GENERAL PERMIT REGISTRATION

For

Discharge of Stormwater and Dewatering Wastewaters for Construction Activities

Reconstruction of Route 31
Intersection of Route 31 and Route 275
Project No. 32-130
Coventry, Connecticut

Registrant:
The State of Connecticut
Department of Transportation – District 1
1107 Cromwell Avenue
Rocky Hill, CT 06067

Prepared By:
BSC Group
300 Winding Brook Drive
Glastonbury, CT 06033

April, 2014

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit Registration Form for the Discharge of Stormwater and Dewatering

Prior to completing this form, you **must** read the instructions for the subject general permit available at **DEEP-WPED-INST-015**.
This form must be filled out electronically before being printed.
You must submit the registration fee along with this form.

The status of your registration can be checked on the DEEP's ezFile Portal. Please note that DEEP will no longer mail certificates of registration.

CPPU USE ONLY

App #:_____

Doc #:_____

Check #:_____

Program: Stormwater

Part I: Registration Type

Select the appropriate boxes identifying the registration type and registration deadline.

Registration Type			Registration Timeline	
☐	**Re-registration** **Existing Permit No. GSN _____**		**On or before February 1, 2014*** *Note: Failure to renew a permit by this date will require submission of new registration. Re-registrants must only complete Parts I, II, III (except Question 8), IV - Question 1, VII and submit Attachment A.	
☒	**New Registration** (Refer to Section 2 of the permit for definitions of Locally Exempt and Locally Approvable Projects)	☐ **Locally Approvable Projects** **Size of soil disturbance:**	**New registration - Sixty (60) days prior to the initiation of the construction activity for:** Sites with a total soil disturbance area of 5 or more acres	
		☒ **Locally Exempt Projects** **Size of soil disturbance:4.97**	☒	**New registration - Sixty (60) days prior to the initiation of the construction activity for:** Sites with a total disturbance area of one (1) to twenty (20) acres except those with discharges to impaired waters or tidal wetlands
			☐	**New registration - Ninety (90) days prior to the initiation of the construction activity for:** (i) Sites with a total soil disturbance area greater than twenty (20) acres, or (ii) Sites discharging to a tidal wetland (that is not fresh-tidal and is located within 500 feet), or (iii) Sites discharging to an impaired water listed in the "Impaired Waters Table for Construction Stormwater Discharges"

Part II: Fee Information

1. New Registrations
   a. Locally approvable projects (registration only):
      ☐ $625 [#1855]
   b. Locally exempt projects (registration and Plan):
      ☒ $3,000 total soil disturbance area ≥ one (1) and < twenty (20) acres. [#1856]
      ☐ $4,000 total soil disturbance ≥ twenty (20) acres and < fifty (50) acres. [#1857]
      ☐ $5,000 total soil disturbance ≥ fifty (50) acres. [#1858]
2. Re-Registrations
   ☐ $625 (sites previously registered prior to September 1, 2012) [#1853]
   ☐ $0 (sites previously registered between September 1, 2012 and the issuance date of this permit) [#1854]

The fees for municipalities shall be half of those indicated in subsections 1.a., 1.b., and 2 above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection. The registration will not be processed without the fee. The fee shall be non-refundable and shall be paid by certified check or money order payable to the Department of Energy and Environmental Protection.

Part III: Registrant Information

- If a registrant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of the State. If applicable, the registrant's name shall be stated **exactly** as it is registered with the Secretary of the State. This information can be accessed at **CONCORD.**
- If a registrant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

1. Registrant /Client Name: Connecticut Department of Transportation

   State Agency ⬇

   Secretary of the State business ID #:

   Mailing Address: 1107 Cromwell Avenue - District 1

   City/Town: Rocky Hill State: CT Zip Code: 06067

   Business Phone: 860-258-4601 ext.:

   Example:(xxx) xxx-xxxx

   Contact Person: Ravi V. Chandran, PE Title:

   E-Mail: **Ravi.Chandran@ct.gov**

   Additional Phone Number (if applicable): ext.

2. List billing contact, if different than the registrant:

   Name: Same

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Title:

Part III: Registrant Information (continued)

3. List primary contact for departmental correspondence and inquiries, if different than the registrant:

Name: Same

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Site Phone: Emergency Phone:

Contact Person: Title:

Association (e.g. developer, general or site contractor, etc.):

4. List owner of the property on which the activity will take place, if different from registrant:

Name: Same

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person:

5. List developer, if different from registrant or primary contact:

Name: Same

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person: Title:

6. List general contractor, if different from registrant or primary contact:

Name: Not Available

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Site Phone: Off Hours Phone:

Contact Person: Title:

7. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration and/or Stormwater Pollution Control Plan. ☐ Please select if additional sheets are necessary, and label and attach them to this sheet.

Name: BSC Group - Connecticut, Inc.

Mailing Address: 300 Winding Brook Drive

City/Town: Glastonbury State: CT Zip Code: 06033

Business Phone: 860-652-8227 ext.: 4549

Contact Person: Francis J. Vacca, PE Title: Civil Engineer

Service Provided: **Permit Preparation**

8. List Reviewing Qualified Professional (for locally approvable projects only):

Name: NA Contact Person:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Part IV: Site Information

1. Site Name: Reconstrucion of Route 31

   Street Address or Description of Location: 300 ft north of intersection with State Route 275 to 900 ft east of Monument Hill Road

   City/Town: Coventry State: CT Zip Code: 06238

   Brief Description of construction activity: Reconstruction/realignment of a portion of Route 31 to increase the safety of the roadway. The reconstruction includes upgrades to the drainage infrastructure and access management.

   Project Start Date: 05 / 2015 *(month/ yr)* Anticipated Completion Date: 11 / 2016 *(month/ yr)*

   Normal working hours: **8 am** to **5 pm**

2. MINING: Is the activity on the site in question part of mining operations (i.e. sand and gravel)? ☐ Yes ☒ No

   If yes, mining is not authorized by this general permit. You must submit the Registration Form for the General Permit for the Discharge of Stormwater Associated with Industrial Activity.

3. COMBINED OR SANITARY SEWER: Does all of the stormwater from the proposed activity discharge to a combined or sanitary sewer (i.e. a sewage treatment plant)? ☐ Yes ☒ No

   If yes, this activity is not regulated by this permit. Contact the Water Permitting & Enforcement Division at 860-424-3018.

4. INDIAN LANDS: Is or will the facility be located on federally recognized Indian lands ☐ Yes ☒ No

5. COASTAL BOUNDARY: Is the activity which is the subject of this registration located within the coastal boundary as delineated on DEEP approved coastal boundary maps ☐ Yes ☒ No

   The coastal boundaries fall within the following towns: Branford, Bridgeport, Chester, Clinton, Darien, Deep River, East Haven, East Lyme, Essex, Fairfield, Greenwich, Groton (City and Town), Old Lyme, Guilford, Hamden, Ledyard, Lyme, Madison, Milford, Montville, New London, New Haven, North Haven, Norwalk, Norwich, Old Saybrook, Orange, Preston, Shelton, Stamford, Stonington (Borough and Town), Stratford, Waterford, West Haven, Westbrook and Westport.

   If "yes", and this registration is for a new authorization or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must provide documentation the DEEP Office of Long Island Sound Programs or the local governing authority has issued a coastal site plan approval or determined the project is exempt from coastal site plan review. Provide this documentation with your registration as Attachment B. See guidance in Appendix D of the general permit. Information on the coastal boundary is available at the local town hall or at www.cteco.uconn.edu/map_catalog.asp. Additional DEEP Maps and Publications are available by contacting DEEP staff at 860-424-3555.

Part IV: Site Information (continued)

6. ENDANGERED OR THREATENED SPECIES:

In order to be eligible to register for this General Permit, each registrant must perform a self-assessment, obtain a limited one-year determination, or obtain a safe-harbor determination regarding threatened and endangered species. This may include the need to develop and implement a mitigation plan. While each alternative has different limitations, the alternatives are not mutually exclusive; a registrant may register for this General Permit using more than one alternative. See Appendix A of the General Permit. Each registrant must complete this section AND Attachment C to this Registration form and a registrant who does not or cannot do so is not eligible to register under this General Permit.

Each registrant must perform a review of the Department's Natural Diversity Database maps to determine if the site of the construction activity is located within or in proximity (within ¼ mile) to a shaded area.

a. Provide the date the NDDB maps were reviewed: December 2013 (Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attacment C.)

b. For a registrant using a limited one-year determination or safe harbor determination to register for this General Permit, provide the Department's Wildlife Divison NDDB identification number for any such determination: 201400714 (The number is on the determination issued by the Department's Wildlife Divison).

c. verify that I have completed Attachment C to this Registration Form. ☒ Yes

For more information on threatened and endangered species requirements, refer to Appendix A and Section 3(b)(2) of this General Permit, visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDB at 860-424-3011.

7. WILD AND SCENIC RIVERS: Is the proposed project within the watershed of a designated Wild and Scenic River? (See Appendix H for guidance) ☐ Yes ☒ No

8. AQUIFER PROTECTION AREAS: Is the site located within a mapped aquifer protection area www.ct.gov/deep/aquiferprotection as defined in section 22a-354h of the CT General Statutes? ☐ Yes ☒ No
(For additional guidance, please refer to Appendix C of the General Permit)

9. CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL: Is the activity in accordance with CT Guidelines for Erosion and Sediment Control and local erosion & sediment control ordinances, where applicable? ☒ Yes ☐ No

10. HISTORIC AND/OR ARCHAEOLOGICAL RESOURCES:
Has the site of the proposed activity been reviewed (using the process outlined in Appendix G of this permit) for historic and/or archaeological resources? ☒ Yes ☐ No

a. The review indicates the proposed site does not have the potential for historic/ archaeological resources, OR ☐ Yes ☒ No

b. The review indicated historic and/ or archaeological resource potential exists and the proposed activity is being or has been reviewed by the Offices of Culture and Tourism, OR ☒ Yes ☐ No

c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. ☒ Yes ☐ No

11. CONSERVATION OR PRESERVATION RESTRICTION:
Is the property subject to a conservation or preservation restriction? ☐ Yes ☒ No

If Yes, proof of written notice of this registration to the holder of such restriction or a letter from the holder of such restriction verifying that this registration is in compliance with the terms of the restriction, must be submitted as Attachment D.

Part V: Stormwater Discharge Information

Table 1

Outfall #	a) Type	b) Pipe Material	c) Pipe Size	d) Note: To find lat/long, go to: CT ECO. A decimal format is required here. Directions on how to use CT ECO to find lat./long. and conversions can be found in Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
MO-1	pipe	concrete	18"	-7 2.3 0 4 1 9	4 1.7 6 9 2 5	other: Software
MO-2	pipe	concrete	15"	-7 2.3 0 2 4 5	4 1.7 6 8 5 0	other: Software
MO-3	pipe	concrete	12"	-7 2.3 0 2 5 1	4 1.7 6 8 4 5	other: Software
MO-4	pipe	other: concrete	12"	-7 2.3 0 2 2 9	4 1.7 6 8 4 6	other: Software
MO-5	other: Box Culv	other: concrete	other: 4'x9'	-7 2.3 0 2 1 9	4 1.7 6 8 0 4	other: Software

Table 2

Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer" or "wetlands/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water" ? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
MO-1	05/01-mm/dd-mm/dd	33,400 sq feet	37,300 sq feet	wetlands/waterbody	☐ Yes ☒ No	Select one:
MO-2	05/01-mm/dd-mm/dd	44,060 sq feet	41,518 sq feet	wetlands/waterbody	☐ Yes ☒ No	Select one:
MO-3	05/01-mm/dd-mm/dd	3,690 sq feet	3,540 sq feet	wetlands/waterbody	☐ Yes ☒ No	Select one:
MO-4	05/01-mm/dd-mm/dd	23,091 sq feet	22,498 sq feet	wetlands/waterbody	☐ Yes ☒ No	Select one:
MO-5	05/01-mm/dd-mm/dd	34,837 sq feet	27,161 sq feet	Select one:	☐ Yes ☒ No	Select one:
		(nxt pg) total sq feet	**(nxt pg) total sq feet**			

Part V: Stormwater Discharge Information

Table 1

Outfall #	a) Type	b) Pipe Material	c) Pipe Size	d) Note: To find lat/long, go to: CT ECO. A decimal format is required here. Directions on how to use CT ECO to find lat./long. and conversions can be found in Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
MO-6	pipe	concrete	18"	-7_2.3_0_1_0_3	4_1.7_6_7_9_6	other: Software
	Select One:	Select One:	Select One:	-_ _.__ _ _ _	_ _.__ _ _ _	Select One:
	Select One:	Select One:	Select One:	-_ _.__ _ _ _	_ _.__ _ _ _	Select One:
	Select One:	Select One:	Select One:	-_ _.__ _ _ _	_ _.__ _ _ _	Select One:
	Select One:	Select One:	Select One:	-_ _.__ _ _ _	_ _.__ _ _ _	Select One:

Table 2

Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer" or "wetlands/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water" ? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
MO-6	05/01-mm/dd-mm/dd	18,200 sq feet	18,300 sq feet	wetlands/waterbody	☐ Yes ☒ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
		157,278 total sq feet	**150,317 total sq feet**			

Part V: Stormwater Discharge Information (continued)

Table 3 Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site:			
Outfall #	a) What is your 305b ID # (water body ID #)? (Section 3.b, of the DEEP-WPED-INST-015, explains how to find this information)	b) Is your receiving water identified as a impaired water in the "Impaired Waters Table for Construction Stormwater Discharges"? If yes, proceed to next question. If no, proceed to Part VI: Pollution Control Plan.	c) Has any Total Maximum Daily Load (TMDL) been approved for the impaired water?
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N

Part V: Stormwater Discharge Information (continued)

Impaired waters: If you answered "yes" to Table 3, question b.,**verify** that the project's Pollution Control Plan (Plan) addresses the control measures below in Question 1 or 2, as appropriate.

1. **If the impaired water does not have a TMDL,** confirm compliance by selecting 1.a. or 1.b. below:
   a. No more than 3 acres is disturbed at any time; ☐ Yes

   OR

   b. Stormwater runoff from a 2 yr, 24 rain event is **retained.** ☐ Yes

2. **If the impaired water has a TMDL,** confirm compliance by selecting 2.a. and 2.b. below and either question 2.c.1. or 2.c.2. below:
   a. The Plan documents there is sufficient remaining Waste Load Allocations (WLA)in the TMDL for the proposed discharge, ☐ Yes

   AND

   b. Control measures shall be implemented to assure the WLA will not be exceeded, ☐ Yes

   AND

   c. 1. Stormwater discharges will be monitored for the indicator pollutant identified in theTMDL, ☐ Yes

   OR

   2. The Plan documents specific requirements for stormwater discharges specified in the TMDL. ☐ Yes

Part VI: Pollution Control Plan (select one of the following four categories)

☐ I am registering a Locally Exempt project and submitting the required electronic Plan (in Adobe™ PDF or similar publically available format) pursuant to Section 3(*c*)(2)(E) of this permit.

- ☐ Plan is attached to this registration form
- ☐ Plan is available at the following Internet Address (URL):

☐ I am registering a Locally Approvable project and have chosen not to submit the Plan with this registration pursuant to Section 3(*c*)(1) of this permit.

☐ I am registering a Locally Approvable project and have chosen to make my Plan electronically available pursuant to Section 4(*c*)(2)(N) of this permit.

- ☐ Plan is attached to this registration form
- ☐ Plan is available at the following Internet Address (URL):

☒ I am registering a Locally Exempt project and do not have the capability to submit the Plan electronically. Therefore, I am submitting a paper copy with this registration as Attachment E.

Part VII: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

For New Registrants:

" I hereby certify that I am making this certification in connection with a registration under such general permit, [INSERT NAME OF REGISTRANT BELOW] submitted to the commissioner by Ravi V. Chandran, District 1 Engineer for [INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW] an activity located at Route 31 at intersection with Route 275, Coventry CT and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*) (8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(*b*)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

For Re-registrants:

" I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner [INSERT NAME OF REGISTRANT BELOW] by _____ for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW] _____ and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

Signature of Registrant	Date
Ravi V. Chandran, PE	**District 1 Engineer**
Name of Registrant (print or type)	Title (if applicable)
	4/15/14
Signature of Preparer (if different than above)	Date
Francis J. Vacca, PE	**Civil Engineer**
Name of Preparer (print or type)	Title (if applicable)

Part VIII: Professional Engineer (or Landscape Architect, where appropriate) Design Certification (for publically approvable and exempt projects)

The following certification must be signed by a Professional Engineer or Landscape Architect where appropriate.

"I hereby certify that I am a professional engineer licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by

[INSERT NAME OF REGISTRANT BELOW]

Francis J. Vacca, P.E.

for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

Route 31 at intersection with Route 275, Coventry CT

I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate, and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

	4/15/14
Signature of Design Professional	Date
Francis J. Vacca, PE	**Civil Engineer**
Name of Professional (print or type)	Title
300 Winding Brook Drive	**Glastonbury**
Mailing Address	City/Town
CT **06033**	**860-652-8227**
State Zip Code	Business Phone
STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER	**29098**
	License #
Affix P.E/L.A Stamp Here	

Part IX: Reviewing Qualified Professional Certification

The following certification must be signed by a) a Conservation District reviewer OR, b) a qualified soil erosion and sediment control and/or professional engineer

☐ **Review certification by Conservation District:**

1.) District: list of districts

Date of Affirmative Determination:

" I am making this certification in connection with a registration under General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner

[INSERT NAME OF REGISTRANT BELOW]

by _____ for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

_____.

I have personally examined and am familiar with the information that provides the basis for this certification, and I affirm, based on the review described in Section 3(*b*)(11)(C) of this general permit and on the standard of care for such projects, that the Stormwater Pollution Control Plan is adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and that all stormwater management systems: (i) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution."

_____

Signature of District Professional and Date

_____

Name of District Professional and License Number (if applicable)

Or

☐ **Review certification by Qualified Professional**

Company: _____

Name: _____

License # : _____

Level of independency of professional:

Required for all projects disturbing over 1 acre:

1. I verify I am not an employee of the registrant. ☐ Yes
2. I verify I have no ownership interest of any kind in the project for which the registration is being submitted. ☐ Yes

Required for projects with 15 or more acres of site disturbance (in addition to questions 1&2):

3. I verify I did not engage in any activities associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. ☐ Yes
4. I verify I am not under the same employ as any person associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. ☐ Yes

Part IX: Reviewing Qualified Professional Certification (continued)

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in Sections 3(*b*)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit,

[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by _____

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

for an activity located at _____.

I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(11)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 3(*b*)(11)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

_____

Signature of Reviewing Qualified Professional Date: _____

_____

Name of Reviewing Qualified Professional License No.: _____

Affix P.E./L.A. Stamp Here

Part X: Supporting Documents

Select the applicable box below for each attachment being submitted with this registration form. When submitting any supporting documents, please label the documents as indicated below (e.g., Attachment A, etc.) and be sure to include the registrant's name as indicated on this certification form.

☒ **Attachment A:** Select here as verification that an 8 ½" X 11" copy of the relevant portion of a USGS Quadrangle Map with a scale of 1:24,000, showing the exact location of the facility has been submitted with this registration. Indicate the quadrangle name on the map, and be sure to include the registrant's name. (To obtain a copy of the relevant USGS Quadrangle Map, call your town hall or DEEP Maps and Publications Sales at 860-424-3555)

☐ **Attachment B:** Documentation related to *Coastal Consistency Review,* if applicable.

☒ **Attachment C:** Threatened and Endangered Species Form and any additional information (such as a copy of a NDDB map)

☐ **Attachment D:** Conservation or Preservation Restriction Information, if applicable.

☒ **Attachment E:** Where applicable, non-electronic Pollution Control Plan.

Note: Please submit the fee along with a completed, printed and signed Registration Form and all additional supporting documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES

Information about compliance with the requirements of Section 3(b)(2) of this general permit, regarding threatened and endangered species, is in Appendix A of the general permit. Choose one or more (if applicable) of the following in order to be eligible to register for this General Permit. A registrant who does not or cannot do so is not eligible to register under this General Permit.

☐ Self Assessment using the NDDB maps – Select this only if:

a. The site of the construction activity is not entirely, partially or within a ¼ mile of a shaded area depicted on the Department's Natural Diversity Database maps and this determination was made not more than six months before the date of submitting this registration;

AND

b. The entity registering for this General Permit has no reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Attach a copy of the NDDB map used to conduct the self assessment used to register for this general permit.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the self-assessment option. If neither is true, a Registrant cannot use the self-assessment option to comply with Section 3(b)(2) and Appendix A of the General Permit.

☒ Limited One-Year Determination – Select this only if:

a. The entity registering for this General Permit has obtained a limited one-year determination from the Department's Wildlife Division regarding threatened and endangered species: i) within a year of the date of submitting this registration; or ii) more than 1 year before submitting this registration, but such determination has been extended by the Department within one year of the date of submitting this registration;

AND

b. The Registrant has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the limited one-year determination was issued by the Department's Wildlife Division February 24, 2014 ;

or

Provide the date that the most recent extension to a limited one year determination was issued by the Department's Wildlife Division _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Limited One-Year Determination option. If a Limited One-Year Determination or extension to any such determination was issued by the Department's Wildlife Division more than one year before the submission of this registration, a Registrant cannot use any such determination or extension to comply with Section 3(b)(2) and Appendix A of the General Permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

☐ **Select here if the Limited One-Year Determination issued by the Department includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? ☐ Yes ☐ No

Date commenced: _____ Date completed:_____

Is the Mitigation Plan partially implemented? ☐ Yes ☐ No

If yes, what actions have been taken?_____

And which actions are yet to be implemented and what is the timeframe for completion of such actions:_____

Is the Mitigation Plan yet to be implemented? ☐ Yes ☐ No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

☐ Safe Harbor Determination - Select this only if:

a. The entity registering for this General Permit has obtained a Safe Harbor Determination from the Department's Wildlife Division regarding threatened and endangered species: i) within 3 years of the date of submitting this registration; or ii) more than 3 years before submitting this registration, but within one-year of a one-year extension issued by the Department's Wildlife Division to a safe harbor determination;

AND

b. The entity registering for this General Permit has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the Department's Wildlife Division issued a Safe Harbor Determination: _____

If applicable, provide the date that any one-year extension to a Safe Harbor Determination was issued by the Department's Wildlife Division: _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Safe Harbor Determination option. If a Safe Harbor Determination was issued by the Department's Wildlife Division more than three years before the submission of this registration, and has not been extended, a Registrant cannot use any such safe harbor to comply with section 3(b)(2) and Appendix A of this General Permit. If a Safe Harbor Determination was granted and extended for one-year, more than four years before the submission of this registration, a Registrant cannot use any such Safe Harbor Determination to comply with Section 3(b)(2) and Appendix A of the general permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

☐ **Select here if the safe harbor noted above includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? ☐ Yes ☐ No

Date commenced: _____ Date completed:_____

Is the Mitigation Plan partially implemented? ☐ Yes ☐ No

If yes, what actions have been taken?_____

And which actions are yet to be implemented and what is the timeframe for completion of such actions:_____

Is the Mitigation Plan yet to be implemented? ☐ Yes ☐ No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base

February 24, 2014

Mr. Francis J. Vacca, PE
BSC Group – Connecticut Inc.
180 Glastonbury Blvd.
Glastonbury, CT 06033
fvacca@bscgroup.com

Regarding: Reconstruction of Route 31 – Project No. 32-130, Coventry, CT
Natural Diversity Data Base 201400714

Dear Mr. Vacca:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for the Reconstruction of Route 31 – Project No. 32-130 in Coventry, our records indicate an extant population of a threatened species documented on or within the vicinity of the site:

Wood turtle (*Glyptemys insculpta*) Protection Status: Species of Special Concern

Wood turtles require riparian habitats bordered by floodplain, woodland or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. This species has been negatively impacted by the loss of suitable habitat.

Recommendation: Precautions should be taken to protect wood turtles. The following guidelines should be met:

- Silt fencing should be installed around the work area prior to activity;
- After silt fencing is installed and prior to work being conducted, a sweep of the work area should be conducted to look for turtles;
- Workers should be apprised of the possible presence of turtles, and provided a description of the species (http://www.ct.gov/dep/cwp/view.asp?a=2723&q=473472&depNav_GID=1655);
- Any turtles that are discovered should be moved, unharmed, to an area immediately outside of the fenced area, and position in the same direction that it was walking;

- Work conducted during early morning and evening hours should occur with special care not to harm basking or foraging individuals; and
- All silt fencing should be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, I can be contacted by email at Elaine.Hinsch@ct.gov.

Sincerely,
/s/
Elaine Hinsch
Program Specialist II
Wildlife Division

NATURAL DIVERSITY DATA BASE AREAS

COVENTRY, CONNECTICUT

LEGEND

- State and Federal Listed Species and Significant Natural Communities*
- Railroad
- Interstate
- US Route
- State Route
- Ramp
- Street
- State Boundary
- County Boundary
- Town Boundary
- Watercourse
- Intermittent Watercourse
- Dam
- Dredged Channel
- Aqueduct
- Open Water
- Intermittent Water
- Marsh area on USGS topo map
- Cranberry Bog
- Dam
- Fish Hatchery
- Aqueduct
- Sewage Pond
- Water Tank

EXPLANATION

This map depicts general locations of state and federal listed species and significant natural communities. The map is intended to be used as a pre-screening tool to determine the potential for impacts on state listed species and the need for a Natural Diversity Data Base review. To use the map, locate the project boundaries and any additional affected areas on the map. If the project is within a shaded area there may be a potential conflict with a listed species or natural community . For more information complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007) and submit to the Natural Diversity Data Base along with the required maps and information. More detailed instructions are available along with the request form on the Department of Energy and Environmental Protection (DEEP) webpage. www.ct.gov/deep/nddbrequest

Date of Map: June 2013
Natural Diversity Data Base Digital Data

For more information about State Listed Species, contact DEEP, Burerau of Natural Resources, Wildlife Division.
Tel: 860-424-3011

DATA SOURCES

*NDDB Information - Locations of state and federal listed species and significant natural communities are based on data collected by the Connecticut Department of Energy & Environmental Protection, private conservation groups and the scientific community and compiled by the Natural Diversity Data Base (NDDB). The information is not necessarily the result of comprehensive or site-specific field investigations; in some cases locations have been derived from literature or museum searches or historic records. Exact locations have been buffered to produce generalized locations. The exact species or community location falls somewhere within the shaded area and not necessarily in the center. Information on this map does not include Natural Area Preserves, designated wetland areas or wildlife concentration areas.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).

MAPS AND DIGITAL DATA - Visit the CT ECO website (www.cteco.uconn.edu) for this map and a variety of others. Visit the DEEP website (www.ct.gov/deep) to download the base map digital spatial data shown on this map.

0 0.475 0.95 1.9 Miles
0 2000 4000 8000 Feet
0 0.5 1 2 Kilometers

MAP LOCATION

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

Map prepared by CT DEEP

Map is not colorfast
Protect from light and moisture

STORMWATER POLLUTION CONTROL PLAN

Reconstruction of State Route 31
Coventry, Connecticut
Project No. 32-130

The State of Connecticut
Department of Transportation – District 1
1107 Cromwell Avenue
Rocky Hill, CT 06067

Prepared By:
BSC Group
300 Winding Brook Drive
Glastonbury, CT 06033

April, 2014

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Appendix A Stormwater Monitoring Reports (SMR)
Appendix B Velocity Dissipation Calculations
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ATTACHMENTS

Attachment 1 Site Location Map
Attachment 2 Site Plans

1.0 INTRODUCTION

The Connecticut Department of Transportation (ConnDOT) is proposing the reconstruction of approximately 2000 feet of State Route 31 (Main Street) through the center of historic South Coventry, Connecticut. The reconstruction shall begin approximately 300 feet northwest of the intersection of Route 275 (Stonehouse Road) and end approximately 900 feet east of Monument Hill Road, in the vicinity of the South Coventry First Congregational Church. Intersecting approaches (Stonehouse Road/Lake Street, and Monument Hill Road) will be reconstructed for lengths that vary from stubs to 175 feet. The entire project will include drainage improvements. Please see Attachment 1 for a site location map.

This Stormwater Pollution Control Plan (SWPCP) has been prepared in accordance with the Connecticut Department of Energy and Environmental Protection (DEEP) "General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities", DEEP-WPED-GP-015 (hereinafter the "General Permit"). ConnDOT has filed registration under the General Permit with DEEP and is therefore the "Permitee". As this SWPCP is a required component of the General Permit registration, all project participants who are involved with "site" construction (e.g. Construction Manager, General Contractor, Contractor, Subcontractors, etc.) are required to certify to this SWPCP and perform the actions defined by this SWPCP throughout all phases of construction. ConnDOT, as Permitee, will be responsible for compliance with applicable portions of this SWPCP following the completion of construction and turn-over of the new facility.

This SWPCP is intended to be used in concert with technical specification Section 01 5713 – Temporary Erosion and Sedimentation Controls and the Erosion and Sedimentation Control Plans included in Attachment 2. This SWPCP is intended to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice the following: (1) pollution caused by soil erosion and sedimentation during and after construction; and (2) stormwater pollution caused by use of the site after construction is completed.

2.0 SITE PLAN

The project site is located within the South Coventry Historic District in Coventry, Connecticut and is bounded on all sides by private or town properties. The work area is comprised of approximately 4.97 acres.

Roadway work area topography in the vicinity of the route 31 and route 270 intersection slopes to the southeast, with reconstruction starting around elevation 540 at station 10+00. The slope proceeds downward to the southeast around the proposed curve and continues east through the intersection with Monument Hill Road at around elevation 468 (±Station 21+25). The low point of the roadway work area occurs at station 23+50, adjacent to the fire pond at approximate elevation 455. From here the roadway continues relatively flat to the end of the reconstruction at station 30+50 and approximate elevation 452.

Site drawings included in Attachment 2 provide the following information:

- Drainage patterns
- Approximate slopes anticipated after major grading activities
- Areas of soil disturbance
- Location of major structural and non-structural controls
- The location of areas where stabilization practices are expected to occur
- Areas which will be vegetated following construction
- Monitored outfalls

3.0 SITE DESCRIPTION

3.1 Nature of the Construction Activity

The primary objective of this project is to eliminate a very sharp curve on Route 31 just south of Route 275, which is the cause of numerous accidents. ConnDOT designed the project with a "context sensitive" approach, which includes sidewalks and streetscape improvements. An "Access Management Plan" will also be implemented as part of the project, to reduce the number of curb cuts and control their location and design.

The reconstruction project will include full depth reconstruction, milling and overlay, horizontal and vertical realignment (most notably, the sharp curve 500 feet south of Route 275), as well as drainage improvements and other improvements incidental to the construction of the road, such as sidewalks, retaining walls, utility pole relocation, curbs, and parking lots.

3.2 Site Area and Site Area Disturbance

The site is 4.97 acres in size. It is anticipated that the entire 4.97 acres will be disturbed by construction activities.

3.3 Runoff Coefficients

The estimated average runoff coefficient of the site after construction activities are completed is 0.73.

3.4 Receiving Water(s)

If not infiltrated into the ground, wastewaters discharged under the General Permit will be collected by the ConnDOT operated storm drainage system and will discharge to the Mill Brook watercourse through one of three Main Outlets: MO-1 through MO-3 (Subregional Basin No. 3105-00). Mill Brook discharges to Decew Pond, south of Depot Road in South Coventry and eventually enters Eagleville Brook, which ultimately discharges to the Thames River (Drainage Basin No. 3).

3.5 Wetlands

There are wetlands associated with the "Trolley Way" drainage ditch and Mill Brook that crosses underneath the site. In total, the wetlands constitute 0.08 acres (approximately 3,500 square feet) within the limits of work.

4.0 CONSTRUCTION SEQUENCING

The contractor will have the ability, and the responsibility, to perform the work in phases, so as to minimize disturbance at any one time, minimize disruption to the town and state roadway system, minimize disruption to local businesses, and perform the work in an efficient manner. It is the contractor's responsibility to determine the limit of each phase of work, and comply with the maximum disturbance criteria.

Each phase of construction, regardless of the number of sequences it contains, requires a preconstruction meeting that should include ConnDOT, the contractor, utility representatives, and other agents who have responsibility and authority for the implementation, operation, monitoring and maintenance of the erosion and sediment (E&S) controls. The purpose of the preconstruction meeting is to make all responsible parties aware of the project's needs so that resources can be properly distributed and to identify limitations and restrictions. The preconstruction meeting shall identify modifications needed to the construction sequence and application of special treatments. Included in the preconstruction meeting agenda, at a minimum, shall be a review of plans, permit conditions, the contractors' sequence and schedules for construction, site restrictions and other special needs.

The following sequence is provided as a generic roadway construction guideline applicable for each individual phase. This generic phasing shall be adjusted, by the contractor, to meet project-specific phase needs and conditions. It is also recognized that work will not proceed without delays. When work is suspended within a phase, the contractor shall deploy additional erosion and sediment controls as may be required to secure the site. Erosion and sediment controls shall be installed and maintained as dictated by the plan set (Erosion and Sedimentation Control Sheets) and Section 5.0 (Controls) of this Plan. If additional erosion and sediment controls are required due to specific site conditions, it is the contractor's responsibility to provide controls that are sufficient to prevent the removal and transportation of sediment off site to resource areas, that area also satisfactory to the Engineer.

The generic sequence of construction activities for each phase will generally occur as follows:

1. Preconstruction meeting.
2. Install Erosion and Sediment Controls.
3. Construction activities.
4. Stabilize area.
5. Remove Erosion and Sediment Controls.

In order to give the contractor the maximum amount of flexibility, the plans show locations of perimeter erosion control barriers. It is the contractor's responsibility to provide additional controls within the project limits to prevent the removal and transportation of sediment off site and to resource areas. In accordance with ConnDOT Form 816 Best Management Practices (Section 1.10.03 – Water Pollution Control), no construction shall proceed until (i) the Contractor has submitted in writing to the Engineer its erosion and sedimentation control plan (for each phase); (ii) the Engineer has given in writing his approval of said plans; and (iii) the Contractor has installed all erosion and sedimentation controls called for by said plans.

If the construction sequencing activities create an area of disturbance between two (2) acres and five (5) acres per each discharge point, the contractor must submit to the engineer a revised SWPCP for review and approval. The SWPCP must include locations of the temporary sedimentation trap installed prior to each discharge point with a capacity to contain 134 cubic yards per acre of material in accordance with the 2002 Guidelines. The contractor shall provide

an inspection and maintenance plan for the temporary sedimentation trap as part of the amended SWPCP.

The tentative schedule proposed by ConnDOT for the reconstruction of route 31 is provided as follows:

1. Relocation and flattening of the sharp curve: June – November, 2015
2. Installation of utility infrastructure: July 2015 – May 2016
3. Roadway Reconstruction: May – August, 2016
4. Sidewalk and streetscape construction: July – September, 2016
5. Installation of Parking Lots: July – September, 2016
6. Painting, signing, landscaping, finish-work: August – October, 2016

The total project construction schedule is set from May, 2015 through November, 2016; approximately 76 weeks.

5.0 STORMWATER CONTROL MEASURES

Per the General Permit, this SWPCP must address interim and permanent stabilization practices to address pollution caused by soil erosion and sedimentation during construction, and soil erosion and sedimentation following construction. The project's erosion and sedimentation controls and stormwater management systems have been designed to address both short-term and long-term stormwater quality.

The project's Erosion and Sediment Control Plans include many of the measures indicated below. However, the measures specified on the plans are the minimum requirements for erosion and sediment control at the project, and are shown in general size and location only. All contractors performing site work on the project, construction managers who may engage contractors on the project, and other contractor entities who may have authority over erosion and sedimentation control measures at the project are responsible for ensuring that all measures are configured and constructed in a manner that will minimize erosion of soils and prevent the transport of sediments and other pollutants to any resource areas. In general terms, all entities performing work on the site have a responsibility to minimize the area of exposed soil, control run-off rate and direction, and provide for rapid stabilization of exposed areas.

5.1 Erosion and Sediment Controls

During construction, stormwater run-off is a concern due to the excess amount of exposed areas that do not have vegetation or other cover to prevent the removal and transportation of sediment to resource areas. The primary function of erosion and sedimentation controls, as defined by the 2002 "Connecticut Guidelines for Soil Erosion and Sediment Control" (hereinafter the "2002 Guidelines") is to, "absorb erosional energies and reduce run-off velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area." The project addresses the short-term concerns by providing erosion control measures in the form of Erosion and Sediment Control Plans (refer to Attachment 2). The proposed erosion and sedimentation controls consider the specific characteristics of the site and the anticipated construction activities, and have been designed in accordance with the 2002 Guidelines.

5.1.1 Soil Stabilization and Protection

5.1.1.1 Erosion Control Barriers

Reference: Section 5-11 of the 2002 Guidelines

Prior to any construction activity, hay bales, silt fence, or combination hay bale/silt fence barriers will be placed at the limit of work where run-off potential exists, at other key locations within the site where run-off potential exists, and around stockpiles or stockpile areas. These barriers will be inspected once every seven calendar days and within 24 hours after every rainfall generating a discharge. Repair or replace damage or displaced fencing as required. Collected silt will be removed when one-half the barrier height is reached.

Haybales

Use hay bales for the following:

- To intercept and detain small amounts of sediment from small disturbed areas.
- To decrease the velocity of sheet flows.
- To redirect small volumes of water away from erodible soils.
- To settle and assist in filtering waters discharged from pumping operations.

Applicability-

- Below small disturbed areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size.
- Above disturbed slopes to direct surface water away from erodible areas where the drainage area (disturbed and undisturbed) is less than 1acre in size.
- Where protection and effectiveness is required for less than 3 months.
- Where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas.
- Not for use in drainageways, except in special cases where it is applied with other measures.
- Not intended for use in streams.

Silt Fence

Use silt fence for the following:

- To intercept and retain sediment from disturbed areas.
- To decrease the velocity of sheet flows and low volume concentrated flows.

Applicability-

- Below small disturbed areas where the contributing drainage area (disturbed and undisturbed) is less than 1 acre in size.
- At storm water drainage inlets and catch basins where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas.
- Not for use in areas where rock, frozen ground or other hard surface prevents proper installation of the barrier.
- Prohibited from use in drainageways whose flow is supported by ground water discharge.

5.1.1.2 Temporary Seeding

Reference: Section 5-3-2 of the 2002 Guidelines

Areas that will remain disturbed but inactive for at least thirty days will receive temporary seeding or soil protection within seven (7) days in accordance with the 2002 Guidelines. Areas that will remain disturbed beyond the seeding season as identified in the 2002 Guidelines, will receive long-term, non-vegetative stabilization and protection (see below) sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the 2002 Guidelines or as approved by DEEP.

It is important to note that temporary seeding will not provide the same level of protection that permanent vegetation will provide. Temporary seeding mixtures do not develop a "turf" or "sod." Temporary seeding does not generally receive the same level of maintenance as permanent seeding.

Temporary seeding will be conducted per the table below:

Temporary Erosion Control Seeding

Species (Note 1)	Application Rate, Pounds Per Acre	Application rate, Pounds Per 1,000 sf	Optimum Seed Depth, inches (Note 2)	Optimum Seeding Dates (Note 3)
Annual ryegrass Lolium multiflorum	40	1.00	0.5	3/1 - 6/15 and 8/1 - 10/15
Perennial ryegrass Lolium perenne	40	1.00	0.5	3/15 - 7/1 and 8/1 - 10/15
Winter Rye Secale cereale	120	3.00	1.00	4/5 - 7/1 and 8/15 - 10/15
Oats Avena sativa	86	2	1	3/1 - 6/15 and 8/1 - 9/15
Winter Wheat Triticum aestivum	120	3	1	4/15 - 7/1 and 8/15 - 10/15
Millet Echinochloa crusgalli	20	.5	1	5/15 - 7/15
Sudangrass Sorghum sudanese	30	.7	1	5/15 - 8/1
Buckwheat Fagopyrum esculentum	15	.4	1	4/1 - 9/15
Weeping lovegrass Eragostis curbula	5	.2	.25	6/1 - 7/1
ConnDOT All Purpose Mix	150	3.4	.5	3/1 - 6/15 and 8/1 - 10/15

1 - Listed species may be used in combinations to obtain a broader time spectrum. If used in combinations, reduce each species planting rate by 20% of that listed.
2 - Seed at twice the indicated depth for sandy soils
3 - May be planted throughout summer if soil moisture is adequate or can be irrigated. Fall seeding may be extended 15 days in the coastal towns.

5.1.1.3 Soil Stabilization- Mulches

Reference: Section 5-4-8 of the 2002 Guidelines

Structural (non-living) soil stabilization is intended to protect the soil surface on a temporary basis without the intention of promoting plant growth.

Applicability-

- When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, disturbed areas will be stabilized within 7 days of the suspension of grading through the use of mulch, non-bituminous tackifiers, erosion control netting, or other approved materials appropriate for use as a temporary soil protector.
- For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use temporary seeding, seeding-type mulch (hay, straw, or cellulose fiber) or when slopes are less than 3:1, wood chips, bark chips or shredded bark.

Mulch Types-

Hay - The dried stems and leafy parts of plants cut and harvested, such as alfalfa, clovers, other forage legumes and the finer stemmed, leafy grasses. The average stem length should not be less than 4 inches. Hay that can be windblown should be anchored to hold it in place.

Straw - Cut and dried stems of herbaceous plants, such as wheat, barley, cereal rye, or brome. The average stem length should not be less than 4 inches. Straw that can be windblown should be anchored to hold it in place.

Wood Chips - Chipped wood material from logs, stumps, brush or trimmings including bark, stems and leaves having a general maximum size of 0.5 inch by 2 inches and free of excessively fine or long stringy particles as well as stones, soil and other debris. No anchoring is required. If seeding is performed where wood chips have been previously applied, prior to the seeding the wood chips should be removed or tilled into the ground and additional nitrogen applied. Nitrogen application rate is determined by soil test at time of seeding (anticipate 12 lbs. nitrogen per ton of wood chips).

Bark Chips, Shredded Bark - Tree bark shredded as a by-product of timber processing having a general maximum size of 4 inches and free of excessively fine or long stringy particles as well as stone and other debris. Material use is the same as wood chips.

Other Mulch Materials - Other mulch materials may include corn stalks, leaves and other similar materials provided they meet the requirements of the materials in Section 5-4 of the 2002 Guidelines.

5.1.1.4 Soil Stabilization - Blankets/Mats

Reference: Section 5-4-10 of the 2002 Guidelines

Erosion control blankets/mats are a manufactured product composed of biodegradable/photodegradable natural or polymer fibers and/or filaments that have been mechanically, structurally or chemically bound together to form a continuous matrix. Their purpose is to provide temporary surface protection to newly seeded and/or disturbed soils to absorb raindrop impact and to reduce sheet and rill erosion and to enhance the establishment of vegetation.

Applicability-

- On disturbed soils where slopes are 2:1 or flatter.
- Where wind and traffic generated air flow may dislodge standard, unarmored mulches.

The success of temporary erosion control blankets is dependent upon strict adherence to the manufacturer's installation recommendations. As such, a final inspection should be planned to ensure that the lap joints are secure, all edges are properly anchored and all staking/stapling patterns follow the manufacturer's recommendations. Inspect temporary erosion control blankets at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. Blanket failure has occurred when (1) soils and/or seed have washed away from beneath the blanket and the soil surface can be expected to continue to erode at an accelerated rate, and/or (2) the blanket has become dislodged from the soil surface or is torn. If washouts or breakouts occur, re-install the blanket after re-grading and re-seeding, ensuring that blanket installation still meets design specifications. When repetitive failures occur at the same location, review conditions and limitations for use and determine if diversions, stone check dams or other measures are needed to reduce failure rate. Repair any dislodged or failed blankets immediately.

5.1.1.5 Temporary Filter Inserts

Temporary Filter Inserts are commercially-available geotextile-fabric filters that are configured to fit into the openings of drainage structures. These filters serve as secondary protective measures to trap (filter) sediment that may bypass other control measures and be carried to drainage structure inlets by stormwater run-off during construction. Temporary Filter Inserts will be installed in catch basins and similar drainage structures as secondary protective measures throughout construction. Temporary Filter Inserts will be placed in each existing catch basin and yard drains prior to the start of construction, and in each new catch basin or yard drain during construction. These devices will be removed upon final site stabilization.

Filter inserts will be inspected once every seven (7) calendar days and within 24 hours after every rainfall of 0.5 inches or greater. Replacement of the inserts will be as often as necessary to maintain function of the drainage structure and prevent excessive ponding due to clogged fabric. Ripped or otherwise damaged inserts will be replaced immediately.

5.1.1.6 Stockpile Management

Reference: Section 4-9 of the 2002 Guidelines

Stockpile management of topsoil and other types of erodible soils is necessary to prevent unnecessary damage resulting from erosion of stockpile material. Locate stockpiles so that natural drainage is not obstructed. Attempt to maximize the distance of stockpiles from wetlands, watercourses, drainage ways, and steep slopes. When the stockpile is down gradient from a long slope, divert run-off water away from or around the stockpile. Install a geotextile silt fence or hay bale barrier around the stockpile area approximately 10 feet from the proposed toe of the slope. The side slopes of stockpiled material that is erodible should be no steeper than 2:1. Stockpiles that are not to be used within 30 days need to be seeded and mulched immediately after formation of the stockpile. The seed mix used depends upon the stockpiled material and the length of time it is to remain stockpiled. Information gathered from soil borings and soil delineation can be used to plan the type of seed and any soil amendments that are appropriate for the stockpile. After the stockpile has been removed, the site should be graded and permanently stabilized.

Topsoil stockpiles which will be idle for at least 30 days will be stabilized with temporary seed and mulch no later than 7 days from the last use. Small stockpiles may be covered with impervious tarps or erosion control matting in lieu of seeding and mulching.

5.1.2 Structural Measures

Structural measures are intended to 1) divert flows away from exposed soils, and 2) store flows or otherwise limit runoff and minimize the discharge of pollutants from the site. Unless otherwise specifically approved in writing by DEEP, or if otherwise authorized by another state or federal permit, structural measures shall be installed on upland soils.

Diversion measures include Temporary Fill Berm, Water Bar, Temporary Diversion and Permanent Diversion. These measures serve the common function of redirecting and controlling the direction of water flow. Diversions are used to direct runoff away from or around sensitive construction areas and to fragment drainage areas to reduce the need for a Temporary Sediment Trap. Diversions are preferable to other types of man-made storm water conveyance systems because they more closely simulate natural flow patterns and characteristics. Flow velocities are generally kept to a minimum.

Storage measures include Temporary Sediment Traps. The primary function of these measures is to slow the velocity of sediment laden waters enough to allow suspended sediments to drop out of solution. They are intended to provide 75% –90% trap efficiency1 for a 10 year, 2 hour return frequency storm.

Evolving site conditions will determine what structural measures are necessary, and the following general principles should be applied to their selection and placement:

- Prevent clean water from becoming turbid, by diverting runoff from upslope areas away from disturbed areas. Earth dikes, temporary swales, perimeter dike/swales, or diversions that outlet in stable areas can be used in this capacity.
- Remove sediment from turbid water before the water leaves the site. The method of sediment removal depends upon how the water drains from the site.

Concentrated flow must be diverted to a trapping device so that suspended sediment can be deposited. Dikes or swales that outlet into traps or basins can accomplish this. A storm drain system may be used to convey concentrated sediment laden water only if the system empties into a trap or basin. Otherwise, all storm drain inlets must be protected so that sediment laden water cannot enter the drainage system before being treated to remove the sediment.

- Surface runoff draining in sheet flow must be controlled and treated before the water leaves the site. Straw bale dikes, silt fences, or vegetative buffer strips can be used to treat sheet flow.
- All practices designed and implemented must be properly maintained in order to remain functional. Sediment accumulated in basins and traps must be removed and disposed of in a manner that stabilizes them on the construction site.

5.1.2.1 Diversion - Temporary Fill Berm

Reference: Section 5-7-3 of the 2002 Guidelines

The Temporary Fill Berm is a non-engineered measure that is a very temporary berm used at the top of active fill slopes whose drainage area at the point of discharge is less than 3 acres. It is intended to divert run-off from unprotected fill slopes during construction to a stabilized outlet or sediment-trapping facility. Its intended duration of use is less than 5 days for any specific fill berm. The use of a berm starts when it is constructed and ends when new fill is placed. When filling is complete and it is determined that a diversion is needed at the top of fill to protect the fill until it is stabilized then a Temporary Diversion is needed.

Applicability-

- On active earth fill slopes where the drainage area at the top of fill drains toward the exposed slope and where ongoing fill operations make the use of a Permanent Diversion unfeasible.
- Where the intended use is 5 days or less. For use longer than 5 days use Temporary Diversion or other measure.
- Where the drainage area at the point of discharge is less than 3 acres.

5.1.2.2 Diversion - Water Bar

Reference: Section 5-7-6 of the 2002 Guidelines

A Water Bar is a channel with a supporting berm on the down slope side constructed across an unpaved roadway, construction access road, driveway, or other access way. Its purpose is to minimize the concentration of sheet flow across and down sloping roadways and access ways, or similar sloping and unstable areas and to shorten the continuous flow length within a sloping right-of-way. Water bar spacing is provided in Table 2

Table 1: Water Bar Spacing

% Slope of Roadway	Spacing (ft)
1%	400
2%	245
5%	125
10%	78
15%	58

Applicability-

- On construction access road, driveway, log road or other access way.
- Where the drainage area to each separate water bar is less than 1 acre.

Unless the water bar discharges into a heavily vegetated area of sufficient length to adequately filter run-off, discharges should be settled or filtered through a geotextile silt fence, hay bale barrier or temporary sediment trap.

5.1.2.3 Temporary Diversion

Reference: Section 5-7-9 of the 2002 Guidelines

Temporary diversion is used to divert sheet flow to a stabilized outlet or a sediment-trapping facility, to direct water originating from undisturbed areas away from areas where construction activities are taking place, and to fragment disturbed areas thereby reducing the velocity and concentration of run-off. When used at the top of a slope, the structure protects exposed slopes by directing run-off away from the disturbed areas. When used at the base of a disturbed slope, the structure protects adjacent and downstream areas by diverting sediment-laden run-off to a sediment trapping facility. Temporary diversions must be installed as a first step in the land-disturbing activity and must be functional prior to disturbing the land they are intended to protect.

Applicability-

- Where the drainage area at the point of discharge is 5 acres or less. For drainage areas greater than 5 acres use Permanent Diversion measure.
- Where the intended use is 1 year or less. For uses greater than 1 year use Permanent Diversion measure.

5.1.2.4 Storage - Temporary Sediment Traps

Reference: Section 5-11-25 of the 2002 Guidelines

Temporary Sediment Traps are temporary ponding areas with a stone or engineered outlet formed by excavation and/or construction of an earthen embankment. They are intended to detain sediment-laden run-off from small disturbed areas long enough to allow a majority of the sediment to settle out. If included in the project's erosion and sedimentation control plans, or required based on evolving site conditions, the sizing and location of Temporary Sediment Traps will be completed in conjunction with the project civil engineer.

Applicability-

- If the construction sequencing activities create an area of disturbance between two (2) acres and five (5) acres per each discharge point, the contractor must submit to the engineer a revised SWPCP for review and approval. The SWPCP must include locations of the temporary sedimentation trap installed prior to each discharge point with a capacity to contain 134 cubic yards per acre of material in accordance with the 2002 Guidelines. The contractor shall provide an inspection and maintenance plan for the temporary sedimentation trap as part of the amended SWPCP.
- Where the intended use is 2 years or less.
- When diverting sediment-laden water with temporary diversions that meet the above limitations for use.

Maintenance-

Inspect temporary sediment traps at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. Check the outlet to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should maintained at least 1 foot below the crest of the embankment. Also check for sediment accumulation and filtration performance. When sediments have accumulated to one half the minimum required volume of the wet storage, dewater the trap as needed, remove sediments and restore the trap to its original dimensions. Dispose of the sediment removed from the basin in a suitable area and in such a manner that it will not erode and cause sedimentation problems. The temporary sediment trap may be removed after the contributing drainage area is stabilized. If it is to be removed, refer to the project plans for how the site of the temporary sediment trap is to be graded and stabilized after removal.

5.2 Dewatering

Reference: Form 816, Section 1.10, as amended

Dewatering may be utilized at the site to lower the groundwater table to allow for the construction of subsurface improvements (utilities, foundations, etc.) within a relatively dry environment. Several dewatering techniques may be utilized at the contractor's discretion based on the specific nature of the work. These may include:

- Sumps
- Wells
- Wellpoints

Dewatering wastewaters shall be managed in accordance with the 2002 Guidelines. Where feasible and appropriate, dewatering wastewaters will be infiltrated into the ground. Dewatering wastewaters discharged to surface waters will be discharged in a manner that minimizes the discoloration of the receiving waters. No discharge of dewatering wastewater(s) shall contain or cause a visible oil sheen, floating solids, or foaming in the receiving water. Unless otherwise specifically approved in writing by DEEP, or if otherwise authorized by another state or federal permit, dewatering measures shall be installed on upland soils.

The following measures will be employed to ensure that dewatering wastewaters will not cause scouring or erosion or contain suspended solids in amounts that could reasonably be expected to cause pollution:

- Divert surface waters away from areas needing dewatering.
- Consider if well points and sumps can be used to lower the groundwater table, reducing the need for settling facilities.
- For sites that don't require continuous pumping, pump work areas before construction activities begin each work day.
- Provide filtration near the suction intake.
- Locate pumps, intake sumps, and other intake structures in areas which will not require constant moving, when possible.
- Locate pump discharge facilities (portable, permanent, or bio-filtering structures) such that a minimum disturbance of existing wetlands and watercourses is incurred.
- Provide protection at outlets from pumping operations to dissipate pumping surges and prevent erosion at the point of discharge.

5.2.1 Dewatering Plan

This SWPCP provides general measures for the management of dewatering wastewater based on the measures indicated in the 2002 Guidelines. It is recognized that the use of these measures is dependent upon specific site conditions, the contractor's specific method of operations, and the contractor's dewatering equipment. As this plan provides a general description of dewatering operations, the contractor will be required to submit a project-specific Dewatering Plan. This Dewatering Plan will be submitted to the engineer for review and approval prior to its implementation. The project-specific Dewatering Plan will, at a minimum, identify the following:

1. Locations and associated construction where dewatering is required.
2. Specific methods and devices proposed for dewatering.
3. Details on protection at the inlet and outlet of pumps, method for floating the pump intake, or other methods to minimize and retain the sediment.
4. Proposed location of dewatering discharge and details of infiltration basins or other discharge location. Per the General Permit, where feasible and appropriate, dewatering wastewaters will be infiltrated into the ground.
4. Details on any containment berm construction when dewatering earth materials.
5. Identification of a contingency plan for emergency operations should the dewatering operation prove inadequate to meet the dewatering need or is found to be causing unacceptable turbidity problems (e.g., alternative discharge locations or use of a portable sediment tank). If turbidity or siltation problems are not adequately controlled by the contingency plan, then the operation will be ceased and a revised dewatering plan submitted for approval prior to further implementation.

5.3 Post Construction Stormwater Management

After construction, stormwater runoff is a concern because it may contain contaminants such as suspended solids, petroleum hydrocarbons, nutrients, heavy metals, and salts that may have adverse effects on water quality. The sources of the pollutants are generally associated with urban land use, including automobile exhaust, mechanical wear of vehicles, leaf litter, deicing salts and atmospheric deposition. The pollutants accumulate on the land surfaces and are washed off during storm events into the receiving waterways and wetlands. The objective of the stormwater management system designed for the proposed development is to mitigate, to the most thorough extent possible, suspended solids and floatables (i.e. oil and grease, other floatable liquids, floatable solids, trash, etc.) from stormwater.

Currently, there is no water quality treatment for this portion of Route 31. The existing drainage and outfall protection is inadequate and stormwater is discharged directly to resource areas via leak offs for a portion of the roadway. The proposed design provides a stormwater treatment train and addresses stormwater quality using the following methods:

- Four (4) foot sumps in proposed catch basins, unless prevented by utility or shallow ledge conflicts.
- Outlet protection (scour holes) at all outfalls

The existing characteristics of the work area for the reconstruction of route 31 consist of greater than 40% impervious cover. However, as part of the reconstruction project, the total effective impervious cover will not be increased. As a result, onsite retention of one half of the water quality volume is not required.

5.3.1 Post Construction Controls:

5.3.1.1 Runoff Reduction and Low Impact Development (LID) Practices:

Due to the limited physical space available throughout the work area, runoff reduction and LID practices to provide primary stormwater treatment of the main outlets would have required the filling of wetlands and were not pursued.

5.3.1.2 Suspended Solids and Floatables Removal:

Per the 2000 ConnDOT Drainage Manual, ConnDOT considers the use of 10 or less primary deep sump catch basins to be suitable water quality treatment for a given watershed, and do not require any additional treatment. Four (4) foot sump catch basins shall be installed in all locations, barring any utility or ledge conflicts. All proposed roadway areas are designed to route to the catch basins instead of sheet flowing off site to sensitive areas.

5.3.1.3 Velocity Dissipation

Unlike the existing condition, the proposed design will utilize the installation of outlet protection scour holes and riprap velocity attenuation pads engineered to accept the discharge velocities from the newly installed storm system. Details for these devices are included with the erosion control details in Attachment 2.

5.3.2 Permanent Stabilization Practices

Permanent site stabilization practices are included on the drawings in Attachment 2 and include the following:

- Hardscape – The majority of the site is hardscape. Hardscape will include reconstructed bituminous pavement roadways, driveways, concrete sidewalks and walkways, and concrete stairs/ramps. Stormwater from these areas will either 1) run-off to an adjacent pervious surface (e.g. grass or landscaping), or 2) run-off to a collection point such as catch basin or area drain, and be conveyed to the roadway stormwater system.
- Landscaping/Turf Establishment Areas – After reconstruction of the roadway, several areas of the site will be landscaped and planted or replaced with permanent turf establishment. Landscape and turf areas will provide a stabilized surface, but will allow for direct infiltration of stormwater.

5.3.3 Maintenance of Permanent Stabilization

After construction is completed and accepted by the State, inspection and maintenance of stabilized surfaces will be the responsibility of the State thereafter.

- Landscape and Turf Areas: Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.

- Hardscape: Inspect on a regular basis not to exceed weekly for litter and debris. Sweep at least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.

- Catch Basin Sumps: Inspect semi-annually and clean when the sump is one half full of silt and/or debris.

6.0 OTHER POLLUTION CONTROLS

6.1 Waste Disposal

6.1.1 Waste Materials - All waste materials generated at the site will be collected and stored in securely lidded, metal dumpsters rented from a licensed solid waste management company. All trash and construction debris from the site will be deposited in the dumpsters. When at capacity, the dumpsters will be removed from the site and transported to a state-licensed waste transfer or waste disposal facility. No construction waste materials will be burned, buried, or otherwise disposed-of on-site.

All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and a competent person will be assigned day-to-day operation responsibilities.

6.1.2 Recycling – Waste materials generated at the site that are designated for recycling will be collected and stored in securely lidded, metal dumpsters rented from a licensed solid waste management company. Materials designated for recycling will be deposited in the appropriate dumpster based on material type. When at capacity, the dumpsters will be removed from the site and transported to a state-licensed transfer or recycling facility.

6.1.3 Liquid Waste Materials - The dumping of liquid wastes in storm sewers is prohibited. All liquid waste materials generated at the site will be collected and stored in secure containers suitable for the particular type of waste if such liquid waste is not suitable for the "Washout Area" (see below). Containers storing liquid waste will be removed from the site for disposal by a state-licensed company.

6.1.4 Hazardous Materials - All waste materials that are considered "hazardous" such as oils, greases, oil-based paints, solvents, etc. generated by construction will be stored and disposed of in accordance with local, state, and federal regulations. Site personnel must be instructed in the practices of handling, collecting and storage of hazardous materials, and a competent person will be assigned responsibility for seeing that these practices are followed.

6.1.5 Sanitary Waste - All sanitary waste will be collected from portable units on a regular basis as required by applicable regulations.

6.2 Washout Areas

A designated "Washout Area" will be established for the purpose of washing the following:

- Latex paint equipment
- Vehicles, containers, and equipment for concrete
- Applicators and containers for materials which have not contained any oils, greases, oil-based paints, solvents, fuels, lubricants, etc.

The Washout Area shall be established as follows:

(1) Outside of any buffers and at least 50 feet from any steam, wetland or other sensitive resource; or
(2) In an entirely self-contained washout system.

The Washout Area shall be clearly delineated with fencing, flagging, or similar highly-visible materials. Washout activities are only permitted within the Washout Area. All wash water shall be directed into a container or pit designed such that no overflows can occur during rainfall or after snowmelt. There shall be no surface discharge of washout wastewaters from the Washout Area.

Hardened concrete waste from the Washout Area will be removed and disposed-of consistent with practices developed for the "Waste Materials" above. At least once per week, any containers or pits used for washout will be inspected to ensure structural integrity, adequate holding capacity, and to check for leaks or overflows. If there are signs of leaks, holes or overflows in the containers or pits that could lead to a discharge, the containers will be repaired prior to further use. For concrete washout areas, all hardened concrete waste will be removed whenever the hardened concrete has accumulated to a height of one-half (½) of the container or pit or as necessary to avoid overflows. A record of maintenance and inspections for the Washout Area is included in Appendix C.

6.3 Off-Site Vehicle Tracking

Reference: Section 5-12 of the 2002 Guidelines

Stabilized construction entrances (ant-tracking pad) will be used to help reduce the movement of sediments from the site to off-site areas by vehicles. Construction details for these facilities are contained on the project's Erosion and Sedimentation Control Plans. A stabilized construction entrance will be installed at each primary site access point used by construction equipment.

Stabilized construction entrances will be maintained in a condition which will prevent tracking and washing of sediment onto paved surfaces. Each entrance will be periodically top-dressed with additional stone and/or additional length added as conditions demand.

All sediment spilled, dropped, washed or tracked onto paved surfaces will be immediately removed. Roads adjacent to the site will be left clean at the end of each day. It is also recognized that the use of stabilized construction entrances may not eliminate the need for periodic street sweeping. Therefore, adjacent paved roadways will be swept as necessary.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then either (1) the construction entrance will be lengthened, (2) the construction access road surface will be modified, or (3) washing racks (or similar devices) will be installed before the vehicle enters a paved surface. If a washing rack or similar device is to be used to wash sediment from tires, provisions will be employed to intercept the wash water and trap the sediment before it is carried off-site. Per the 2002 Guidelines, the sediment trapping facility will be sized to hold the maximum volume of water that would be used over a 2-hour period.

6.4 Dust Control

The generation of fugitive dust will be minimized during all aspects of the work, and measures to suppress fugitive dust will be employed when work activities are conducted which could generate dust. Construction sequencing will be organized and conducted to the extent possible to leave existing pavement or ground coverings in place until just prior to earth excavation for the purpose of minimizing the migration of dust beyond the project limits into the surrounding area. If the amount of fugitive dust and/or particulate generated during the work is deemed unacceptable or exceeds baseline project site conditions the work will be halted and corrective measures implemented. Dust control and suppression will be implemented as follows:

6.4.1 Water

Water will be applied only at the locations, at such times, and in the amount required to control and suppress dust. The volume of water sprayed for controlling dust shall be minimized so as to prevent the runoff of water. No discharge of dust control water shall contain or cause a visible oil sheen, floating solids, visible discoloration, or foaming in the receiving stream.

6.4.2 Calcium Chloride

Calcium chloride will be applied only at the locations, times, and in the amount approved by the owner (as Permitee). The application of calcium chloride will be by means of a mechanical spreader, or other approved methods.

6.4.3 Mulch

The use of mulch for dust control will be coordinated with erosion and sedimentation control measures. Straw mulch will be applied at a rate of 100 pounds per 1,000 square feet (100 lb/1,000 ft2). Wood chips or wood mulch will be applied at such a rate as to form a layer one (1) inch thick.

6.5 Spill Prevention

6.5.1 Potential Stormwater Pollution Sources

During construction, the following are potential sources of pollutants that could impact stormwater:

- Cleared and disturbed grassed/planted areas;
- Pavement and utility removal;
- Construction site entrances and bituminous access drive lot construction;
- Foundation excavation and building construction.
- Topsoil and mulch installation;
- Dewatering operations;
- Final grading and landscaping.

6.5.2 Good Housekeeping

The following good housekeeping practices will be followed on-site during the project:

- An effort will be made to store only enough products required to perform the work.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container and opening a new container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The Construction Manager and/or site superintendent will inspect daily to ensure proper use and disposal of materials on-site.
- Dumpsters will be kept covered and drain plugs will remain in place unless being cleaned.
- Products will be kept in original containers unless they are not re-sealable. Leftover product will be properly disposed of or placed in a sealable container.
- Original labels and material safety data will be retained as they contain important product information.
- If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

6.5.3 Product Specific Practices

The following product specific practices will be followed on-site:

- Chemical and Petroleum Product Storage - All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) will be stored in tightly sealed containers that are clearly labeled. All chemical and petroleum product containers will be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers will be stored under a roofed area except for those chemicals stored in containers of 100 gallon capacity or more, in which case a roof is not required. Double-walled tanks satisfy this requirement.

- Petroleum Products - All on-site construction vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations. Spill kits will be included with any fueling sources and maintenance activities.

- Fertilizers - Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Fertilizer will not be stored on site.

- Paints - All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system, but will be properly disposed of according to manufacturers' instructions or State and local regulations. Spray guns will be cleaned on a removable tarp.

6.5.4 Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information.

- Materials and equipment necessary for spill cleanup will be kept in the designated material storage areas on-site. Equipment and materials will include, but not be limited to, brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, Speedi-Dry and plastic and metal trash containers specifically made for this purpose.

- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

- Spills of toxic or hazardous materials will be reported to the appropriate State and/or local government agency, regardless of the size. The National Response Center number is 800-424-8802. The CT DEEP Emergency Reporting number is 800-424-3333.

- The site construction superintendent will be responsible for the day-to-day operations, and act as the person responsible for spill prevention and cleanup. The names of responsible construction spill containment and cleanup personnel will be posted in the material storage area and in the office trailer on-site.

6.6 Post-Construction Cleaning

All post-construction stormwater structures will be cleaned of construction sediment and any remaining silt fence shall be removed upon stabilization of the site, prior to filing notice of termination.

7.0 INSPECTION AND MONITORING

Throughout all phases of construction, the erosion control measures will be routinely inspected, cleaned, repaired, and replaced as necessary. Maintenance of erosion and sedimentation control measures is critical to their effectiveness. Maintenance will be an ongoing process during the period of construction and will continue until long-term vegetation is established. Mulching and seeding will be inspected throughout all phases of construction: at the end of each workday, if precipitation is forecast and after each rainfall. At the end of each workweek, prior to weekends, all erosion and sediment control measures will be inspected and repairs/replacements made as required.

Throughout the construction process, extra stocks of hay bales and filter fabric will be kept on-site to replace those that may become damaged and/or deteriorated.

Any erosion and sediment control measures, which upon inspection, are found to be damaged, deteriorated, or not functioning properly, will be repaired, replaced and corrected immediately after inspection.

Inspection procedures will be addressed and implemented in the following manner:

7.1 Plan Implementation Inspections

Within the first 30 days following commencement of construction activity on the site, a representative of the Permitee will inspect the site. The Permitee's representative for Plan Implementation Inspections is:

ConnDOT District 1 Construction Office
1107 Cromwell Avenue
Rocky Hill, CT 06067

The Permitee's representative will inspect the site at least once and no more than three times during the first 90 days of commencement of the construction activity to confirm compliance with the General Permit and proper initial implementation of all control measures designated in this SWPCP for the site for the initial phase of construction.

7.2 Routine Inspections

The Permitee will routinely inspect the site for compliance with the General Permit and this SWPCP for the site until a Notice of Termination has been submitted. Inspection procedures for these Routine Inspections will be addressed and implemented in the following manner.

7.2.1 Qualified Inspector

The Permitee will retain a Qualified Inspector meeting the following definition:

"an individual possessing either (1) a professional license or certification by a professional organization recognized by the commissioner related to agronomy, civil engineering, landscape architecture, soil science, and two years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (2) five years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and

commercial construction projects in accordance with the Guidelines; or (3) certification by the Connecticut Department of Transportation (DOT)".

The Permitee's Qualified Inspector will be an individual(s) from:

ConnDOT District 1 Construction Office
1107 Cromwell Avenue
Rocky Hill, CT 06067

7.2.2 Rainfall Measurement

The Permitee will maintain a rain gauge on-site to document rainfall amounts.

7.2.3 Inspection Criteria

At least once a week and within 24 hours of the end of a storm that generates a discharge, the Qualified Inspector, will inspect, at a minimum, the following:

- Disturbed areas of the construction activity that have not been finally stabilized.
- All erosion and sedimentation control measures.
- All structural control measures.
- Soil stockpile areas.
- Washout Areas.
- Locations where vehicles enter or exit the site.

For storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection will occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, inspections will be conducted at least once every month for three months.

The areas noted above will be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site will also be inspected for evidence of off-site sediment tracking. Where sites have been temporarily or finally stabilized, such inspection will be conducted at least once every month for three months.

The Qualified Inspector will evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s).

7.2.4 Inspection Report

Following each inspection, the Qualified Inspector will prepare a report that will summarize the following:

- The scope of the inspection.
- Name(s) and qualifications of personnel making the inspection.
- The date(s) of the inspection.
- Weather conditions including precipitation information.
- Major observations relating to erosion and sediment controls and the implementation of the SWPCP.
- A description of the stormwater discharge(s) from the site.
- Any water quality monitoring performed during the inspection.

Report forms are included in Appendix A. The report will be signed by the Permitee or his authorized representative. Reports will be retained as part of the SWPCP.

The report will include a statement that, in the judgment of the Qualified Inspector(s) conducting the Routine Inspection, the site is either in compliance or out of compliance with the terms and conditions of this SWPCP and General Permit. If the site inspection indicates that the site is out of compliance, the inspection report will include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the 2002 Guidelines) will be implemented on site within 24 hours and incorporated into a revised SWPCP within three (3) calendar days of the date of inspection unless another schedule is specified in the 2002 Guidelines. Engineered corrective actions (as identified in the 2002 Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised SWPCP within ten (10) days of the date of inspection, unless another schedule is specified in the 2002 Guidelines or is approved by DEEP. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures will be implemented to minimize the potential for the discharge of pollutants from the site.

Inspectors from DEEP may inspect the site for compliance with the General Permit at any time construction activities are ongoing and upon completion of construction activities to verify the final stabilization of the site and/or the installation of post-construction stormwater management measures.

7.2.5 Turbidity Monitoring

The Permitee via the Qualified Inspector, will perform turbidity monitoring at each of the 3 “Main Outlet” locations indicated on the registration and in accordance with the following:

<u>Monitoring Frequency</u>

- Sampling will be conducted at least once every month, when there is a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

- The Permitee will collect samples during normal working hours, which for this project are Monday through Friday, between the hours of 8:00 am and 5:00 pm.
- If sampling is discontinued due to the end of normal working hours, the Permitee will resume sampling the following morning or the morning of the next working day following a weekend or holiday, as long as the discharge continues.
- Sampling may be temporarily suspended any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightning, impinging wave or tidal activity, intense rainfall or other hazardous condition. Once the unsafe condition is no longer present, sampling will resume.
- If there is no stormwater discharge during a month, sampling will not be conducted.

Sample Collection

- All samples will be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating a stormwater discharge.
- Any sample containing snow or ice melt must be identified on the Stormwater Monitoring Report form. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.
- Samples shall be grab samples taken at least three separate times during a storm event and shall be representative of the flow and characteristics of the discharge(s). Samples may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings (i.e. not composite). The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sampling Locations

- Sampling is required of all point source discharges of stormwater from disturbed areas.
- Where there are two or more discharge points that discharge substantially identical runoff, based on similarities of the exposed soils, slope, and type of stormwater controls used, a sample may be taken from just one of the discharge points. In such case, the Permitee will report that the results also apply to the substantially identical discharge point(s).
- No more than 5 substantially identical outfalls may be identified for one representative discharge. If such project is planned to continue for more than one year, the Permitee shall rotate twice per year the location where samples are taken so that a different discharge point is sampled every six months.
- The outfalls authorized by the General Permit are identified on the Erosion and Sedimentation Control Plans.

Sampling and Analysis

Sampling and turbidity analysis will be conducted in accordance with ASTM D6855. Results will be reported in Nephelometric Turbidity Units (NTU).

Turbidity Values

The stormwater discharge turbidity value for each sampling point will be determined by taking the average of the turbidity values of all samples taken at that sampling point during a given storm.

7.2.6 Stormwater Monitoring Reports

Within thirty (30) days following the end of each month, the Permitee will submit the stormwater sampling result(s) on the Stormwater Monitoring Report (SMR) form included in Appendix B. If there was no discharge during any given monitoring period, the Permitee will submit the form as required with the words "no discharge" entered in place of the monitoring results. If the Permitee monitors any discharge more frequently than required by the General Permit, the results of this monitoring will be included in additional SMRs for the month in which the samples were collected.

8.0 CERTIFICATION

The following Certification Statement applies to this SWPCP. All project participants who are involved with "site" construction (e.g. Construction Manager, General Contractor, Contractor, Subcontractors, etc.) are required to certify to this plan by signing in the space provided. By signing, each project participant certifies the following:

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site."

1	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
2	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
3	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):

4	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
5	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
6	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
7	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):
8	_____ Signature _____ Printed Name _____ Date	On behalf of (company): Telephone Number: Responsible for (project role):

APPENDIX A
Stormwater Monitoring Reports

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, issued 8/21/13, effective 10/1/13
Stormwater Monitoring Report

SITE INFORMATION

Permittee: _____

Mailing Address: _____

Business Phone: _____ ext.: _____ Fax: _____

Contact Person: _____ Title: _____

Site Name: _____

Site Address: _____

Receiving Water (name, basin): _____

Stormwater Permit No. GSN _____

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____

Outfall Location(s) (lat/lon or map link): _____

Person Collecting Sample: _____

Storm Magnitude (inches): _____ Storm Duration (hours): _____

Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall) Avg =

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____

Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

APPENDIX B

Velocity Dissipation Calculations for Outlet Control Sizing

Appendix G
Outlet Protection Worksheets

BSC GROUP

Appendix A – Outlet Protection Form

OUTLET PROTECTION

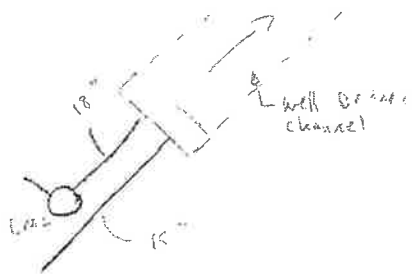
Project No.: 32-130 **Designed By:** WGW **Date:** 7/16/08
Town: Coventry **Checked By:** JLF **Date:** 7/16/08
Route: 31 **Station:** STA 17+62 – 27.8 LT

1. Assess the erosion potential at the outlet and other critical site factors

Describe the conditions at the outlet location: Outlet will consist of (1) endwall with (2) pipes (1-15" brook crossing, 1-18" roadway system with the same invert). A level scour hole will be constructed just upstream of the existing well-defined channel.

☐ No well-defined channel
☒ Well-defined channel

Sketch



2. Determine the tailwater (TW) conditions at the outlet

TW depth: 1.40 ft TW elevation: 495.00
TW computational method: HGL at roadway system outlet (Bernoulli's Equation)
Channel bed elevation: 493.60 Estimated velocity in channel: 7.06 fps

3. Calculate and evaluate the outlet velocity for the design discharge

Design Discharge: 11.34 cfs (combined) Design Frequency: 25-Year
Outlet Pipe Size: (1)-15", (1)-18" Type: RCP
Length: 9' (18"), 66' (15") Slope: 1.10%(18"), 2.90% (15") Outlet Invert Elevation: 493.60
Outlet Velocity at design discharge: 7.06 fps (18"), 6.46 fps (15")
Velocity computational method: Bernoulli's Equation

4. Select the type of outlet protection

☐ Riprap Apron
(See Figures 11-13 & 11-14)

Type_____(A,B,C)

Riprap type: _____
Length (L_a): _____
Width (W_1): _____
Width (W_2): _____
Width-Type C (W_3): _____

☒ Preformed Scour Hole
(See Figure 11-15)

	Type 1	Type 2
d_{50}	0.20 ft	
F	0.75 ft	
C	12.75 ft	
B	10.00 ft	
S_p	2.75 ft	

Proposed Type: 1
Riprap Type: Modified

Appendix E
Outlet and Inlet Protection Computations

Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	Route 31 Reconstruction	**Date**	2/25/2008
Location	Coventry, CT	**Revised**	1/14/2009
		Checked by	
		Date	

NORTH TRIBUTARY (STA 00+50)

CULVERT 2-48 "Ø

Q50 = 137 CFS
V50 (UP) = 8.29 FPS
V50 (DN) = 5.45 FPS

Q100 = 164 CFS
V100 (UP) = 8.93 FPS
V100 (DN) = 6.53 FPS

(STA 00+13) TW (DW 50) = 4.41'

TW (DN 100) = 5.18'

USE Q100 & V100 FOR PURPOSES OF DESIGN

QD = 164 CFS VD = 6.53 FPS TWD = 5.18'

Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	Route 31 Reconstruction	**Date**	2/25/2008
Location	Coventry, CT	**Revised**	12/29/2008
		Checked by	
		Date	

PREFORMED SCOUR HOLE TYPE 1
FROM CONNECTICUT DOT DRAINAGE MANUAL (MAY 2002)

Tributary North Discharge Sta. 00+50

GIVEN:

R_P = 4.00 maximum inside pipe rise, ft
S_p = 10.00 inside dia. of circular sections or max. inside pipe span for non-circular sections (ft)
value is based on the sum of both culverts (4'+4'+2' separation)
Q = 164.00 cfs (use Qfull at 100-year design event)
Tw = 5.18 ft (at 100 year event)

FIND:

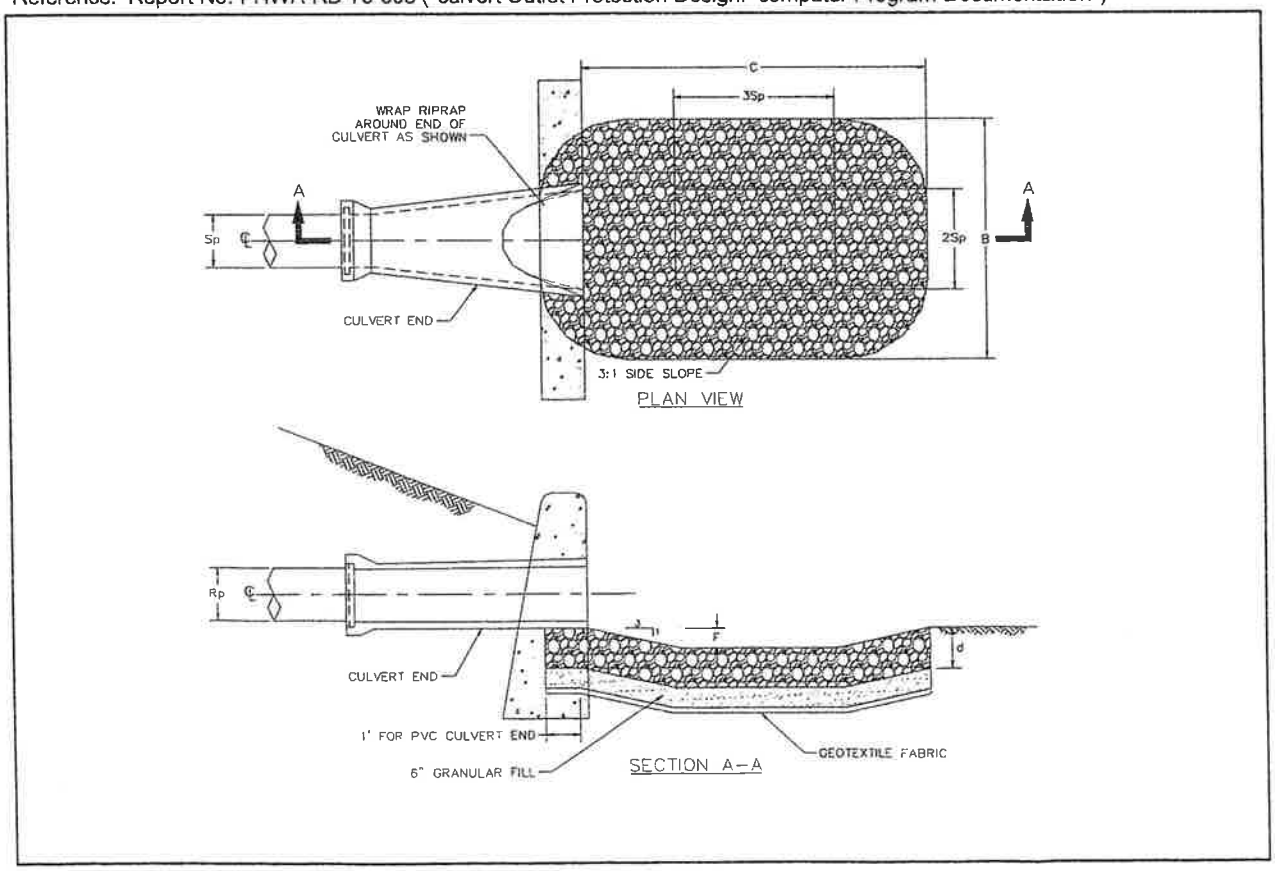
D_{50} = Average Rock Diameter Required
D_{50} = ((0.0125*R_P^2) / Tw) * (Q / (R_P^2.5))^(1.333) = **0.4 feet**
4.8 inches
Use: 6 inches

F=	0.5 Rp =	Basin Depression =	**2 feet**
C=	$3S_p$ + 6F =	Basin Length =	**42.00 feet**
B=	$2S_p$ + 6F =	Basin Inlet and Outlet Width =	**32.00 feet**

The type of riprap is as follows:

Modified	d_{50} < 0.13 m (0.42 ft)
Intermediate	0.13 m (0.42 ft) < d_{50} < 0.20 m (0.67 ft)
Standard	0.20 m (0.67 ft) < d_{50} < 0.38 m (1.25 ft)
Special Design	0.38 m (1.25 ft) < d_{50}

Reference: Report No. FHWA-RD-75-508 ("culvert Outlet Protection Design: computer Program Documentation")



Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	Route 31 Reconstruction	**Date**	2/25/2008
Location	Coventry, CT	**Revised**	1/14/2009
		Checked by	
		Date	

MILL BROOK WEST (STA 29+47)

EXIST CULVERT 9' W X 1.5' H

Q25 = 75 CFS
V25 (UP) = 5.56 FPS
V25 (DN) = 12.88 FPS

Q100 = 79 CFS
V100 (UP) = 5.85 FPS
V100 (DN) = 5.85 FPS

(STA 28+12) TW 25 = 0.65'

TW 100 = 2.96'

USE Q25 & V25 FOR PURPOSES OF DESIGN

QD = 75 CFS VD = 12.88 FPS TWD = 0.65'

Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	Route 31 Reconstruction	**Date**	2/25/2008
Location	Coventry, CT	**Checked by**	
		Date	

PREFORMED SCOUR HOLE TYPE 1
FROM CONNECTICUT DOT DRAINAGE MANUAL (MAY 2002)

Mill Brook West Discharge Sta. 29+47

GIVEN:

R_P = 1.50 maximum inside pipe rise, ft
S_p = 9.00 inside dia. of circular sections or max. inside pipe span for non-circular sections (ft)

Q = 75.00 cfs (use Qfull at 25-year design event)
Tw = 0.65 ft (at 25 year event)

FIND:

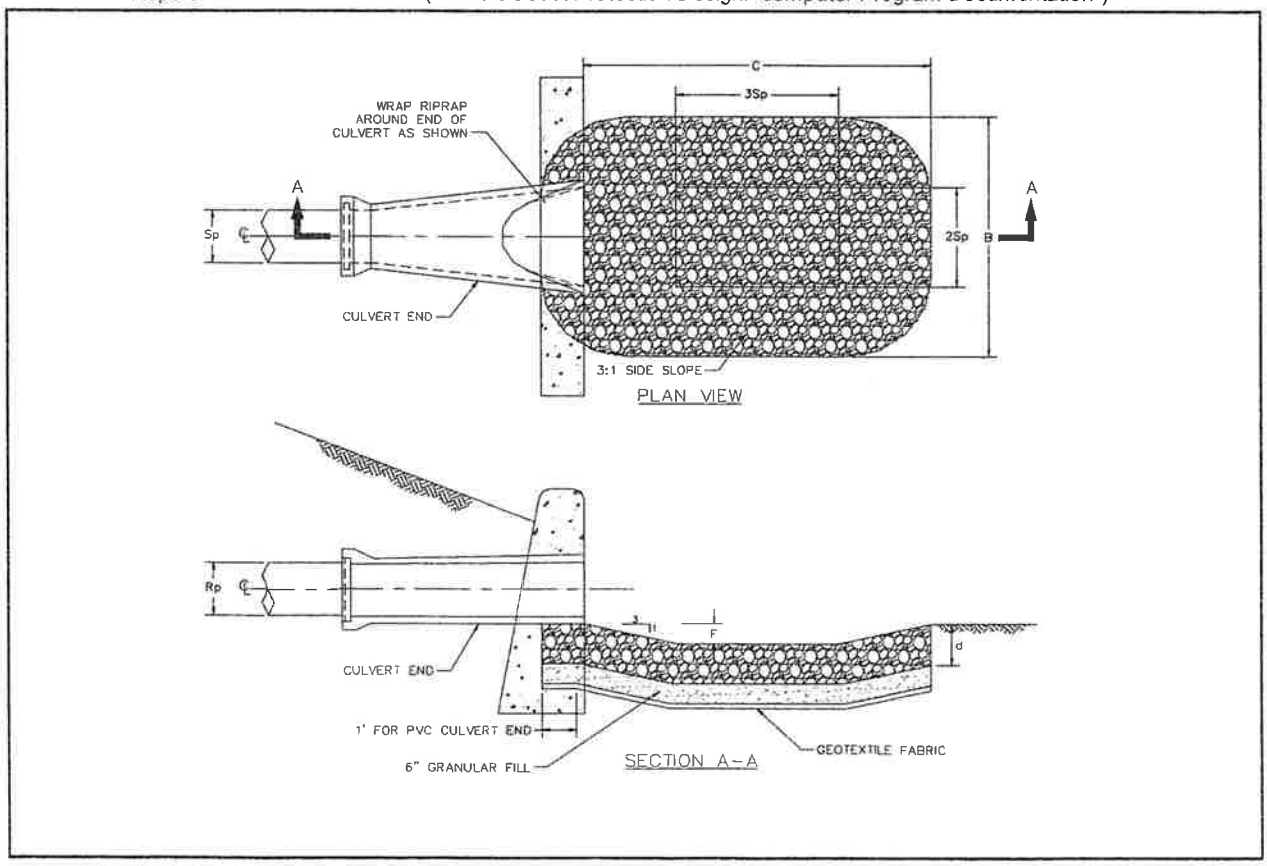
D_{50} = Average Rock Diameter Required
D_{50} = ((0.0125*R_P^2) / Tw) * (Q / (R_P^2.5))^(1.333) = **3.6 feet**
43.2 inches
Use: 48 inches

F=	0.5 Rp =	Basin Depression =	**0.75 feet**
C=	$3S_p$ + 6F =	Basin Length =	**31.50 feet**
B=	$2S_p$ + 6F =	Basin Inlet and Outlet Width =	**22.50 feet**

The type of riprap is as follows:

Modified	d_{50} < 0.13 m (0.42 ft)
Intermediate	0.13 m (0.42 ft) < d_{50} < 0.20 m (0.67 ft)
Standard	0.20 m (0.67 ft) < d_{50} < 0.38 m (1.25 ft)
Special Design	0.38 m (1.25 ft) < d_{50}

Reference: Report No. FHWA-RD-75-508 ("culvert Outlet Protection Design: computer Program Documentation")



Calculation Sheet

BSC GROUP

Project No.	83160.00	Calc By	B. Sherman
Subject	Route 31 Reconstruction	Date	2/25/2008
Location	Coventry, CT	Checked by	
		Date	

PREFORMED SCOUR HOLE TYPE 2
FROM CONNECTICUT DOT DRAINAGE MANUAL (MAY 2002)

Mill Brook West Discharge Sta. 29+47

GIVEN:

R_P = 1.50 maximum inside pipe rise, ft
S_p = 9.00 inside dia. of circular sections or max. inside pipe span for non-circular sections (ft)

Q = 75.00 cfs (use Qfull at 25-year design event)
Tw = 0.65 ft (at 25 year event)

FIND:

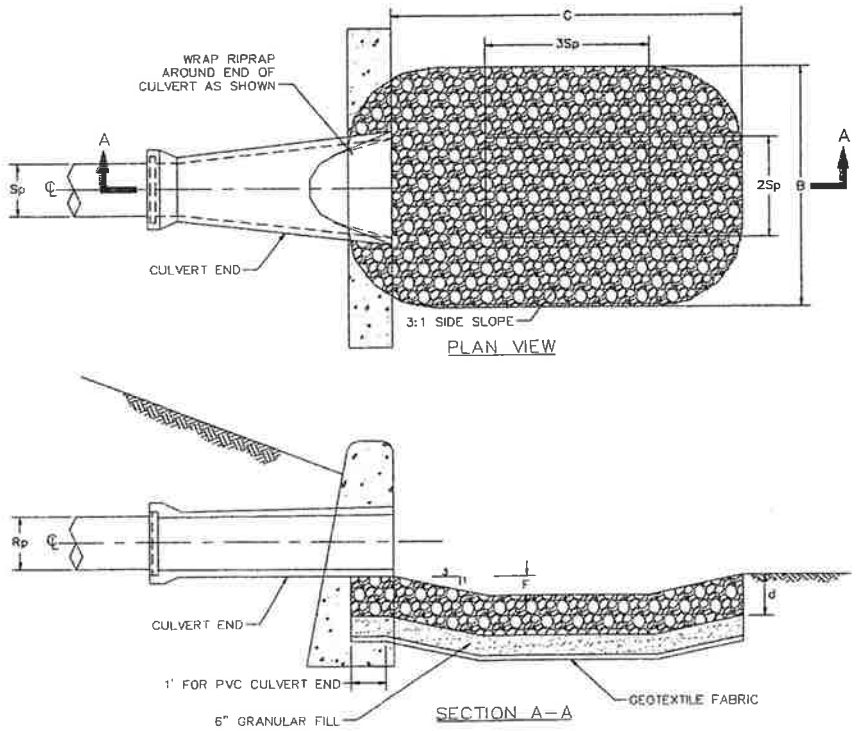
D_{50} = Average Rock Diameter Required
D_{50} = ((0.0082*R_P^2) / Tw) * (Q / (R_P^2.5))^(1.333) = **2.4 feet**
28.8 inches
Use: 30 inches

F=	Rp =	Basin Depression =	**1.50**	**feet**
C=	$3S_p$ + 6F =	Basin Length =	**36.00**	**feet**
B=	$2S_p$ + 6F =	Basin Inlet and Outlet Width =	**27.00**	**feet**

The type of riprap is as follows:

Modified	d_{50} < 0.13 m (0.42 ft)
Intermediate	0.13 m (0.42 ft) < d_{50} < 0.20 m (0.67 ft)
Standard	0.20 m (0.67 ft) < d_{50} < 0.38 m (1.25 ft)
Special Design	0.38 m (1.25 ft) < d_{50}

eference: Report No. FHWA-RD-75-508 ("culvert Outlet Protection Design: computer Program Documentation")



Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	COVENTRY SCOUR DETERMINATION	**Date**	2/25/2008
Location	Coventry, CT	**Checked by**	
		Date	

ALTERNATIVE DETERMINATION OF D50 FOR MILL BROOK WEST CULVERT

-MANNINGS 'n'

DAVG = 3.86 FT D50 = 0.25 FT ∴ DAVG/D50 = 3.86/0.25
= 15.44 <185
USE EQ (2)

BUT HIGH GRADIENT STREAMS USE EQUATION (4)

EQ (4): n = 0.39 SF ^0.38 R ^-0.16

WHERE SF = FRICTION SLOPE, FROM HEC RAS = 2.88%
R = HYDRAULIC RADIUS = FLOW AREA / WETTED PERIMETER

$$= \frac{(9' \times 0.65')}{(9+0.65+0.65)} = 0.57$$

n = 0.39 (0.0288) ^0.38 (0.57)^ '-0.16
n = 0.11

-DETERMINE DESIGN WATER SURFACE @ STA. 28+12

WSE (28+12) = 450.95

AVG DEPTH = 3.86' V = 12.88 FPS

CHART 4 (PG 129) = VERY ANGULAR d50= 0.5 FT $\theta = 42^\circ$
CHART 3 (PG 128) =1.5:1 $\theta = 42^\circ$ $K_1 = 0.55$

∴ D50 = 0.001 Va^3 / davg^0.5 K_1^1.5

$$= \frac{0.001\ (12.88\ FPS)^3}{(3.86)^{0.5}\ (0.55)^{1.5}} = \frac{2.136}{(1.96)\ (0.41)} = 2.65\ FT$$

D50 = 2.65 FT or 31.92"

USE 36" = D50

Calculation Sheet

BSC GROUP

Project No.	83160.00	**Calc By**	B. Sherman
Subject	COVENTRY HYDRAULICS	**Date**	2/21/2008
Location	Coventry, CT	**Checked by**	
		Date	

MILL BROOK EAST CULVERTS
KNOWN INFORMATION:

LOW FLOW CULVERT -

US INVERT = 447.00
DS INVERT = 444.00
LENGTH = 124'
SLOPE = 2.42%

Q25 = 101.53 CFS
V25 (UP) = 9.35 FPS
V25 (DN) = 9.57 FPS
TW 25 (DN) = 2.61 FT

Q100 = 129.70 CFS
V100 (UP) = 10.14 FPS
V100 (DN) = 10.42 FPS
TW 25 (DN) = 2.97 FT

HIGH FLOW CULVERT -

US INVERT = 448.0
DS INVERT = 445.0
LEN = 124'
SLOPE = 2.42%

Q25 = 86.47 CFS
V25 (UP) = 8.23 FPS
V25 (DN) = 14.15 FPS
TW25 (DN) = 2.61 FT

Q100 = 117.30 CFS
V100 (UP) = 7.82 CFS
V100 (DN) = 15.72 CFS
TW100 (DN) = 2.97 FT.

* VALUES OBTAINED FROM HEC-RAS

QT25 = 188 CFS
QT100 = 247 CFS

BASED ON FLOWS AND VELOCITIES AT THE DISCHARGE LOCATION, THE TYPE 1 PERFORMED SCOUR HOLES ARE PROPOSED FOR THIS LOCATION. (SEE ATTACHED CALCULATIONS)

Calculation Sheet

BSC GROUP

Project No.	83160.00	Calc By	B. Sherman
Project	Route 31 Reconstruction	Date	2/21/2008
Location	Coventry, CT	Revised	3/26/2009
		Checked by	
		Date	

PREFORMED SCOUR HOLE TYPE 1
FROM CONNECTICUT DOT DRAINAGE MANUAL (MAY 2002)

New Mill Brook Discharge Sta. 25+98

GIVEN:

R_p = 4.00 maximum inside pipe rise, ft

S_p = 9.00 inside dia. of circular sections or max. inside pipe span for non-circular sections (ft)
value is based on the sum of both culverts (5'+5')

Q = 247.00 cfs (use Qfull at 100-year design event)

Tw = 2.97 ft (at 100 year event)

FIND:

D_{50} = Average Rock Diameter Required

D_{50} = ((0.0125*R_p^2) / Tw) * (Q / (R_p^2.5))^(1.333) = 1.1 feet

13.2 inches

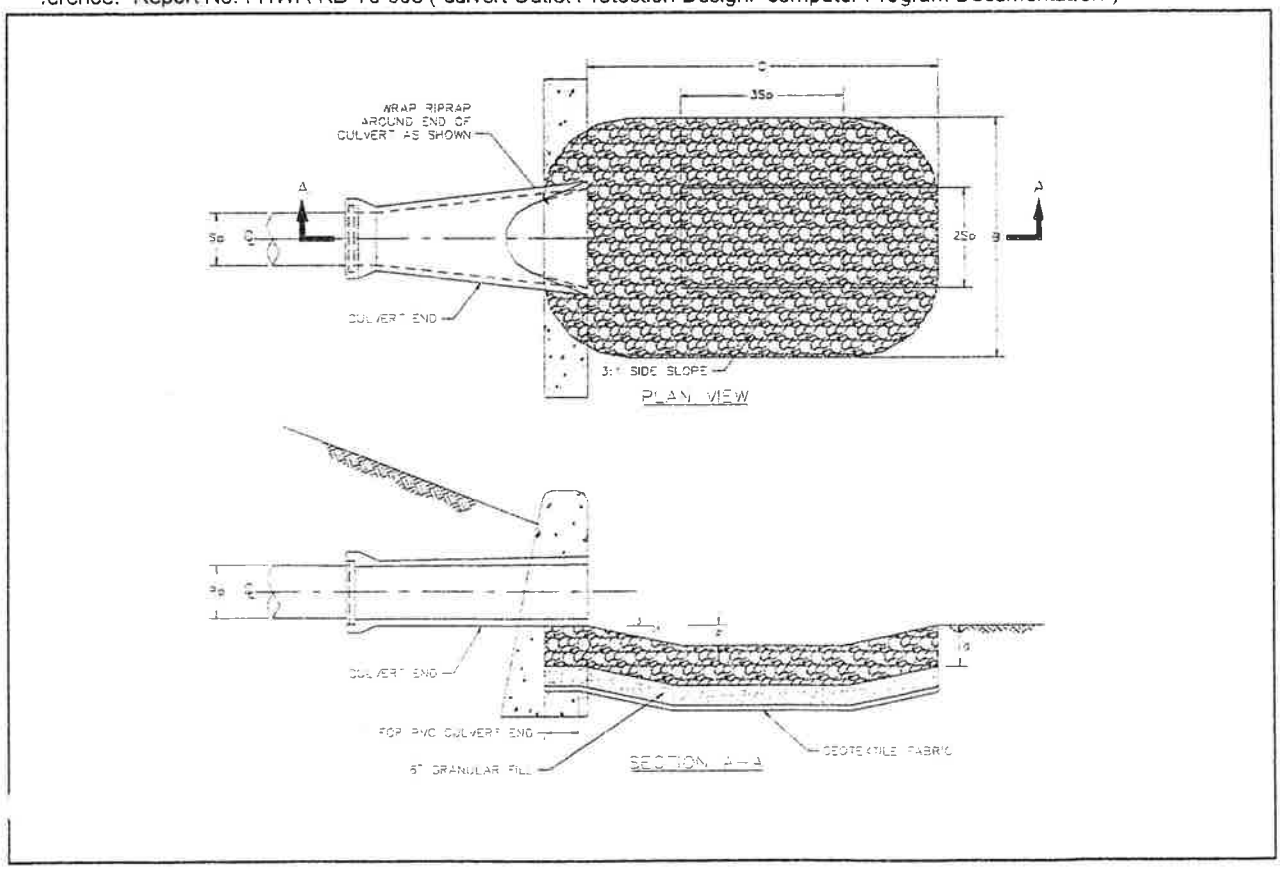
Use: 15 inches

F=	0.5 Rp =	Basin Depression =	2 feet
C=	$3S_p$ + 6F =	Basin Length =	39.00 feet
B=	$2S_p$ + 6F =	Basin Inlet and Outlet Width =	30.00 feet

The type of riprap is as follows:

Modified	d_{50} < 0.13 m (0.42 ft)
Intermediate	0.13 m (0.42 ft) < d_{50} < 0.20 m (0.67 ft)
Standard	0.20 m (0.67 ft) < d_{50} < 0.38 m (1.25 ft)
cial Design	0.38 m (1.25 ft) < d_{50}

erence: Report No. FHWA-RD-75-508 ("culvert Outlet Protection Design: computer Program Documentation")



Calculation Sheet

BSC GROUP

Project No.	83160.00	Calc By	B. Sherman
›ject	Route 31 Reconstruction	Date	2/21/2008
Location	Coventry, CT	Revised	3/26/2009
		Checked by	
		Date	

PREFORMED SCOUR HOLE TYPE 2
FROM CONNECTICUT DOT DRAINAGE MANUAL (MAY 2002)

New Mill Brook Discharge Sta. 25+98

GIVEN:

R_P = 4.00 maximum inside pipe rise, ft

S_p = 9.00 inside dia. of circular sections or max. inside pipe span for non-circular sections (ft)
value is based on the sum of both culverts (5'+5')

Q = 247.00 cfs (use Qfull at 100-year design event)

Tw = 2.97 ft (at 100 year event)

FIND:

D_{50} = Average Rock Diameter Required

D_{50} = ((0.0082*R_P^2) / Tw) * (Q / (R_P^2.5))^(1.333) = 0.7 feet

8.4 inches

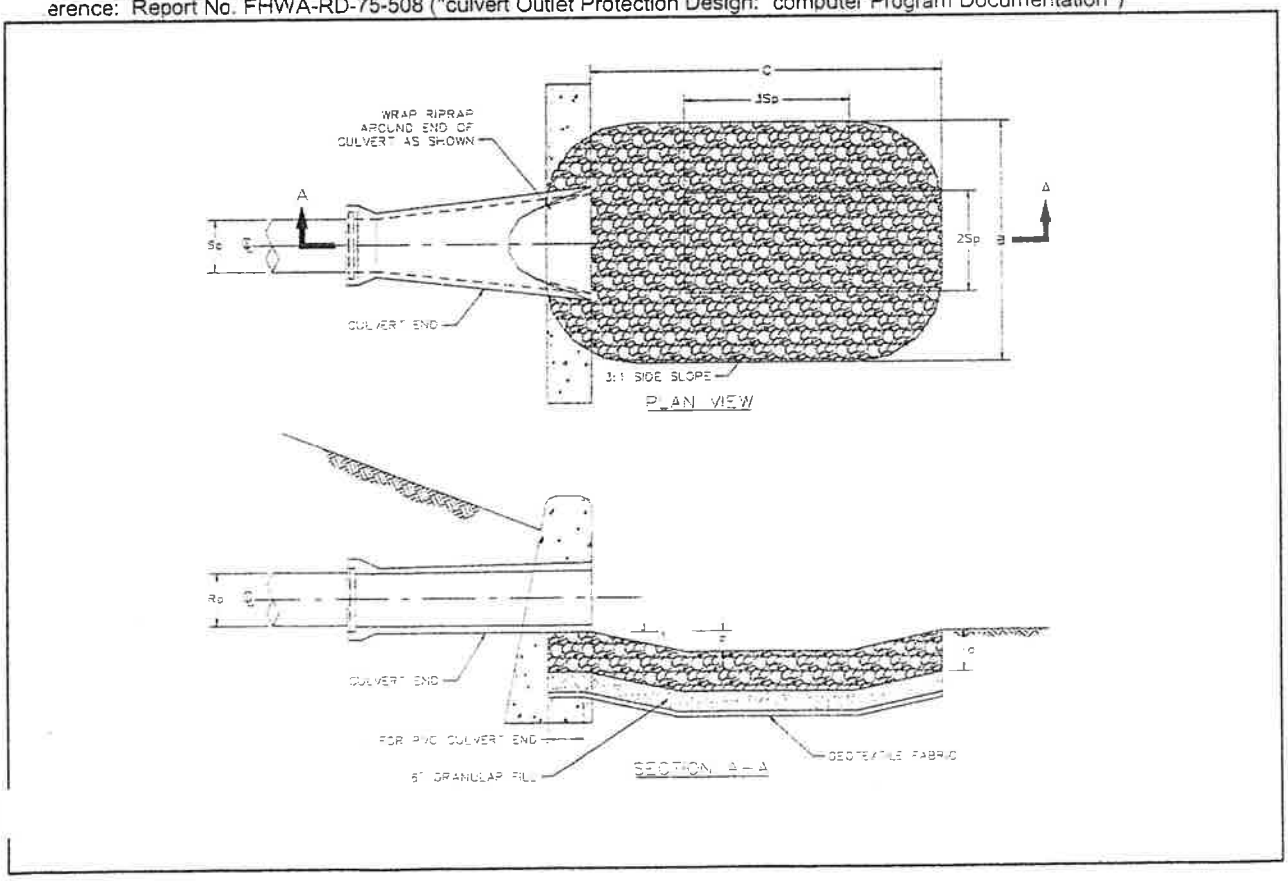
Use: 12 inches

F=	Rp =	Basin Depression =	4.00 feet
C=	$3S_p$ + 6F =	Basin Length =	51.00 feet
B=	$2S_p$ + 6F =	Basin Inlet and Outlet Width =	42.00 feet

The type of riprap is as follows:

Modified	d_{50} < 0.13 m (0.42 ft)
Intermediate	0.13 m (0.42 ft) < d_{50} < 0.20 m (0.67 ft)
Standard	0.20 m (0.67 ft) < d_{50} < 0.38 m (1.25 ft)
›cial Design	0.38 m (1.25 ft) < d_{50}

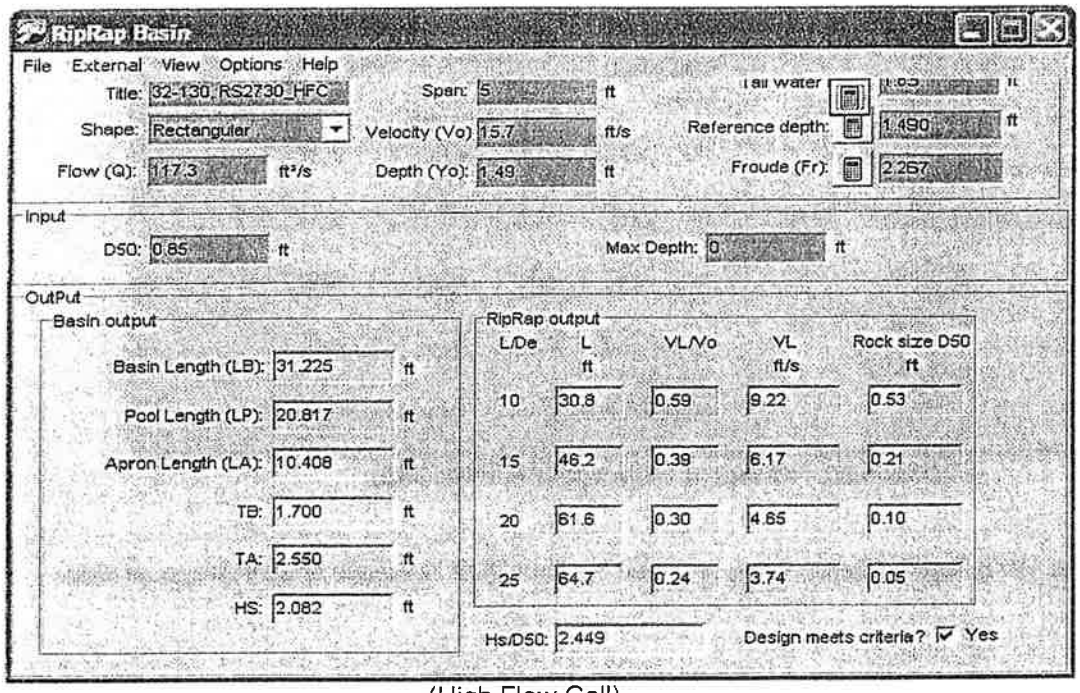
erence: Report No. FHWA-RD-75-508 ("culvert Outlet Protection Design: computer Program Documentation")



Calculation Sheet

BSC GROUP

Project No.	83160.00	Calc By	
Subject	Route 31 Reconstruction	Date	3/30/2009
Location	Coventry, CT	Checked by	
		Date	



RipRap Basin

File External View Options Help

Title: 32-130 RS2730 HFC | Span: 5 ft | Tail water: 1.63 ft

Shape: Rectangular | Velocity (Vo): 15.7 ft/s | Reference depth: 1.490 ft

Flow (Q): 117.3 ft³/s | Depth (Yo): 1.49 ft | Froude (Fr): 2.267

Input

D50: 0.65 ft | Max Depth: 0 ft

OutPut

Basin output

Basin Length (LB): 31.225 ft

Pool Length (LP): 20.817 ft

Apron Length (LA): 10.408 ft

TB: 1.700 ft

TA: 2.550 ft

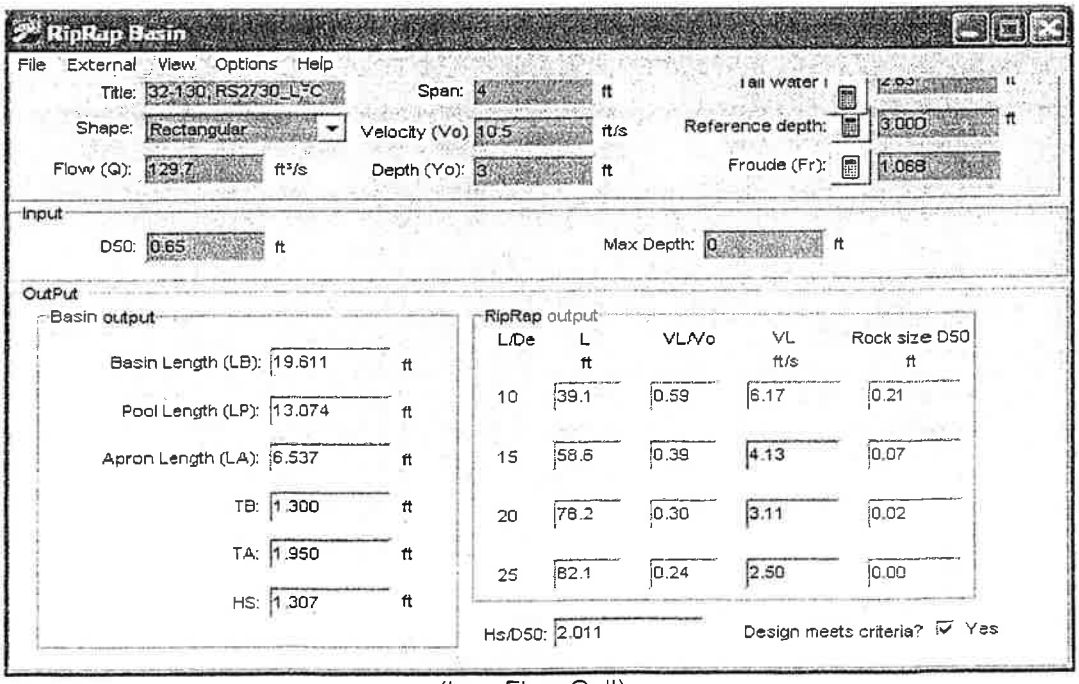
HS: 2.082 ft

RipRap output

L/De	L ft	VL/Vo	VL ft/s	Rock size D50 ft
10	30.8	0.59	9.22	0.53
15	46.2	0.39	6.17	0.21
20	61.6	0.30	4.65	0.10
25	64.7	0.24	3.74	0.05

Hs/D50: 2.449 | Design meets criteria? ☑ Yes

(High Flow Cell)



RipRap Basin

File External View Options Help

Title: 32-130 RS2730 LFC | Span: 4 ft | Tail water: 2.63 ft

Shape: Rectangular | Velocity (Vo): 10.5 ft/s | Reference depth: 3.000 ft

Flow (Q): 129.7 ft³/s | Depth (Yo): 3 ft | Froude (Fr): 1.068

Input

D50: 0.65 ft | Max Depth: 0 ft

OutPut

Basin output

Basin Length (LB): 19.611 ft

Pool Length (LP): 13.074 ft

Apron Length (LA): 6.537 ft

TB: 1.300 ft

TA: 1.950 ft

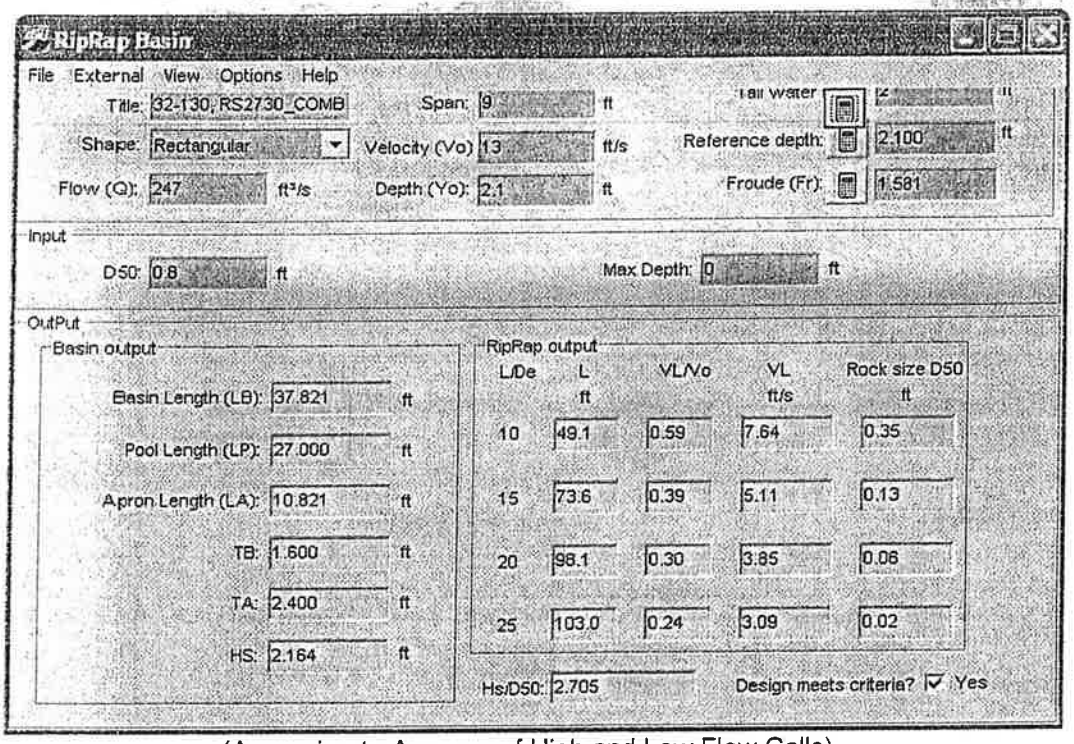
HS: 1.307 ft

RipRap output

L/De	L ft	VL/Vo	VL ft/s	Rock size D50 ft
10	39.1	0.59	6.17	0.21
15	58.6	0.39	4.13	0.07
20	78.2	0.30	3.11	0.02
25	82.1	0.24	2.50	0.00

Hs/D50: 2.011 | Design meets criteria? ☑ Yes

(Low Flow Cell)



(Approximate Average of High and Low Flow Cells)

Note: Input data for HY-8 RipRap Basin sizing provided by ConnDOT Hydraulic and Drainage section.

Connecticut Department of Transportation

Project No.		**Prepared by**		**Date**	
Route No.		**Checked by**		**Date**	
Town		**Stream**			
Discharge	**100 YR**	**Unit**	English		

Riprap Revetment Design Based on HEC-11

$$D_{50} = 0.001 \; Va^3/(d_{avg}^{0.5} K_1^{1.5}) \, C_{sf}$$

Average velocity (Va) and Average flow depth(d ave) in main channel

Cross Section No. RS 2570 Va (fps)= 7.45

Flow Area (sq.ft)= 42.11 Top Width (ft)= 39.53

d avg (ft) = 1.07

Side Slope= 2 : 1

Bank angle (degrees)
θ = 26.6

Riprap Class	Φ	K_1	D_{50}	Acceptable Range	Check
Modified	41.2	0.7342	**0.64**	d50 < 0.42'	**NG**
Intermediate	41.6	0.7391	**0.63**	0.42'<d50<0.67'	**G**
Standard	41.8	0.7300	**0.64**	0.67'<d50<1.25'	**G**
Other	42	0.7438	**0.62**	d50>1.25'	

Assumed Specific Gravity of Rock Riprap = 2.65

Angle of Repose (degrees)= Φ

Bank Stability Factor =K1

Median riprap particle size (ft) for Stabilty Factor of 1.2 = D50

use larger Stability Factor if applying at channel bends

Stability Factors (SF) and Correction Factor (C_{sf})

SF	C_{sf}	D_{50} (Φ = 41.2)	D_{50} (Φ = 41.6)	D_{50} (Φ = 41.8)	D_{50}| Φ = 42
1.0	0.76	**0.48**	**0.48**	**0.49**	**0.48**
1.1	0.88	**0.56**	**0.55**	**0.56**	**0.55**
1.2	1.00	**0.64**	**0.63**	**0.64**	**0.62**
1.3	1.13	**0.72**	**0.71**	**0.72**	**0.70**
1.4	1.26	**0.80**	**0.79**	**0.81**	**0.79**
1.5	1.40	**0.89**	**0.88**	**0.90**	**0.87**
1.6	1.54	**0.98**	**0.97**	**0.99**	**0.96**
1.7	1.69	**1.07**	**1.06**	**1.08**	**1.05**
1.8	1.84	**1.17**	**1.16**	**1.18**	**1.15**
1.9	1.99	**1.27**	**1.26**	**1.28**	**1.24**
2.0	2.15	**1.37**	**1.36**	**1.38**	**1.34**

Recommendation: use Intermediate Riprap

CALCULATION SHEET

BSC GROUP

PROJECT NO [illegible]
SUBJECT Inlet Protection Sizing
HEC-11 cases
LOCATION Rte 31 Reconstruction
Covington, CT

CALC BY J White
DATE 12-18-08
CHECKED BY DEV
DATE

REFER TO

Twin 48"-ϕ culverts. – Inlet Protection

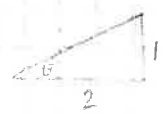
- size for 50 yr flow
  Q 50 = 68.5 cfs (per culvert)
  V 50 = 8.29 fps

Find: D_{50} = median riprap particle size
$= 0.001\, V_a^3 / (d_{avg}^{0.5} K_1^{1.5})$ (6) pg 30

V_a = avg velocity = 8.29 fps
C = correction factor = assume 1.0 (based on specific gravity Rip rap = 2.65)
d_{avg} = avg depth of flow = 454.59 (WS elev from HECRAS @ 1+06)
451.5 (~bottom of channel)
3.0 = d_{avg}

$K_1 = [1 - (\sin^2\theta / \sin^2\phi)]^{0.5}$ (7) pg 30

θ = bank angle w/ horizontal = 26.6° (2:1 slope)



$\tan\theta = \frac{1}{2}$

ϕ = riprap material ∡ repose = 39°
(Chart 4, ~ 1" dia D_{50}, very angular)

$K_1 = [1 - (\sin^2(26.6°) / \sin^2(39°))]^{0.5} = 0.703$

$D_{50} = 0.001\,(8.29\text{ fps})^3 / ((3.0\text{ ft})^{0.5} * (0.703)^{1.5}) = \boxed{0.558' \approx 7''}$

From ConnDOT Spec, use Intermediate Rip Rap 0.13m (0.42ft) < d_{50} < 0.21m (0.67ft)

Extent of protection (Section 3.6.1 & 3.6.2)

Length: $\boxed{40\text{ ft}}$ (from start of west wingwall to start of 48" pipes)

Vertical extent: 456.0 ft minimum (top of bank)

CALC SHEET 1 OF SHEETS

CALCULATION SHEET

BSC GROUP

PROJECT NO 83160.00 CALC BY J. White REFER TO
SUBJECT Inlet Protection Sizing DATE 12.18.08
HEC-11 Calcs CHECKED BY DEV
LOCATION Rte 31 Reconstruction DATE
Coventry, CT

Layer thickness (4.3)

(a) $D_{100} = 1.7 D_{50} = 1.7(0.67) = 1.14'$ (table 2 p.36) ← larger value.
or $1.5 D_{50} = 1.5(.67) = 1.01'$

(b) Not less than 12 in.

(c) Increase by 50% for placement under water – assume NO

∴ Min thickness = $\boxed{14 \text{ in} \approx 1.17 \text{ ft}}$

Filter Layer (Section 4.4 and form 3.5.5)

(a) Filter Material Size

$$\frac{D_{15}\text{ (coarser layer)}}{D_{85}\text{ (finer layer)}} < 5 < \frac{D_{15}\text{ (coarser layer)}}{D_{15}\text{ (finer layer)}} < 40$$

Try 1" uniformly graded coarse gravel filter

$$\frac{0.03}{0.14} = 0.21 < 5 < \frac{0.03}{0.005} = 6 < 40 \checkmark$$

∴ Soil interface ok.

For rip rap to filter interface:

$$\frac{D_{15}\text{(riprap)}}{D_{85}\text{(filter)}} = \frac{0.23}{0.22} = 1.05 < 5 \checkmark$$

$$\frac{D_{15}\text{(riprap)}}{D_{15}\text{(filter)}} = \frac{0.23}{0.03} = 7.67 < 40 \checkmark$$

∴ 1" filter material is adequate

Note - designed gravel & rip rap layer. Soil layer characteristics taken from HEC-11 calcs for outlet protec sizing (assumed properties of existing bank soil)

(b) Filter layer thickness

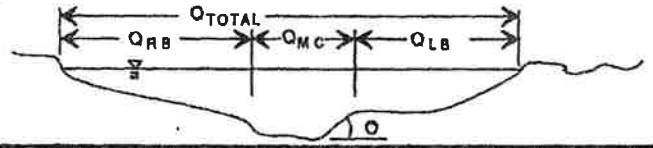
- Use a thickness of $\boxed{12 \text{ in}}$

CALC SHEET 2 OF SHEETS

Project: No. 32 - 130
Description: Reconstruction of Rte 31, Coventry CT
Inlet of twin 48" culverts

Prepared by/date: JWhite / 12/30/08
Checked by/date: / /
sheet: of

Definition Sketch:

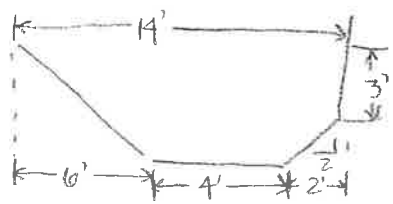


Q_{TOTAL} 68.5
Q_{MC}
Q_{LB}
Q_{RB}

Soil Characteristics:
D_{15} 0.005
D_{50} 0.032
D_{85} 0.14

DEPTH OR W.S. (ft) ①	A (ft^2) ②	V_a (ft/sec) ③	d_a (ft) ④	θ ⑤	Φ ⑥	K_1 ⑦	D_{50} (ft) ⑧	SF ⑨	S_s ⑩	C ⑪	$C_{P/A}$ ⑫	D_{50} (ft) ⑬	NOTES ⑭
459.59	29	8.29	3.0	2:1	39	0.71	0.558	1.2	2.65	1.0	N/A	0.56	

Design Sketch



RIPRAP CHARACTERISTICS:
Size: D_{50} 7"
Class Intermediate
Thickness: $2D_{50}$ 14"
D_{100} 18"
Use 14"

AASHTO Gradation:

	Size: (ft)	Percent Finer
18"	1.5	100
7"	0.58	50
<2"	0.17	5-10

FABRIC CHARACTERISTICS:
Granular:

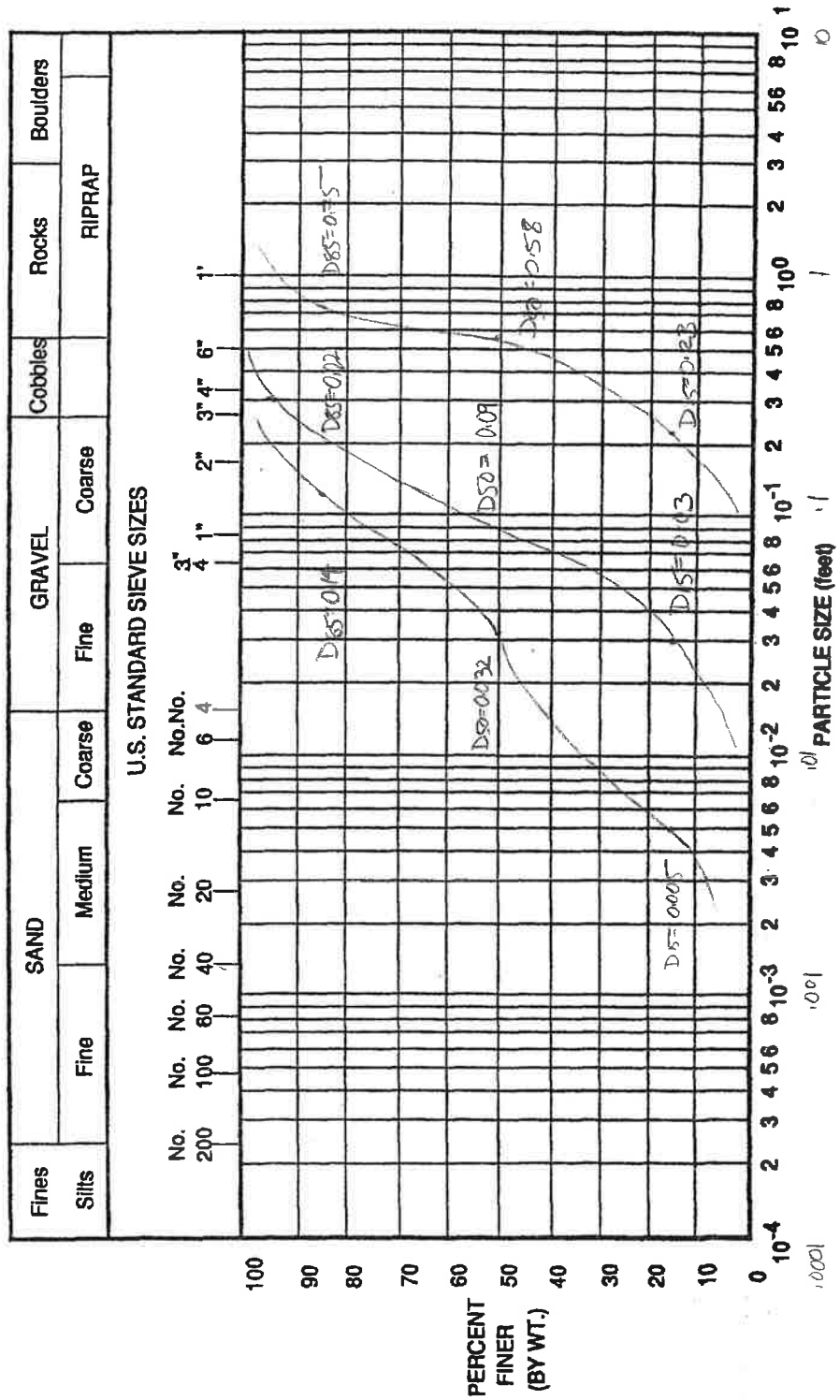
Size (ft)	Percent Finer
0.22	85
0.09	50
0.03	15

Fabric:
AOS * <
Perm.>

Average Opening Size

① Water Surface Elevation
② Main channel flow area
③ Main channel average velocity
④ Main channel average depth
⑤ Bank angle
⑥ Riprap angle of repose (Chart 4)
⑦ Bank angle correction (Chart 3)
⑧ Riprap size (Chart 1)
⑨ Stability Factor
⑩ Riprap specific gravity
⑪ Riprap size correction factor (Chart 2)
⑫ Pier/Abutment Correction (3.38 if applicable)
⑬ Correction D_{50} = ⑧ · ⑪ · ⑫
⑭ Notes or Comments

Form 1. Riprap size - particle erosion



Form 3. Material gradation

PROJECT No 32 - 130	Prepared by/Date: : 12/30/08 JW
DESCRIPTION Reconstruction of Rte 31 - Coventry, CT Inlet Protection of Twin 48" culverts	Checked by/Date: 1
	Sheet 1 of 1

GRANULAR FILTER:

LAYER	DESCRIPTION	D_{15} (ft)	D_{85} (ft)	RATIO	$\frac{D_{15}\text{COARSE}}{D_{85}\text{FINE}}$	<5<	$\frac{D_{15}\text{COARSE}}{D_{15}\text{FINE}}$	< 40
1	Soil layer	0.005	0.14					
				$\frac{0.03}{0.14}$	0.21	<5<	$\frac{0.03}{.005}$	6
2	Gravel filter	0.03	0.22					
				$\frac{0.23}{0.22}$	1.05	<5<	$\frac{0.23}{0.03}$	7.67
3	Rip Rap	0.23	0.75					

SUMMARY:

LAYER DESCRIPTION	D_{15}	D_{85}	THICKNESS
gravel filter	0.03	0.22	12"

FABRIC FILTER:

PHYSICAL PROPERTIES CLASS: _____

HYDRAULIC PROPERTIES

PIPING RESISTANCE < 50% PASSING #200 AOS < 0.6 mm

< 50% PASSING #200 AOS < 0.3 mm

PERMEABILITY SOIL PERMEABILITY < FABRIC PERMEABILITY

SELECTED FABRIC FILTER SPECIFICATIONS: _____

Form 5. Filter design

APPENDIX C
Notice of Termination

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: ***GSN***
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

   Registrant:
3. Site Address:

   City/Town: State: Zip Code:
4. Date all storm drainage structures were cleaned of construction sediment:

   Date of Completion of Construction:

   Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):
5. Check the post-construction activities at the site (check all that apply):

   ☐ Industrial ☐ Residential ☐ Commercial ☐ Capped Landfill

   ☐ Other (describe):

Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

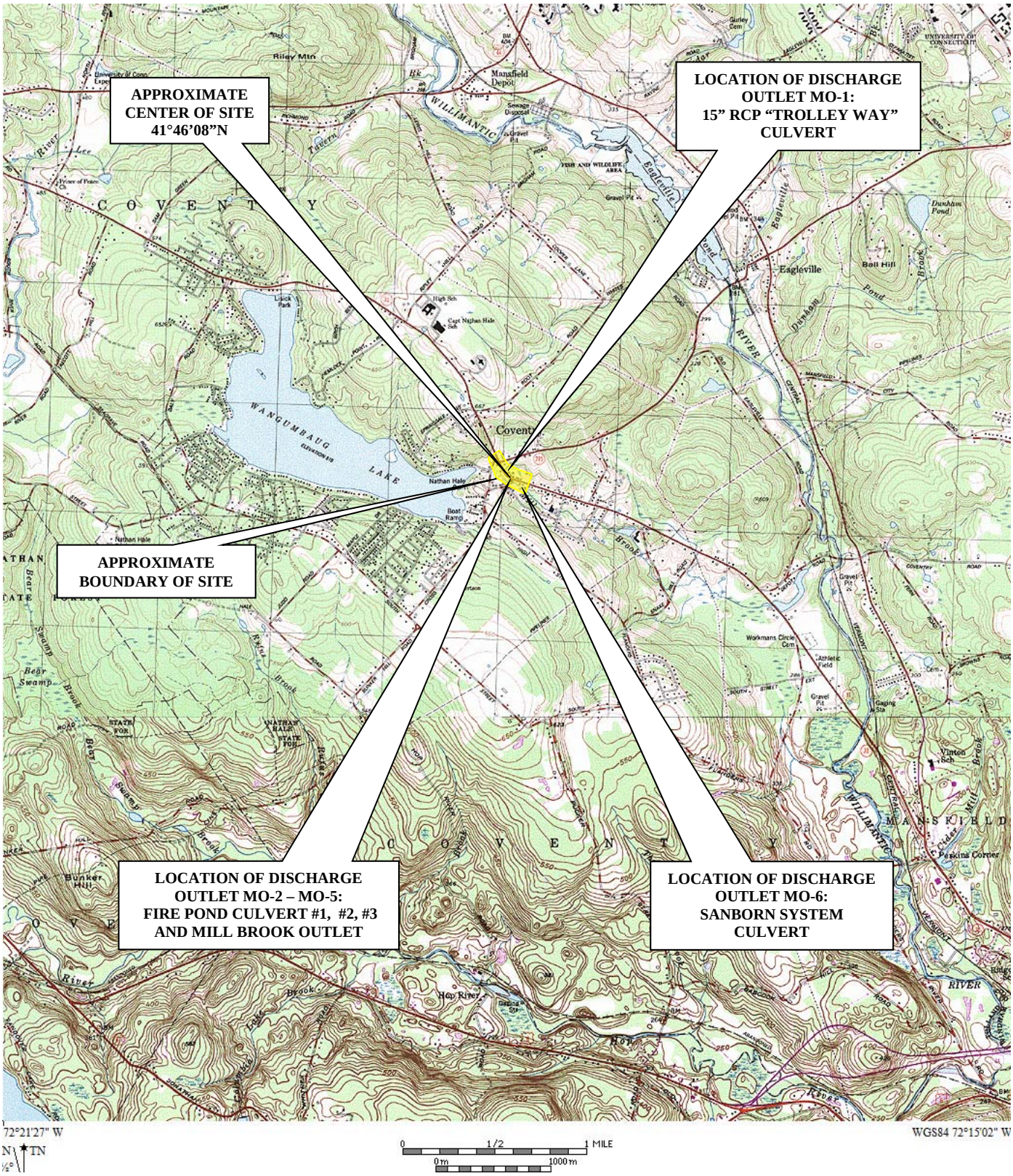
Signature of Permittee	Date
Name of Permittee (print or type)	Title (if applicable)

Note: Please submit this Notice of Termination Form to:

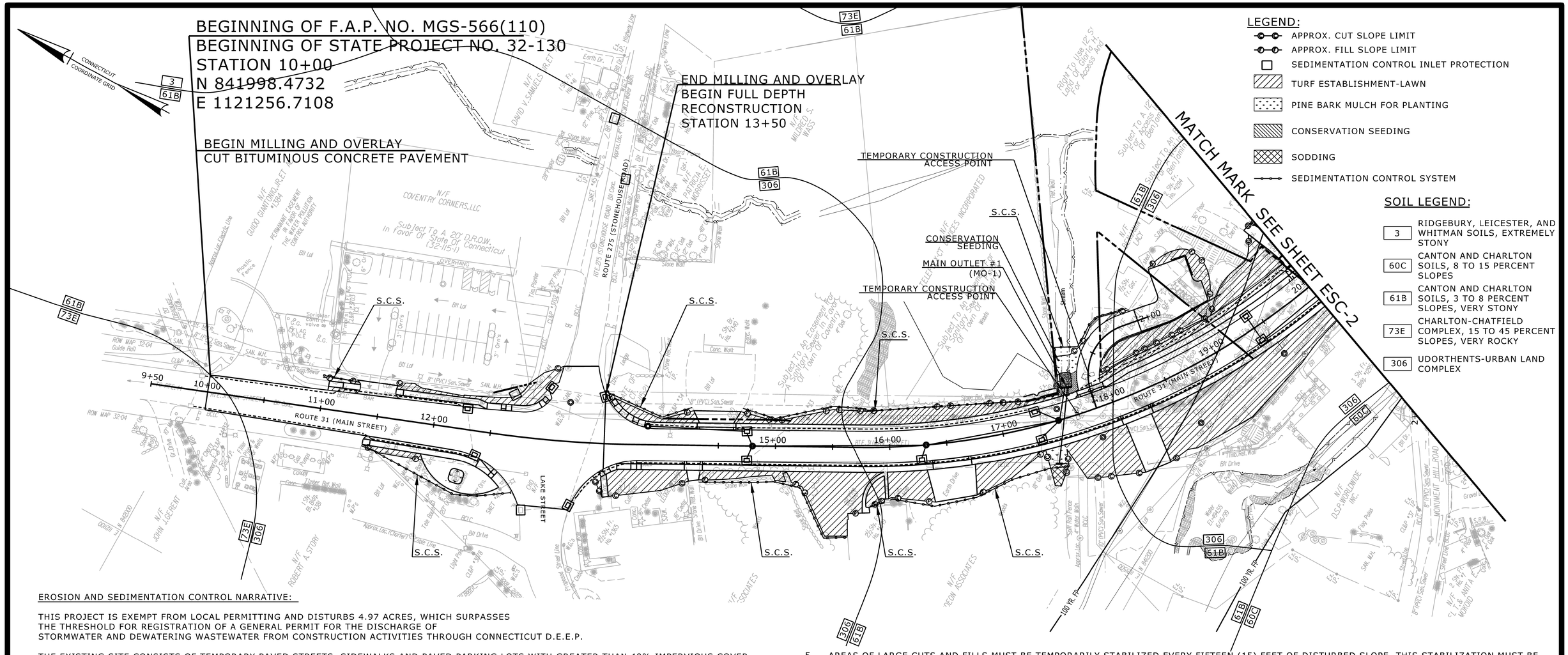
STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Attachment 1
Site Location Map

Attachment 1
USGS Quadrangle Map: 40 - Coventry
Registrant: Connecticut Department of Transportation
Reconstruction of State Route 31
Coventry, Connecticut
Scale-1:24,000



Attachment 2
Site Plans



EROSION AND SEDIMENTATION CONTROL NARRATIVE:

THIS PROJECT IS EXEMPT FROM LOCAL PERMITTING AND DISTURBS 4.97 ACRES, WHICH SURPASSES THE THRESHOLD FOR REGISTRATION OF A GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATER FROM CONSTRUCTION ACTIVITIES THROUGH CONNECTICUT D.E.E.P.

THE EXISTING SITE CONSISTS OF TEMPORARY PAVED STREETS, SIDEWALKS AND PAVED PARKING LOTS WITH GREATER THAN 40% IMPERVIOUS COVER, WHICH TRIGGERS THE PERMIT RECOMMENDATION TO STORE ONE-HALF THE WATER QUALITY VOLUME (WQV). HOWEVER, AS PART OF THE RECONSTRUCTION PROJECT, THE TOTAL EFFECTIVE IMPERVIOUS COVER WILL NOT BE INCREASED. AS A RESULT, ONSITE RETENTION OF ONE-HALF OF THE WATER QUALITY VOLUME IS NOT REQUIRED PER GENERAL PERMIT SECTION 5(b)(2)(C)(i)(a). STORMWATER QUALITY TREATMENT WILL BE ACHIEVED USING DEEP SUMP CATCH BASINS. ALL OFFSITE DISCHARGE LOCATIONS ARE DESIGNED INCLUDING VELOCITY DISSIPATING OUTLET PROTECTION PADS OR SCOUR HOLES.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. THE NARRATIVE PROVIDED IN THE STORMWATER POLLUTION CONTROL PERMIT IS PART OF THE EROSION CONTROL REQUIREMENTS, WHICH THE CONTRACTOR SHALL FOLLOW ALONG WITH THE "2002 CT E&S GUIDELINES".

2. THE EROSION AND SEDIMENT CONTROL PLANS REQUIRE THAT THE DOWNSTREAM SLOPE LIMITS WITHIN THE PROJECT BE PROTECTED WITH SEDIMENTATION CONTROL SYSTEM (SCS), WHICH SHALL BE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION WITHIN THAT PHASE. THE SCS MUST BE IN ACCORDANCE WITH THE CTDEEP'S 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL AND THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL (THE MATERIALS/PRODUCTS USED IN THE SCS SHALL BE AT THE DISCRETION OF THE CONTRACTOR AND AS APPROVED BY THE ENGINEER). THOSE SYSTEMS ARE TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD, OR UNTIL DISTURBED AREAS/SLOPES ARE FULLY STABILIZED, WHICHEVER IS LONGER. ALL STORM WATER OUTFALLS, AND CULVERTS, ARE TO BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM, COMMENCING ONLY AFTER PLACEMENT OF THE REQUIRED SCS ACROSS THE DISCHARGE POINT OR OTHER TECHNIQUES NOTED, AND THE TEMPORARY DIVERSION OF ANY EXISTING FLOW, TO THE SATISFACTION OF THE PROJECT ENGINEER.

3. THE DESIGN OF THE PROJECT STORM DRAINAGE SYSTEMS CONFORMS TO THE CONNDOT DRAINAGE MANUAL AND "ONSITE MITIGATION FOR CONSTRUCTION ACTIVITIES". OUTLET PROTECTION AND CHANNEL PROTECTION HAS BEEN INCLUDED WITHIN EACH SYSTEM DESIGN. TEMPORARY CONDITIONS SHALL FOLLOW THE SAME CRITERIA.

4. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN PERMANENTLY HALTED, OR HAVE BEEN TEMPORARILY SUSPENDED FOR MORE THAN SEVEN (7) DAYS, OR WHEN FINAL GRADES HAVE BEEN ACHIEVED IN ANY PORTION OF THE PROJECT, THE CONTRACTOR SHALL IMPLEMENT STABILIZATION PRACTICES WITHIN THREE (3) DAYS. AREAS THAT WILL REMAIN DISTURBED AND INACTIVE FOR AT LEAST THIRTY (30) DAYS SHALL RECEIVE TURF ESTABLISHMENT.

5. AREAS OF LARGE CUTS AND FILLS MUST BE TEMPORARILY STABILIZED EVERY FIFTEEN (15) FEET OF DISTURBED SLOPE. THIS STABILIZATION MUST BE ACHIEVED BEFORE CONTINUING WITH THE CUT OR FILL BEYOND THE FIFTEEN (15) FEET.

6. ALL PAVED AREAS ADJACENT TO THE PROJECT LIMITS, WHERE CONSTRUCTION IS OCCURRING, SHALL BE SWEPT DAILY TO REMOVE EXCESS MUD, DIRT OR ROCK TRACKING FROM THE PROJECT. DUMP TRUCKS HAULING MATERIAL FROM THE PROJECT MUST BE COVERED WITH A TARPAULIN. ANTI-TRACKING PADS SHALL BE PLACED, AND MAINTAINED, AT ALL POINTS OF ACCESS AND EGRESS TO PAVED AREAS.

7. THE FOLLOWING PERMITS HAVE BEEN OBTAINED FOR THE PROJECT AND ARE INCORPORATED INTO THE CONTRACT DOCUMENTS:
   U.S. ARMY CORPS OF ENGINEERS- SECTION 404- CONNECTICUT GENERAL PERMIT - CATEGORY 2
   CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (CT DEEP) GENERAL PERMIT FOR THE DISCHARGE OF STORM WATER AND DEWATERING WASTEWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
   CT DEEP FLOOD MANAGEMENT CERTIFICATION
   CT DEEP INLAND WETLAND AND WATERCOURSES PERMIT
   CT DEEP 401 WATER QUALITY CERTIFICATION

8. ALL DRAINAGE STRUCTURES SHALL BE CLEANED WITHIN THE PROJECT LIMITS AND ALL SILT FENCE SHALL BE REMOVED PRIOR TO THE FILING OF THE NOTICE OF TERMINATION IN ACCORDANCE WITH THE GENERAL PERMIT.

9. NO STAGING, STORING OF EQUIPMENT OR MATERIAL SHALL OCCUR WITHIN THE 100-YEAR FLOOD LIMITS.

10. THE CONSTRUCTION SITE SHALL BE CLEAN, WITHOUT ANY ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS IN ACCORDANCE WITH SWPCP SECTION 6.1. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. ALL NECESSARY PRECAUTIONS SHALL BE OBSERVED TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE, AS WELL AS THE ADHERENCE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE.

11. DESIGNATE A "WASHOUT" AREA ON THE SITE IN ACCORDANCE WITH SWPCP SECTION 6.2.

FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: Border Version: 11/14/08

DESIGNER/DRAFTER: PJB-MSR / MSR
CHECKED BY: PJB
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: BSC GROUP
APPROVED BY: DATE:

PROJECT TITLE: RECONSTRUCTION OF ROUTE 31

TOWN: COVENTRY

DRAWING TITLE: EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO. 32-130
DRAWING NO. ESC-1
SHEET NO. 51

SOIL LEGEND:

3	RIDGEBURY, LEICESTER, AND WHITMAN SOILS, EXTREMELY STONY
60B	CANTON AND CHARLTON SOILS, 3 TO 8 PERCENT SLOPES
60C	CANTON AND CHARLTON SOILS, 8 TO 15 PERCENT SLOPES
61B	CANTON AND CHARLTON SOILS, 3 TO 8 PERCENT SLOPES, VERY STONY
61C	CANTON AND CHARLTON SOILS, 8 TO 15 PERCENT SLOPES, VERY STONY
73C	CHARLTON-CHATFIELD COMPLEX, 3 TO 15 PERCENT SLOPES, VERY ROCKY
73E	CHARLTON-CHATFIELD COMPLEX, 15 TO 45 PERCENT SLOPES, VERY ROCKY
306	UDORTHENTS-URBAN LAND COMPLEX

LEGEND:

- APPROX. CUT SLOPE LIMIT
- APPROX. FILL SLOPE LIMIT
- SEDIMENTATION CONTROL INLET PROTECTION
- TURF ESTABLISHMENT-LAWN
- PINE BARK MULCH FOR PLANTING
- CONSERVATION SEEDING
- SEDIMENTATION CONTROL SYSTEM
- DOUBLE SHREDDED HARDWOOD MULCH
- WETLAND SEED MIX
- SODDING

END OF F.A.P. NO. MGS-566(110)
END OF STATE PROJECT NO. 32-130
STATION 30+00
N 840872.2090
E 1122736.7591

MATCH MARK SEE SHEET ESC-1

CONNECTICUT COORDINATE GRID

ROUTE 31 (MAIN STREET)

MONUMENT HILL ROAD

CONSERVATION SEEDING

S.C.S.

TEMPORARY CONSTRUCTION ACCESS POINT

TEMPORARY CONSTRUCTION ACCESS POINTS

SEE ESC SHEETS 5 & 6 FOR EROSION AND SEDIMENTATION CONTROL REQUIREMENTS FOR STONE CHANNEL CONSTRUCTION

MAIN OUTLET #2 (MO-2)

MAIN OUTLET #3 (MO-3)

MAIN OUTLET #4 (MO-4)

MAIN OUTLET #5 (MO-5)

MAIN OUTLET #6 (MO-6)

100 YR. FP.

END OVERLAY
STATION 1+75

END FULL DEPTH RECONSTRUCTION
BEGIN OVERLAY
STATION 0+93.37

FINAL DESIGN REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename:

DESIGNER/DRAFTER: PJB-MSR / MSR
CHECKED BY: PJB
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: BSC GROUP
APPROVED BY:
DATE:

PROJECT TITLE: RECONSTRUCTION OF ROUTE 31

TOWN: COVENTRY

DRAWING TITLE: EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT NO. 32-130
DRAWING NO. ESC-2
SHEET NO. 52