVOC treatment. These treatment processes are described in detail in the following sections. Technical specification and datasheets from the equipment vendors for each major piece of equipment are provided as **Attachment 1**.

Bulk Solids Removal

Two closed top 21,000-gallon frac tanks will allow for settling of large particles and suspended solids. To increase detention time, the two frac tanks will be plumbed in series. At the maximum design flow rate of 100 gpm, these tanks will provide approximately 400 minutes of detention time for solids to settle and equalization to occur. Each of the two frac tanks will be equipped with a Tank Alert XT Alarm System. The Tank Alert system will utilize a flashing strobe light and audible alarm to notify operators of high water levels within the frac tanks. A portable generator will power the Tank Alert system. On an as needed basis, the frac tanks will be cleaned and the separated solids will be transferred to the soil stockpiles for treatment.

Should the additional bulk particulate removal be required, GES will blend a high molecular weight anionic polymer such as Pristine's PHI-21030H into the influent of the primary frac tank. The mixed polymer will be stored in a 125-gallon day tank (or equivalent) and pumped into the frac tank's influent piping using a chemical metering pump powered by a portable generator. If implemented, periodic jar testing will be conducted to determine the optimal polymer dosing rate.

Filtration

A diesel driven pump will transfer groundwater from the secondary frac tank through a series of two bag filters plumbed in series (four units in all). The bag filters will prevent solids from accumulating in and fouling the granular activated carbon (GAC) units. Each of the U.F. Strain Rite trade size #2 housings is capable of a flow rate of 150 gpm. The primary bag filters will be rated at 10-microns with the secondary bag filters rated at 5-microns. Reduced flowrates will govern bag filter changes with internal housing pressures of approximately 40 psi indicative of the need for a bag filter replacement. Pressure gauges are mounted on the influent side of each bag filter housing. Sample ports are located on the influent and effluent side of the filtration skid.

VOC Removal

Dissolved phase volatile organic compounds will be treated using liquid phase granular activated carbon. Four Calgon TW-72 carbon units will be plumbed in two trains of two vessels. **Figure 1** depicts the configuration of the carbon vessels. Each carbon vessel will be filled with approximately two thousand pounds (72 cubic feet) of liquid phase 8 x 30 mesh carbon. The carbon vessels are constructed of epoxy coated carbon steel, have an inside diameter of 48 inches, a carbon bed height of 6 ft, and are designed for a flow down operation. Each vessel has been designed to allow for 20% bed expansion during backwashing of the unit. The carbon unit is fitted with a manway for adding fresh carbon, inspecting the interior of the vessel, and removal of the spent carbon. The maximum pressure for each of the vessels if 75 psig. A pressure gauge is mounted on the influent side of vessel. Sample ports are located on the influent and effluent side of the vessel.

Field constructed manifolds will be used to divide the flow such that approximately 50 gpm are directed towards each train of two vessels. Liquid phase carbon changes will be conducted as required to maintain permit compliance and be based upon the results of the laboratory analysis. Prior to use, the carbon will be hydrated with potable water for a minimum of 12 hours.

The vessels may be backwashed to remove silt, sediment, or biological growth which accumulates in the carbon bed. A differential pressure of 15 to 30 psi is an indication that the vessel should be backwashed.

Metals Removal

The proposed metals treatment system was designed to incorporate multiple stages of settling within the bulk solids removal phase followed by filtration within the bag filter skid and liquid phase carbon vessels. The cation resin proposed for use ResinTech CGS. This is a strong acid cation resin in the Na+ form, commonly referred to as softening resin. This resin has a high affinity for metal cations and due to its relatively inexpensive nature is an attractive choice for removing the metals of concern. This resin has high selectivity for divalent metal cations, but will also remove background ions such as hardness (Ca+2 and Mg+2). The total ion load for the resin will include the metals of concern, the hardness ions, along with the iron and lead on the analysis from the Cayuga Creek samples.

Ion exchange resin calculations are completed with cation concentrations represented in the "as CaCO3" forms. The concentrations reported on the analysis will be assumed to be reported "as ion" unless otherwise noted. These ion concentrations have been converted to "as CaCO3"equivalents for the purpose of capacity calculations. Below is a table of concentrations and the conversions from sample data collected.

Metal	*Max. Conc. from Cayuga Creek*	*Conversion Multiplier*	*Concentration as CaCO3*
Lead	0.042 ppm	0.48	0.021 ppm
Iron	1.875 ppm	1.79	3.356 ppm

Based on the above, the total metals concentration as CaCO3 is 3.376 ppm.

The capacity of a cubic foot (cu ft) of virgin CGS resin is approximately 40,000 grains/cu ft. For the purpose of capacity calculations, 32,000 grains/cu ft was used as a 20% safety factor. For reference, 7,000 grains represents 1 pound of metals removal capacity.

To calculate capacity, the concentration of the ionic load is converted from ppm as CaCO3 to grains/gallon as CaCO3. For conversions, 17.1 ppm as CaCO3 is equal to 1 grain/gallon.

3.356 ppm as CaCO3 / 17.1 ppm as CaCO3 per grain/gallon = 0.196 grains/gallon

To calculate capacity, divide the grains capacity of the resin by the load concentration in grains per gallon. The result is the total number of gallons treated per cubic foot of resin expected.

32,000 grains/cu ft divided by 0.196 grains/gallon = approx. 163,265 gallons of water treated per cubic foot of resin. The calculations above can be manipulated as needed as the ionic load changes for the resin

2.5 Treatment System Operation

Overview

Russo Development will provide an on-site treatment operator when water is being treated during regular working hours. The operator will monitor key process parameters to ensure that the system is operating as designed. An example daily log is included in **Attachment 2**. Adjustments will be made as necessary to keep the system operating optimally.

Upon startup of the treatment system, Russo/GES may mobilize up to two additional 21,000 gallon closed top frac tanks to the site. These frac tanks will serve as batch holding vessels for the proof-of-performance testing. Once analytical confirms that the treatment system is in compliance with the discharge permit, the system will operate on a continuous basis and the two frac tanks will be utilized for additional stormwater storage.

The system is not designed for unmanned operation or operation during freezing temperatures. If operation of the equipment extends into winter operations, additional equipment and procedures may be required at an additional expense.

Compliance Sampling

NYSDEC, or their designee, will collect effluent samples from the treatment system's sample ports to document compliance with the permit. These samples will be shipped to a certified laboratory for analysis using a Contractor supplied Purchase Order.

Granular Activated Carbon and Resin Vessels

1. Record the flow rate, total flow, and pressures for each vessel
2. Visually inspect the exterior of the vessel and manifold piping. Leaks typically occur around the ball valves and gaskets on the manways. Report any damage or signs of damage. Make repairs immediately, if possible.
3. Collect influent, midfluent, and effluent compliance samples as required.

Backwashing – Carbon Vessels

The vessels may be backwashed to remove silt, sediment, or biological growth which accumulates in the carbon bed. A differential pressure of 15 to 30 psi is an indication that the vessel should be backwashed.

1. Shutoff the transfer pump
2. Close the influent and effluent ball valves on the vessel to be backwashed
3. Move in the influent hose to the effluent ball valve
4. Install a length of hose on the influent ball valve such that the hose runs to the primary frac tank. Secure the hose to the frac tank
5. Open both ball valves
6. Activate the transfer pump and monitor the pressure at the vessel (maximum vessel pressure is 75 psig). The maximum flow rate for the vessel is 80 gpm.

based on real time sampling and analysis once the treatment system is up and running. Based on the volume of water to be treated of 1,875,000 gallons, approximately 12 cubic feet of CGS resin will be required.

The manufacturer's literature claims that the removal efficiency of the virgin CGS resin for the soluble metal cations will be greater than 90% on a single pass. The resin manufacturer also suggests that hydraulic loading should be in the range of 2-5 gpm/cu ft of resin with a minimum bed depth of 30 inches for effective removal. The proposed system utilizes two TW-36 vessels from Calgon. The resin vessels are constructed of epoxy coated carbon steel, have an inside diameter of 42 inches, a bed height of 4 ft, and are designed for a flow down operation.

The vessels arrangement within the treatment system will be based upon the proposed flowrate. When operating at 50 – 70 gallons per minute, two 36 cu ft vessels in series will provide for both of these design parameters. However, the vessel's configuration will be modified though valve adjustments to a parallel operation when the projected flowrate is in excess of 70 gpm.

Flow Measurement

Prior to discharge, the flow volume will be recorded by a 2-inch diameter Rockwell totalizer, or equivalent, located downstream of the resin vessels.

Waste Disposal

All remediation derived wastes generated as part of the dewatering activities will be managed by Russo Development.

Spent liquid phase carbon and spent resin will be disposed of in the onsite landfill Area #8.

Settled solids removed from the frac tanks will be transported to the onsite landfill Area #8.

Spent filters will be transported to the onsite landfill Area #8.

2.4 Permitting

In accordance with section 01425-Sampling of the contract documents, discharge to Cayuga Creek will be permitted using a general SPDES permit obtained through NYSDEC. Once the system is set up, approximately 1,000-gallons of water will be treated and discharged into a separate holding tank. The discharge will be sampled and sent for laboratory analysis to demonstrate compliance with the discharge limitations outlined in section 01425-Sampling of the contract documents.

7. Shutoff the transfer pump
8. Close the influent and effluent ball valves on the vessel that was backwashed
9. Move in the hose on the effluent ball valve to the influent ball valve
10. Reconnect the effluent ball valve
11. Restart the system and make adjustments for normal operation. If the pressure differential is still above 15 psi, repeat the backwashing procedure.
12. Repeat as necessary for all vessels requiring backwashing

Backwashing – Resin Vessels

The manufacturer recommends that the beds be backwashed at a rate that expands the bed 50-75 percent to remove any foreign matter and reclassify the bed. Per the attached technical specification sheet, a flow rate of 4 gpm/ square foot is required at a temperature of 40°F. With a 42 inch diameter vessel, the minimum required backwashing flowrate for 50 percent bed expansion is 38 gallons per minute at 40°F.

The vessels will utilize the same backwashing procedure for the carbon vessels called out above except the flow will be restricted to approximately 40 gallons per minute.

Bag Filters

Bag filters should be changed when pressures exceed 40 psi. The filtration skid utilizes two banks of two filter housings in parallel (refer to see layout figure). A 10-micron bag filter will be used within the primary filter housing in each bank. The secondary filter housings will use 5-micron bag filters. As each filter bank is capable of processing 150 gpm, the bag filters within one bank can be changed while the other bank is in operation using both the influent and effluent ball valves located at each bank.

Spent filters will be placed in a 5 gallon bucket, or similar, to allow free running fluids to drain from them. Once free of running fluids, the spent filters will be placed in the onsite landfill Area #8. The liquid in the 5-gallon bucket will be transferred to the influent 20,000 gallon frac tank.

Equipment Fueling

All petroleum powered equipment will be refueled by either GES or Russo personnel.

Critical Equipment

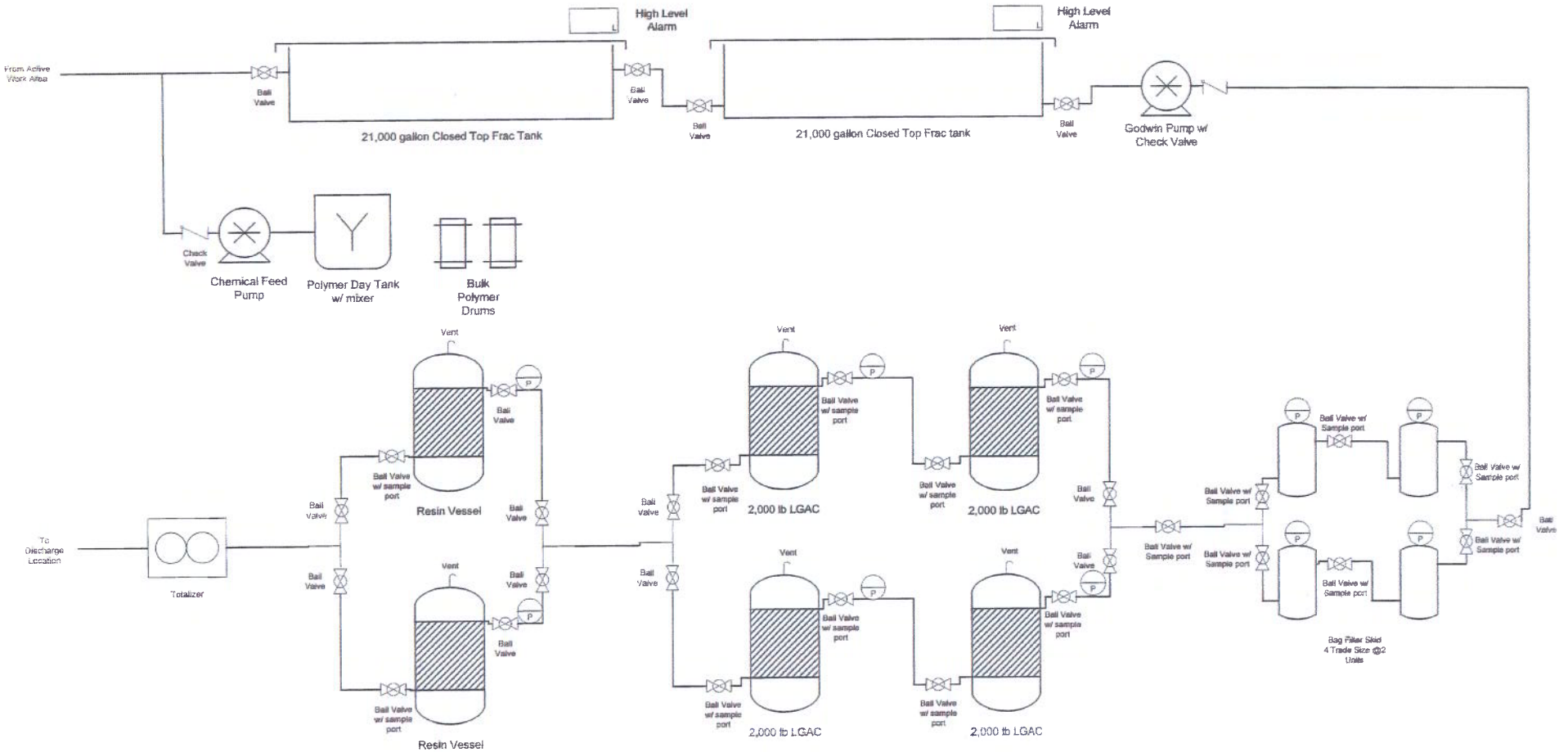
Critical equipment includes the Tank Alert High Level alarms and pressure gauges. The Tank Alert system will be tested daily by inspecting the float for signs of damage and manually lifting the float to verify both the visual and audible alarms sound. Pressure gauges that are identified as faulty will be replaced as soon as possible.

3.0 REFERENCES

Depew Village Landfill Site, Site Number 9-15-015, Contract Number D008513, Contract Documents, March 22, 2012. Ecology and Environment Engineering

Depew Village Landfill Site, Site Number 9-15-015, Contract Number D008513, Title Sheet, Vicinity Map, Site Location Map, and List of Drawings, first issued 5/19/2011, CAD File No. G-1 G-2.dwg, Ecology and Environment Engineering

New York State DEC Website: www.dec.ny.gov/chemical/59707.html



Water Treatment System – 100 gpm

Project Name: Depew Village Landfill Site
NYSDEC Site Number: 915105

APPENDIX C

Permanent Erosion and Sediment Controls and Measures Required by the Contract
(Reference the full-size contract documents for greater clarity)

Area 1

Benway weirs *(contract drawings)*
Rip-rap armoring of creek bank *(contract drawings)*
Rock protection at pipe outlets *(contract drawings)*

Area 1 and Area 2

Rip-rap toe protection *(contract drawings)*

Areas 2 & 6

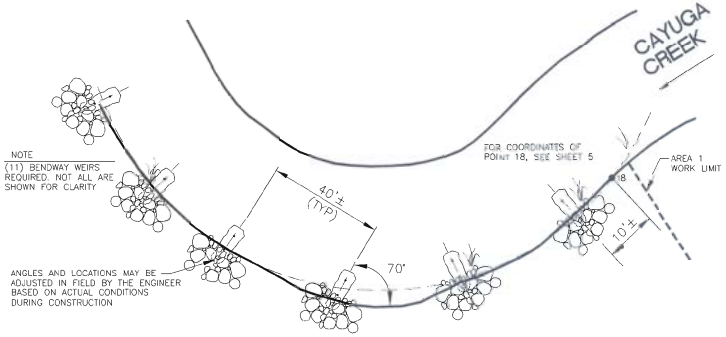
Topsoiling and permanent erosion-control blankets *(contract drawings)*
Submittal #23 – Permanent erosion control blankets

Areas 1, 2, 4, 5, & 6

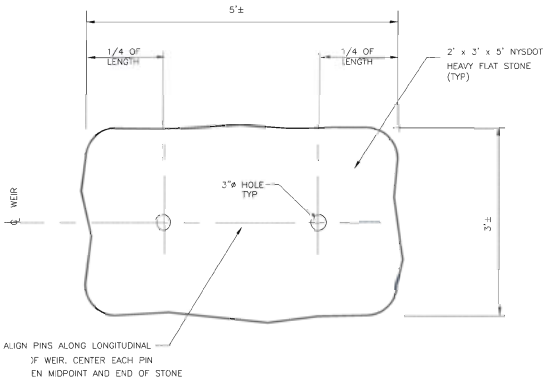
Live stakes, poles and container plants *(contract drawings)*

Misc. Areas

Project specifications for seed mix and erosion control blankets *(Project Manual)*

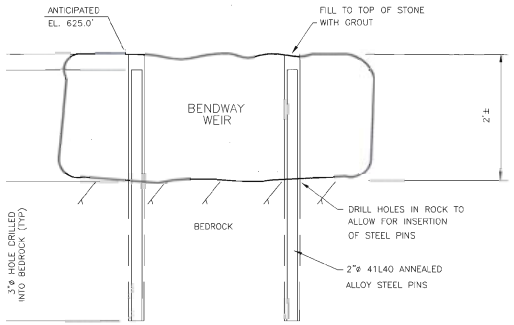


PLAN VIEW - BENDWAY WEIRS



ENLARGED BENDWAY WEIR PLAN VIEW

SCALE: 1" = 1'-0"



SECTION THROUGH BENDWAY WEIR

SCALE: 1" = 1'-0"

NOTE

1. DRILL HOLES IN ROCK TO ALLOW FOR INSERTION OF STEEL PINS.

DWG NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO.	DATE	DWN	APP'D	DESCRIPTION
0	12/16/11	KMK	TRH	ISSUED FOR CONSTRUCTION
REVISIONS				

ecology and environment engineering p.c.

DESIGNED BY	CHECKED BY
C. SCHIFFERLI P.E.	M. WATKE P.E.
DRAWN BY	APPROVED BY
KM KRAJEWSKI/JJ KOHLER	T HEINS P.E. TRH

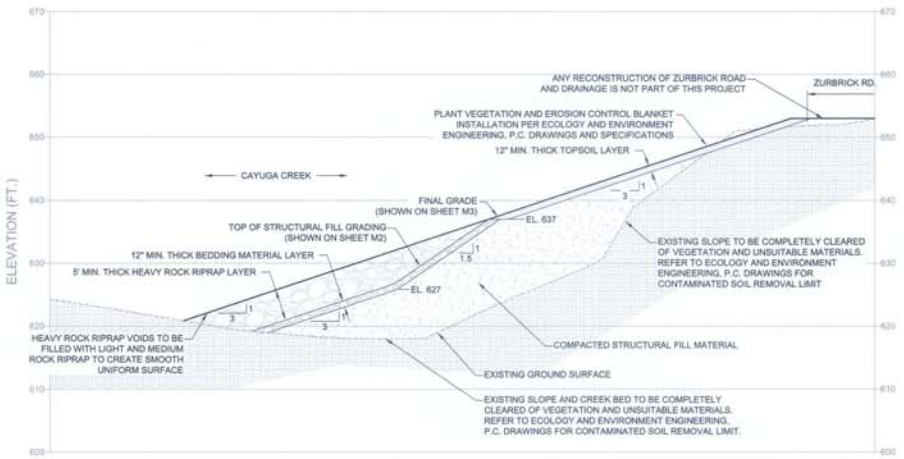
DEPEW VILLAGE LANDFILL SITE

NYSDEC CONTRACT No. D008513

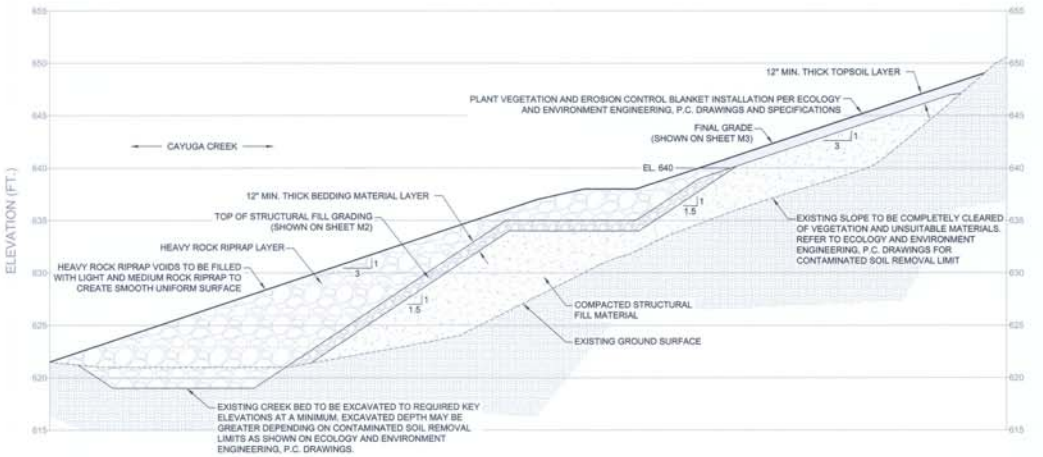
VILLAGE OF DEPEW | ERIE COUNTY | NEW YORK

MISCELLANEOUS DETAILS

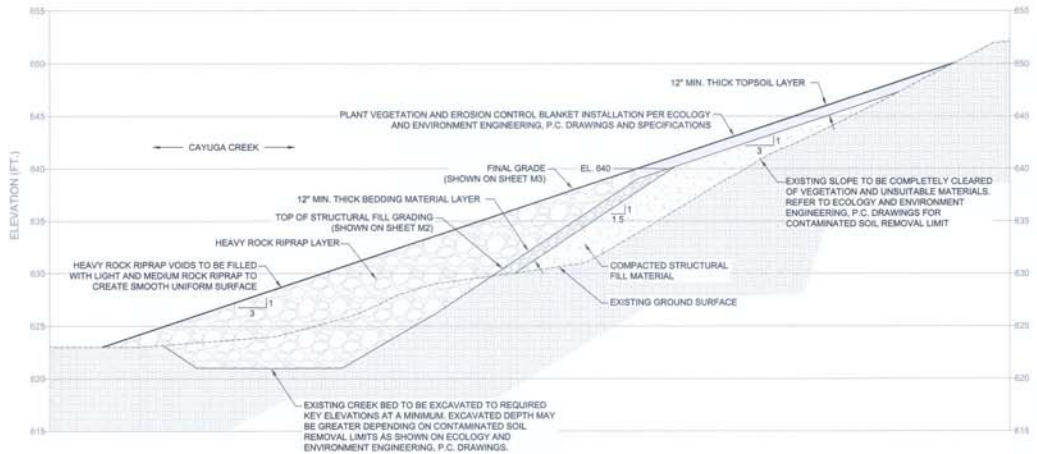
SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.	REV.
NOTED	5/19/11	C-14.dwg	Sheet 16 of 16	B



1 M2M4 **TYPICAL SLOPE SECTION**
SCALE: 1" = 10'



2 M2M4 **DOWNSTREAM KEY SECTION**
SCALE: 1" = 6'



3 M2M4 **UPSTREAM KEY SECTION**
SCALE: 1" = 6'

NOTE:
1. Material shall be placed in horizontal lifts to achieve the final grades shown in section view. No more than two 12-inch thick structural fill lifts shall be installed prior to placing bedding material and heavy rock riprap.

DWG NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO.	DATE	DWN	APP'D	DESCRIPTION
A	–	–	–	–
REVISIONS				

ecology and environment engineering p.c.

McMahon & Mann
Consulting Engineers, P.C.
2495 MAIN STREET, SUITE 432
BUFFALO, NY 14214
(716) 834-8932
FAX: (716) 834-8934

DESIGNED BY	CHECKED BY
A.J.N.	D.R.M.
DRAWN BY	APPROVED BY
A.J.N. / C.R.G.	D.R.M.

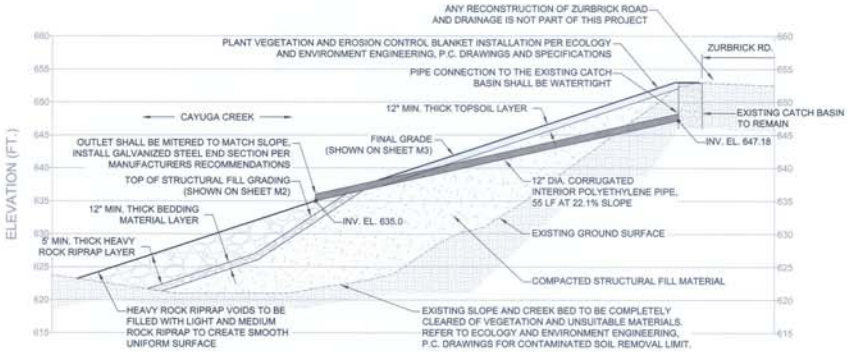
STATE OF NEW YORK — DONALD RICHARD MANN — No. 088778 — LICENSED PROFESSIONAL ENGINEER

DEPEW LANDFILL REMEDIAL DESIGN

DEPEW — ERIE COUNTY — NEW YORK

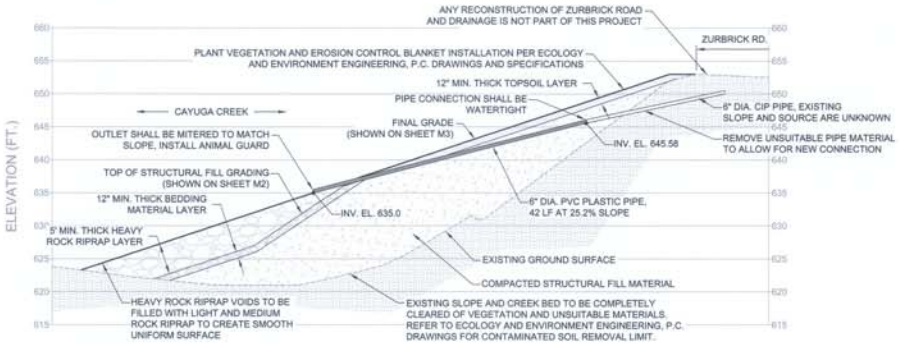
AREA 1
TYPICAL SLOPE SECTIONS

SCALE	FIRST ISSUED	DRAWING NO.	SHEET NO.	REV.
NOTED	DEC. 2011	11006-005b	Sheet M4 of M5	A



1 M2M5 PIPE EXTENSION SECTION 1

SCALE: 1" = 10'

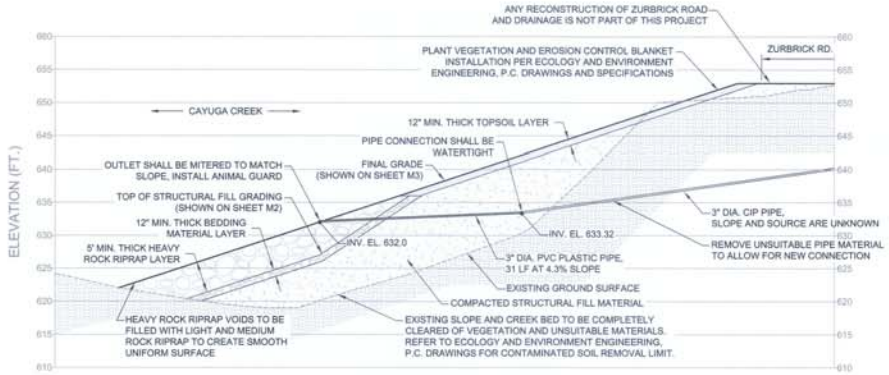


2 M2M5 PIPE EXTENSION SECTION 2

SCALE: 1" = 10'

NOTES:

1. Material shall be placed in horizontal lifts to achieve the final grades shown in section view. No more than two 12-inch thick structural fill lifts shall be installed prior to placing bedding material and heavy rock riprap.
2. Pipe connection location shown on these sections may vary due to unsuitable pipe removal limit. The Contractor shall be prepared to install longer lengths of proposed pipe.



3 M2M5 PIPE EXTENSION SECTION 3

SCALE: 1" = 10'

DWG. NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO.	DATE	DWN	APP'D	DESCRIPTION
A	–	–	–	–
REVISIONS				

ecology and environment engineering p.c.

McMahon & Mann
Consulting Engineers, P.C.
2495 MAIN STREET, SUITE 432
BUFFALO, NY 14214
(716) 834-8932
FAX: (716) 834-8934

DESIGNED BY	CHECKED BY
A.J.N.	D.R.M.
DRAWN BY	APPROVED BY
A.J.N. / C.R.G.	D.R.M.

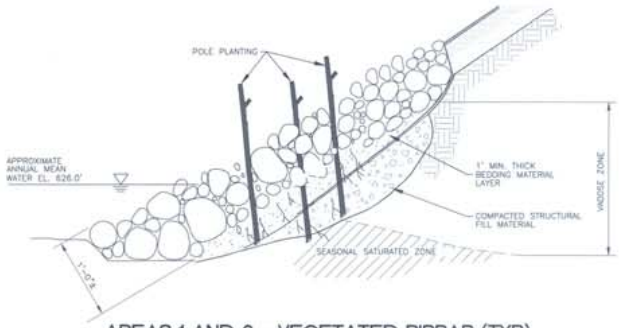
DONALD RICHARD MANN — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

DEPEW LANDFILL REMEDIAL DESIGN

DEPEW — ERIE COUNTY — NEW

AREA 1
PIPE EXTENSION SECTIONS

SCALE	FIRST ISSUED	DRAWING NO.	SHEET NO.
NOTED	DEC. 2011	11006-005c	Sheet M5 of M5

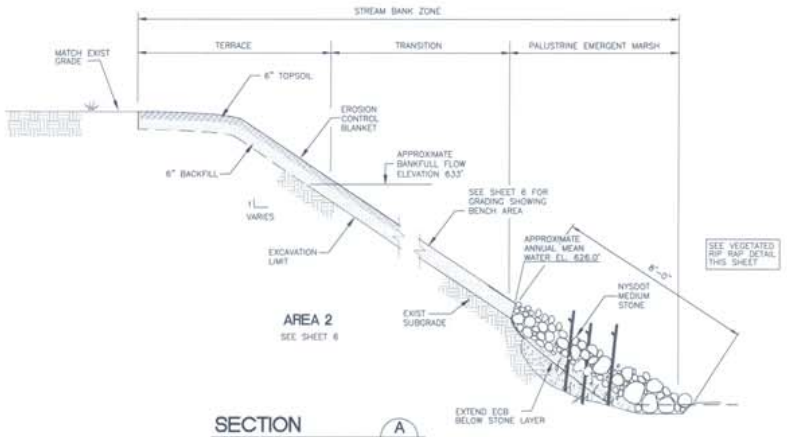


AREAS 1 AND 2 - VEGETATED RIPRAP (TYP)

NOT TO SCALE

NOTES

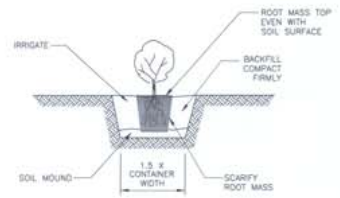
1. INTEGRATE POLE PLANTING TECHNIQUES DURING ROCK PLACEMENT TO ENSURE CONTACT WITH FILL.
2. PLANT DEEPLY IF POSSIBLE.
3. PLACE RIPRAP CAREFULLY, DO NOT END DUMP.
4. POLES SHALL BE PLANTED IN AREA 1 RIPRAP FROM MEAN WATER EL. 626.0' TO BANKFULL EL. 635.0'.
5. SEE SHEET M1 FOR AREAS DEFINED AS RIPRAP WITHIN AREA 1. THESE AREAS REPRESENT VEGETATED RIPRAP AREAS.



SECTION

A
6 15

NOT TO SCALE

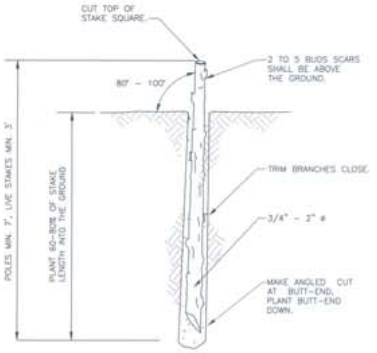


CONTAINER PLANTING (TYP)

NOT TO SCALE

NOTES

1. INSTALL #5 CONTAINER
2. SCARIFY SIDES AND BOTTOM OF HOLE.
3. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
4. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
5. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT FINISHED GRADE.
6. PLUMB AND BACKFILL PLANTINGS WITH ORIGINAL SOIL.
7. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
8. BACKFILL VOIDS AND WATER SECOND TIME.
9. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS MOISTURE IS EXCESSIVE.
10. REFER TO SHEET 14 FOR PLANTING DENSITY.

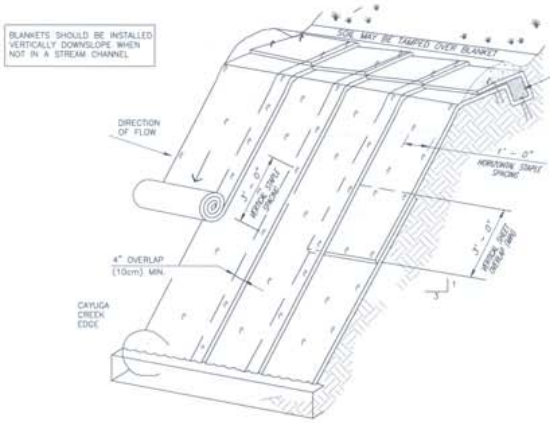


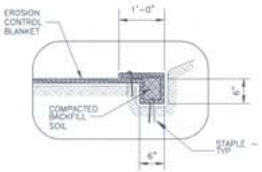
LIVE STAKES AND POLE PLANTING (TYP)

SCALE: 3" = 1'-0"

NOTES

1. HARVEST AND PLANT STAKES DURING THE DORMANT SEASON, WITH THE EXCEPTION OF WILLOW. WILLOW STAKES CAN BE HARVESTED AND PLANTED YEAR ROUND.
2. USE HEALTHY, STRAIGHT AND LIVE WOOD AT LEAST 1 YEAR OLD.
3. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION.
4. USE AN OVERSIZED IRON BAR THE SIZE OF THE LIVE STAKE TO MAKE A PILOT HOLE IN FIRM SOILS.
5. SOAK CUTTINGS FOR AT LEAST 24 HOURS PRIOR TO INSTALLATION. SOAK FOR 5-7 DAYS FOR BEST RESULTS.
6. INSTALL THE LIVE STAKE IN THE HOLE AND TAMP SOIL AROUND THE LIVE STAKE.
7. REFER TO SHEET 14 FOR PLANTING DENSITY.





ANCHOR TRENCH DETAIL

NOT TO SCALE

AREAS 2, 6 EROSION CONTROL BLANKET SLOPE INSTALLATION (TYP)

NOT TO SCALE

NOTES

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. HOLES IN BLANKET SHALL BE FILLED WITH SOIL UNTIL LEVEL.
3. LAY BLANKETS LOOSELY AND STAKE WITH BIODEGRADABLE STAKES TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. REFER TO SHEET 14 FOR ESTIMATED EROSION CONTROL BLANKET QUANTITIES.

DWG. NO.	DATE	DESCRIPTION
REFERENCE DRAWINGS		

NO.	DATE	DWN.	APP'D	DESCRIPTION
0	12/16/11	KMK	TRH	ISSUED FOR CONSTRUCTION

REVISIONS

ecology and environment engineering p.c.

DESIGNED BY: C. SCHIFFERLI P.E.
CHECKED BY: T. HEINS P.E.
DRAWN BY: KM KRAJEWSKI/JJ KOHLER
APPROVED BY: T HEINS P.E. T.R.H

STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER

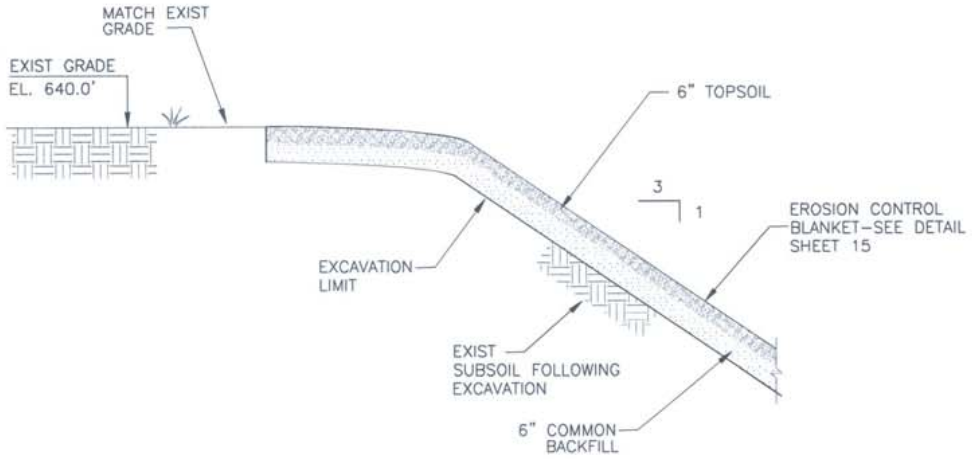
DEPEW VILLAGE LANDFILL SITE

NYSDEC CONTRACT No. D008510

VILLAGE OF DEPEW | ERIE COUNTY | NEW YORK

MISCELLANEOUS SECTIONS AND DETAILS

SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.	REV.
NOTED	5/19/11	C-13.dwg	Sheet 15 of 16	0



SLOPE SECTION - AREA 6

NOT TO SCALE

ecology and environment engineering p.c.

DESIGNED BY	CHECKED BY
C. SCHIFFERLI P.E.	H LITTLE P.E.
DRAWN BY	APPROVED BY
KM KRAJEWSKI/JJ KOHLER	T HEINS P.E.

STATE OF NEW YORK · GERALD A. STROBEL P.E. · LICENSED PROFESSIONAL ENGINEER

DEPEW VILLAGE LANDFILL SITE

NYSDEC CONTRACT No. D008513

VILLAGE OF DEPEW ERIE COUNTY NEW YORK

STREAM BANK GRADING AND RESTORATION PLAN - AREA 6

SCALE	FIRST ISSUED	CAD FILE NO.	SHEET NO.	REV.
NOTED	12/02/11	C-8.dwg	Sheet 10 of 16	0

Tensar International Corporation
5401 St. Wendel-Cynthiana Road
Poseyville, Indiana 47633
Tel. 800.772.2040
Fax 812.867.0247
www.nagreen.com

Material and Performance Specification
SC250 Turf Reinforcement Mat

Description

The composite turf reinforcement mat (C-TRM) shall be a machine-produced mat of 70% straw and 30% coconut fiber matrix incorporated into permanent three-dimensional turf reinforcement matting. The matrix shall be evenly distributed across the entire width of the matting and stitch bonded between a heavy duty UV stabilized nettings with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, an ultra heavy UV stabilized, dramatically corrugated (crimped) intermediate netting with 0.5 x 0.5 inch (1.27 x 1.27 cm) openings, and covered by an heavy duty UV stabilized nettings with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings. The middle corrugated netting shall form prominent closely spaced ridges across the entire width of the mat. The three nettings shall be stitched together on 1.50 inch (3.81cm) centers with UV stabilized polypropylene thread to form permanent three-dimensional turf reinforcement matting. All mats shall be manufactured with a colored thread stitched along both outer edges as an overlap guide for adjacent mats.

The SC250 shall meet Type 5A, B, and C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) *FP-03 Section 713.18*

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.72 in (18.3 mm)
Resiliency	ASTM 6524	95.2%
Density	ASTM D792	0.53 oz/in^3
Mass/Unit Area	ASTM 6566	17.88oz/yd^2 (606 g/m^2)
UV Stability	ASTM D4355 /1000 hr	100%
Porosity	ECTC Guidelines	99%
Stiffness	ASTM D1388	222.65 oz-in
Light Penetration	ECTC Guidelines	8.9%
Tensile Strength –MD	ASTM D6818	620 lbs/ft (9.05 kN/m)
Elongation – MD	ASTM D6818	35%
Tensile Strength – TD	ASTM D6818	737 lbs/ft (10.75 kN/m)
Elongation – TD	ASTM D6818	16%

Material Content		
Matrix	70% Straw Fiber 30% Coconut Fiber	0.35 lbs/yd^2 (0.27 kg/m^2) 0.15 lbs/yd^2 (0.08 kg/m^2)
Netting	Top and Bottom, UV stabilized Polypropylene Middle, Corrugated UV stabilized Polypropylene	5 lb/1000 ft^2 (2.44 kg/100 m^2) 24 lb/1000 ft^2 (11.7 kg/100m^2)
Thread	Polypropylene, UV stable	

Maximum Permissible Shear Stress		
	Short Duration	Long Duration
Phase 1 Unvegetated	3.0 lbs/ft^2 (144 Pa)	2.5 lbs/ft^2 (120Pa)
Phase 2 Partially Veg.	8.0 lbs/ ft^2 (383 Pa)	8.0 lbs/ft^2 (383 Pa)
Phase 3 Fully Veg.	10.0 lbs/ft^2 (480 Pa)	8.0 lbs/ ft^2 (383 Pa)
Unvegetated Velocity	9.5 ft/s (2.9 m/s)	
Vegetated Velocity	15 ft/s (4.6 m/s)	

Standard Roll Sizes	
Width	6.5 ft (2.0 m)
Length	55.5 ft (16.9 m)
Weight ± 10%	34 lbs (15.42 kg)
Area	40 yd^2 (33.4 m^2)

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.0010	0.0209	0.0507
20-50 ft	0.0081	0.0266	0.0574
≥ 50 ft (15.2 m)	0.0455	0.0555	0.081

Bench Scale Testing (NTPEP)		
Test Method	Parameters	Results
ECTC 2 Rainfall	50 mm (2 in)/hr-30 min 100mm (4 in)/hr-30 min 150 mm (6 in)/hr-30 min	SLR** = 18.25 SLR** = 20.97 SLR** = 22.74
ECTC 3 Shear Res.	Shear at 0.50 inch soil loss	7.7 lbs/ft^2
ECTC 4 Germination	Top Soil, Fescue, 21 day incubation	523% improvement of biomass

* Bench Scale tests should not be used for design purposes
** Soil Loss Ratio = Soil Loss Bare Soil/Soil Loss with RECP

Roughness Coefficients- Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.040
0.50 – 2.0 ft	0.040-0.012
≥ 2.0 ft (0.60 m)	0.011

Proud Participant of:

Tensar International Corporation warrants that at the time of delivery the product furnished hereunder shall conform to the specification stated herein. Any other warranty including merchantability and fitness for a particular purpose, are hereby executed. If the product does not meet specifications on this page and Tensar is notified prior to installation, Tensar will replace the product at no cost to the customer. **This product specification supersedes all prior specifications for the product described above is and is not applicable to any products shipped prior to January 1, 2011.**

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2)	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 1 ZURBRICK ROAD SLOPE	TERRACE	C	T	1 per 400 FT^2	19,943	50	FAC FACU	Acer rubrum – Red Maple Acer saccharum – Sugar Maple Celtis occidentalis – Hackberry Pinus strobus– Eastern White Pine Platanus occidentalis – American Sycamore Quercus macrophylla – Bur Oak Q. palustris – Pin Oak Q. rubra – Northern Red Oak Tilia Americana – American Basswood Tsuga canadensis – Eastern Hemlock
		C	S	1 per 100 FT^2	19,943	200	FAC FACU	Aronia melanocarpa – Black Chokeberry Morella pennsylvanica – Northern Bayberry Prunus pumila var. depressa – Catskill Sand Cherry
	RIPRAP IN TRANSITION TO RIPARIAN UPLAND (TRANSITION) PALUSTRINE TO EMERGENT MARSH(PEM)	P	S	5 per 9 FT^2	6,028	3,349	FACW OBL	Cornus amomum–Silky Dogwood S. exigua – Sandbar Willow Salix discolor – Pussy Willow C. sericea – Redosier Dogwood Cephalanthus occidentalis – Buttonbush

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2)	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 2 LANDFILL TIP	TERRACE	C	S	1 per 100 FT^2	23,997	240	FAC, FACU	Aronia melanocarpa – Black Chokeberry, Morella pennsylvanica – Northern Bayberry Prunus pumila var. depressa – Catskill Sand Cherry
	TRANSITION	C	T	1 per 400 FT^2	18,571	46	FAC FACU FACW	S. fragilis – Crack Willow S. nigra – Black Willow Acer rubrum – Red Maple Celtis occidentalis – Hackberry Platanus occidentalis – American Sycamore Q. palustris – Pin Oak Tilia Americana – American Basswood
		C	S	1 per 25 FT^2	18,571	743	FAC OBL FACW	Aronia melanocarpa – Black Chokeberry C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow
		LS	S, T	5 per 9 FT^2	18,571	10,317	FACW OBL	C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow S. nigra – Black Willow
	PEM	C	S	1 per 25 FT^2	7,357	294	OBL FACW	Alnus incana ssp rugosa – Speckled Alder Aronia melanocarpa – Black Chokeberry Cephalanthus occidentalis – Buttonbush S. exigua – Sandbar Willow
		LS	S	5 per 9 FT^2	7,357	4,087	OBL	Cephalanthus occidentalis – Buttonbush S. exigua – Sandbar Willow

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2)	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 4 STREAM BANK SLOPE	TRANSITION	C	T	1 per 400 FT^2	9,505	24	FAC FACU FACW	S. fragilis – Crack Willow S. nigra – Black Willow Acer rubrum – Red Maple Celtis occidentalis – Hackberry Platanus occidentalis – American Sycamore Q. palustris – Pin Oak Tilia Americana – American Basswood
		C	S	1 per 150 FT^2	9,505	64	FACW OBL	Cornus amomum–Silky Dogwood S. exigua – Sandbar Willow Salix discolor – Pussy Willow C. sericea – Redosier Dogwood
		LS	S, T	1 per 10 FT^2	9,505	951	FACW OBL	S. fragilis – Crack Willow Cornus amomum–Silky Dogwood S. exigua – Sandbar Willow Salix discolor – Pussy Willow C. sericea – Redosier Dogwood S. nigra – Black Willow
	PEM	C	S	1 per 150 FT^2	8,282	55	OBL	S. exigua – Sandbar Willow Cephalanthus occidentalis – Buttonbush
		LS	S	1 per 10 FT^2	8,282	828	OBL	S. exigua – Sandbar Willow Cephalanthus occidentalis – Buttonbush

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2) [3]	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 5 LANDFILL STREAM BANK WEST	TRANSITION TO RIPARIAN UPLAND	C	T	1 per 400 FT^2	9,115	23	FACW	S. fragilis – Crack Willow S. nigra – Black Willow
		C	S	1 per 25 FT^2	9,115	365	FAC OBL FACW	Aronia melanocarpa – Black Chokeberry C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow
		LS	S, T	5 per 9 FT^2	9,115	5,064	FACW OBL	C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow S. nigra – Black Willow
	PEM	C	S	1 per 25 FT^2	2,735	109	FACW OBL	Alnus incana ssp rugosa – Speckled Alder Aronia melanocarpa – Black Chokeberry Cephalanthus occidentalis – Buttonbush S. nigra – Black Willow
		LS	S	5 per 9 FT^2	2,735	1,519	OBL	Cephalanthus occidentalis – Buttonbush S. exigua – Sandbar Willow

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2)	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 6 LANDFILL EXCAVATION AREA WEST	TRANSITION TO RIPARIAN UPLAND	C	T	1 per 400 FT^2	5,576	14	FACW	S. fragilis – Crack Willow S. nigra – Black Willow
		C	S	1 per 25 FT^2	5,576	223	FACW OBL	Cornus amomum–Silky Dogwood S. exigua – Sandbar Willow Salix discolor – Pussy Willow C. sericea – Redosier Dogwood
		LS	S, T	5 per 9 FT^2	5,576	3,098	FACW OBL	S. fragilis – Crack Willow Cornus amomum–Silky Dogwood S. exigua – Sandbar Willow Salix discolor – Pussy Willow C. sericea – Redosier Dogwood S. nigra – Black Willow
	TERRACE	B	S	1 EVERY 30 FT ALONG TOP OF BANK	186 LF	6	OBL	Acer rubrum – Red Maple Acer saccharum – Sugar Maple Platanus occidentalis – American Sycamore Tilia Americana – American Basswood

LOCATION	STREAM BANK ZONE	FORM [1]	TYPE [2]	DENSITY	ESTIMATED AREA (FT^2)	ESTIMATED # OF PLANTS	WETLAND INDICATOR [4]	SPECIES
AREA 7 STREAM BANK WEST OF THE BORDEN ROAD BRIDGE	TRANSITION TO RIPARIAN UPLAND	C	T	1 per 400 FT^2	19,893	50	FACW	S. fragilis – Crack Willow S. nigra – Black Willow
		C	S	1 per 25 FT^2	19,893	799	FAC OBL FACW	Aronia melanocarpa – Black Chokeberry C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow
		LS	S, T	5 per 9 FT^2	19,893	11,052	FACW OBL	C. sericea – Redosier Dogwood Cornus amomum–Silky Dogwood Salix discolor – Pussy Willow S. exigua – Sandbar Willow S. nigra – Black Willow
	PEM	C	S	1 per 25 FT^2	1,357	54	FACW OBL	Alnus incana ssp rugosa – Speckled Alder Aronia melanocarpa – Black Chokeberry Cephalanthus occidentalis – Buttonbush S. nigra – Black Willow
		LS	S	5 per 9 FT^2	1,357	754	OBL	Cephalanthus occidentalis – Buttonbush S. exigua – Sandbar Willow

SECTION 02920 – SEEDING AND PLANTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The CONTRACTOR shall provide and install erosion control blankets, seeding, and plantings, and restore the Site as shown and noted on the Contract Drawings, and as specified herein.

1.2 RELATED SECTIONS

A. Section 01010 – Summary of Work

B. Section 01425 - Sampling

C. Section 02110 – Site Preparation, Clearing, and Grubbing

D. Section 02220 - Excavation

E. Section 02510 – Backfilling – Common Fill, Topsoil, Gravel Fill, and Stone (Depew Landfill)

F. Section 02775 – Site Restoration

1.3 SUBMITTALS

A. The CONTRACTOR shall submit the seeding and planting report with the following components:

1. The name and location of each proposed source of seed and plants.

2. Certification from suppliers that all seed and plant to be supplied for use on this project shall meet the requirements of this section.

3. A guaranteed analysis of the seed mix(es).

4. Certification tests from each lot of seed are consistent with the lot label in accordance with the New York State Agriculture and Marketing Law.

5. A summary of the construction and maintenance records as submitted throughout the project in the Final Project Report. A summary of work that has been completed, the amount of materials planted and utilized, and the area each was installed on in the Final Project Report.

B. Erosion Control Blankets: The CONTRACTOR shall submit documentation that the erosion control blankets comply with NYSDOT Specification 713 – Landscape Development Materials, as specified herein.

PART 2 - PRODUCTS

2.1 PERMANENT VEGETATION SPECIES AND SEED MIXTURES

A. Provide materials in accordance with the Species List (see Table 1) by specific area. Provide seed of the latest season's crop in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Invasive vegetation species are not allowed.

B. Hydroseed with a grass seed mixture that is fresh, clean, and of the current season's crop. The products shall be delivered in unopened containers bearing the guaranteed analysis of the mix.

C. Install live stakes, poles, and container plants capable of growth and rooting and free of disease or defects at the time of installation. See Tables 1 through 9 for permanent densities per Area. Contractor shall install a nearly equal amount of each species in all planting areas.

Table 1 Selected Plant Species for Depew Village Landfill Construction Areas

Plant Species	Type[1]	Form[2]	Wetland Indicator[3]	Streambank Zone
Red Maple (*Acer rubrum*)	T	C, B	FAC	Transition to Riparian Up-land (Transition), Terrace
Sugar Maple (*Acer saccharum*)	T	C, B	FACU	Terrace
Speckled Alder (*Alnus incana ssp rugosa*)	S	C	FACW	Palustrine Emergent Marsh (PEM)
Black Chokeberry (*Aronia melano-carpa*)	S	C	FAC	PEM, Transition
Redosier Dogwood (*C. sericea*)	S	P, LS,C	FACW	Transition
Hackberry (*Celtis occidentalis*)	T	C	FACU	Transition, Terrace
Buttonbush (*Cephalanthus occiden-talis*)	S	P, LS,C	OBL	PEM
Silky Dogwood (*Cornus amomum*)	S	P, LS,C	FACW	Transition
Northern Bayberry (*Morella penn-sylvanica*)	S	C	FAC	Terrace
Eastern White Pine (*Pinus strobus*)	T	C	FACU	Terrace
Catskill Sand Cherry (*Prunus pumila var.depressa*)	S	C	FACU	Terrace
American Sycamore (*Platanus occi-dentalis*)	T	C, B[4]	FACW	Transition, Terrace
Bur Oak (*Quercus macrophylla*)	T	C	FAC	Terrace
Pin Oak (*Q. palustris*)	T	C	FAC	Transition, Terrace
Northern Red Oak (*Q. rubra*)	T	C	FACU	Terrace
Pussy Willow (*Salix discolor*)	S	P, LS,C	FACW	Transition
Sandbar Willow (*S. exigua*)	S	P, LS,C	OBL	PEM, Transition
Crack Willow (*S. fragilis*)	T	LS,C	FACW	Transition
Black Willow (*S. nigra*)	T	LS,C	FACW	Transition

Table 1 Selected Plant Species for Depew Village Landfill Construction Areas				
Plant Species	**Type[1]**	**Form[2]**	**Wetland Indicator[3]**	**Streambank Zone**
American Basswood (*Tilia Americana)*	T	C, B	FAC	Transition, Terrace
Eastern Hemlock (*Tsuga Canadensis)*	T	C	FAC	Terrace

Key:

[1] T-Tree, S-Shrub
[2] P-Pole, LS-Live Stake, C-Container, B-Ball and Burlap
[3] Wetland Indicator Status - Indicator Status Designation signifying its frequency of occurrence in a wetland (Obligate [OBL], Facultative Wetland [FACW], Facultative [FAC], and Facultative Upland [FACU]).
[4] Ball and Burlap to be planted at top of bank in Area 6 only.

Table 2 Average Densities for Construction Area 1 – Zurbrick Road Slope	
Planting Feature	**Average Density[1]**
Poles in Riprap	5 per 9 SF
Container Plant Shrubs	1 per 100 SF
Container Plant Trees	1 per 400 SF
Seed Mix	2 pounds per 1,000 SF
Annual Rye Grass	1 pound per 5,000 SF

[1] Final spacing and species selection will be determined by specific bank and surface conditions (slope, aspect, etc.) and stock availability. All planting feature density estimates are independent of each other.

Key:
SF = square feet.

Table 3 Average Densities for Construction Area 2 – Depew Village Landfill Tip; Construction Area 5 – Landfill Streambank, West; and Construction Area 7 – Streambank Downstream of the Borden Road Bridge	
Planting Feature	**Average Density[1]**
Live Stakes	5 per 9 SF
Container Plant Shrubs	1 per 25 SF
Container Plant Trees	1 per 400 SF
Seed Mix	2 pounds per 1,000 SF

[1] Final spacing and species selection will be determined by specific bank and surface conditions (slope, aspect, etc.) and stock availability. All planting feature density estimates are independent of each other.

Key:
SF = square feet.

Table 4 Average Densities for Area 4 – Landfill Streambank Soils	
Planting Feature	**Average Density[1]**
Live Stakes	4 per 10 SF
Container Plant Shrubs	1 per 30 SF
Container Plant Trees	1 per 400 SF
Seed Mix	2 pounds per 1,000 SF

[1] Final spacing and species selection will be determined by specific bank and surface conditions (slope, aspect, etc.) and stock availability. All planting feature density estimates are independent of each other.

Key:
SF = square feet.

Table 5 Average Densities for Area 6 – Landfill Excavation, West	
Planting Feature	**Average Density[1]**
Live Stakes	5 per 9 SF
Container Plant Shrubs	1 per 25 SF
Container Plant Trees	1 per 400 SF
Ball and Burlap Trees	1 every 30 feet along top of bank
Seed Mix	2 pounds per 1,000 SF

[1] Final spacing and species selection will be determined by specific bank and surface conditions (slope, aspect, etc.) and stock availability. All planting feature density estimates are independent of each other.

Key:
SF = Square feet.

Table 6 Riparian Seed Mix for PEM Zone
Ernst OBL-FACW Wetland Mix – ERNMX 120
20% fox sedge (*Carex vulpinoidea*) PA Ecotype
20% Virginia wild rye (*Elymus virginicus)* PA Ecotype
10% giant bur reed (*Sparganium eurycarpum)* PA Ecotype
8% nodding sedge (*Carex gynandra*) PA Ecotype
5% hop sedge (*Carex lupulina*) PA Ecotype
5% fringed (nodding) sedge (*Carex crinita*) PA Ecotype
5% blunt broom sedge (*Carex scoparia)* PA Ecotype
5% soft rush (*Juncus effuses)*
5% lurid (shallow) sedge (*Carex lurida*) PA Ecotype
5% eastern bur reed (*Sparganium americanum)*
4% deer tongue, "tioga" (*Panicum clandestinum [Dichanthelium c.])*
3% green bulrush (*Scirpus atrovirens)* WI Ecotype
2% cosmos (bristly) sedge (*Carex comosa)* PA Ecotype
2% woolgrass (*Scirpus cyperinus)* PA Ecotype
1% rice cutgrass (*Leersia oryzoides)* PA Ecotype

Table 7 Seed Mix for Transition Zone and Soil Disposal Areas
Ernst FACW Wetland Meadow Mix – ERNMX 122
20% Virginia wild rye (*Elymus virginicus)*
19% fox sedge (*Carex vulpinoidea)*
7% green bulrush (*Scirpus atrovirens)*
5.5% blue vervain (*Verbena hastate)*
5% ox-eye sunflower (*Heliopsis helianthoides)*
4% boneset (*Eupatorium perfoliatum)*
4% American mannagrass (*Gylceria grandis)*
3% lurid/shallow sedge (*Carex lurida)*
3% spotted Joe Pye weed (*Eupatorium maculatum)*
3% soft rush (*Juncus effuses)*
3% many Leaved bulrush (*Scirpus polyphyllus)*
2.5% blunt broom grass (*Carex scoparia)*
2% swamp milkweed (*Asclepias incarnate)*
2% cosmos/bristly sedge (*Carex comosa)*
2% hop sedge (*Carex lupulina)*
2% *Helenium autumnale PA or VA*
2% blue flag (*Iris versicolor)*
2% giant ironweed (*Vernonia gigantean)*
1% New England aster (*Aster novae-angliae)*
1% wild brome grass (*Bromus altissima)*
1% awl sedge (*Carex stipata)*
1% rattlesnake grass (*Glyceria Canadensis)*
1% fowl mannagrass (*Glyceria striata)*
1% path rush (*Juncus tenuis)* PA Ecotype
1% golden Alexanders (*Zizia aurea)*
.5% flat-topped white aster (*Aster umbellatus)*
.5% Turk's cap lilly (*Lilium superbum)*
.5% square-stemmed monkey flower (*Mimulus ringens)*
.5% ditch stonecrop (*Penthorum sedoides)*

Table 8 Seed Mix for Streambank Terrace Zone
Ernst Floodplain Mix – ERNMX 154
20% Virginia wild rye (*Elymus virginicus)*
20% fox sedge (*Carex vulpinoidea)*
14% deertongue, "Tioga" (*Panicum clandestinum)*
10% indiangrass (*Sorghastrum nutans)*
10% big bluestem, "Niagara" (*Andropogon)*
5% switchgrass, "cave-in-rock" (*Panicum virgatum)*
4% fringed (nodding) sedge (*Carex crinite)*
3% common sneezeweed (*Helenium autumnale)*
3% blue vervain (*Verbena hastate)*
2% oxeye sunflower (*Heliopsis helianthoides)*
2% boneset (*Eupatorium perfoliatum)*
2% purplestem aster (*Aster puniceus)*
1% swamp milkweed (*Asclepias incarnate)*
1% seedbox (*Ludwigia alternifolia)*
1% great blue lobelia (*Lobelia siphilitica)*
1% spotted beebalm (*Monarda punctata)*
1% grassleaf goldenrod (*Euthamia graminifolia)*

Table 9 Seed Mix for Construction Area 8 - Landfill Cap Three Pounds per 1,000 SF Density
Ernst Native Steep Slope Mix with Annual Rye Grass – ERNMX 181
26% Indiangrass (*Sorghastrum nutans)*
20% annual ryegrass (*Lolium multiflorum)*
15% little bluestem (*Schizachyrium scoparium)*
12% big Canada wildrye (*Elymus canadensis)*
8% Virginia wildrye (*Elymus virginicus)*
4% switchgrass, "Cave-in-Rock" (*Panicum virgatum)*
3% purple coneflower (*Echinacea purpurea)*
3% purpletop (*Tridens flavus)*
2% autumn bentgrass (*Agrostis perennans)*
2% blackeyed Susan (*Rudbeckia hirta)*
2% partridge pea (*Chamaecrista fasciculate [Cassia f.])*
2% ticklegrass (*Agrostis scabra)*
1% marsh (dense) blazing star (spiked gayfeather) (*Liatris spicata)*

2.2 STAKES AND POLES

A. Obtain live stakes and poles from live and healthy trees/plants. The recommended species for live stakes and poles are found in Table 1.

B. The stakes and poles must exhibit ample rigidity to enable being driven into hard ground, with sufficient flexibility to resist shattering. All live stakes, poles and container plants shall be capable of growth and rooting and free of disease or defects at the time of installation.

2.3 CONTAINER PLANTS

A. Container plants will be #1 container minimum, #5 preferred.

2.4 WATER

A. Water for irrigation, soaking of plants and cuttings, and dust control shall be the responsibility of the CONTRACTOR. Water shall be clean, free of contaminants, and have a turbidity of less than 20 nephelometric turbidity units (NTUs).

2.5 EROSION CONTROL BLANKETS

A. For Area 2 only: Erosion Control Blanket shall meet requirements in New York State Department of Transportation Specification 713 – Landscape Development Materials, Section 713-07 Rolled Erosion Control Products and Soil Stabilizers, Class III (Permanent), Type A. Use Tensar Vmax3 SC250 or approved equal.

B. For Areas 1 and 6 only: Erosion Control Blanket shall meet requirements in New York State Department of Transportation Specification 713 – Landscape Development Materials, Section 713-07 Rolled Erosion Control Products and Soil Stabilizers, Class II, Type D.

2.6 FERTILIZER

A. Granular, 10-10-10, Nitrogen-Phosphorus-Potassium Ratio.

2.7 BALL AND BURLAP TREES

A. Ball and burlap trees will be caliper size 2.5-inch to 3-inch.

PART 3 - EXECUTION

3.1 PLACEMENT OF SEED

A. The CONTRACTOR shall hydroseed all required areas, ensuring that a pre-germinated hydroseed mix is used.

3.2 SEEDING GUARANTEE

A. The CONTRACTOR shall guarantee the vegetative cover for one calendar year from the date of planting. At the end of the guarantee period, any dead, unhealthy, or badly impaired seedlings shall be replaced. All replacements shall be of the same kind as the originals. The cost of such replacements to be borne by the CONTRACTOR.

APPENDIX D

Prime Contractor and Subcontractor Certifications of SWPPP

PRIME CONTRACTOR'S CERTIFICATION of the SWPPP

A. . Contractor or subcontractor information

Russo Development, Inc.
Company name

3710 Milestrip Road
Address

Blasdell NY 14219
State *Zip*

Phone 716- 844-4745

Fax 716-931-9071

Emergency phone 716-359-4189 ew cell

Email ewarren@russodev.com

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the OWNER OF THE SITE and/or the OPERATOR OF THE SITE must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Storm Water Discharges from Construction Activities, and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

B. Elements of construction or of implementing the SWPPP for which the contractor is responsible:

General contractor; Excavations and grading; Installation and maintenance of erosion and sediment control measures, Site housekeeping and pollution prevention during construction.

C. Responsible party

Eric Warren
Signature of responsible officer

Project Manager
Title

10/16/12
Date

Eric Warren
Name (printed)

D. Designated NYS-certified, Trained Contractor who shall be responsible for implementing the SWPPP and will be on site during land-disturbance activities:

Paul Smeader
Name (printed)

Superintendent
Title

(716) 771-6257
Contact Phone No.

SWT # 29T-0121-58

SUBCONTRACTOR'S CERTIFICATION of the SWPPP

A. Subcontractor information

Cardno/JF New
Company name

708 Roosevelt Road
Address

Walkerton Indiana 46574
State *Zip*

Phone 574-586-3400
Fax 574-586-3446
Emergency phone 574-229-2904 jk cell
Email jon.kingston@cardno.com

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the OWNER OF THE SITE and/or the OPERATOR OF THE SITE must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Storm Water Discharges from Construction Activities, and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

B. Elements of construction or of implementing the SWPPP for which the subcontractor is responsible:

C. Responsible party

Signature of responsible officer

Senior Project Scientist
Title

10/16/2012
Date

Jonathan R. Kingston
Name (printed)

D. Designated NYS-certified, Trained Contractor who shall be responsible for implementing the SWPPP and will be on site during land-disturbance activities:

Paul Smeader
Name (printed)

Superintendent
Title

(716) 771-6257
Contact Phone No.

SWT # 29T-0121I-58

SUBCONTRACTOR'S CERTIFICATION of the SWPPP

A. Subcontractor information

Groundwater and Environmental Services, Inc
Company name

495 Aero Drive, Suite 3
Address

Cheektowaga NY 14225
State *Zip*

Phone (800) 287-7857

Fax (716) 706-0078

Emergency phone _____

Email _____

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the OWNER OF THE SITE and/or the OPERATOR OF THE SITE must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Storm Water Discharges from Construction Activities, and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

B. Elements of construction or of implementing the SWPPP for which the subcontractor is responsible:

Design and supplying components of, and installation of the wastewater treatment system to control Pb and silt/solids removal from creek waters and storm water runoff collected during site contaminated soil excavation and other operations.

C. Responsible party

Signature of responsible officer

SENIOR PROJECT MANAGER
Title

10/17/12
Date

STEVEN LEITEN
Name (printed)

D. Designated NYS-certified, Trained Contractor who shall be responsible for implementing the SWPPP and will be on site during land-disturbance activities:

Paul Smeader / RDI
Name (printed)

Superintendent
Title

716-771-6257
Contact Phone No.

SUBCONTRACTOR'S CERTIFICATION of the SWPPP

A. Subcontractor information

_____ *Phone* _____
Company name

Fax _____

_____ *Emergency phone* _____

_____ *Email* _____
Address *State* *Zip*

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the OWNER OF THE SITE and/or the OPERATOR OF THE SITE must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Storm Water Discharges from Construction Activities, and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

B. Elements of construction or of implementing the SWPPP for which the subcontractor is responsible:

_____

_____

_____

_____

C. Responsible party

_____ _____ _____
Signature of responsible officer *Title* *Date*

_____
Name (printed)

D. Designated NYS-certified, Trained Contractor who shall be responsible for implementing the SWPPP and will be on site during land-disturbance activities:

_____ _____ _____
Name (printed) *Title* *Contact Phone No.*

APPENDIX E

Acceptable Erosion and Sediment Control Materials and Methods

STANDARD AND SPECIFICATIONS FOR PROTECTING VEGETATION DURING CONSTRUCTION

Definition

The protection of trees, shrubs, ground cover and other vegetation from damage by construction equipment.

Purpose

To preserve existing vegetation determined to be important for soil erosion control, water quality protection, shade, screening, buffers, wildlife habitat, wetland protection, and other values.

Condition Where Practice Applies

On planned construction sites where valued vegetation exists and needs to be preserved.

Design Criteria

1. Planning Considerations

   A. Inventory:

      1) Property boundaries, topography, vegetation and soils information should be gathered. Identify potentially high erosion areas, areas with tree windthrow potential, etc. A vegetative cover type map should be made on a copy of a topographic map which shows other natural and manmade features. Vegetation that is desirable to preserve because of its value for screening, shade, critical erosion control, endangered species, aesthetics, etc., should be identified and marked on the map.

      2) Based upon this data, general statements should be prepared about the present condition, potential problem areas, and unique features of the property.

   B. Planning:

      1) After engineering plans (plot maps) are prepared, another field review should take place and recommendations made for the vegetation to be saved. Minor adjustments in location of roads, dwellings, and utilities may be needed. Construction on steep slopes, erodible soils, wetlands, and streams should be avoided. Clearing limits should be delineated (See Section 2).

      2) Areas to be seeded and planted should be identified. Remaining vegetation should blend with their surroundings and/or provide special function such as a filter strip, buffer zone, or screen.

      3) Trees and shrubs of special seasonal interest, such as flowering dogwood, red maple, striped maple, serviceberry, or shadbush, and valuable potential shade trees should be identified and marked for special protective treatment as appropriate.

      4) Trees to be cut should be marked on the plans. If timber can be removed for salable products, a forester should be consulted for marketing advice.

      5) Trees that may become a hazard to people, personal property, or utilities should be removed. These include trees that are weak-wooded, disease-prone, subject to windthrow, or those that have severely damaged root systems.

      6) The vigor of remaining trees may be improved by a selective thinning. A forester should be consulted for implementing this practice.

2. Measures to Protect Vegetation

   A. Limit soil placement over existing tree and shrub roots to a maximum of 3 inches. Soils with loamy texture and good structure should be used.

   B. Use retaining walls and terraces to protect roots of trees and shrubs when grades are lowered. Lowered grades should start no closer than the dripline of the tree. For narrow-canopied trees and shrubs, the stem diameter in inches is converted to feet and doubled, such that a 10 inch tree should be protected to 20 feet.

C. Trenching across tree root systems should be the same minimum distance from the trunk, as in “B”. Tunnels under root systems for underground utilities should start 18 inches or deeper below the normal grounds surface. Tree roots which must be severed should be cut clean. Backfill material that will be in contact with the roots should be topsoil or a prepared planting soil mixture.

D. Construct sturdy fences, or barriers, of wood, steel, or other protective material around valuable vegetation for protection from construction equipment. Place barriers far enough away from trees, but not less than the specifications in "B", so that tall equipment such as backhoes and dump trucks do not contact tree branches.

E. Construction limits should be identified and clearly marked to exclude equipment.

F. Avoid spills of oil/gas and other contaminants.

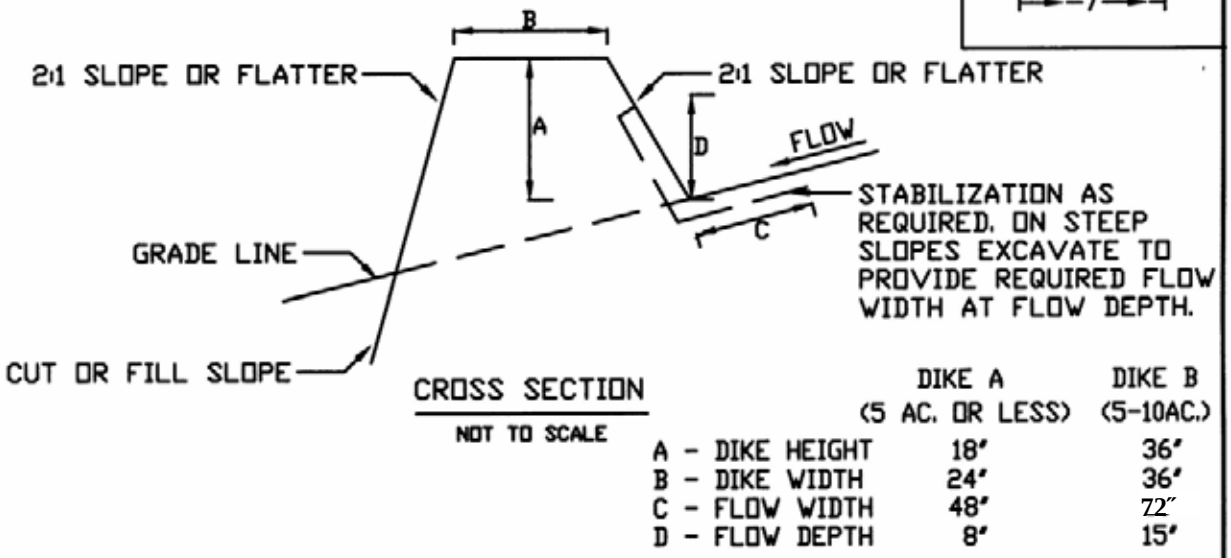
G. Obstructive and broken branches should be pruned properly. The branch collar on all branches whether living or dead should not be damaged. The 3 or 4 cut method should be used on all branches larger than two inches at the cut. First cut about one-third the way through the underside of the limb (about 6-12 inches from the tree trunk). Then (approximately an inch further out) make a second cut through the limb from the upper side. When the branch is removed, there is no splintering of the main tree trunk. Remove the stub. If the branch is larger than 5-6 inches in diameter, use the four cut system. Cuts 1 and 2 remain the same and cut 3 should be from the underside of the limb, on the outside of the branch collar. Cut 4 should be from the top and in alignment with the 3rd cut. Cut 3 should be 1/4 to 1/3 the way through the limb. This will prevent the bark from peeling down the trunk. Do not paint the cut surface.

H. Penalties for damage to valuable trees, shrubs, and herbaceous plants should be clearly spelled out in the contract.

Figure 5A.1
Earth Dike

SYMBOL

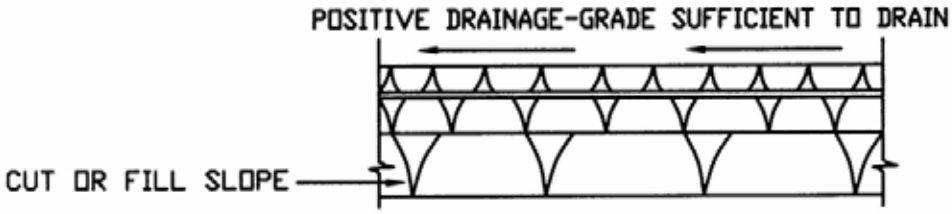
A=2, B=3



CROSS SECTION

NOT TO SCALE

	DIKE A (5 AC. OR LESS)	DIKE B (5-10AC.)
A - DIKE HEIGHT	18"	36"
B - DIKE WIDTH	24"	36"
C - FLOW WIDTH	48"	72"
D - FLOW DEPTH	8"	15"



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART ON THE PREVIOUS PAGE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

EARTH DIKE

STANDARD AND SPECIFICATIONS FOR EARTH DIKE

Definition

A temporary berm or ridge of compacted soil, located in such a manner as to channel water to a desired location.

Purpose

The purpose of an earth dike is to direct runoff to a sediment trapping device, thereby reducing the potential for erosion and off site sedimentation. Earth dikes can also be used for diverting clean water away from disturbed areas.

Conditions Where Practice Applies

Earth dikes are often constructed across disturbed areas and around construction sites such as graded parking lots and subdivisions. The dikes shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.1 on page 5A.2 for details.

General

	Dike A	Dike B
Drainage Area	<5 Ac	5-10 Ac
Dike Height	18 in.	36 in.
Dike Width	24 in.	36 in.
Flow Width	4 ft.	6 ft.
Flow Depth in Channel	8 in.	15 in.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% Min. 20% Max.	0.5% Min. 20% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Diversion on page 5B.1.

Stabilization

Stabilization of the dike shall be completed within 7 days of installation in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in seeding season and flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel A (<5 Ac.)	Flow Channel B (5-10 Ac)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with RECP, sod, or lined with plastic or 2 in. stone
3	5.1-8.0%	Seed and cover with RECP, Sod, or line with plastic or 2 in. stone	Line with 4-8 in. stone or, Recycled Concrete Equivalent[2] or geotextile
4	8.1-20%	Line with 4-8 in. stone or Recycled Concrete Equivalent[2] or geotextile	Site Specific Engineering Design

[1] In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.
[2] Recycled Concrete Equivalent shall be concrete broken into the required size, and shall contain no steel reinforcement.

Outlet

Earth dikes shall have an outlet that functions with a minimum of erosion.

Runoff shall be conveyed to a sediment trapping device until the drainage area above the dike is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

SWPPP Cut Sheet:

Filtrexx® Runoff Diversion

Runoff & Erosion Control Technology

PURPOSE & DESCRIPTION

Filtrexx® Runoff diversion is a three-dimensional tubular runoff and erosion control device used for **diversion or redirection of runoff** otherwise flowing to disturbed or highly erodable areas on and around construction activities. Filtrexx® Runoff diversion can be used as temporary or permanent runoff diversion devices used to prevent soil erosion during excavation, or prior to erosion control practice installation, vegetation establishment, or final stabilization.

APPLICATION

Filtrexx® Runoff diversion is generally used upslope of areas undergoing excavation. Runoff diversion is effective at diverting sheet flow runoff coming from stabilized areas and otherwise flowing to unstable or bare soils while excavation and grading is in progress. Runoff diversion should direct runoff flows to stabilized channels, heavily vegetated areas, on to flat surfaces, infiltration zones, collection ponds, or storm inlets. Runoff diversion can also be used for temporary diversion on paved surfaces to protect disturbed soils adjacent to paved areas. Where hill slopes are greater than 5%, hydraulic shear stress is greater than 3 lbs/ft^2 (15 kg/m^2), or runoff velocity is greater than 6 CFS (0.17 CMS) additional erosion control measures to help stabilize the area where flow is being directed and potentially concentrated or channeled should be utilized. Filtrexx® Channel protection may be used to stabilize channels where runoff is conveyed or concentrated. Runoff diversion devices and practices should be utilized early in the soil disturbance and construction process. Appropriate applications for runoff diversion devices include:

- diversion of runoff away from disturbed areas and to stabilized outlets or storm inlets,
- diversion of sediment-laden water to a sediment containment or storm water treatment system,
- diversion of runoff into a conveyance channel to improve site working conditions (but does not otherwise increase erosion),
- prevention of sediment-laden runoff or storm water from leaving site perimeter.

For temporary applications Runoff diversion does not need to be seeded; however, for permanent runoff diversion the device should be direct seeded at the time of application, as vegetation will prevent UV degradation of the device. Runoff diversion may also be used in sensitive environmental areas, where migration of wildlife may be impeded by the use of fences or trenching may damage plant roots.

INSTALLATION

1. Runoff diversion used for runoff and erosion control shall meet Filtrexx® FilterSoxx™ Material Specifications and use Filtrexx® GrowingMedia™. Soil and/or sand may be added to the Filtrexx® GrowingMedia™ at percent determined by the Engineer.
2. Contractor is required to be a Filtrexx® Certified™ Installer as determined by Filtrexx® International, LLC (440-926-2607 or visit website at Filtrexx.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application (current list can be found at www.filtrexx.com).

Look for the Filtrexx® Certified™ Installer Seal.

3. Runoff diversion will be placed at locations indicated on plans as directed by the Engineer.
4. Runoff diversion shall be installed above and adjacent to areas of unprotected soil or areas prone to soil erosion.
5. Runoff diversion shall be installed where 5 ft (1.5m) of the end at highest elevation shall be pointing upslope and into any existing vegetation.
6. Runoff diversion shall be installed so the trailing end of the device points down slope to prevent ponding of runoff.
7. Runoff diversion shall lead sheet and shallow concentrated runoff *from* vegetated/stabilized soil areas *to* stabilized channels, vegetated areas, level areas, high infiltration zones, or collection ponds.
8. Runoff diversion shall be placed on slopes 1% or greater to allow effective runoff conveyance and to prevent ponding.
9. Runoff diversion installed on slopes > 5% may require erosion control/soil stabilization practices where runoff flow is concentrated or conveyed.
10. Runoff diversion should not be used on slopes greater than 2:1.
11. Stakes shall be installed through the middle of Runoff diversion on 10 ft (3m) centers, using 2 in (50mm) x 2 in (50mm) x 3 ft (1m) wood stakes.
12. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
13. If the Runoff diversion is to be a permanent runoff diversion device or part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seed requirements.
14. Loose GrowingMedia™ used for backfilling and extension of filter strip may also be seeded. The Engineer will specify seed requirements.

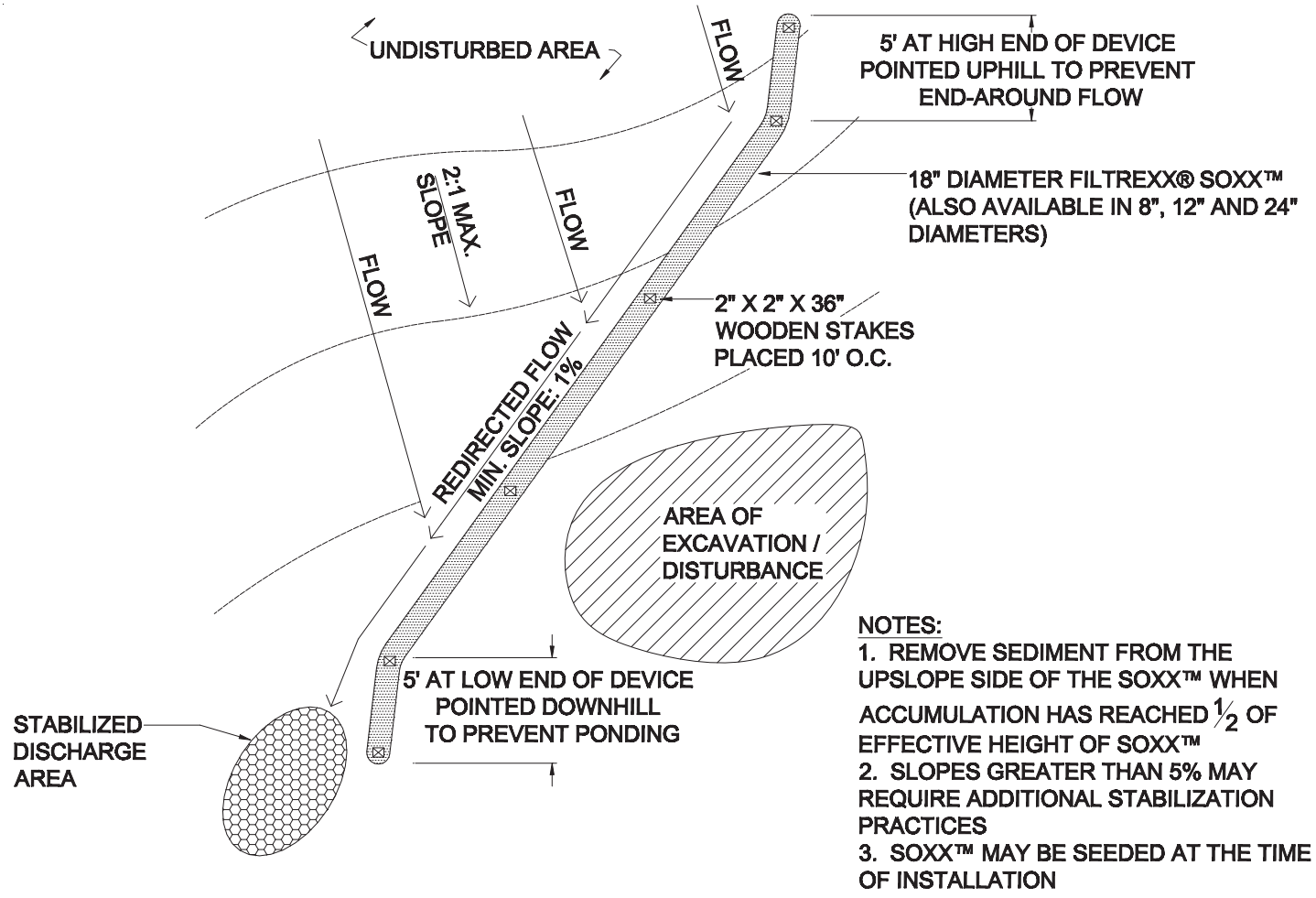
INSPECTION AND MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Runoff diversion should be regularly inspected to make sure they maintain their shape and are adequately diverting storm runoff. If ponding becomes excessive, additional Runoff diversion may be required, sediment or debris removal may be necessary, or the device may need to be adjusted to allow gravitational flow of water down slope. A freeboard height of 4 in. (100mm) below the top edge of the device must be maintained at all times. Runoff diversion shall be inspected until the entire area has been permanently stabilized and construction activity has ceased.

1. The Contractor shall maintain the Runoff Diversion in a functional condition at all times and it shall be routinely inspected.
2. If the Runoff diversion has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment and debris at the base of the upslope side of the Runoff diversion when accumulation has reached 1/2 of the effective height of the Soxx™, or as directed by the Engineer.
4. A freeboard height of 4 in. (100mm) below the top edge of the device must be maintained throughout the life of the device.
5. Runoff diversion shall be maintained until the hill slope has been permanently stabilized and construction activity has ceased.
6. GrowingMedia™ will be dispersed on site once disturbed area has been permanently stabilized, construction activity ceased, or determined by Engineer.

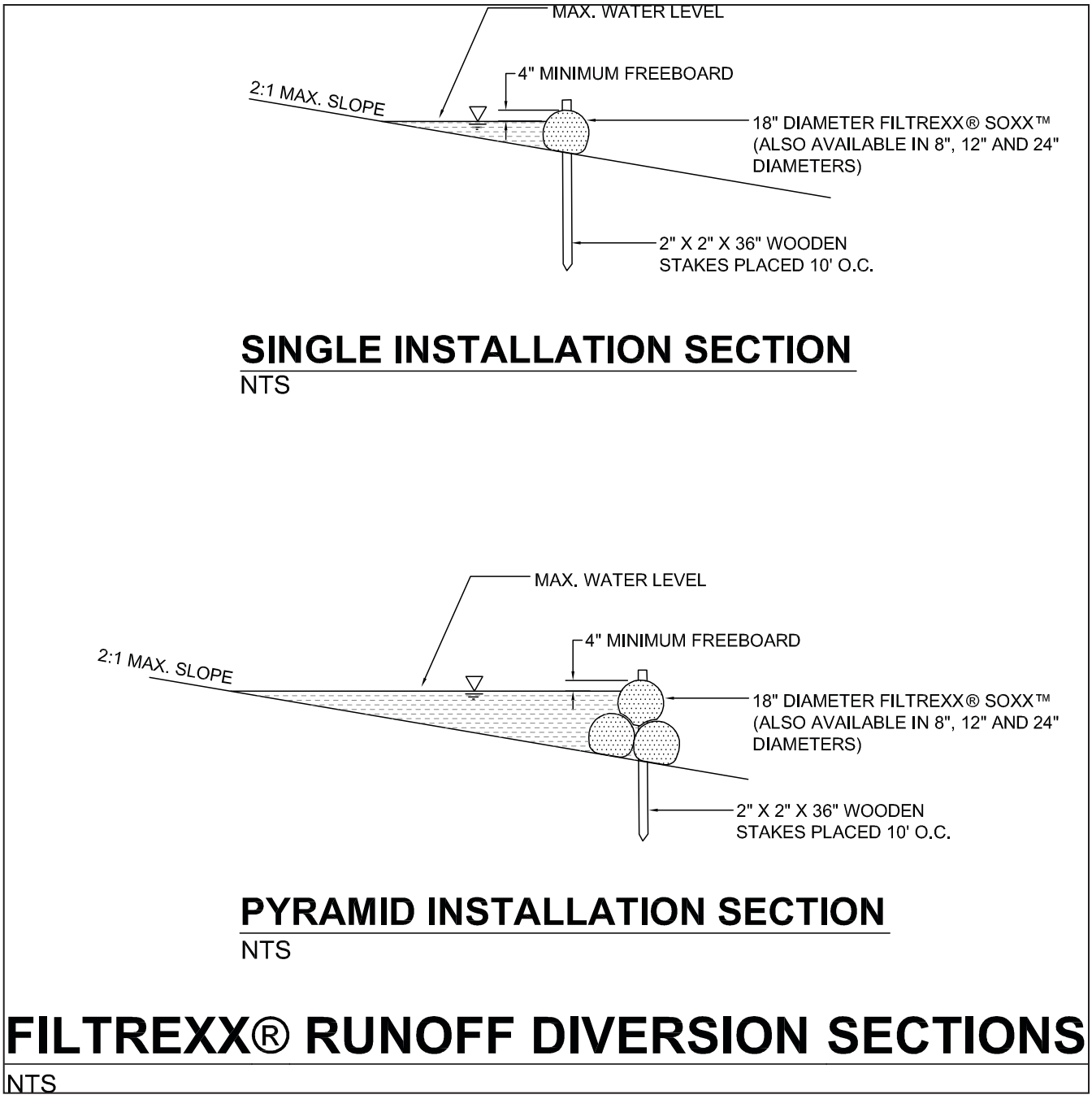
For projects exceeding 1 year, Runoff diversion can be seeded at the time of installation to create a permanent runoff and erosion control system. Vegetation will add stability to the device and will reduce UV degradation of the system. The appropriate seed mix shall be determined by the Engineer.

Figure 6.1. Engineering Design Drawing for Runoff Diversion



FILTREXX® RUNOFF DIVERSION

Figure 6.2. Engineering Design Drawing for Runoff Diversion - Sectional View



SWPPP Cut Sheet:

Filtrexx® Sediment Control

Sediment & Perimeter Control Technology

PURPOSE & DESCRIPTION

Filtrexx® Sediment control is a three-dimensional tubular sediment control and storm water runoff filtration device typically used for **perimeter control** of sediment and other soluble pollutants (such as phosphorus and petroleum hydrocarbons), on and around construction activities.

APPLICATION

Filtrexx® Sediment control is to be installed down slope of any disturbed area requiring erosion and sediment control and filtration of soluble pollutants from runoff. Sediment control is effective when installed perpendicular to sheet or low concentrated flow. Acceptable applications include:

- Site perimeters
- Above and below disturbed areas subject to sheet runoff, interrill and rill erosion
- Above and below exposed and erodable slopes
- Around area drains or inlets located in a 'sump'
- On compacted soils where trenching of silt fence is difficult or impossible
- Around sensitive trees where trenching of silt fence is not beneficial for tree survival or may unnecessarily disturb established vegetation.
- On frozen ground where trenching of silt fence is impossible.
- On paved surfaces where trenching of silt fence is impossible.

INSTALLATION

1. Sediment control used for perimeter control of sediment and soluble pollutants in storm runoff shall meet Filtrexx® Soxx™ Material Specifications and use Certified Filtrexx® FilterMedia™.
2. Contractor is required to be Filtrexx® Certified™ as determined by Filtrexx® International, LLC (440-926-2607 or visit website at www.filtrexx.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application (current listing can be found at www.filtrexx.com). Look for the Filtrexx® Certified™ Seal.
3. Sediment control will be placed at locations indicated on plans as directed by the Engineer.
4. Sediment control should be installed parallel to the base of the slope or other disturbed area. In extreme conditions (i.e., 2:1 slopes), a second Sediment control shall be constructed at the top of the slope.
5. Effective Soxx™ height in the field should be as follows: 8" Diameter Sediment control = 6.5" high, 12" Diameter Sediment control = 9.5" high, 18" Diameter SiltSoxx™ = 14.5" high, 24" Diameter Sediment control = 19" high.
6. Stakes shall be installed through the middle of the Sediment control on 10 ft (3m) centers, using 2 in (50mm) by 2 in (50mm) by 3 ft (1m) hard wood stakes. In the event staking is not possible, i.e., when Sediment control is used on pavement, heavy concrete blocks shall be used behind the Sediment control to help stabilize during rainfall/runoff events.
7. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
8. Loose compost may be backfilled along the upslope side of the Sediment control, filling the seam between the soil surface and the device, improving filtration and sediment retention.
9. If the Sediment control is to be left as a permanent filter or part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seed requirements.

10. Filtrexx® Sediment control is not to be used in perennial, ephemeral, or intermittent streams.

See design drawing schematic for correct Filtrexx® Sediment control installation (Figure 1.1).

INSPECTION AND MAINTENANCE

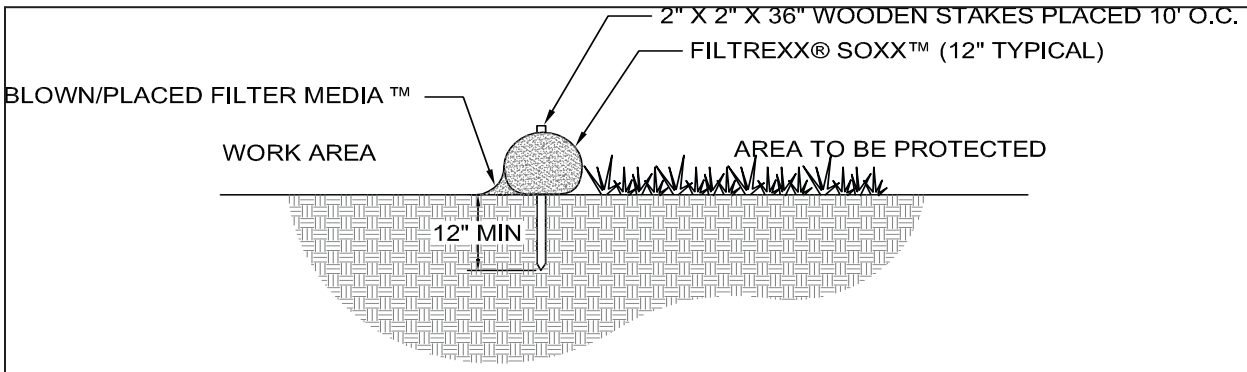
Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Sediment control should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional Sediment control may be required to reduce effective slope length or sediment removal may be necessary. Sediment control shall be inspected until area above has been permanently stabilized and construction activity has ceased

1. The Contractor shall maintain the Sediment control in a functional condition at all times and it shall be routinely inspected.
2. If the Sediment control has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of the Sediment control when accumulation has reached 1/2 of the effective height of the Sediment control, or as directed by the Engineer. Alternatively, a new Sediment control can be placed on top of and slightly behind the original one creating more sediment storage capacity without soil disturbance.
4. Sediment control shall be maintained until disturbed area above the device has been permanently stabilized and construction activity has ceased.
5. The FilterMedia™ will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.
6. For long-term sediment and pollution control applications, Sediment control can be seeded at the time of installation to create a vegetative filtering system for prolonged and increased filtration of sediment and soluble pollutants (contained vegetative filter strip). The appropriate seed mix shall be determined by the Engineer.

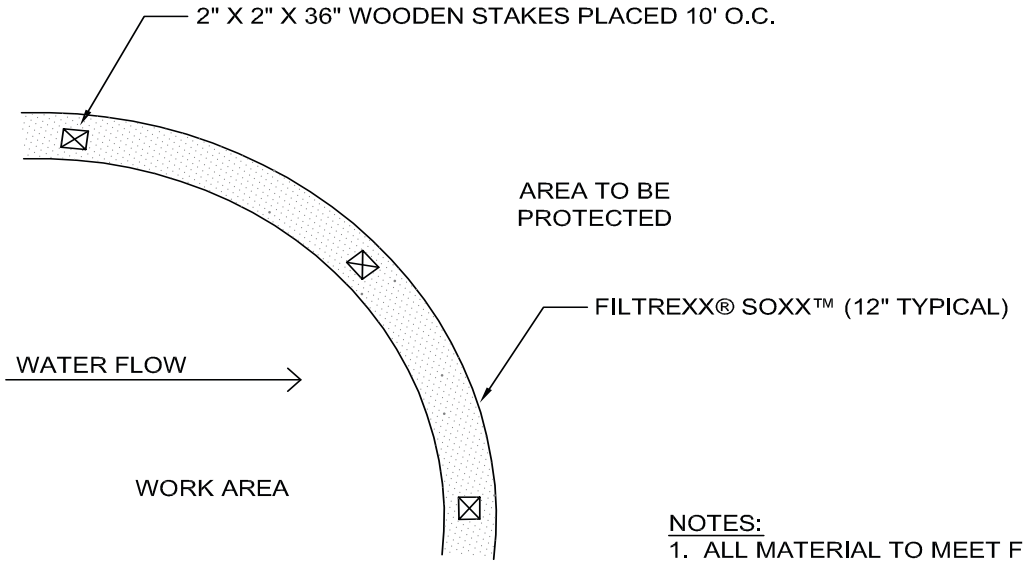
Slope Percent	Maximum Slope Length Above Sediment Control in Feet (meters)*				
	8 in (200 mm) Sediment control	12 in (300 mm) Sediment control	18 in (450 mm) Sediment control	24 in (600mm) Sediment control	32 in (800mm) Sediment control
	6.5 in (160 mm)**	9.5 in (240 mm) **	14.5 in (360 mm) **	19 in (480 mm) **	26 in (650 mm) **
2 (or less)	600 (180)	750 (225)	1000 (300)	1300 (400)	1650 (500)
5	400 (120)	500 (150)	550 (165)	650 (200)	750 (225)
10	200 (60)	250 (75)	300 (90)	400 (120)	500 (150)
15	140 (40)	170 (50)	200 (60)	325 (100)	450 (140)
20	100 (30)	125 (38)	140 (42)	260 (80)	400 (120)
25	80 (24)	100 (30)	110 (33)	200 (60)	275 (85)
30	60 (18)	75 (23)	90 (27)	130 (40)	200 (60)
35	60 (18)	75 (23)	80 (24)	115 (35)	150 (45)
40	60 (18)	75 (23)	80 (24)	100 (30)	125 (38)
45	40 (12)	50 (15)	60 (18)	80 (24)	100 (30)
50	40 (12)	50 (15)	55 (17)	65 (20)	75 (23)

* Based on a failure point of 36 in (0.9 m) super silt fence (wire reinforced) at 1000 ft (303 m) of slope, watershed width equivalent to receiving length of sediment control device, 1 in/ 24 hr (25 mm/24 hr) rain event.

** Effective height of Sediment control after installation and with constant head from runoff as determined by Ohio State University.



SECTION NTS



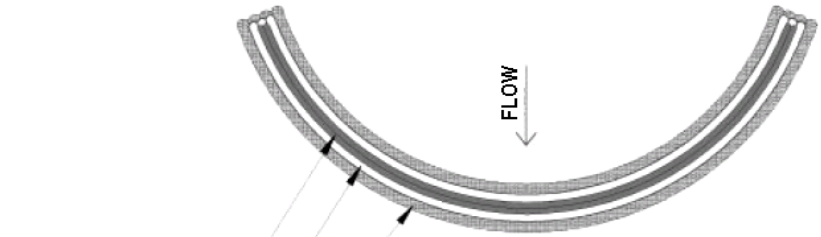
PLAN NTS

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

FILTREXX® SEDIMENT CONTROL

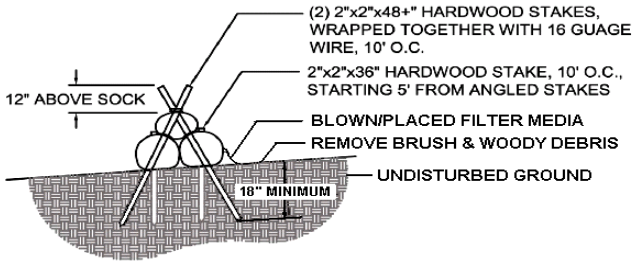
NTS

STANDARD CONSTRUCTION DETAIL #3-11
Compost Sock Sediment Trap



1. Compost Sock Sediment Trap shall be sized to provide 2,000 cubic feet of storage capacity for each acre tributary to the trap.
2. Minimum base width is equivalent to the height.
3. Sediment accumulation shall not exceed 1/3 the total height of the trap.
4. Socks shall be of larger diameter at the base of the trap and decrease in diameter for successive layers as indicated to the left.
5. Ends of the trap shall be a minimum of 1 foot higher in elevation than the mid-section, which shall be located at the point of discharge.

PLAN VIEW



Adapted from Filtrexx

STAKING DETAIL

Sock material shall meet the standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost sock sediment traps shall not exceed three socks in height and shall be stacked in pyramidal form as shown above. Minimum trap height is one 24" diameter sock. Additional storage may be provided by means of an excavated sump 12" deep extending 1 to 3 feet upslope of the socks along the lower side of the trap.

Compost sock sediment traps shall provide 2,000 cubic feet storage capacity with 12" freeboard for each tributary drainage acre. (See manufacturer for anticipated settlement.)

The maximum tributary drainage area is 5.0 acres. Since compost socks are "flow-through," no spillway is required.

Compost sock sediment traps shall be inspected weekly and after each runoff event. Sediment shall be removed when it reaches 1/3 the height of the socks.

Photodegradable and biodegradable socks shall not be used for more than 1 year.

443 Bricker Road Bernville, PA 19506
1.800.582.4005
+1.610.488.8496 Fax +1.610.488.8494
www.eastcoasterosion.com

EASTCOAST erosion blankets

Material and Performance Specification

ECWATTLE Sediment Retention Fiber Rolls

Description: ECWATTLES are flexible, cylindrical Sediment Retention Fiber Rolls (SRFRs) comprised of various types of compressed matrices, designed to reduce hydraulic energy and filter sediment-laden stormwater runoff on slopes and in channels. Each pallet is shrink-wrapped and labeled. SRFRs are designed to be used as perimeter controls, slope interceptor devices, check dams, around temporary soil stockpiles, at curb cuts and drain inlets. SRFRs should be installed in accordance to East Coast Erosion Blankets, LLC's Wattle Installation Guidelines and secured with wooden stakes.

TYPE: 100% Agricultural Straw Netting: UV Degradable Polyethylene

Diameter:	**9.0 in (22.9 cm)**	**12.0 in (30.5 cm)**	**20.0 in (50.8 cm)**
Length:	20 ft (5.08 m)	10.0 ft (2.54 m)	12.0 ft (3.65 m)
Weight ±10%:	57 lbs (25.8 kg)	45 lbs (20.4 kg)	92 lbs (41.9 kg)
Density:	6.45 lbs/ft^3 (103.3 kg/ m^3)	5.73 lbs/ft^3 (91.8 kg/ m^3)	3.53 lbs/ft^3 (56.5 kg/ m^3)
#/Pallet:	11	20	7
100% Agricultural Straw ECWATTLES have been tested by an independent laboratory to have an 83% filtering efficiency.			

TYPE: 100% Aspen Wood Fibers Netting: UV Degradable Polyethylene

Diameter:	**9.0 in (22.9 cm)**	**12.0 in (30.5 cm)**	**20.0 in (50.8 cm)**
Length:	NOT AVAILABLE IN THIS DIAMETER	10.0 ft (2.54 m)	10.0 ft (2.54 m)
Weight ±10%:		25 lbs (11.4 kg)	45 lbs (20.4 kg)
Density:		3.13lbs/ft^3 (50.14 kg/ m^3)	2.96 lbs/ft^3 (47.41 kg/ m^3)
#/Pallet:		20	7

TYPE: Mulch Compost Blend Netting: Black Polyester

Diameter:	**9.0 in (22.9 cm)**	**12.0 in (30.5 cm)**	**20.0 in (50.8 cm)**
Length:	20.0 ft (5.08 m)	30.0 ft (m)	NOT AVAILABLE IN THIS DIAMETER
Weight ±10%:	300 lbs (136.3 kg)	960 lbs (436.4 kg)	
Density:	15 lbs/ft^3 (240.2 kg/ m^3)	32 lbs/ft^3 (512.59 kg/ m^3)	
#/Pallet:	3	1	

TYPE: Coir Fiber Rolls Netting: Organic Coir Twine

Diameter:	**9.0 in (22.9 cm)**	**12.0 in (30.5 cm)**	**20.0 in (50.8 cm)**
Length:	NOT AVAILABLE IN THIS DIAMETER	10.0 ft (2.54 m)	NOT AVAILABLE IN THIS DIAMETER
Weight ±10%:		70 lbs (31.75 kg)	
Density:		7 lbs/ft^3 (112.13 kg/ m^3)	
#/Pallet:		20	

TYPE: ECO-LOG Biodegradable Straw Netting: Organic Jute Material

Diameter:	**9.0 in (22.9 cm)**	**12.0 in (30.5 cm)**	**20.0 in (50.8 cm)**
Length:	NOT AVAILABLE IN THIS DIAMETER	12.0 ft (3.65 m)	NOT AVAILABLE IN THIS DIAMETER
Weight ±10%:		30 lbs (13.61 kg)	
Density:		4.85 lbs/ft^3 (77.62 kg/ m^3)	
#/Pallet:		10	

Custom lengths on all varieties of above sediment fiber rolls available upon request.

Proud Member of: IECA Corporate Member, ECTC Erosion Control Technology Council, ASTM International, Member NAHB

PROUDLY MADE IN THE USA

Revised 03052010

STANDARD AND SPECIFICATIONS FOR MULCHING

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

Table 3.7
Guide to Mulch Materials, Rates, and Uses

Mulch Material	Quality Standards	per 1000 Sq. Ft.	per Acre	Depth of Application	Remarks
Wood chips or shavings	Air-dried. Free of objectionable coarse material	500-900 lbs.	10-20 tons	2-7”	Used primarily around shrub and tree plantings and recreation trails to inhibit weed competition. Resistant to wind blowing. Decomposes slowly.
Wood fiber cellulose (partly digested wood fibers)	Made from natural wood usually with green dye and dispersing agent	50 lbs.	2,000 lbs.	—	Apply with hydromulcher. No tie down required. Less erosion control provided than 2 tons of hay or straw.
Gravel, Crushed Stone or Slag	Washed; Size 2B or 3A—1 1/2”	9 cu. yds.	405 cu. yds.	3”	Excellent mulch for short slopes and around plants and ornamentals. Use 2B where subject to traffic. (Approximately 2,000 lbs./cu. yd.). Frequently used over filter fabric for better weed control.
Hay or Straw	Air-dried; free of undesirable seeds & coarse materials	90-100 lbs. 2-3 bales	2 tons (100-120 bales)	cover about 90% surface	Use small grain straw where mulch is maintained for more than three months. Subject to wind blowing unless anchored. Most commonly used mulching material. Provides the best micro-environment for germinating seeds.
Jute twisted yarn	Undyed, unbleached plain weave. Warp 78 ends/yd., Weft 41 ends/ yd. 60-90 lbs./roll	48” x 50 yds. or 48” x 75 yds.	—	—	Use without additional mulch. Tie down as per manufacturers specifications. Good for center line of concentrated water flow.
Excelsior wood fiber mats	Interlocking web of excelsior fibers with photodegradable plastic netting	8” x 100” 2-sided plastic, 48” x 180” 1-sided plastic	—	—	Use without additional mulch. Excellent for seeding establishment. Tie down as per manufacturers specifications. Approximately 72 lbs./roll for excelsior with plastic on both sides. Use two sided plastic for centerline of waterways.
Compost	Up to 3” pieces, moderately to highly stable	3-9 cu. yds.	134-402 cu. yds.	1-3”	Coarser textured mulches may be more effective in reducing weed growth and wind erosion.
Straw or coconut fiber, or combination	Photodegradable plastic net on one or two sides	Most are 6.5 ft. x 3.5 ft.	81 rolls	—	Designed to tolerate higher velocity water flow, centerlines of waterways, 60 sq. yds. per roll.

Table 3.8
Mulch Anchoring Guide

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
1. Peg and Twine	Hay or straw	After mulching, divide areas into blocks approximately 1 sq. yd. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more tight turns. Drive pegs flush with soil. Driving stakes into ground tightens the twine.
2. Mulch netting	Hay or straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Wood cellulose fiber	Hay or straw	Apply with hydroseeder immediately after mulching. Use 500 lbs. wood fiber per acre. Some products contain an adhesive material ("tackifier"), possibly advantageous.
4. Mulch anchoring tool	Hay or straw	Apply mulch and pull a mulch anchoring tool (blunt, straight discs) over mulch as near to the contour as possible. Mulch material should be "tucked" into soil surface about 3".
5. Tackifier	Hay or straw	Mix and apply polymeric and gum tackifiers according to manufacturer's instructions. Avoid application during rain. A 24-hour curing period and a soil temperature higher than 45^0 Fahrenheit are required.

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence placed on a slope are:

Slope Steepness	Maximum Length (ft.)
2:1	25
3:1	50
4:1	75
5:1 or flatter	100

2. Maximum drainage area for overland flow to a silt fence shall not exceed ¼ acre per 100 feet of fence, with maximum ponding depth of 1.5 feet behind the fence; and

3. Erosion would occur in the form of sheet erosion; and

4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff. All silt fences shall be placed as close to the areas as possible, but at least 10 feet from the toe of a slope to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.

Sensitive areas to be protected by silt fence may need to be reinforced by using heavy wire fencing for added support to prevent collapse.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. A detail of the silt fence shall be shown on the plan. See Figure 5A.8 on page 5A.21 for details.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682

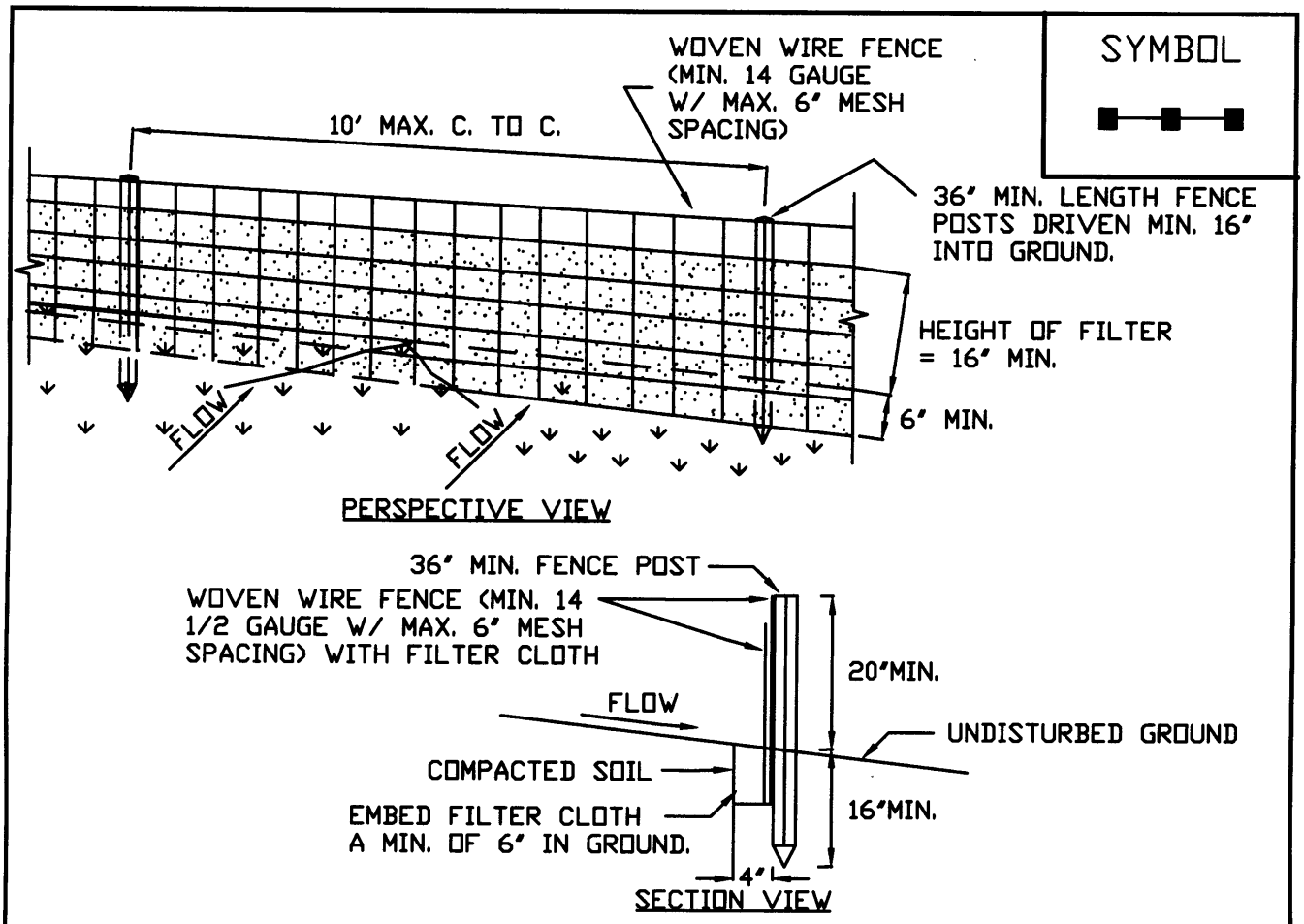
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.

3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated Units: Envirofence, Geofab, or approved equal, may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.8.

Figure 5A.8
Silt Fence



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	SILT FENCE

STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

Definition

A temporary, somewhat permeable barrier, installed around inlets in the form of a fence, berm or excavation around an opening, trapping water and thereby reducing the sediment content of sediment laden water by settling.

Purpose

To prevent heavily sediment laden water from entering a storm drain system through inlets.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are four (4) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

I. Excavated Drop Inlet Protection
II. Fabric Drop Inlet Protection
III. Stone & Block Drop Inlet Protection
IV. Curb Drop Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

See details for Excavated Drop Inlet Protection in Figure 5A.11 on page 5A.29.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection

See Figure 5A.12 for details on Filter Fabric Drop Inlet Protection on page 5A.30.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as

necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

If straw bales are used in lieu of filter fabric, they should be placed tight with the cut edge adhering to the ground at least 3 inches below the elevation of the drop inlet. Two anchor stakes per bale shall be driven flush to bale surface. Straw bales will be replaced every 4 months until the area is stabilized.

Type III – Stone and Block Drop Inlet Protection

See Figure 5A.13 for details on Stone and Block Drop Inlet Protection on page 5A.31.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet ("doughnut"). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilized in a manner appropriate to the site.

Type IV – Curb Drop Inlet Protection

See Figure 5A. 14 for details on Curb Drop Inlet Protection on page 5A.32.

The drainage area should be limited to 1 acre at the drop inlet. The wire mesh must be of sufficient strength to support the filter fabric and stone with the water fully impounded against it. Stone is to be 2 inches in size and clean. The filter fabric must be of a type approved for this purpose with an equivalent opening size (EOS) of 40-85. The protective structure will be constructed to extend beyond the inlet 2 feet in both directions. Assure that storm flow does not bypass the inlet by installing temporary dikes (such as sand bags) directing flow into the inlet. Make sure that the overflow weir is stable. Traffic safety shall be integrated with the use of this practice.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any stone missing should be replaced. Check materials for proper anchorage and secure as necessary.

Figure 5A.11
Excavated Drop Inlet Protection

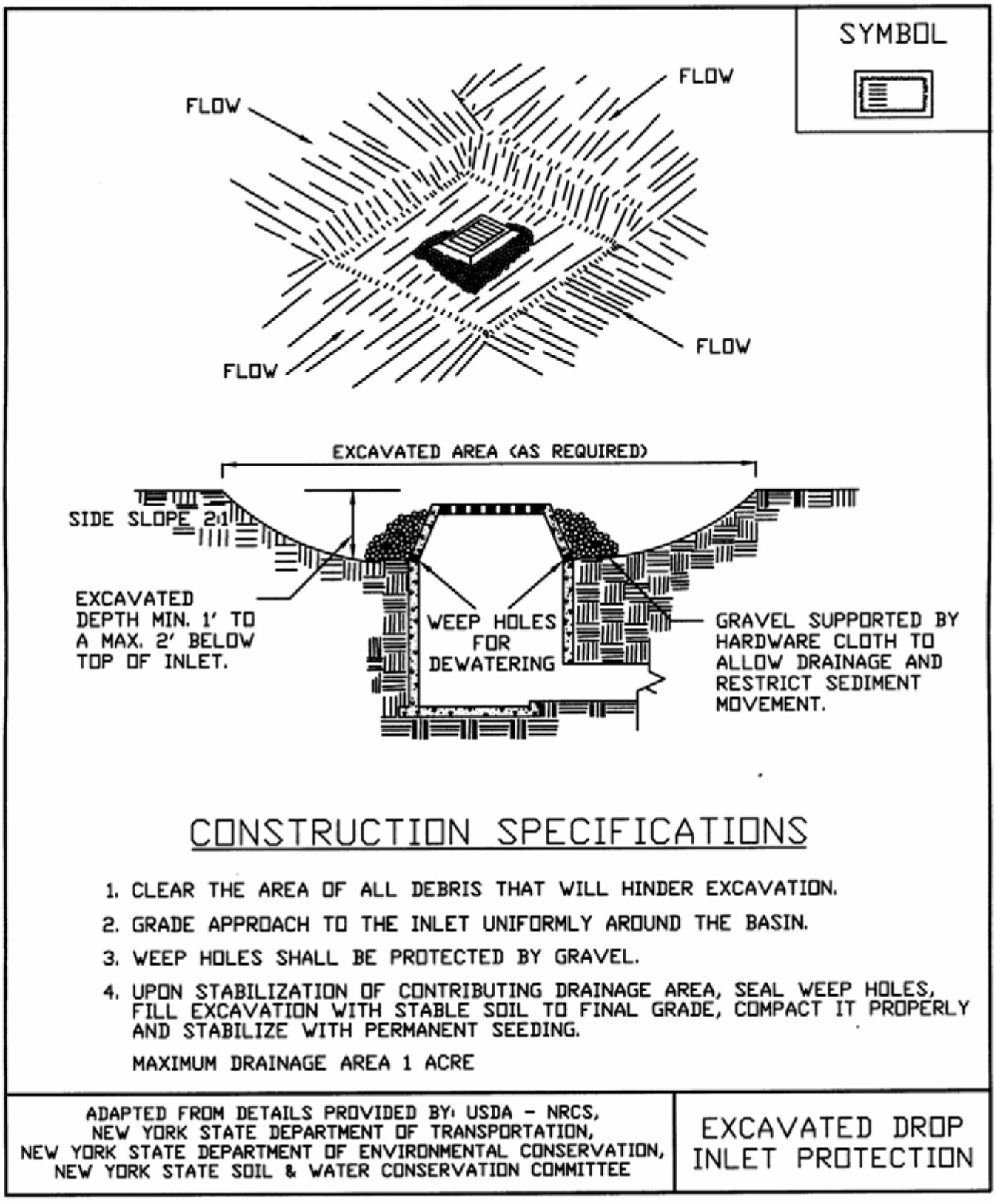
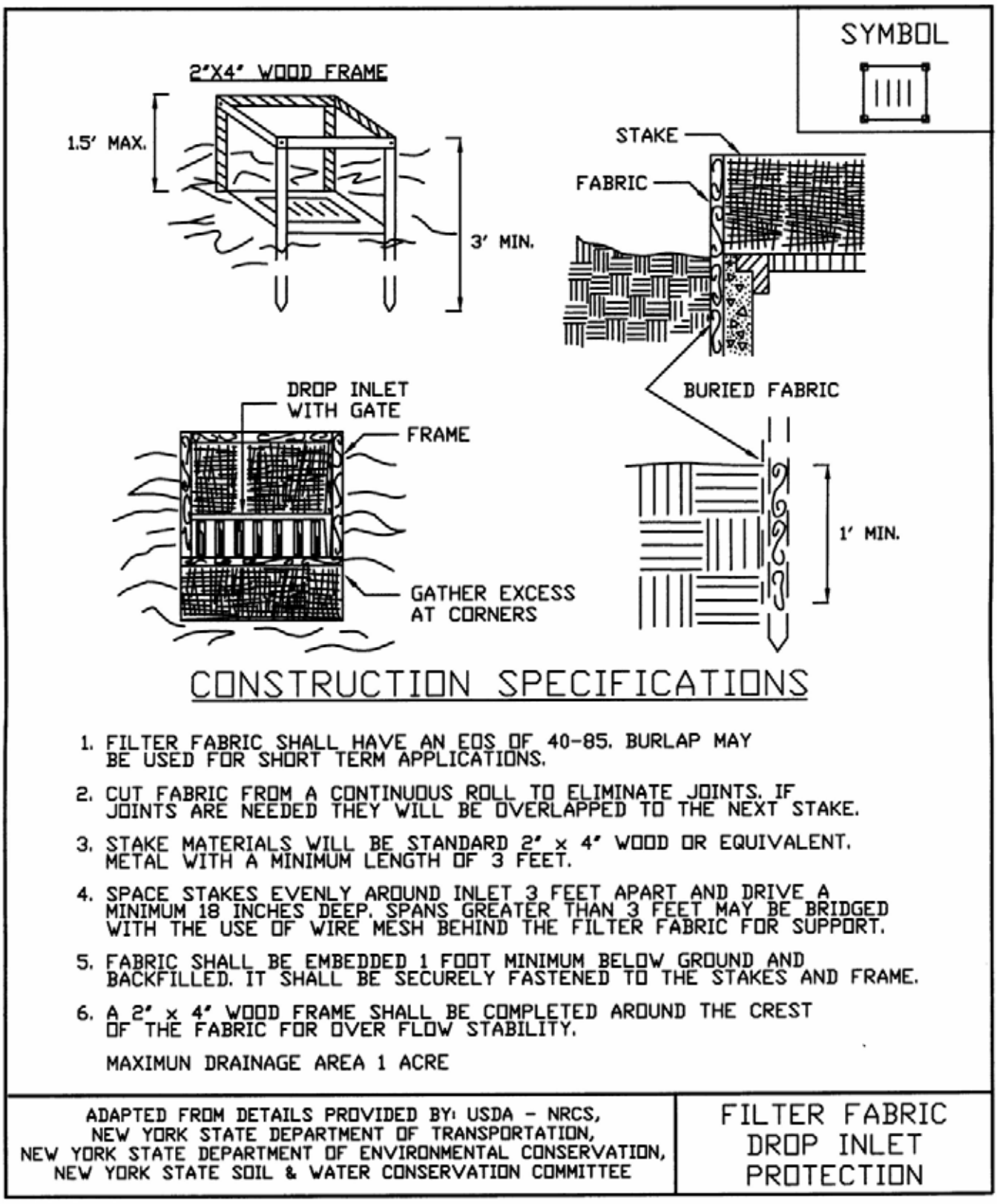


Figure 5A.12
Filter Fabric Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

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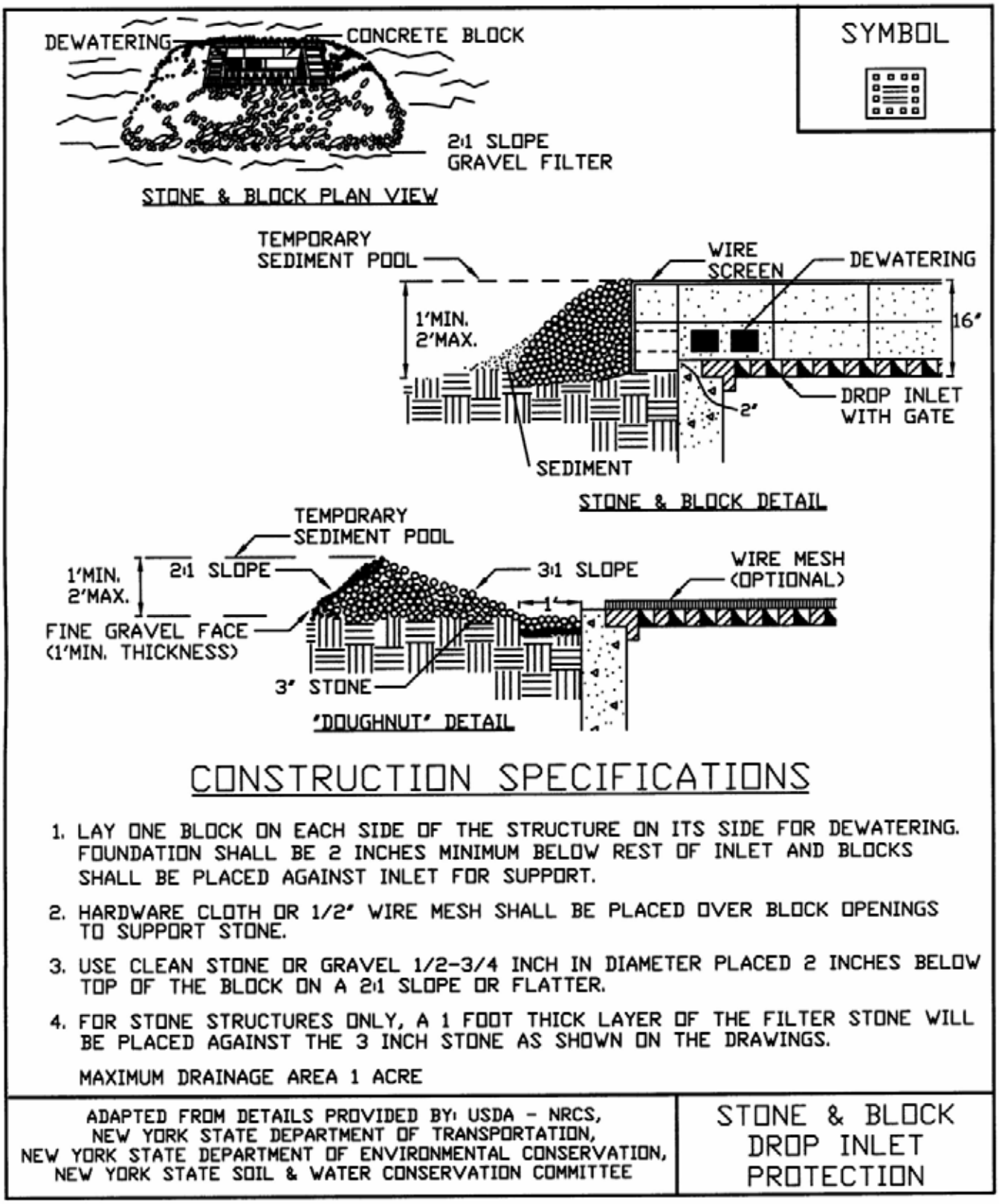
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

FILTER FABRIC
DROP INLET
PROTECTION

Figure 5A.13
Stone & Block Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

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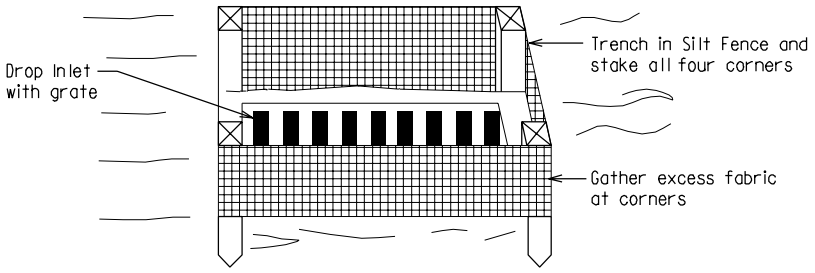
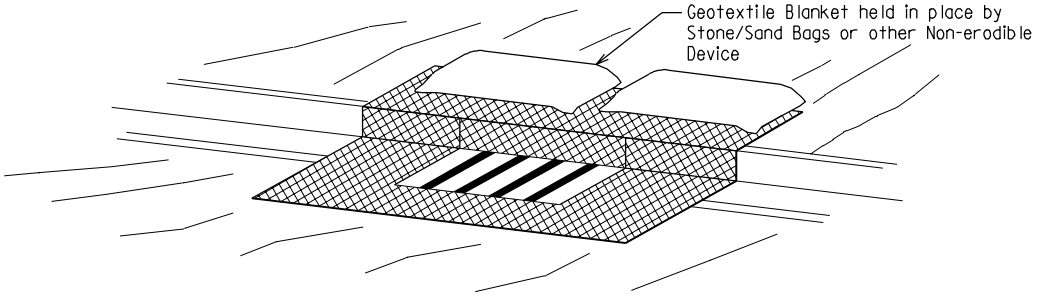
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

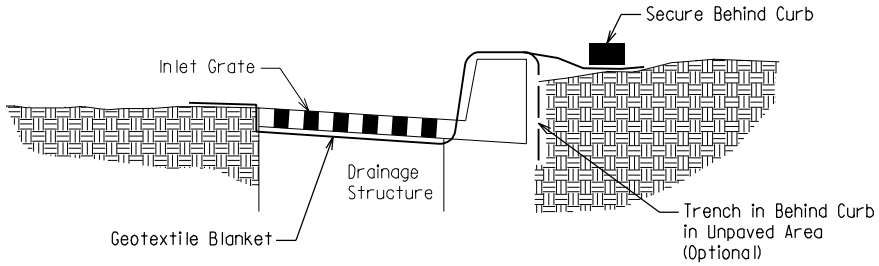
STONE & BLOCK
DROP INLET
PROTECTION



Inlet Protection in Unpaved Area



Plan View Inlet in Curb - Paved Area Behind Curb



Cross Section Inlet in Curb - Paved or Unpaved Area Behind Curb

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Inlet Protection Fabric Drop

MDOT Michigan Department of Transportation	04-07-2006 PLAN DATE	E&S-29-A	SHEET 1 OF 2

STANDARD AND SPECIFICATIONS FOR PORTABLE SEDIMENT TANK

Definition

A sediment tank is a compartmented tank container to which sediment laden water is pumped to trap and retain the sediment.

Purpose

To trap and retain sediment prior to pumping the water to drainageways, adjoining properties, and rights-of-way below the sediment tank site.

Conditions Where Practice Applies

A sediment tank is to be used on sites where excavations are deep, and space is limited, such as urban construction, where direct discharge of sediment laden water to stream and storm drainage systems is to be avoided.

Design Criteria

Location

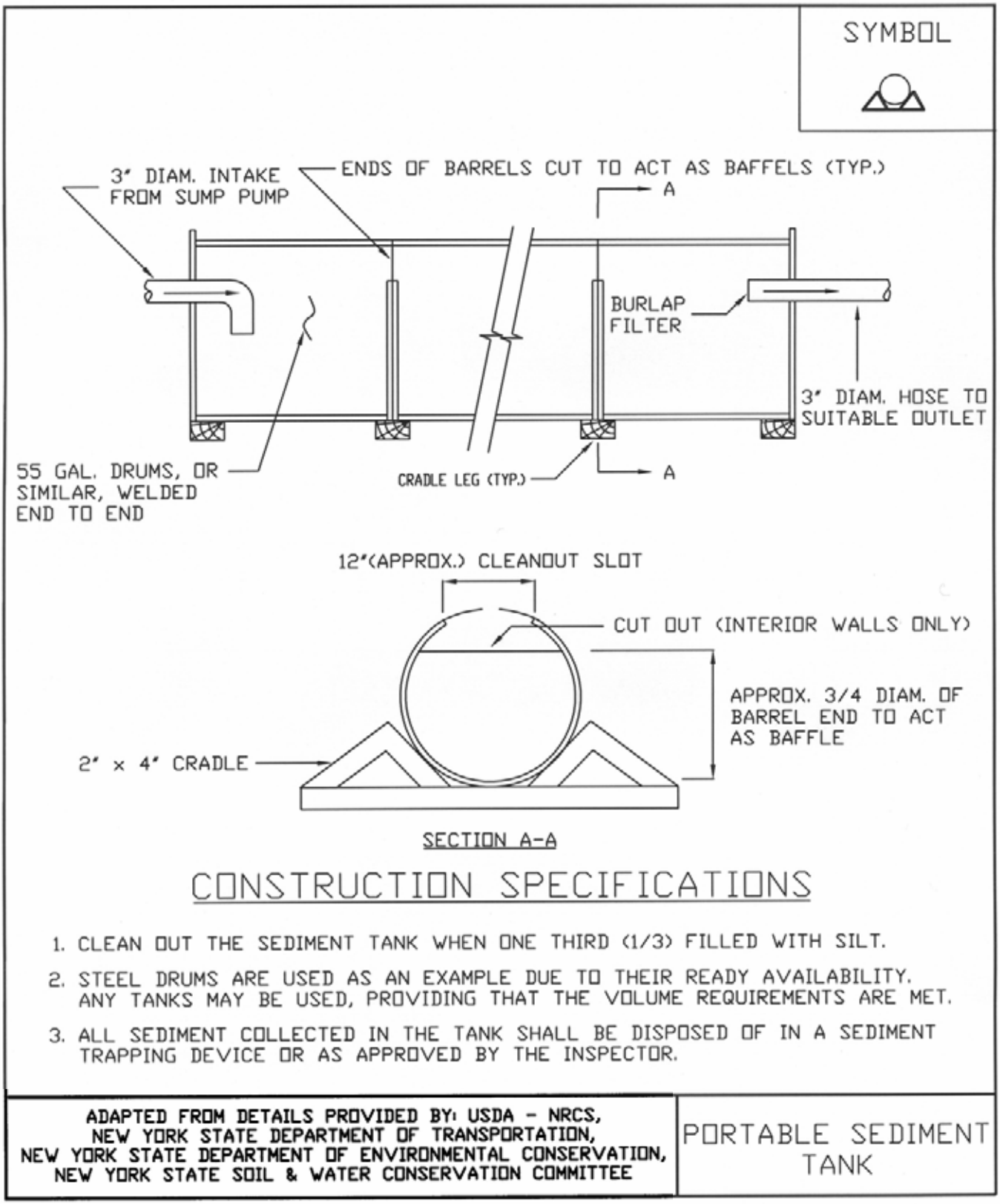
The sediment tank shall be located for ease of clean-out and disposal of the trapped sediment, and to minimize the interference with construction activities and pedestrian traffic.

Tank Size

The following formula should be used in determining the storage volume of the sediment tank; pump discharge (G.P.M.) x 16 = Cubic Foot Storage.

An example of a typical sediment tank is shown on Figure 5A.22 on page 5A.48. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency. Commercially manufactured tanks are also available.

Figure 5A.22
Portable Sediment Tank



CONSTRUCTION SPECIFICATIONS

1. CLEAN OUT THE SEDIMENT TANK WHEN ONE THIRD (1/3) FILLED WITH SILT.
2. STEEL DRUMS ARE USED AS AN EXAMPLE DUE TO THEIR READY AVAILABILITY. ANY TANKS MAY BE USED, PROVIDING THAT THE VOLUME REQUIREMENTS ARE MET.
3. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF IN A SEDIMENT TRAPPING DEVICE OR AS APPROVED BY THE INSPECTOR.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

PORTABLE SEDIMENT TANK

STANDARD AND SPECIFICATIONS
FOR
TEMPORARY ACCESS WATERWAY CROSSING

Definition

A temporary access waterway crossing is a structure placed across a waterway to provide access for construction purposes for a period of less than one year. Temporary access crossings shall not be utilized to maintain traffic for the general public.

Purpose

The purpose of the temporary access waterway crossing is to provide safe, environmentally sound access across a waterway for construction equipment by establishing minimum standards and specifications for the design, construction, maintenance, and removal of the structure. Temporary access waterway crossing are necessary to prevent construction equipment from damaging the waterway, blocking fish migration, and tracking sediment and other pollutants into the waterway. This standard and specification may represent a channel constriction, thus, the temporary nature of waterway access crossing must be stressed. They should be planned to be in service for the shortest practical period of time and removed as soon as their function is completed.

Conditions Where Practice Applies

The following standard and specification for temporary access waterway crossings are applicable in non-tidal waterways. These standard and specifications provide designs based on waterway geometry rather than the drainage area contributing to the point of crossing.

The principal consideration for development of the standard and specifications is concern for erosion and sediment control. Structural utility and safety must also be considered when designing temporary access waterway crossings to withstand expected loads.

The tree types of standard temporary access waterway crossings are bridges, culverts, and fords.

General Requirements

1. In-Stream Excavation: In-Stream excavation shall be limited to only that necessary to allow installation of the standard methods as presented in Subsection "Temporary Access Waterway Crossing Methods."

2. Elimination of Fish Migration Barriers: Of the three basic methods presented in Subsection "Temporary Access Waterway Crossing Methods," bridges pose the least potential for creating barriers to aquatic migration. The construction of any specific crossing method as presented in Subsection "Temporary Access Waterway Crossing Methods," shall not cause a significant water level difference between the upstream and downstream water surface elevations. Fish spawning or migration within waterways is from October 1 to April 30 for water classified for trout and from March 15 to June 15 for other streams. Restrictions imposed by the NYS Department of Environmental Conservation during these time periods may apply and must be checked.

3. Crossing Alignment: The temporary waterway crossing shall be at right angles to the stream. Where approach conditions dictate, the crossing may vary 15 degrees from a line drawn perpendicular to the centerline of the stream at the intended crossing location.

4. Road Approaches: The centerline of both roadway approaches shall coincide with the crossing alignment centerline for a minimum distance of 50 feet from each bank of the waterway being crossed. If physical or right-of-way restraints preclude the 50 feet minimum, a shorter distance may be provided. All fill materials associated with the roadway approach shall be limited to a maximum height of 2 feet above the existing flood plain elevation.

5. Surface Water Diverting Structure: A water diverting structure such as a swale shall be constructed (across the roadway on both roadway approaches) 50 feet (maximum) on either side of the waterway

crossing. This will prevent roadway surface runoff from directly entering the waterway. The 50 feet is measured from the top of the waterway bank. Design criteria for this diverting structure shall be in accordance with the "Standard and Specification" for the individual design standard of choice. If the roadway approach is constructed with a reverse grade away from the waterway, a separate diverting structure is not required.

6. Road Width: All crossings shall have one traffic lane. The minimum width shall be 12 feet with a maximum width of 20 feet.

7. Time of Operation: All temporary crossing shall be removed within 14 calendar days after the structure is no longer needed. Unless prior written approval is obtained, all structures shall be removed within one year from the date of the installation.

8. Materials

A. Aggregate: There shall be no earth or soil materials used for construction within the waterway channel. NYS DOT specifications for coarse aggregate designation No. 4 (3/4" to 4"), also referenced as AASHTO designation No. 1, shall be the minimum acceptable aggregate size for temporary crossings. Larger aggregates will be allowed.

B. Filter Cloth: Filter cloth is a fabric consisting of either woven or nonwoven plastic, polypropylene, or nylon used to distribute the load, retain fines, allow increased drainage of the aggregate and reduce mixing of the aggregate with the subgrade soil. Filter cloths such as Mirafi, Typar, Adva Filter, Polyfilter X, or approved equivalent shall be used, as required by the specific method.

Temporary Access Waterway Crossing Methods

The following criteria for erosion and sediment control shall be considered when selecting a specific temporary access waterway crossing standard method:

1. Site aesthetics: Select a standard design method that will least disrupt the existing terrain of the stream reach. Consider the effort that will be required to restore the area after the temporary crossing is removed.

2. Site location: Locate the temporary crossing where there will be the least disturbance to the soils of the existing waterway banks. When possible, locate the crossing at a point receiving minimal surface runoff.

3. Physical site constraints: The physical constraints of a site may preclude the selection of one or more of the standard methods.

4. Time of year: The time of year may preclude the selection of one or more of the standard methods due to fish spawning or migration restrictions.

5. Vehicular loads and traffic patterns: Vehicular loads, traffic patterns, and frequency of crossing should be considered in choosing a specific method.

6. Maintenance of crossing: The standard methods will require various amounts of maintenance. The bridge method should require the least maintenance, whereas the ford method will probably require more intensive maintenance.

7. Removal of the Structure: Ease of removal and subsequent damage to the waterway should be primary factors in considering the choice of a standard method.

Temporary Access Bridge (Figure 5A.36 on page 5A.84)

A temporary access bridge is a structure made of wood, metal, or other materials, which provides access across a stream or waterway.

Considerations

1. This is the preferred method for temporary access waterway crossings. Normally, bridge construction causes the least disturbance to the waterway bed and banks when compared to the other access waterway crossings.

2. Most bridges can be quickly removed and reused.

3. Temporary access bridges pose the least chance for interference with fish migration when compared to the other temporary access waterway crossings.

4. Restrictions and Permits: A permit from the New York State Department of Environmental Conservation, Division of Regulatory Affairs, Regional Permit Administrator, will be needed to install and remove temporary access culverts in streams with a classification of C(T) and higher. Installation and removal may not be permitted during the period of time from the start of trout spawning until the eggs have hatched. In some instances, restrictions may also be applied to bass spawning waters.

Construction Specifications

1. Restriction: Construction, use, or removal of a temporary access bridge will not normally have any time of year restrictions if construction, use, or removal does not disturb the stream or its banks.

2. Bridge Placement: A temporary bridge structure shall be constructed at or above bank elevation to prevent the entrapment of floating materials and debris.

3. Abutments: Abutments shall be placed parallel to and on stable banks.

4. Bridge Span: Bridges shall be constructed to span the entire channel. If a footing, pier, or bridge support is constructed within the waterway, a stream-disturbance permit may be required.

5. Stringers: Stringers shall either be logs, saw timber, pre-stressed concrete beams, metal beams, or other approved materials.

6. Deck Material: Decking shall be of sufficient strength to support the anticipated load. All decking members shall be placed perpendicular to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway below.

7. Run Planks (optional): Run planking shall be securely fastened to the length of the span. One run plank shall be provided for each track of the equipment wheels. Although run planks are optional, they may be necessary to properly distribute loads.

8. Curbs or Fenders: Curbs or fenders may be installed along the outer sides of the deck. Curbs or fenders are an option, which will provide additional safety.

9. Bridge Anchors: Bridges shall be securely anchored at only one end using steel cable or chain. Anchoring at only one end will prevent channel obstruction in the event that floodwaters float the bridge. Acceptable anchors are large trees, large boulders, or driven steel anchors. Anchoring shall be sufficient to prevent the bridge from floating downstream and possibly causing an obstruction to the flow.

10. Stabilization: All areas disturbed during installation shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specification for Temporary Critical Area Plantings on page 3.3.

Bridge Maintenance Requirements

1. Inspection: Periodic inspection shall be performed by the user to ensure that the bridge, streambed, and streambanks are maintained and not damaged.

2. Maintenance: Maintenance shall be performed, as needed to ensure that the structure complies with the standard and specifications. This shall include removal and disposal of any trapped sediment or debris. Sediment shall be disposed of outside of the floodplain and stabilized.

Bridge Removal and Clean-Up Requirements

1. Removal: When the temporary bridge is no longer needed, all structures including abutments and other bridging materials shall be removed within 14 calendar days. In all cases, the bridge materials shall be removed within one year of installation.

2. Final Clean-Up: Final clean-up shall consist of removal of the temporary bridge from the waterway, protection of banks from erosion, and removal of all construction materials. All removed materials shall be stored outside the waterway floodplain.

3. Method: Removal of the bridge and clean-up of the area shall be accomplished without construction equipment working in the waterway channel.

4. Final Stabilization: All areas disturbed during removal shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specifications for Permanent Critical Area Plantings on page 5.5.

Temporary Access Culvert (Figure 5A.37 on page 5A.85)

A temporary access culvert is a structure consisting of a section(s) of circular pipe, pipe arches, or oval pipes of reinforcing concrete, corrugated metal, or structural plate, which is used to convey flowing water through the crossing.

Considerations

1. Temporary culverts are used where a) the channel is too wide for normal bridge construction, b) anticipated loading may prove unsafe for single span bridges, or c) access is not needed from bank to bank.

2. This temporary waterway crossing method is normally preferred over a ford type of crossing, since disturbance to the waterway is only during construction and removal of the culvert.

3. Temporary culverts can be salvaged and reused.

Construction Specifications

1. Restrictions and Permits: A permit from the New York State Department of Environmental Conservation, Division of Regulatory Affairs, Regional Permit Administrator, will be needed to install and remove temporary access culverts in streams with a classification of C(T) and higher. Installation and removal may not be permitted during the period of time from the start of trout spawning until the eggs have hatched. In some instances, restrictions may also be applied to bass spawning waters.

2. Culvert Strength: All culverts shall be strong enough to support their cross sectional area under maximum expected loads.

3. Culvert Size: The size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is 12-inch diameter pipe.

4. Culvert Length: The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe of the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.

5. Filter Cloth: Filter cloth shall be placed on the streambed and streambanks prior to placement of the pipe culvert(s) and aggregate. The filter cloth shall cover the streambed and extend a minimum six inches and a maximum one foot beyond the end of the culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.

6. Culvert Placement: The invert elevation of the culvert shall be installed on the natural streambed grade to minimize interference with fish migration (free passage of fish).

7. Culvert Protection: The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used, they shall be separated by at least 12 in. of compacted aggregate fill. At the minimum, the bedding and fill material used in the construction of them temporary access culvert crossings shall conform with the aggregate requirements cited in the General Requirements subsection.

8. Stabilization: All areas disturbed during culvert installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for Permanent Critical Area Plantings.

Culvert Maintenance Requirements

1. Inspection: Periodic inspection shall be performed to ensure that the culverts, streambed, and streambanks are not damaged, and that sediment is not entering the stream or blocking fish passage or migration.

2. Maintenance: Maintenance shall be performed, as needed in a timely manner to ensure that structures are in compliance with this standard and specification. This shall include removal and disposal of any trapped sediment or debris. Sediment shall be disposed of and stabilized outside the waterway flood plain.

Culvert Removal and Clean-Up Requirements

1. Removal: When the crossing has served its purpose, all structures, including culverts, bedding, and filter cloth materials shall be removed within 14 calendar days. In all cases, the culvert materials shall be removed within one year of installation. No structure shall be removed during the spawning season (March 15 through June 15).

2. Final Clean-Up: Final clean-up shall consist of removal of the temporary structure from the waterway, removal of all construction materials, restoration of original stream channel cross section, and protection of the streambanks from erosion. Removed material shall be stored outside of the waterway floodplain.

3. Method: Removal of the structure and clean-up of the area shall be accomplished without construction equipment working in the waterway channel.

4. Final Stabilization: All areas disturbed during culvert removal shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for Permanent Critical Area Plantings.

Temporary Access Ford (Figure 5A.38 on page 5A.86)

A temporary access ford is a shallow structure placed in the bottom of a waterway over which the water flows while still allowing traffic to cross the waterway.

Considerations

Temporary fords may be used when the streambanks are less than four (4) feet above the invert of the stream, and the streambed is armored with naturally occurring bedrock, or can be protected with an aggregate layer in conformance with these specifications.

Construction Specifications

1. Restrictions and Permits: A permit from New York State Department of Environmental Conservation, Division of Regulatory Affairs, Regional Permit Administrator, will be needed to install, use, and remove temporary fords in streams with a classification of C(T) or higher. Installation and removal may not be permitted during the period of time from the start of trout spawning until the eggs have hatched. In some instances, restrictions may also be applied to bass spawning waters.

2. The approaches to the structure shall consist of stone pads constructed to comply with the aggregate requirements of the General Requirements subsection.

The entire ford approach (where banks were cut) shall be covered with filter cloth and protected with aggregate to a depth of four (4) inches.

3. Fords shall be prohibited when the streambanks are four (4) feet or more in height above the invert of the stream.

4. The approach roads at the cut banks shall be no steeper than 5:1. Spoil material from the banks shall be stored out of the floodplain and stabilized.

5. One layer of filter cloth shall be placed on the streambed, streambanks, and road approaches prior to placing the bedding material on the stream channel or approaches. The filter cloth will be a minimum of six (6) inches and a maximum one foot beyond bedding material.

6. The bedding material shall be course aggregate or gabion mattresses filled with coarse aggregate.

7. Aggregate used in ford construction shall meet the minimum requirements of the General Requirements subsection.

8. All fords shall be constructed to minimize the blockage of stream flow and shall allow free flow over the ford. The placing of any material in the waterway bed will cause some upstream ponding. The depth of this ponding will be equivalent to the depth of the material placed within the stream and therefore should be kept to a minimum height. However, in no case will the bedding material be placed deeper than 12 inches or one-half (1/2) the height of the existing banks whichever is smaller.

9. Stabilization: All areas disturbed during ford installation shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specifications for Temporary Critical Area Planting on page 3.3.

10. Ford removal and Clean-Up Requirements

A. Removal: When the temporary structure has served its purpose, excess material used for this structure need not be removed. Care should be taken so that any aggregate left does not create an impoundment or restrict fish passage.

B. Final Clean-Up: Final clean-up shall consist of removal of excess temporary ford materials from the waterway. All materials shall be stored outside the waterway floodplain.

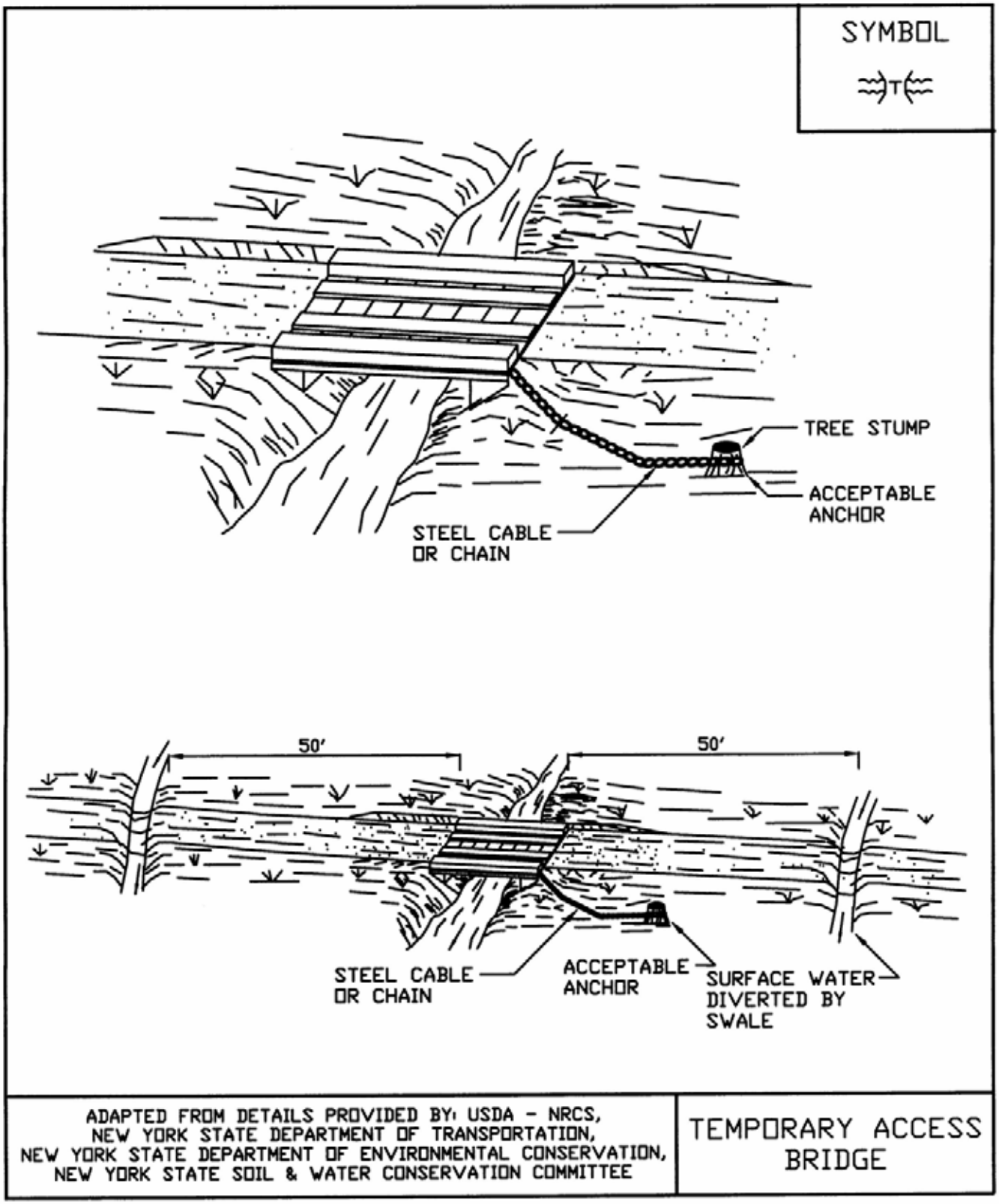
C. Method: Clean up shall be accomplished without construction equipment working in the stream channel.

D. Approach Disposition: The approach slopes of the cut banks shall not be backfilled.

E. Final Stabilization: All areas disturbed during ford removal shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specifications for Permanent Critical Area Planting on page 3.3.

NOTE: Any temporary access crossing shall conform to the technical requirements of this Standard and Specifications as well as any specific requirement imposed by the New York State Department of Environmental Conservation. Permits may be required for streambank disturbance.

Figure 5A.36
Temporary Access Bridge



STANDARD AND SPECIFICATIONS FOR DUST CONTROL

Definition

The control of dust resulting from land-disturbing activities.

Purpose

To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the local permitting authority.

Construction Specifications

A. Non-driving Areas – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. Driving Areas – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access routes.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

Barriers – Woven geotextiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

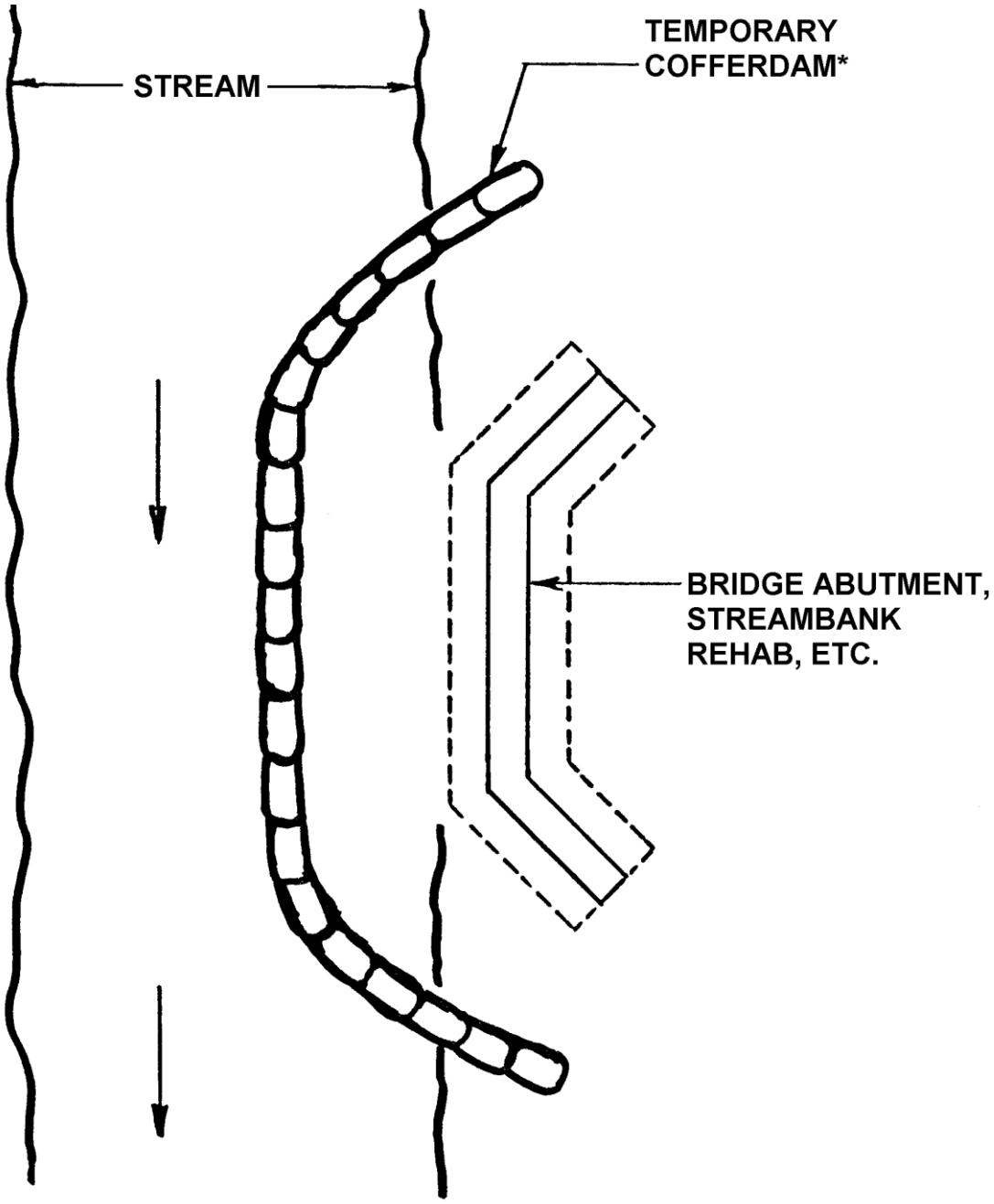
Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

All Stormwater Pollution Prevention Plans must contain the NYS DEC issued “Conditions for Use” and “Application Instructions” for any polymers used on the site. This information can be obtained from the NYS DEC website.

Maintenance

Maintain dust control measures through dry weather periods until all disturbed areas are stabilized.

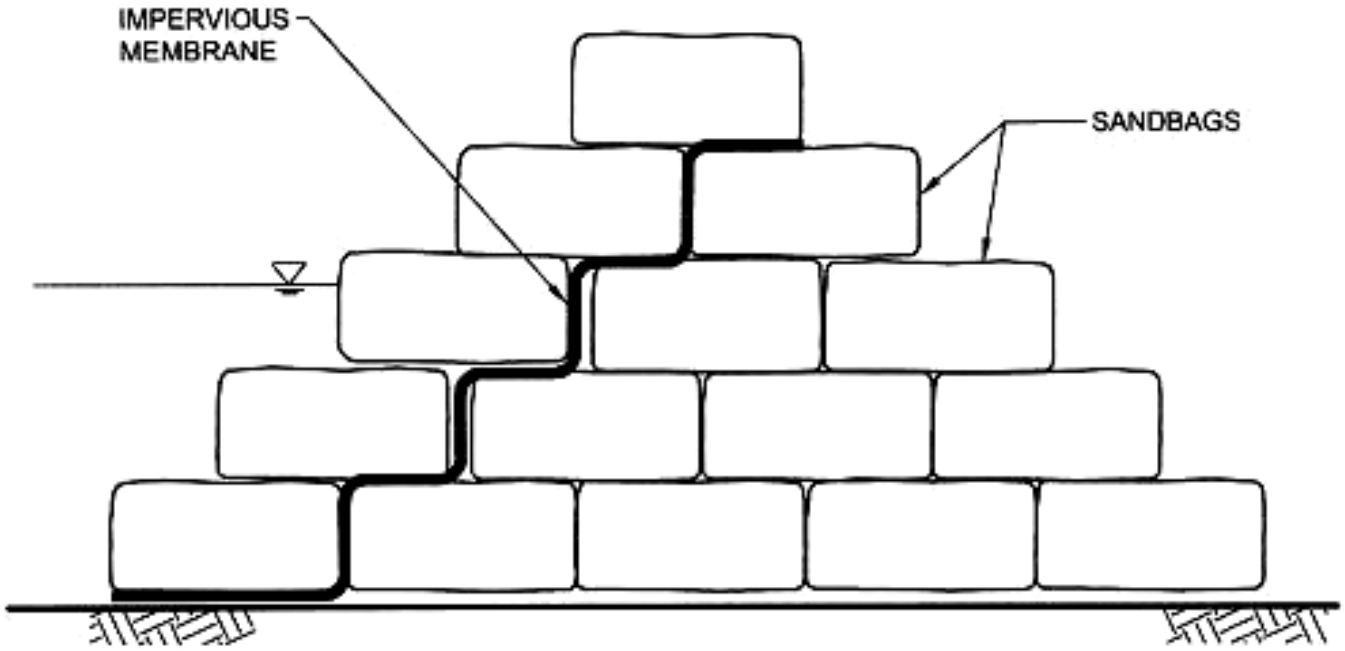
FIGURE 3.12
In-stream Cofferdam Diversion



PA DEP

*** Sandbags (Standard Construction Detail #3-15), Jersey barriers (Figure 3.13) or other non-erosive material, no earth fill.**

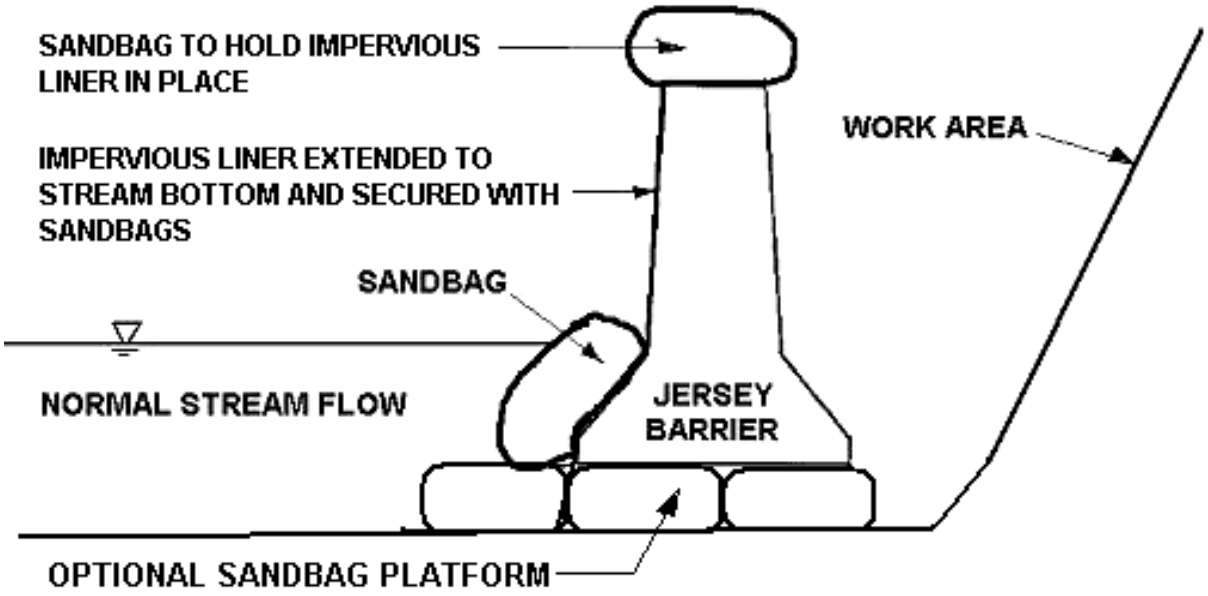
STANDARD CONSTRUCTION DETAIL #3-15
Sandbag Diversion Dam or Cofferdam



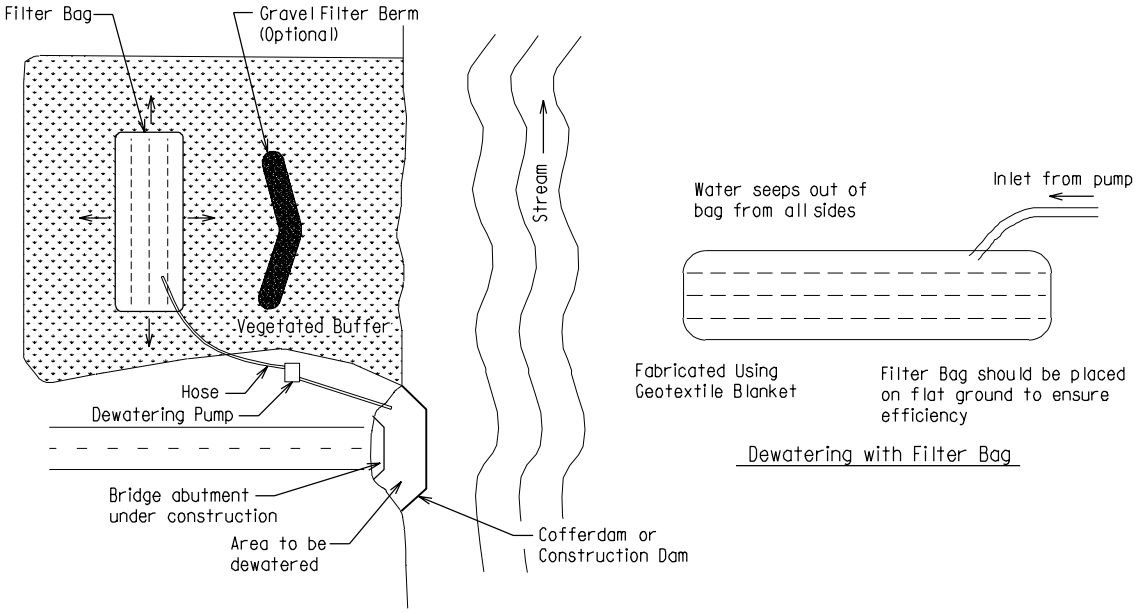
PA DEP

2 BAG MINIMUM HEIGHT ABOVE NORMAL BASE FLOW

FIGURE 3.13
Jersey Barrier Cofferdam – End View



PA DEP



Use:

Dewatering operations may utilize a Filter Bag located a sufficient distance from the watercourse or wetland to allow for proper settling or filtering through natural vegetation.

Installation and Maintenance:

The Filter Bag must be of adequate size or the pumping rate must be reduced to still the water for a sufficient time to allow particles to settle.

When Dewatering with a Filter Bag on a barge, care shall be taken during the removal of the Filter Bag to ensure that sediment does not enter the watercourse.

Optional Measures:

Installation of a Gravel Filter Berm (E & S-13) may be required to provide additional sediment removal. Placement of a Sediment Basin (E & S-21) may be required if the water returning to the streams or wetland area remains turbid.

Related SESC Measures:

E & S-13 Gravel Filter Berm
E & S-20 Sediment Trap
E & S-21 Sediment Basin
E & S-34 Cofferdam
E & S-36 Construction Dam

Measurement and Payment:

Dewatering and associated E & S measures are generally not paid for separately but are included in related items of work. When a Filter Bag is used to aid in removing sediment, it will be paid for separately. Optional work shown, when installed and maintained as directed by the Engineer, will be paid using the associated contract items listed here unless otherwise specified.

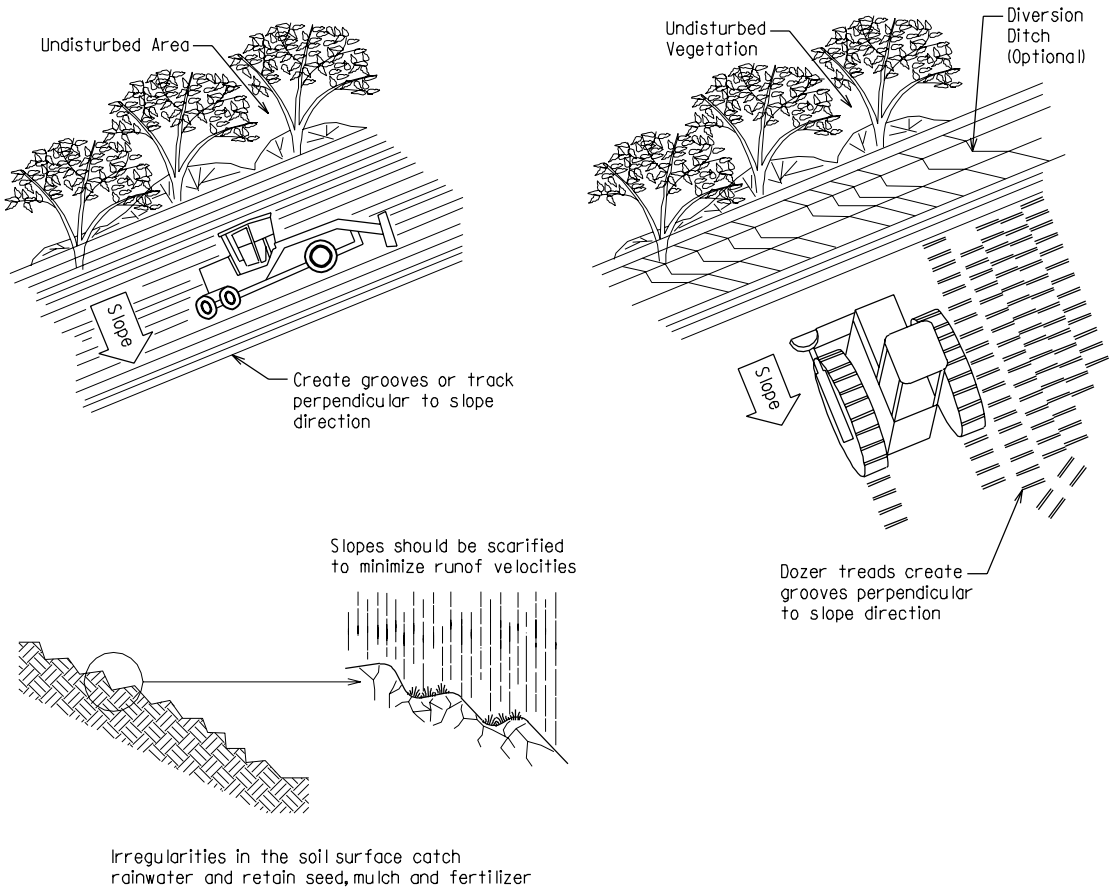
Contract Item (Pay Item)	Pay Unit
Erosion Control, Sediment Basin	Cubic Yard
Erosion Control, Maintenance, Sediment Removal	Cubic Yard
Erosion Control, Gravel Filter Berm	Foot
Erosion Control, Filter Bag	Each

PERMITS FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY MAY BE REQUIRED.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Dewatering with Filter Bag

MDOT Michigan Department of Transportation	04-07-2006 PLAN DATE	E&S-18-A	SHEET 1 OF 1



Use:
Surface Roughening and Scarification is accomplished by placing horizontal grooves in a slope perpendicular to the direction of runoff.

Installation and Maintenance:
This can be done by either disc harrowing, back blading, or running the treads of a dozer perpendicular to the slope.

Optional Measures:
A Diversion Ditch (E & S-10), Intercepting Ditch (E & S-11) and Intercepting Ditch and Diversion Dike (E & S-12) may be placed at the top of the slope to minimize the amount of runoff draining from the undisturbed area onto the new slope.

Related SESC Measures:
E & S-3 Permanent/Temporary Seeding
E & S-10 Diversion Dike
E & S-11 Intercepting Ditch
E & S-12 Intercepting Ditch and Diversion Dike
E & S-28 Mulching and Mulch Anchoring

Measurement and Payment:
There is no separate contract item for this E & S measure. Payment for Surface Roughening and Scarification will be included in related items of work. Optional work shown, when installed and maintained as directed by the Engineer, will be paid using the associated contract item listed here.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Surface Roughening and Scarification

MDOT Michigan Department of Transportation	09-30-2005 PLAN DATE	E&S-32-A	SHEET 1 OF 1

APPENDIX F

Record of Revisions to the SWPPP

RECORD OF REVISIONS TO THE SWPPP

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP;

OR

2. The SWPPP is found to be ineffective in:
   - Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit;

   OR

   - Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity;

AND

3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

   The regulating authority must also approve substantive revisions to the SWPPP.
   The Site Owner, Site Operator, Prime Contractor, and Subcontractor(s) must also certify that they agree to implement the revisions to the SWPPP.

Date: _____ *By:* _____ *Firm:* _____

Modification(s) & Reason(s):

APPENDIX G

Pre-construction Checklist

Site Inspection Forms and Completed Inspection Forms
(format may be revised based on current construction)

Monthly Summaries of Inspections

Pre-CONSTRUCTION CHECKLIST *Page 1 of 1*

_____ _____ _____

Name of Qualified Professional *Signature* *Date*

The above acknowledges that, to the best of his/her knowledge, all information provided on the inspection form is accurate and complete.

1. Notice of Intent, SWPPP, and Contractors Certification:	*OK*	*Not OK*	*NA*
Notice of Intent has been filed with the NYSDEC.	[ ]	[ ]	[ ]
The SWPPP is on-site at _____	[ ]	[ ]	[ ]
The SWPPP is current with the latest revision date being _____	[ ]	[ ]	[ ]
A copy of the NOI is onsite at _____	[ ]	[ ]	[ ]
All contractors involved with storm water related signed the contractor's certification.	[ ]	[ ]	[ ]

2. Resource Protection	*OK*	*Not OK*	*NA*
Construction limits are clearly flagged; fenced; or otherwise identified.	[ ]	[ ]	[ ]
Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.	[ ]	[ ]	[ ]
Creek crossings installed prior to land-disturbing, including clearing and blasting.	[ ]	[ ]	[ ]

3. Surface Water Protection	*OK*	*Not OK*	*NA*
Clean storm water runoff has been diverted from areas to be disturbed.	[ ]	[ ]	[ ]
Water bodies located either on or in the vicinity of the site are identified and protected.	[ ]	[ ]	[ ]
Appropriate practices to protect on-site or downstream surface water are installed.	[ ]	[ ]	[ ]
Clearing and grading operations are divided into areas < 5 acres?	[ ]	[ ]	[ ]

4. Stabilized Construction Entrance	*OK*	*Not OK*	*NA*
A temporary construction entrance has been installed.	[ ]	[ ]	[ ]
Other access areas (entrances, construction routes, equipment parking areas) are stabilized with gravel or other cover immediately as work takes place.	[ ]	[ ]	[ ]
Sediment tracked onto public streets is removed or cleaned on a regular basis.	[ ]	[ ]	[ ]

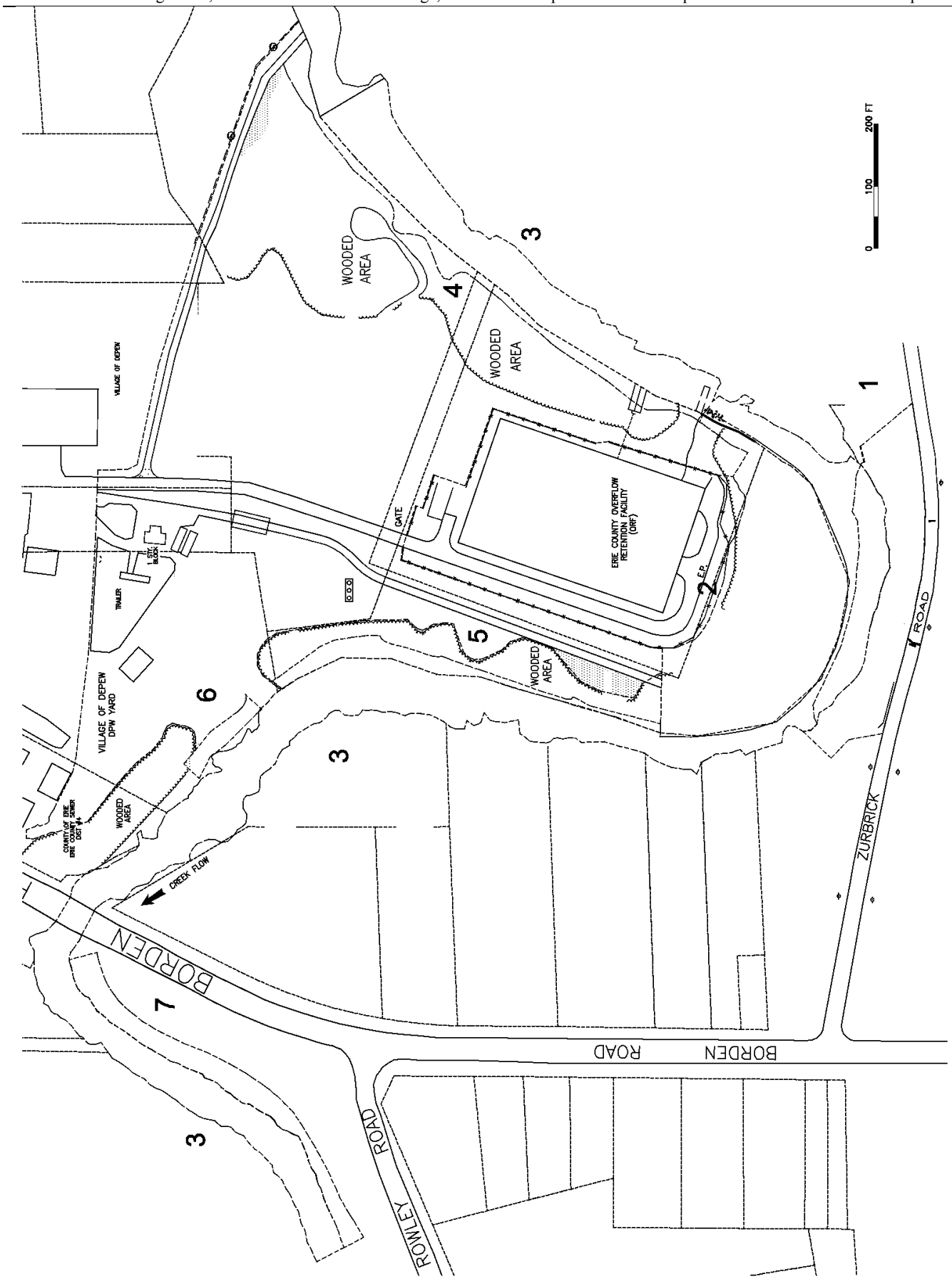
5. Perimeter Sediment Controls	*OK*	*Not OK*	*NA*
Sediment/detention basin was installed as first land disturbing activity.	[ ]	[ ]	[ ]
Silt fence material and installation comply with the standard drawing and specifications.	[ ]	[ ]	[ ]
Silt fences are installed at appropriate spacing intervals.	[ ]	[ ]	[ ]
Sediment traps and barriers are installed.	[ ]	[ ]	[ ]

6. Pollution Prevention for Waste and Hazardous Materials	*OK*	*Not OK*	*NA*
The Pollution Prevention Plan is contained at page _____ of the SWPPP.	[ ]	[ ]	[ ]
Appropriate materials to control spills are onsite at _____	[ ]	[ ]	[ ]
The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.	[ ]	[ ]	[ ]
The site is appropriately delineated to identify "dirty" hazardous waste working areas and "clean" non-contaminated equipment access/working/staging areas.	[ ]	[ ]	[ ]
WWTP operating before construction starts where contaminated water will be collected.	[ ]	[ ]	[ ]

CONSTRUCTION DURATION INSPECTION *Page 1 of 1*

Name of Qualified Professional	*Signature*	*Date*

The above acknowledges that, to the best of his/her knowledge, all information provided on the inspection form is accurate and complete.



CONSTRUCTION DURATION INSPECTIONS

Maintaining Water Quality	*OK*	*Not OK*	*NA*
No increase in turbidity causing a substantial visible contrast to natural conditions.	[ ]	[ ]	[ ]
No residue from oil and floating substances, visible oil film, or globules or grease.	[ ]	[ ]	[ ]
Disturbance is within the limits of the approved plan.	[ ]	[ ]	[ ]
No receiving waters and/or wetlands impacted by silt from project.	[ ]	[ ]	[ ]

Housekeeping

General Site Conditions	*OK*	*Not OK*	*NA*
Construction site litter and debris appropriately managed.	[ ]	[ ]	[ ]
Facilities and equipment necessary to implement erosion and sediment control in working order and properly maintained.	[ ]	[ ]	[ ]
Construction not impacting the adjacent property.	[ ]	[ ]	[ ]
Dust adequately controlled.	[ ]	[ ]	[ ]

Site Pollution Prevention

Contaminated soil areas	*OK*	*Not OK*	*NA*
Cofferdams installed to separate contaminated soil/runoff from creek.	[ ]	[ ]	[ ]
Site Exclusion and Contaminant Reduction Zone separation and correctly followed.	[ ]	[ ]	[ ]
No discharge to Creek.	[ ]	[ ]	[ ]
Contaminated water being vacced out or stored in temporary tanks for treatment.	[ ]	[ ]	[ ]
WWTP operating correctly.	[ ]	[ ]	[ ]

Sediment Control Practices

Stabilized Construction Entrance	*OK*	*Not OK*	*NA*
ll traffic uses the stabilized entrance and stabilized access roads.	[ ]	[ ]	[ ]
Temporary creek crossing installed and adequate.	[ ]	[ ]	[ ]

Silt Transport Barriers	*OK*	*Not OK*	*NA*
Installed on contour, 10 feet from toe of slope (not across flow channels).	[ ]	[ ]	[ ]
Silt fence or other barrier correctly installed.	[ ]	[ ]	[ ]
Transport barriers installed every place necessary.	[ ]	[ ]	[ ]
Barriers are stable, in good condition, and operating correctly.	[ ]	[ ]	[ ]
Sediment accumulation is _____% of design capacity.	[ ]	[ ]	[ ]

Runoff Control Practices

Dewatering	*OK*	*Not OK*	*NA*
Runoff Diversions (sandbags, inflatable dams, berms, etc.) installed where needed.	[ ]	[ ]	[ ]
Turbid and/or contaminated water in cofferdams being collected and treated.	[ ]	[ ]	[ ]
Sediment-laden water from work area being discharged to a silt-trapping device.	[ ]	[ ]	[ ]

Rock Outlet Protection	*OK*	*Not OK*	*NA*
Installed per plan, concurrently with pipe.	[ ]	[ ]	[ ]

CONSTRUCTION DURATION INSPECTIONS

Soil Stabilization

Topsoil and Spoil Stockpiles	*OK*	*Not OK*	*NA*
Stockpiles are stabilized with vegetation and/or mulch when necessary.	[ ]	[ ]	[ ]
Sediment control is installed at the toe of the slope.	[ ]	[ ]	[ ]

Re-vegetation	*OK*	*Not OK*	*NA*
Temporary seeding and mulch have been applied to idle areas.	[ ]	[ ]	[ ]
Min 4 inches topsoil applied under permanent seeding.	[ ]	[ ]	[ ]

Final Stabilization	*OK*	*Not OK*	*NA*
Rolled erosion-control blankets installed in approved manner.	[ ]	[ ]	[ ]
Erosion-control blankets installed concurrent with final grading.	[ ]	[ ]	[ ]
Rip rap toe protection installed as specified.	[ ]	[ ]	[ ]
Rip rap toe protection installed as work progresses.	[ ]	[ ]	[ ]
Live stakes and poles installed as specified.	[ ]	[ ]	[ ]
Live stakes and poles installed concurrent with installing E/C blankets and rip rap.	[ ]	[ ]	[ ]

CONSTRUCTION DURATION INSPECTIONS *Page 4 of 4*

Notes; General Observations; Revisions to the SWPPP to be considered, etc.; Deficiencies to be corrected (note locations of site sketch (page 1) and attach photographs and shoe photo angle on site sketch);

MONTHLY SUMMARY OF INSPECTIONS

Permitted Facility: **Depew Village Landfill Site No. 9-15-105; Rutherford Place, Depew NY 14043**

Reporting month:/year _____ / _____

_____	_____	_____
Name of Qualified Professional	*Signature*	*Date*

The above acknowledges that, to the best of his/her knowledge, all information provided on this summary is accurate and complete.

Inspection Date	***(Circle Type) Reg / Post-precip.***	***Inspector Initials***	***Items of Concern [None -- Or summarize items]***
_____	R P	_____	_____
_____	R P	_____	_____
_____	R P	_____	_____
_____	R P	_____	_____
_____	R P	_____	_____
_____	R P	_____	_____

Site Owner/Operator Certification:

I understand that the construction activity is authorized and governed by the ***Storm Water Pollution Prevention Plan*** *approved by the NYSDEC and is governed by the NYS Permit No. GP-0-08-001;* ***SPDES General Permit for Storm Water Discharges from Construction Activity****. I also understand that substantial criminal, civil, and/or administrative penalties are possible for violating the provisions of the permit, including fines up to $37,500 per day per violation and imprisonment up to 15 years.*

I certify under penalty of law that this report was 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, this record of inspections is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

_____	Russo Development, Inc.	_____
Signature of Authorized Representative	*Prime Remediation Contractor*	*Date*