Amesbury Heights

Construction Activities at:	**Amesbury Heights** 36 Haverhill Road Amesbury, Massachusetts 01803
Prepared on Behalf of:	**Corcoran Jennison** 150 Mount Vernon Street, Suite 500 Boston, MA 02125 Sean McReynolds T: (617) 822-7382 M: (646) 351-9350 E: smcreynolds@corcoranjennison.com
Prepared for:	**Pilot Construction Inc.** 24 Ladd Street Portsmouth, NH 03801 Drew Carter T: (603) 436-2510 E: drewc@pilotconstructioninc.com
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SWPPP Preparation Date: April 2015
Estimated Project Start Date: Summer 2016
Estimated Project End Date: Winter 2017

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List of Attachments

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Introduction and Instruction to Contractor

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the guidelines for the National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Stormwater Discharges from Construction Activity (2012, USEPA).

A copy of the Construction General Permit (CGP) for which this SWPPP was prepared is attached hereto. The CGP authorizes the discharge of stormwater pollution from construction activities in accordance with specified terms and conditions. All construction projects that propose to disturb one (1) or more acres of land must comply with the CGP. A construction project that is part of a larger common plan that will ultimately disturb one or more acres of land must also comply.

Compliance with the CGP is achieved by:

- Developing and implementing a SWPPP;
- Completing, certifying and submitting a Notice of Intent (NOI) to the Environmental Protection Agency (EPA); and
- Reading and complying with the requirements contained in the CGP and the Order of Conditions.

Compliance with the CGP and its Standard Permit Conditions is the responsibility of the site Operator. An Operator is any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

The Operators have been identified under Section Operator(s) / Subcontractor(s). Each Operator shall identify at least one person from each respective company that will be responsible for complying with the CGP and SWPPP.

The NPDES CGP, SWPPP, and the EPA-issued authorization must be kept on file at the Project field office. The SWPPP shall be kept current and shall be amended according to the conditions described in the CGP.

This manual provides the following information, as required by the NPDES Permit:

- Contact Information and Responsible Parties
- Site Evaluation, Assessment, and Planning
  - Site Description
  - Development Description
  - Wetland Characteristics
  - Drainage Characteristics
  - Rare and Endangered Species Data
  - Historic Preservation Data
- Documentation of Compliance with Other Federal Reglulations
- Erosion and Sediment Controls
- Pollution Prevention Standards
- Inspections and Corrective Actions
- Training
- Certifications and Notification
- Site Plans
- The text of the 2012 CGP
- The EPA-issued authorization
- Underground Injection Control Forms

The SWPPP must be prepared prior to filing of the Notice of Intent (NOI). The NOI must be filed electronically, on the U.S. EPA website (www.epa.gov) at least fourteen (14) days prior to the start of construction.

In order to complete the pre-construction SWPPP, the General Contractor must complete the following t o finalize the SWPPP:

- Certify that they have read and understand the terms of the NPDES Permit. (Attachment B).
- Review this manual, fill out relevant information in the spaces provided (or attach additional pages as necessary) and update and/or revise as necessary.
- Provide the names and contact information for all parties responsible for preparing, finalizing, amending, and implementing the SWPPP (Section 1).

- Install a sign or other notice posted conspicuously at a safe, publicly accessible location in close proximity to the project site. At a minimum, the notice shall include the NPDES Permit tracking number and a contact name and phone number for obtaining additional project information.
- Review the Order of Conditions issued for this project and comply with all requirements specified therein, as well as with any other local by-laws or ordinances.

The SWPPP is a dynamic document, and must be continually updated by the contractor throughout construction. However, this manual does not comprise a complete SWPPP. It is the responsibility of the contractor to update this manual , including:

- Designate and Provide Contact Information for the Responsible Parties. See Section 1.
- Provide documentation confirming EPA authorization of the Project. Insert into Attachment D.
- Provide documentation of correspondence with Massachusets Historical Commission. Submit the Project Notification Form (PNF) (See Attachment L) to Massachusetts Historic Commission and fill out Section 3.2.
- Document compliance with DEP regulations 310 CMR 27.00. See Section 3.3 and UIC Form in Attachment M.
- Provide a construction schedule including dates of major earthwork, stabilization and/or erosion control installations. See Table 5 and Appendix A.
- Document the installation and maintenance of Erosion and Sediment Controls. Update location and types of sedimentation and erosion control materials as necessary. See Section 4.
- Identify any chemical treatments that may be applied to the site and describe dosage, application techniques, and training for personnel. See Section 4.12, Section 7 and Attachment J.
- Identify potential sources of pollution. See Section 5.1 and Table 8.
- Provide information for Spill Notification Procedures. See Section 5.2 and Attachment O.
- Identify personnel responsible for Inspections and Corrective Actions. See Section 6, Attachment F.
- Provide an inspection Schedule. See Section 6.1.
- Document any spills.
- Document off-site sedimentation resulting from this construction.

The contractor-completed SWPPP must be updated throughout construction, until a Notice of Termination (NOT) Form has been submitted to the EPA. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Site operator for a period of three years.

1

Contact Information and Responsible Parties

1.1 Operator(s) / Subcontractor(s)

Operator(s):

Company or Organization Name:	Pilot Construction Inc.
Name:	Drew Carter
Address:	24 Ladd Street
City, State, Zip:	Portsmouth, NH 03801
Telephone:	(603) 436-2510
Fax/Email:	drewc@pilotconstructioninc.com
Area of responsibility:	Primary Contractor

Subcontractor(s):

Company or Organization Name:	TBD
Name:	
Address:	
City, State, Zip:	
Telephone:	
Fax/Email:	
Area of responsibility:	

Insert pages for additional subcontractors as necessary.

Emergency 24-hour Contact:

Company or Organization Name:	**Pilot Construction Inc.**
Name:	Drew Carter
Address:	24 Ladd Street
City, State, Zip:	Portsmouth, NH 03801
Telephone:	(603) 436-2510
Fax/Email:	drewc@pilotconstructioninc.com

1.2 Stormwater Team Responsibilities

Company:	Vanasse Hangen Brustlin, Inc. (VHB) 101 Walnut Street Watertown, MA 02741
Name:	Conor Nagle/ Jocelyn Mayer
Telephone:	(617) 924-1770
Fax/Email:	(617) 924-2286/ cnagle@vhb.com/ jmayer@vhb.com
Role or Responsibility:	- Prepare the Draft SWPPP

Company:	Pilot Construction Inc. 24 Ladd Street Portsmouth, NH 03801
Name:	Drew Carter
Telephone:	(603) 436-2510
Email:	drewc@pilotconstructioninc.com
Role or Responsibility:	- Finalize the SWPPP - Implement the SWPPP - Oversee maintenance practices identified as BMPs in the SWPPP - Conduct or provide inspection and monitoring activites - Idenfity other potential pollutant sources and make sure that they are added to the plan - Identifiy amendments to the SWPPP necessitated by field conditions and make sure they are implemented - Ensure that any design changes during construction are addressed in the SWPPP

Role or Responsibility: _____

Position: _____

Name: _____

Telephone: _____

Fax/Email: _____

Role or Responsibility: _____

Position: _____

Name: _____

Telephone: _____

Fax/Email: _____

Additional information if necessary

2

Site Evaluation, Assessment and Planning

2.1 Project/Site Information

Project Name and Address

Project/Site Name:	**Amesbury Heights**
Project Street/Location:	36 Haverhill Road
City:	Amesbury
State:	Massachusetts
ZIP Code:	01913
County	Middlesex County

Project Latitude/Longitude

(Use one of three possible formats, and specify method)

Latitude:

1. 42 º 50 ' 28" N	(degrees, minutes, seconds)
2. _ _ º _ _ . _ _' N	(degrees, minutes, decimal)
3. _ _ . _ _ _ _ º N	(decimal)

Longitude:

1. 70 º 56 ' 33" W	(degrees, minutes, seconds)
2. _ _ º _ _ . _ _' W	(degrees, minutes, decimal)

3. _ _ . _ _ _ _ ° W (decimal)

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____)

☐ EPA Web site

☐ GPS

☒ Other (please specify): MassGIS

Horizontal Reference Datum:

☐ NAD 27 ☒ NAD 83 or WGS 84 ☐ Unknown

If you used a U.S.G.S topographic map, what was the scale?

_____

Additional Project Information

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? *Contractor must submit a Project Notification Form to Massachusetts Historic Commission to confirm. See Attachment L for documentation.	☐ Yes ☒ No
If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property:	n/a
If you are conducting earth-disturbing activities in response to a public emergency, document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services:	n/a
Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2012 CGP?	☐ Yes ☒ No

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ Yes ☒ No

Are there any surface waters that are located within 50 feet of your construction disturbances? ☒ Yes ☐ No

Table 1. Names of Receiving Waters

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

1. Bailey Pond
2. Wetland along Route 110
3.
4.
5.
6.

Table 2. Impaired Waters/TMDLs

(Answer the following for each surface water listed in Table 1 above)

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has a TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
1.	☐ YES ☒ NO		☐ YES ☐ NO		
2.	☐ YES ☒ NO		☐ YES ☐ NO		
3.	☐ YES ☐ NO		☐ YES ☐ NO		
4.	☐ YES ☐ NO		☐ YES ☐ NO		
5.	☐ YES ☐ NO		☐ YES ☐ NO		
6.	☐ YES ☐ NO		☐ YES ☐ NO		

Describe the method(s) you used to determine whether or not your project/site discharges to an impaired water: We used the MassGIS Impaired Waterbodies database to determine the Impairment/TMDL status of Vine Brook.

Table 3. Tier 2, 2.5, or 3 Waters

(Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as a Tier 2, Tier 2.5, or Tier 3 water? (see Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
1.	☐ YES ☒ NO	
2.	☐ YES ☒ NO	
3.	☐ YES ☐ NO	
5.	☐ YES ☐ NO	
6.	☐ YES ☐ NO	

Source: http://cfpub.epa.gov/npdes/stormwater/antideg.cfm

2.3 Nature of the Construction Activity

General Description of Project

Corcoran Jennison Associates, Inc. (the "Proponent") is proposing to construct Amesbury Heights Multi-family Residential Development (the "Project"), located on a 26.4-acre site on Route 110 (Haverhill Road) approximately 1,000 feet west of the intersection with Route 150 in Amesbury, Massachusetts (the "Project Site"). The Project will consist of a residential development with 240 units including 25% affordable units (60 affordable units), a centrally located clubhouse, "village green" and associated amenities.

The Project Site is bounded by Haverhill Road and abutting commercial properties to the north, Interstate 495 to the south, wetlands to the east, and single family residential dwellings to the west. The majority of the Site is currently zoned Office Park with a small portion zoned residential. The entire site is within the Amesbury Gateway Village 40R Smart Growth Overlay District (AGVSGOD). A large portion of the Project Site was formerly occupied by a gravel mining operation and currently is unused, disturbed and underutilized. The Project Site centers on a large hill, the apex of which has been excavated during the former gravel mining operations. The primary site access sweeps down the east side of the hill toward Route 110. The Project Site is a varied mix of grass, brush, and woods including a significant amount of invasive species of shrubs.

The proposed residential development would consist of five (5) four-story buildings with 48 apartments each totaling 240 units, a centrally located clubhouse, a "village green" and associated amenities. The clubhouse and amenity center houses the management and maintenance offices, a show unit, fitness facility and outdoor swimming pool. In addition, a sidewalk will provide connectivity and pedestrian access to downtown Amesbury.

The proponent proposes to provide 60 affordable units. This amounts to 25% of the total and exceeds the minimum requirements of Chapter 40B, and the Decision of the Amesbury Zoning Board in relation to the Project, which require no less than 20% of the total number of units will be affordable units as defined by M.G.L. Chapter 40B, Section 20 (Regional Planning – Low and Moderate Income Housing). The apartments will

include a mix of 1-, 2- and 3-bedroom units. The buildings are arrayed around the edges of parking lots, landscaped areas, and the clubhouse facility and associated "village green". The main access roadway follows the alignment of the former gravel haul road to the intersection with Route 110 to the north. An emergency access to Route 110 would be provided approximately 750-feet west of the main access.

Size of Construction Project

- Total Property Size: 26.4 acres
- Total Area of Construction Disturbances: 11.1 acres
- Maximum area to be disturbed at any one time: 11.1 acres

Construction Support Activities (only provide if applicable)

Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas).

Table 4. Construction Support Activities

The contractor will describe construction support activities here (insert additional sheets as necessary)

2.4 Sequence and Estimated Dates of Construction Activities

For each phase of construction, include the following information:

- Installation of stormwater controls, and when they will be made operational;
- Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
- Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;
- Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject to in Part 2.2.1; and
- Removal of temporary stormwater conveyances/channels and other stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

The construction sequence must reflect the following requirements:

- Part 2.1.1.1 (area of disturbance);
- Part 2.1.1.3.a (installation of stormwater controls); and
- Parts 2.2.1.1, 2.2.1.2, 2.2.1.3 (stabilization deadlines).

Table 5. Construction Schedule

Date	Activity
TBD	

2.5 Allowable Non-Stormwater Discharges

Table 6. Allowable Non-Stormwater Discharges Present at the Site

	Likely to be Present at the Site	
Type of Allowable Non-Stormwater Discharges Present at the Site	**Yes**	**No**
Discharges from emergency fire-fighting activities		x
Fire hydrant flushings	x	
Landscape irrigation	x	
Waters used to wash vehicles and equipment	x	
Water used to control dust	x	
Potable water including uncontaminated water line flushings	x	
Routine external building wash down	x	
Pavement wash waters	x	
Uncontaminated air conditioning or compressor condensate	x	
Uncontaminated, non-turbid discharges of ground water or spring water	x	
Foundation or footing drains	x	
Construction dewatering water	x	

2.6 Site Maps

Attachment A contains the and Project Plans for this project. Attachment C contains Site Maps including the:

- Site Location Map
- Site Aerial Map
- Natural Heritage and Endangered Species Map
- FEMA Flood Insurance Rate Map
- Soil Map

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3

Documentation of Compliance with Other Federal Requirements

3.1 Endangered Species Protection

Eligibility Criterion

Under which criterion listed in Appendix D are you eligible for coverage under this permit?

☒ A ☐ B ☐ C ☐ D ☐ E

- **Criterion A.** No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of this permit.
- **Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.
- **Criterion C.** Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to

adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

- **Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

- **Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

  i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

  ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally designated habitat.

  You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

- **Criterion F.** Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

For reference purposes, the eligibility criteria listed in Appendix D are as follows:

Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the permit). Check the applicable source of information you relied upon:

☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.

☒ Publicly available species list. Map of Estimated Habitats of Rare Wildlife and Certified Vernal Pools, published by the Massachusetts Natural Heritage and Endangered Species Program.

☐ Other source: In accordance with the U. S. Fish and Wildlife Service Project Review Procedure, a review was conducted for the site. The review found that "no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U. S. Fish and Wildlife Service are known to occur in the project area". Documentation of the review is contained in Attachment N.

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

For criterion C, provide the following information:

- Not Applicable

For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

3.2 Historic Preservation

The Operator responsible for finalizing this SWPPP must:

- Submit the Project Notification Form in Attachment L to the Massachusetts Historical Commission – Completed as part of MEPA Permitting.
- Fill out the answers to the questions below for
  - Appendix E, Step 2
  - Appendix E, Step 3

- Appendix E, Step 4

➢ Insert copies of any correspondence with the Massachusetts Historical Commission into Attachment L.

Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

☐ Dike
☒ Berm
☒ Catch Basin
☒ Pond (Bioretention Basin, Detention Basin)
☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
☐ Culvert
☐ Other type of ground-disturbing stormwater control:

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for Section 3.2 of the Template.)

Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?

☒ YES ☐ NO

If yes, no further documentation is required for Section 3.2 of the Template. If no, proceed to Appendix E, Step 3.

Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?

☐ YES ☐ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?

☐ YES ☐ NO

If no, no further documentation is required for Section 3.2 of the Template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions. *INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE*

☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls. *INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE*

☐ Other: *INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE*

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

☒ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

All stormwater structures meeting the definition of Underground Injection Wells shall be registered in accordance with DEP regulations 310 CMR 27.00. The site owner will complete and submit the required documentation prior to installation of each structure. See Attachment M for documentation.

4

Erosion and Sediment Controls

The purpose of an erosion and sedimentation control program is to minimize the discharge of pollutants from earth-disturbing activities during the construction phase of the project. The program incorporates BMPs specified in guidelines developed by the DEP[1] and the U.S. Environmental Protection Agency[2] and complies with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and sedimentation control program will:

- minimize exposed soil areas through temporary stabilization and construction sequencing;
- minimize sediment track-out from the site;
- minimize the generation of dust;
- minimize soil compaction;
- place structures to manage stormwater runoff and erosion; and
- establish permanent vegetative cover or other forms of stabilization in accordance with Part 2.2 of the Permit.

Installation of stormwater controls must be completed prior to the commencement of each phase of earth-disturbing activities. All manufactured control measures must be installed and maintained in accordance with the manufacturer's specifications. The site contractor must inspect all erosion and sediment controls in accordance with the applicable requirements in CGP Part 4.1, and document findings in accordance with Part 4.1.7 of the Permit.

The following sections describe the erosion and sedimentation controls that will be used on this site. The contractor will implement, modify, and add to these stormwater controls, when required.

▼

1 Massachusetts Department of Environmental Protection, 1993. *Massachusetts Nonpoint Source Management Manual, The Megamanual: A Guidance Document for Municipal Officials.*

2 United States Environmental Protection Agency, 1992. *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.*

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives

Are there any surface waters within 50 feet of your project's earth disturbances?

☒ YES ☐ NO

Check the compliance alternative that you have chosen:

☐ I will provide and maintain a 50-foot undisturbed natural buffer.

☐ I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☒ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☐ I qualify for one of the exceptions in Part 2.1.2.1.e. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)

Buffer Exceptions

Which of the following exceptions to the buffer requirements applies to your site?

☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

☐ No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

☐ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible for me to meet any of the CGP Part 2.1.2.1.a compliance alternatives.

☐ The project qualifies as "small residential lot" construction (defined in Part 2.1.2.1.e.iv and in Appendix A).

☒ Buffer disturbances are authorized under a CWA Section 404 permit.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

4.2 Perimeter Controls

General

Installation of perimeter controls must be completed prior to the commencement of earth-disturbing activities.

Specific Perimeter Controls

Hay Bale Barriers

Hay bale barriers will be placed to trap sediment transported by runoff before it reaches the drainage system or leaves the construction site. Bales will be set at least four inches into the existing ground to minimize undercutting by runoff.

Silt Fencing

In areas where high runoff velocities or high sediment loads are expected, hay bale barriers will be backed up with silt fencing. This semi-permeable barrier made of a synthetic porous fabric will provide additional protection. The silt fences and hay bale barrier will be replaced as determined by periodic field inspections.

Date of Perimeter Control Installation

Hay Bale Barriers

Date Installed: _____

Silt Fencing

Date Installed: _____

Maintenance Requirements

Hay Bale Barriers and Silt Fencing will be inspected weekly and after any rainfall. Inspection shall be in compliance with the inspection schedule specified in CGP Part 4.1.2 and maintained routinely throughout the duration of the project. Minimum maintenance and key items to check shall include sediment build up and broken bales or stakes. In accordance with CGP Part 2.1.2.2.b, the contractor must remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

4.3 Sediment Track-out

General

A temporary crushed-stone construction entrance/exit will be constructed.

Specific Track-Out Controls

Gravel and Construction Entrance/Exit

A temporary crushed-stone construction entrance/exit will be constructed. A cross slope will be placed in the entrance to direct runoff to a protected catch basin inlet or settling area. If deemed necessary after construction begins, a wash pad may be included to wash off vehicle wheels before leaving the project site.

Date of Track-Out Control Installation

Gravel and Construction Entrance/Exit

Date of Installation: _____

Maintenance Requirements

The exit shall be maintained in a condition which shall prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair or clean out or any measures used to trap sediment.

In the event that sediment is tracked-out of the site onto the surface of off-site streets, other paved areas, and sidewalks, the contractor will remove the deposited sediment by the end of the same work day. If track-out occurs on a non-work day, the contractor will remove the sediment by the end of the next work day. Sediment will be swept, shoveled, vacuumed or removed by similar means. Hosing or sweeping sediment directly into a stormwater conveyance, storm drain inlet, or surface water is prohibited.

Stabilized construction exit shall be removed prior to final finished materials being installed.

4.4 Stockpiled Sediment or Soil

General

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be temporarily stabilized with vegetative or non-vegetative stabilization practices.

Specific Stockpile Control

Vegetative Stabilization

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro-seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Non-Vegetative Stabilization

Non-vegetative stabilization practices will consist of applying a layer of straw mulch, or an erosion control blanket in accordance with manufacturer's specifications.

Date of Stockpile Control Installation

Vegetative Stabilization

Date Installed: _____

Date Installed: _____

Date Installed: _____

Non-Vegetative Stabilization

Date Installed: _____

Date Installed: _____

Date Installed: _____

Maintenance Requirements

In accordance with CGP Part 2.1.2.4, the contractor must comply with the following requirements for any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil:

- Locate the piles outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls implemented in accordance with Part 2.1;
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;

- Where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water; and
- Unless infeasible, contain and securely protect from wind.
- The contractor or subcontractor will be responsible for implementing each control shown on the Sedimentation and Erosion Control Plan. In accordance with EPA regulations, the contractor must sign a copy of a certification to verify that a plan has been prepared and that permit regulations are understood.
- The on-site contractor will inspect all sediment and erosion control structures periodically and after each rainfall event. Records of the inspections will be prepared and maintained on-site by the contractor.
- Silt shall be removed from behind barriers if greater than 6-inches deep or as needed.
- Damaged or deteriorated items will be repaired immediately after identification.
- The underside of hay bales should be kept in close contact with the earth and reset as necessary.
- Sediment that is collected in structures shall be disposed of properly and covered if stored on-site.
- Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

4.5 Minimize Dust

General

When necessary larger areas of exposed soil will be wetted to prevent wind borne transport of fine grained sediment.

Specific Dust Controls

Soil Wetting

Enough water shall be applied to wet the upper 0.5 inch of soil. The water will be applied as a fine spray in order to prevent erosion.

Date of Dust Control Implementation

Soil Wetting

Date of Implementation: _____

Date of Implementation: _____

Date of Implementation: _____

Maintenance Requirements

Large areas of exposed soils will routinely be inspected to determine if soil wetting is required.

4.6 Minimize the Disturbance of Steep Slopes

General

Disturbances to steep slopes were minimized, to the maximum extent practicable, during the design phase of the project. Preservation of natural grading will occur where feasible and disturbances will be minimized through the implementation of erosion and sediment control practices designed for utilization on steep slopes.

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Specific Steep Slope Controls

Erosion Control Blanket

Erosion control blankets will be installed by anchoring the top of the blanket in a 6 inch deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. The erosion control blanket will be installed in the direction of potential flow. Edges of the blankets must be stapled with approximately 4 inches overlap where 2 or more strip widths are required.

Date of Steep Slope Control Installation

Erosion Control Blanket

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Maintenance Requirement

Erosion control blankets will be inspected in compliance with the inspection schedule specified in CGP Part 4.1.2 and maintained routinely throughout the duration of the project.

4.7 Topsoil

General

Topsoil will be preserved throughout the site to the maximum extent practicable. Where it is infeasible to preserve topsoil in place it shall be repurposed throughout the site to the maximum extent practicable.

Specific Topsoil Controls

Topsoil Preservation/Repurpose

Topsoil will be repurposed throughout the project site and excess topsoil will be disposed of in accordance with local, state and federal regulations, as necessary.

Date of Topsoil Control Implementation

Topsoil Preservation/Repurpose

Date of Implementation: _____

Date of Implementation: _____

Date of Implementation: _____

4.8 Soil Compaction

General

In order to avoid soil compaction the contractor will limit vehicle and equipment use in areas where final vegetative stabilization will occur or where infiltration practices will be installed.

Prior to seeding or planting of areas where final vegetative stabilization will occur or where infiltration practices will be installed techniques that condition soil, to support vegetative growth, will be implemented in the event exposed soils become compacted as a result of construction activities. Soil conditioning techniques shall be determined on an individual basis, if required.

Specific Soil Compaction Controls

Soil Conditioning Techniques

Date of Soil Compaction Control Implementation

Date of Implementation: _____
Date of Implementation: _____
Date of Implementation: _____

Maintenance Requirement

4.9 Storm Drain Inlets

General

Prior to any earth-disturbing activities inlet protection measures will be installed.

Specific Storm Drain Inlet Controls

Siltsack Sediment Traps

Siltsack sediment traps will be installed at the inlets of existing and proposed catch basins throughout the site. Catch basin grates to be placed over siltsack.

Straw Bale and Non-Woven Filter Fabric

A straw bale barrier may be installed at the inlets or existing and proposed catch basins. If straw bales are used, a layer of non-woven filter fabric shall be placed beneath the grate of each catch basin.

Date of Storm Drain Inlet Control Installation

Siltsack Sediment Trap

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Straw Bale and Non-Woven Filter Fabric

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Maintenance Requirement

The contractor will clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation in or adjacent to the inlet protection measure, the contractor must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible. Sediment will be reused onsite or disposed of at a suitable off-site location.

4.10 Constructed Stormwater Conveyance Channels

General

Constructed Stormwater Conveyance Channels will be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Specific Constructed Stormwater Conveyance Channel Controls

Diversion Channels

Diversion channels will be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Date of Constructed Stormwater Conveyance Channel Controls Construction

Diversion Channels

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Maintenance Requirement

Diversion channel s will be inspected weekly and after any rainfall. If breakout or erosion is observed, the diversion channel shall be reinforced or protected by an erosion control blanket.

4.11 Sediment Basins

General

If the Site contractor discharges flows from the disturbed area into the rehabilitated retention pond, the rehabilitated retention pond will meet the requirements of CGP Part 2.1.3.2.

Temporary sediment basins will be designed either as excavations or bermed stormwater detention structures (depending on grading) that will retain runoff for a sufficient period of time to allow suspended soil particles to settle out prior to discharge. These temporary basins will be located based on construction needs as determined by the contractor and outlet devices will be designed to control velocity and sediment. Points of discharge from sediment basins will be stabilized to minimize erosion.

Maintenance Requirements

(Note: At a minimum, you must comply with following requirement in CGP Part 2.1.3.2.b: "Keep in effective operating condition and remove accumulated sediment to maintain at least ½ of the design capacity of the sediment basin at all times.")

The sediment basins shall be inspected weekly and after any rainfall. If cracking, erosion, breakout, sediment build-up are observed, the basin shall be reinforced or cleaned out as needed. If accumulated sediment occupies at least ½ of the design capacity (or is deposited to a depth greater than 6 inches), whichever is smaller, the basin will be cleaned out and sediments will be disposed of properly. If contaminants are observed in the basin(s), they shall be identified and cleaned up in accordance with local, state, and federal requirements.

4.12 Chemical Treatment

Soil Types

List all the soil types (including soil types expected to be found in fill material) that are expected to be exposed during construction and that will be discharged to locations where chemicals will be applied:

Soils within existing developed areas are generally classified as a combination of Udorthents, smoothed (with no soil class specification) and sandy loam with a soil class type B (as specified by the NRCS for the Site).

Treatment Chemicals

List all treatment chemicals that will be used at the site and explain why these chemicals are suited to the soil characteristics:

Table 7. List of Treatment Chemicals and Dosage/Use to be used on Site

Chemical	Dosage and Application Details

The contractor will comply with all treatment chemical usage requirements under Part 2.1.3.3 of the Permit by:

- utilizing conventional erosion and sediment controls prior to and after the application of any treatment chemical;
- selecting treatment chemicals suitable to the types of soils likely to be exposed during construction activities;
- minimizing discharge risk by storing chemicals in leak-proof containers;
- using chemicals in accordance with good engineering practices and specifications of the chemical provider;
- complying with state and local requirements;

- ensuring that all persons who handle and use treatment chemicals are provided with product-specific training and appropriate dosing requirements;
- complying with additional requirements for the pre-approved use of cationic chemicals; and
- providing proper SWPPP documentation of specific chemicals and chemical treatment systems to be used and compliance with CGP Part 2.1.3.3.

Special Controls for Cationic Treatment Chemicals

If you have been authorized by your applicable Regional Office to use cationic treatment chemicals, include the official EPA authorization letter or other communication, and identify the specific controls and implementation procedures you are required to implement to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards:

Training

Describe the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to the use of treatment chemicals:

Personnel will receive all necessary training prior to any treatment chemical application. Attachment J contains the training records.

4.13 Dewatering Practices

General

If necessary, sediment-laden water that collects in trenches or excavated areas will be pumped into straw bale basins or filter bags.

Specific Dewatering Practices

Straw Bale Basin

The basins will consist of a ring of staked straw bales overlain by non-woven geotextile filter fabric and crushed stone. Discharge water will be pumped into the basin and allowed to drain through the fabric onto relatively-flat stabilized surfaces.

Dewatering Filter Bag

Dewatering filter bags may be used in place of straw bale basins. The bags will be placed on relatively flat terrain, free of brush and stumps, to avoid ruptures and punctures. A maximum of one six-inch discharge hose will be allowed per filter bag. To help prevent punctures, geotextile fabric will be placed beneath the filter bag when used in wooded locations. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

Date of Dewatering Practice Installation

Straw Bale Basin

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Dewatering Filter Bag

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Maintenance Requirement

All dewatering structures will be placed as far away from wetland resources as practicable. Filter bags used during construction will be bundled and removed for proper disposal. Backwash water shall be returned to the beginning of the treatment process or hauled away for disposal. Filter media shall be cleaned and replaced in all dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

4.14 Other Stormwater Controls

General

Additional erosion controls may be used in the event that excessive erosion occurs. Placement of temporary silt fence, straw bales or earthen berms may be used to control the movement of material within the site. If such controls are deemed necessary for adequate protection, they will be installed perpendicular to the flow direction to contain sediment. These measures will be installed to prevent perimeter erosion controls from becoming compromised.

Straw Wattles

Straw wattles will be placed to trap sediment transported by runoff before it reaches the drainage system or leaves the construction site. Straw wattles will be set in accordance with the details in the Site Plans.

Catch Basin Protection

Newly constructed and existing catch basins will be protected with straw bale barriers (where appropriate) or silt sacks throughout construction.

4.15 Site Stabilization

General

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be temporarily stabilized with vegetative or non-vegetative stabilization practices.

Site Stabilization Practice

☒ Vegetative	☐ Non-Vegetative
☒ Temporary	☒ Permanent

Vegetative Stabilization

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Maintenance Requirement

- In accordance with EPA regulations, the contractor must sign a copy of a certification to verify that a plan has been prepared and that permit regulations are understood.
- The on site contractor will inspect all sediment and erosion control structures periodically and after each rainfall event. Records of the inspections will be prepared and maintained on site by the contractor.
- Silt shall be removed from behind barriers if greater than 6 inches deep or before it has accumulated to one-half the above-ground height of any perimeter control.
- Damaged or deteriorated items will be repaired immediately after identification.
- The underside of hay bales should be kept in close contact with the earth and reset as necessary.

- Sediment that is collected in structures shall be disposed of properly and covered if stored on site.

- Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

Site Stabilization Practice

☐ Vegetative ☒ Non-Vegetative
☒ Temporary ☒ Permanent

Non-Vegetative Stabilization

Non-vegetative stabilization practices will consist of applying a layer of straw mulch, at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non tar) applied by a hydroseeder. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix as described above.

In the event heavy rain is forecast (more than 2 inches over a 24 hour period), slopes that are not stabilized will be treated with a polyacrylamide (PAM) product such as Silt Stop® (or equivalent product). PAM is a non toxic substance that promotes soil bonding. PAM shall be applied in powder or liquid form in accordance with the recommendations provided by the manufacturer.

Date of Site Stabilization Practice Installation

Vegetative Stabilization

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Non-Vegetative Stabilization

Date of Installation: _____

Date of Installation: _____

Date of Installation: _____

Mulching

☒ Vegetative ☐ Non-Vegetative
☐ Temporary ☒ Permanent

Installation

When construction will be temporarily or permanently ceased, mulching shall occur immediately over seeding, as required, for erosion control while vegetation is being established.

Maintenance Requirements

Periodic inspections shall occur once a week and after every rainstorm 0.25 inches or greater.

See BMP Manual Section 8.2 for specific controls, installation, and maintenance.

Erosion Control Mats and Blankets

☐ Vegetative	☒ Non-Vegetative
☒ Temporary	☐ Permanent

Description of Practice

Organic or synthetic materials applied to the soil surface as a continuous sheet. Used to protect disturbed areas from erosion and to enhance seed growth, typically where moving water is likely to wash out new vegetative plantings and mulches are ineffective.

Commonly used techniques include erosion control blankets which are made of mulch material surrounded by plastic netting, jute mats which are sheets of woven jute fiber, and turf reinforcement matting which is usually a geotextile matrix most effective for channels.

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Pollution Prevention Standards

5.1 Potential Sources of Pollution

Table 8. Construction Site Pollutant

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site** (or reference SWPPP site map where this is shown)
Paving Operations	Concrete constituents	
Painting	Paint	
Vehicle/Building Cleaning	Cleaning solvents, detergents	
Landscape Plantings	Fertilizer	
Vehicle Maintenance	Petroleum-based products	

Add information as necessary.

5.2 Spill Prevention and Response

The following practices will be followed for spill control, notification and cleanup:

- The construction superintendent responsible for the daily operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

- Spills of toxic or hazardous material in excess of reportable quantities, as established in the CGP, will be reported to the Massachusetts Department of Environmental Protection Division of Hazardous Waste [(617) 292-5851 or (978) 661-7679] and the National Response Center [(800) 424-8802];

- All spills will be cleaned up immediately after discovery;

- The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance; and

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies;

- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to the emergency response equipment listed herein;

The following text is excerpted from the Project Stormwater Management System Operations and Maintenance Manual.

A comprehensive Spill Prevention Control and Countermeasure (SPCC) plan will be developed and implemented by the Project Owner and Tenant. At a minimum the SPCC, will discuss:

- Spill prevention equipment;
- Spill prevention supplies provided on-site; and
- Spill prevention training to be provided by the Owner and/or Tenant to designated employees.

Initial Notification

In the event of a spill the facility and/or construction manager or supervisor will be notified immediately.

Facility Manager (name): Drew Carter, Pilot Construction, Inc.

Facility Manager (phone): (603) 436-2510

Construction Manager (name): Drew Carter, Pilot Construction, Inc.

Construction Manager (phone): (603) 436-2510

The supervisor will first contact the Fire Department and then notify the Police Department, the Board of Health and the Conservation Commission.

Further Notification

The Fire Chief may require additional notification to a cleanup based on further assessments. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

Emergency Notification Phone Numbers

1. FACILITY MANAGER NAME: Drew Carter ALTERNATE CONTACT: NAME:	PHONE: (603) 436-2510 CELL: HOME PHONE: PHONE: CELL: HOME PHONE:
2. FIRE & POLICE DEPARTMENT	EMERGENCY: **911**
3. CLEANUP CONTRACTOR: **TBD** _____ ADDRESS: _____ _____	PHONE: _____
4. MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)	EMERGENCY PHONE: (800) 340-1133
5. NATIONAL RESPONSE CENTER ALTERNATE: U.S. ENVIRONMENTAL PROTECTION AGENCY	PHONE: (800) 424-8802 EMERGENCY: (800) 424-8802 BUSINESS: (800) 424-8802
6. AMESBURY HEALTH DEPARTMENT AMESBURY CONSERVATION COMMISSION:	PHONE: (978) 388-8134 PHONE: (978) 388-8110

See **Attachment O** for a the Hazardous Waste Oil Spill Report

Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following page.

Fire / Police Department: 911

Amesbury Health Department: (978) 388-8134

Amesbury Conservation Commission: (978) 388-8110

Emergency Response Equipment

The following is an example of an equipment and materials list that must be prepared by the Owner and Tenant. Equipment and Supplies on this list shall be maintained at all times and stored in a secure area for long-term emergency response need.

Supplies		Recommended Suppliers
➢ SORBENT PILLOWS/"PIGS"	**2**	➢ http://www.newpig.com
➢ SORBENT BOOM/SOCK	**25 FEET**	➢ Item # KIT276 — mobile container with two pigs, 26 feet of sock, 50 pads, and five pounds of absorbent (or equivalent)
➢ SORBENT PADS	**50**	➢ http://www.forestry-suppliers.com
➢ LITE-DRI® ABSORBENT	**5 POUNDS**	➢ Item # 43210 — Manhole cover pick (or equivalent)
➢ SHOVEL	**1**	➢ Item # 33934 — Shovel (or equivalent)
➢ PRY BAR	**1**	➢ Item # 90926 — Gloves (or equivalent)
➢ GOGGLES	**1 PAIR**	➢ Item # 23334 — Goggles (or equivalent)
➢ GLOVES – HEAVY	**1 PAIR**	

5.3 Fueling and Maintenance of Equipment or Vehicles

When fueling or maintaining equipment or vehicles, the contractor will adhere to the following requirements (CGP 2.3.3.1):

- If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;
- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and
- Do not clean surfaces by hosing the area down.

5.4 Washing of Equipment and Vehicles

As listed in CGP 2.3.3.2, the contractor must provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing. Effective controls include, but are not restricted to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediments trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls. For compliance with Part 2.3.1.4, for storage of soaps, detergents, or solvents, the contractor must provide either cover (e.g., plastic sheeting or temporary roofs) to prevent these detergents from coming into contact with rainwater, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

5.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

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

- An effort will be made to store only enough product required to do the job;
- 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 before disposing of the container;
- Manufacturer's recommendations for proper use and disposal will be followed; and
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer;
- Products will be kept in original containers unless they are not re-sealable;
- Original labels and material safety data (MSD sheets) will be retained; they contain important product information; and
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

■

Building Products

All containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use. Excess materials will be properly disposed according to manufacturer's instructions or state and local regulations and shall not be discharged to the storm sewer system. No storage will occur within 100 feet of a wetland or waterway.

■

Pesticides, Herbicides, Insecticides

Pesticides, herbicides, and insecticides will not be used at the Project Site.

■

Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. Spills will be cleaned up immediately, using dry clean-up methods where possible. No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway.

Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway. All containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use.

■

Hazardous or Toxic Waste

In accordance with CGP Part 2.3.3.3.d, the contractor will:

- Separate hazardous or toxic waste from construction and domestic waste;
- Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;
- Store all containers that will be stored outside within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to

prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in covered area or having a spill kit available on site); and

- Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
- Hosing will not be utilized as a method to clean surfaces or spills.
- Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

■

Construction and Domestic Waste

The contractor will provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers until being disposed of properly off-site. Areas to be used for storing dumpsters, compactors or other raw or waste materials will be covered to prevent contact with stormwater.

■

Sanitary Waste

Portable toilets will be positioned so that they are secure and will not be tipped or knocked over. All sanitary waste will be collected from the portable units by a licensed contractor as required, and disposed in compliance with state and local regulation.

5.6 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

In compliance with the prohibition in CGP Parts 2.3.1.1 and 2.3.1.2, the contractor must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, the contractor must:

- Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;
- Handle washout or cleanout wastes as follows:
  - Do not dump liquid wastes in storm sewers;
  - Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3.3; and
  - Remove and dispose of hardened concrete waste consistent with handling of other construction wastes in Part 2.3.3.3.
- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

5.7 Fertilizers

Only slow-release organic fertilizers will be used in landscaped areas. This protocol will limit the amount of potential nutrients that could enter the stormwater and wetland systems. Fertilizer use will be reduced once the proposed landscaping is established.

As included in CGP Part 2.3.5, the contractor must follow the requirements below when applying fertilizer products:

- Apply at a rate and in amounts consistent with manufacturer's specifications, or document departures from the manufacturer specifications where appropriate in Part 7.2.7.2 of the CGP;
- Apply at the appropriate time of year for the project location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;
- Avoid applying before heavy rains that could cause excess nutrients to be discharged;

- Never apply to frozen ground;
- Never apply to stormwater conveyance channels with flowing water; and
- Follow all other federal, state, tribal, and local requirements regarding fertilizer application.

5.8 Other Pollution Prevention Practices

Pavement sweeping may be performed daily or as needed, when track-out has occurred. The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater.

6

Inspection and Corrective Action

6.1 Inspection

Personnel Responsible for Inspections

Inspections are to be performed by "qualified personnel" as defined in Part 4.1.1 of the Permit and shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls, inspect the site egress points for tracking, and inspect material, waste, borrow, or equipment storage and maintenance areas. If, in the course of the inspection, the inspector identifies an eroded area or an area impacted by sedimentation, additional erosion and sedimentation controls will be implemented, the discharge will be documented, and the SWPPP will be revised to include these changes.

Inspection Personnel

Name: Drew Carter

Title: Site Superintendent

Name:

Title:

Name:

Title:

Inspection Schedule

Minimum Interval: 7 days

Within 24-hours of an event 0.25 inches or greater

To determine if a storm event of 0.25 inch or greater has occurred on the site, data will be obtained from the weather station at Congress Street in Milford, Massachusetts.

For reduction in inspections due to frozen conditions: If the contractor is suspending earth-disturbing activities due to frozen conditions, the contractor may temporarily suspend inspections on the site until thawing conditions (as defined by the CGP as based on the historical likelihood of two or more days with daytime temperatures greater than 32˚F) begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.1.2 or 4.1.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2 of the CGP.

For reduction in inspections due to frozen conditions:

Beginning Date: _____

End Date: _____

Site Inspection Forms are provided in Attachment E, Corrective Action Forms are provided in Attachment F.

6.2 Corrective Action

The following personnel are responsible for completing corrective action forms:

Personnel Responsible for Corrective Actions

Name:	Drew Carter
Company Name:	Pilot Construction, Inc.
Position:	Site Superintendent
Address:	24 Ladd Street
City, State, Zip Code:	Portsmouth, NH 03801
Telephone Number:	603-436-2510
Fax/Email:	drewc@pilotconstructioninc.com

Name:	
Name:	
Position:	
Address:	
City, State, Zip Code:	
Telephone Number:	
Fax/Email:	

6.3 Delegation of Authority

The following representatives or positions have been granted the delegation of authority to sign inspection reports. A copy of the signed delegation form is provided in Attachment K.

Duly Authorized Representative(s) or Position(s):

Company Name:	Pilot Construction, Inc.
Name:	Drew Carter
Position:	Site Superintendent
Address:	24 Ladd Street
City, State, Zip Code:	Portsmouth, NH 03801
Telephone Number:	603-436-2510
Fax/Email:	drewc@pilotconstructioninc.com

Duly Authorized Representative(s) or Position(s):

Company Name:	
Name:	
Position:	
Address:	
City, State, Zip Code:	
Telephone Number:	
Fax/Email:	

7

Training

The following table provides a list of personnel and training completion date, which are responsible for the design, installation, maintenance and/or repair of stormwater controls, the application and storage of treatment chemicals, conducting inspections and completing inspection and corrective action forms.

Table 9. Documentation for Completion of Training

Name	Date Training Completed

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8

Certifications and Notification

The following certification statement must be signed and dated by a person who meets the requirements of Appendix I, Part I.11.b. This certification must be re-signed in the event of a SWPPP Modification.

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

OWNER	CONTRACTOR	SUBCONTRACTOR
Signature and Date	Signature and Date	Signature and Date
Owner Representative	Construction Manager	
Title	Title	Title
Sean McReynolds Corcoran Jennison 150 Mount Vernon Street, Suite 500 Boston, MA 02125 T: (617) 822-7382 M:	Drew Carter Pilot Construction, Inc. 24 Ladd Street Portsmouth, NH 03801 T: ((603) 436-2510 M:	
Company, Address, Telephone	Company, Address, Telephone	Company, Address, Telephone

SUBCONTRACTOR	SUBCONTRACTOR	SUBCONTRACTOR
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Company, Address, Telephone	Company, Address, Telephone	Company, Address, Telephone

Add additional sheets as necessary.

8.1 Notice of Intent (NOI)

After completion of the SWPPP and the above certification, the NOI must be submitted by all site Operators, list above, at least 14 calendar days prior to commencing earth disturbing activities. The project is considered covered under the permit 14 calendar days after EPA has acknowledged receipt of the project NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies the Operator that the authorization has been delayed or denied. Copies of the NOI and the EPA Authorization Email shall be included in Attachment D.

8.2 Notice of Termination (NOT)

Until coverage is terminated under this permit, the Operators are required to continue to comply with all conditions and requirements in the permit. To terminate permit coverage, all Operators must submit to EPA a complete and accurate NOT, which certifies an Operator has met the requirements for termination as listed in Part 8 of the CGP. In addition, Operators must submit the NOT within 30 calendar days after any of the triggering conditions listed in Part 8.2 of the CGP. An Operator's authorization to discharge under the CGP terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website.

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Attachment A
Site Plans &
Construction Scheudle

Site Plans

Issued for: **40R Approval**

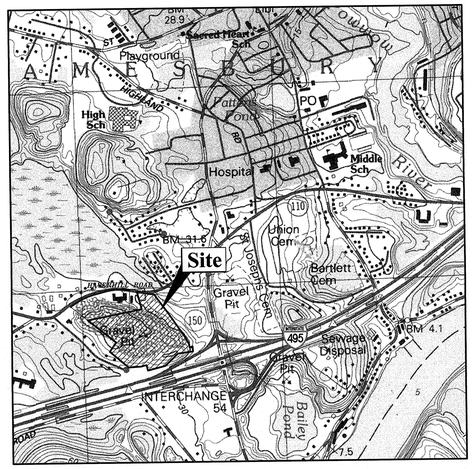
Date Issued: October 28, 2014

Latest Issue: October 28, 2014

Index

Amesbury Heights

36 Haverhill Road
Amesbury, Massachusetts



Site Location Map

Property Information

Owner:
Boston North Properties, LLC
98 Elm Street
Salisbury, MA 01952
978-462-6543 (t) 978-499-0760 (f)

Applicant:
Corcoran & Jennison Companies
150 Mount Vernon Street
Boston, MA 02125
617-822-73503 (t)

Assessor's Map: 86
Lot: 25 and 47

Architect:
David M. White
403 Tibbetts Hill Road
Goffstown, NH 03045
603-497-3405 (t) 603-497-2783 (f)

Surveyor:
Millenium Engineering, Inc.
62 Elm Street
Salisbury, MA 01952
978-463-8980 (t) 978-499-0029 (f)

Management Company:
Corcoran Jennison Companies
150 Mount Vernon Street
Boston, MA 02125
617-822-7350 (t)

Enviromental Consultant:
Wetlands Preservation, Inc.
47 Newton Rd.
Plaistow, NH 03865
603-382-3435 (t) 603-382-3492 (f)

Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

COMMONWEALTH OF MASSACHUSETTS
CONOR C. NOLL
No. 40062
REGISTERED PROFESSIONAL ENGINEER
10/30/14

VHB Project No. 09407.03
Haverhill Road, Amesbury, MA
Issued for: 40R Approval October 28, 2014

Legend

Exist.	Prop.	
		PROPERTY LINE
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/PROPERTY LINE
		EASEMENT
		BUILDING SETBACK
10+00	10+00	BASELINE
		CONSTRUCTION LAYOUT
		ZONING LINE
		TOWN LINE
		LIMIT OF DISTURBANCE
		WETLAND LINE WITH FLAG
		FLOODPLAIN
BLSF		BORDERING LAND SUBJECT TO FLOODING
BZ		WETLAND BUFFER ZONE
NDZ		NO DISTURB ZONE
200'RA		200' RIVERFRONT AREA
		GRAVEL ROAD
EOP	EOP	EDGE OF PAVEMENT
BB	BB	BITUMINOUS BERM
BC	BC	BITUMINOUS CURB
CCB	CCB	CAPE COD BERM
CC	CC	CONCRETE CURB
CG	CG	CURB AND GUTTER
CC	ECC	EXTRUDED CONCRETE CURB
CC	MCC	MONOLITHIC CONCRETE CURB
CC	PCC	PRECAST CONC. CURB
SGE	SGE	SLOPED GRAN. EDGING
VGC	VGC	VERT. GRAN. CURB
		LIMIT OF CURB TYPE
		SAWCUT
		BUILDING
	EN	BUILDING ENTRANCE
	LD	LOADING DOCK
		BOLLARD
D	D	DUMPSTER PAD
		SIGN
		DOUBLE SIGN
		STEEL GUARDRAIL
		WOOD GUARDRAIL
		PATH
		TREE LINE
		WIRE FENCE
		FENCE
		STOCKADE FENCE
		STONE WALL
		RETAINING WALL
		STREAM / POND / WATER COURSE
		DETENTION BASIN
		HAY BALES
		SILT FENCE
4	4	MINOR CONTOUR
20	20	MAJOR CONTOUR
10	10	PARKING COUNT
	C10	COMPACT PARKING STALLS
DYL	DYL	DOUBLE YELLOW LINE
SL	SL	STOP LINE
		CROSSWALK
		ACCESSIBLE CURB RAMP
		ACCESSIBLE PARKING
VAN	VAN	VAN-ACCESSIBLE PARKING

Exist.	Prop.	
		CONCRETE
		HEAVY DUTY PAVEMENT
		RIPRAP
		CONSTRUCTION ENTRANCE
27.35 TC×	27.35 TC×	TOP OF CURB ELEVATION
26.85 BC×	26.85 BC×	BOTTOM OF CURB ELEVATION
132.75 ×	132.75 ×	SPOT ELEVATION
45.0 TW× 38.5 BW	45.0 TW× 38.5 BW	TOP & BOTTOM OF WALL ELEVATION
		BORING LOCATION
		TEST PIT LOCATION
MW	MW	MONITORING WELL
UD	UD	UNDERDRAIN
12"D	12"D	DRAIN
6"RD	6"RD	ROOF DRAIN
12"S	12"S	SEWER
FM	FM	FORCE MAIN
OHW	OHW	OVERHEAD WIRE
6"W	6"W	WATER
4"FP	4"FP	FIRE PROTECTION
	2"DW	DOMESTIC WATER
3"G	G	GAS
E	E	ELECTRIC
STM	STM	STEAM
T	T	TELEPHONE
FA	FA	FIRE ALARM
CATV	CATV	CABLE TV
		CATCH BASIN
		DOUBLE CATCH BASIN
		GUTTER INLET
		DRAIN MANHOLE
TD		TRENCH DRAIN
		PLUG OR CAP
CO	CO	CLEANOUT
		FLARED END SECTION
		HEADWALL
S		SEWER MANHOLE
CS	CS	CURB STOP & BOX
WV	WV	WATER VALVE & BOX
TSV	TSV	TAPPING SLEEVE, VALVE & BOX
HYD	HYD	SIAMESE CONNECTION
		FIRE HYDRANT
WM	WM	WATER METER
PIV	PIV	POST INDICATOR VALVE
W	W	WATER WELL
GS	GS	GAS GATE
GM	GM	GAS METER
E	EMH	ELECTRIC MANHOLE
EM	EM	ELECTRIC METER
		LIGHT POLE
T	TMH	TELEPHONE MANHOLE
T	T	TRANSFORMER PAD
		UTILITY POLE
		GUY POLE
		GUY WIRE & ANCHOR
HH	HH	HAND HOLE
PB	PB	PULL BOX
Matchline		MATCHLINE

Abbreviations

General

ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EXIST	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL

Utility

CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

Notes:

General

1. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE SIX INCHES LOAM AND SEED.
5. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
6. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
7. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
8. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
10. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
11. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
12. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
13. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
14. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP) PROGRAM AND EPA JURISDICTION. PRIOR TO THE START OF CONSTRUCTION CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS. CONTRACTOR SHALL CONFIRM THE OWNER HAS ALSO FILED A NOTICE OF INTENT WITH THE EPA.
15. ON-SITE SIGNAGE TO BE CONSTRUCTED OF SIGN-FOAM COORDINATED TO MATCH COLORS OF ON-SITE SURROUNDINGS. ALL ON-SITE STOP SIGNS SHALL MEET ALL M.U.T.C.D. REGULATIONS.

Utilities

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
   A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
   B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   C. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: SIX INCHES ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
6. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
   A. WATER PIPES SHALL BE DUCTILE IRON (DI)
   B. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC SDR 35) SEWER PIPE NOTE: PIPING WITHIN 10 FT OF BUILDING SHALL COMPLY WITH STATE BUILDING CODE
   C. STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE
8. SITE CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. SITE CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.

Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. CURB RADII ARE THREE (3) FEET UNLESS OTHERWISE NOTED.
3. CURBING SHALL BE AS INDICATED ON THE PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. PROPOSED GRANITE BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
7. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
8. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

Demolition

1. THE CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS, AND UNSUITABLE MATERIAL WITHIN THE PROPOSED BUILDING FOOTPRINT AND TEN FEET BEYOND AND BENEATH PROPOSED EXTERIOR COLUMNS, PER DRAWINGS AND SPECIFICATIONS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE, AND INDIVIDUAL UTILITY COMPANIES STANDARDS SPECIFICATIONS, AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES, AND STATUTES.

Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. PROPOSED DETENTION BASINS AND BIORETENTION BASINS SHALL BE EQUIPPED WITH RISERS ON THE OUTLETS FOR USE AS TEMPORARY SEDIMENTATION BASINS DURING CONSTRUCTION. ALL SEDIMENT SHALL BE REMOVED AFTER CONSTRUCTION AND BEFORE RISERS ARE REMOVED.
7. TEMPORARY DISTURBANCES TO BUFFER ZONES SHALL BE FULLY RESTORED ON COMPLETION CONSTRUCTION WITHIN THAT BUFFER ZONE.
8. A STOCKPILE OF HAYBALES AND SILT FENCE SHALL BE MAINTAINED ON SITE FOR REPAIR OF BARRIERS.

Existing Conditions Information

1. SEE ATTACHED REFERENCE DRAWING ENTITLED "PLAN OF LAND" BY MILLENNIUM ENGINEERING, INC. DATED MARCH 24, 2006.
1. BASE PLAN: THE PROPERTY LINES SHOWN WERE DETERMINED BY AN ACTUAL FIELD SURVEY CONDUCTED BY MILLENNIUM ENGINEERING, INC. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY MILLENNIUM ENGINEERING, INC., BETWEEN JUNE 2004 AND JANUARY 2006.
   A. DELINEATION OF THE WETLANDS AND PLACEMENT OF THE FLAGS WAS PERFORMED BY: WETLAND PRESERVATION, INC.
   B. FLAGS MARKING THE WETLANDS WERE LOCATED BY: MILLENNIUM ENGINEERING, INC.
2. WETLAND DELINEATION APPROVED BY ORAD DATED NOVEMBER 16, 2005, AS SHOWN ON PLAN ENTITLED 'PLAN OF LAND TO ACCOMPANY ANRAD' DATED JULY 19, 2005 AND REVISED THROUGH OCTOBER 2, 2005 BY MILLENNIUM ENGINEERING, INC.
3. TOPOGRAPHY: ELEVATIONS ARE BASED ON NGVD 1929 DATUM.
4. GEOTECHNICAL DATA INCLUDING TEST PIT AND BORING LOCATIONS AND ELEVATIONS WERE OBTAINED FROM MCARDLE-GANNON ASSOCIATES, INC. IN JANUARY 2006.

Permit Note:

1. THIS PROJECT IS THE SUBJECT OF A COMPREHENSIVE PERMIT UNDER G.L. C.40B SECTION 20-23.
2. THIS PROJECT IS THE SUBJECT TO ORDER OF CONDITIONS DEP FILE NUMBER 002-0936.

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale None | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
40R Approval

Not Approved for Construction

Drawing Title
Legend and
General Notes

Drawing Number
C-1

Sheet 1 of 26

Project Number
09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR J. NOLAN
No. 46561
REGISTERED PROFESSIONAL ENGINEER
10/30/14

VHB
Vanasse Hangen Brustlin, Inc.
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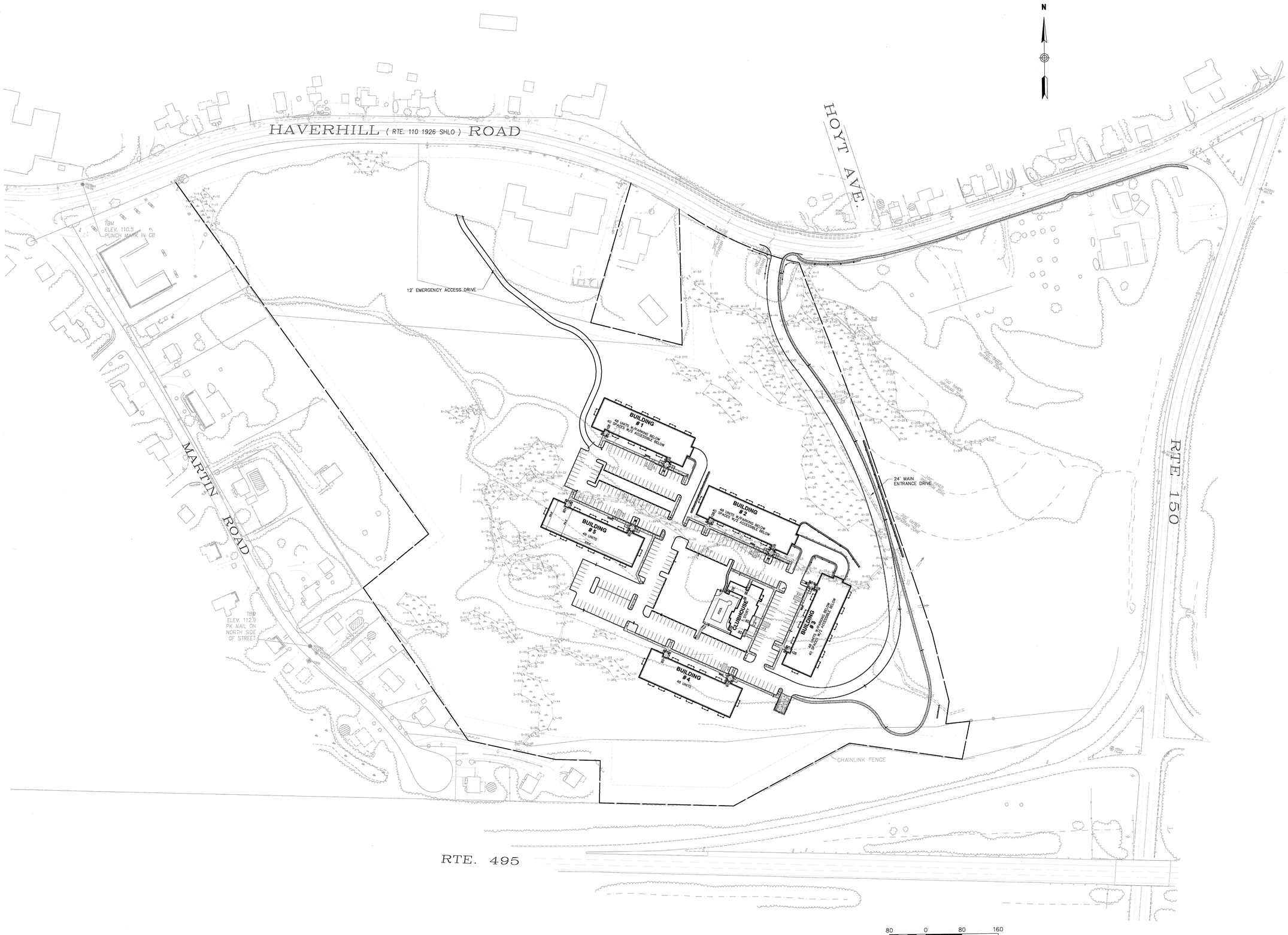

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
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Scale 1"=80' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

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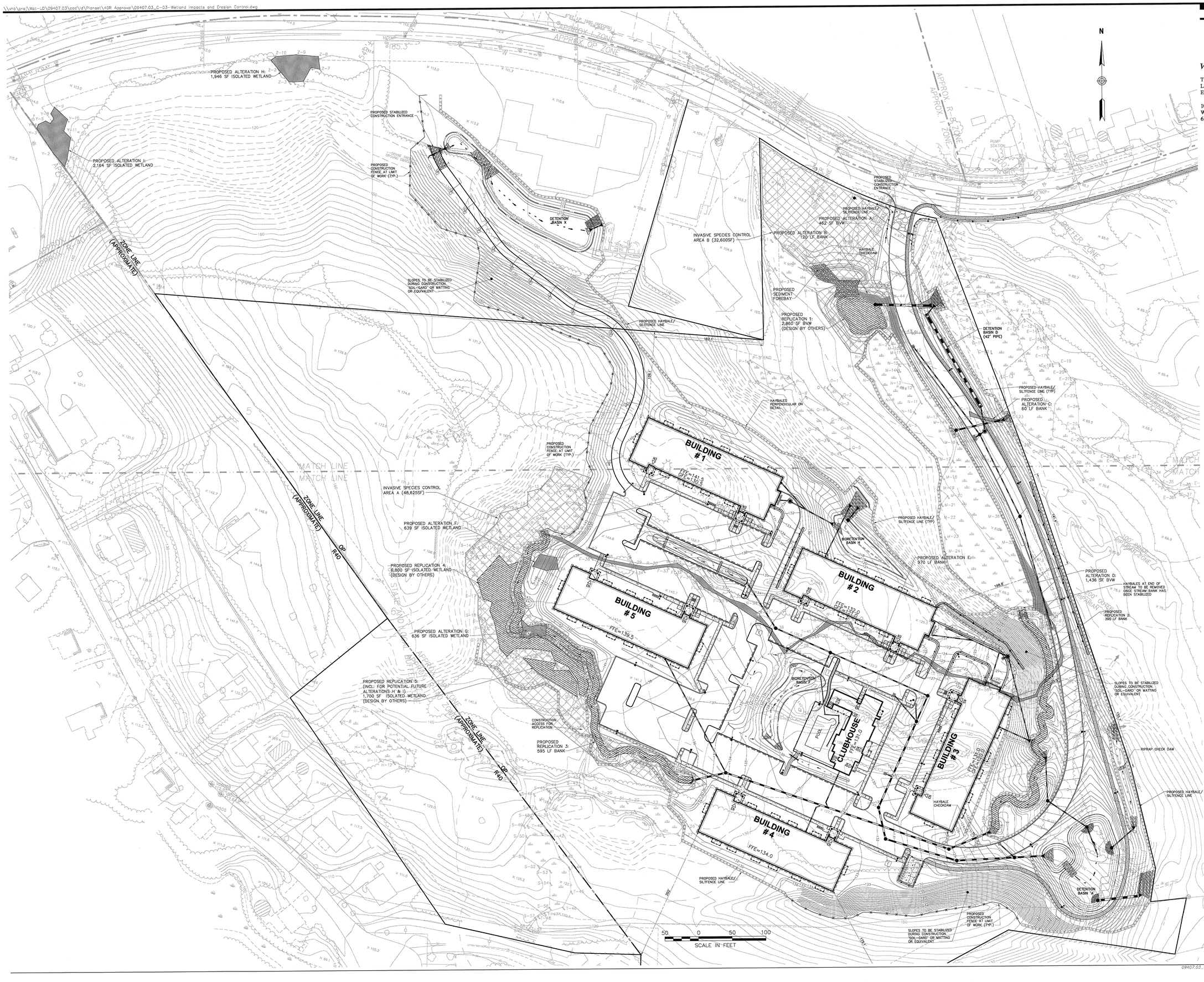
Drawing Title

Overall Site Plan

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
No. 46902
REGISTERED PROFESSIONAL ENGINEER
10/30/14

Drawing Number
C-2
Sheet 2 of 26
Project Number 09407.03



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No.	Revision	Date	Apprvd

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Scale 1"=50'		Date October 28, 2014	

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

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Drawing Title

Wetland Impacts and Erosion Control Plan

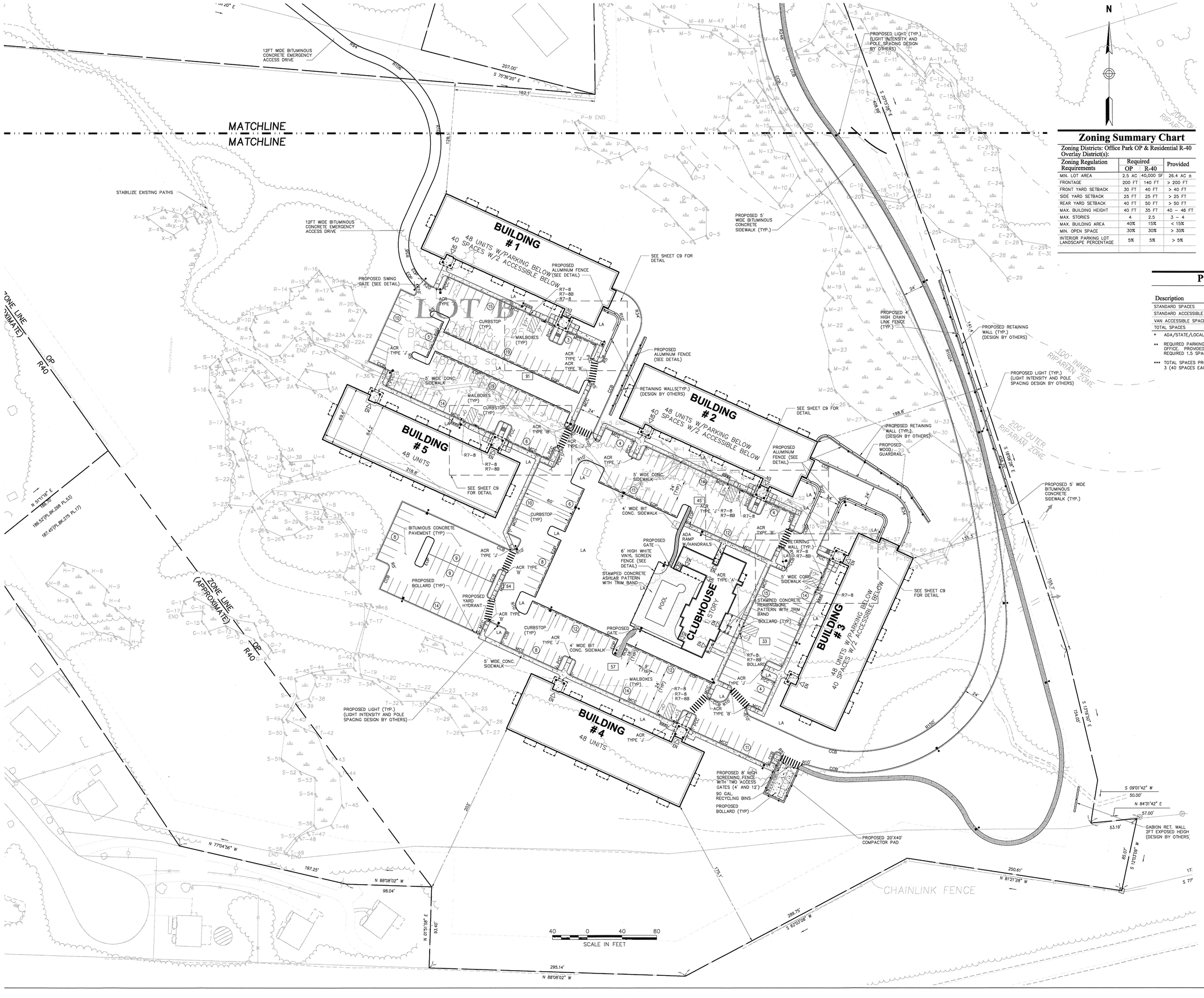
COMMONWEALTH OF MASSACHUSETTS
CONOR P. MAGUIRE
No. 49810
REGISTERED PROFESSIONAL ENGINEER
10/30/14

Drawing Number

C-3

Sheet 3 of 26

Project Number 09407.03



Zoning Summary Chart

Zoning Districts: Office Park OP & Residential R-40 Overlay District(s):

Zoning Regulation Requirements	Required OP	Required R-40	Provided
MIN. LOT AREA	2.5 AC	40,000 SF	26.4 AC ±
FRONTAGE	200 FT	140 FT	> 200 FT
FRONT YARD SETBACK	30 FT	40 FT	> 40 FT
SIDE YARD SETBACK	25 FT	25 FT	> 25 FT
REAR YARD SETBACK	40 FT	50 FT	> 50 FT
MAX. BUILDING HEIGHT	40 FT	35 FT	40 – 46 FT
MAX. STORIES	4	2.5	3 – 4
MAX. BUILDING AREA	40%	15%	< 15%
MIN. OPEN SPACE	30%	30%	> 30%
INTERIOR PARKING LOT LANDSCAPE PERCENTAGE	5%	5%	> 5%

Sign Summary

M.U.T.C.D. Number	Specification Width	Specification Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING VAN ACCESSIBLE
R7-8B	12"	6"	VAN ACCESSIBLE

Parking Summary Chart

Description	Size Required	Size Provided	Spaces Required	Spaces Provided
STANDARD SPACES	9'x18'	9'x18'	**	393
STANDARD ACCESSIBLE SPACES *	8'X18' w/5'	9'X18' w/5'	9	11
VAN ACCESSIBLE SPACES	8'X18' w/8'	9'X18' w/8'	2	6
TOTAL SPACES			**	410***

* ADA/STATE/LOCAL REQUIREMENTS

** REQUIRED PARKING BASED ON ZONING DISTRICT IS 3.6 SPACES PER 1000 SF FOR OFFICE. PROVIDED PARKING IS 1.71 SPACES PER UNIT COMPARED TO THE REQUIRED 1.5 SPACES PER UNIT FOR AN APPROPRIATE ZONING DISTRICT.

*** TOTAL SPACES PROVIDED INCLUDES 120 GARAGE SPACES BELOW BUILDINGS 1,2 & 3 (40 SPACES EACH) WITH 2 STANDARD ACCESSIBLE SPACE IN EACH GARAGE.

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No.	Revision	Date	Apprvd.

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Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
40R Approval

Not Approved for Construction
Drawing Title
Layout Plan

Drawing Number
C-4.1

Sheet 4 of 26

Project Number
09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
01 ROCKINGHAM
REGISTERED PROFESSIONAL ENGINEER
10/30/14

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HAVERHILL (RTE. 110 1926 SHLO) ROAD

HOYT AVE

MARTIN ROAD

MATCHLINE
MATCHLINE

LOT A
(BK. 17010 PG. 302)
141,968 SQ. ft.
3.26 ACRES

LOT B

BUILDING #1
48 UNITS W/PARKING BELOW
40 SPACES W/2 ACCESSIBLE BELOW

BUILDING #2
48 UNITS W/PARKING BELOW
40 SPACES W/2 ACCESSIBLE BELOW

BUILDING #5
48 UNITS

PROPOSED SWING GATE (SEE DETAIL)

EXISTING FENCE ALONG PROPERTY LINE TO BE REMOVED

LANDSCAPE SPOT LIGHTS

PROPOSED 5' WIDE BIT. CONC. SIDEWALK TO INTERSECTION (DESIGN BY OTHERS)

CONNECT TO SITE SIDEWALK

PROPOSED PILLARS W/SIGN AND SPLIT RAIL FENCE (SEE DETAIL)

INSTALL 4' HIGH CLF; ADJUST POSTS TO CULVERT

5'FT. WIDE SIDEWALK (TYP.)

EXISTING FENCE TO BE REMOVED

PROPOSED LIGHT (TYP.) (LIGHT INTENSITY AND POLE SPACING DESIGN BY OTHERS)

12FT WIDE BITUMINOUS CONCRETE EMERGENCY ACCESS DRIVE

STABILIZE EXISTING PATHS

PROPOSED 5' WIDE BITUMINOUS CONCRETE SIDEWALK (TYP.)

SEE SHEET C9 FOR DETAIL

PROPOSED ALUMINUM FENCE (SEE DETAIL)

PROPOSED ALUMINUM FENCE (SEE DETAIL)

PROPOSED 4' HIGH CHAIN LINK FENCE (TYP.)

PROPOSED RETAINING WALL (TYP.) (DESIGN BY OTHERS)

PROPOSED WOOD GUARDRAIL

RETAINING WALLS(TYP.) (DESIGN BY OTHERS)

4' WIDE BIT CONC. SIDEWALK

ZONE LINE (APPROXIMATE)

OP R40

RIPARIAN

200' RIVERFRONT

SCALE IN FEET 40 0 40 80

No.	Revision	Date	Appvd.

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Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
40R Approval

Not Approved for Construction

Drawing Title
Layout Plan

COMMONWEALTH OF MASSACHUSETTS
CONOR PATRICK NAUGHTON
No. 49351
REGISTERED PROFESSIONAL ENGINEER
10/30/14

Drawing Number
C-4.2

Sheet 5 of 26

Project Number
09407.03

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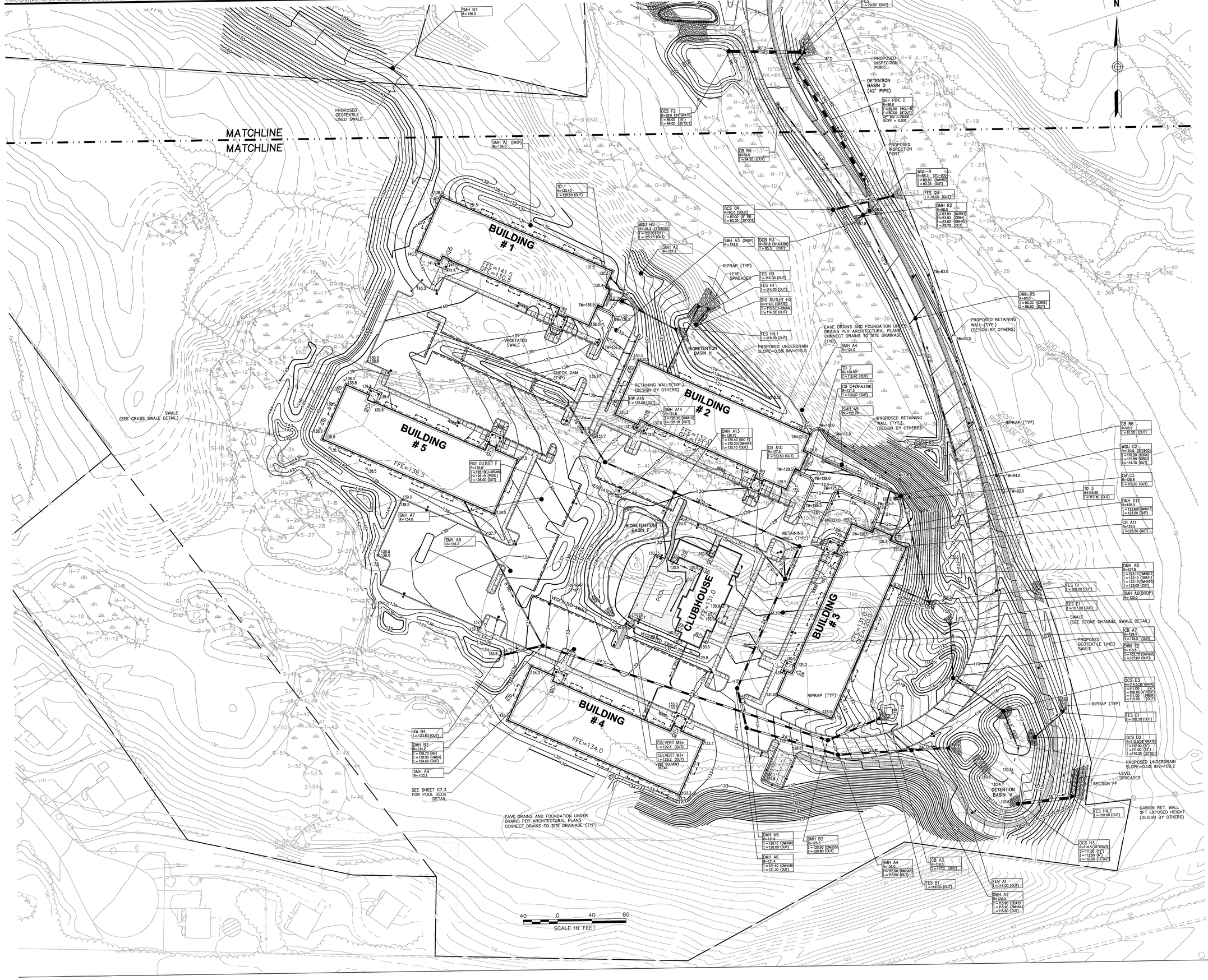

NOTE:

1. MAXIMUM SLOPE FOR ACCESSIBLE PARKING AREA SHALL BE 2% IN ANY DIRECTION.
2. GUARD RAIL TO BE PROVIDED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS.

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No.	Revision	Date	Appvd.

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Scale	1"=40'	Approved by	CPN
		Date	October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Grading and Drainage Plan

Drawing Number

C-5.1

Sheet 6 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAUGHTON
No. 46401
REGISTERED PROFESSIONAL ENGINEER
10/28/14

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HAVERHILL (RTE. 110 1926 SHLO) ROAD

HOYT FARM ROAD

MARTIN ROAD

MATCHLINE
MATCHLINE

SMH B1 R=EXISTING EL.
SMH B2 R=EXISTING EL.
SMH B3 R=EXISTING EL.
SMH B4 R=EXISTING EL.
SMH B5 R=120.0
SMH B6 R=126.5
SMH B7 R=136.0
SMH A1 (DROP) R=134.5
SMH A2 R=127.2
SMH A3 (DROP) R=133.9
SMH A4 R=121.0
SMH A5 R=122.20
SMH A7
HW X4 I=114.50 (OUT)
FES X3 I=114.00 (OUT)
FES X1 I=111.00 (OUT)
FES X2 I=111.50 (OUT)
DETENTION BASIN X
PROPOSED LOW FLOW CHANNEL SECTION LINE
RIPRAP (TYP)
PROPOSED GEOTEXTILE LINED SWALE
PROPOSED HAY BALE CHECKDAMS (TYP)
DESIRE TREE GROUND CRESCENT
TD 1 R=130.40 I=126.50 (OUT)
TD 2 R=120.80 I=118.40 (OUT)
BUILDING #1 FFE=141.5 GFE=130.5
BUILDING #2 FFE=132.0 GFE=121.0
BUILDING #5 FFE=139.5
VEGETATED SWALE J
CHECK DAM (TYP)
SWALE (SEE GRASS SWALE DETAIL)
BIO OUTLET F R=129.0 I=126.10(I)-GRAIN I=126.10 (POOL) I=126.00 (OUT)
BIO OUTLET H2 R=119.0 (GRATE) I=115.0 (I)-GRAIN I=114.50 (OUT)
BIORETENTION BASIN H
PROPOSED UNDERDRAIN SLOPE=0.5% INV=115.5
LEVEL SPREADER
FES H3 I=116.00 (OUT)
FES H1 I=114.00 (OUT)
FES H4,1 I=119.00 (OUT)
FES I=83.00 (OUT)
FES I=79.80 (OUT)
EAVE DRAINS AND FOUNDATION UNDER DRAINS PER ARCHITECTURAL PLANS, CONNECT DRAINS TO SITE DRAINAGE. (TYP)
DCS F2 R=89.6 (24"GRATE) I=86.00 (18") I=84.00 (36" OUT)
DCS Q4 R=90.0 (SQUID) I=87.00 (8" N) I=80.00 (30"OUT)
DCB R3 R=87.8 (SHALLOW) I=85.3 (OUT)
CB R4 R=88.0 I=84.50 (OUT)
CB A10 R=127.0 I=123.50 (OUT)
DMH A13 R=130.10 I=125.40 (BO F) I=125.20 (DMHA14) I=125.10 (OUT)
DMH A14 R=131.8 I=125.20 (HMA15) I=126.10 (OUT)
HW A15 I=132.50 (OUT)
WQU H5 R=133.3 (STORM360) I=126.00 (OUT) I=125.75 (OUT)
CB C4(SHALLOW) R=121.5 I=119.00 (OUT)
PROPOSED INSPECTION PORT
DET PIPE D R=88.0 I=80.50 (WQU-I) I=80.00 (F OUT) 42" INV=80.00 SLOPE=0.00
DETENTION BASIN D (42" PIPE)
PUMP STATION 3
INV. 85.4 5'x4' BOX CULVERT INV. 88.8 12"DWB
200' RIPARIAN ZONE
100' RIPARIAN
INV. 93.5 12"PVC INV.95.0 12"CPP
INV. 102.4 12"RCP
12"CMP INV.=84.0
38"D
36"D
CB RIM 114.0 INV.OUT 110.4
CB INV.IN 108.6 INV.OUT 108.4
CB RIM 99.5 INV. 94.4
CB RIM 93.3 INV.IN 89.6 INV.OUT 89.5
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SCALE IN FEET

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No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
40R Approval

Not Approved for Construction

Drawing Title
Grading and Drainage Plan

COMMONWEALTH OF MASSACHUSETTS
CONOR P NAGLE
No. 50018
REGISTERED PROFESSIONAL ENGINEER
10/30/14

Drawing Number
C-5.2
Sheet 7 of 26
Project Number 09407.03

09407.03_C-05-GD.DWG

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

MATCHLINE
MATCHLINE

ZONE LINE (APPROXIMATE)
OP R40

LOT B
(BK. 26430 PG. 295)
PARCEL 1 AND 2
480,613 SQ.FT.
11.03 ACRES

BUILDING #1
FFE=141.5
GFE=130.5
6"S INV=126.5
4" DOM
6" FIRE

BUILDING #2
FFE=132.0
GFE=121.0
6"S INV=115.4
4" DOMESTIC
6" FIRE

BUILDING #3
FFE=131.0
GFE=120.0
6"S INV=117.80
4" DOMESTIC
6" FIRE

BUILDING #4
FFE=134.0
6"S INV=128.50
6" FIRE
4" DOMESTIC

BUILDING #5
FFE=139.5
4" DOMESTIC
6" FIRE

CLUBHOUSE
FFE=131.0
POOL
4" FIRE
4" DOMESTIC

BIORETENTION BASIN H
BIORETENTION BASIN F
DETENTION BASIN 'A'
DETENTION BASIN D (42" PIPE)

SMH A1 (DROP) R=134.5 I = 113.23 (SMHA2) I = 126.40 (BLDG1) I = 113.10 (OUT)
TD 1 R=130.40 I = 126.50 (OUT)
WQU H5 R=133.3 (STC900) I = 126.00 (TD1) I = 125.75 (OUT)
SMH A2 R=127.2 I = 114.00 (SMHA3) I = 113.95 (OUT)
SMH A3 (DROP) R=133.9 I = 117.55 (SMHA7) I = 114.50 (SMHA4) I = 114.40 (OUT)
DCB R3 R=87.8 (SHALLOW) I = 85.3 (OUT)
QCS F2 R=86.6 (24"GRATE) I = 86.00 (18") I = 84.00 (36"OUT)
CB R4 R=89.0 I = 84.50 (OUT)
QCS Q4 R=90.0 (SQUO) I = 87.00 (8" IN) I = 80.00 (30"OUT)
DET PIPE D R=88.0 I = 82.30 (WQU-R) I = 80.00 (8"OUT) I = 80.00 (8"IN) SLOPE = 0.001
WQU-R R=88.3 STC-900 I = 83.60 (SMH2) I = 83.35 (OUT)
FES Q3 I = 78.00 (OUT)
DMH R2 R=88.0 I = 83.80 (OCB3) I = 83.80 (CB14) I = 83.80 (MH-RS) I = 83.70 (OUT)
DMH R5 R=90.0 I = 86.00 (CBR5) I = 85.80 (OUT)
FES H3 I = 116.00 (OUT)
FES H1 I = 114.00 (OUT)
BIO OUTLET H2 R=119.0 (GRATE) I = 115.0 (I-DRAIN) I = 114.50 (OUT)
FES H4.1 I = 119.00 (OUT)
PROPOSED UNDERDRAIN SLOPE=0.5% INV=115.5
EAVE DRAINS AND FOUNDATION UNDER DRAINS PER ARCHITECTURAL PLANS CONNECT DRAINS TO SITE DRAINAGE (TYP.)
SMH A4 R= 121.0 I = 115.80 (SMHA5) I = 115.70 (OUT)
TD 2 R=120.90 I = 118.40 (OUT)
CB C4(SHALLOW) R=121.5 I = 118.00 (OUT)
SMH A5 R=122.20 I = 116.20 (SMHA6) I = 116.10 (OUT)
HW A15 I = 132.50 (OUT)
DMH A14 R=131.8 I = 128.20 (HWA15) I = 128.10 (OUT)
DMH A13 R=130.10 I = 125.40 (BIO F) I = 125.20 (SMHA14) I = 125.10 (OUT)
CB A10 R=127.5 I = 123.50 (OUT)
BIO OUTLET F R=129.0 I = 126.10(U-DRAIN) I = 126.10 (POOL) I = 126.00 (OUT)
6"S INV=127.0
SMH A7 R= 134.8 I = 124.00 (SMHA8) I = 124.00 (BLDG) I = 123.90 (OUT)
SMH A8 R=126.7 I = 126.70 (SMHA9) I = 126.60 (OUT)
HW B4 I = 133.80 (OUT)
DMH B3 R=134.2 I = 129.70 (RI) I = 130.00 (HWB4) I = 129.60 (OUT)
SMH A9 R= 133.2 I = 127.80 (BLDG4) I = 127.70 (OUT)
SEE SHEET C7.3 FOR POOL DECK DETAIL
CULVERT M2* I = 129.3 (OUT)
CULVERT M1* I = 129.2 (OUT) *SEE CULVERT DETAIL
PROPOSED UNDERDRAIN SLOPE=0.5% I=126.7
PROPOSED LIGHT (TYP.) (LIGHT INTENSITY AND POLE SPACING DESIGN BY OTHERS)
PROPOSED INSPECTION PORT
ELECTRIC LINE FOR POWER ACCESS AT CAR-VAC STATION
PROPOSED YARD HYDRANT
EAVE DRAINS AND FOUNDATION UNDER DRAINS PER ARCHITECTURAL PLANS CONNECT DRAINS TO SITE DRAINAGE (TYP)
DMH A5 R=131.6 I = 120.10 (SMHA6) I = 120.00 (OUT)
DMH A6 R=131.4 I = 121.40 (SMHA8) I = 121.30 (OUT)
DMH B2 R=125.5 I = 120.90 (SMH13) I = 120.80 (OUT)
DMH A4 R=125.0 I = 118.50 (SMHA5) I = 118.80 (OUT)
CB A3 R=119.5 I = 117.5 (OUT)
FES B1 I = 119.00 (OUT)
FES A1 I = 114.00 (OUT)
DMH A2 R=120.0 I = 115.90 (CBA1) I = 115.90 (SMHA4) I = 115.80 (OUT)
CB R6 R=95.5 I = 91.50 (OUT)
WQU C2 R=120.5 (STORM3) I = 116.20 (CBC4) I = 115.80 (CBC3) I = 114.70 (OUT)
CB C3 R=120.8 I = 116.20 (OUT)
DMH A12 R=128.0 I = 123.60(SMHA13) I = 123.50 (OUT)
CB A11 R=127.5 I = 123.50 (OUT)
DMH A8 R=127.8 I = 123.10 (SMHA12) I = 123.10 (CBA11) I = 123.10(SMHA10) I = 123.00 (OUT)
SMH A6(DROP) R=130.0 I = 124.90 (CLUB) I = 119.75 (OUT)
FES C1 I = 108.00 (OUT)
FES E1 I = 107.00 (OUT)
CB A7 R=128.5 I = 125.5 (OUT)
DMH E2 R=113.5 I = 107.70 (SMHA9) I = 107.60 (OUT)
OCS E3 R=114.5(36"GRATE) I = 112.00 (4" I = 108.00(4"PERF I = 111.00 (WEIR I = 110.00 (OUT)
FES D1 I = 108.50 (OUT)
OCS D2 R=113.5(36"GRATE) I = 112.00 (8") I = 111.00 (12") I = 110.00 (30"OUT)
PROPOSED UNDERDRAIN SLOPE=0.5% INV=108.2
FES H4.2 I = 100.00 (OUT)
OCS H3 R=114.5 (36"GRATE I = 111.00 (12") I = 113.50 (8") I = 110.00 (12" OUT)
TD 3 R=119.90 I = 117.40 (OUT)
WIDE SWALE
WIDE PATH

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NOTE:
1. UTILITY SERVICE CONNECTIONS SHALL BE PROVIDED FOR EACH BUILDING.
2. ELECTRIC AND TELEPHONE MANHOLES TO BE PROVIDED IN ACCORDANCE WITH SERVICE PROVIDER REQUIREMENTS.

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SCALE IN FEET

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

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40R Approval

Not Approved for Construction

Drawing Title
Utility Plan

COMMONWEALTH OF MASSACHUSETTS
CONOR P NAGLE
CIVIL
No. 52
REGISTERED PROFESSIONAL ENGINEER
10/30/14

Drawing Number
C-6.1
Sheet 8 of 26
Project Number 09407.03

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

NOTE:
1. UTILITY SERVICE CONNECTIONS SHALL BE PROVIDED FOR EACH BUILDING.

N

MATCHLINE
MATCHLINE

ZONE LINE (APPROXIMATE)
OP
R-40

SCALE IN FEET
40 0 40 80

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts
Issued for
40R Approval
Not Approved for Construction
Drawing Title
Utility Plan

Drawing Number
C-6.2
Sheet 9 of 26
Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
REGISTERED PROFESSIONAL ENGINEER
10/29/14

09407.03_C-06-UT.DWG

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BUILDING #1
48 UNITS W/PARKING BELOW
40 SPACES W/2 ACCESSIBLE BELOW

BUILDING #2
48 UNITS W/PARKING BELOW
40 SPACES W/2 ACCESSIBLE BELOW

BUILDING #3
48 UNITS W/PARKING BELOW
40 SPACES W/2 ACCESSIBLE BELOW

BUILDING #4
48 UNITS

BUILDING #5
48 UNITS

CLUBHOUSE
1 STORY

ZONE LINE (APPROXIMATE)
OP R40

100' STATE AND LOCAL BUFFER ZONE

100' INNER RIPARIAN ZONE

200' OUTER RIPARIAN ZONE

EXISTING VEGETATION TO REMAIN

LOAM & SEED

LOAM & SOD

SEE WETLAND REPLICATION PLAN

CONSERVATION SEED MIX

COMPOSTED HARDWOOD MULCH AT BIORETENTION PERENNIAL PLANTINGS

5' DRIP STRIP (TYP.)

CHAIN LINK FENCE

SCALE IN FEET
40 0 40 80

No.	Revision	Date	Appvd.

Designed by CPN	Drawn by IMM	Checked by EHM	
CAD checked by MCS		Approved by RSH	
Scale 1"=40'		Date October 28, 2014	

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
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Drawing Title
Landscape Plan

Drawing Number
C-7.1

Sheet 10 of 26

Project Number
09407.03

10.28.14

LANDSCAPE NOTES

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED CAREFULLY AS SHOWN ON THE PLANS FOR FIELD REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. A 3-INCH DEEP SHREDDED PINE BARK SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, AS SHOWN ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
10. AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
11. LOAM AND SEED ALL AREAS NOT OTHERWISE TREATED.
12. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

TREE PROTECTION

1. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY EROSION CONTROL FENCE AND HAY BALE BARRIER. ERECT BARRIER AT EDGE OF THE EARTHWORK CUT LINE PRIOR TO TREE CLEARING. LAY OUT THIS LINE BY FIELD SURVEY.
2. CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
3. DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.

PLANT MAINTENANCE NOTES

1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE OWNER.
3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE PER WEEK.
4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
5. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

Bioretention Construction Notes

1. BIORETENTION AREAS SHALL NOT BE CONSTRUCTED UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. THE BIORETENTION AREA SHALL BE PROTECTED FROM SEDIMENT LADEN RUNOFF.
2. THE BIORETENTION AREAS SHALL CONTAIN A PLANTING SOIL MIXTURE OF 50%-60% SAND, 30%-35% SANDY TOPSOIL, 0-5% CLAY, AND 10% COMPOST.
3. PROVIDE A 3" DEEP LAYER OF COMPOSTED, SHREDDED HARDWOOD MULCH OVER SOIL SURFACE.
4. SAND SHALL CONFORM TO SECTION 2320 EARTHWORK, OF THE PROJECT SPECIFICATIONS, AND BE FREE OF DELETERIOUS MATERIAL.
5. SANDY TOPSOIL SHALL CONSIST OF TOPSOIL FROM ON SITE STOCKPILE, OR LOAM BORROW, WITH SAND ADDED TO PROVIDE A LOAMY SAND OF UNIFORM COMPOSITION.
6. PLANTING SOIL SHALL BE PLACED IN LIFTS OF LESS THAN 18 INCHES AND LIGHTLY COMPACTED (MINIMUM COMPACTIVE EFFORT) BY TAMPING OR ROLLING WITH A HAND-OPERATED LANDSCAPE ROLLER. HEAVY EQUIPMENT SHALL BE RESTRICTED FROM TRAVELING OVER THE BIORETENTION AREA.
7. SEE GRADING AND DRAINAGE PLAN FOR DIMENSIONS, ELEVATIONS, PIPE SIZES, LOCATIONS AND INVERTS OF BIORETENTION FACILITY.
8. FILTER FABRIC SHALL MEET CLASS 'C' GEOTEXTILE, APPARENT OPENING SIZE SHALL MEET ASTM-D-4751, GRAB TENSIL STRENGHT SHALL MEET ASTM-D-4632, PUNCTURE RESISTANCE SHALL MEET ASTM-D-4833.
9. UNDERDRAIN PIPE SHALL BE 6" RIGID SCHEDULE 40 PVC OR SDR 35 WITH 3/8" PERFORATIONS AT 6" ON-CENTER. PERFORATED PIPE SHALL TERMINATE ONE FOOT INSIDE THE BIORETENTION AREA. CAP THE ENDS OF THE PIPES. PROVIDE CLEAN-OUTS AT APPROPRIATE LOCATIONS. CRUSHED STONE FOR UNDERDRAINS SHALL MEET SECTION 2320 EARTHWORK OF THE PROJECT SPECIFICATION.

Conservation Seeding Schedule

Seeding Schedule		
Location	Seed Mix	Seeding Rate
Treatment Swales	New England Erosion Control/Restoration Mix (moist sites)	35 lbs/ acre
Detention Basin Bottoms	New England Erosion Control/Restoration Mix (moist sites)	35 lbs/ acre
Detention Basin Side-Slopes	New England Conservation/Wildlife Mix	25 lbs/acre

Note: Seed Mix as supplied by New England Wetlands Plants, Inc. Amherst, MA (413) 256-1152, or approved equivalent.

BIORETENTION BASIN AND SWALE PERENNIALS					
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
356	AIN	ASCLEPIAS INCARNATA	SWAMP BUTTERFLY MILK-WEED	2" PLUG	1' O.C.
810	ANA	ASTER NOVAE-ANGLEA	NEW ENGLAND ASTER	2" PLUG	1' O.C.
681	CSC	CAREX SCOPARIA	BROOM SEDGE	2" PLUG	1' O.C.
1212	EPU	EUPATORIUM PURPUREUM	JOE-PYE WEED	2" PLUG	1' O.C.
493	IVE	IRIS VERSICOLOR	BLUE FLAG IRIS	2" PLUG	1' O.C.
681	LC	LOBELIA CARDINALIS	CARDINAL FLOWER	2" PLUG	1' O.C.
160	OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	1 POT	1' O.C.
150	OS	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 POT	1' O.C.
1323	PV	PANICUM VIRGATUM	SWITCH GRASS	2" PLUG	1' O.C.
726	RF	RUDBECKIA FULGIDA	BLACK-EYED SUSAN	1 POT	1' O.C.
3050	SSC	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUE-STEM	2" PLUG	1' O.C.
1388	SSE	SOLIDAGO SEMPERVIRENS	SEASIDE GOLDENROD	2" PLUG	1' O.C.

PLANT LIST				
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE
SHADE TREES				
23	AC	AMELANCHIER CANADENSIS 'CLUMP'	CLUMP SHADBLOW SERVICEBERRY	9-10' HT.
30	AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2-2½" CAL.
38	BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	12-14' HT.
4	CC	CERCIS CANADENSIS	EASTERN REDBUD	9-10' HT.
7	CK	CORNUS RUTGERS 'AURORA'	AURORA RUTGERS HYBRRID DOGWOOD	9-10' HT.
7	FP	FRAXINUS PENNSYLVANICA 'SUMMIT'	SUMMIT GREEN ASH	2-2½" CAL.
4	MLM	MAGNOLIA LOEBNER\ 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA	9-10' HT.
9	MS	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	9-10' HT.
13	NS	NYSSA SYLVATICA	TUPELO	2-2½" CAL.
3	PC	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER PEAR	2-2½" CAL.
6	QP	QUERCUS PALUSTRIS	PIN OAK	2-2½" CAL.
11	QR	QUERCUS RUBRA	RED OAK	2-2½" CAL.
EVERGREEN TREES				
7	JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6-7' HT.
17	PG	PICEA GLAUCA	WHITE SPRUCE	6-7' HT.
16	PS	PINUS STROBUS	WHITE PINE	6-7' HT.
SHRUBS				
76	AA	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	18-24" HT.
129	CA	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SUMMERSWEET	18-24" HT.
82	IC	ILEX CRENATA 'COMPACTA'	COMPACT CONVEX LEAF JAPANESE HOLLY	18-24" HT.
184	IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	18-24" HT.
58	IV	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET VIRGINIA SWEETSPIRE	18-24" HT.
58	IVN	ILEX VERTICILLATA 'NANA'/JIM DANDY' (1 MALE/ 10 FEMALE)	DWARF WINTERBERRY (1 MALE/10 FEMALE)	2-2½' HT.
27	MD	MICROBIOTA DECUSSATA	RUSSIAN CYPRESS	18-24" BPD.
67	MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	2-2½' HT.
99	RC	RHODODENDRON CUNNINGHAM'S BLUSH'	CUNNINGHAM'S BLUSH RHODODENDRON	2-2½' HT.
24	RMF	ROSA 'MEIPELTA'	FUCHSIA MEIDILAND ROSE	18-24" BPD.
41	RMW	ROSA 'MEICOUBLAN'	WHITE MEIDILAND ROSE	18-24" BPD.
36	SB	SPIRAEA 'BUMALDA 'ANTHONY WATERER'	ANTHONY WATERER SPIRAEA	18-24" HT.
8	TC	TAXUS CUSPIDATA 'GREENWAVE' YEW	GREENWAVE YEW	18-24" BPD.
13	TH	TAXUS MEDIA 'HICKSII'	HICK'S YEW	2-2½" HT.
139	VC	VACCINIUM CORYMBOSUM	HIGH BUSH BLUEBERRY	2-2½" HT.
49	VD	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	2-2½" HT.
PERENNIALS & ORNAMENTAL GRASSES				
18	CAK	CALAMAGROSTIS ACUTIFOLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	1 POT
36	HH	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	1 POT
37	NF	NEPETA X FASSENII 'WALKER'S LOW'	WALKERS LOW CATMINT	1 POT

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N

No.	Revision	Date	Appvd.

Designed by CPN | Drawn by IMM | Checked by EHM
CAD checked by MCS | Approved by RSH
Scale 1"=40' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Landscape Plan

Drawing Number C-7.2

Sheet 11 of 26

Project Number 09407.03

10-28-14

09407.03_C-07-LA.dwg

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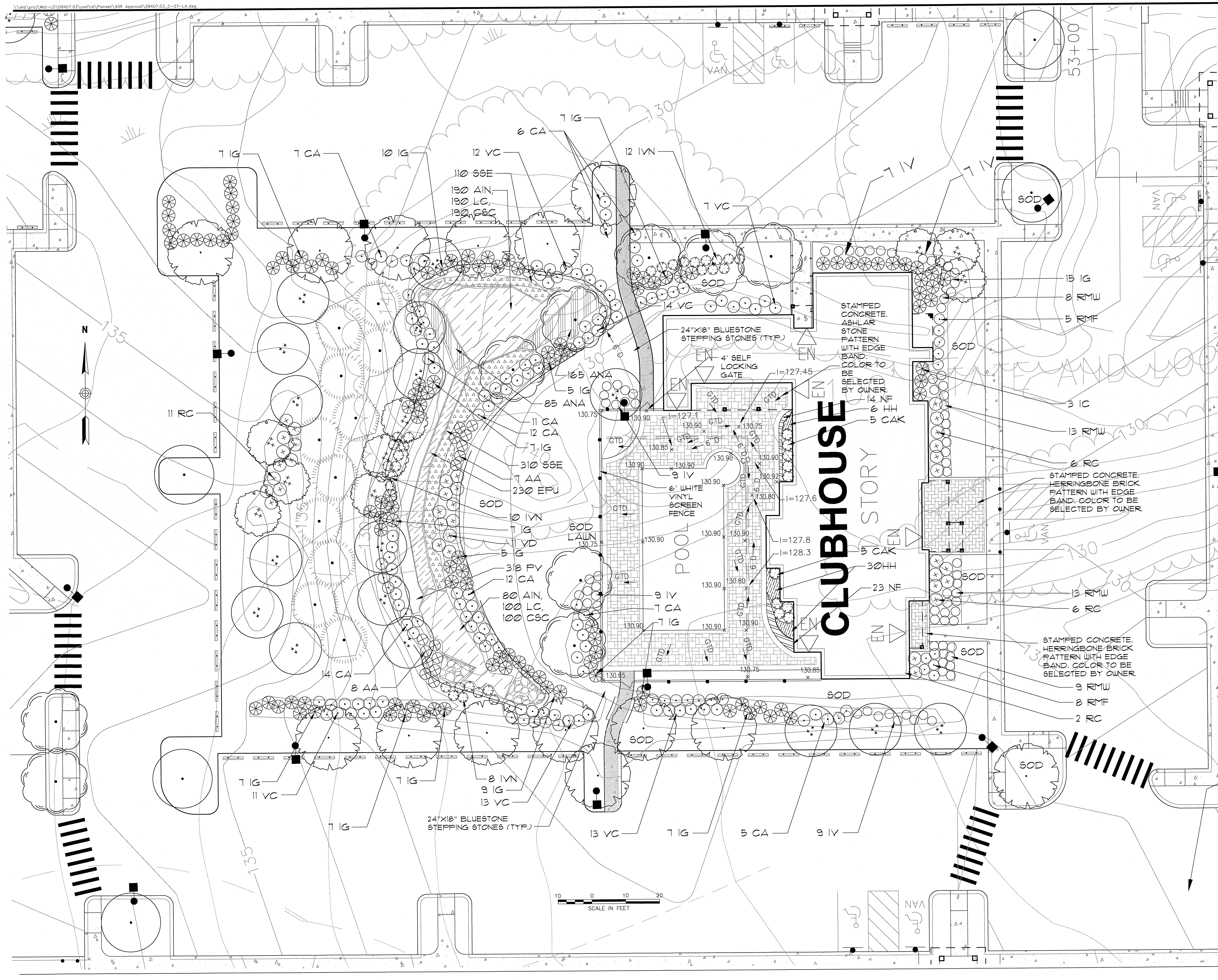

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No.	Revision	Date	Appvd.

Designed by CPN
Drawn by IMM
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Scale 1"=10'
Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Landscape Enlargement Plan

Drawing Number

C-7.3

No. 866

10·28·14

Sheet 13 of 26

Project Number
09407.03

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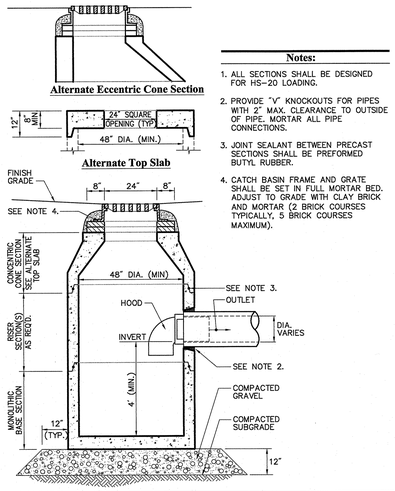


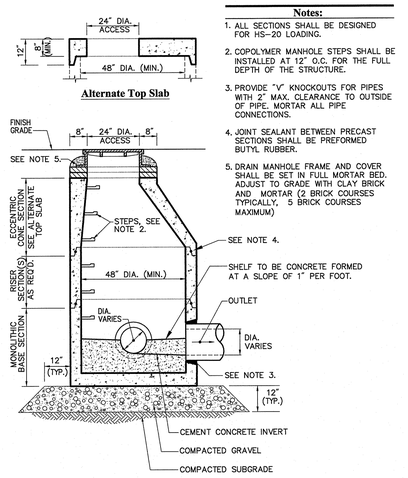
Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

Catch Basin (CB) With Hood

6/03

N.T.S. Source: VHB LD_101



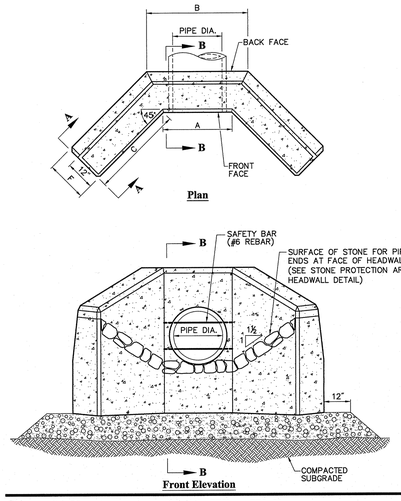
Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Drain Manhole (DMH)

6/03

N.T.S. Source: VHB LD_115



Dimensional Table							
PIPE DIA.	A	B	C	D	E	F	SAFETY BARS REQUIRED
12"	2'-6"	3'-8"	2'-11"	4'-0"	3'-3"	1'-6"	–
15"	2'-6"	3'-8"	2'-11"	4'-0"	3'-6"*	1'-6"	1
18"	3'-0"	4'-2"	3'-3"	4'-6"	3'-6"	1'-6"	1
24"	3'-6"	4'-8"	3'-6"	5'-0"	3'-9"	1'-6"	1
30"	4'-0"	5'-3"	4'-3"	5'-10"	4'-0"	1'-6"	2
36"	4'-6"	5'-11"	5'-0"	6'-4"	4'-3"	1'-8"	2
42"	5'-0"	6'-6"	5'-9"	6'-11"	4'-6"	1'-10"	3
48"	5'-6"	7'-2"	6'-6"	7'-5"	4'-9"	2'-0"	3
60"	6'-6"	8'-5"	8'-0"	8'-6"	5'-3"	2'-4"	4
72"	7'-6"	9'-9"	9'-6"	9'-7"	5'-9"	2'-8"	5

1. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI AIR ENTRAINED TYPE II CEMENT.
2. INSTALL IMPERMEABLE TRENCH DAM ANTI-SEEP COLLAR AROUND DRAIN PIPE PRIOR TO HEADWALL LOCATION
3. SAFETY BARS TO BE OMITTED WHERE INDICATED ON PLANS.
4. SAFETY BARS SHALL BE SET TO CREATE EQUAL OPENING DIMENSIONS.

Concrete Headwall (HW) with Wing Walls

6/03

N.T.S. Source: VHB LD_132

1. SEE ARCHITECTURAL PLANS FOR LOCATIONS

Roof Drainage Drip Strip

6/06/07

N.T.S. Source: David M White Architect

FES NO.	X	Y	Z	STONE DIA. (D_{50})
A1	10'	12'	0.5'	6"
B1	8'	10'	0.5'	6"
C1	11'	12'	0.5'	6"
D1	5'	7.5'	0.5'	6"
E1	4'	5.5'	0.5'	6"
F1	–	–	0.5'	6"
FES	12'	13'	0.5'	6"
H1	9'	10'	0.5'	6"
H3	5'	6'	0.5'	6"

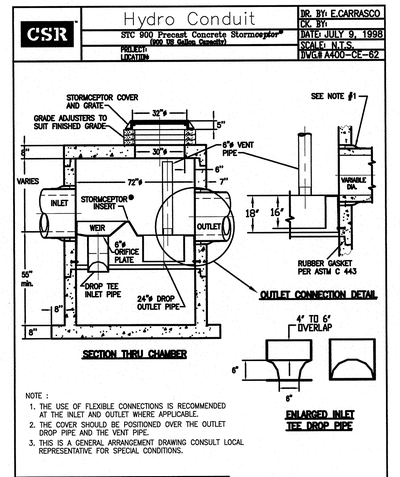
FES NO.	X	Y	Z	STONE DIA. (D_{50})
H4.1	5'	6'	0.5'	6"
H4.2	5'	8'	0.5'	6"
Q3	–	–	0.5'	6"

FES NO.	X	Y	Z	STONE DIA. (D_{50})
X1	4'	4.5'	0.5'	6"
X2	4'	4.5'	0.5'	6"
X3	12'	13'	0.5'	6"

Flared End Section (FES) with Stone Protection

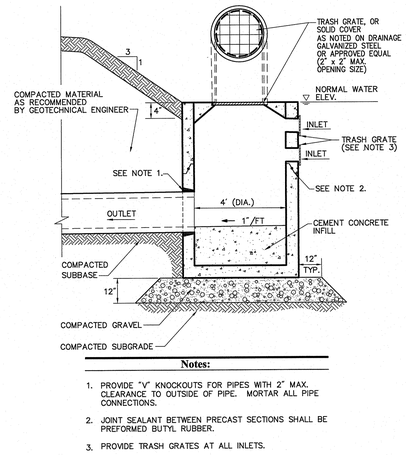
6/06

N.T.S. Source: VHB LD_134



Water Quality Unit (STC 900)

N.T.S.



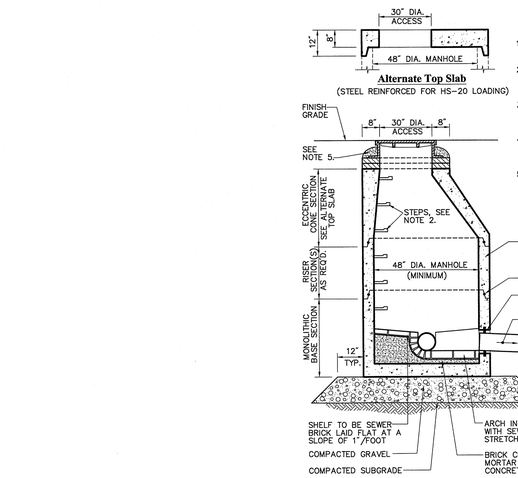
Notes:

1. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
2. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
3. PROVIDE TRASH GRATES AT ALL INLETS.

Pond Outlet Control Detail

6/03

N.T.S. Source: LD_163



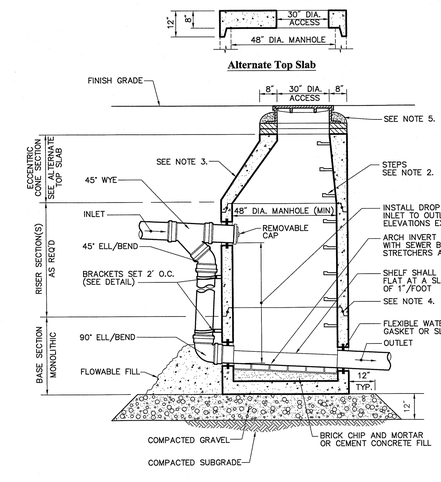
Notes:

1. STRUCTURES SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER-PROOFING MATERIAL.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. STANDARD SEWER MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH SEWER BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Sanitary Sewer Manhole (SMH)

6/03

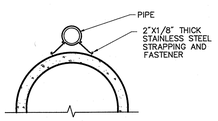
N.T.S. Source: VHB LD_200



Exterior Drop Sewer Manhole (SMH) Drop Type "A"

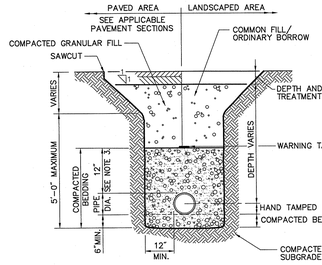
6/03

N.T.S. Source: VHB LD_203



Notes:

1. STRUCURE SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE
3. EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
5. SEWER MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH SEWER BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)



Notes:

1. WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
2. USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.
3. FOR HDPE PIPE, DIMENSION IS 24 INCHES.

Utility Trench

6/03

N.T.S. Source: VHB LD_300

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

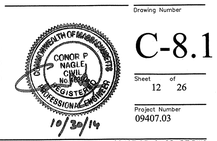
Details

Drawing Number

C-8.1

Sheet 12 of 26

Project Number 09407.03



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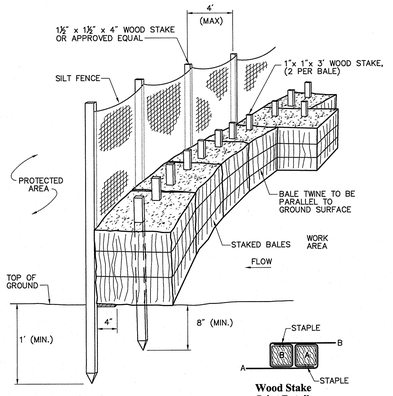


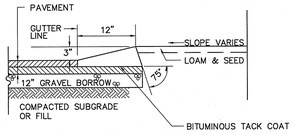
Note:

PLACE ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER (100' O.C.).

Silt Fence / Hay Bale Barrier

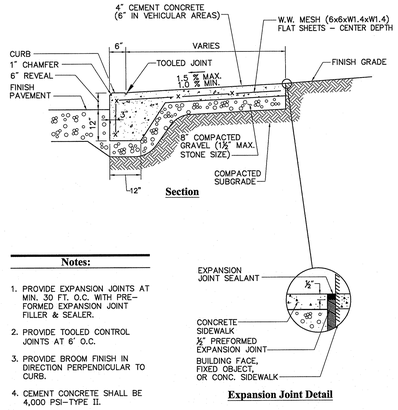
6/03

N.T.S. Source: VHB LD_657



CAPE COD BERM

S-402R1 N.T.S.



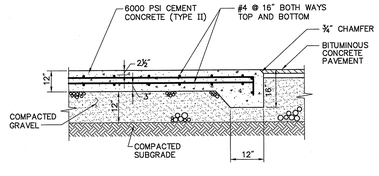
Notes:

1. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE-FORMED EXPANSION JOINT FILLER & SEALER.
2. PROVIDE TOOLED CONTROL JOINTS AT 6' O.C.
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
4. CEMENT CONCRETE SHALL BE 4,000 PSI-TYPE II.

Monolithic Concrete Curb (MCC) & Sidewalk

6/03

N.T.S. Source: VHB LD_421



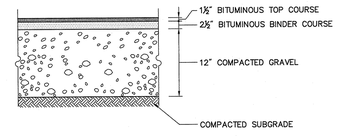
Notes:

1. SIZE OF DUMPSTER PAD TO BE AS INDICATED ON PLANS.
2. CONSTRUCTION JOINTS SHALL BE SPACED NO MORE THAN 40 FEET ON CENTER AND SHALL BE EQUALLY SPACED OVER THE LENGTH AND WIDTH OF THE PAD.

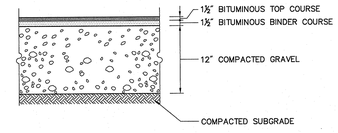
Compactor Pad

6/03

N.T.S. Source: VHB LD_712



Heavy Duty Flexible Pavement



Standard Duty Flexible Pavement

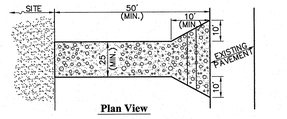
Note:

PAVEMENT SECTIONS ARE SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.

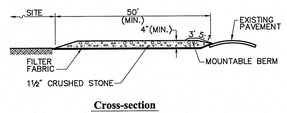
Bituminous Concrete Pavement Sections

9/04

N.T.S. Source: VHB LD_430



Plan View



Cross-section

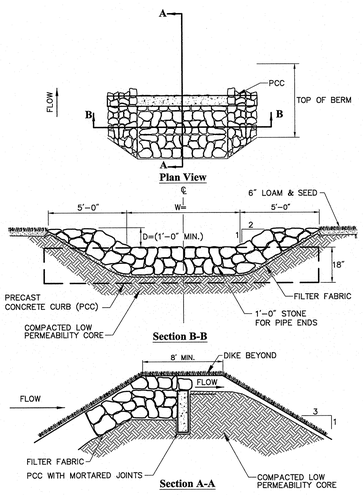
Notes:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Stabilized Construction Exit

6/03

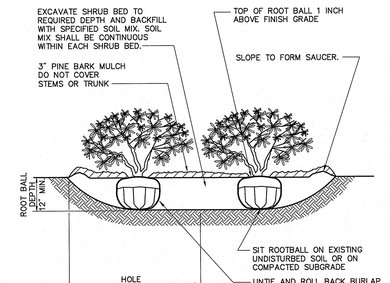
N.T.S. Source: VHB LD_682



Level Spreader

6/03

N.T.S. Source: REV LD_161



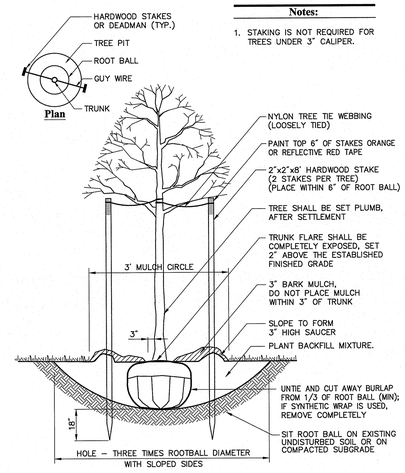
Notes:

1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

Shrub Bed Planting

4/07

N.T.S. Source: VHB LD_601



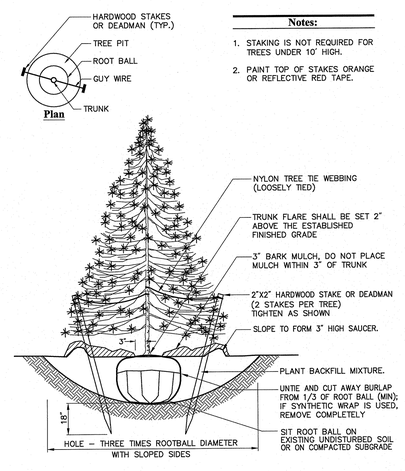
Notes:

1. STAKING IS NOT REQUIRED FOR TREES UNDER 3" CALIPER.

Tree Planting (For Trees Under 4" Caliper)

10/07

N.T.S. Source: VHB LD_602



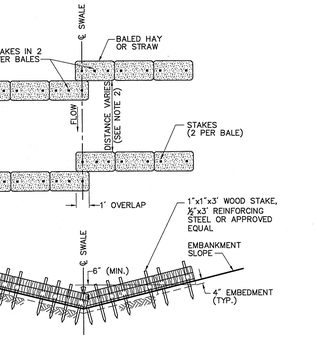
Notes:

1. STAKING IS NOT REQUIRED FOR TREES UNDER 10' HIGH.
2. PAINT TOP OF STAKES ORANGE OR REFLECTIVE RED TAPE.

Evergreen Tree Planting

10/07

N.T.S. Source: VHB LD_604



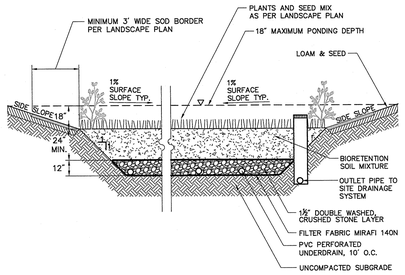
Notes:

1. THIS CHECKDAM SHALL BE INSTALLED IN A DRAINAGE SWALE WITH BED WIDTHS OF 2 FT. OR LESS.
2. THE DISTANCE BETWEEN HAYBALE CHECKDAMS SHALL BE DETERMINED BY THE SLOPE OF THE SWALE. CHECKDAMS SHALL BE SET AT EVERY 2 FT. DROP IN SWALE ELEVATION.
3. BALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. INSTALL 3 STAKES PER HAY BALE WITHIN SWALE BED AREAS.

Hay Bale Checkdam (Narrow Swale)

6/03

N.T.S. Source: VHB LD_672



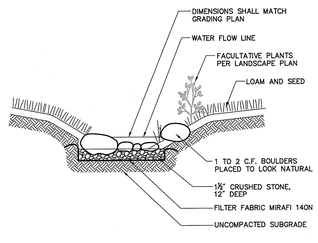
Notes:

1. INSTALL UNDERDRAINS AT 10 FEET ON CENTER. CONNECT TO DRAINS PER PLAN.
2. SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.

Bioretention Basin

9/07

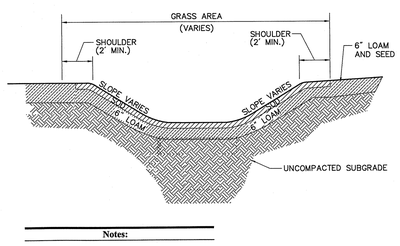
N.T.S. Source: VHB LD_353



Stone Channel Swale

9/07

N.T.S. Source: VHB LD_358



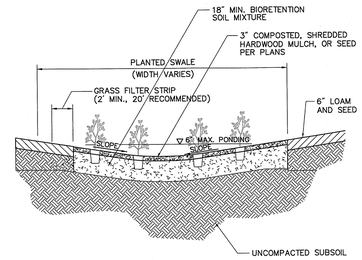
Notes:

1. SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.
2. SEE GRADING AND DRAINAGE PLAN FOR LOCATIONS AND INVERTS OF OVERFLOW OUTLETS AND SUBDRAIN CONNECTIONS.
3. SIDE SLOPES IN EXCESS OF 3:1 TO BE REINFORCED WITH GEO-FABRIC.

Grass Swale

1/07

N.T.S. Source: VHB



Notes:

1. SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.
2. SEE GRADING AND DRAINAGE PLAN FOR LOCATIONS AND INVERTS OF OVERFLOW OUTLETS AND SUBDRAIN CONNECTIONS.

Vegetated Swale

1/07

N.T.S. Source: VHB REV

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Details

Drawing Number

C-8.2

Sheet 13 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
No. 49300
REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-08-DT.DWG

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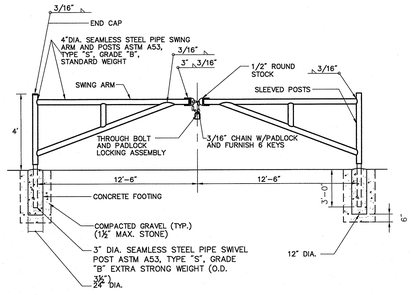


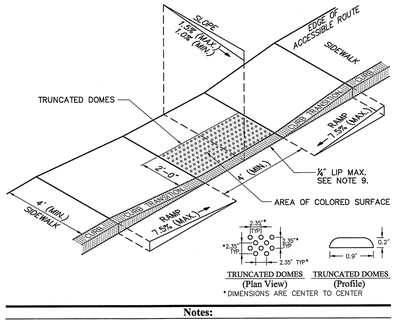
Notes:

1. SHOP PRIME PAINT EXPOSED SURFACES FIELD PAINT EPOXY ENAMEL-YELLOW.
2. PROVIDE "MASTER" PADLOCK WITH 6 WORKING KEYS.
3. 3,000 PSI CONCRETE FOOTING

Swing Gate (Double)

6/03

N.T.S. Source: VHB LD_486



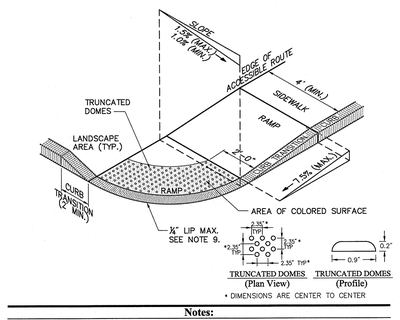
Notes:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.

Accessible Curb Ramp (ACR) Type 'A'

11/06

N.T.S. Source: VHB LD_500



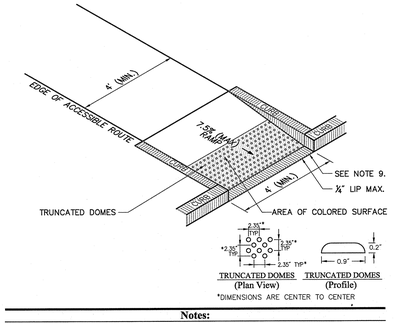
Notes:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.

Accessible Curb Ramp (ACR) - Type 'B'

11/03

N.T.S. Source: VHB LD_501



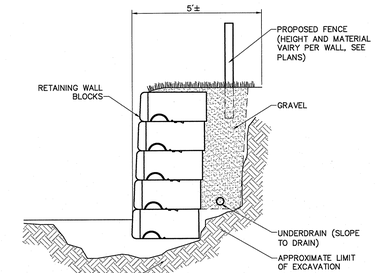
Notes:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. TYPICAL SIDEWALK SECTION FOR RAMP SECTION CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.

Accessible Curb Ramp (ACR) Type 'J'

11/06

N.T.S. Source: VHB LD_509



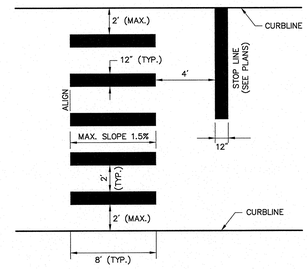
Notes:

1. DETAIL PROVIDED FOR GENERAL INFORMATION ONLY. STAMPED FINAL DESIGN OF MODULAR WALL SYSTEM TO BE PROVIDED BY WALL MANUFACTURER BASED ON GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
2. EF SHEA, OR APPROVED EQUAL.

Modular Block Retaining Wall

6/06

N.T.S. Source: VHB LD_



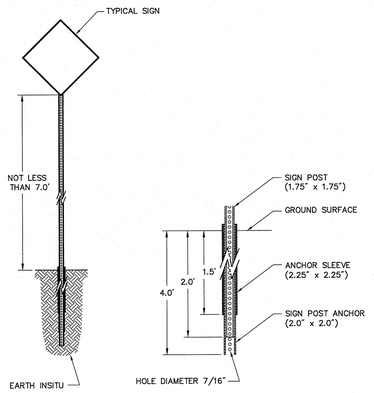
Notes:

1. TWELVE INCH (12") LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO – 6 INCH LINES) WILL BE ACCEPTED.
2. LONGITUDINAL CROSSWALK LINES TO BE PARALLEL TO CURBLINE.
3. ALL LONGITUDINAL CROSSWALK LINES TO BE THE SAME LENGTH AND PROPERLY ALIGNED.
4. CROSS WALK SIDESLOPE SHALL NOT EXCEED 1.5%

Crosswalk

6/03

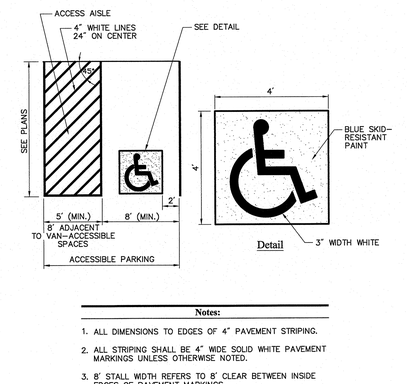
N.T.S. Source: VHB LD_553



Sign Post - Type 'B'

6/03

N.T.S. Source: VHB LD_702



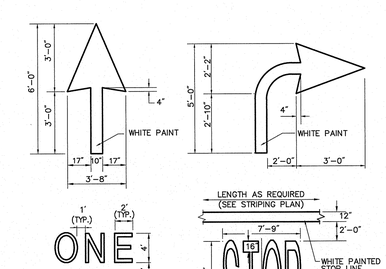
Notes:

1. ALL DIMENSIONS TO EDGES OF 4" PAVEMENT STRIPING.
2. ALL STRIPING SHALL BE 4" WIDE SOLID WHITE PAVEMENT MARKINGS UNLESS OTHERWISE NOTED.
3. 8' STALL WIDTH REFERS TO 8' CLEAR BETWEEN INSIDE EDGES OF PAVEMENT MARKINGS.

Accessible Parking Space

6/03

N.T.S. Source: VHB LD_552



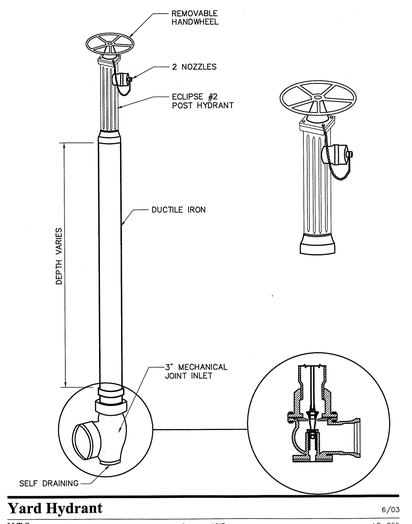
Notes:

1. PAVEMENT MARKINGS TO BE INSTALLED FOR ON SITE WORK IN LOCATIONS SHOWN.

Painted Pavement Markings - On Site

6/03

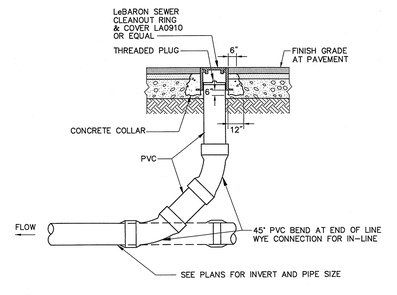
N.T.S. Source: VHB LD_554



Yard Hydrant

6/03

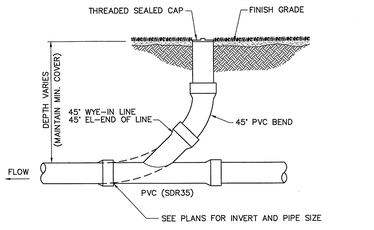
N.T.S. Source: VHB LD_255



Cleanout - Paved Area

6/03

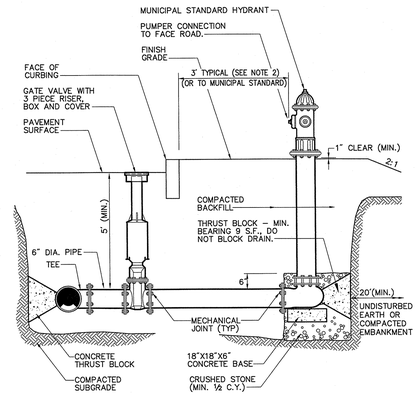
N.T.S. Source: VHB LD_303



Cleanout - Landscape Area

6/03

N.T.S. Source: VHB LD_302



Notes:

1. CONCRETE THRUST BLOCKS TO BE USED ONLY WHERE THEY CAN BEAR ON UNDISTURBED EARTH AS SHOWN. USE CLAMPS AND TIE RODS OR OTHER ACCEPTABLE METHOD OF JOINT RESTRAINT WHERE SOIL CONDITIONS PROHIBIT THE USE OF THRUST BLOCKS.
2. HYDRANT IN SIDEWALK AREAS TO BE LOCATED TO PROVIDE MINIMUM CLEAR SIDEWALK PASSAGE WIDTH OF 3 FEET AT HYDRANT.

Hydrant Construction

3/06

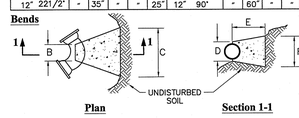
N.T.S. Source: VHB LD_250

Table Of Dimensions

BENDS	B	C	D	E	F
6" 11¼°	8"	15"	12"	24"	12"
6" 22½°	-	19"	-	-	13"
8" 11¼°	-	20"	-	-	12"
8" 22½°	-	22"	-	-	17"
12" 11¼°	-	30"	-	-	15"
12" 22½°	-	35"	-	-	25"

BENDS	B	C	D	E	F
6" 45°	8"	30"	12"	24"	14"
6" 90°	-	30"	-	-	27"
8" 45°	-	30"	-	-	24"
8" 90°	-	38"	-	-	36"
12" 45°	-	40"	-	-	40"
12" 90°	-	60"	-	-	52"

Bends



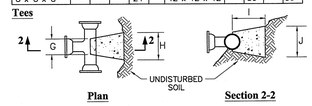
Plan Section 1-1

Table Of Dimensions

TEES	G	H	I	J
6"x 6"x 6"	12"	24"	24"	18"
8"x 6"x 6"	-	-	-	24"
8"x 8"x 8"	-	-	24"	-

TEES	G	H	I	J
12"x 12"x 6"	12"	24"	24"	18"
12"x 12"x 8"	-	-	-	24"
12"x 12"x 12"	-	36"	-	36"

Tees



Plan Section 2-2

Notes:

1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES, AND VERTICAL BENDS (SAME SIZE AS REQUIRED FOR TEES). PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES.
2. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.
3. CONCRETE SHALL BE 3000 PSI-TYPE I.

Concrete Thrust Block

6/03

N.T.S. Source: VHB LD_260

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Details

Drawing Number

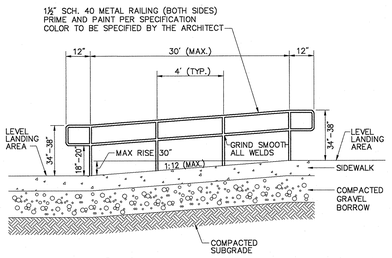
C-8.3

Sheet 14 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P NAGLE
No. 49,406
REGISTERED PROFESSIONAL ENGINEER
10/30/14

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

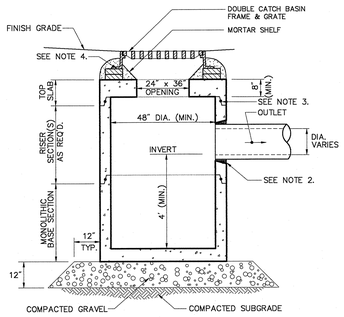


Notes:

1. RAMPS TO MEET ADA OR STATE STANDARD, WHICHEVER IS MORE STRINGENT.
2. REFER TO SIDEWALK DETAIL FOR SIDEWALK CONSTRUCTION.

Hand Rail 3/02

N.T.S. Source: VHB LD_520

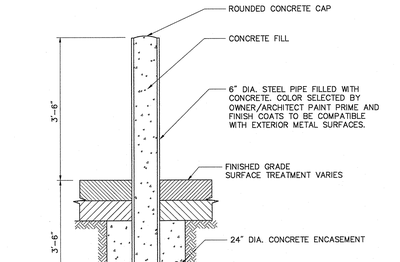


Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
4. DOUBLE CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICKS TYPICALLY, 5 BRICK COURSES MAXIMUM)

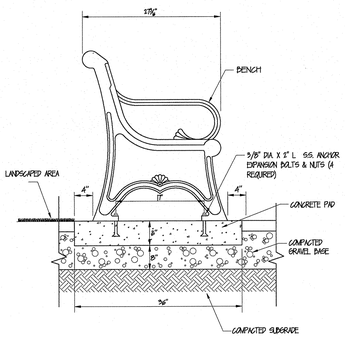
Double Grate Catch Basin (DCB) 6/03

N.T.S. Source: VHB LD_102



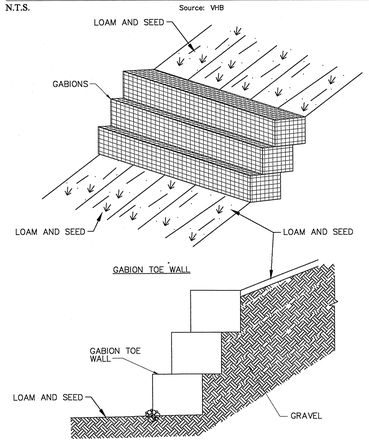
Bollard 6/03

N.T.S. Source: VHB LD_700



Bench Foundation 5/05

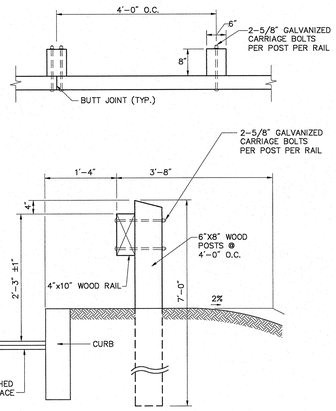
N.T.S. Source: VHB



SOURCE: ADAPTED FROM PRODUCT LITERATURE OF BEKAERT GABIONS DESIGNED BY OTHERS

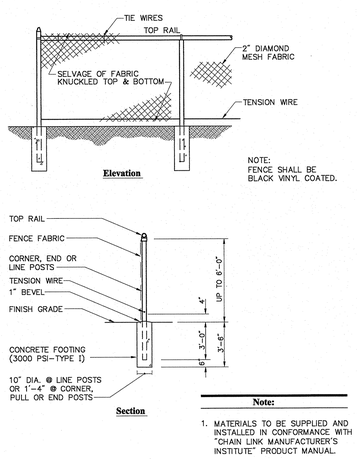
STRUCTURAL GABION WALL

S-1323RI N.T.S.



Wood Guardrail 6/03

N.T.S. Source: VHB LD_450

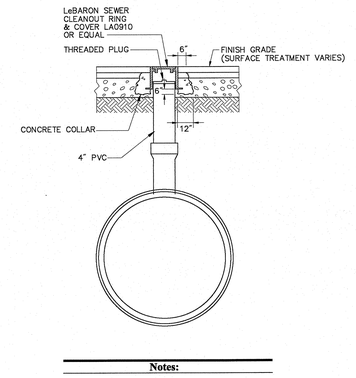


Note:

1. MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.

Chain Link Fence up to 6' 6/03

N.T.S. Source: VHB LD_481

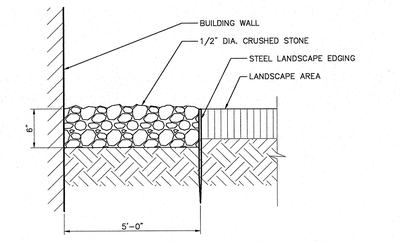


Notes:

1. ONE INSPECTION PORT TO BE INSTALLED AT EACH END OF THE DETENTION SYSTEM OR AS DIRECTED BY THE ENGINEER.

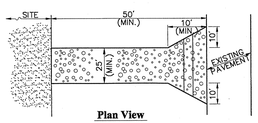
Detention System Inspection Port 8/05

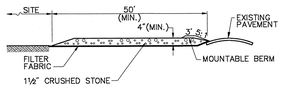
N.T.S. Source: StormTech LD_303



Drip Edge 4/07

N.T.S. Source: VHB REV LD_



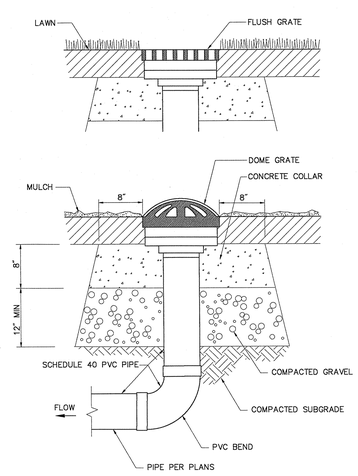


Notes:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

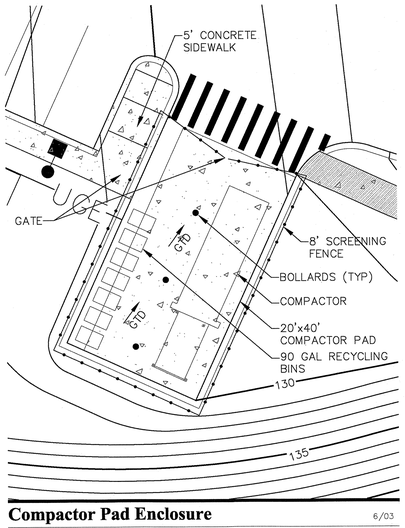
Stabilized Construction Exit 6/03

N.T.S. Source: VHB LD_682



Landscape Drain (LD) 2/07

N.T.S. Source: VHB LD_193



Compactor Pad Enclosure 6/03

1"=10' Source: VHB LD_712

Notes:

LIGHT POLE FOUNDATION DESIGN IS SUBJECT TO CHANGE BASED ON FINAL POLE AND FIXTURE SELECTION AND GEOTECHNICAL SITE INVESTIGATION.

Light Pole Foundation Detail (Up to 15' Pole) 10/03

N.T.S. Source: VHB LD_310a

No.	Revision	Date	Appvd
Designed by JRM	Drawn by PLH	Checked by KSS	
CAD checked by		Approved by CPN	
Scale As Noted		Date October 28, 2014	

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

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Drawing Title

Details

Drawing Number

C-8.4

Sheet 15 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

VHB
Vanasse Hangen Brustlin, Inc.
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Land Development
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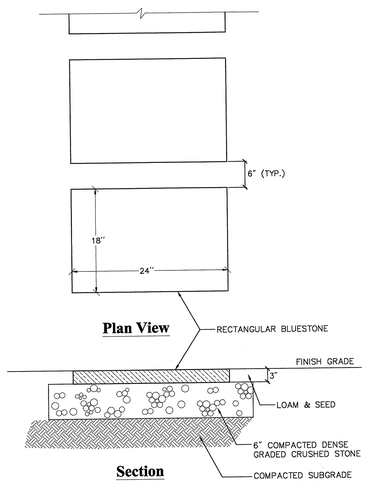
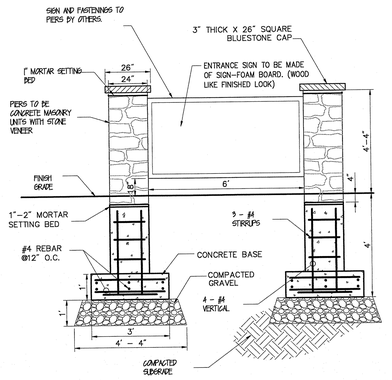
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286



Bluestone Path

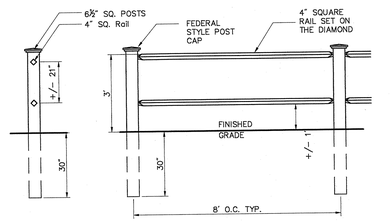
N.T.S. Source: VHB

STONE SIZE TABLE
MIN. DIMENSION 6"
MAX. DIMENSION 24"
60% MIN. – 18"
30% MIN. – 12"
10% MIN. – 6"



Entry Sign

1/2" = 1' 10/07



Fence Post **Rail Section**

NOTE:
1. INSTALL FENCE PER MANUFACTURERS SPECIFICATIONS.
2. FENCE SHALL BE MADE OF MONOLITHICALLY EXTRUDED VIRGIN VINYL. COLOR HALL BE WHITE.

Vinyl Post and Rail Fence

N.T.S. Source: VHB 10/07

Victorian (V72) Page 1 of 2

HADCO
a GENLYTE company

Victorian (V72): Commercial: Traditional Post Tops

Additional Information
- Specification Sheet
- Instruction Sheets
- Line Art
- Application Shots
- Product Shots
- IES Files

Specifications

Housing: 360 low-copper die-cast aluminum alloy . Easy access to lamp . A weatherproof ballast assembly insulates the ballast from water and heat for longer life. The optional photo control eye is located in the ballast enclosure for easy access via a hinged door. All non-ferrous fasteners prevent corrosion and ensure longer life. Slip Fitter Dimensions: 3" I.D. x 3" deep .

Finish: Thermoset polyester powdercoat is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications. For larger projects where a custom color is required, contact the factory for more information.

Optical Assembly: Type III Reflector Bowl. Type V Reflector Bowl. Heat-resistant, low expansion borosilicate glass refractor bowl. Type V Specular Louvers. Optically designed, highly polished-ALZAK® aluminum, internal louver assembly. Symmetric. U.V. stabilized clear acrylic textured globe.

Lamping: MH and HPS Medium base: E17. MH Mogul base: E22B. HPS Mogul base: E23.5.

Electrical Assembly: Twistlock Ballast Assembly with Quick Disconnects for easy maintenance. Ballasts are HPF core and coil . For V72 with T3, T5 and TL optics, or 250W H.L.D. Ballast assemblies are mounted to an aluminum plate or spinning, which is mounted inside the ballast pod. For V72 with TD optics up to 175W H.L.D. 4kv rated medium base porcelain socket, Nickel-plated screw shell with center contact. 4kv rated mogul base porcelain socket. Nickel-plated screw shell with center contact.

Ballast: All HID ballasts are core and coil and regulated with power factors better than 90% (HPF). Ballast provides +/- 5% lamp power regulation with +/- 10% input voltage regulation. Ballasts are factory pre-wired and tested. Metal halide ballasts are capable of starting at -20° F or -30° C and HPS at -40°F or -40°C.

Certification: UL Listed to U.S. safety standards for wet locations. cUL Listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2000 Standards.

Warranty: Three-year limited warranty.

Height: 34 7/8" (89cm)
Width: 16 1/2" (42cm)
Max. EPA: 1.17 sq. ft.
Max. Weight: 33 lbs
IESNA Classifications: Non Cutoff; Refractor Bowl
IESNA Classifications: Non Cutoff; Specular Louvers
IESNA Classifications: Non Cutoff; Symmetric

Ordering Guide

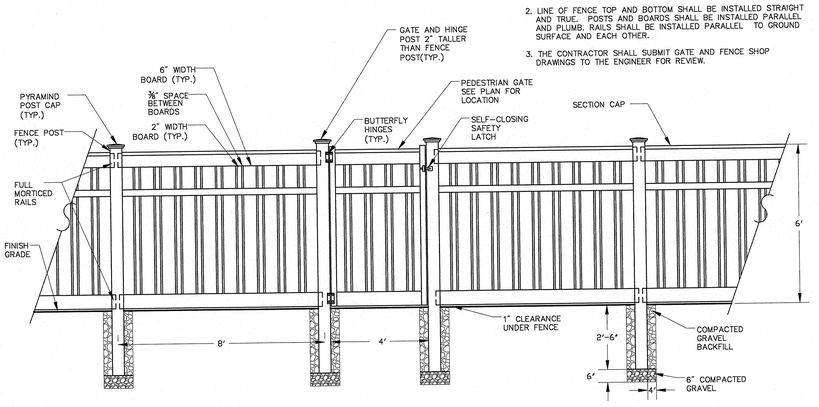
http://www.hadco.com/hadco/public/ProductDetail.aspx?pid=25 7/24/2006

Light Pole

N.T.S. Source:

Notes:

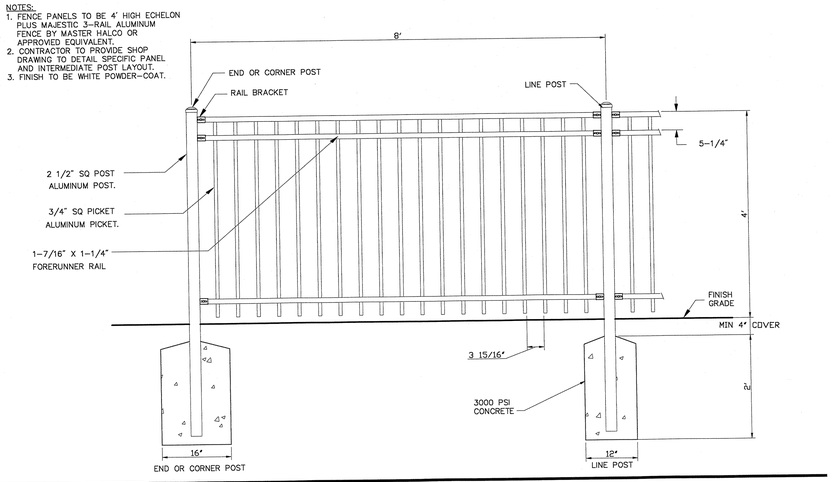
1. FENCE SHALL BE MADE OF MONOLITHICALLY EXTRUDED, VIRGIN VINYL, WHITE COLOR. INSTALL FENCE PER MANUFACTURERS SPECIFICATIONS.
2. LINE OF FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. POSTS AND BOARDS SHALL BE INSTALLED PARALLEL AND PLUMB. RAILS SHALL BE INSTALLED PARALLEL TO GROUND SURFACE AND EACH OTHER.
3. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.



Vinyl Screen Fence

N.T.S. Source: VHB 10/07

NOTES:
1. FENCE PANELS TO BE 4' HIGH ECHELON PLUS MAJESTIC 3–RAIL ALUMINUM FENCE BY MASTER HALCO OR APPROVED EQUIVALENT.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO DETAIL SPECIFIC PANEL AND INTERMEDIATE POST LAYOUT.
3. FINISH TO BE WHITE POWDER–COAT.



Ornamental Aluminum Fence

N.T.S. Source: VHB 11/07

vital™ cluster box units

Ready to SHIP

USPS APPROVED

vital™ 1570 Cluster Box Unit

The Florence vital™ 1570 series cluster box unit design has been adopted by the USPS as the design standard for all CBUs manufactured in the United States. As the original manufacturer of the F Series, Florence is pleased to offer a complete line of USPS approved cluster box units to fit your individual project needs. We are honored to have been selected as the sole supplier of CBUs to the USPS and proud to offer you the same security and reliability that the USPS depends on every day.

Standard Features:
- Robotically welded cabinet and hood seams
- Rugged, weather resistant powder coat finish resists scratching and vandalism
- Constructed of 300 series stainless steel and aircraft aluminum, including aluminum pedestal
- Master front loading door designed to prevent prying with interlocking overlap seams
- Solid aluminum mail slot frame, similar to Florence exclusive HSCBU design, protects adjacent customer compartment and collection compartment
- Silver adhesive metal placards with black numbers 1-16 and 1P-2P

Product Applications:
Residential, Multi-Family, Centralized, Industrial, High Security, Parcel Delivery, Government Agencies, Colleges/Universities, Military Bases, Business Offices

Important Product Notes:
- To convert to private delivery, click here for our Postal to Private Conversion Kit

Download Technical Docs:
- 0907_vitalCBU.pdf
- 1570-12.dwg
- 1570-12.pdf
- 1570-13.dwg
- 1570-13.pdf
- 1570-16.dwg
- 1570-16.pdf
- 1570-8.dwg
- 1570-8.pdf
- 1570_FCBU_Installation_Instructions.pdf
- 1570_FCBU_Maintenance_Manual.pdf
- CSH109_Anchor_Bolt_Detail.pdf
- Mail_Slot_Plug_Install.pdf
- Pad_Spec_1570_CBU.pdf

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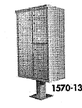
Powder Coat Colors Available:

Standard	
	Sandstone (Pebble) 7501C
	White (Pebble) White
	Dark Bronze (Pebble) Black 7C
	Forest Green (Pebble) 3308C
	Black (Pebble) Black 6C
	Postal Grey (Flat) 413C

*Postal Grey is available for replacement only.


1570-8SDAF


1570-12SDAF


1570-13SDAF


1570-16SDAF

Modified with 1 MX Back to Back

Item:	Description:	Quote:
1570-8AF	8 mailboxes, 1 outgoing, 2 parcel compartments	» Add to Quote
1570-12AF	12 Mailboxes, 1 outgoing, 1 parcel compartment	» Add to Quote
1570-13AF	13 Mailboxes, 1 outgoing, 1 parcel compartment	» Add to Quote
1570-16AF	16 Mailboxes, 1 outgoing, 2 parcel compartments	» Add to Quote

Mailboxes

N.T.S. Source:

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

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Drawing Title

Details

Drawing Number

C-8.5

Sheet 16 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
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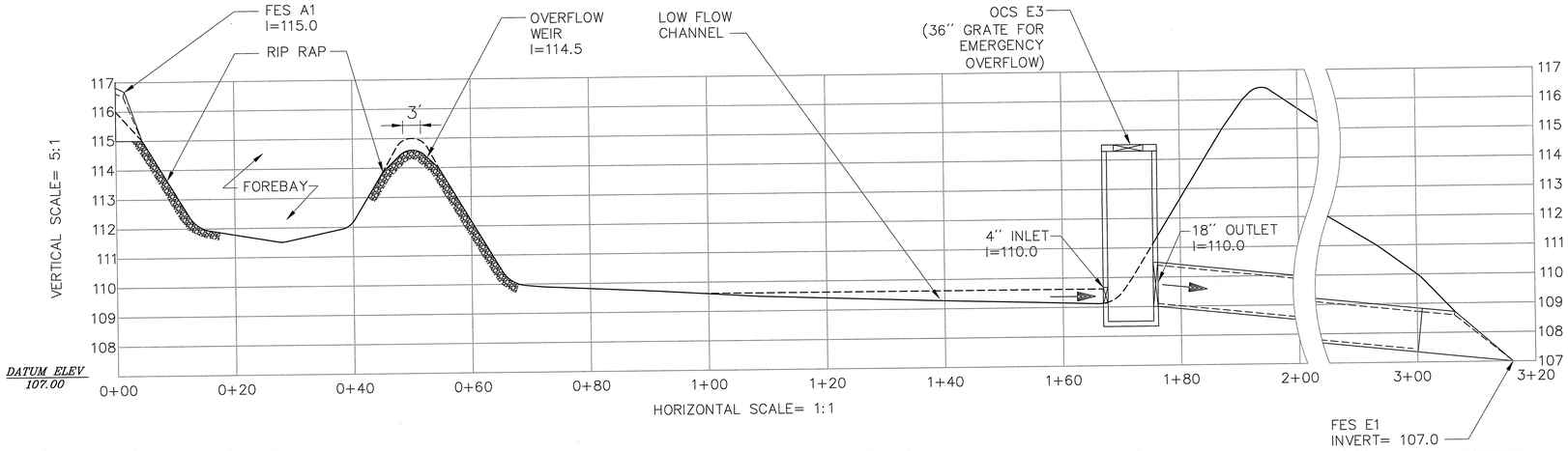
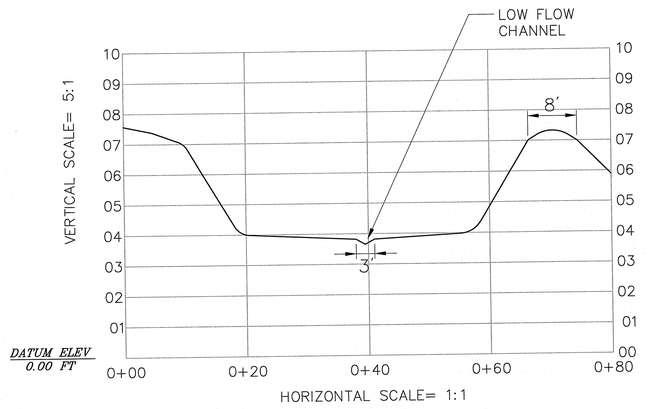


Detention Basin A- Profile

H 1:1, V 5:1

Source: VHB

6/07

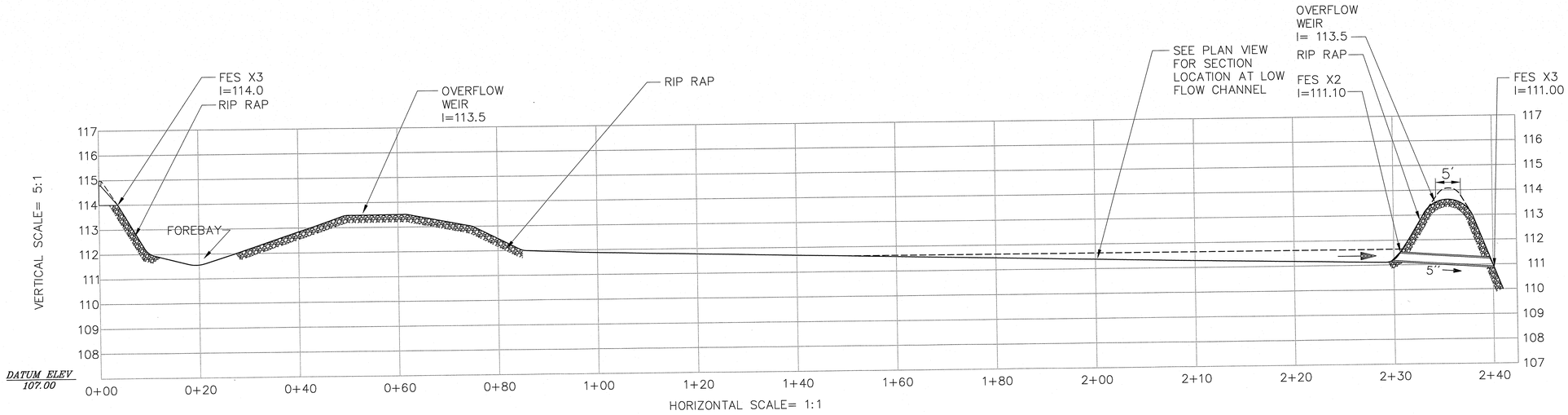


Detention Basins - Typical Section

H 1:1, V 5:1

Source: VHB

6/07



Detention Basin X- Profile

H 1:1, V 5:1

Source: VHB

HORIZONTAL
10 0 10 20
4 0 4 8
VERTICAL
SCALE IN FEET

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

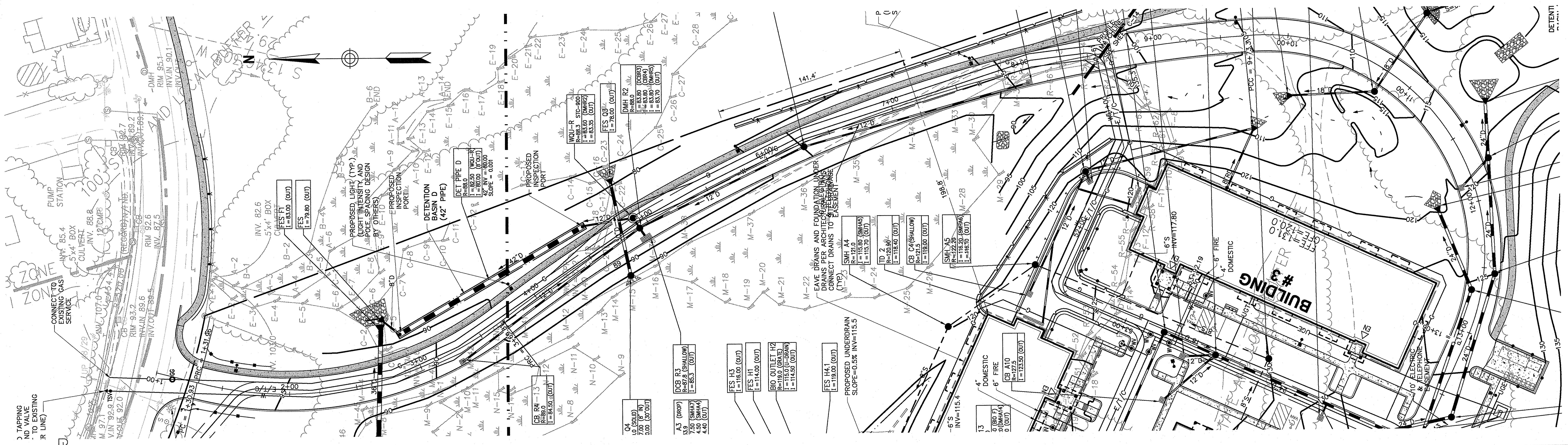
Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts
Issued for
40R Approval

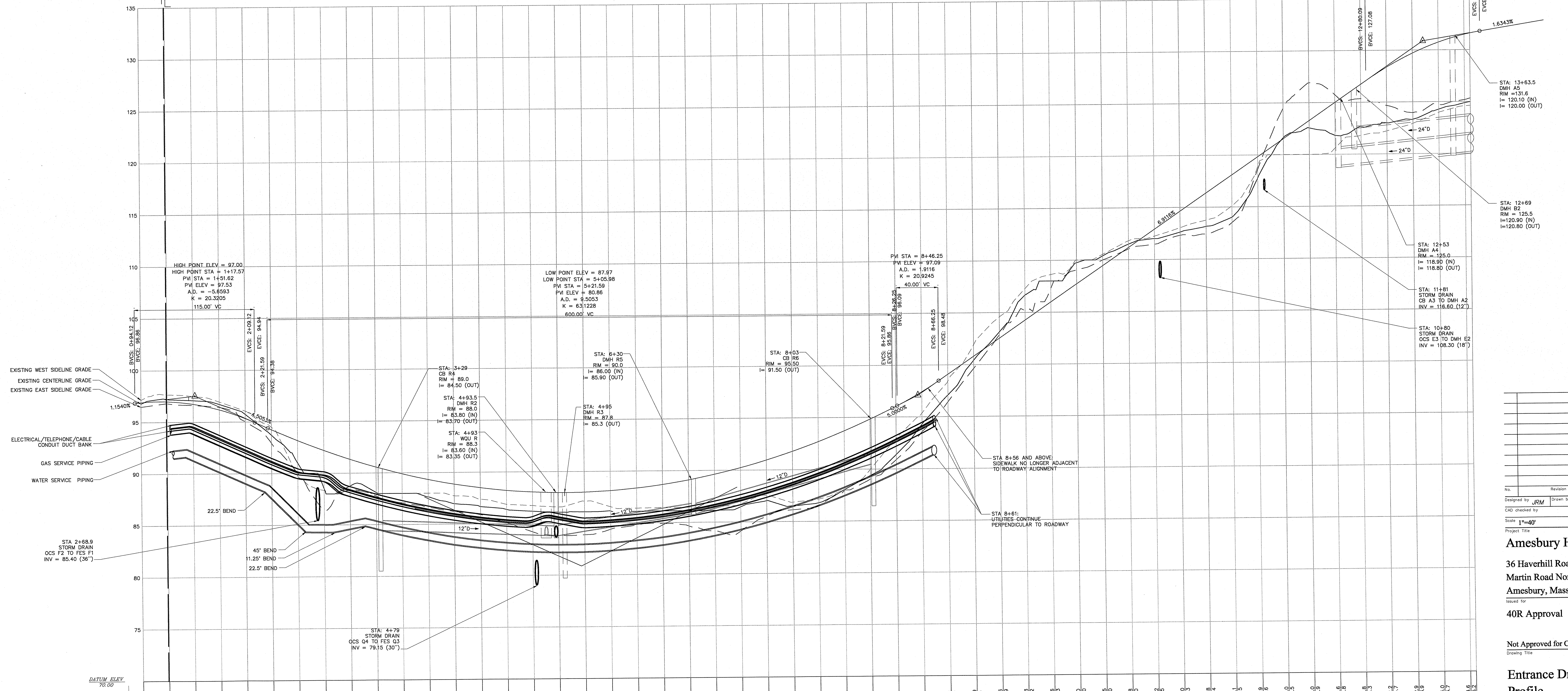
Not Approved for Construction
Drawing Title
Detention Basin
Sections

Drawing Number
C-9
Sheet 17 of 26
Project Number
09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-09-BASIN SECTIONS.DWG





DATUM ELEV
70.00

STATION	SIDELINE GRADE ELEVATIONS WEST	SIDELINE GRADE ELEVATIONS EAST	CENTERLINE GRADE ELEVATIONS EXISTING	CENTERLINE GRADE ELEVATIONS PRPOSED
1+00	97.2	96.5	96.8	96.80
	97.7	96.8	97.2	97.20
1+50	97.5	96.6	97.1	97.41
	97.0	96.4	96.7	
2+00	96.0	95.0	95.7	95.35
	94.5	92.9	93.7	94.22
2+50	89.7	90.0	91.0	93.16
	88.4	86.6	88.5	92.20
3+00	88.3	88.3	88.8	91.33
	88.0	87.8	88.1	90.56
3+50	88.0	87.1	88.0	89.90
	88.0	86.6	87.6	89.33
4+00	87.7	86.2	87.0	88.86
	87.4	85.9	86.7	88.49
4+50	86.9	85.1	86.4	88.22
	86.7	84.2	86.2	88.05
5+00	86.6	83.8	86.1	87.97
	87.1	83.9	86.1	88.00
5+50	86.6	84.4	86.2	88.12
	86.4	84.8	86.1	88.35
6+00	86.4	84.9	86.1	88.67
	86.4	84.6	86.1	89.09
6+50	86.5	84.1	86.1	89.61
	86.7	84.1	86.5	90.23
7+00	87.5	85.5	87.0	90.95
	86.9	86.1	86.5	91.77
7+50	87.1	86.5	86.8	92.69
	88.1	88.0	88.1	93.70
8+00	90.0	89.0	89.4	94.82
	92.9	90.9	91.4	
8+50	95.4	93.6	94.3	97.37
	98.4	96.4	97.1	
9+00	101.9	99.6	100.4	100.81
	104.6	102.9	103.1	
9+50	107.3	105.2	106.7	104.26
	108.6	107.3	108.0	
10+00	110.0	109.0	109.7	107.72
	110.5	110.0	110.4	
10+50	111.8	111.0	111.5	111.18
	112.2	111.5	112.0	
11+00	113.0	112.3	112.6	114.63
	113.8	112.4	113.1	
11+50	115.1	113.5	114.0	118.09
	118.9	118.6	117.8	
12+00	120.0	124.5	121.6	121.54
	120.0	126.9	122.6	
12+50	120.6	125.8	121.8	125.00
	121.8	125.3	122.6	
13+00	122.2	124.7	123.0	128.45
	122.9	123.9	123.3	130.16
13+50	124.0	124.7	124.3	131.12
	124.6	125.2	124.9	125.0

HORIZONTAL
40 0 40 80
4 0 4 8
VERTICAL
SCALE IN FEET

VHB
Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

No.	Revision	Date	Appvd.

Designed by *JRM* | Drawn by *PLH* | Checked by *KSS*
CAD checked by | Approved by *CPN*
Scale 1"=40' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

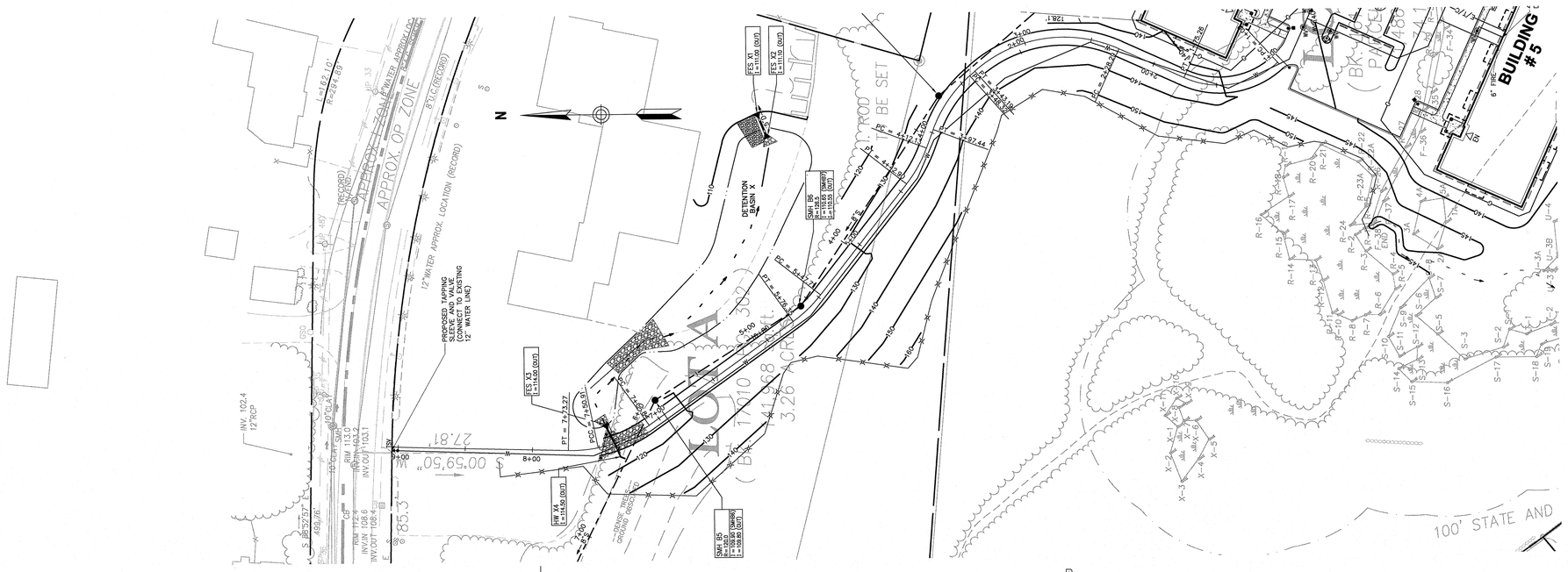
Entrance Drive Profile

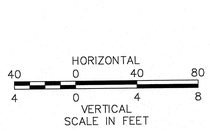
CONOR P. NAGLE
CIVIL
No. 46302
10/30/14

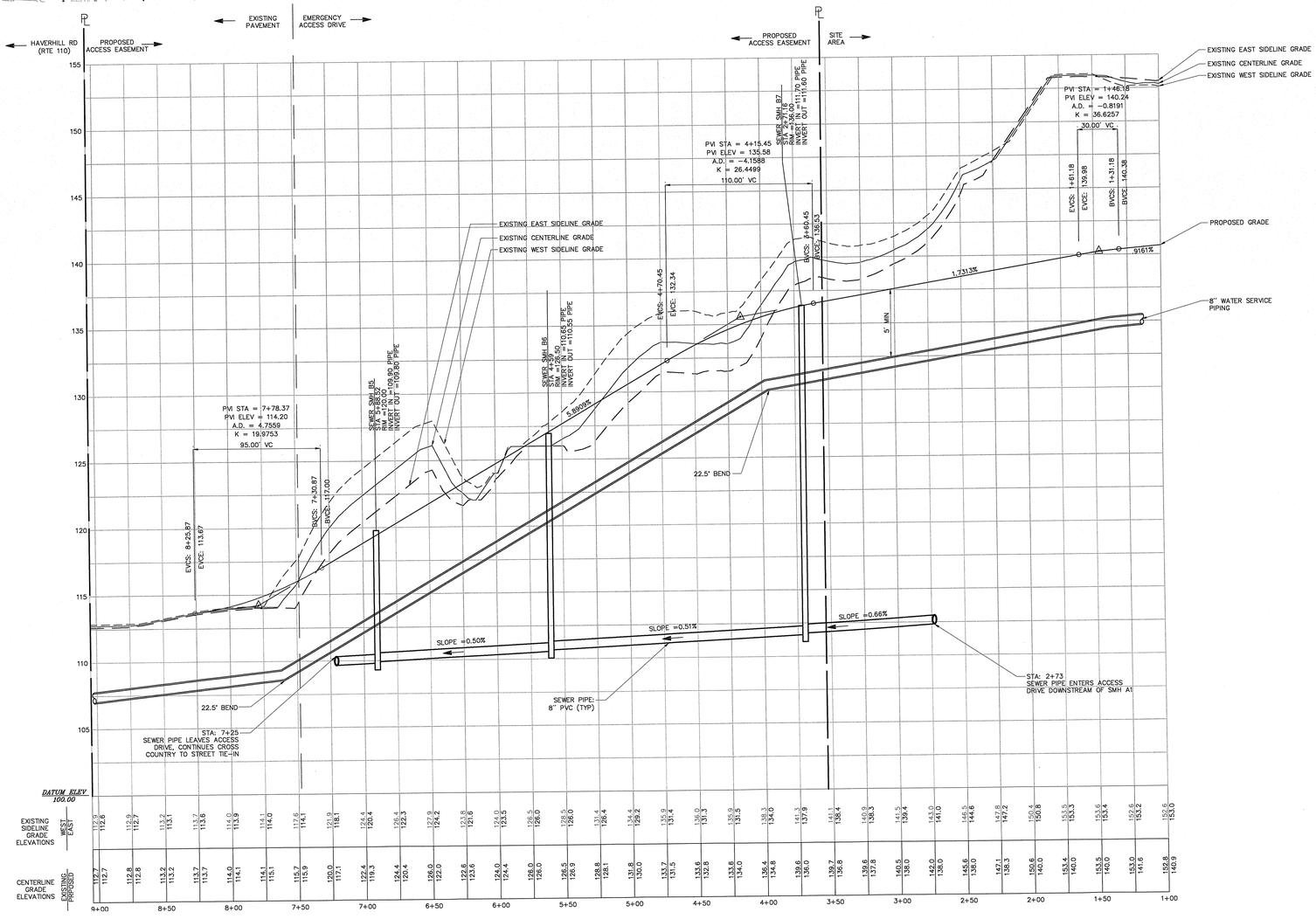
Drawing Number
C-10

Sheet 18 of 26

Project Number
09407.03







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Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts
Issued for
40R Approval

Not Approved for Construction
Drawing Title
Emergency Access Drive Profile

Drawing Number
C-11
Sheet 19 of 26
Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-11-EMERGENCY ACCESS DRIVE PROFILE.DWG

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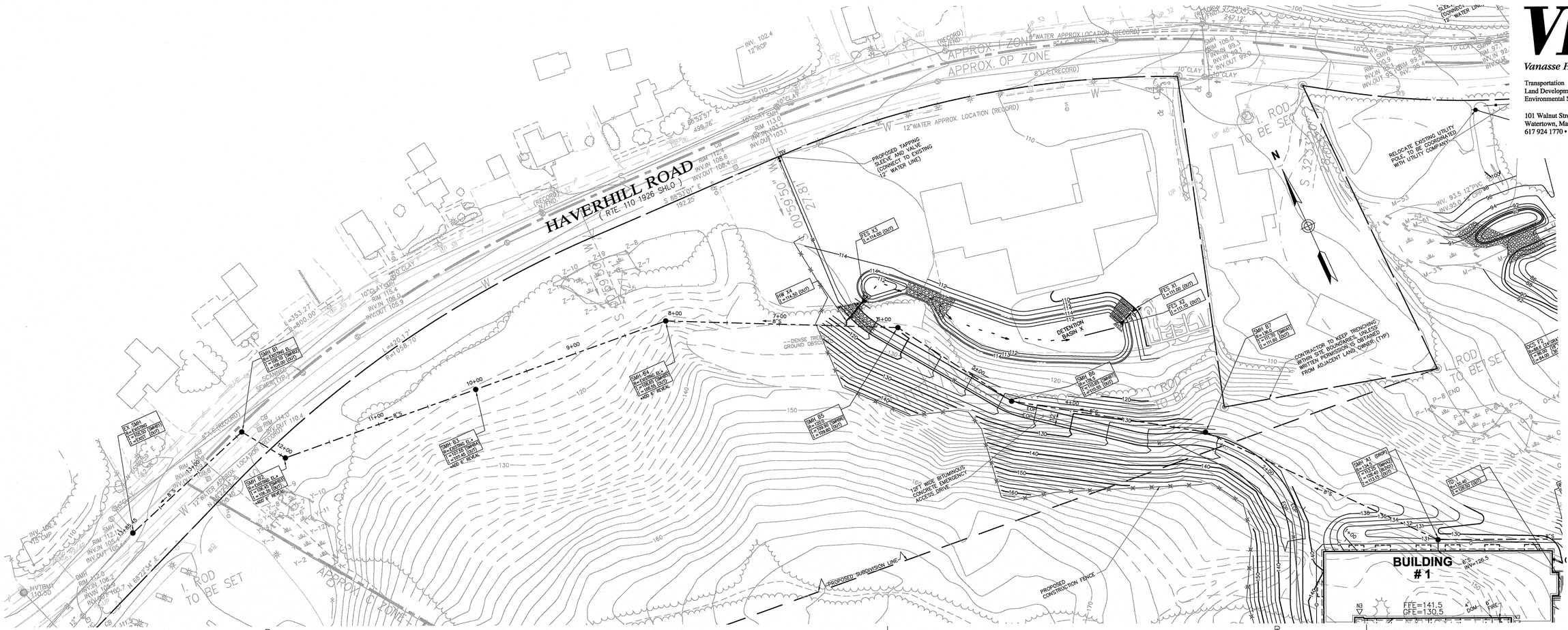

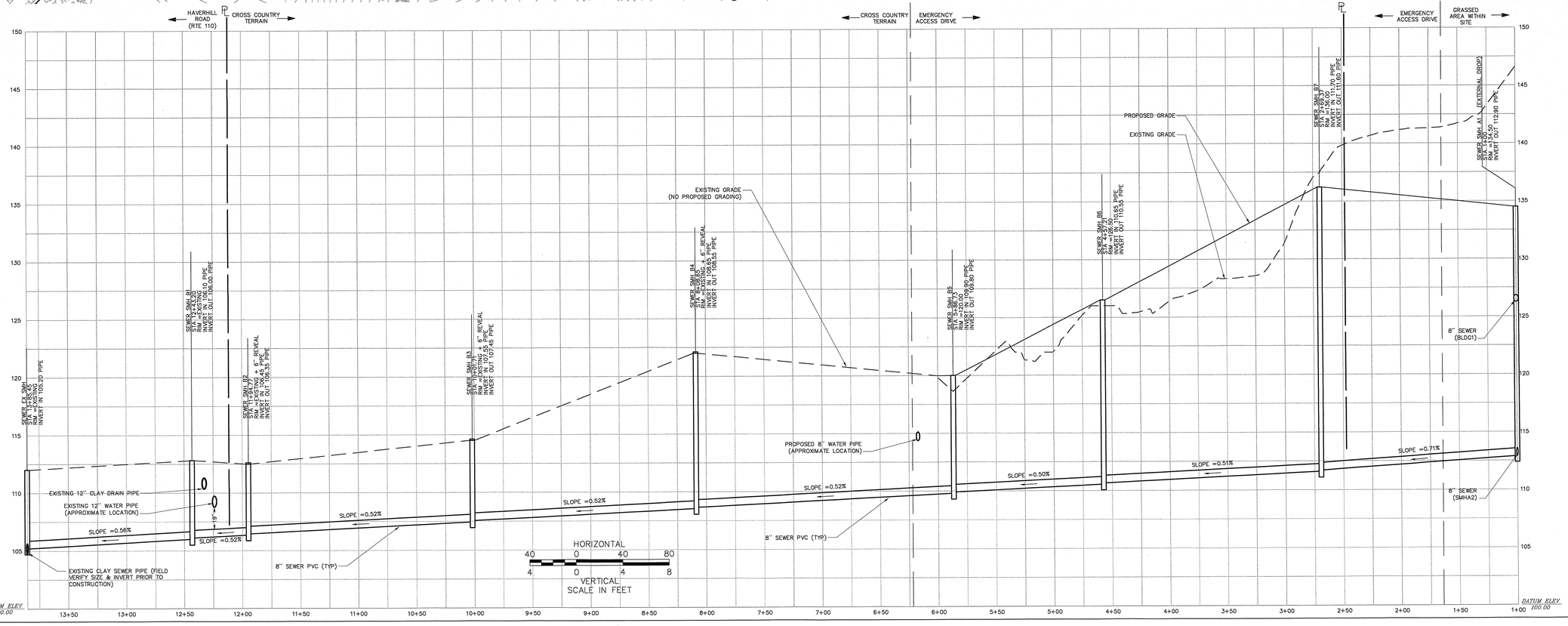

No.	Revision	Date	Appvd.

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Scale 1"=40' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

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Not Approved for Construction

Drawing Title

Utility Profiles

Drawing Number

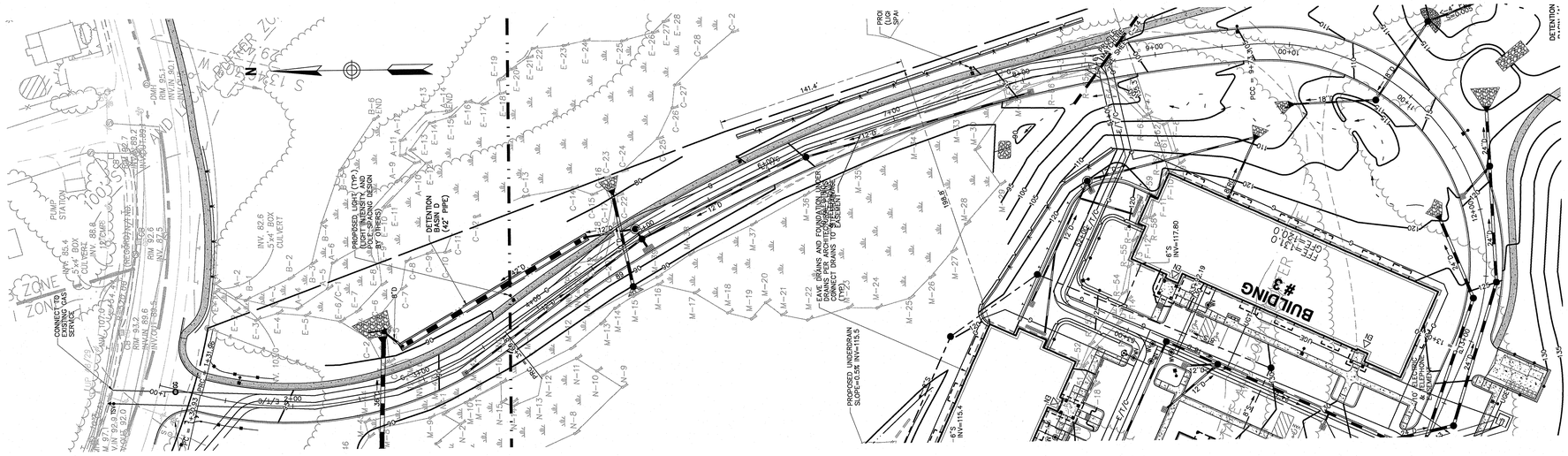
C-12

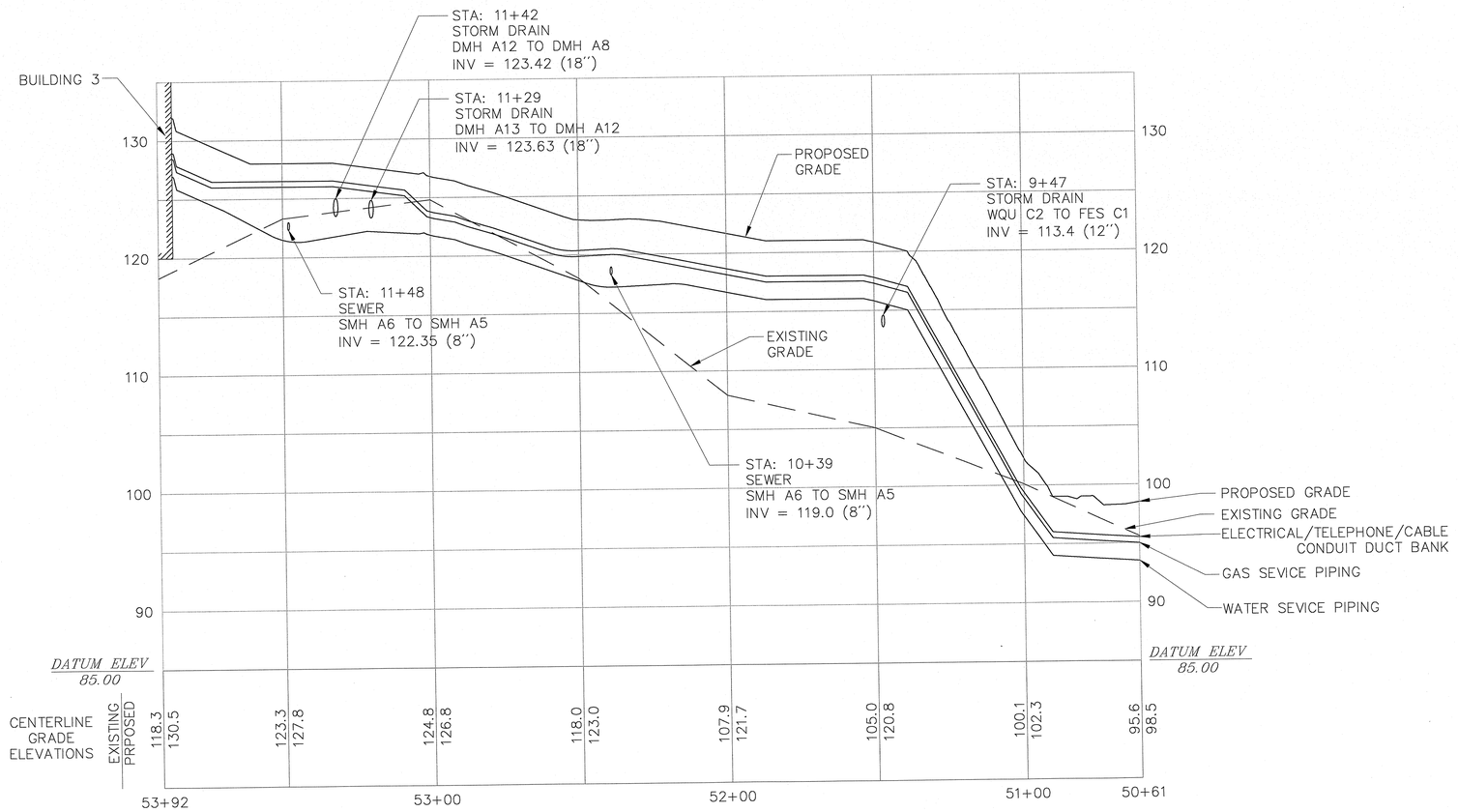
Sheet 20 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
No. 46844
REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-12-SEWER PROFILE.DWG





HORIZONTAL
20 0 20 40
5 0 5 10
VERTICAL
SCALE IN FEET

VHB
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Scale 1"=40' | Date October 28, 2014

Project Title
Amesbury Heights
36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for
40R Approval

Not Approved for Construction
Drawing Title
Utility Profiles

Drawing Number
C-13
Sheet 21 of 26
Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONOR P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

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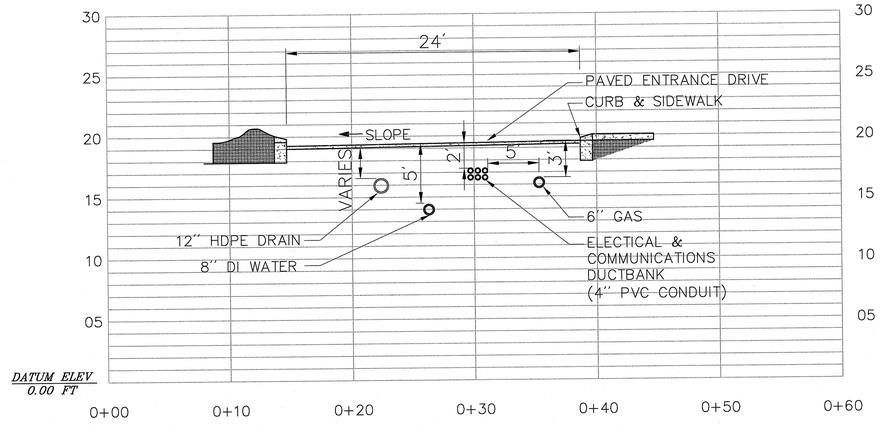
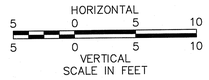
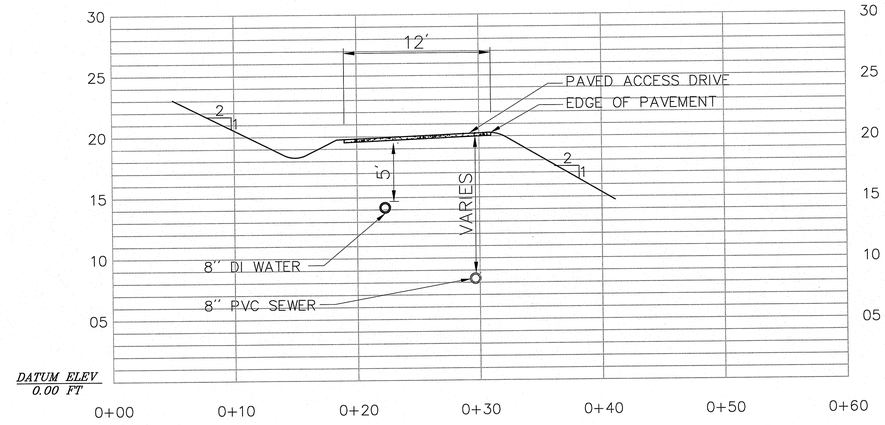
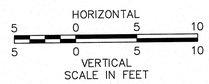




Entrance Drive - Typical Utility Section 9/07

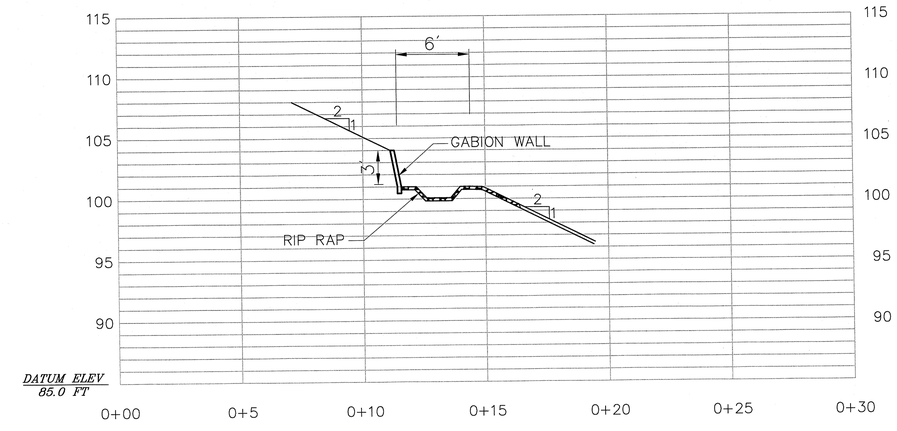
Source: VHB

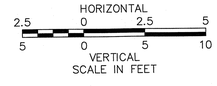




Emergency Access Drive - Typical Utility Section 9/07

Source: VHB





Section FF 9/07

Source: VHB

No.	Revision	Date	Appvd.

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CAD checked by | Approved by CPN
Scale As Noted | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

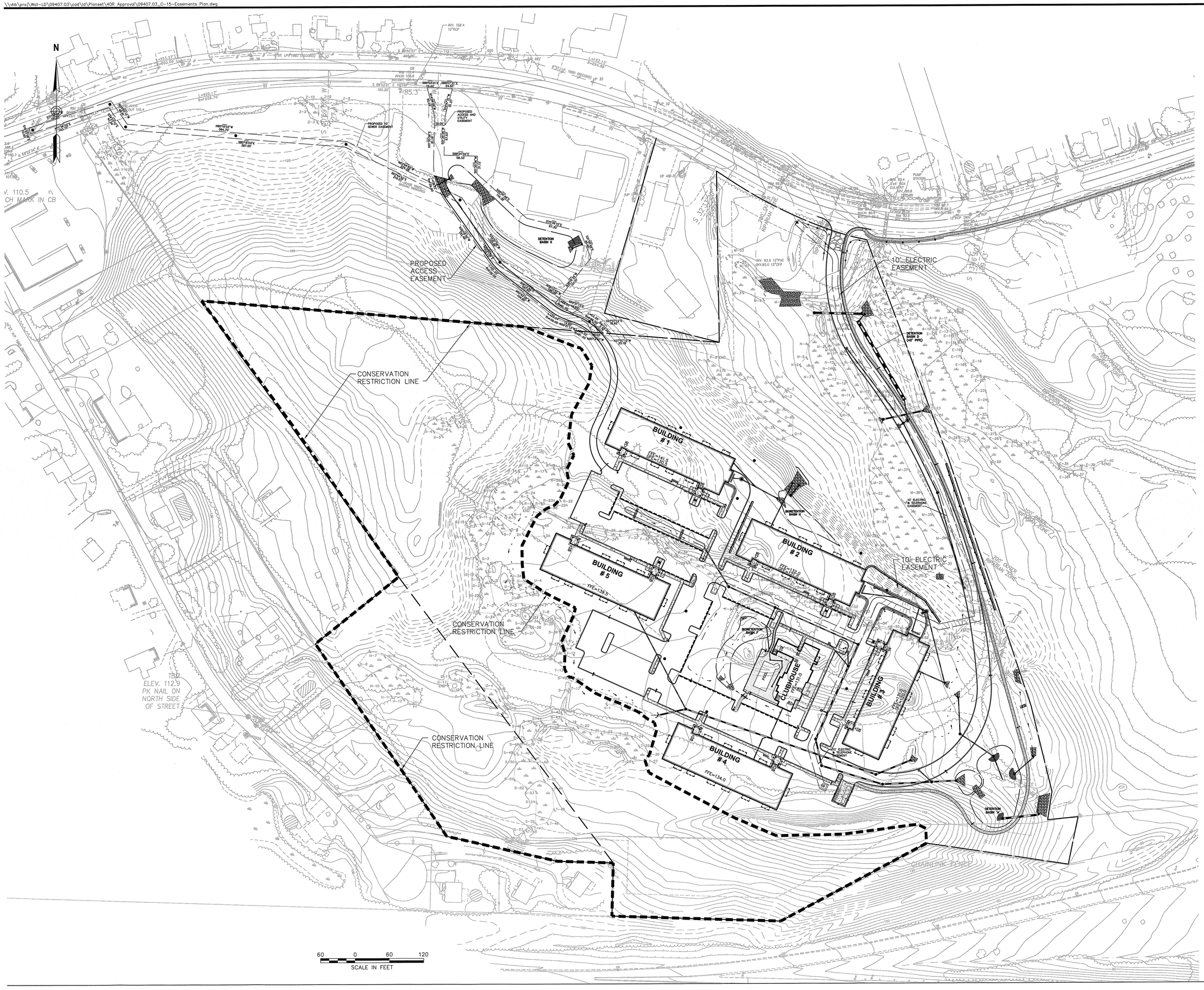
Typical Utility Sections

Drawing Number

C-14

Sheet 22 of 26

Project Number 09407.03



VHB
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Transportation
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Environmental Services

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Scale 1"=60' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Easements Plan

Drawing Number

C-15

Sheet 23 of 26

Project Number 09407.03

CONOR P. NOLAN — COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-15-EASEMENTS PLAN.DWG

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HAVERHILL (RTE. 110 1926 SHLO) ROAD

HOYT AVE.

PROPOSED SNOW STORAGE AREA

BUILDING #1 FFE=141.5

BUILDING #2 FFE=139.0

BUILDING #3 FFE=137.5

BUILDING #4 FFE=134.0

BUILDING #5 FFE=138.5

CLUBHOUSE FFE=131.0

DETENTION BASIN X

DETENTION BASIN D (42" PIPE)

DETENTION BASIN H

DETENTION BASIN I

DETENTION BASIN K

ZONE LINE (APPROXIMATE)

APPROX. I ZONE

APPROX. OP ZONE

APPROX. R-80 ZONE

100' BUFFER ZONE

200' OUTER RIPARIAN ZONE

100' STATE AND LOCAL RIPARIAN ZONE

APPROX. 100' BUFFER TO WETLAND

TBM ELEV. 112.9 PK NAIL ON NORTH SIDE OF STREET

CHAIN LINK FENCE

60 0 60 120
SCALE IN FEET

No.	Revision	Date	Appvd.

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Scale 1"=60' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Snow Storage Plan

Drawing Number

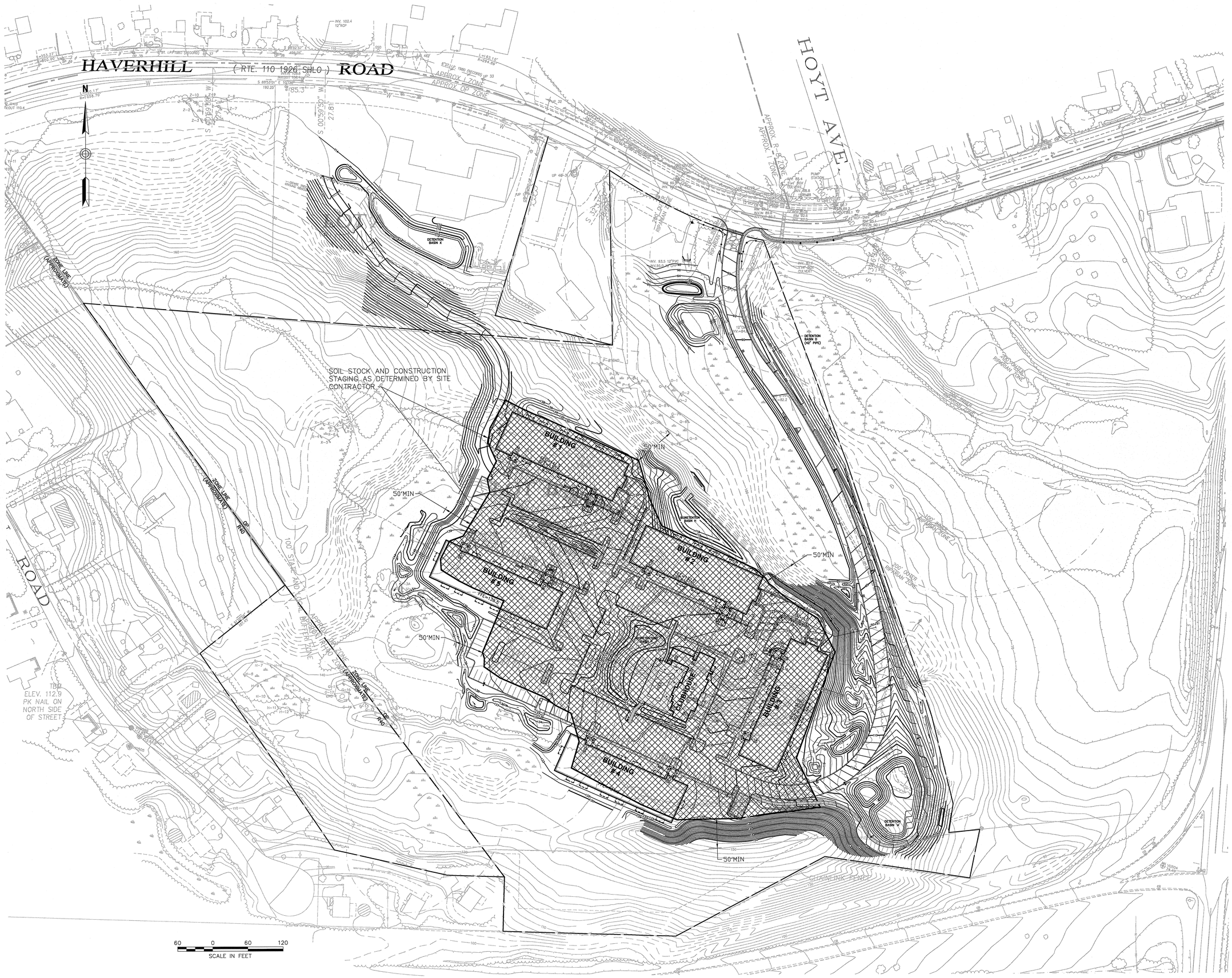
C-16

Sheet 24 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
CONCORD P. NAGLE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
10/30/14

09407.03_C-16-SNOW STORAGE PLAN.DWG



VHB
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Transportation
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Environmental Services

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No.	Revision	Date	Appvd.

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Scale 1"=60' | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Construction Staging Plan

Drawing Number

C-17

Sheet 25 of 26

Project Number 09407.03

COMMONWEALTH OF MASSACHUSETTS
PAUL L. O'CONNOR III
No. 46302
REGISTERED PROFESSIONAL ENGINEER
10/29/14

VHB
Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

Table III

Bordering Vegetated Wetland Replication Area 1
2,860 Square Feet

Planting Table

Strata	Wetland Plant Species	Size	Spacing
Tree	green ash (*Fraxinus pennsylvanica*) red maple (*Acer rubrum*) swamp white oak (*Quercus bicolor*)	4'-6' specimens	28 trees planted 10' on center throughout the replication area.
Shrub	silky dogwood (*Cornus amomum*) winterberry (*Ilex verticillata*) highbush blueberry (*Vaccinium corymbosum*) northern arrowwood (*Viburnum dentatum*) wild raisin (*Viburnum cassinoides*)	18"-24" stock	44 shrubs planted 8' on center throughout the replication area.
Herbaceous	Wetland Seed Mix: red top (*Agrostis alba*), switchgrass (*Panicum virgatum*), fox sedge (*Carex vulpinoidea*), soft rush (*Juncus effusus*), nodding bur-marigold (*Bidens cernua*), swamp milkweed (*Asclepias incarnata*), nodding smartweed (*Polygonium lapathifolium*)	Wetland Seed Mix	0.5 lbs./2,500 s.f.

Table IV

Isolated Vegetated Wetland Replication Area 4
4,800 Square Feet

Planting Table

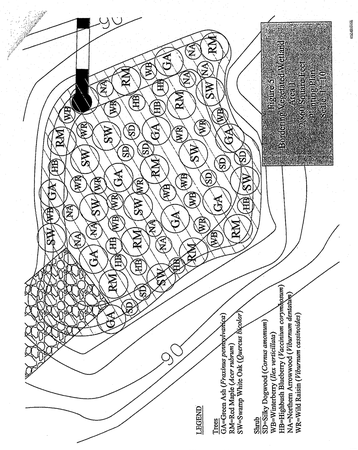
Strata	Wetland Plant Species	Size	Spacing
Tree	red maple (*Acer rubrum*) green ash (*Fraxinus pennsylvanica*) swamp white oak (*Quercus bicolor*)	4'-6' specimens	68 trees planted 10' on center throughout the replication area.
Shrub	silky dogwood (*Cornus amomum*) highbush blueberry (*Vaccinium corymbosum*) northern arrowwood (*Viburnum dentatum*) winterberry (*Ilex verticillata*)	18"-24" stock	106 shrubs planted 8' on center throughout the replication area.
Herbaceous	Wetland Seed Mix: red top (*Agrostis alba*), switchgrass (*Panicum virgatum*), fox sedge (*Carex vulpinoidea*), soft rush (*Juncus effusus*), nodding bur-marigold (*Bidens cernua*), swamp milkweed (*Asclepias incarnata*), nodding smartweed (*Polygonium lapathifolium*)	Wetland Seed Mix	0.5 lbs./2,500 s.f.

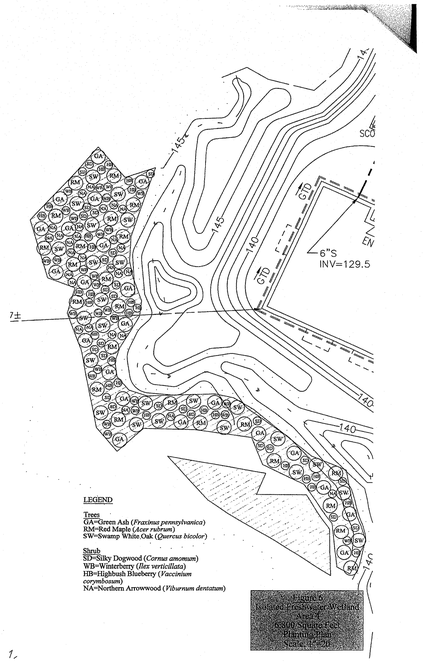
Table V

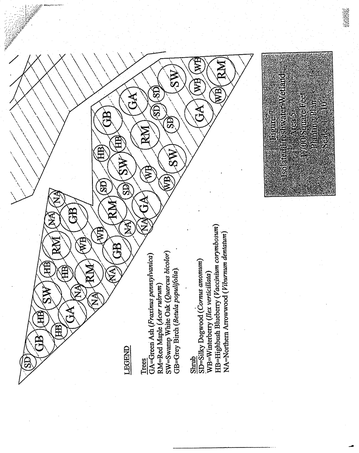
Isolated Vegetated Wetland Replication Area 5
1,700 Square Feet

Planting Table

Strata	Wetland Plant Species	Size	Spacing
Tree	red maple (*Acer rubrum*) green ash (*Fraxinus pennsylvanica*) swamp white oak (*Quercus bicolor*) gray birch (*Betula populifolia*)	4'-6' specimens	17 trees planted 10' on center throughout the replication area.
Shrub	silky dogwood (*Cornus amomum*) highbush blueberry (*Vaccinium corymbosum*) northern arrowwood (*Viburnum dentatum*) winterberry (*Ilex verticillata*)	18"-24" stock	26 shrubs planted 8' on center throughout the replication area.
Herbaceous	Wetland Seed Mix: red top (*Agrostis alba*), switchgrass (*Panicum virgatum*), fox sedge (*Carex vulpinoidea*), soft rush (*Juncus effusus*), nodding bur-marigold (*Bidens cernua*), swamp milkweed (*Asclepias incarnata*), nodding smartweed (*Polygonium lapathifolium*)	Wetland Seed Mix	0.5 lbs./2,500 s.f.







No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale N.T.S. | Date October 28, 2014

Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction

Drawing Title

Wetland Replication Planting Plan

Drawing Number

C-18

Sheet 26 of 26

Project Number
09407.03

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Environmental Services
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Watertown, Massachusetts 02471
617 924 1770 • FAX 617 924 2286

HAVERHILL (RTE. 110 1926 SHLO) ROAD

HAVERHILL (RTE. 110 1926 SHLO) ROAD

HOYT AVE E.

MARTIN ROAD

PROPOSED LOT A
337,206± sq.ft.
7.74± ACRES

PROPOSED LOT B
1,144,888± sq.ft.
26.378± ACRES

BUILDING #1
48 UNITS W/ PARKING BELOW
40 SPACES W/ 2 ACCESSIBLE BELOW

BUILDING #2
48 UNITS W/ PARKING BELOW
40 SPACES W/ 2 ACCESSIBLE BELOW

BUILDING #3
48 UNITS W/ PARKING BELOW
40 SPACES W/ 2 ACCESSIBLE BELOW

BUILDING #4
48 UNITS

CLUBHOUSE

EXCEPTION FROM BK.17070 PG.302

EXCEPTION FROM BK.10150 PG.305 (PLAN #1)

N/F DELAHUNTY CARWASH 62 HAVERHILL RD AMESBURY, MA BK. 16723 PG.199

N/F FREDERICK C. SMITH 1 MARTIN ROAD AMESBURY, MA BK. 11660 PG. 292

N/F WARREN W. CRANDALL 3 MARTIN ROAD AMESBURY, MA BK. 12891 PG.70

N/F WILLIAM SABINA BERTONE 7 MARTIN RD. AMESBURY, MA BK. 14543 PG.227

N/F JOSEPH EVANGELISTA 5 MARTIN ROAD AMESBURY, MA BK. 19519 PG. 211

N/F JOHN WERHER 11 MARTIN RD. AMESBURY, MA BK. 16382 PG. 92

KIETH & MAUREEN CHAMPAGNE 13 MARTIN RD. N AMESBURY, MA BK. 13774 PG. 457

DOUGLAS & JEANNE KELLER 15 MARTIN RD. N. AMESBURY, MA BK. 20310 PG. 420

CHRISTOPHER & RAELENE PASCUITO 17 MARTIN RD. N. AMESBURY, MA BK. 13122 PG. 154

KIETH PAGE 19 MARTIN RD. N AMESBURY, MA BK. 16063 PG. 521

N/F CYNTHIA WESSANT 19 MARTIN RD. S. AMESBURY, MA BK. 14188 PG. 365

N/F SCOTT ALAN CHRISTMAS HAVERHILL RD. RLTY TR. 40 HAVERHILL RD. AMESBURY, MA BK. 17673 PG. 383

N/F RAYMOND GORMAN JR. 28 HAVERHILL RD AMESBURY, MA BK. 13231 PG. 449

SEE PLAN ENTITLED "PLAN OF LAND" PREPARED BY F. NICHOLS PE, LS DATED 10-2-02

SEE PLAN BK. 298 PLAN 53

RTE. 495

NOTE: THE CURRENT DEED FOR THE EXCEPTED PARCEL CALLS FOR 210', THE ORIGINAL DEED AT BK.5041 PG.262 CONVEYED 207'

80 0 80 160
SCALE IN FEET

No.	Revision	Date	Appvd.

Designed by JRM | Drawn by PLH | Checked by KSS
CAD checked by | Approved by CPN
Scale 1"=80' | Date October 28, 2014
Project Title

Amesbury Heights

36 Haverhill Road and
Martin Road North #RR
Amesbury, Massachusetts

Issued for

40R Approval

Not Approved for Construction
Drawing Title

Conceptual Subdivision Plan

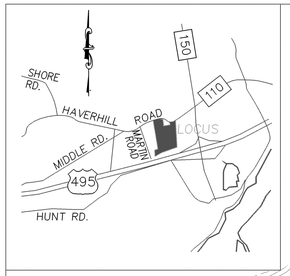
Drawing Number

S-1

Sheet 1 of 26

Project Number
09407.03

TOPOGRAPHY AND ON GROUND STRUCTURES LOCATED BY EASTERN TOPOGRAPHICS
WETLANDS DELINEATED BY WETLANDS PRESERVATION, INC. AND LOCATED BY THIS OFFICE
WETLANDS BUFFER ZONE BASED ON INFORMATION FROM WETLANDS PRESERVATION, INC.



LOCUS MAP

NOTES:

1.) THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT, VISIBLE USES OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.

2.) A.)DRAINAGE, WATER, ELECTRIC, GAS AND SEWER ON HAVERHILL ROAD WERE LOCATED BY INSTRUMENT SURVEY, SOME ADDITIONAL SEWER STRUCTURES COULD NOT BE LOCATED DUE TO BEING PAVED AND/OR BURIED.
B.)TOWN RECORD SEWER INFORMATION IS INSERTED BASED ON SCANNED AND SCALED IMAGES.
C.)FORCED 6" D.I. MAIN SHOWN IS BASED ON SEA CONSULTANTS PLAN, TOWN RECORDS SHOW THE FORCED MAIN HAND DRAWN.

HAVERHILL (RTE. 110 1926 SHLO) ROAD

HOYT AVE.

L=420.17'
R=1058.70'
N 68°22'34" E
247.00'
20.40'
BOLT N/FND.
ROD TO BE SET
365.19'
359.86'
TBM
ELEV. 110.5
PUNCH MARK IN CB
MHB FND. (HELD)
N/F
DELAHUNTY CARWASH
62 HAVERHILL RD
AMESBURY, MA
BK. 16723 PG.199
S 88°53'01" E
192.25'
S 00°59'56" W
27.61'
R=935.63'
L=402.47'
L=537.63'
ROD TO BE SET
322.52'(CALC.)
N 18°04'01" E
N/F
SCOTT SCHERBON TRS
HAVERHILL RD. RLTY TR.
40 HAVERHILL RD.
AMESBURY, MA
BK. 17673 PG. 383
N 75°06'39" W
207'(DEED)
207.00'
300'(DEED)
300.00'
S 01°12'40" W
R=798.60'
L=205.23'
L=13.82'
L=62.49'
R=428.56'
L=211.12'(MEAS.)
L=211.70'(PLAN)
MHB FND.
DN: 0.8'
S 13°46'30" W
28.43'
0.6'
N 72°32'27" E
675.80'
N/F
RAYMOND GORMAN JR.
28 HAVERHILL RD
AMESBURY, MA
BK. 13231 PG. 449
S 20°15'26" E
408.99'
N 52°11'46" W
954.08'
594.10'
N/F
WARREN W. CRANDALL
3 MARTIN ROAD
AMESBURY, MA
BK. 12891 PG.70
N/F
WILLIAM SABINA BERTONE
7 MARTIN RD.
AMESBURY, MA
BK. 14543 PG.227
N/F
JOSEPH EVANGELISTA
5 MARTIN ROAD
AMESBURY, MA
BK. 19519 PG. 211
OLD I.P. FND. (HELD)
N 51°11'19" E
186.70'(CALC.)
186.52'(PL.BK.208,PL.-53)
187.45'(PL.BK.275,PL.-177)
N/F
JOHN MERHER
11 MARTIN RD.
AMESBURY, MA
BK. 16382 PG. 92
TBM
ELEV. 112.9
PK NAIL ON
NORTH SIDE
OF STREET
I.P. FND. (HELD)
N 33°50'21" W
407.94'
KIETH & MAUREEN CHAMPAGNE
13 MARTIN RD. N
AMESBURY, MA
BK. 13774 PG. 457
DOUGLAS & JEANNE KELLER
15 MARTIN RD. N.
AMESBURY, MA
BK. 20310 PG. 420
CHRISTOPHER & RAELENE PASCUITO
17 MARTIN RD. N.
AMESBURY, MA
BK. 13122 PG. 154
KIETH PAGE
19 MARTIN RD. N
AMESBURY, MA
BK. 16063 PG. 521
N 77°04'56" W
197.25'
N 88°08'02" W
98.04'
N 01°51'58" E
93.40'
N/F
CYNTHIA WESSANT
19 MARTIN RD. S.
AMESBURY, MA
BK. 14188 PG. 365
MHB FND.
295.14'
N 88°08'02" W
RTE. 495
100' LOCAL AND STATE JURISDICTIONAL BUFFER ZONE
100' NON-JURISDICTIONAL BUFFER ZONE
APPROX. 1P ZONE
APPROX. 2P ZONE
APPROX. 3P ZONE
12"WATER APPROX. LOCATION
6"WATER APPROX. LOCATION
SEE PLAN ENTITLED "PLAN OF LAND" BY PAUL F. NICHOLS PE, LS DATED 10-2-02
458.75'
S 19°08'28" E
S 13°16'50" E
154.05'
S 09°01'42" W
50.00'
I. ROD FND.
N 84°31'42" E
57.00'
53.19'
S 12°03'09" W
85.07'(CALC.)
87.14'(PLAN)
S 77°06'17" W
173.76'
CHAINLINK FENCE
I. ROD FND. (HELD)
MHB FND.
N 81°21'28" W
250.61'
289.75'
S 62°03'08" W

LEGEND

⊡ C.B.	CONCRETE BOUND
⊡ S.B.	STONE BOUND
◉ D.H.	DRILL HOLE
PK	MASONRY NAIL
○ I.P.	IRON PIPE
◉ I ROD	IRON ROD
FND.	FOUND
N/FND.	NOT FOUND
0/00	ASSESSORS MAP AND PARCEL

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 80'

UNDERGROUND UTILITY NOTE

THE ACTUAL HORIZONTAL AND VERTICAL LOCATION OF UNDERGROUND UTILITY LINES BETWEEN STRUCTURES CANNOT BE CERTIFIED TO.
THE LOCATION OF UNDERGROUND UTILITIES SHOWN ARE BASED ON SURFACE FEATURES AND OBSERVATION OF EXISTING LINES INSIDE OF MANHOLES.
AVAILABLE RECORD INFORMATION FOR UTILITIES HAS BEEN USED TO VERIFY THE FIELD LOCATIONS AND CONNECTIONS SHOWN.
THE ACTUAL LOCATION AND CONNECTIONS MAY VARY FROM THAT SHOWN HEREON.

THE CERTIFICATIONS SHOWN HEREON ARE NOT INTENDED AS CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN/CITY ASSESSORS RECORDS.

I CERTIFY:
THAT THIS ACTUAL SURVEY WAS MADE ON THE GROUND BETWEEN JULY 2004 AND JAN. 2006 AND THAT THE WETLAND FLAGS AND LOCUS PROPERTY FEATURES ARE LOCATED AS SHOWN TO THE BEST OF MY ABILITY AND BELIEF.

PROGRESS PRINT

REGISTERED PROFESSIONAL LAND SURVEYOR DATE

PLAN OF LAND
IN
AMESBURY, MA

SHOWING
EXISTING CONDITIONS AND PROPOSED LOT LINES
FOR PERMIT PURPOSES
(ASSESSORS MAP 86, LOT 25)

PREPARED FOR
BOSTON NORTH PROPERTIES

MILLENNIUM ENGINEERING, INC.
ENGINEERS AND LAND SURVEYORS
62 ELM ST. SALISBURY, MA 01952

SCALE: 1"=80'	CALC. BY: P.J.M.	PROJECT: M051794
DATE: MAR. 24, 2006	CHK BY: S.J.R.	

THE COMMONWEALTH OF MASSACHUSETTS

SAFETY IMPROVEMENT PROJECT

HAVERHILL ROAD (ROUTE 110)

IN THE TOWN OF

AMESBURY

ESSEX COUNTY

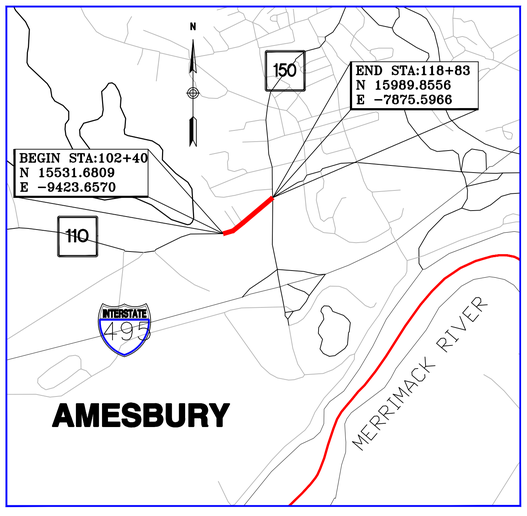
ACCESS PERMIT PROJECT

HIGHWAY DEPT. AUTHORIZATION
HIGHWAY TECH. REVIEW
CONSTRUCTION REVIEW

PROJECT ENGINEER
STRUCTURAL REVIEW
TRAFFIC SIGNAL REVIEW

\\vhb\proj\Wat-TS\09407.04\cad\te\planset\09407cov.dwg

INDEX



0.2 0 1 MILE

800 0 1600 3200 4800

SCALE

100% SUBMITTAL

LENGTH OF PROJECT: 1640 FEET

REFERENCE MANUALS

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE INTERIM SUPPLEMENTAL SPECIFICATIONS DATED MAY 2, 2014, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

DESIGN DESIGNATION

DESIGN SPEED	=	40 mph
ADT (2006)	=	10,970 vpd
ADT (2016)	=	15,547 vpd
K	=	8.4%
D	=	56.3% (WB)
T (PEAK HOUR)	=	2.0%
DHV	=	1306 vph
DDHV	=	735 vph (WB)

SUBJECT TO APPROVAL BY MassDOT

ENGINEER DATE

VHB Vanasse Hangen Brustlin, Inc.
Transportation • Land Development • Environmental Services
101 Walnut St., P.O. Box 9151
Watertown, MA 02472
617 924 1770 FAX 617 924 2286

DESIGNED BY J. MONTY	APPROVED BY DGS	SHEET 1	OF 31
DRAWN BY J. MONTY	DFTG CHECKED BY DGS	VHB CAD FILE NAME 09407cov.dwg	
CHECKED BY WPA	DATE 28 OCT 14	JOB NO. 09407.01	

GENERAL SYMBOLS

EXISTING	PROPOSED	
CB (OR GI, LB)	■ CB	CATCH BASIN (OR GUTTER INLET, OR LEACHING BASIN)
CBCI (OR GICI)	■ CBCI (OR GICI)	CATCH BASIN (OR GUTTER INLET) WITH CURB INLET (GUTTERMOUTH)
		EDGESTONE–TYPE NOTED
		EDGE OF ROAD
Ⓔ	●EHH	ELECTRIC HANDHOLE (NUMBER AS NOTED)
Ⓔ	●EMH	ELECTRIC MANHOLE "
Ⓣ	●TMH	TELEPHONE MANHOLE "
Ⓦ	●WMH	WATER MANHOLE "
Ⓢ	●SMH	SEWER MANHOLE "
Ⓓ	●DMH	DRAINAGE MANHOLE "
○ GG	● GG	GAS GATE
⋈ WG	●WG	WATER GATE
○ CS	●CS	CURB STOP
Hyd	●HYD	HYDRANT
○ FA	● FA	FIRE ALARM BOX
	●	
LP	●LP	STREET LIGHT POLE
UP	●UP	UTILITY POLE
Guy	● GUY	GUY POLE
12" RCP SD	21'–12"RCP	DRAIN PIPE (UNDER 24")
	21'–24"RCP	DRAIN PIPE (DOUBLE LINE 24" AND OVER)
8" VCP SS	82'–8"VCP	SEWER MAIN " "
E		ELECTRIC DUCT " "
4" HP GAS	8"GAS	GAS MAIN " "
8" C.I. W	12"DI	WATER MAIN " "
COMM		TELEPHONE DUCT " "
□MB	■MB	MAIL BOX
		HIGHWAY GUARD (TYPE NOTED)
		FENCE (SIZE AND TYPE NOTED)
□MHB	■MHB	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
LABEL/DATE	LABEL/DATE	CITY, TOWN, OR COUNTY LAYOUT
		STATE HIGHWAY LAYOUT (S.H.L.O.)
		EASEMENT LINE
℄	℄	PROPERTY LINE
NAME		CITY, TOWN, OR COUNTY BOUNDARY
NAME		STATE BOUNDARY
N00°00'00"E		BASE OR SURVEY LINE
+57.59 10 P.C. N00°00'00"E		CONSTRUCTION BASELINE
		TREE (SIZE AND TYPE NOTED)
		APPROXIMATE FULL DEPTH AREA
	(#)	DRAINAGE STRUCTURE
	(#)	WHEEL CHAIR RAMP

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED (WITHOUT & WITH CONCRETE PAD)
		CONTROL CABINET POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
TS		SIGNAL POST & BASE
		MAST ARM, SHAFT, & BASE (ARM LENGTH AS NOTED)
	A	VEHICULAR SIGNAL HEAD (ALPHA–NUMERIC DESIGNATION NOTED)
	A	VEHICULAR SIGNAL HEAD OPTICALLY PROGRAMMED "
		LIMIT OF VISIBILITY OF OPTICALLY PROGRAMMED SIGNAL HEAD
	A	FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
□PB	■PB	PULL BOX 12" x 12"
		PEDESTRIAN PUSH BUTTON
		PRE–EMPTION DETECTOR
		PRE–EMPTION STROBE
		VIDEO DETECTION CAMERA
	Ø	CONTROLLER PHASE
		INDUCTIVE LOOP DETECTOR
m		MAGNETIC DETECTOR (LANE, MULTI–LANE, DIRECTIONAL
T T		AS NOTED MAGNETOMETER)
		CONDUIT (COND.)
		CONDUIT CROSSING ROADWAY WITH CONTROLLED DENSITY FILL
—x—x—	—x—x—	"x" DUCT (CONCRETE ENCASED)
		OVERHEAD CABLE
		DIRECT BURIED CABLE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW AND LEGEND
CW SL	CW SL	CROSSWALK, 2–12" WHITE LINES (WIDTH NOTED)
		STOP LINE, 12" WHITE LINE 4.0' BEHIND CW (TYP)
		YIELD LINE, 24" x 36" WHITE TRIANGLE, 36" O.C.
SWCHL	SWCHL	SOLID WHITE CHANNELIZING LINE–SIZE AS NOTED
SYCHL	SYCHL	SOLID YELLOW CHANNELIZING LINE–SIZE AS NOTED
BWLL	BWLL	BROKEN WHITE LANE LINE – 6"
SWLL	SWLL	SOLID WHITE LANE LINE – 6"
DYCL	DYCL	DOUBLE YELLOW CENTERLINE – 6"
SYEL	SYEL	SOLID YELLOW EDGE LINE – 6"
SWEL	SWEL	SOLID WHITE EDGE LINE – 6"
BYLL	BYLL	BROKEN YELLOW LANE LINE – 6"
		BICYCLE LANE
		BICYCLE DETECTION LEGEND
Sign		SIGN AND POST
		DELINEATOR

AMESBURY
HAVERHILL ROAD (ROUTE 110)
LEGEND & GENERAL NOTES
SHEET 2 OF 31

GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION FROM A SURVEY BY MILLENIUM ENGINEERING, SALISBURY, MASSACHUSETTS. SEPTEMBER 2007.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

CONTRACTOR PLEASE NOTE →

5. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
7. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE–USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
8. JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
9. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
10. ALL EXISTING GRANITE CURB & EDGING SHALL BE RE–USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
11. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
12. PROJECT IS ON AN ASSUMED COORDINATE SYSTEM
13. WORK HOURS SUBJECT TO MASS HIGHWAY ACCESS PERMIT. RESTRICTIONS WILL BE IN ACCORDANCE TO THE ACCESS PERMIT.

SUBJECT TO APPROVAL BY MassDOT

ABBREVIATIONS

GENERAL

ABAN	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
℄	BASELINE
BOS	BOTTOM OF SLOPE
(BO)	BY OTHERS
CEM	CEMENT
CLF	CHAINLINK FENCE
CONC	CONCRETE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
FND	FOUNDATION
GRAN	GRANITE
HMA	HOT MIX ASPHALT
LOAM	LOAM BORROW
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
PGL	PROFILE GRADE LINE
PROP	PROPOSED
PVM'T	PAVEMENT
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
ROW	RIGHT OF WAY
R&D	REMOVE AND DISCARD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SHLDR	SHOULDER
SHLO	STATE HIGHWAY LAYOUT
STA	STATION
TEMP	TEMPORARY
THLO	TOWN HIGHWAY LAYOUT
TOS	TOP OF SLOPE
TYP	TYPICAL

UTILITIES

ACCMP	ASHPALT COATED CORRIGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
TSV&B	TAPPING SLEEVE VALVE AND BOX
UP	UTILITY POLE

ALIGNMENT/GRADING

CC	CENTER OF CURVE
HP	HIGH POINT
LP	LOW POINT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PNT	POINT
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
25.45	SPOT ELEVATION

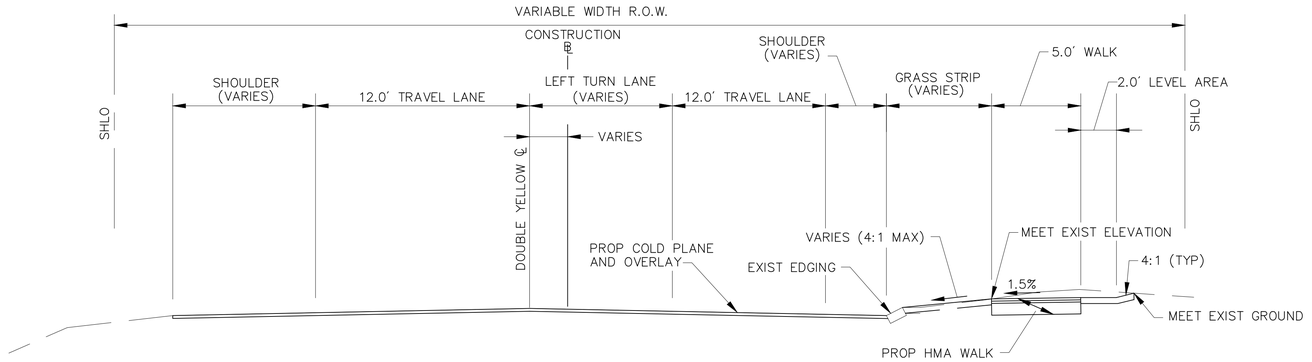
PROFILES

AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
ELEV	ELEVATION
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVE
PVT	POINT OF VERTICAL TANGENT
PVRC	POINT OF VERTICAL REVERSE CURVE
PVCC	POINT OF VERTICAL COMPOUND CURVE
SSD	STOPPING SIGHT DISTANCE
VC	VERTICAL CURVE

TRAFFIC SIGNAL SYSTEMS

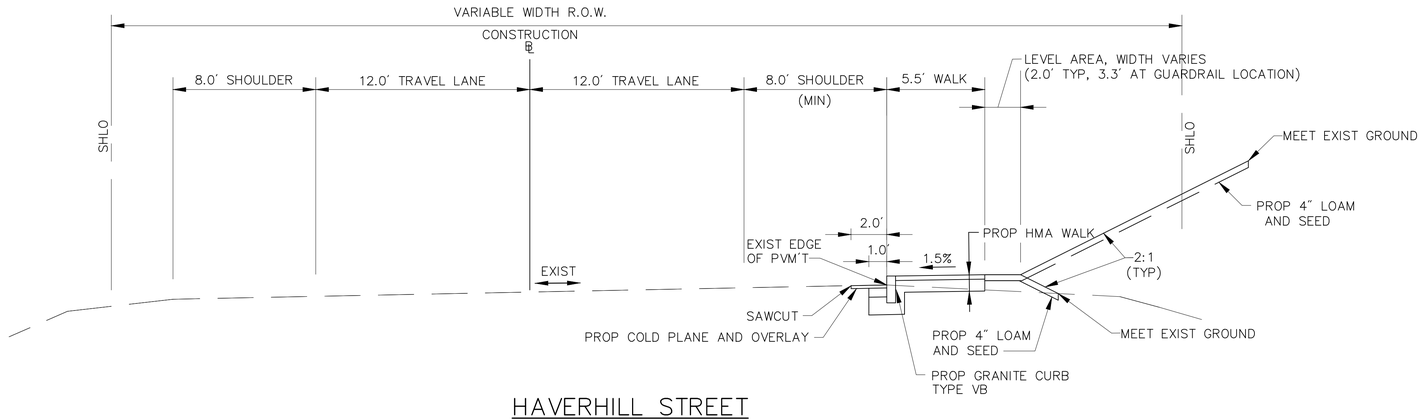
R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR YELLOW
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
—FR→	FLASHING RED ARROW
FY	FLASHING CIRCULAR YELLOW
—FY→	FLASHING YELLOW ARROW
G	STEADY VERTICAL GREEN ARROW
← X—	STEADY LEFT ARROW (RED, YELLOW OR GREEN PREFIX)
—X→	STEADY RIGHT ARROW (RED, YELLOW OR GREEN PREFIX)
W	STEADY WALK–WHITE
DW	STEADY DON'T WALK–PORTLAND ORANGE
FDW	FLASHING DON'T WALK–PORTLAND ORANGE

AMESBURY
HAVERHILL ROAD (ROUTE 110)
TYPICAL SECTIONS &
PAVEMENT NOTES
SHEET 3 OF 31



HAVERHILL STREET

STA 110+43 TO 113+80
NTS



HAVERHILL STREET

STA 103+10 TO 110+43
NTS

PAVEMENT NOTES

PROPOSED HOT MIX ASPHALT WALK

SURFACE: 3" HOT MIX ASPHALT
PLACE IN TWO LAYERS, 1.5" TOP COURSE
OVER 1.5" BINDER COURSE

SUBBASE: 8" GRAVEL BORROW, TYPE c

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 3.5" HOT MIX ASPHALT
(1.5" TOP COURSE OVER 2" BINDER COURSE)

SUBBASE: 8" GRAVEL BORROW, TYPE c

PROPOSED CEMENT CONCRETE WALK/ WHEELCHAIR RAMP

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610

SUBBASE: 8" GRAVEL BORROW, TYPE c

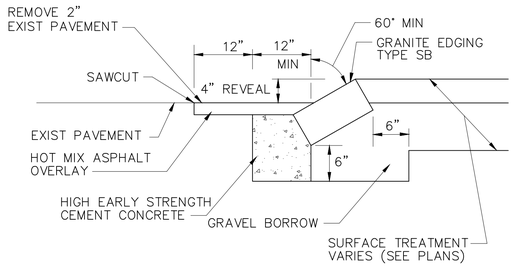
PROPOSED PAVEMENT COLD PLANE & OVERLAY

SURFACE: 2" HOT MIX ASPHALT
MODIFIED TOP COURSE MATERIAL.

BITUMEN FOR PRIME COAT (RS-1) AT
0.05 GAL/SY OVER EXISTING PAVEMENT.

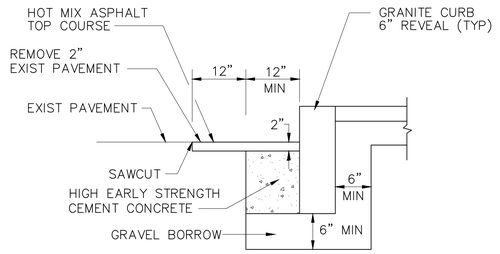
COLD PLANE 2"

SUBJECT TO APPROVAL BY MassDOT



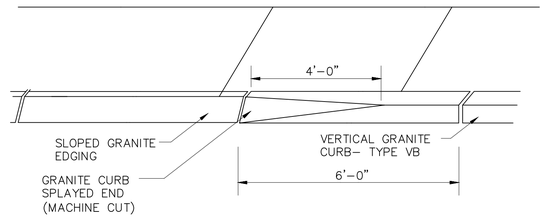
GRANITE EDGING IN EXISTING PAVEMENT

SCALE: NOT TO SCALE



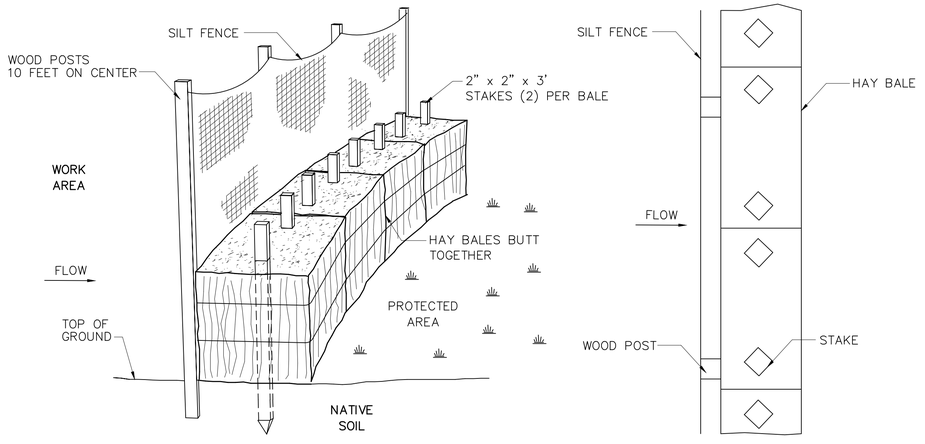
GRANITE CURB IN EXISTING PAVEMENT

SCALE: NOT TO SCALE



GRANITE TRANSITION CURB - SPLAYED END

SCALE: NOT TO SCALE



CROSS SECTION

PLAN VIEW

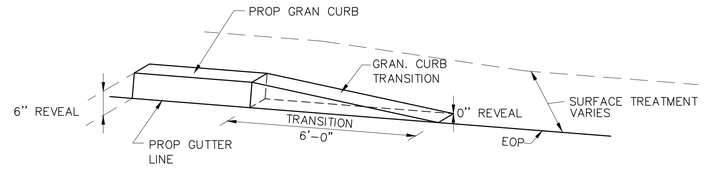
CONSTRUCTION NOTES:

1. FILTER CLOTH SHALL BE FASTENED SECURELY TO POSTS WITH WIRE TIES OR STAPLES AND POSTS SHALL BE SPACED EVERY 10 FEET.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED.
3. ENTRENCH SILT FENCE BUT NOT HAY BALES.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED, OR WHEN SEDIMENT ACCUMULATES TO HALF THE HEIGHT OF FENCING.

EROSION CONTROL BARRIER

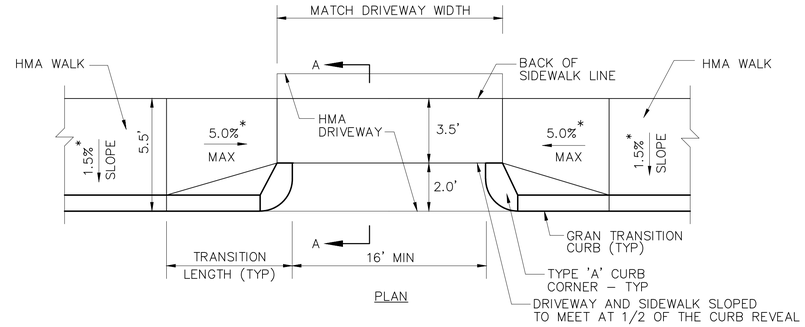
SCALE: NOT TO SCALE

SUBJECT TO APPROVAL BY MassDOT

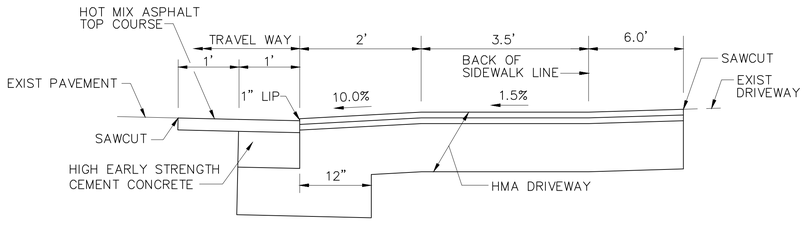


GRANITE CURB TRANSITION PIECE

SCALE: NOT TO SCALE



PLAN

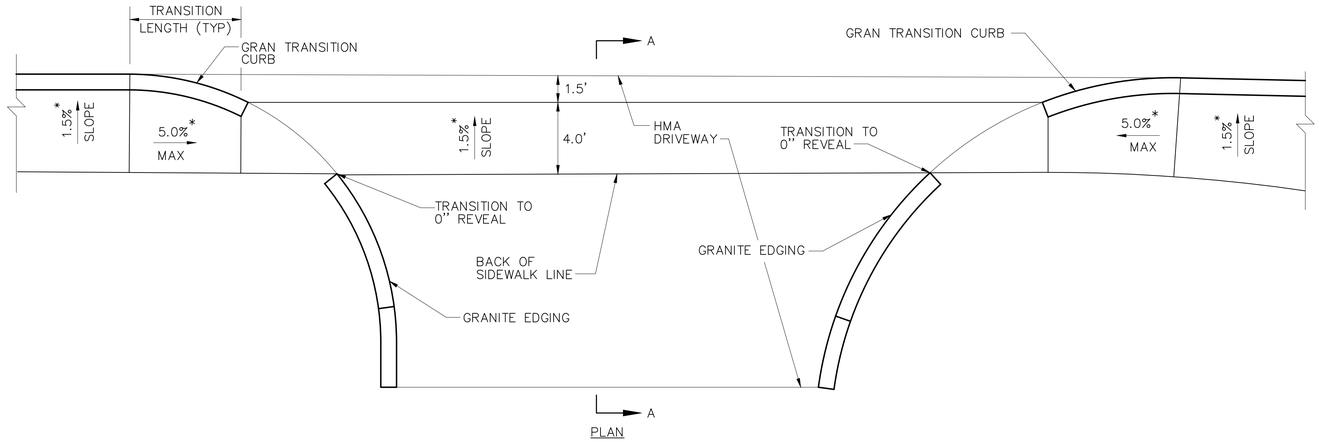


SECTION A–A

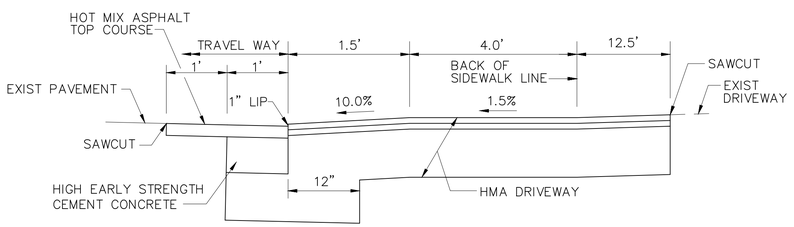
STATION	SIDEWALK WIDTH	LEFT SIDE		RIGHT SIDE	
		REVEAL	TRANSITION	TRANSITION	REVEAL
107+80 RT	5.50'	6"	5'–0"	5'–0"	6"

* TOLERANCE FOR CONSTRUCTION ±0.5%

RESIDENTIAL DRIVEWAY
STATION 107+80, RIGHT
SCALE: NOT TO SCALE
DATE:
DWG:



PLAN



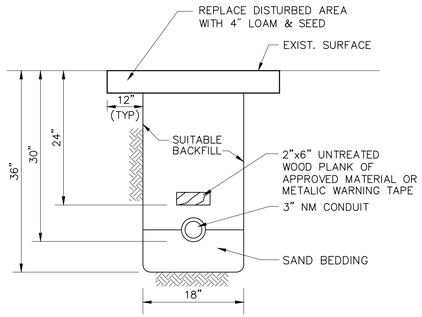
SECTION A–A

STATION	SIDEWALK WIDTH	LEFT SIDE		RIGHT SIDE	
		REVEAL	TRANSITION	TRANSITION	REVEAL
110+00 RT	5.50'	6"	6'–0"	6'–0"	6"

* TOLERANCE FOR CONSTRUCTION ±0.5%

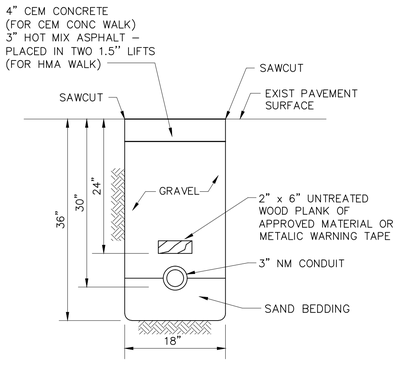
VETERINARY DRIVEWAY
STATION 110+00, RIGHT
SCALE: NOT TO SCALE
DATE:
DWG:

SUBJECT TO APPROVAL BY MassDOT



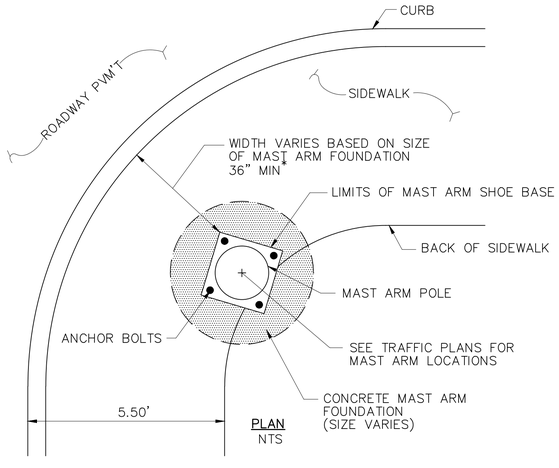
CONDUIT IN GRASS

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: TRENCH-02

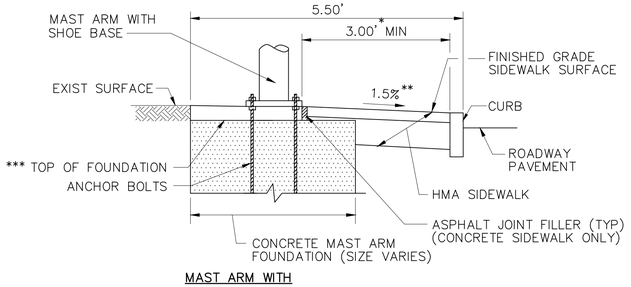


CONDUIT IN SIDEWALK

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: TRENCH-03



PLAN
NTS



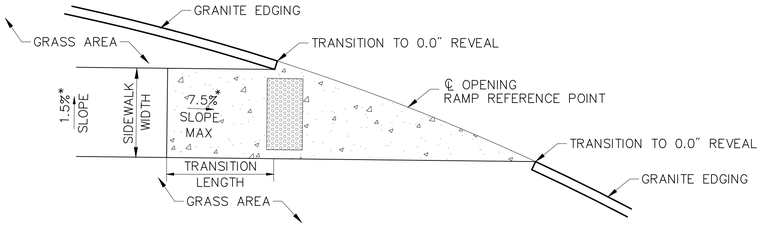
MAST ARM WITH SHOE BASE
NTS

ELEVATION
NTS

NOTES:
* MAST ARM BASE TO COMPLY WITH MASSACHUSETTS ACCESSIBILITY REQUIREMENTS FOR 36" MINIMUM CLEAR PATH.
** TOLERANCE FOR CONSTRUCTION 0.5%.
*** SHOE BASES.
**** INSTALL NON-SHRINK GROUT AFTER FOUNDATION, CURB, WALK AND MAST ARM HAVE BEEN INSTALLED.

MAST ARM FOUNDATION LOCATION

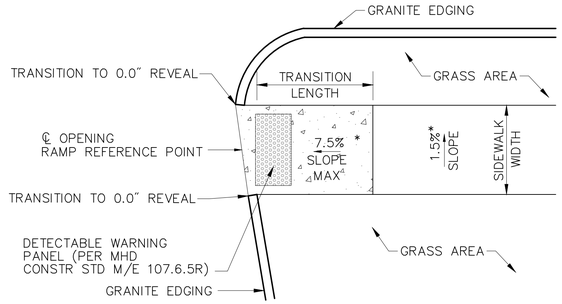
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: PM-04



WHEELCHAIR RAMP
SINGLE DIRECTION
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

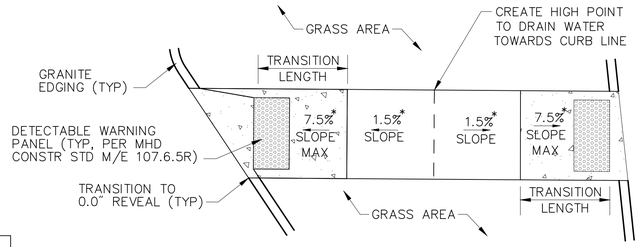
WHEELCHAIR RAMP DATA					
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	TRANSITION LENGTH	℄ OPENING ELEVATION
1	111+72.0 33.8' RT	5.0'±	–	6'–6"	MATCH EXIST



WHEELCHAIR RAMP
SINGLE DIRECTION
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

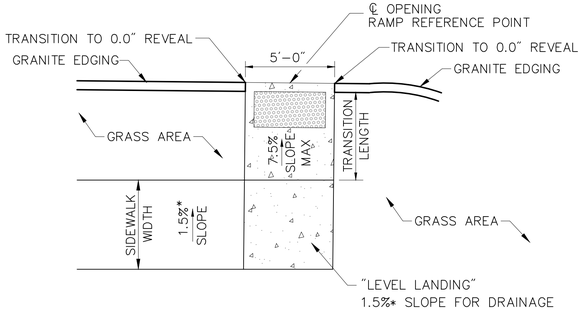
WHEELCHAIR RAMP DATA					
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	TRANSITION LENGTH	℄ OPENING ELEVATION
2	112+11.3 31.3' RT	5.0'±	–	6'–6"	MATCH EXIST



WHEELCHAIR RAMP
ISLAND CUT THROUGH
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

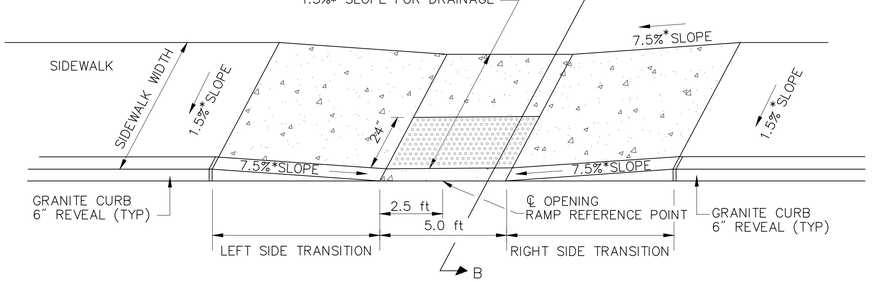
WHEELCHAIR RAMP DATA					
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	TRANSITION LENGTH	℄ OPENING ELEVATION
5	112+10 – 112+35, RT	5.0'±	–	5'–0"	MATCH EXIST



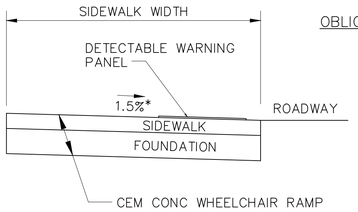
WHEELCHAIR RAMP
SINGLE DIRECTION
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP DATA					
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	TRANSITION LENGTH	℄ OPENING ELEVATION
3	113+69.4 21.0' RT	5.0'±	–	5'–0"	MATCH EXIST



OBLIQUE VIEW



SECTION B–B

*TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
PARALLEL
NTS

TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	TRANSITION LEFT	TRANSITION RIGHT	℄ OPENING ELEVATION
4	113+69.2 18.6' LT	5.5'±	1.53%	6'–6"	9'–0"	MATCH EXIST

DETECTABLE WARNING PANELS
NTS

NOTES:

1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED WHEELCHAIR RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MHD CONSTRUCTION STANDARD M/E 107.6.5R.
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THERE MUST BE A MINIMUM 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE.
3. NO SEPARATE PAYMENT SHALL BE MADE FOR DETECTABLE WARNING PANELS (INCLUDING THOSE PROPOSED AT THE MEDIAN ISLANDS), BUT ALL COSTS IN CONNECTION THERE WITH SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.

LEGEND

LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

SEE GENERAL PLANS FOR LOCATIONS OF WHEELCHAIR RAMPS

AMESBURY
HAVERHILL ROAD (ROUTE 110)
GENERAL PLAN
SHEET 8 OF 31

SUBJECT TO APPROVAL BY MassDOT

N

HAVERHILL ROAD (ROUTE 110)

MERRILL AVENUE

HOYT AVENUE

LIMIT OF WORK STA 102+40

STA. 102+80.00 HAVERHILL ROAD
STA. 300+00.00 PROP SITE DRIVE

1926 STATE HIGHWAY LAYOUT

1926 STATE HIGHWAY BASELINE

MEET EXIST EDGE OF PAVEMENT +40

BEGIN GRAN CURB PROP 6" TRANSITION CURB +40

PROP HMA DRIVE VGC

RET SIGN

MEET PROP CURB +86± (BY OTHERS)

PC = 1+30.93

100' BUFFER ZONE TO BORDERING VEGETATED WETLAND

WORK BY OTHERS (SEE SITE PLANS)

PROPOSED SITE DRIVE

24.00

1+00

2+00

R25

R248

STOP

PROP GRAN CURB

REM EXIST HIGHWAY GUARD

BEGIN SELECTIVE TREE TRIMMING

END SELECTIVE TREE TRIMMING

PROP HIGHWAY GUARD

PROP TERMINAL END +20

SAWCUT

LIMIT OF GRADING

PROP 5.5' HMA WALK

PROP LOAM AND SEED

PROP EROSION CONTROL

PROP 48" CHAIN LINK FENCE MOUNTED ON HIGHWAY GUARD (PER MHD CONSTR STD 404.8.0)

MEET PROP WALK (BY OTHERS)

MEET PROP CURB +91± (BY OTHERS)

PROP TERMINAL END +95

PROPOSED LIGHT (TYP.)
(LIGHT INTENSITY AND

20 0 20 40
SCALE IN FEET

FES F1
I = 83.00 (OUT)

FES
I = 79.80 (OUT)

N/F
RAYMOND GORMAN JR.
28 HAVERHILL RD
AMESBURY, MA
BK. 13231 PG. 449

NOTES:
1. FINAL LOCATION
DETAILED FINAL DE
APPROVAL, AND TC
OF TEMPORARY CO
EASEMENT.

2. LOCATIONS SUB
FINAL DESIGN, MHD
TOWN ACQUISITION
CONSTRUCTION EAS

CONT. ON SHEET 9

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AMESBURY
HAVERHILL ROAD (ROUTE 110)
GENERAL PLAN
SHEET 9 OF 31

SUBJECT TO APPROVAL BY MassDOT

N

MERRILL AVENUE

JAQUELINE AVENUE

HAVERHILL ROAD (ROUTE 110)

BEGIN COLD PLANE AND OVERLAY STA 110+24

CONT. ON SHEET 8

CONT. ON SHEET 10

1926 STATE HIGHWAY LAYOUT

1963 STATE HIGHWAY LAYOUT

CONSTRUCTION BASELINE

STATE HIGHWAY BASELINE

N72°45'39"E

L=460.19'

659.21'

S 71°36'50" W

L=254.81'

PC +34.22

+74

+70.48

+18.32

R=1500.00

107

108

109

110

111

112

REM STAIRS

PROP GRAN CURB

SAWCUT

PROP TYPE A CURB CORNER

PROP 5.5' HMA WALK

R&R 'NEXT SIGNAL' SIGN

PROP HMA DRIVE

R&R

PROP RIGHT OF ENTRY

LIMIT OF GRADING (TYP)

PROP 5' WIDE BIT. CONC. SIDEWALK

MEET EXIST EDGING

PROP COLD PLANE AND OVERLAY

MEET EXIST EDGING +43 PROP SPLAYED END

PROP 5.0' HMA WALK

PROP LOAM AND SEED (TYP)

CONSTRUCT WALK BETWEEN UTILITY POLE AND GUY

ADJ GUY WIRE, INSTALL SIDEWALK GUY (BY UTILITY CO.) IF REQUIRED

LIMIT OF GRADING

PROP GRAN EDGING

R&R GRAN EDGING

PROP 5.0' CEM CONC WALK

PROP LOAM AND SEED

R&R GRAN EDGIN

EDGE OF PAVEMENT

SLOPED GRANITE CURB

VERT.GRANITE CURB

CONC.WALK

OHW

BIT.CONC.DRIVE

GRANITE CURB

12"RCP

10"PVC

CB 28 RIM=105.24 INV.OUT.101.69

CB 27 RIM=105.57 INV.IN(DMH29)101.97 INV.OUT.100.92

DMH 30 RIM=101.91 INV.INV(DMH29)96.01 INV.OUT.95.91

DMH 29 RIM=105.18 INV.IN 97.10 INV.OUT 96.90

CB 24W RIM=99.33 INV.IN(CB23)95.82

CB 23 RIM=95.03 INV.94.53

CB 22 RIM=97.76 INV.IN(CB23)93.56 INV.OUT 93.46

TR.SIGN (RTE.)

TR.SIGNS

NOTES:
1. FINAL LOCATION SUBJECT TO DETAILED FINAL DESIGN, MHD APPROVAL, AND TOWN ACQUISITION OF TEMPORARY CONSTRUCTION EASEMENT.
2. LOCATIONS SUBJECT TO DETAILED FINAL DESIGN, MHD APPROVAL, AND TOWN ACQUISITION OF TEMPORARY CONSTRUCTION EASEMENT.

20 0 20 40
SCALE IN FEET

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AMESBURY
HAVERHILL ROAD (ROUTE 110)
GENERAL PLAN
SHEET 10 OF 31

N

HAVERHILL ROAD (ROUTE 110)

HILLSIDE AVENUE

(ROUTE 150)

1963 STATE HIGHWAY LAYOUT

1926 STATE HIGHWAY LAYOUT

1926 STATE HIGHWAY BASELINE

CONSTRUCTION BASELINE

STATE HIGHWAY BASELINE

PROP LOAM AND SEED

LIMIT OF GRADING (TYP)

PROP HMA WALK

PROP COLD PLANE AND OVERLAY

SAWCUT

PROP LOAM AND SEED

PROP CURB TRANSITION (TYP)

PROP 5.0' HMA WALK

PROP 5.0' CEM CONC WALK

PROP LOAM AND SEED

PROP GRAN EDGING

R&R GRAN EDGING

LIMIT OF GRADING

PROP MAST ARM FOUNDATION

PROP LOAM AND SEED

SLOPED GRANITE CURB

5.0'

BIT.CONC.WALK

BIT.CONC.SIDEWALK

VERT.GRANITE CURB

GRASS

STONE RET.WALL

BIT.CONC.DRIVE

BRICK

EMTR

OHW

TR.SIGN

TR.SIGN (RTE.)

TR.SIGN (DO NOT ENTER)

TR.SIGN (SPEED LIMIT)

TR.SIGNS

MILE MARKER 65.6

12"RCP

UP 21/90

UP 48/41

UP 48/17-1

UP 16/84

UP 19-84

UP 0/25

UP 48/15

UP 13

UP 14

LP

MB

CP

MULCH

STOP

EDGE OF PAVEMENT

SMH 58
RIM=89.42
INV.IN.(SMH57)76.22
INV.IN(8"PVC)76.22
INV.IN(6"PVC)80.42
INV.OUT.76.12

SMH 57
RIM=92.29
INV.IN.84.99
INV.OUT.84.89

SMH 56
RIM=95.65
INV.OUT.87.95

CBCI 7
RIM=99.11
INV.OUT.95.81

CBCI 8.3
RIM=99.59
INV.OUT.96.39

CBCI 9
RIM=100.39

CBCI 10
RIM=80.80
INV.IN.76.0
INV.OUT(CB11)75.9

CBCI 11
RIM=83.90
INV.(CB10)79.4
INV.79.5

DMH 8.1
RIM=100.46
INV.IN.(DMH)95.81
INV.IN(CB9)95.26
INV.IN(CB8.3)96.76
INV.OUT(DMH)95.66

8"PVC

2-12"PVC

12"RCP

OUT(DMH13).96.75

112 113 114 115 116 117 118 119 120

PT +89.03 R=1500.00

PC +34.37 L=207.74' R=1500.00

PT +42.12

PT +33.29

PC +77.53

N63°01'40"E L=145.35'

N70°57'46"E L=450.53'

+99.30

LIMIT OF WORK 118+83

CONT. ON SHEET 9

CONT ABOVE

CONT BELOW

1 2 3 4 5

20 0 20 40
SCALE IN FEET

SUBJECT TO APPROVAL BY MassDOT

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AMESBURY
HAVERHILL ROAD (ROUTE 110)
ALIGNMENT & GRADING PLAN
SHEET 11 OF 31

SUBJECT TO APPROVAL BY MassDOT

HAVERHILL ROAD CONSTRUCTION ℄

	STATION		NORTHING	EASTING
BEGIN	100+00.00		15641.5636	−9641.4008
		S59°54'03"E 119.61'		
PC	101+19.61		15581.5792	−9537.9193
		RADIUS = 550.00' TANGENT = 241.08' LENGTH = 454.42' DELTA = 47°20'19"		
PT	105+74.02		15532.1248	−9099.0950
		N72°45'39"E 460.19'		
PC	110+34.22		15668.5090	−8659.5763
		RADIUS = 1500.00' TANGENT = 127.71' LENGTH = 254.81' DELTA = 9°43'59"		
PT	112+89.03		15764.2830	−8423.7819
		N63°01'40"E 145.35'		
PC	114+34.37		15830.2065	−8294.2448
		RADIUS = 1500.00' TANGENT = 104.04' LENGTH = 207.74' DELTA = 7°56'07"		
PT	116+42.12		15911.3289	−8103.1760
		N70°57'46"E 450.53'		
END	120+92.65		16058.2835	−7677.2848

TRAVERSE DATA

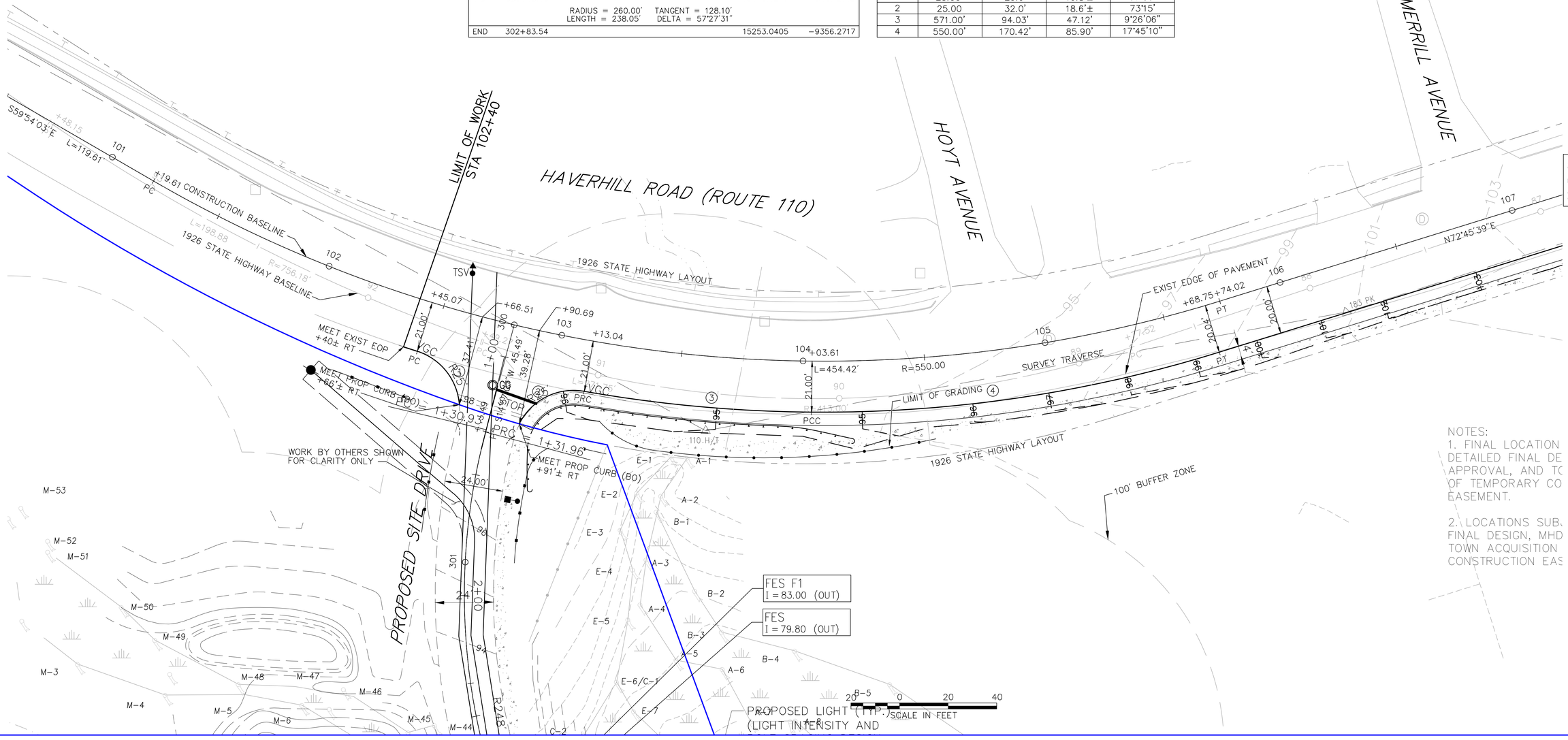
POINT	NORTHING	EASTING	ELEV.
107 PK	15609.3923	−10971.2310	113.90
108 PK	15806.7110	−10300.9768	113.53
109 PK	15712.4182	−9737.6653	110.08
110 H/T	15478.7823	−9310.6655	95.38
183 PK	15527.6194	−9047.0135	100.96
184 PK	15576.7029	−8892.9111	104.69
185 H/T	15756.3583	−8356.9185	101.40
186 PK	15284.2572	−8495.4193	90.02
187 DHSB	16168.6464	−8038.7891	−−

PROPOSED SITE DRIVE CONSTRUCTION ℄

	STATION		NORTHING	EASTING
BEGIN	300+00.00		15522.3711	−9389.4788
		S14°57'07"W 45.49'		
PC	300+45.49		15478.4247	−9401.2148
		RADIUS = 260.00' TANGENT = 128.10' LENGTH = 238.05' DELTA = 57°27'31"		
END	302+83.54		15253.0405	−9356.2717

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	25.00'	29.6'	16.8'±	67°56'
2	25.00	32.0'	18.6'±	73°15'
3	571.00'	94.03'	47.12'	9°26'06"
4	550.00'	170.42'	85.90'	17°45'10"



NOTES:
1. FINAL LOCATION
DETAILED FINAL DE
APPROVAL, AND TC
OF TEMPORARY CO
EASEMENT.

2. LOCATIONS SUB
FINAL DESIGN, MHD
TOWN ACQUISITION
CONSTRUCTION EAS

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AMESBURY
HAVERHILL ROAD (ROUTE 110)
ALIGNMENT & GRADING PLAN
SHEET 12 OF 31

SUBJECT TO APPROVAL BY MassDOT

N

MERRILL AVENUE

JAQUELINE AVENUE

HAVERHILL ROAD (ROUTE 110)

CONT. ON SHEET 11

CONT. ON SHEET 13

1926 STATE HIGHWAY LAYOUT

STATE HIGHWAY BASELINE

SURVEY TRAVERSE

CONSTRUCTION BASELINE

107 108 109 110 111 112

N72°45'39"E

L=460.19'

659.21'

S 71°36'50" W

L=254.81'

R=1500.00'

+68.6

+27.4+34.22

+74

+18.25 82

+33.29

PC

PT

20.00'

19.84'

MEET EXIST EDGING +43

183 PK

184 PK

+68

+88

104 103 102 101

PROPOSED 5' WIDE BIT. CONC. SIDEWALK

R=123'±

15'R

20'R

PC +19.66
25.17' RT

PRC +40.80
27.26' RT

R=100'

PT +61.15
29.68' RT

R=3.00'
CC +10.96
25.90' RT

R=3.00'
CC +29.66
25.95' RT

R=5'±

L=2.0'

L=6.0'

L=1.0'

L=6.0'

5.00'

1963 STATE HIGHWAY LAYOUT

NOTES:
1. FINAL LOCATION SUBJECT TO DETAILED FINAL DESIGN, MHD APPROVAL, AND TOWN ACQUISITION OF TEMPORARY CONSTRUCTION EASEMENT.
2. LOCATIONS SUBJECT TO DETAILED FINAL DESIGN, MHD APPROVAL, AND TOWN ACQUISITION OF TEMPORARY CONSTRUCTION EASEMENT.

20 0 20 40
SCALE IN FEET

AMESBURY
HAVERHILL ROAD (ROUTE 110)
ALIGNMENT & GRADING PLAN
SHEET 13 OF 31

N

(ROUTE 150)
1963 STATE HIGHWAY LAYOUT

CONSTRUCTION BASELINE
STATE HIGHWAY BASELINE

112 PT +18.38 R=1500.00
113 +89.03 PT +33.29
114 +34.37 PC
115 PC +17.53
116 PT +99.30
117 +42.12 PT
118 CONT. BELOW

N63°01'40"E L=145.35'
L=207.74' R=1500.00

CONT. ON SHEET 12

1926 STATE HIGHWAY LAYOUT

HAVERHILL ROAD (ROUTE 110)

HILLSIDE AVENUE

R=3.00'
CC +10.96
25.90' RT

R=3.00'
CC +29.66
25.95' RT

R=123'±
R=5'±
R=9.5'
L=1.0'
L=6.0'
L=2.0'
L=6.0'
5.00'
185 H/T

STATE HIGHWAY BASELINE

1963 STATE HIGHWAY LAYOUT

20 0 20 40
SCALE IN FEET

N

1963 STATE HIGHWAY LAYOUT

LIMIT OF WORK
118+83

CONT ABOVE

118 PT +21.82 R=1500.00
119 +22.53 PC
120 +83.53

N70°57'46"E L=450.53'

STATE HIGHWAY BASELINE
CONSTRUCTION BASELINE

20 0 20 40
SCALE IN FEET

SUBJECT TO
APPROVAL BY MHD

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AMESBURY
HAVERHILL ROAD (ROUTE 110)
TRAFFIC PLAN
SHEET 14 OF 31

BEGIN COLD PLANE AND OVERLAY STA 110+24

HAVERHILL (ROUTE 110)

1926 STATE HIGHWAY LAYOUT

MEET EXIST MARKINGS

12" SYCHL 3:1, 10' O.C.

MATCH LINE SEE BELOW

MATCH LINE, SEE ABOVE

PROP 8' TS POST W/PED SIGNAL HEAD W/PED PUSH BUTTON W/R10-3e(R) & SADDLE STA 113+74.0, 25.5' LT

PROP TS POLE W/25' MAST ARM W/D3-1½ D3-2 STA 114+15.0, 25.5' LT

PROP TS 2 TYPE 1 TS CONTROLLER W/TYPE 6 CABINET & FOUNDATION W/CONCRETE PAD STA 114+55.0, 43.5' LT

PROP SERVICE CONNECTION

CONSTRUCT OVER EXIST CONDUIT

PROP POWER SOURCE

CUT & EXTEND EXIST CONDUIT

PROP PRE-EMPTION DETECTOR (TYP)

PROP PRE-EMPTION STROBE

PROP VIDEO DETECTOR

PROP TS POLE W/35' MAST ARM W/D3-1, D3-2 STA 114+83.0, 33.5' RT

PROP TS POLE W/25' MAST ARM W/PED SIGNAL HEAD W/PED PUSH BUTTON W/R10-3e(L) & SADDLE STA 113+72.0, 32.0' RT

PROP VIDEO DETECTOR ZONE (TYP)

CONSTRUCT OVER EXIST CONDUIT

PROP TS POLE W/25' MAST ARM STA 115+29.5, 32.5' LT

CUT & EXTEND EXIST CONDUIT

MEET EXIST MARKINGS

1963 STATE HIGHWAY LAYOUT

1926 STATE HIGHWAY LAYOUT

HILLSIDE (ROUTE 150)

AVENUE

ROAD

EMTR

SUBJECT TO APPROVAL BY MassDOT

CONSTRUCTION NOTES:

1. SEE SHEET XX FOR TRAFFIC SIGNAL DATA.
2. REMOVE ALL EXISTING TS EQUIPMENT, AND ABANDON ALL TS CONDUIT UNLESS OTHERWISE NOTED.
3. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
4. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
5. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
6. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
7. THE TOP OF ALL MAST ARM FOUNDATIONS SHALL BE LOCATED 2"± ABOVE FINISHED GRADE.
8. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
9. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN ON SHEET X.

SCALE IN FEET 20 0 20 40

HAVERHILL (ROUTE 110) ROAD

LIMIT OF WORK 118+83

MEET EXIST MARKINGS

MATCH LINE SEE ABOVE

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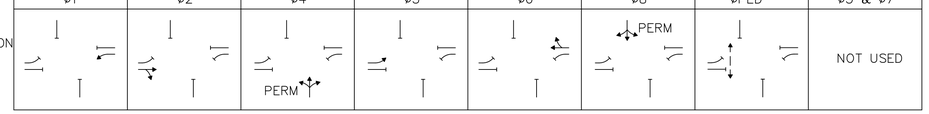
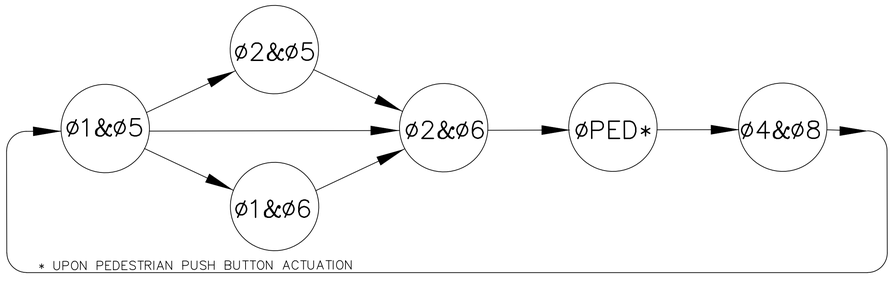
AMESBURY
HAVERHILL ROAD (ROUTE 110)
TRAFFIC PLAN
SHEET 15 OF 31

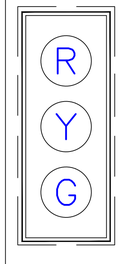
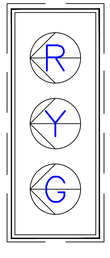
SEQUENCE AND TIMING																									
APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	FLASHING OPERATION
MINIMUM INTERVAL			6			10			6			6			10			6								
VEHICLE EXTENSION			2			2			2			2			2			2								
MAXIMUM 1			15			40			40			15			40			40								
MAXIMUM 2			15			40			40			15			40			40								
YELLOW CLEARANCE				3			4			4			3			4			4							
RED CLEARANCE					2.5			1.5			1			2.5			1.5			1							
PEDESTRIAN INTERVAL																					7	11	1				
HAVEHILL ROAD	EB	A	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←G–	←Y–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–				←FR–
HAVEHILL ROAD	EB	B,C	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				FY
HAVEHILL ROAD	WB	D	←G–	←Y–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–	←R–				←FR–
HAVEHILL ROAD	WB	E,F	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R				FY
HILLSIDE AVENUE	NB	G,H	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R				FR
HILLSIDE AVENUE	SB	J,K	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R				FR
PEDESTRIAN X–ING	P1–P2	NB–SB	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW				OUT
DETECTOR			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			–						
RECALL			OFF			SOFT			OFF			OFF			SOFT			OFF			–						
			ø1			ø2			ø4			ø5			ø6			ø8			øPED			ø3 & ø7			

NOTES:
1. AUTOMATIC FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12.
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. PERM = PERMISSIVE
4. ø4 & ø8 DUAL ENTRY
5. MAXIMUM 1 = NORMAL OPERATION
6. MAXIMUM 2 = NOT USED
7. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.



PREFERENTIAL PHASE SEQUENCE



PROPOSED SIGNAL HEAD DATA		
B,C,E,F,G,H,J,K	A,D	P1–P2
		 W/COUNTDOWN TIMER
ALL 12" LENS		

NOTES:
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 2" WIDE YELLOW REFLECTIVE BORDER.
3. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
4. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

DETECTOR DATA				
DETECTOR NO.	ZONE SIZE	CAMERA	DELAY /EXT	CALL PHASE
1	TO BE FIELD ADJUSTED	V1	0	ø5
2	TO BE FIELD ADJUSTED	V1	0	ø2
3	TO BE FIELD ADJUSTED	V1	0	ø1
4	TO BE FIELD ADJUSTED	V1	0	ø6
5	TO BE FIELD ADJUSTED	V1	0	ø4
6	TO BE FIELD ADJUSTED	V1	0	ø8

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

SEQUENCE & TIMING NOTES:
1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON–CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT–OF–WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

PROPOSED PRE–EMPTION PHASING & PRIORITY			
DETECTOR & PRIORITY	PRE–EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		ø2&ø5
D2	2		ø1&6
D3	3		ø4
D4	4		ø8

EMERGENCY VEHICLE PRE–EMPTION OPERATION.
1. EMERGENCY VEHICLE PRE–EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
2. PRE–EMPTION SIGNALS SHALL BE SERVICED ON A FIRST COME, FIRST SERVE BASIS.
3. IN RESPONSE TO A PRE–EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE–EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE–EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE–EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE–EMPTION PHASES AS NECESSARY.
4. UNLESS OTHERWISE STATED, ONCE A PRE–EMPTION CALL HAS BEEN RECEIVED BY THE TRAFFIC SIGNAL CONTROLLER AND THE PRE–EMPTION PHASE IS BEING SERVICED, IT SHALL REMAIN IN THAT PHASE AS LONG AS THE CALL IS PRESENT.
5. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE–EMPTION DEMAND.
6. PRE–EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE–EMPTION GREEN IS ON.

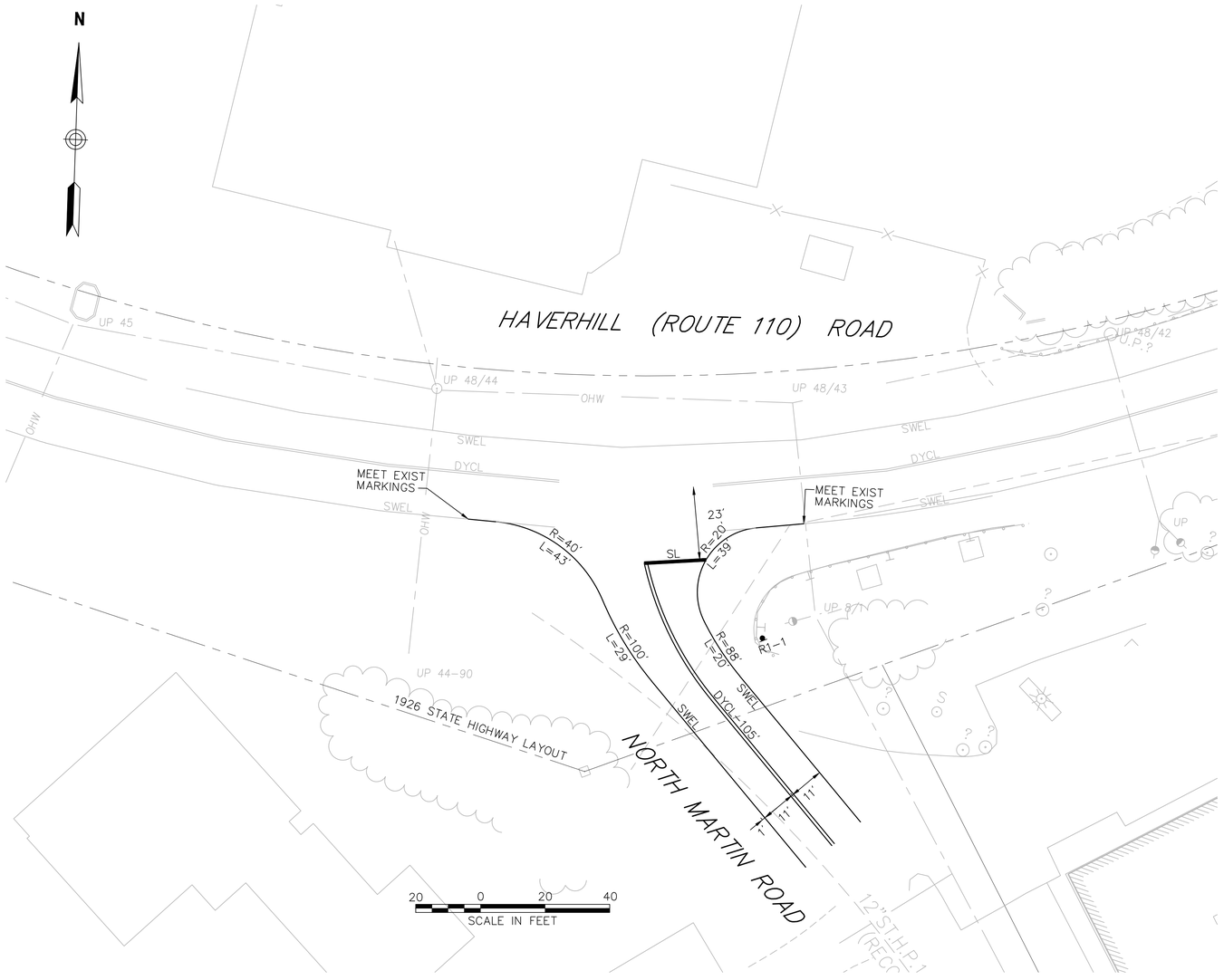
SUBJECT TO APPROVAL BY MassDOT

ITEM 816.01
TRAFFIC SIGNAL RECONSTRUCTION
HAVERHILL ROAD (ROUTE 110) AT HILLSIDE AVENUE (ROUTE 150)
LIST OF MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	8ø TS 2 TYPE 1 CONTROLLER IN A TYPE 6 BASE MOUNTED CABINET INCL. FOUNDATION AND CONCRETE PAD
3	TS 25' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
1	TS 35' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
1	TS POST 8' STANDARD INCL. FOUNDATION
10	SIGNAL HEAD, 3–SECTION, 12" LENSES
2	PEDESTRIAN SIGNAL HEAD (L.E.D.)
2	PEDESTRIAN PUSH BUTTON W/R10–3e AND SIGN SADDLE
6	PULL BOX–12"x12"
1	VIDEO DETECTION SYSTEM (1 CAMERAS. VDP & CABLES)
4	EMERGENCY PRE–EMPTION OPTICAL DETECTORS & DETECTOR CABLE
2	EMERGENCY PRE–EMPTION 2 CHANNEL PHASE SELECTOR
1	EMERGENCY PRE–EMPTION SYSTEM CHASSIS
1	EMERGENCY PRE–EMPTION STROBE (WHITE LENS)
1	SERVICE CONNECTION (OVERHEAD)

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

AMESBURY
HAVERHILL ROAD (ROUTE 110)
TRAFFIC PLAN
SHEET 16 OF 31



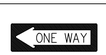
SUBJECT TO APPROVAL BY MassDOT

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

AMESBURY
HAVERHILL ROAD (ROUTE 110)
SIGN SUMMARY

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	30"	30"		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			2	RED	WHITE	WHITE	P5-2	6.38	12.76
R3-2	30"	30"					2	WHITE	RED/ BLACK	BLACK	P5-2	6.25	12.50
R3-5L	30"	36"					2	WHITE	BLACK	BLACK	4 MTD ON MAST ARM	7.50	15.00
R3-7L	30"	30"					2	WHITE	BLACK	BLACK	P5-2	6.25	12.50
R5-1	30"	30"					3	RED/ WHITE	WHITE	– –	P5-3	6.25	18.75
R6-1	36"	12"					4	BLACK/ WHITE	BLACK	BLACK	4 MTD W/OTHERS	3.00	12.00
R10-3f	5"	8"		AS PER MASSHIGHWAY DEPARTMENT STANDARD			2	WHITE	BLACK	BLACK	2 MTD ON TS POLE/ TS POST	ITEM 816.01	
R10-22	12"	18"					4	WHITE	BLACK	BLACK	P5-4	1.50	6.00
H1-2	24"	24"					1	YELLOW	YELLOW CLUSTER	– – –	P5-1	ITEM 827.21	
D3-1	VARIES	12"	HAVERHILL RD	6	3 3	N/A	2	GREEN	WHITE	WHITE	2 MTD ON TS POLE	ITEM 874	
D3-1	VARIES	12"	HILLSIDE AVE	6	3 3	N/A	2	GREEN	WHITE	WHITE	2 MTD ON TS POLE	ITEM 874	
RET D3-1	–	–											
RET D6-1	–	–											
RET D6-2	–	–											

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
RET D6-3	–	–											
RET D6-4	–	–											
RET D6-5	–	–											
RET D6-6	–	–											
R&R D6-7	–	–											
R&S D8-1	–	–											
RET D8-2	–	–											
RET D8-3	–	–											

NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED.

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
RET D8-4	–	–	110 WEST MERRIMAC NEXT RIGHT										
RET D8-5	–	–	150 NORTH AMESBURY NEXT RIGHT										
RET D8-6	–	–	150 NORTH DOWNTOWN AMESBURY										
RET D8-7	–	–	110 WEST MERRIMAC										
RET D8-8	–	–	NORTH 150 DOWNTOWN AMESBURY										
RET D8-9	–	–	110 WEST MERRIMAC										
RET D8-10	–	–	110 WEST MERRIMAC										
R&R D8-11	–	–	110 EAST SALISBURY										

SUBJECT TO APPROVAL BY MassDOT

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

INDEX

THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE ENGLISH EDITION OF SUPPLEMENTAL SPECIFICATIONS DATED JUNE 6, 2006, THE AMENDMENTS TO THE STANDARD AND SUPPLEMENTAL SPECIFICATIONS, THE 1977 CONSTRUCTION STANDARDS, THE ENGLISH EDITION OF SUPPLEMENTAL DRAWINGS DATED APRIL 2003, THE 2001 "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" WITH LATEST REVISIONS, THE 2003 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" WITH LATEST REVISIONS, THE 1990 "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS," AND THE 2004 EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

MAST ARM & FOUNDATION

Details Standard Drawings

NOTES

1. For these standard drawings the Design Wind Speed for all Mast Arm Structures shall be **130 MPH**.

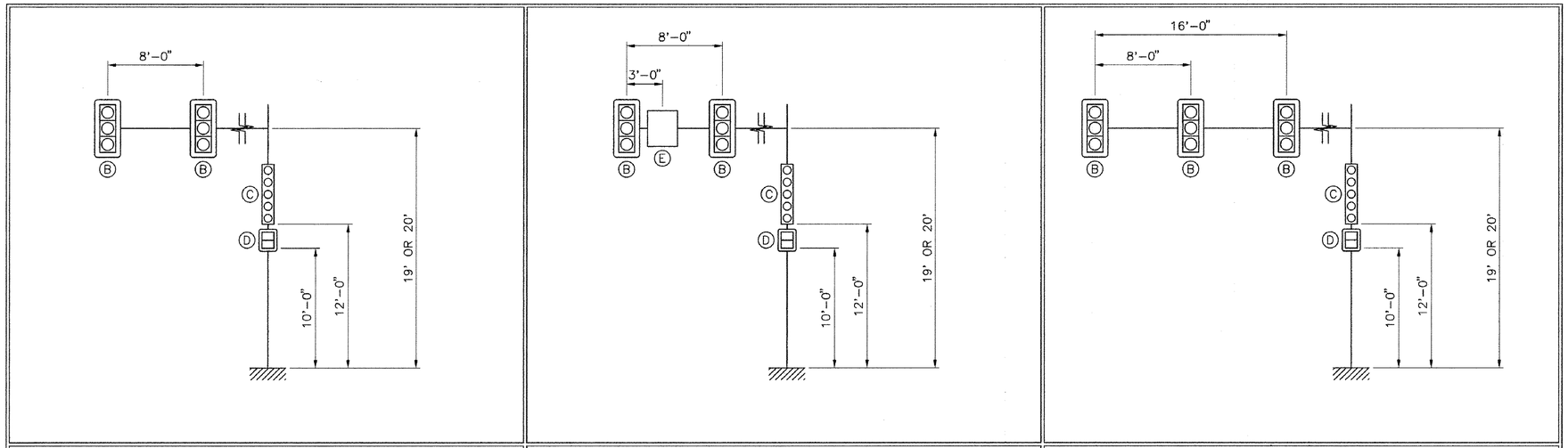
2. For these standard drawings the Design Wind Speed for mast arm foundations located in the following counties: Plymouth, Bristol, Barnstable, Dukes, and Nantucket counties in District 5 and Berkshire county in District 1 shall be **130 MPH**. The design wind speed for mast arm foundations for the remainder of the state shall be **110 MPH.**

3. For these standard drawings the mast arm structure design life shall be 25 years.

4. For these standard drawings the Fatigue Category no. 2 was used and truck induced gusts were excluded in the design.

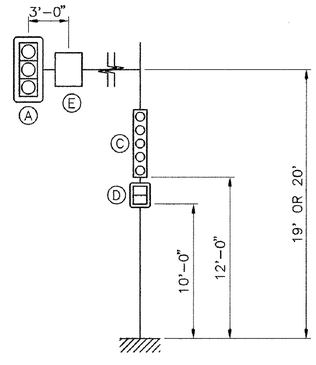
5. These standard drawings do not apply for mast arm structures at intersections with an ADT greater than 40,000 vehicles and a truck percentage of greater than 10%. The responsibility for the design of mast structures and foundations will rest with the design engineer. The structure design life will be 50 years and the fatigue category shall be no. 1. The design wind speed criteria shall be as shown in Notes Nos. 1 & 2. The design will be submitted to MassDOT for review and comment.

6. For strain pole, dual mast arm designs, or mast arms longer than 45 feet, notes 1, 2, 3 and 4 will apply, if ADT (>40,000 vehicles) and truck percentage (10%) criterion is met, note 5 design criteria (50 year design life, fatigue category no. 1, wind design speed notes 1 and 2) will apply. The responsibility for the design of these structures and foundations will rest with the design engineer. The design will be submitted to MassDOT for review and comment.



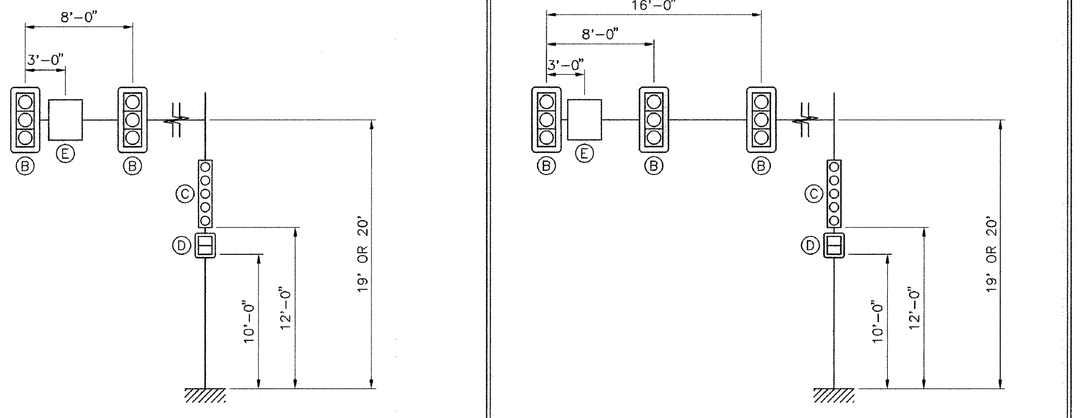
20', 25', 40' & 45' SPANS | 30' SPAN | 35' SPAN

LOAD DEFINITIONS – LIGHT LOADS



15' SPAN

SHORT SPAN LOADING

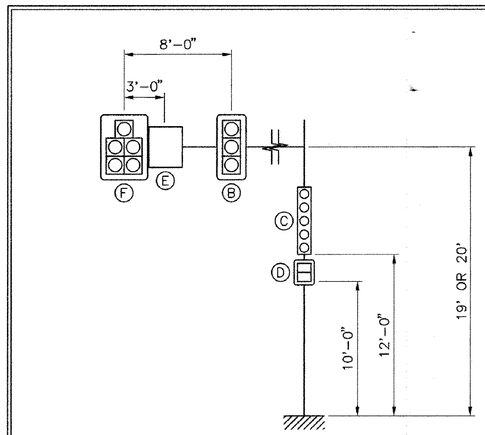


20' & 25' SPANS | 30', 35', 40' & 45' SPANS

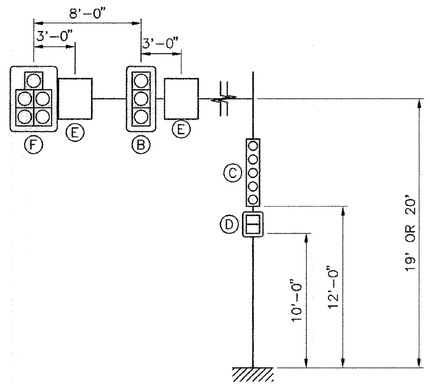
LOAD DEFINITIONS – MEDIUM LOADS

DEVICE	DESCRIPTION	PROJ. AREA (FT~2)	WEIGHT (LBS)
A	3 SECTION, 3 WAY SIGNAL	13.50	202
B	3 SECTION, 1 WAY SIGNAL	8.67	74
C	5 SECTION, 1 WAY SIGNAL	13.33	110
D	DUAL PEDESTRIAN SIGNAL	8.00	80
E	30" X 36" REGULATORY SIGN	7.50	23

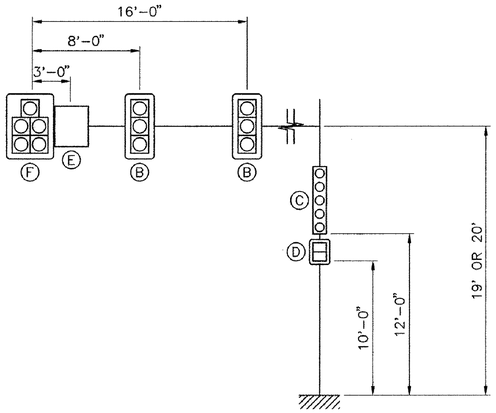
NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES



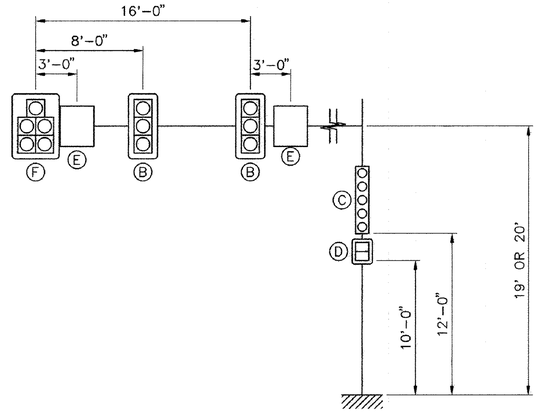
20' SPAN



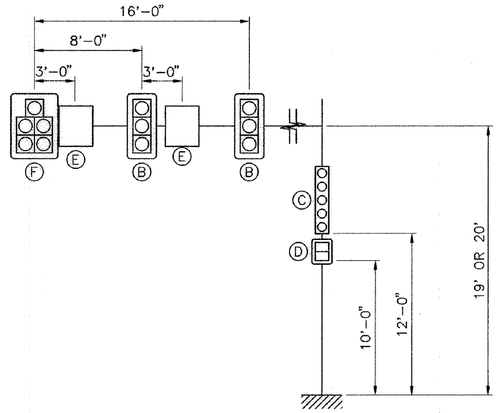
25' SPAN



30' SPAN



35' SPAN

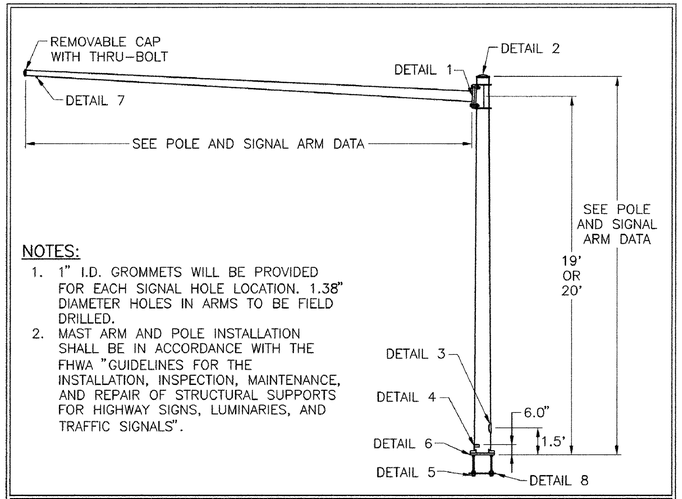


40' & 45' SPANS

LOAD DEFINITIONS – HEAVY LOADS

DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)
(A)	3 SECTION, 3 WAY SIGNAL	18.29	202
(B)	3 SECTION, 1 WAY SIGNAL	8.67	74
(C)	5 SECTION, 1 WAY SIGNAL	13.33	110
(D)	DUAL PEDESTRIAN SIGNAL	8.00	80
(E)	30" X 36" REGULATORY SIGN	7.50	23
(F)	5 SECTION, 2 WAY SIGNAL	21.95	215
NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES			

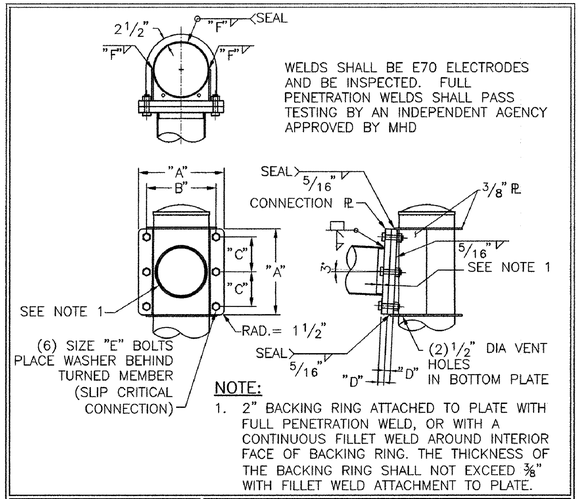
THIS PLAN NOT DESIGNED BY
VANASSE HANGEN BRUSTLIN, INC.
IT WAS PROVIDED BY THE MASSDOT
AND ALL INFORMATION CONTAINED
HEREIN IS ASSUMED TO BE CORRECT.



NOTES:

1. 1" I.D. GROMMETS WILL BE PROVIDED FOR EACH SIGNAL HOLE LOCATION. 1.38" DIAMETER HOLES IN ARMS TO BE FIELD DRILLED.
2. MAST ARM AND POLE INSTALLATION SHALL BE IN ACCORDANCE WITH THE FHWA "GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS".

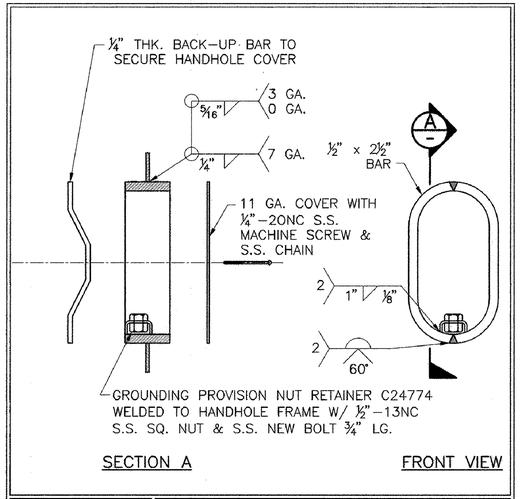
MAST ARM ELEVATION



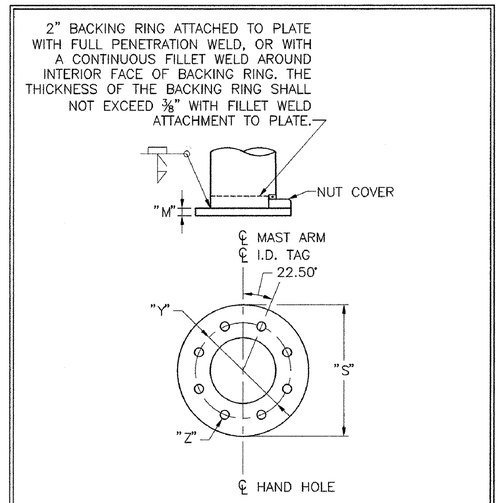
NOTE:

1. 2" BACKING RING ATTACHED TO PLATE WITH FULL PENETRATION WELD, OR WITH A CONTINUOUS FILLET WELD AROUND INTERIOR FACE OF BACKING RING. THE THICKNESS OF THE BACKING RING SHALL NOT EXCEED 3/8" WITH FILLET WELD ATTACHMENT TO PLATE.

DETAIL 1 | SIGNAL ARM ATTACHMENT



DETAIL 3 | 4"x8" HANDHOLE

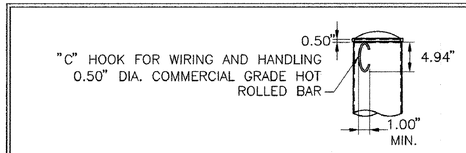


DETAIL 6 | POLE BASE

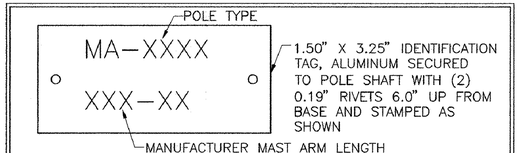
MATERIAL DATA

COMPONENT	DESIGNATION	YIELD (KSI)	COMPONENT	DESIGNATION	YIELD (KSI)
POLE TUBE	ASTM A595 GR. A	55	ARM TUBE	ASTM A595 GR. A	55
POLE BASE PLATE	AASHTO M270	50	ARM CONNECTION PLATE	AASHTO M270	50
ANCHOR BOLTS	AASHTO M314	55	ARM CONNECTING BOLTS	AASHTO M164 **	
GALVANIZING	AASHTO M111 OR M232				

** BOLTS WHICH ACCUMULATE RUST OR DIRT SHALL BE DISCARDED.



DETAIL 2 | POLE TOP



DETAIL 4 | I.D. TAG

POLE AND SIGNAL ARM DATA – LIGHT LOADS

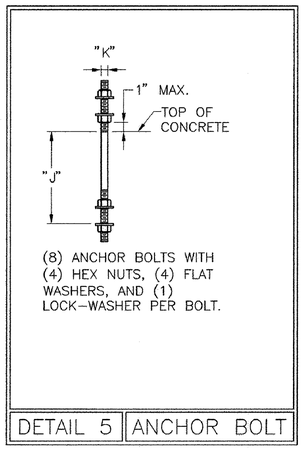
LOCATIONS	SIGNAL ARM TUBE				POLE TUBE				POLE BASE				ANCHOR BOLT		SIGNAL ARM ATTACHMENT DATA					
	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	9.00	6.20	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	25.00	10.00	6.50	7 GA.	13.00	10.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.188
	30.00	12.50	8.30	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	13.00	8.10	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	40.00	13.00	7.40	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	45.00	13.50	7.20	3 GA.	16.50	13.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.313

POLE AND SIGNAL ARM DATA – MEDIUM LOADS

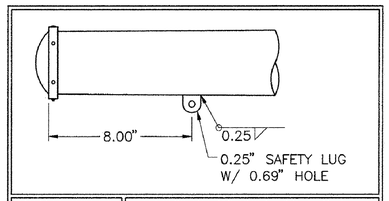
LOCATIONS	SIGNAL ARM TUBE				POLE TUBE				POLE BASE				ANCHOR BOLT		SIGNAL ARM ATTACHMENT DATA					
	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	10.00	7.20	3 GA.	13.00	10.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.250
	25.00	11.00	7.50	3 GA.	14.00	11.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	30.00	13.00	8.80	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	14.00	9.10	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	40.00	15.00	9.40	3 GA.	18.00	15.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	45.00	16.00	9.70	0 GA.	19.00	16.06	21.00	0 GA.	29.50	24.00	1.50	1.813	1.50	36.00	29.50	24.00	12.00	1.75	1.50	0.313

POLE AND SIGNAL ARM DATA – HEAVY LOADS

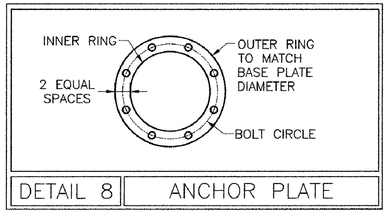
LOCATIONS	SIGNAL ARM TUBE				POLE TUBE				POLE BASE				ANCHOR BOLT		SIGNAL ARM ATTACHMENT DATA					
	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	12.50	9.70	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.00	19.00	9.50	1.25	1.25	0.250
	25.00	14.00	10.50	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	30.00	15.50	11.30	3 GA.	18.50	15.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	35.00	16.50	11.60	0 GA.	19.50	16.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.313
	40.00	17.50	11.90	0 GA.	20.50	17.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.313
	45.00	18.50	12.20	0 GA.	21.50	18.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	31.50	26.00	13.00	2.00	1.50	0.313



DETAIL 5 | ANCHOR BOLT



DETAIL 7 | SAFETY HANGER LUG



DETAIL 8 | ANCHOR PLATE

THIS PLAN NOT DESIGNED BY VANASSE HANGEN BRUSTLIN, INC. IT WAS PROVIDED BY THE MASSDOT AND ALL INFORMATION CONTAINED HEREIN IS ASSUMED TO BE CORRECT.

PIER FOUNDATIONS FOR 110 MPH WIND SPEED ZONE

LIGHT LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	6'–0"	18–#8	3'–6"	8'–0"	18–#8	3'–6"	8'–0"	18–#8	3'–6"	9'–0"	18–#8
WET SAND	3'–6"	7'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	9'–0"	18–#8
CLAY (MEDIUM STIFF)	3'–6"	11'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8
ALLUVIAL	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	11'–0"	18–#8

MEDIUM LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	7'–0"	18–#8	3'–6"	9–0"	18–#8	4'–0"	9–0"	18–#9	4'–6"	8'–0"	18–#10
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	9'–0"	18–#8	4'–0"	10'–0"	18–#9	4'–6"	9'–0"	18–#10
CLAY (MEDIUM STIFF)	3'–6"	11'–0"	18–#8	3'–6"	12'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	14'–0"	18–#10
ALLUVIAL	3'–6"	9'–0"	18–#8	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	10'–0"	18–#10

HEAVY LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	8'–0"	18–#8	4'–0"	9'–0"	18–#9	4'–6"	10'–0"	18–#10	5'–0"	9'–0"	23–#10
WET SAND	3'–6"	8'–0"	18–#8	4'–0"	10'–0"	18–#9	4'–6"	11'–0"	18–#10	5'–0"	10'–0"	23–#10
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	4'–0"	14'–0"	18–#9	4'–6"	15'–0"	18–#10	5'–0"	16'–0"	23–#10
ALLUVIAL	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	12'–0"	18–#10	5'–0"	12'–0"	23–#10

PIER FOUNDATIONS FOR 130 MPH WIND SPEED ZONE

LIGHT LOADING CONDITIONS

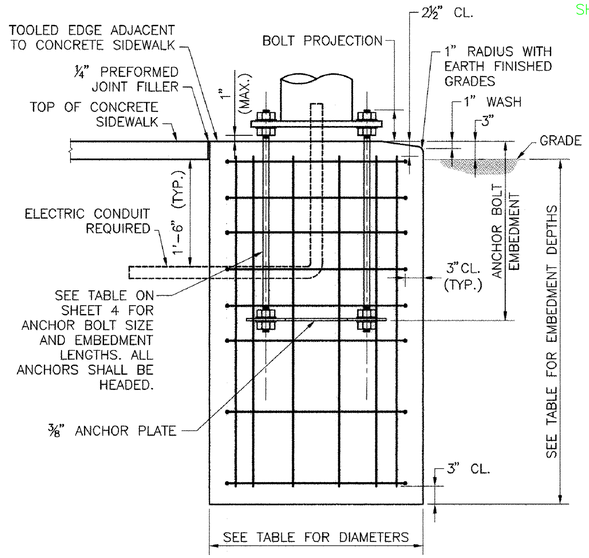
SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	7'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	10'–0"	18–#8
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	11'–0"	18–#8	3'–6"	11'–0"	18–#8
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	3'–6"	13'–0"	18–#8	3'–6"	13'–0"	18–#8	3'–6"	13'–0"	18–#8
ALLUVIAL	3'–6"	9'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	13'–0"	18–#8

MEDIUM LOADING CONDITIONS

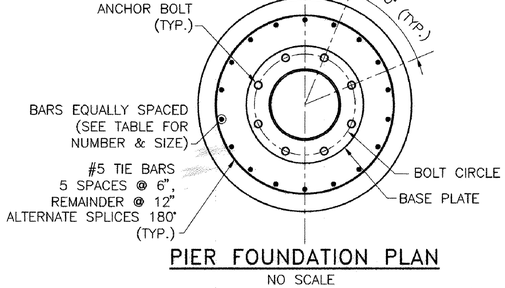
SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	10'–0"	18–#10
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	11'–0"	18–#8	4'–0"	12'–0"	18–#9	4'–6"	11'–0"	18–#10
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	3'–6"	14'–0"	18–#8	4'–0"	15'–0"	18–#9	4'–6"	15'–0"	18–#10
ALLUVIAL	3'–6"	10'–0"	18–#8	3'–6"	13'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	12'–0"	18–#10

HEAVY LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	9'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	12'–0"	18–#10	5'–0"	11'–0"	23–#10
WET SAND	3'–6"	10'–0"	18–#8	4'–0"	12'–0"	18–#9	4'–6"	13'–0"	18–#10	5'–0"	12'–0"	23–#10
CLAY (MEDIUM STIFF)	3'–6"	14'–0"	18–#8	4'–0"	15'–0"	18–#9	4'–6"	16'–0"	18–#10	5'–0"	17'–0"	23–#10
ALLUVIAL	3'–6"	11'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	15'–0"	18–#10	5'–0"	14'–0"	23–#10



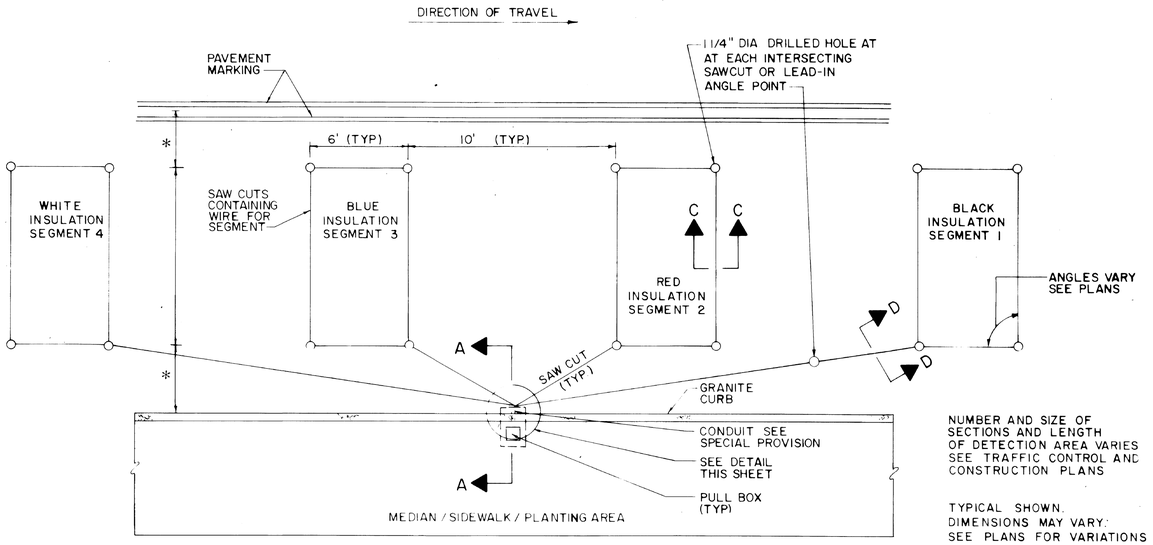
PIER FOUNDATION DETAIL
NO SCALE



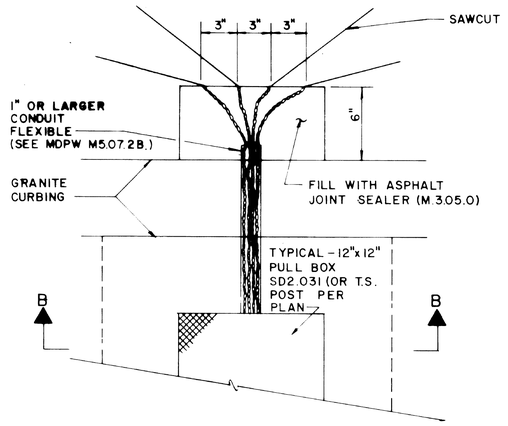
PIER FOUNDATION PLAN
NO SCALE

NOTES:

1. FOUNDATIONS SHALL BE 4000 PSI, 1½", 565 CEMENT CONCRETE.
2. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.
3. ANCHOR BOLTS SHALL BE SET BY TEMPLATE.
4. PROVIDE FOR ELECTRICAL CONDUIT.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATIONS WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM. ALTERNATE METHODS OF EXCAVATION MAY BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL IF THEY MEET THE REQUIREMENTS LISTED IN NOTES 6, 7, AND 8.
6. THE EARTH WALLS OF THE FOUNDATION SHALL BE ADEQUATELY AND SECURELY PROTECTED AT ALL TIMES AGAINST CAVE–INS, DISPLACEMENT OF THE SURROUNDING EARTH AND FOR THE EXCLUSION OF GROUND WATER. THIS MAY BE DONE BY THE USE OF STEEL CYLINDER LINERS OR CASINGS THAT ARE APPROVED BY MASSHIGHWAY. IF LINERS ARE USED THEY MAY BE RECLAIMED PROVIDED THAT THEY ARE WITHDRAWN AS THE CONCRETE IS BEING PLACED, MAINTAINING A SUFFICIENT HEAD OF CONCRETE WITHIN THE LINER TO PREVENT REDUCTION IN THE FOUNDATION DIAMETER AND TO PREVENT EXTRANEOUS MATERIAL FROM FALLING IN FROM THE SIDES AND MIXING WITH THE CONCRETE.
7. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
8. SPECIAL CARE SHOULD BE GIVEN TO AREAS WHERE WET SOIL IS ENCOUNTERED, TO INSURE THAT THE PREAUGERED HOLE DOES NOT COLLAPSE. THIS MAY REQUIRE THE USE OF STEEL CYLINDER LINERS OR CASINGS TO HOLD THE SOIL IN PLACE UNTIL READY FOR CONCRETE PLACEMENT. THE STEEL CYLINDERS OR CASINGS SHALL BE WITHDRAWN AS THE FOUNDATION CONCRETE IS PLACED.
9. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE DESIGN ENGINEER.
10. IF LEDGE OR POOR SOIL IS ENCOUNTERED (i.e. ONE WHICH DOES NOT APPLY TO THE DESIGN TABLES SHOWN ON THIS SHEET), AN ALTERNATIVE DESIGN SHALL BE PROVIDED BY THE DESIGN ENGINEER. DECISIONS MADE IN NOTES 8 AND 9 SHALL BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE ENGINEER.



PLAN OF SEGMENTED DETECTOR DETAIL
NOT TO SCALE

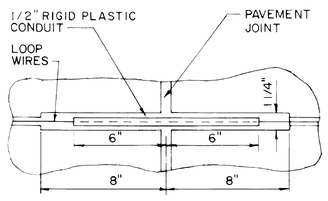


DETAIL - PLAN VIEW
NOT TO SCALE

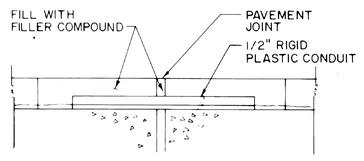
DETECTOR NOTES

1. IN BASE OR HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE. SEGMENTS SHALL BE SPLICED IN IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. NUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. SEE NOTE 12.
2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER.
3. LEAD-IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE. FIVE TURNS PER FOOT. LEAD-IN SHALL BE TYPE II (M8.16.11).
4. BEFORE STARTING ANY SPLICING THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENTS STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS. SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.
5. THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROAD WAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD, SHALL BE FIRMLY BONDED TO THE EARTH GROUNDING BUS IN THE CONTROLLER. HOWEVER, THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL OTHER POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.
6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL.
7. AFTER SAW CUTS ARE COMPLETE, BLOW OUT OIL AND WATER WITH FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND EDGED TOOL OF WOOD OR PLASTIC SUCH AS A PAINT STIRRER, DO NOT USE A SCREWDRIVER. THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM 5B. STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET. THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.
8. THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHALL HAVE A RESISTANCE TO GROUND OF AT LEAST 100 MEGOHMS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR. DETAIL IS THE SAME.
10. CUT LOOPS IN BINDER AND FILL WITH APPROVED FLEXIBLE SEALER.
11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL.
12. SPLICING PATTERN P= SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GROUPS IN PARALLEL. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

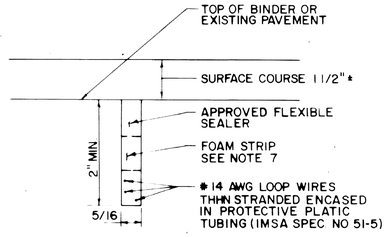
   SPLICING PATTERN S=SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.



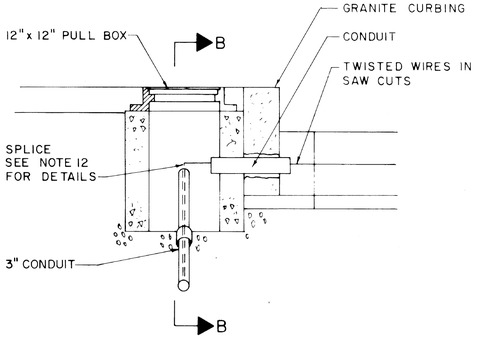
PLAN
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



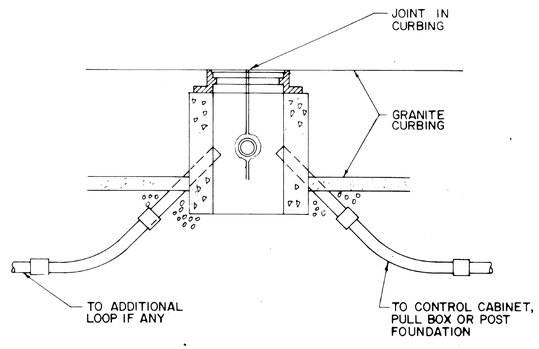
VERTICAL SECTION
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



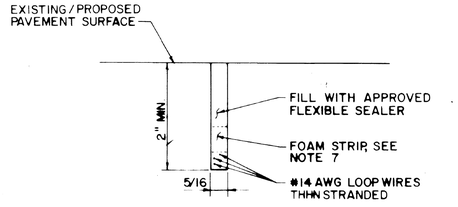
SECTION C-C & D-D
LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO BE RESURFACE
NOT TO SCALE



SECTION A-A
NOT TO SCALE

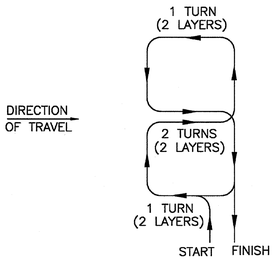


SECTION B-B
NOT TO SCALE

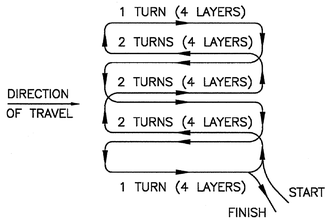


SECTION C-C & D-D
LOOPS IN SURFACE COURSE
NOT TO SCALE

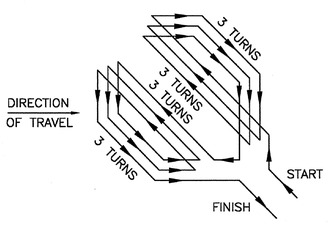
WINDING DETAILS



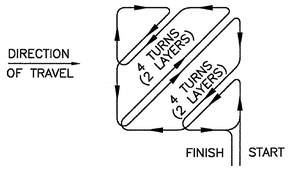
TYPE Q DETECTOR



TYPE D–Q DETECTOR

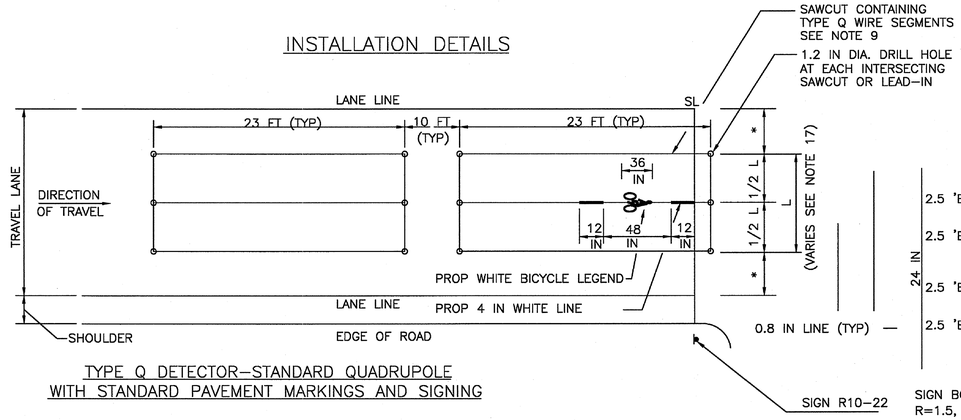


TYPE D–1 DETECTOR

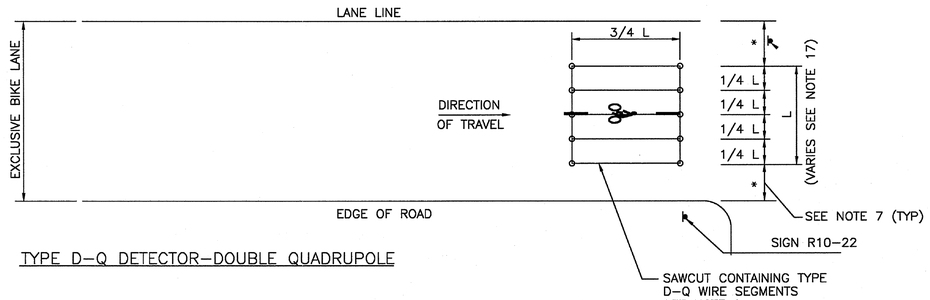


TYPE D–2 DETECTOR

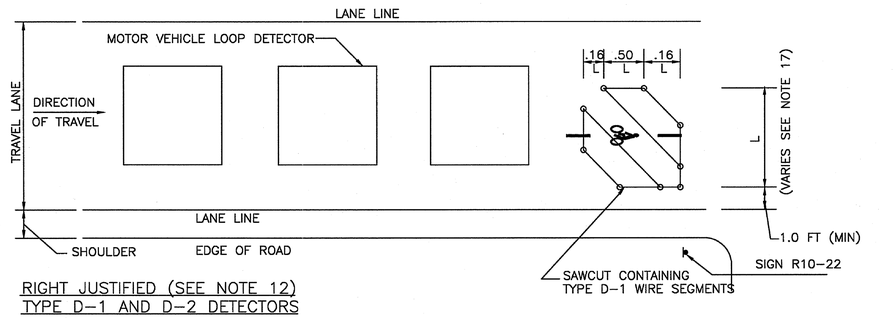
INSTALLATION DETAILS



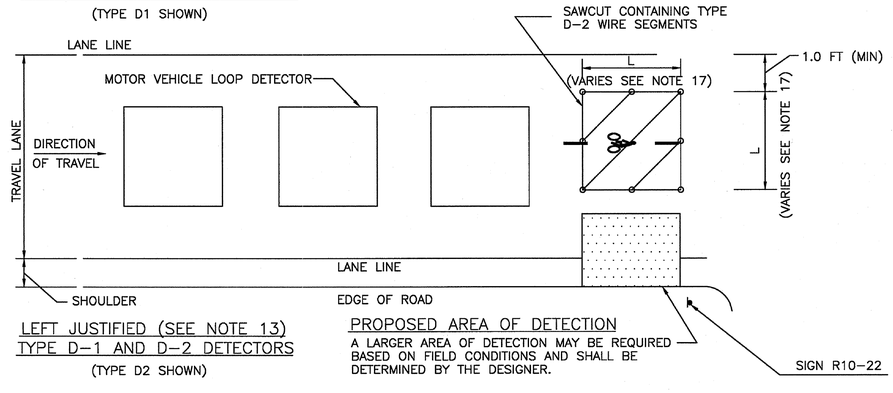
TYPE Q DETECTOR–STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING



TYPE D–Q DETECTOR–DOUBLE QUADRUPOLE



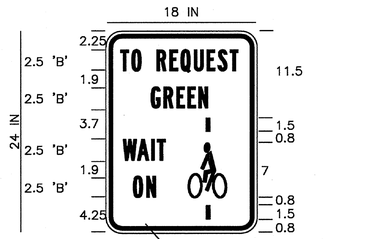
RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D–1 AND D–2 DETECTORS
(TYPE D1 SHOWN)



LEFT JUSTIFIED (SEE NOTE 13)
TYPE D–1 AND D–2 DETECTORS
(TYPE D2 SHOWN)

PROPOSED AREA OF DETECTION
A LARGER AREA OF DETECTION MAY BE REQUIRED BASED ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE DESIGNER.

SIGN R10–22

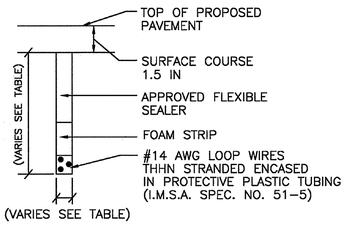


SIGN BORDER:
R=1.5, TH=0.5, INS=.38

WHITE BACKGROUND
BLACK LEGEND AND LINES

NOTE: ALL SIGN DIMENSIONS IN INCHES

NOTE: SIGN PANEL NOT SHOWN TO SCALE



SECTION THRU LOOP DETECTOR

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (IN)	WIDTH (IN)
1	1.5	0.5
2	1.5	0.5
3	1.5	0.5
4	2.0	0.5
5	2.0	0.5
6	2.0	0.5
7	2.0	0.5
8	2.0	0.5

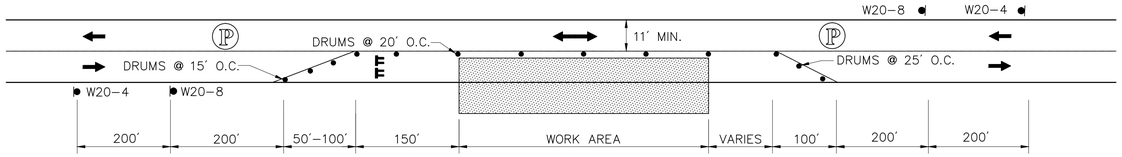
BICYCLE LOOP DETECTOR DETAILS

NOTES:

1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
3. THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA VARIES AND SHALL BE DETERMINED BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN.
4. BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
5. BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
7. * OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN ("2–4–2") WITH 2 TURNS IN THE PERIMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D–Q DETECTORS.
10. PROVIDE 3 TURNS FOR TYPE D–1 DETECTORS.
11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D–2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
    b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE.
    b) BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO–LANE ROADWAY.
14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO–LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D–Q, D–1 & D–2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

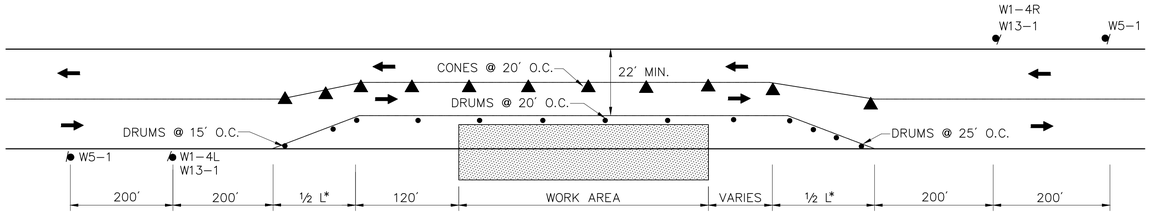
OPERATIONAL SIGNING

LANE CLOSURES SHOWN ARE FOR TEMPORARY CONSTRUCTION.
ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR
DURING THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE.



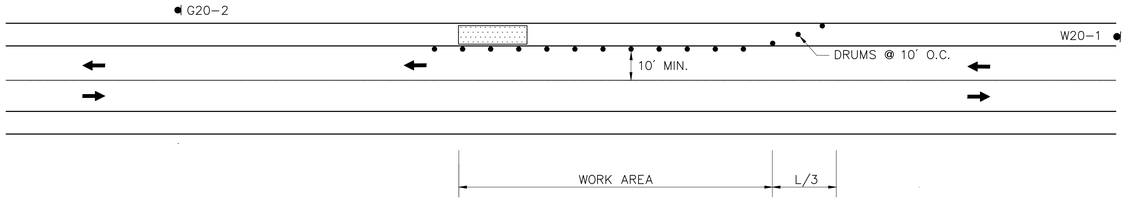
TYPICAL TWO WAY STREET LANE CLOSURE

NOT TO SCALE



TYPICAL TWO WAY STREET LANE SHIFT

NOT TO SCALE



SHOULDER WORK WITH MINOR ENCROACHMENT

NOT TO SCALE

FOR POSTED SPEEDS OF 40 MPH OR LESS

$* L = \frac{WS^2}{60}$

L=TAPER LENGTH
W=WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED
S=POSTED SPEED LIMIT

TEMPORARY SIGNS

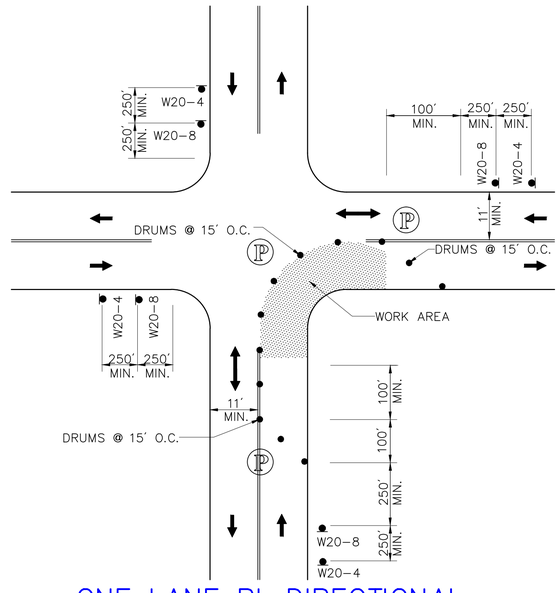
SIGN DESIGNATION	LEGEND	HEIGHT	WIDTH
W20-1	ROAD WORK AHEAD	48"	48"
W20-4	ONE LANE ROAD AHEAD	48"	48"
W20-8	POLICE OFFICER AHEAD	48"	48"
W5-1	ROAD NARROWS	36"	36"
W13-1	ADVISORY SPEED PLATE	24"	24"
W1-4R		30"	30"
W1-4L		30"	30"
G20-2	END ROAD WORK	24"	60"

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AS AMENDED.
2. ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTOR AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILIAR OPERATIONS.
5. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN.
6. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
7. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL TO COMPACTED 1:4 SLOPE.
8. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.
9. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
10. THE GENERAL SEQUENCE OF WORK IS DEPENDENT UPON THE REMOVAL AND RELOCATION OF THE EXISTING UTILITY POLES AND WIRES THAT ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, BY THE UTILITY COMPANIES. THE CONTRACTOR SHALL SCHEDULE THE WORK IN EACH AREA TO COORDINATE WITH THE POLE RELOCATION WORK.
11. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.

LEGEND

- DRUM
- TRAFFIC CONE
- (P) POLICE OFFICER
- CONSTRUCTION SIGN
- TYPE III BARRICADES
- WORK AREA PUBLIC ACCESS RESTRICTED
- PROPOSED TRAFFIC FLOW
- SPECIAL LIGHTING UNIT (SLU)
- NTS NOT TO SCALE



ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

NOT TO SCALE

NOTE:
1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY

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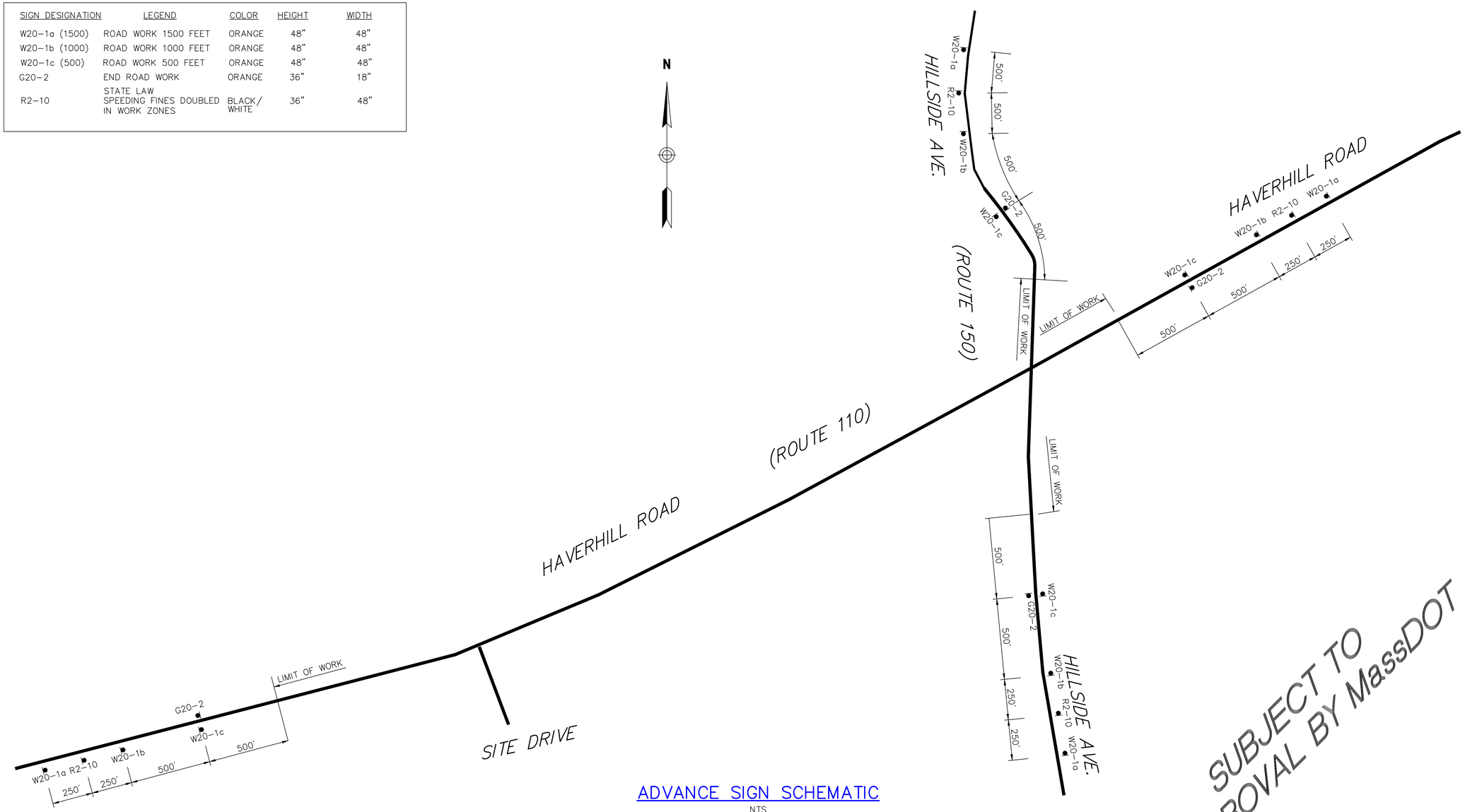
TEMPORARY SIGNS

SIGN DESIGNATION	LEGEND	COLOR	HEIGHT	WIDTH
W20-1a (1500)	ROAD WORK 1500 FEET	ORANGE	48"	48"
W20-1b (1000)	ROAD WORK 1000 FEET	ORANGE	48"	48"
W20-1c (500)	ROAD WORK 500 FEET	ORANGE	48"	48"
G20-2	END ROAD WORK	ORANGE	36"	18"
R2-10	STATE LAW SPEEDING FINES DOUBLED IN WORK ZONES	BLACK/ WHITE	36"	48"



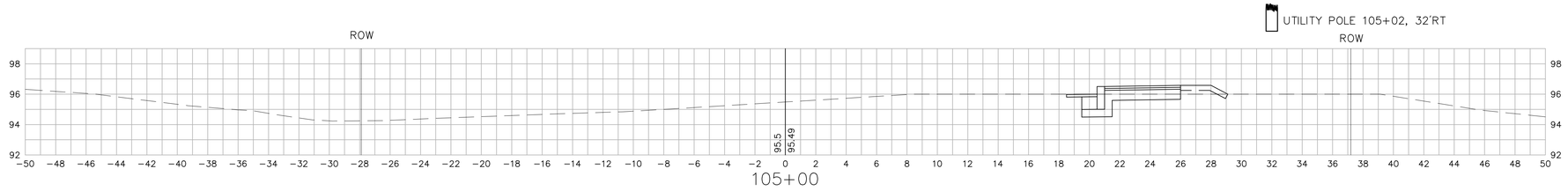
ADVANCE SIGN SCHEMATIC

NTS

ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.

SUBJECT TO APPROVAL BY MassDOT

AMESBURY
HAVERHILL ROAD (ROUTE 110)
CROSS SECTIONS
SHEET 28 OF 31



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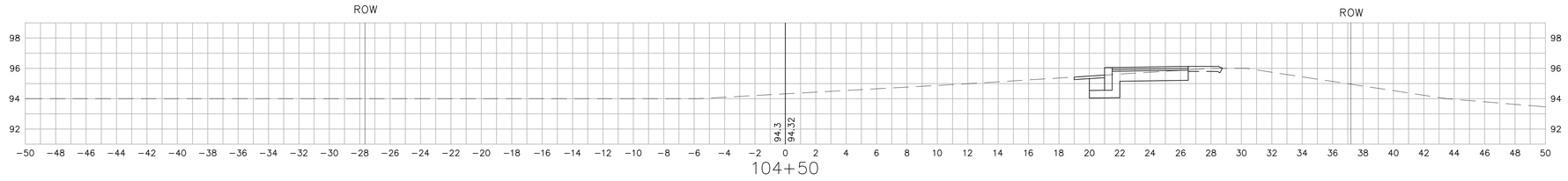

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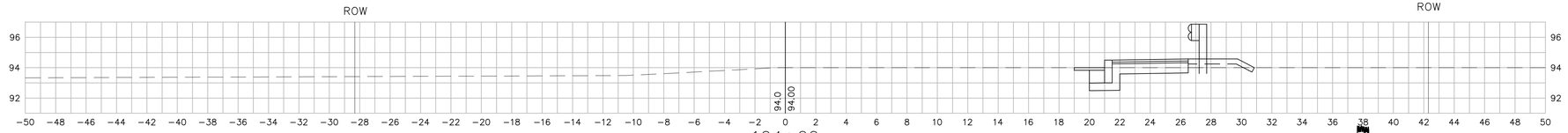

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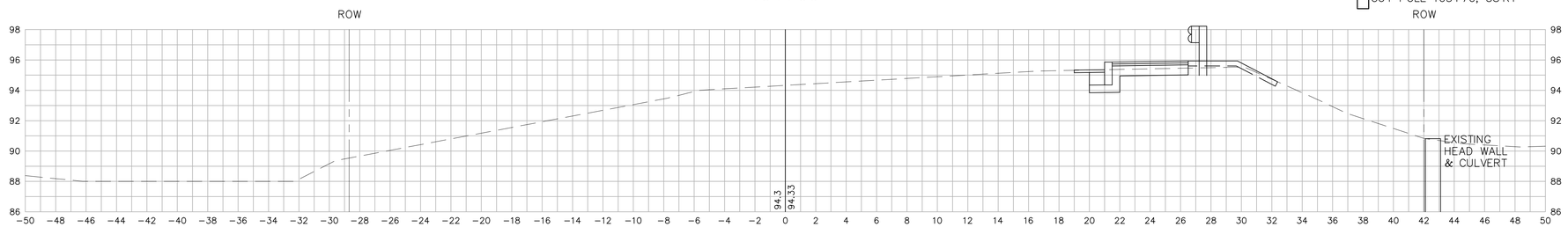

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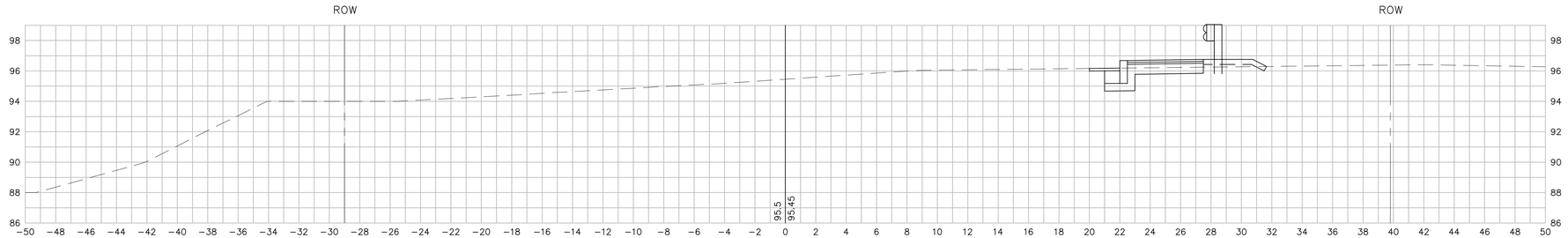

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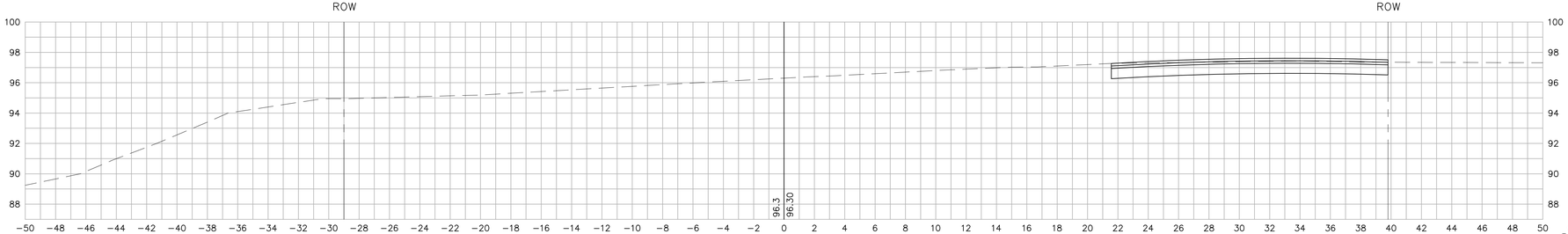
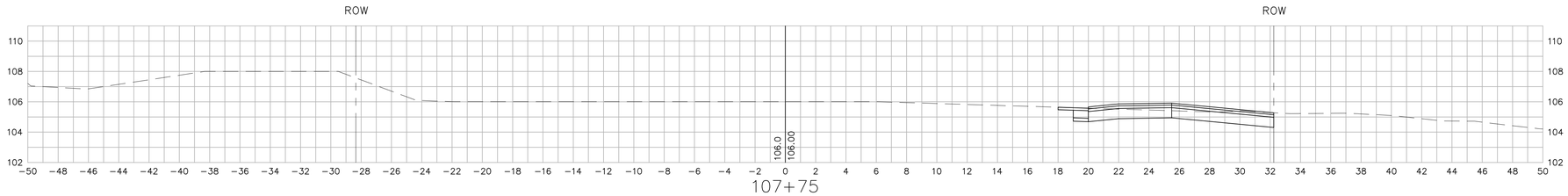


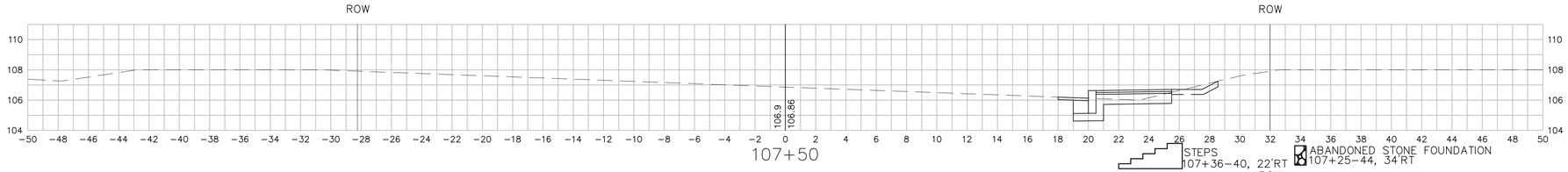
102+75

SUBJECT TO
APPROVAL BY MassDOT

AMESBURY
HAVERHILL ROAD (ROUTE 110)
CROSS SECTIONS
SHEET 29 OF 31



107+75



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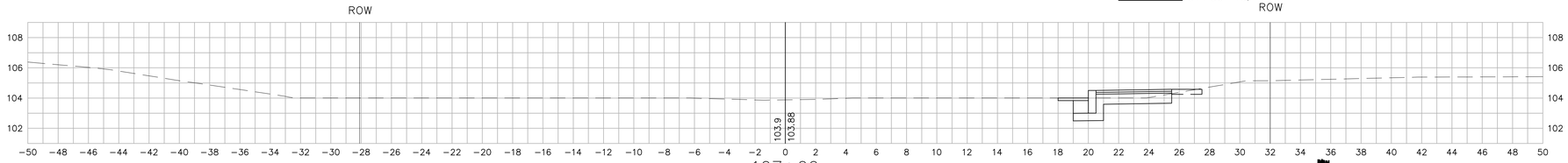

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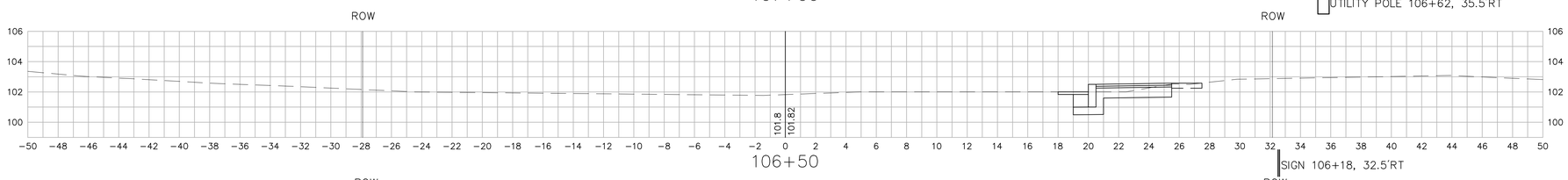

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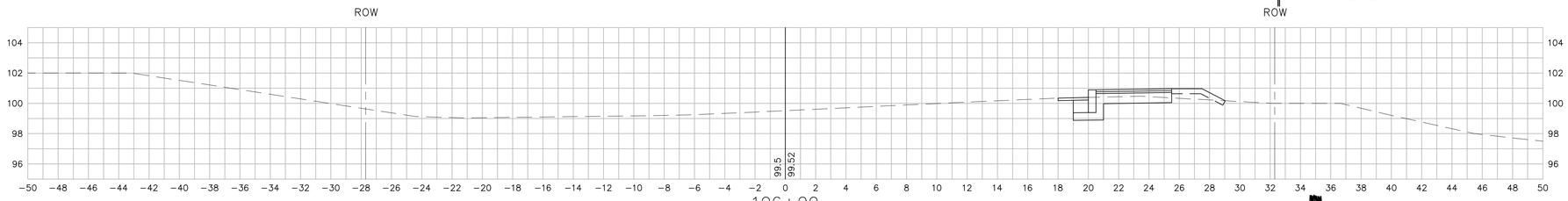

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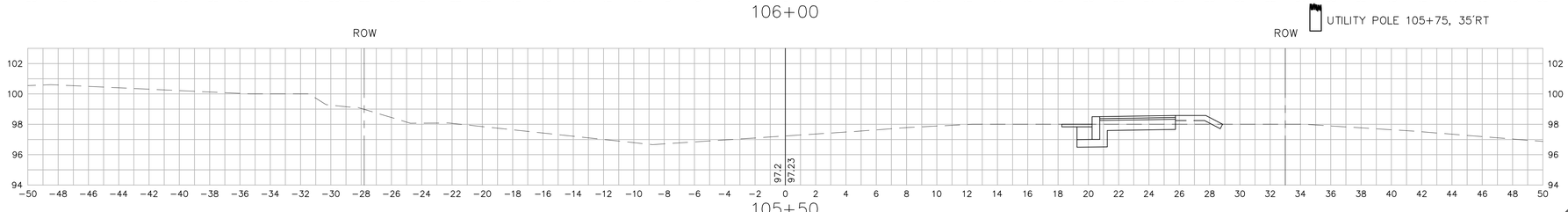


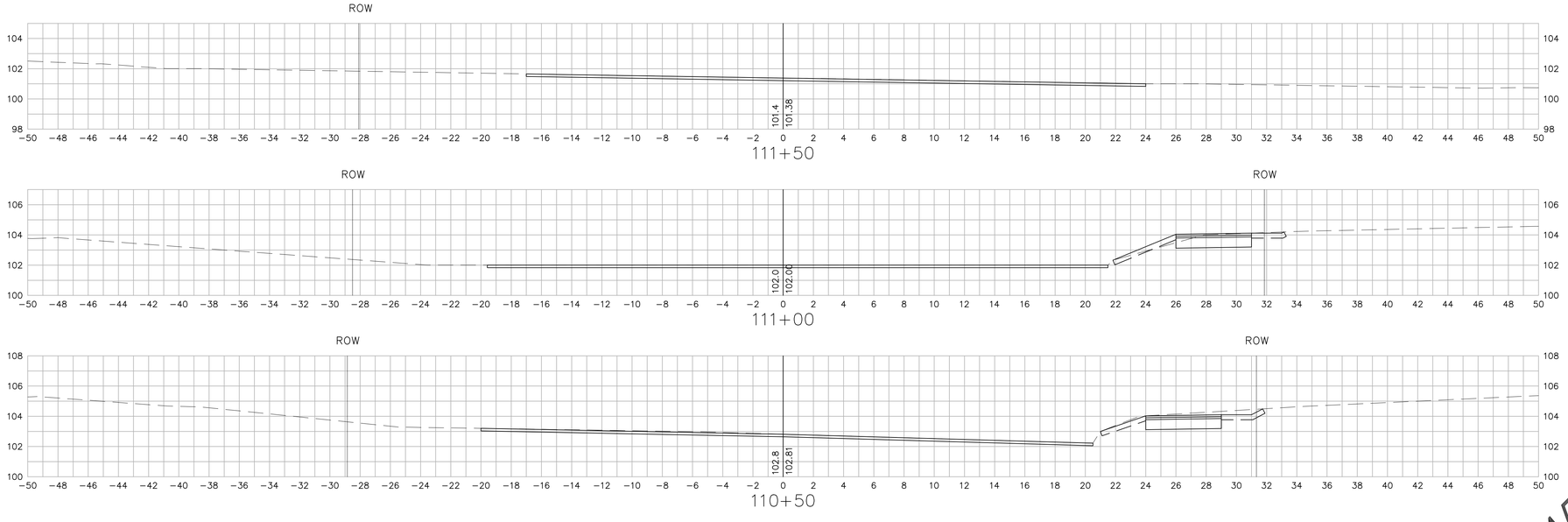
105+50

SUBJECT TO APPROVAL BY MassDOT

AMESBURY
HAVERHILL ROAD (ROUTE 110)
CROSS SECTIONS
SHEET 30 OF 31

SUBJECT TO APPROVAL BY MassDOT

AMESBURY
HAVERHILL ROAD (ROUTE 110)
CROSS SECTIONS
SHEET 31 OF 31



SUBJECT TO APPROVAL BY MassDOT

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Attachment B
2012 Construction General Permit

National Pollutant Discharge Elimination System
General Permit for Discharges from
Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Part 1.1.a and Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) general permit, are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of earth-disturbing activities" (see Appendix A) until "final stabilization" (see Part 2.2).

This permit becomes effective on **February 16, 2012**. For the State of Idaho (except for Indian country), this permit becomes effective on **April 9, 2012**. For areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, this permit becomes effective on **April 13, 2012**. For projects located in the following areas, this permit becomes effective on **May 9, 2012**: Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

This permit and the authorization to discharge expire at midnight, **February 16, 2017**.

Signed and issued this 16th day of February, 2012

H. Curtis Spalding
Regional Administrator, Region 1

Signed and issued this 16th day of February, 2012

William K. Honker, P.E.
Acting Director, Water Quality Protection Division, Region 6

Signed and issued this 16th day of February, 2012

John Filippelli
Director, Division of Environmental Planning & Protection, Region 2

Signed and issued this 16th day of February, 2012

Karen Flournoy
Director, Wetlands and Pesticides Division, Region 7

Signed and issued this 16th day of February, 2012

José C. Font
Acting Division Director, Carribbean Environmental Protection Division, Region 2, Caribbean Office

Signed and issued this 16th day of February, 2012

Melanie L. Pallman
Acting Assistant Regional Administrator, Office of Partneships and Regulatory Assistance, Region 8

Signed and issued this 16th day of February, 2012

Catherine A. Libertz
Assistant Director, Water Protection Division, Region 3

Signed and issued this 16th day of February, 2012

Nancy Woo
Deputy Director, Water Division, Region 9

Signed and issued this 16th day of February, 2012

James D. Giattina
Director, Water Protection Division, Region 4

Signed and issued this 16th day of February and 9th day of April, 2012

Michael J. Lidgard
Acting Director, Office of Water and Watersheds, Region 10

Signed and issued this 16th day of February and 9th day of May, 2012

Tinka G. Hyde
Director, Water Division, Region 5

Signed and issued this 13th day of April, 2012

Christine Psyk
Associate Director, Office of Water and Watersheds, Region 10

The signatures are for the permit conditions in Parts 1 through 9 and Appendices A through K.

CONTENTS

1. HOW TO OBTAIN PERMIT COVERAGE UNDER THE CGP.

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for applying for permit coverage in this Part.

1.1. ELIGIBILITY CONDITIONS REQUIRED OF ALL PROJECTS.

Only those projects that meet all of the following eligibility conditions may be covered under this permit:

a. You are an "operator" of the construction project for which discharges will be covered under this permit;

Note: For the purposes of this permit, an "operator" is any party associated with a construction project that meets either of the following two criteria:

1. *The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or*
2. *The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).*

Subcontractors generally are not considered operators for the purposes of this permit.

Note: Where there are multiple operators associated with the same project, all operators are required to obtain permit coverage. The following applies in these situations:

1. *If one operator has control over plans and specifications and a different operator has control over activities at the project site, they may divide responsibility for compliance with the terms of this permit as long as they develop a group SWPPP (see Part 7.1.1), which documents which operator has responsibility for each requirement of the permit.*
2. *If an operator only has operational control over a portion of a larger project (e.g., one of four homebuilders in a subdivision), the operator is responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to the activities on their portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP in the areas under their control.*
3. *You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective.*
4. *If the operator of a "construction support activity" (see Part 1.3.c) is different than the operator of the main construction site, that operator is also required to obtain permit coverage.*

b. Your project:

i. Will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land; or

ii. Your project's discharges have been designated by EPA as needing a permit under § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Your project is located in an area where EPA is the permitting authority (see Appendix B);

d. Discharges from your project are not:

   i. Already covered by a different NPDES permit for the same discharge; or

   ii. In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.[1, 2]

e. You are able to demonstrate that you meet one of the criteria listed in Appendix D with respect to the protection of species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or federally-designated critical habitat;

f. You have completed the screening process in Appendix E relating to the protection of historic properties and places; and

g. You have complied with all requirements in Part 9 imposed by the applicable state, Indian tribe, or territory in which your construction activities will occur.

1.2. ELIGIBILITY CONDITIONS THAT APPLY DEPENDING ON TYPE OF PROJECT.

You must also satisfy, if applicable, the conditions in Parts 1.2.1 through 1.2.4 in order to obtain coverage under this permit.

1.2.1. Eligibility for Emergency-Related Construction Activities.

If you are conducting earth-disturbing activities in response to a public emergency *(e.g., natural disaster, widespread disruption in essential public services)*, and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you are authorized to discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing earth-disturbing activities (see Table 1) establishing that you are eligible under this permit. You are also required to provide documentation in your SWPPP to substantiate the occurrence of the public emergency.

1.2.2. Water Quality Standards – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are not eligible for coverage under this permit for discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 1.4.5. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures designed to bring your discharge into compliance with water quality standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

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[1] Parts 1.1.d.i and 1.1.d.ii do not include sites currently covered under the 2003 or 2008 CGPs, which are in the process of obtaining coverage under this permit, and sites covered under this permit, which are transferring coverage to a different operator.

[2] Notwithstanding a project being made ineligible for coverage under this permit because it falls under the description of Parts 1.1.d.i or 1.1.d.ii, above, EPA may waive the applicable requirement after specific review if it determines that coverage under this permit is appropriate.

1.2.3. Discharging to Waters with High Water Quality – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are eligible to discharge to a Tier 2, Tier 2.5, or Tier 3 water only if your discharge will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.3.2, will result in discharges that will not lower the water quality of the applicable water. See list of Tier 2, Tier 2.5, and Tier 3 waters in Appendix F.

Note: Your project will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

1.2.4. Use of Cationic Treatment Chemicals.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

1.3. Types of Discharges Authorized Under the CGP.

The following is a list of discharges that are allowed under the permit provided that appropriate stormwater controls are designed, installed, and maintained:

a. Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);

b. Stormwater discharges designated by EPA as needing a permit under 40 CFR § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Stormwater discharges from construction support activities *(e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)* provided:

   i. The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;

   ii. The support activity is not a commercial operation, nor does it serve multiple unrelated construction projects;

   iii. The support activity does not continue to operate beyond the completion of the construction activity at the project it supports; and

   iv. Stormwater controls are implemented in accordance with Part 2 and, if applicable, Part 3, for discharges from the support activity areas.

d. The following non-stormwater discharges from your construction activity, provided that, with the exception of water used to control dust and to irrigate areas to be vegetatively stabilized, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Part 2:

   i. Discharges from emergency fire-fighting activities;

ii. Fire hydrant flushings;

iii. Landscape irrigation;

iv. Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;

v. Water used to control dust;

vi. Potable water including uncontaminated water line flushings;

vii. Routine external building washdown that does not use detergents;

viii. Pavement wash waters provided spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used. You are prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

ix. Uncontaminated air conditioning or compressor condensate;

x. Uncontaminated, non-turbid discharges of ground water or spring water;

xi. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

xii. Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4; and

e. Discharges of stormwater listed above in Parts a, b, and c, or authorized non-stormwater discharges in Part d above, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.4. SUBMITTING YOUR NOTICE OF INTENT (NOI).

To be covered under this permit, you must submit to EPA a complete and accurate NOI prior to commencing construction activities. The NOI certifies to EPA that you are eligible for coverage according to Part 1.1 and 1.2, and provides information on your construction operation and discharge.

Note: All "operators" (as defined in Appendix A) associated with your construction project, who meet the Part 1.1 eligibility requirements, and who elect to seek coverage under this permit, are required to submit an NOI.

Note: There are two exceptions to the requirement to submit the NOI prior to the commencement of construction activities: (1) for emergency-related projects, and (2) for new projects scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012. [3] *For these two types of projects, the NOI*

[3] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in the following areas, if you are schedule to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

must be submitted within 30 calendar days after the commencement of earth-disturbing activities (see Part 1.4.2).

Note: You must complete the development of a Stormwater Pollution Prevention Plan (SWPPP) consistent with Part 7 prior to submitting your NOI for coverage under this permit.

1.4.1. How to Submit Your NOI.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOI. Go to www.epa.gov/npdes/stormwater/cgpenoi to access the eNOI system and file an NOI. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOI, and you elect to use it, you must complete the form in Appendix J.

1.4.2. Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage.

Table 1 provides the deadlines for submitting your NOI and your official start date of permit coverage, which differ depending on when you commence construction activities. The following terms are used in Table 1 to establish NOI deadlines:

a. New project – a construction project that commences construction activities on or after February 16, 2012, or or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

b. Existing project – a construction project that commenced construction activities prior to February 16, 2012, or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

c. New operator of a new or existing project – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
New project	You must submit your NOI at least 14 calendar days prior to commencing earth-disturbing activities. *Exception:* If your project qualifies as an "emergency-related project" under Part 1.2.1, you must submit your NOI by no later than 30 calendar days after commencing	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied. *Exception:* If your project qualifies as

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
	earth-disturbing activities. *Exception:* If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities.[4]	an "emergency-related project" under Part 1.2.1, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. *Exception:* If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied.[5]

[4] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

[5] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
Existing project	You must submit your NOI by no later than May 16, 2012.[6] However, if you have not previously obtained coverage under an NPDES permit, you must submit your NOI immediately.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.[7]
New operator of a new or existing project	You must submit your NOI at least 14 calendar days before the date the transfer to the new operator will take place.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.

Note: If you have missed the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the Clean Water Act until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of earth-disturbing activities and discharge authorization.

Note: Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

1.4.3. Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

- You terminate permit coverage consistent with Part 8; or
- Your discharges are permitted under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2017; or
- For existing projects that continue after this permit has expired, the deadline has passed for the submission of an NOI for coverage under a reissued or replacement version of this permit and you have failed to submit an NOI by the required deadline.

1.4.4. Continuation of Coverage for Existing Permittees After the Permit Expires.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and

[6] For existing projects located in the State of Idaho (except Indian country), NOIs must be submitted by no later than July 8, 2012. For existing projects located in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, NOIs must be submitted by no later than July 12, 2012. For existing projects located in the following areas, NOIs must be submitted no later than August 7, 2012: the Fond Du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac Du Flambeau Band of Lake Superior Chippewa in Wisconsin.

[7] Note that if you are currently covered under the 2003 or 2008 CGP, this coverage continues until your coverage under this permit begins, provided you have submitted an NOI by the deadline.

remain in force and effect for discharges that were covered prior to expiration. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by this permit until the earliest of:

- Your authorization for coverage under a reissued or replacement version of this permit following your timely submittal of a complete and accurate NOI requesting coverage under the new permit; or

  Note: If you fail to submit a timely NOI for coverage under the reissued or replacement permit, your coverage will terminate on the date that the NOI was due.

- Your submittal of a Notice of Termination; or
- Issuance or denial of an individual permit for the project's discharges; or
- A final permit decision by EPA not to reissue a general permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will terminate at the end of this time period.

EPA reserves the right to modify or revoke and reissue this permit under 40 CFR 122.62 and 63, in which case you will be notified of any relevant changes or procedures to which you may be subject.

1.4.5. Procedures for Denial of Coverage.

Following your submittal of a complete and accurate NOI, you may be notified in writing by EPA that you are not covered, and that you must either apply for and/or obtain coverage under an individual NPDES permit or an alternate general NPDES permit. This notification will include a brief statement of the reasons for this decision and will provide application information. Any interested person may request that EPA consider requiring an individual permit under this paragraph.

If you are already a permittee with coverage under this permit, the notice will set a deadline to file the permit application, and will include a statement that on the effective date of the individual NPDES permit or alternate general NPDES permit, as it applies to you, coverage under this general permit will terminate. EPA may grant additional time to submit the application if you request it. If you are covered under this permit and fail to submit an individual NPDES permit application or an NOI for an alternate general NPDES permit as required by EPA, then the applicability of this permit to you is terminated at the end of the day specified by EPA as the deadline for application submittal. EPA may take appropriate enforcement action for any unpermitted discharge. If you submit a timely permit application, then when an individual NPDES permit is issued to you or you are provided with coverage under an alternate general NPDES permit, your coverage under this permit is terminated on the effective date of the individual permit or date of coverage under the alternate general permit.

1.5. REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE.

You must post a sign or other notice conspicuously at a safe, publicly accessible location in close proximity to the project site. At a minimum, the notice must include the NPDES Permit tracking number and a contact name and phone number for obtaining additional project information. The notice must be located so that it is visible from the public road that is nearest to the active part of the construction site, and it must use a font large enough to be readily viewed from a public right-of-way.

2. EFFLUENT LIMITATIONS APPLICABLE TO ALL DISCHARGES FROM CONSTRUCTION SITES

You are required to comply with the following effluent limitations in this Part for discharges from your site and/or from construction support activities (see Part 1.3.c).

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a "new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part because (1) the requirement was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to document this fact in your SWPPP and are waived from complying with that requirement. This flexibility applies only to the requirements in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4). This only applies to those portions of your site that have already commenced earth-disturbing activities or where stormwater controls implemented in compliance with the previous permit have already been installed.

Part 2 includes the following types of requirements:

- Erosion and Sediment Control Requirements (Part 2.1)
- Stabilization Requirements (Part 2.2)
- Pollution Prevention Requirements (Part 2.3)

2.1. EROSION AND SEDIMENT CONTROL REQUIREMENTS.

You must design, install, and maintain erosion and sediment controls that minimize the discharge of pollutants from earth-disturbing activities. To meet this requirement, you must comply with the following provisions.

2.1.1. General Requirements Applicable to All Construction Sites.

2.1.1.1 ***Area of Disturbance.*** You are required to minimize the amount of soil exposed during construction activities. You are also subject to the deadlines for temporarily and/or permanently stabilizing exposed portions of your site pursuant to Part 2.2.

2.1.1.2 ***Design Requirements.***

a. You must account for the following factors in designing your stormwater controls:

i. The expected amount, frequency, intensity, and duration of precipitation;

ii. The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. If any stormwater flow will be channelized at your site, you must design stormwater controls to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion; and

iii. The range of soil particle sizes expected to be present on the site.

b. You must direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers established under Part 2.1.2.1, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.

2.1.1.3 ***Installation Requirements.***

a. **Complete installation of stormwater controls by the time each phase of earth-disturbance has begun, unless infeasible.** By the time earth-disturbing activities in any given portion of your site have begun, unless infeasible, you must install and make operational any downgradient sediment controls (*e.g., buffers or equivalent sediment controls, perimeter controls, exit point controls, storm drain inlet protection)* that control discharges from the initial site clearing, grading, excavating, and other land-disturbing activities.

Note: Where it is infeasible to install stormwater controls prior to the initial earth disturbance, it is EPA's expectation that it will be a rare circumstance that will prevent the operator from installing such controls immediately following the initial earth disturbance.

Following the installation of these initial controls, all other stormwater controls planned for this portion of your site and described in your SWPPP must be installed and made operational as soon as conditions on the site allow.

Note: The requirement to install stormwater controls prior to earth-disturbance for each phase of the project does not apply to the earth disturbance associated with the actual installation of these controls.

b. **Use good engineering practices and follow manufacturer's specifications.** You must install all stormwater controls in accordance with good engineering practices, including applicable design specifications.

Note: Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in your SWPPP.

2.1.1.4 ***Maintenance Requirements.***

a. You must ensure that all erosion and sediment controls required in this Part remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

b. You must inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4.1, and document your findings in accordance with Part 4.1.7. If you find a problem (*e.g., erosion and sediment controls need to be replaced, repaired, or maintained*), you must make the necessary repairs or modifications in accordance with the following schedule:

i. Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

ii. When installation of a new erosion or sediment control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.1.2. Erosion and Sediment Control Requirements Applicable to All Sites.

2.1.2.1 **Provide Natural Buffers or Equivalent Sediment Controls.** (These requirements only apply when a surface water is located within 50 feet of your project's earth disturbances).

Note: EPA does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the requirement to comply with this Part.

Note: Areas that you do not own or that are otherwise outside your operational control may be considered areas of undisturbed natural buffer for purposes of compliance with this part.

You must ensure that any discharges to surface waters through the area between the disturbed portions of the property and any surface waters located within 50 feet of your site are treated by an area of undisturbed natural buffer and/or additional erosion and sediment controls in order to achieve a reduction in sediment load equivalent to that achieved by a 50-foot natural buffer. Refer to Appendix G (Buffer Guidance) for information to assist you in complying with this requirement, and to Part 2.1.2.1e for exceptions to this requirement.

a. **Compliance Alternatives.** You can comply with this requirement in one of the following ways:

i. Provide and maintain a 50-foot undisturbed natural buffer; or

Note: If your earth disturbances are located 50 feet or further from a surface water, then you have complied with this alternative.

ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or

iii. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment

controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note: For the compliance alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2.1.2.1a.ii and 2.1.2.1a.iii, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Appendix G for a discussion of how to determine equivalent reductions.

You must document the compliance alternative you have selected in your SWPPP, and comply with the applicable additional requirements described in Parts 2.1.2.1b and 2.1.2.1c below.

The compliance alternative selected above must be maintained throughout the duration of permit coverage, except that you may select a different compliance alternative during your period of permit coverage, in which case you must modify your SWPPP to reflect this change.

b. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.i or 2.1.2.1a.ii above, throughout your period of coverage under this permit, you must comply with the following additional requirements:

   i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

   ii. Document in your SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

   iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas.

c. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii, you must document in your SWPPP the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency.

d. **Additional Requirement for the Compliance Alternative in Part 2.1.2.1a.iii.** If you choose the compliance alternative in Part 2.1.2.1a.iii, you must also

include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

e. **Exceptions.**

i. If there is no discharge of stormwater to surface waters through the area between your site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented control measures, such as a berm or other barrier, that will prevent such discharges.

ii. Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part, unless you will remove portions of the preexisting development.

Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you are required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either Part 2.1.2.1a.ii or 2.1.2.1a.iii above, you are not expected to compensate for the reduction in buffer function from the area covered by these preexisting disturbances. See Appendix G for further information on how to comply with the compliance alternatives in Part 2.1.2.1a.ii or 2.1.2.1a.iii above.

If during your project, you will disturb any portion of these preexisting disturbances, the area disturbed will be deducted from the area treated as natural buffer.

iii. For "linear construction projects" (see Appendix A), you are not required to comply with the requirements in this Part if site constraints (*e.g., limited right-of-way*) prevent you from meeting any of the compliance alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale as to why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.

iv. For "small residential lot" construction (*i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre*), you have the option of complying with the requirements in Appendix G (Part G.2.3).

v. The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

- Construction approved under a CWA Section 404 permit; or
- Construction of a water-dependent structure or water access area *(e.g., pier, boat ramp, trail)*.

You must document in your SWPPP if any of the above disturbances will occur within the buffer area on your site.

2.1.2.2 ***Install Perimeter Controls.***

a. **Installation Requirements:** You must install sediment controls along those perimeter areas of your site that will receive stormwater from earth-disturbing activities.[8]

For linear projects with rights-of-way that restrict or prevent the use of such perimeter controls, you must maximize the use of these controls where practicable and document in your SWPPP why it is impracticable in other areas of the project.

b. **Maintenance Requirements:** You must remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control.

2.1.2.3 ***Minimize Sediment Track-Out.*** You must minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting your construction site. To comply with this requirement, you must:

a. Restrict vehicle use to properly designated exit points;

b. Use appropriate stabilization techniques[9] at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit;

c. Where necessary, use additional controls[10] to remove sediment from vehicle tires prior to exit; and

d. Where sediment has been tracked-out from your site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 2.1.2.3.

2.1.2.4 **Control Discharges from Stockpiled Sediment or Soil.** For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

[8] Examples of perimeter controls include, but are not limited to, filter berms, silt fences, and temporary diversion dikes.

[9] Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, or turf mats.

[10] Examples of additional controls to remove sediment from vehicle tires include, but are not limited to, wheel washing, rumble strips, and rattle plates.

Note: For the purposes of this permit, sediment or soil stockpiles are defined as the storage for multiple days of soil or other sediment material to be used in the construction project.

a. Locate the piles outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls implemented in accordance with Part 2.1;

b. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;[11]

c. Where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge;

d. Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water; and

e. Unless infeasible, contain and securely protect from wind.

2.1.2.5 ***Minimize Dust.*** In order to avoid pollutants from being discharged into surface waters, to the extent feasible, you must minimize the generation of dust through the appropriate application of water or other dust suppression techniques.

2.1.2.6 ***Minimize the Disturbance of Steep Slopes.*** You must minimize the disturbance of "steep slopes" (see definition in Appendix A).

Note: The permit does not prevent or prohibit disturbance on steep slopes. For some projects, disturbance on steep slopes may be necessary for construction (e.g., a road cut in mountainous terrain). If a disturbance to steep slopes is required for the project, EPA would recognize that it is not economically achievable to avoid the disturbance to steep slopes. However, in cases where steep slope disturbances are required, minimizing the disturbances to steep slopes consistent with this requirement can be accomplished through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances to these areas and using stabilization practices designed to be used on steep grades.

2.1.2.7 ***Preserve Topsoil.*** You must preserve native topsoil on your site, unless infeasible.

Note: Some projects may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain. In these cases, preserving topsoil at the site would not be feasible. Some sites may not have space to stockpile topsoil on site for later use, in which case, it may also not be feasible to preserve topsoil.

Note: Stockpiling of topsoil at off-site locations, or transfer of topsoil to other locations, is an example of a practice that is consistent with the requirements in this Part.

2.1.2.8 ***Minimize Soil Compaction***. In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed, you must either:

[11] Examples include berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale.

a. **Restrict vehicle / equipment use.** Restrict vehicle and equipment use in these locations to avoid soil compaction; or

b. **Use soil conditioning techniques.** Prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

2.1.2.9 ***Protect Storm Drain Inlets.*** If you discharge to any storm drain inlet that carries stormwater flow from your site directly to a surface water (and it is not first directed to a sediment basin, sediment trap, or similarly effective control), and you have authority to access the storm drain inlet, you must:

a. **Installation Requirements.** Install inlet protection measures[12] that remove sediment from your discharge prior to entry into the storm drain inlet.

Note: Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

b. **Maintenance Requirements.** Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

2.1.3. Requirements Applicable Only to Sites Using These Specific Stormwater Controls.

You are required to comply with the following requirements if you will install any of the following stormwater controls at your site:

2.1.3.1 ***Constructed Stormwater Conveyance Channels.*** Design stormwater conveyance channels to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. Minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices[13] within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

2.1.3.2 ***Sediment Basins.*** If you install a sediment basin , you must comply with the following:

a. **Design requirements.**

i. Provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm (see Appendix H), or (2) 3,600 cubic feet per acre drained;

ii. When discharging from the sediment basin, utilize outlet structures that withdraw water from the surface in order to minimize the discharge of pollutants, unless infeasible;

[12] Examples of inlet protection measures include fabric filters, sandbags, concrete blocks, and gravel barriers.

[13] Examples of velocity dissipation devices include check dams, sediment traps, riprap, or grouted riprap at outlets.

Note: EPA believes that the circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where surface outlets may not be feasible during certain time periods (although it is expected that they would be used during other periods). If you have determined that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination.

iii. Prevent erosion of (1) the sediment basin using stabilization controls *(e.g., erosion control blankets)*, and (2) the inlet and outlet using erosion controls and velocity dissipation devices; and

iv. Sediment basins must be situated outside of surface waters and any natural buffers established under Part 2.1.2.1a, and must be designed to avoid collecting water from wetlands.

b. **Maintenance requirements.** Keep in effective operating condition and remove accumulated sediment to maintain at least ½ of the design capacity of the sediment basin at all times.

2.1.3.3 ***Use of Treatment Chemicals.*** If you are using polymers, flocculants, or other treatment chemicals at your site, you must comply with the following minimum requirements:

a. **Use conventional erosion and sediment controls prior to and after the application of treatment chemicals.** Use conventional erosion and sediment controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control *(e.g., sediment basin, perimeter control)* prior to discharge.

b. **Select appropriate treatment chemicals**. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and discharged to locations where chemicals will be applied, and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area.

c. **Minimize discharge risk from stored chemicals.** Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures *(e.g., spill berms, decks, spill containment pallets),* or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means *(e.g., storing chemicals in covered area or having a spill kit available on site)*.

d. **Comply with state/local requirements.** Comply with relevant state and local requirements affecting the use of treatment chemicals.

e. **Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier.** You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

f. **Ensure proper training.** Ensure that all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training. Among other things, the training must cover proper dosing requirements.

g. **Comply with additional requirements for the approved use of cationic chemicals.** If you have been authorized to use cationic chemicals at your site pursuant to Part 1.2.4, and the authorization is conditioned on your compliance with additional requirements necessary to ensure that the use of such chemicals will not cause an exceedance of water quality standards, you are required to comply with all such requirements.

h. **Provide proper SWPPP documentation.** You must include documentation in your SWPPP consistent with Parts 7.2.6.9 and 7.2.10.2 on the specific chemicals and chemical treatment systems you will use, and how you will comply with the requirements in this Part.

2.1.3.4 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls.[14] Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

a. **Discharge requirements.**

i. Do not discharge visible floating solids or foam;

ii. Use an oil-water separator or suitable filtration device (such as a cartridge filter) that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials;

iii. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area;

iv. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.1.3.1;

v. With backwash water, either haul it away for disposal or return it to the beginning of the treatment process; and

vi. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

b. **Treatment chemical restrictions.** If you are using polymers, flocculants, or other treatment chemicals to treat dewatering water, you must comply with the requirements in Parts 2.1.3.3.

2.2. STABILIZATION REQUIREMENTS.

You are required to stabilize exposed portions of your site in accordance with the requirements of this Part.

[14] Examples of appropriate controls include, but are not limited to, sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

Note: For the purposes of this permit, "exposed portions of your site" means areas of exposed soil that are required to be stabilized. Note that EPA does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left unvegetated or unstabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

2.2.1. Deadlines for Initiating and Completing Stabilization.

2.2.1.1 ***Deadline to Initiate Stabilization.*** You must initiate soil stabilization measures immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the site.

Note: Earth-disturbing activities have permanently ceased when clearing and excavation within any area of your construction site that will not include permanent structures has been completed.

Note: Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future.

The 14 calendar day timeframe above begins counting as soon as you know that construction work on a portion of your site will be temporarily ceased. In circumstances where you experience unplanned or unanticipated delays in construction due to circumstances beyond your control (e.g., sudden work stoppage due to unanticipated problems associated with construction labor, funding, or other issues related to the ability to work on the site; weather conditions rendering the site unsuitable for the continuation of construction work) and you do not know at first how long the work stoppage will continue, your requirement to immediately initiate stabilization is triggered as soon as you know with reasonable certainty that work will be stopped for 14 or more additional calendar days. At that point, you must comply with Parts 2.2.1.1 and 2.2.1.2.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization:

1. *prepping the soil for vegetative or non-vegetative stabilization;*
2. *applying mulch or other non-vegetative product to the exposed area;*
3. *seeding or planting the exposed area;*
4. *starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and*
5. *finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization in Parts 2.2.1.2 and 2.2.1.3.*

This list of examples is not exhaustive.

Note: The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this provision, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

2.2.1.2 ***Deadline to Complete Stabilization Activities.*** As soon as practicable, but no later than 14 calendar days after the initiation of soil stabilization measures consistent with Part 2.2.1.1[15], you are required to have completed:

[15] EPA may determine, based on an inspection carried out under Part 4.2 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil

a. For vegetative stabilization, all activities[16] necessary to initially seed or plant the area to be stabilized; and/or

b. For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

2.2.1.3 ***Exceptions to the Deadlines for Initiating and Completing Stabilization.***

a. *Deadlines for projects occurring in arid or semi-arid areas, or drought-stricken areas*. These requirements apply if (1) your site is located in an arid area, a semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, (2) construction will occur during the seasonally dry period or during a period in which drought is predicted to occur, and (3) you are using vegetative cover for temporary or permanent stabilization. You may also comply with the deadlines in Part 2.2.1.1 instead. The deadlines for these types of projects are as follows:

i. Immediately initiate, and within 14 calendar days of a temporary or permanent cessation of work in any portion of your site complete, the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;

ii. As soon as practicable, given conditions or circumstances on your site, complete all activities necessary to initially seed or plant the area to be stabilized; and

iii. If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. You must also include the schedule you will follow for initiating and completing vegetative stabilization.

b. *Deadlines for projects that are affected by circumstances beyond the control of the permittee that delay the initiation and/or completion of vegetative stabilization as required in Parts 2.2.1.1 and/or 2.2.1.2*. If you are unable to meet the deadlines in Parts 2.2.1.1and/or 2.2.1.2 due to circumstances beyond your control[17], and you are using vegetative cover for temporary or permanent stabilization, you may comply with the following stabilization deadlines instead:

i. Immediately initiate, and within 14 calendar days complete, the installation of temporary non-vegetative stabilization measures to prevent erosion;

ii. Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and

that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

[16] For example, such activities might include, but are not limited to, soil conditioning, application of seed or sod, planting of seedlings or other vegetation, application of fertilizer, and, as deemed appropriate, watering.

[17] Examples include problems with the supply of seed stock or with the availability of specialized equipment, unsuitability of soil conditions due to excessive precipitation and/or flooding.

Note: You are required to have stabilized the exposed portions of your site consistent with Part 2.2.2 prior to terminating permit coverage under Part 8.2.

iii. Document the circumstances that prevent you from meeting the deadlines required in Parts 2.2.1.1and/or 2.2.1.2 and the schedule you will follow for initiating and completing stabilization.

c. *Deadlines for sites discharging to sensitive waters.* For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Note: If you qualify for the deadlines for initiating and completing stabilization in Part 2.2.1.3a or b*, you may comply with the stabilization deadlines in Part 2.2.1.3a or* b *for any portion of your site that discharges to a sensitive water.*

2.2.2. Criteria for Stabilization.

To be considered adequately stabilized, you must meet the criteria below depending on the type of cover you are using, either vegetative or non-vegetative.

2.2.2.1 ***Vegetative Stabilization.***

a. ***For all sites, except those located in arid or semi-arid areas or on agricultural lands.***

i. If you are vegetatively stabilizing any exposed portion of your site through the use of seed or planted vegetation, you must provide established uniform vegetation *(e.g., evenly distributed without large bare areas)*, which provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. You should avoid the use of invasive species;

ii. For final stabilization, vegetative cover must be perennial; and

iii. Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, you must select, design, and install non-vegetative erosion controls that provide cover *(e.g., mulch, rolled erosion control products)* to the area while vegetation is becoming established.

b. ***For sites located in arid or semi-arid areas, or drought-stricken areas.*** If you are located in an arid or semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, you are considered to have completed final stabilization if both of the following criteria are met:

i. The area you have seeded or planted must within 3 years provide established vegetation that covers 70 percent or more of the density of vegetation prior to commencing earth-disturbing activities; and

ii. In addition to seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded

or planted area, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

c. ***For sites located on land used for agriculture.*** Disturbed areas on land used for agricultural purposes *(e.g., pipelines across crop or range land, staging areas for highway construction*) that are restored to their pre-construction agricultural use are not subject to these final stabilization criteria. Areas disturbed that were not previously used for agricultural activities, and areas that are not being returned to preconstruction agricultural use, must meet the conditions for stabilization in this Part**.**

2.2.2.2 ***Non-Vegetative Stabilization.*** If you are using non-vegetative controls to stabilize exposed portions of your site, or if you are using such controls to temporarily protect areas that are being vegetatively stabilized, you must provide effective non-vegetative cover[18] to stabilize any such exposed portions of your site.

2.3. POLLUTION PREVENTION REQUIREMENTS.

You are required to design, install, and maintain effective pollution prevention measures in order to prevent the discharge of pollutants. Consistent with this requirement, you must:

- Eliminate certain pollutant discharges from your site (see Part 2.3.1);
- Properly maintain all pollution prevention controls (see Part 2.3.2); and
- Comply with pollution prevention standards for pollutant-generating activities that occur at your site (see Part 2.3.3).

These requirements apply to all areas of your construction site and any and all support activities covered by this permit consistent with Part 1.3.c.

2.3.1. Prohibited Discharges.

You are prohibited from discharging the following from your construction site:

2.3.1.1 Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.2 Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.3 Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

2.3.1.4 Soaps, solvents, or detergents used in vehicle and equipment washing; and

2.3.1.5 Toxic or hazardous substances from a spill or other release.

2.3.2. General Maintenance Requirements.

You must ensure that all pollution prevention controls installed in accordance with this Part remain in effective operating condition and are protected from activities that would reduce their effectiveness. You must inspect all pollutant-generating activities and

[18] For temporary stabilization, examples of temporary non-vegetative stabilization methods include, but are not limited to, hydromulch and erosion control blankets. For final stabilization, examples of permanent non-vegetative stabilization methods include, but are not limited to, riprap, gabions, and geotextiles.

pollution prevention controls in accordance with your inspection frequency requirements in Parts 4.1.2 or 3.2.2.1 to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges to receiving waters, and must document your findings in accordance with Part 4.1.7. If you find that controls need to be replaced, repaired, or maintained, you must make the necessary repairs or modifications in accordance with the following:

2.3.2.1 Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

2.3.2.2 When installation of a new pollution prevention control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7 calendar day timeframe. Where these actions result in changes to any of the pollution prevention controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.3.3. Pollution Prevention Standards.

You are required to comply with the pollution prevention standards in this Part if you conduct any of the following activities at your site or at any construction support activity areas covered by this permit (see Part 1.3.c):

- Fueling and maintenance of equipment or vehicles;
- Washing of equipment and vehicles;
- Storage, handling, and disposal of construction materials, products, and wastes; and
- Washing of applicators and containers used for paint, concrete, or other materials.

The pollution prevention standards are as follows:

2.3.3.1 ***Fueling and Maintenance of Equipment or Vehicles***. If you conduct fueling and/or maintenance of equipment or vehicles at your site, you must provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuel, from the area where these activities will take place.[19]

To comply with the prohibition in Part 2.3.1.3, you must:

a. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;

b. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;

[19] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances, providing secondary containment *(e.g., spill berms, decks, spill containment pallets)*and cover where appropriate, and/or having spill kits readily available.

c. Use drip pans and absorbents under or around leaky vehicles;

d. Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;

e. Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and

f. Do not clean surfaces by hosing the area down.

2.3.3.2 ***Washing of Equipment and Vehicles.***

a. You must provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing;[20] and

b. To comply with the prohibition in Part 2.3.1.4, for storage of soaps, detergents, or solvents, you must provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these detergents from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

2.3.3.3 ***Storage, Handling, and Disposal of Construction Products, Materials, and Wastes.*** You must minimize the exposure to stormwater of any of the products, materials, or wastes specified below that are present at your site by complying with the requirements in this Part.

Note: These requirements do not apply to those products, materials, or wastes that are not a source of stormwater contamination or that are designed to be exposed to stormwater.

To ensure you meet this requirement, you must:

a. *For building products*[21]*:* In storage areas, provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these products from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

b. *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*

i. In storage areas, provide either (1) cover (e.g., *plastic sheeting or temporary roofs*) to prevent these chemicals from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas; and

ii. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

c. *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:*

[20] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

[21] Some examples of building products that are typically stored at construction sites include, but are not limited to, asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures.

i. To comply with the prohibition in Part 2.3.1.3, store chemicals in water-tight containers, and provide either (1) cover *(e.g., plastic sheeting or temporary roofs)* to prevent these containers from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., spill kits)*, or provide secondary containment *(e.g., spill berms, decks, spill containment pallets)*; and

ii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

d. *For hazardous or toxic waste*[22]*:*

i. Separate hazardous or toxic waste from construction and domestic waste;

ii. Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;

iii. Store all containers that will be stored outside within appropriately-sized secondary containment *(e.g., spill berms, decks, spill containment pallets)* to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., storing chemicals in covered area or having a spill kit available on site)*;

iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with federal, state, tribal, and local requirements; and

v. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

e. *For construction and domestic waste*[23]: Provide waste containers *(e.g., dumpster or trash receptacle)* of sufficient size and number to contain construction and domestic wastes. In addition, you must:

(1) On work days, clean up and dispose of waste in designated waste containers; and

(2) Clean up immediately if containers overflow.

[22] Examples of hazardous or toxic waste that may be present at construction sites include, but are not limited to, paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, acids.

[23] Examples of construction and domestic waste include, but are not limited to, packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.

f. *For sanitary waste:* Position portable toilets so that they are secure and will not be tipped or knocked over.

2.3.3.4 **Washing of Applicators and Containers used for Paint, Concrete, or Other Materials.** To comply with the prohibition in Parts 2.3.1.1 and 2.3.1.2, you must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, you must:

a. Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. Do not dump liquid wastes in storm sewers;

ii. Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3.3; and

iii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3.3; and

c. Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.4. Emergency Spill Notification.

You are prohibited from discharging toxic or hazardous substances from a spill or other release, consistent with Part 2.3.1.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. You must also, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.3.5. Fertilizer Discharge Restrictions.

You are required to minimize discharges of fertilizers containing nitrogen or phosphorus. To meet this requirement, you must comply with the following requirements:

2.3.5.1 Apply at a rate and in amounts consistent with manufacturer's specifications, or document departures from the manufacturer specifications where appropriate in Part 7.2.7.2 of the SWPPP;

2.3.5.2 Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

2.3.5.3 Avoid applying before heavy rains that could cause excess nutrients to be discharged;

2.3.5.4 Never apply to frozen ground;

2.3.5.5 Never apply to stormwater conveyance channels with flowing water; and

2.3.5.6 Follow all other federal, state, tribal, and local requirements regarding fertilizer application.

3. WATER QUALITY-BASED EFFLUENT LIMITATIONS.

3.1. GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Your discharge must be controlled as necessary to meet applicable water quality standards. You must also comply with any additional requirements that your state or tribe requires you to meet in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your discharge is not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Part 5.2.1, and document the corrective actions as required in Part 5.2.2 and Part 5.4.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI, or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA established or approved TMDL.

3.2. DISCHARGE LIMITATIONS FOR IMPAIRED WATERS

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or (2) nutrients, including impairments for nitrogen and/or phosphorus, you are required to comply with the requirements in Part 3.2.2.

Note: For the purposes of this Part, "impaired waters" are waters identified as impaired on the appropriate CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first surface water to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

If you discharge to an impaired water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional limits or controls are necessary for your discharge to be controlled as necessary to meet water quality standards, including for it to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL, or if coverage under an individual permit is necessary in accordance with Part 1.4.5.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of this permit.

3.2.1. Identify If You Discharge To An Impaired Water.

If you discharge to an impaired water, you must provide the following information in your NOI:

- A list of all impaired waters to which you discharge;
- The pollutant(s) for which the surface water is impaired; and

- Whether a TMDL has been approved or established for the waters to which you discharge.

3.2.2. Requirements for Discharges to Sediment or Nutrient-Impaired Waters.

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter *(e.g., total suspended solids (TSS) or turbidity)* and/or (2) nutrients *(e.g., nitrogen and/or phosphorus)*, including impaired waters for which a TMDL has been approved or established for the impairment, you are required to comply with the following stormwater control requirements, which supplement the requirements applicable to your site in other corresponding parts of the permit

3.2.2.1 ***Frequency of Site Inspection.*** You must conduct inspections at the frequency specified in Part 4.1.3.

3.2.2.2 ***Deadline to Complete Stabilization.*** You must comply with the deadlines for completing site stabilization as specified in Part 2.2.1.3c.

3.2.2.3 ***State and Tribal Requirements.*** You must comply with any additional state or tribal impairment-related requirements included in Part 9.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if it is determined that the controls in the Part will not be sufficient to control discharges consistent with the assumptions and requirements of an applicable wasteload allocation of an approved or established TMDL or to prevent the site from contributing to the impairment.

3.3. DISCHARGES TO WATERS IDENTIFIED AS TIER 2, TIER 2.5, OR TIER 3.

3.3.1. Identify if You Discharge to a Tier 2, Tier 2.5, or Tier 3 Water.

If you discharge to a water identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 water, you must provide on your NOI a list of waters identified as Tier 2, Tier 2.5, or Tier 3 to which you discharge. See Appendix F for a list of Tier 2 and 3 waters.

Note: For the purposes of this permit, you are considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3. Tiers 2, 2.5 and 3 refer to waters either identified by the state as high quality waters or Outstanding National Resource Waters under 40 CFR §131.12(a)(2) and (3). For discharges that enter a storm sewer system prior to discharge, the surface water to which you discharge is the first surface water that receives the stormwater discharge from the storm sewer system.

3.3.2. Requirements for New Projects Discharging to Tier 2, Tier 2.5, or Tier 3 Waters.

For new projects, if you will discharge to a Tier 2, Tier 2.5, or Tier 3 water, you are required to comply with the requirements in Parts 4.1.3 (inspection frequencies) and 2.2.1.3c (stabilization deadlines), and, if applicable, Part 9 (relevant state or tribal requirements). In addition, on a case-by-case basis, EPA may notify operators of such new projects or operators of existing projects with increased discharges that additional analyses, stormwater controls, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part 1.4.5.

4. INSPECTIONS.

4.1. SITE INSPECTIONS.

4.1.1. Person(s) Responsible for Inspecting Site.

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that the person who conducts inspections is a "qualified person."

Note: A "qualified person" is a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

4.1.2. Frequency of Inspections.

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to Part 4.1.3 or Part 4.1.4:

4.1.2.1 At least once every 7 calendar days; or

4.1.2.2 Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in accordance with Part 4.1.2.2 and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.3. Increase in Inspection Frequency for Sites Discharging to Sensitive Waters.

For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), instead of the inspection frequency specified in Part 4.1.2, you must conduct inspections in accordance with the following inspection frequencies:

4.1.3.1 Once every 7 calendar days; and

4.1.3.2 Within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that

measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

Note: If you qualify for any of the reduced inspection frequencies in Part 4.1.4, you may conduct inspections in accordance with Part 4.1.4 for any portion of your site that discharges to a sensitive water.

4.1.4. Reductions in Inspection Frequency.

Your inspection frequency may be reduced as follows:

4.1.4.1 ***For Stabilized Areas.*** You may reduce the frequency of inspections to once per month in any area of your site where the stabilization steps in Parts 2.2.1.2a and 2.2.1.2b have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.1.2 or 4.1.3, if applicable. You must document the beginning and ending dates of this period in your records.

4.1.4.2 ***For Arid, Semi-Arid, or Drought-Stricken Areas.*** You may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event of 0.25 inches or greater if your site is located in an arid, semi-arid, or drought-stricken area, as these terms are defined in Appendix A, and construction is occurring during the seasonally dry period or during a period in which drought is predicted to occur. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.4.3 ***For Frozen Conditions.***

a. If you are suspending earth-disturbing activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (see Appendix A) begin to occur if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3, if applicable;

ii. Land disturbances have been suspended; and

iii. All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

b. If you are still conducting earth-disturbing activities during frozen conditions, you may reduce your inspection frequency to once per month if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3 if applicable; and

ii. Except for areas in which you are actively conducting earth-disturbing activities, disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

You must document the beginning and ending dates of this period in your SWPPP.

4.1.5. Areas that Need to Be Inspected. During your site inspection, you must at a minimum inspect the following areas of your site:

4.1.5.1 All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2;

4.1.5.2 All stormwater controls (including pollution prevention measures) installed at the site to comply with this permit;

4.1.5.3 Material, waste, borrow, or equipment storage and maintenance areas that are covered by this permit;

4.1.5.4 All areas where stormwater typically flows within the site, including drainageways designed to divert, convey, and/or treat stormwater;

4.1.5.5 All points of discharge from the site; and

4.1.5.6 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.1.6. Requirements for Inspections. During your site inspection, you must at a minimum:

4.1.6.1 Check whether all erosion and sediment controls and pollution prevention controls are installed, appear to be operational, and are working as intended to minimize pollutant discharges. Determine if any controls need to be replaced, repaired, or maintained in accordance with Parts 2.1.1.4 and 2.3.2;

4.1.6.2 Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site;

4.1.6.3 Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3;

4.1.6.4 At points of discharge and, if applicable, the banks of any surface waters flowing within your property boundaries or immediately adjacent to your property, check for signs of visible erosion and sedimentation *(i.e., sediment deposits)* that have occurred and are attributable to your discharge; and

4.1.6.5 Identify any and all incidents of noncompliance observed.

4.1.6.6 If a discharge is occurring during your inspection, you are required to:

a. Identify all points of the property from which there is a discharge;

b. Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollutants; and

c. Document whether your stormwater controls are operating effectively, and describe any such controls that are clearly not operating as intended or are in need of maintenance.

4.1.6.7 Based on the results of your inspection, initiate corrective action under Part 5.

4.1.7. Inspection Report.

4.1.7.1 ***Requirement to Complete Inspection Report.*** You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report must include the following:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.1.6;

d. If you are inspecting your site at the frequency specified in Part 4.1.2.2, Part 4.1.3, or Part 4.1.4.2, and you conducted an inspection because of rainfall measuring 0.25 inches or greater, you must include the applicable rain gauge or weather station readings that triggered the inspection; and

e. If you have determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the locations that this condition applied to.

4.1.7.2 ***Signature Requirements.*** Each inspection report must be signed in accordance with Appendix I, Part I.11 of this permit.

4.1.7.3 ***Recordkeeping Requirements.*** You are required to keep a current, copy of all inspection reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your inspection reports may be kept electronically if the records are:

a. In a format that can be read in a similar manner as a paper record;

b. Legally dependable with no less evidentiary value than their paper equivalent; and

c. Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All inspection reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

4.2. INSPECTIONS BY EPA.

You must allow EPA, or an authorized representative of the EPA, to conduct the following activities at reasonable times:

4.2.1. Enter onto areas of your site, including any construction support activity areas covered by this permit (see Part 1.3.c), and onto locations where records are kept under the conditions of this permit;

4.2.2. Access and copy any records that must be kept under the conditions of this permit;

4.2.3. Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.3.c) and any stormwater controls installed and maintained at the site; and

4.2.4. Sample or monitor for the purpose of ensuring compliance.

5. CORRECTIVE ACTIONS.

5.1. "CORRECTIVE ACTIONS" DEFINED.

Corrective actions are actions you take in compliance with this Part to:

- Repair, modify, or replace any stormwater control used at the site;
- Clean up and properly dispose of spills, releases, or other deposits; or
- Remedy a permit violation.

5.2. REQUIREMENTS FOR TAKING CORRECTIVE ACTION.

You must complete the following corrective actions in accordance with the deadlines specified in this Part. In all circumstances, you must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term "immediately" requires construction operators to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if the problem is identified at a time in the work day when it is too late to initiative corrective action, the initiation of corrective action must begin on the following work day.

5.2.1. For any of the following conditions on your site, you must install a new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe.

5.2.1.1 A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Parts 2 and/or 3; or

5.2.1.2 You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1. In this case, you must notify your EPA Regional Office by the end of the next work day. You are required to submit your notification through EPA's electronic NOI system, or "eNOI", at www.epa.gov/npdes/cgpenoi; or

5.2.1.3 One of the prohibited discharges in Part 2.3.1 is occurring or has occurred.

5.2.2. Where your corrective actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing corrective action work.

5.3. CORRECTIVE ACTION REQUIRED BY EPA.

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.2.

5.4. CORRECTIVE ACTION REPORT.

For each corrective action taken in accordance with this Part, you must complete a corrective action report, which includes the applicable information in Parts 5.4.1 and 5.4.2. Note that these reports must be maintained in your records but do not need to be provided to EPA except upon request.

5.4.1. Within 24 hours of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.1.1 Which condition was identified at your site;

5.4.1.2 The nature of the condition identified; and

5.4.1.3 The date and time of the condition identified and how it was identified.

5.4.2. Within 7 calendar days of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.2.1 Any follow-up actions taken to review the design, installation, and maintenance of stormwater controls, including the dates such actions occurred;

5.4.2.2 A summary of stormwater control modifications taken or to be taken, including a schedule of activities necessary to implement changes, and the date the modifications are completed or expected to be completed; and

5.4.2.3 Notice of whether SWPPP modifications are required as a result of the condition identified or corrective action.

5.4.3. Signature Requirements. Each corrective action report must be signed and certified in accordance with Appendix I, Part I.11 of this permit.

5.4.4. Recordkeeping Requirements. You are required to keep a current copy of all corrective action reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your corrective action reports may be kept electronically if the records are:

5.4.4.1 In a format that can be read in a similar manner as a paper record;

5.4.4.2 Legally dependable with no less evidentiary value than their paper equivalent; and

5.4.4.3 Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All corrective action reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

6. STAFF TRAINING REQUIREMENTS.

Prior to the commencement of earth-disturbing activities or pollutant-generating activities, whichever occurs first, you must ensure that the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
- Personnel responsible for the application and storage of treatment chemicals (if applicable);
- Personnel who are responsible for conducting inspections as required in Part 4.1.1; and
- Personnel who are responsible for taking corrective actions as required in Part 5.

Notes: (1) If the person requiring training is a new employee, who starts after you commence earth-disturbing or pollutant-generating activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit.

(2) For emergency-related construction activities, the requirement to train personnel prior to commencement of earth-disturbing activities does not apply, however, such personnel must have the required training prior to NOI submission.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers, but you must ensure that such personnel understand any requirements of the permit that may be affected by the work they are subcontracted to perform.

At a minimum, personnel must be trained to understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

- The location of all stormwater controls on the site required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

7. STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

7.1. GENERAL REQUIREMENTS.

7.1.1. Requirement to Develop a SWPPP Prior to Submitting Your NOI.

All operators associated with a construction project to be covered under this permit must develop a SWPPP.

Note: You have the option of developing a group SWPPP where you are one of several operators who will be engaged in construction activities at your site. For instance, if both the owner and the general contractor of the construction site are permitted, the owner may be the party responsible for SWPPP development, and the general contractor can choose to use this same SWPPP, as long as the SWPPP addresses the general contractor's scope of construction work and obligations under this permit.

You are required to develop your site's SWPPP prior to submitting your NOI. At a minimum, your SWPPP must include the information required in Part 7.2 and as specified in other parts of the permit. [24] You must also update the SWPPP as required in Part 7.4.

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part or in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4) because (1) the provision was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to include documentation of the reasons why it is infeasible for you to meet the specific requirement, and then you may be waived from complying with this requirement. You must include a separate justification why it is infeasible for you to meet each of the applicable requirements.

If you prepared a SWPPP for coverage under a previous version of this NPDES permit, you must review and update your SWPPP to ensure that this permit's requirements are addressed prior to submitting your NOI.

7.2. SWPPP CONTENTS.

Your SWPPP must include the following information, at a minimum.

[24] The SWPPP does not establish the effluent limits that apply to your site's discharges; these limits are established in this permit in Parts 2 and 3.

7.2.1. Stormwater Team.

Each operator, or group of multiple operators, must assemble a "stormwater team," which is responsible for overseeing the development of the SWPPP, any later modifications to it, and for compliance with the requirements in this permit.

The SWPPP must identify the personnel (by name or position) that are part of the stormwater team, as well as their individual responsibilities. Each member of the stormwater team must have ready access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7.2.2. Nature of Construction Activities.

The SWPPP must describe the nature of your construction activities, including the size of the property (in acres) and the total area expected to be disturbed by the construction activities (in acres), construction support activity areas covered by this permit (see Part 1.3.c), and the maximum area expected to be disturbed at any one time.

7.2.3. Emergency-Related Projects.

If you are conducting earth-disturbing activities in response to a public emergency (see Part 1.2), you must document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions, etc.)*, information substantiating its occurrence *(e.g., state disaster declaration or similar state or local declaration)*, and a description of the construction necessary to reestablish effected public services.

7.2.4. Identification of Other Site Operators.

The SWPPP must include a list of all other operators who will be engaged in construction activities at your site, and the areas of the site over which each operator has control.

7.2.5. Sequence and Estimated Dates of Construction Activities.

The SWPPP must include a description of the intended sequence of construction activities, including a schedule of the estimated start dates and the duration of the activity, for the following activities:

7.2.5.1 Installation of stormwater control measures, and when they will be made operational, including an explanation of how the sequence and schedule for installation of stormwater control measures complies with Part 2.1.1.3a and of any departures from manufacturer specifications pursuant to Part 2.1.1.3b;

7.2.5.2 Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;

7.2.5.3 Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;

7.2.5.4 Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject in Part 2.2.1; and

7.2.5.5 Removal of temporary stormwater conveyances/channels and other stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Note: If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant

to "lock in" the operator to meeting these projections. When departures from initial projections are necessary, this should be documented in the SWPPP itself or in associated records, as appropriate.

7.2.6. Site Map.

The SWPPP must include a legible site map, or series of maps, showing the following features of your project:

Note: Included in the project site are any construction support activities covered by this permit (see Part 1.3.c).

7.2.6.1 Boundaries of the property and of the locations where construction activities will occur, including:

a. Locations where earth-disturbing activities will occur, noting any phasing of construction activities;

b. Approximate slopes before and after major grading activities. Note areas of steep slopes, as defined in Appendix A;

c. Locations where sediment, soil, or other construction materials will be stockpiled;

d. Locations of any crossings of surface waters;

e. Designated points on the site where vehicles will exit onto paved roads;

f. Locations of structures and other impervious surfaces upon completion of construction; and

g. Locations of construction support activity areas covered by this permit (see Part 1.3.c).

7.2.6.2 Locations of all surface waters, including wetlands, that exist within or in the immediate vicinity of the site. Indicate which waterbodies are listed as impaired, and which are identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 waters;

7.2.6.3 The boundary lines of any natural buffers provided consistent with Part 2.1.2.1a;

7.2.6.4 Areas of federally-listed critical habitat for endangered or threatened species;

7.2.6.5 Topography of the site, existing vegetative cover (*e.g., forest, pasture, pavement, structures*), and drainage pattern(s) of stormwater and authorized non-stormwater flow onto, over, and from the site property before and after major grading activities;

7.2.6.6 Stormwater and allowable non-stormwater discharge locations, including:

a. Locations of any storm drain inlets on the site and in the immediate vicinity of the site; and

Note: The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

b. Locations where stormwater or allowable non-stormwater will be discharged to surface waters (including wetlands) on or near the site.

7.2.6.7 Locations of all potential pollutant-generating activities identified in Part 7.2.7;

7.2.6.8 Locations of stormwater control measures; and

7.2.6.9 Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.7. Construction Site Pollutants.

The SWPPP must include the following:

7.2.7.1 A list and description of all the pollutant-generating activities[25] on your site.

7.2.7.2 For each pollutant-generating activity, an inventory of pollutants or pollutant constituents *(e.g., sediment, fertilizers and/or pesticides, paints, solvents, fuels)* associated with that activity, which could be exposed to rainfall, or snowmelt, and could be discharged from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges. You must also document any departures from the manufacturer's specifications for applying fertilizers containing nitrogen and phosphorus, as required in Part 2.3.5.1.

7.2.8. Non-Stormwater Discharges.

The SWPPP must also identify all sources of allowable non-stormwater discharges listed in Part 1.3.d.

7.2.9. Buffer Documentation.

If you are required to comply with Part 2.1.2.1 because a surface water is located within 50 feet of your project's earth disturbances, you must describe which compliance alternative you have selected for your site, and comply with any additional requirements to provide documentation in Part 2.1.2.1.

7.2.10. Description of Stormwater Control Measures.

7.2.10.1 ***Stormwater Control Measures to be Used During Construction Activity.*** The SWPPP must describe all stormwater control measures that are or will be installed and maintained at your site to meet the requirements of Part 2. For each stormwater control measure, you must document:

a. Information on the type of stormwater control measure to be installed and maintained, including design information;

b. What specific sediment controls will be installed and made operational prior to conducting earth-disturbing activities in any given portion of your site to meet the requirement of Part 2.1.2.2a;

c. For exit points on your site, document stabilization techniques you will use and any additional controls that are planned to remove sediment prior to vehicle exit consistent with Part 2.1.2.3; and

d. For linear projects, where you have determined that the use of perimeter controls in portions of the site is impracticable, document why you believe this to be the case (see Part 2.1.2.2a).

7.2.10.2 ***Use of Treatment Chemicals.*** If you will use polymers, flocculants, or other treatment chemicals at your site, the SWPPP must include:

a. A listing of all soil types[26] that are expected to be exposed during construction and that will be discharged to locations where chemicals

[25] Examples of pollutant-generating activities include, but are not limited to: paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations.

will be applied. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction.

b. A listing of all treatment chemicals to be used at the site, and why the selection of these chemicals is suited to the soil characteristics of your site;

c. If you have been authorized by your applicable EPA Regional Office to use cationic treatment chemicals, include the specific controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards;

d. The dosage of all treatment chemicals you will use at the site or the methodology you will use to determine dosage;

e. Information from any applicable Material Safety Data Sheets (MSDS);

f. Schematic drawings of any chemically-enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;

g. A description of how chemicals will be stored consistent with Part 2.1.3.3b;

h. References to applicable state or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and

i. A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

7.2.10.3 ***Stabilization Practices.*** The SWPPP must describe the specific vegetative and/or non-vegetative practices that will be used to comply with the requirements in Part 2.2, including:

a. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3a, you must indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions; and

b. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3b, you must document the circumstances that prevent you from meeting the deadlines specified in Parts 2.2.1.1 and/or 2.2.1.2.

7.2.11. Pollution Prevention Procedures.

7.2.11.1 ***Spill Prevention and Response Procedures.*** The SWPPP must describe procedures that you will follow to prevent and respond to spills and leaks consistent with Part 2.3, including:

a. Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

[26] Information on soils may be obtained at http://websoilsurvey.nrcs.usda.gov/app/.

b. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.4 and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period. Contact information must be in locations that are readily accessible and available.

You may also reference the existence of Spill Prevention Control and Countermeasure (SPCC) plans developed for the construction activity under Part 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan onsite.

Note: Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

7.2.11.2 ***Waste Management Procedures.*** The SWPPP must describe procedures for how you will handle and dispose of all wastes generated at your site, including, but not limited to, clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste.

7.2.12. Procedures for Inspection, Maintenance, and Corrective Action.

The SWPPP must describe the procedures you will follow for maintaining your stormwater control measures, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.1.4, Part 2.3.2, Part 4, and Part 5 of the permit. The following information must also be included in your SWPPP:

7.2.12.1 Personnel responsible for conducting inspections;

7.2.12.2 The inspection schedule you will be following, which is based on whether your site is subject to Part 4.1.2 or Part 4.1.3, and whether your site qualifies for any of the allowances for reduced inspection frequencies in Part 4.1.4. If you will be conducting inspections in accordance with the inspection schedule in Part 4.1.2.2 or Part 4.1.3, the location of the rain gauge on your site or the address of the weather station you will be using to obtain rainfall data;

7.2.12.3 If you will be reducing your inspection frequency in accordance with Part 4.1.4.2, the beginning and ending dates of the seasonally-defined arid period for your area or the valid period of drought. If you will be reducing your inspection frequency in accordance with Part 4.1.4.3, the beginning and ending dates of frozen conditions on your site; and

7.2.12.4 Any inspection or maintenance checklists or other forms that will be used.

7.2.13. Staff Training.

The SWPPP must include documentation that the required personnel were trained in accordance with Part 6.

7.2.14. Documentation of Compliance with Other Federal Requirements.

7.2.14.1 *Endangered Species Act.* The SWPPP must include documentation supporting your determination with respect to Part 1.1.e and Appendix D.

7.2.14.2 *Historic Properties.* The SWPPP must include documentation required by Appendix E in relation to potential impacts to historic properties.

7.2.14.3 *Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls.* If you are using any of the following stormwater controls at your site, as they are described below, you must document any contact you have had with the applicable state agency or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR Parts 144 -147. Such controls would generally be considered Class V UIC wells:

a. Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);

b. Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and

c. Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

Note: For state UIC program contacts, refer to the following EPA website: http://water.epa.gov/type/groundwater/uic/whereyoulive.cfm.

7.2.15. SWPPP Certification.

You must sign and date your SWPPP in accordance with Appendix I, Part I.11.

7.2.16. Post-Authorization Additions to the SWPPP.

Once you are notified of your coverage under this permit, you must include the following documents as part of your SWPPP:

7.2.16.1 A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;

7.2.16.2 A copy of the acknowledgment letter you receive from the NOI Processing Center or eNOI system assigning your permit tracking number;

7.2.16.3 A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3. ON-SITE AVAILABILITY OF YOUR SWPPP.

You are required to keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a state, tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.

Note: Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR Part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may

be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

If an onsite location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4. REQUIRED SWPPP MODIFICATIONS.

7.4.1. List of Conditions Requiring SWPPP Modification.

You must modify your SWPPP, including the site map(s), in response to any of the following conditions:

7.4.1.1 Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater control measures, pollution prevention measures, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.5 change during the course of construction;

7.4.1.2 To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

7.4.1.3 If inspections or investigations by site staff, or by local, state, tribal, or federal officials determine that SWPPP modifications are necessary for compliance with this permit;

7.4.1.4 Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:

a. A copy of any correspondence describing such requirements; and

b. A description of the stormwater control measures that will be used to meet such requirements.

7.4.1.5 To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site; and

7.4.1.6 If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

7.4.2. Deadlines for SWPPP Modifications.

You must complete required revisions to the SWPPP within 7 calendar days following the occurrence of any of the conditions listed in Part 7.4.1.

7.4.3. SWPPP Modification Records.

You are required to maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.15 above) and a brief summary of all changes.

7.4.4. Certification Requirements.

All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix I, Part I.11.b.

7.4.5. Required Notice to Other Operators.

Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8. HOW TO TERMINATE COVERAGE.

Until you terminate coverage under this permit, you are required to comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1. MINIMUM INFORMATION REQUIRED IN NOT.

You will be required to provide the following in your NOT:

8.1.1. NPDES permit tracking number provided by EPA when you received coverage under this permit;

8.1.2. Basis for submission of the NOT (see Part 8.2);

8.1.3. Operator contact information;

8.1.4. Name of project and address (or a description of location if no street address is available); and

8.1.5. NOT certification.

8.2. CONDITIONS FOR TERMINATING PERMIT COVERAGE.

You may terminate permit coverage only if one of the following conditions occurs at your site:

8.2.1. You have completed all earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.3.c), and you have met the following requirements:

8.2.1.1 For any areas that (1) were disturbed during construction, (2) are not covered over by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.2;

8.2.1.2 You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;

8.2.1.3 You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable; and

8.2.1.4 You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or

8.2.2. You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or

8.2.3. Coverage under an individual or alternative general NPDES permit has been obtained.

8.3. HOW TO SUBMIT YOUR NOT.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOT. The electronic NOT form you are required to complete is found at www.epa.gov/npdes/stormwater/cgpenoi. You will use your NOI tracking number *(i.e., the EPA number you were assigned upon authorization under the permit)* to upload the

fillable NOT form, which will ensure that EPA properly records your termination of coverage. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOT, you must complete the form in Appendix K.

8.4. DEADLINE FOR SUBMITTING NOTS.

You must submit your NOT within 30 calendar days after any one of the triggering conditions in Part 8.2 occur.

8.5. EFFECTIVE DATE OF TERMINATION OF COVERAGE.

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website (www.epa.gov/npdes/stormwater/cgpnoisearch).

9. PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and areas in certain states subject to construction projects by Federal Operators. States, Indian country, and areas subject to construction by Federal Operators not included in this Part do not have any modifications or additions to the applicable conditions of this permit

9.1. Region 1

9.1.1. MAR120000: Commonwealth of Massachusetts (except Indian country).

9.1.1.1 You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).

9.1.1.2 You must comply with the conditions in 314 CMR 4.00- Massachusetts Surface Water Quality Standards.

9.1.1.3 You must comply with the conditions in 314 CMR 3.00- Massachusetts Surface Water Discharge Permit Program.

9.1.1.4 You must comply with the Wetlands Protection Act (Ch. 131 s. 40) and its regulations, 310 CMR 10.00 and any Order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

9.1.1.5 You must comply with the Massachusetts Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss 26-53 and the Wetlands Protection Act, Ch. 131, s. 40.

9.1.1.6 You must comply with the conditions in 314 CMR 9.00 – Water Quality Certification for Discharges of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States within the Commonwealth.

9.1.1.7 You must comply with the Massachusetts Endangered Species Act (MESA), MGL Ch. 313A and regulations at 321 CMR 10.00 and any actions undertaken to comply with this stormwater general permit shall not result in non-compliance with the MESA.

9.1.1.8 Activities covered under this general permit shall not interfere with the implementation of mosquito control work conducted in accordance with Chapter 252 including s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Supplies.

9.1.1.9 The Department may request a copy of the Stormwater Pollution Prevention Plan (SWPPP) and the permittee is required to submit the SWPPP to the Department within 14 days of such request. The Department may conduct an inspection of any facility covered by this permit to ensure compliance with state law requirements, including state water quality standards. The Department may enforce its certification conditions.

9.1.1.10 The Department may require the permit holder to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.

9.1.1.11 The Department may require the permit holder to provide measurable verification of the effectiveness of Best Management Practices (BMPs) and other control measures used in the stormwater management program, including water quality monitoring.

9.1.1.12 The Department has determined that compliance with this permit does not protect the permit holder from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.

9.1.1.13 The Department reserves the right to modify this 401 Water Quality Certification if any changes, modifications, or deletions are made to this general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of this 401 Water Quality Certification to carry out its responsibilities during the term of this general permit with respect to water quality, including any revisions to 314 CMR 4.00, Massachusetts Surface Water Quality Standards.

9.1.1.14 Should any violation of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, or the conditions of this 401 Water Quality Certification occur, the Department will direct the permit holder to correct the violation(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation(s) of this permit or the Massachusetts Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Masachusetts' waters in violation of an order or permit issued by this Department. This 401 Water Quality Certification does not relieve the permit holder of the duty to comply with other applicable Massachusetts statutes and regulations.

9.1.2. NHR120000: State of New Hampshire.

9.1.2.1 If you disturb 100,000 square feet or more of contiguous area, you must also apply for an Alteration of Terrain (AoT) permit from DES pursuant to RSA 485-A:17 and Env-Ws 1500. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Ws 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of any surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule.

9.1.2.2 You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.3.d). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the source of the groundwater to be treated and discharged.

Information on groundwater contamination can be generated over the Internet via the NHDES web site http://des.nh.gov/ at the OneStop Web Geographic Information System at http://www2.des.state.nh.us/gis/onestop. If it is determined that the groundwater to be dewatered is near a remediation or other waste site you must apply for the Remediation General Permit (see http://www.epa.gov/region1/npdes/rgp.html.)

9.1.2.3 You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with stormwater at least once per week during weeks when discharges occur. Samples must be analyzed for total suspended solids (TSS) and must meet monthly average and daily maximum TSS limits of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) sampling and analysis must be performed in accordance with Tables IB and II in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.

9.1.2.4 Construction site owners and operators must consider opportunities for post-construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the stormwater pollution prevention plan (SWPPP). If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485-C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GAI or GA2 pursuant to RSA 485-C and Env-Ws 420; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Ws 1507.04(e), including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.26). For design considerations for infiltration measures see Volume II of the NH Stormwater Manual.

9.1.2.5 Appendix F contains a list of Tier 2, or high quality waters. Although there is no official list of tier 2 waters, it can be assumed that all NH surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see Surface Water Quality Watershed Report Cards at http://des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU. A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.

9.1.2.6 To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown in Part 9.1.2.7.

a. A site map required in Part 7.2.6, showing the type and location of all post-construction infiltration BMPs utilized at the facility or the reason(s) why none were installed;

b. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.3.d).

c. Records of sampling and analysis of TSS required for construction dewatering discharges (see Part 9.1.2.3).

9.1.2.7 All required or requested documents must be sent to:

NH Department of Environmental Services, Wastewater Engineering Bureau, Permits & Compliance Section
P.O. Box 95
Concord, NH 03302-0095

9.1.2.8 When NHDES determines that additional water quality certification requirements are necessary to protect water quality, it may require individual discharges to meet additional conditions to obtain or continue coverage under the CGP. Any such conditions must be supplied to the permittee in writing. Any required pollutant loading analyses and any designs for structural best management practices necessary to protect water quality must be prepared by a civil or sanitary engineer registered in New Hampshire.

9.2. Region 4

9.2.1. FLR12000I: Indian country within the State of Florida.

9.2.1.1 **Seminole Tribe of Florida**. The following conditions apply only for discharges on federal trust lands of the Seminole Tribe of Florida (Big Cypress, Brighton, Hollywood, Immokalee, and Tampa Reservations):

a. Any discharges into waters of the Seminole Tribe of Florida shall not cause an exceedance in Turbidity of 29 NTU above natural background conditions.

b. Unless otherwise specified by previous permits or criteria, a storm event of three (3) day duration and twenty five (25) year return frequency shall be used in computing off-site discharge on Seminole Lands as agreed upon in the Water Rights Compact agreement attached to Public Law 100-228 (December 31, 1987), Seminole Indian Land Claims Settlement Act of 1987.

c. The Seminole Tribe of Florida accepts a 20' X 20' stabilization at entry/exit points.

9.3. Region 5

MNR12000I: Indian country within the State of Minnesota.

9.3.1.1 **Fond du Lac Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Fond du Lac Band of Lake Superior Chippewa Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

CGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA.

c. The turbidity limit shall NOT exceed 10% of natural background as determined by the Office of Water protection staff.

d. Turbidity sampling must take place within 24 hours of a ½ -inch or greater rainfall event. The results of the sampling must be reported to the Officce of Water Protection staff within 7 days of sample collection. All sample reporting must include the date and time, location (GPS:UTM/Zone 15), and NTU.

e. Discharges to receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff.

f. This certification does not pertain to any new discharge to Outstanding Reservation Resource Waters (ORRW) as described in §105 b.3 of the Fond du Lac Water Quality Standards (Ordinance #12/98). Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake and Jaskari Lake are designated as ORRWs. New dischargers wishing to discharge to an ORRW must obtain an individual permit for stormwater discharges from large and small construction activities.

g. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98 as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm and cold water fisheries, subsistence fishing (netting), primary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation and commercial.

h. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac reservation, including groundwater.

i. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

9.3.1.2 **Grand Portage Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Grand Portage Band of Lake Superior Chippewa Reservation.

a. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in

accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification"). This Certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing as such.

b. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance). As such, appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation (as defined in the Water Resources Ordinance). All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.

c. A copy of the Storm Water Pollution Prevention Plan (the "Plan") required by the CGP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The Board may require monitoring of storm-water discharges as determined on a case-by-case basis. If the Board determines that a monitoring plan is necessary, the monitoring plan must be prepared and incorporated into the Plan before the Notice of Intent is submitted to the EPA. The Plan should be sent to:

   Grand Portage Environmental Resources Board
   P.O. Box 428
   Grand Portage, MN 55605

   Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

d. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards.

e. Discharges that the Board has determined to be or that may reasonably be expected to be contributing to a violation of Water Quality Standards or Applicable Federal Standards are not authorized by this Certification.

f. The Board retains full authority provided by the Water Resources Ordinance to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions.

g. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.

9.3.2. WIR12000I: Indian country within the State of Wisconsin.

9.3.2.1 **Bad River Band of the Lake Superior Tribe of Chippewa Indians.** The following conditions apply only to discharges on the Bad River Band of the Lake Superior Tribe of Chippewa Indians Reservation.

a. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, or historical sites, or properties that may be eligible for listing as such.[27, 28]

b. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (or Tier 3 water).[29] Outstanding Tribal Resource Waters, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River.[30]

c. Projects utilizing cationic treatment chemicals[31] within the Bad River Reservation boundaries are not eligible for coverage under the CGP.[32]

d. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS).[33]

e. An operator proposing to discharge to an Outstanding Resource Water (or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Outstanding Resource Waters, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweiler River, Tyler Forks, Bell Creek, and Vaughn Creek.[34] The antidegradation demonstration materials described in provision E.4.iii. must be submitted to the following address:

   Bad River Tribe's Natural Resources Department
   Attn: Water Resources Specialist
   P.O. Box 39
   Odanah, WI 54861

f. An operator proposing to discharge to an Exceptional Resource Water (or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Exceptional Resource Waters, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal

[27] Bad River Band of Lake Superior Tribe of Chippewa Indians Water Quality Standards adopted by Resolution No. 7-6-11-441 (hereafter, Tribe's WQS).

[28] 36 C.F.R §800.16(l)(2).

[29] Tribe's WQS: See provisions E.3.ii and E.4.iv.

[30] Tribe's WQS: See provision E.2.iii.

[31] See definition of cationic treatment chemicals in Appendix A of the CGP

[32] Tribe's WQS: See provisions E.6.ii.a and E.6.ii.c.

[33] See Footnote 27.

[34] Tribe's WQS: See provision E.2.ii.

Resource Water (Tier 3 water).[35] The antidegradation demonstration materials described in provision E.4.ii. must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

g. A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.[36]

h. All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.

i. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities.[37] The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39
Odanah, WI 54861

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA.

j. The THPO must be provided 30 days to comment on the project.[38]

k. The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics

[35] Tribe's WQS: See provision E.2.i.

[36] Tribe's WQS: See provision E.7.iii.

[37] See footnotes 27 and 28.

[38] 36 C.F.R. § 800.3(c)(4).

of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.[39]

l. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:[40]

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

m. Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:[41]

Bad River Tribe's Natural Resources Department
P.O. Box 39
Odanah, WI 54861

n. An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.[42]

9.3.2.2 **Lac du Flambeau Band of Lake Superior Chippewa Indians.** The following conditions apply only to discharges on the Lac du Flambeau Band of Lake Superior Chippewa Indians Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Lac du Flambeau
Tribal Land Management
P. O. Box 279
Lac du Flambeau, WI 54538

CGP applicants are encouraged to work with the LdF Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the NOI and the Notice of Termination (NOT) must be sent to the LdF Water Resource Program at the same time they are submitted to EPA.

c. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Lac du Flambeau Reservation. This includes, but is not limited to, the

[39] 36 C.F.R. § 800.3(b).

[40] See footnote 27.

[41] See footnote 27.

[42] See footnote 27.

prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Lac du Flambeau Reservation for any of the uses designated in the Water Quality Standards of the Lac du Flambeau Reservation.

d. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Lac du Flambeau Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Lac du Flambeau Reservation, including groundwater.

e. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

Note: Facilities within the Sokaogon Chippewa Community are not eligible for stormwater discharge coverage under this permit. Contact the Region 5 office for an individual permit application.

9.4. Region 6

9.4.1. NMR120000: State of New Mexico, except Indian country.

9.4.1.1 In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new and existing stormwater discharges must satisfy the following condition:

The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (e.g., SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be

documented in the SWPPP. The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

9.4.1.2 Operators are not eligible to obtain authorization under this permit for all new and existing stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3" waters).

9.4.1.3 For temporary stabilization, instead of the deadline for initiating and completing stabilization in Part 2.2.1.3a, operators must comply with the deadlines in Parts 2.2.1.1 and 2.2.1.2.

9.4.1.4 Instead of the criteria for vegetative stabilization in Part 2.2.2.1.a, operators must provide a uniform vegetation (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for all unpaved areas and areas not covered by permanent structures. The adjustment to allow for less than 100 % native vegetative cover (e.g., 50 % native vegetative cover x 70 % = 35 %) is acceptable.

9.4.1.5 The following replaces the criteria for final vegetative stabilization in Part 2.2.2.1.b:

- The area you have seeded and planted must within 3 years provide established vegetation that achieves 70% of the native background vegetative cover for all unpaved areas and areas not covered by permanent structures; and
- In addition to to seeding or planting the area to be vegetatively stabilized, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

In addition, permittees are only authorized to used this option as a method for final vegetative stabilization for purposes of filing a Notice of Termination (NOT) under the following conditions:

If this option is selected, you must notify NMED at the address listed in Part 9.4.1.6 at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the party responsible for implementing the final stabilization measures; and
- The date that the permanent vegetative stabilization practice was implemented and the projected timeframe that the 70 % native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 % of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization).

NMED also requires that operators periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as specified in Part 2.2 of the CGP, have been met. Operators must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix I, Part I.11. This inspection record must be

retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to NMED at the address listed in Part 9.4.1.6. The inspections at a minimum must include the following:

- Observations of all areas of the site disturbed by construction activity;
- Best Management Practices (BMPs)/post-construction stormwater controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in stormwater runoff from the site, including implementation dates.

9.4.1.6 Copies of all documents submitted to EPA in non-electronic format must be sent to the following address:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502

9.4.2. NMR12000I: Indian country within the State of New Mexico.

9.4.2.1 **Pueblo of Sandia**. The following conditions apply only to discharges on the Pueblo of Sandia Reservation:

a. Copies of all Notices of Intent submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address. Discharges are not authorized by this permit unless an accurate and complete NOI has been submitted to the Pueblo of Sandia.

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

b. The Pueblo of Sandia will not allow the Rainfall Erosivity Waivers (see Appendix C) to be granted for any small construction activities.

c. The Stormwater Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia Environment either electronically or hard copy upon request for review. The SWPPP must be made available at least fourteen (14) days before construction begins. The fourteen (14) day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections, and determine compliance with the Pueblo of Sandia Water Quality Standards. Failure to provide a SWPPP to the Pueblo of Sandia may result in denial of the discharge or construction delay.

d. An "Authorization to Proceed Letter" with site specific mitigation, site and project requirements will be sent out to the permittee when a review of the NOI and SWPPP is completed by the Pueblo of Sandia

Environment Department. This approval will allow the construction to proceed if all applicable requirements are met.

e. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to the Pueblo of Sandia Environment Department though a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating the stabilization requirements have been met will be sent to the permittee to add to the permittees NOT submission to EPA.

f. Copies of all NOT submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address:

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

9.4.3. OKR12000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

In accordance with Section 303 of the Clean Water Act and Oklahoma's Water Quality Standards (OAC 785: 45):

9.4.3.1 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any mineral mining.

9.4.3.2 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including concrete and asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

9.5. Region 8

9.5.1. MTR12000I: Indian country within the State of Montana

9.5.1.1 **The Confederated Salish and Kootenai Tribes of the Flathead Nation**. The following conditions apply only to discharges on the Confederated Salish and Kootenai Tribes of the Flathead Nation Reservation:

a. Permittees must send the Stormwater Pollution Prevention Plan (SWPPP) to the Tribes at least 30 days before construction starts.

b. Before submitting the Notice of Termination (NOT), permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met.

c. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the tribes.

d. Permittees may submit their SWPPPs and NOTs electronically to clintf@cskt.org.

Written NOI's, SWPPPs and NOT's may be mailed to:
Clint Folden, Water Quality Regulatory Specialist
Confederated Salish and Kootenai Tribes
Natural Resources Department
P.O. Box 278
Pablo, MT 59855

9.5.1.2 Fort Peck Tribes. The following conditions apply only to discharges on the Fort Peck Reservation:

Permittees must notify the Fort Peck Office of Environmental Protection (OEP) two weeks prior to commencing construction.

9.6. Region 9

9.6.1. AZR12000I: Indian country within the State of Arizona.

9.6.1.1 **Hualapai Tribal Lands**. The following condition applies only for discharges on the Hualapai Reservation:

All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to Water Resources Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

9.6.2. CAR12000I: Indian country within the State of California.

9.6.2.1 **Big Pine Paiute Tribe of the Owens Valley**. Big Pine Tribal Water Quality Standards Section VII(e): If a proposed action has the possibility to adversely affect the water quality of Big Pine Creek, an application must be filed with the Tribal Environmental Office. The application must describe the action proposed and its effects on the creek, how this information was derived, and a justification for the action. Upon satisfying these requirements, the Tribal Environmental Office will recommend or not recommend this proposal to be considered by the Tribal Council. Tribal Council will make a determination whether to consider the proposal further. If the Tribal Council wishes to consider the application further, the public participation process will take place (see paragraph VII(d)). The Tribal Council has the sole authority in permitting degradation to Big Pine Creek. If the Tribal Council makes the decision to allow degradation, they will submit their decision to the USEPA for review and approval.

9.6.3. GUR120000: The Island of Guam.

Permittees must adhere with imposed conditions for the project, in accordance with section 307(c)(1), of the Coastal Zone Management Act, 15 CFR part 930.

9.6.4. MPR120000: Commonwealth of the Northern Mariana Islands (CNMI).

9.6.4.1 An Earthmoving and Erosion Control Permit must be obtained from DEQ prior to any construction activity covered under the NPDES General Permit.

9.6.4.2 All conditions and requirements set forth in the United States Environmental Protection Agency (USEPA), National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities must be complied with.

9.6.4.3 A stormwater pollution prevention plan (SWPPP) for stormwater discharges from construction activities must be approved by the Director of DEQ prior to submission of the Notice of Intent (NOI).

9.6.4.4 A NOI to be covered by the General Permit for Discharges from Construction Activities must be submitted to DEQ and USEPA, Region IX, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from DEQ.

9.6.4.5 The NOI must be postmarked fourteen (14) calendar days prior to any stormwater discharges and a copy is submitted to the Director of DEQ no later than seven (7) calendar days prior to any stormwater discharges.

9.6.4.6 Copies of all monitoring reports required by the NPDES General Permit are submitted to DEQ.

9.6.4.7 In accordance with Section 10.3(h) and (i) of the CNMI Water Quality Standards, DEQ reserves the right to deny coverage under this permit and require submittal of an application for an individual NPDES permit based on review of the NOI or other information made available to the Director.

9.6.5. NVR12000I: Indian country within the State of Nevada.

9.6.5.1 **Pyramid Lake Paiute Tribe**. The following conditions apply only for discharges on the Pyramid Lake Paiute Reservation:

a. A SWPPP for stormwater discharges from project construction activities must be submitted to, and approved by, the PLPT Environmental Department director, prior to the submission of a Notice of Intent (NOI or eNOI) to EPA.

b. The applicant is to submit a hard copy of the Notice of Intent (NOI or eNOI) and a draft or final copy of the Stormwater Pollution Prevention Plan (SWPPP) by U.S. Mail to the Pyramid Lake Environmental Department at the address below:

Pyramid Lake Tribe Environmental Department
P.O. Box 256
Nixon, NV 89424

c. The applicant is to concurrently submit to the PLPT Environmental Department, hard copies of any other forms submitted to the EPA, including waivers, reporting, and Notice of Termination (NOT).

9.7. Region 10

9.7.1. IDR120000: The State of Idaho, except those located on Indian country.

For the complete text of Idaho's certification including the full anti-degradation analysis, please visit the IDEQ website at http://www.deq.idaho.gov/media/821491-usepa-npdes-general-permit-storm-water-discharges-401-certification-final-0412.pdf

9.7.1.1 The Idaho Department of Environmental Quality's (DEQ) certification of this permit does not constitute authorization of your permitted activities by any other state or federal agency or private person or entity. DEQ's certification does not excuse you from the obligation to obtain any other necessary

approvals, authorizations or permits, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

9.7.1.2 Idaho's Antidegradation Policy. Idaho Water Quality Standards (WQS) (IDAPA 58.01.02) contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

a. Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.05).
b. Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.06).
c. Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.07).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (Idaho Code § 39-3603(2)(b)(i)). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (Idaho Code § 39-3603(2)(b)(iii)). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (Idaho Code § 39-3603(2)(b)). The primary pollutants of concern associated with stormwater discharges from construction activities are sediment and turbidity (as Total Suspended Solids). Other potential pollutants include the following: phosphorus, nitrogen and other nutrients from fertilizers; pesticides; petroleum products; construction chemicals; and solid wastes.

9.7.1.3 Protection and Maintenance of Existing Uses (Tier 1 Protection). In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The permittee must notify the appropriate DEQ Regional Office (see table in Part 9.7.1.8 below for contact information) of any potential discharges to impaired waters - water bodies identified as "impaired" for sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or nutrients, including impairments for nitrogen and/or phosphorus.

To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. Impaired waters are identified in Categories 4 and 5 of the Integrated Report. Category 4(a) reflects impaired waters for which a TMDL has been approved by EPA. Category 5

contains waters which have been identified as "impaired" but do not yet have an EPA-approved TMDL.

DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

In addition to complying with the Part 3.2.2 requirements for any sediment or nutrient-impaired waters, permittee(s) must also comply with Idaho's numeric turbidity criteria, developed to protect aquatic life uses. The criterion states, "Turbidity shall not exceed background turbidity by more than 50 NTU instantaneously or more than 25 NTU for more than 10 consecutive days" (IDAPA 58.01.02250.02.e). For Waters of the State which have been identified as impaired due to sedimentation/siltation, the permittee must conduct turbidity monitoring as described below in Part 9.7.1.6

9.7.1.4 Protection of High-Quality Waters (Tier 2 Protection). To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

DEQ retains the authority to determine that a 303(d) listed water body is actually a high quality water body if there is biological, chemical or physical data to support such a determination. In cases where information submitted with the NOI, or available from other sources, indicates that further Tier 2 analysis is necessary and/or additional conditions are needed, either for a new project or an existing project with a significantly increased discharge, EPA and DEQ will conduct a review and require any appropriate additional controls. If during this review, EPA and DEQ decide that an additional Tier 2 protection is warranted, then EPA may either change the terms of coverage or terminate coverage under the CGP and require an individual permit.

9.7.1.5 Protection of Outstanding Resource Waters (Tier 3 Protection). Idaho's antidegradation policy requires that the quality of outstanding resource waters (ORWs) be maintained and protected from the impacts of point source discharges. No water bodies in Idaho have been designated as outstanding resource waters to date; however, it is possible that waters may become designated during the term of the CGP. Any applicant proposing to discharge to an ORW must obtain an individual NPDES permit from EPA.

9.7.1.6 Turbidity Monitoring. For Waters of the State which are identified in the Integrated Report as impaired for sedimentation/siltation, the permittee must conduct turbidity monitoring each day during construction activities when the project is not stabilized per Part 2.2 or shut down per Part 4.1.4.3 of the CGP. A properly and regularly calibrated turbidimeter is required.

A sample must be taken twice daily at an undisturbed area immediately upstream of the project area to establish background turbidity levels for each monitoring event. Background turbidity, location, date and time must be recorded prior to monitoring downstream of the project area.

A sample must also be taken twice daily immediately downstream from any point of discharge, and within any visible plume. The turbidity, location, date

and time must be recorded. The downstream sample(s) must be taken immediately following the upstream sample(s) in order to obtain meaningful and representative results.

Results from the compliance point sampling or observation must be compared to the background levels to determine whether project activities are causing an exceedance of state WQS. If the downstream turbidity is 50 NTUs or more than the upstream turbidity, or a plume is observed, then the project is causing an exceedance of the WQS. The permittee must inspect the condition of project BMPs. If the BMPs are functioning to their fullest capability, then the permittee must modify project activities and/or BMPs to correct the violation.

Copies of daily logs for turbidity monitoring must be available to DEQ upon request. The report must describe all exceedances and subsequent actions taken, including the effectiveness of the action.

9.7.1.7 Equivalent Analysis Waiver. Use of the "Equivalent Analysis Waiver" in Appendix C (Part C.3) of the CGP is not authorized.

9.7.1.8 Reporting of Discharges Containing Hazardous Materials or Petroleum Products. Any spill of hazardous materials must be immediately reported to the appropriate DEQ regional office (see table of contacts, below) (IDAPA 58.01.02.850.03). Spills of petroleum products that exceed 25 gallons or that cause a visible sheen on nearby surface waters should be reported to DEQ within 24-hours. Petroleum product spills of less than 25 gallons or spills that do not cause a sheen on nearby surface waters shall only be reported to DEQ if clean-up cannot be accomplished within 24-hours (IDAPA 58.01.02.851.04).

DEQ Regional Office	Contact Name	Phone Number
Boise	Lance Holloway	208-373-0550
Coeur d'Alene	June Bergquist	208-769-1422
Idaho Falls	Troy Saffle	208-528-2650
Lewiston	John Cardwell	208-799-4370
Pocatello	Greg Mladenka	208-236-6160
Twin Falls	Balthasar Buhidar	208-736-2190

Outside of regular business hours, qualified spills shall be reported to the State Communications Center (1-800-632-8000 or 208-846-7610).

9.7.2. ORR12000I: Indian country within the State of Oregon.

9.7.2.1 **Confederated Tribes of the Umatilla Indian Reservation**. The following conditions apply only to discharges on the Umatilla Indian Reservation:

a. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservations (CTUIR) Water Quality Standards.

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

c. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

d. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timine Way
Pendleton, OR 97801

e. The CTUIR Tribal Historic Preservation Office (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

f. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

g. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

h. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

i. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
46411 Timine Way
Pendleton, OR 97801

9.7.2.2 Confederated Tribes of the Warm Springs Reservation of Oregon. The following conditions apply only for discharges on the Warm Springs Reservation:

a. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.

b. All activities covered by this NPDES permit must follow all applicable land management and resource conservation requirements specified in the IRMP.

c. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

d. The operator shall be responsible for achieving compliance with the Water Quality Standards of the Confederated Tribes of the Warm Springs Reservation of Oregon. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the Water Control Board at the address above.

e. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTWS, Branch of Natural Resources, Tribal Environmental Office at the address above, at the same time it is submitted to EPA.

f. The CTWS Tribal Historic Preservation Officer (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

g. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

h. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

i. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

j. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

9.7.3. WAR12000F: Areas in the State of Washington, except those located on Indian country, subject to construction by Federal Operators.

9.7.3.1 Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.

9.7.3.2 Prior to the discharge of stormwater and non-stormwater to waters of the state, the permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

9.7.3.3 Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List

a. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this subsection.

Parameter identified in 303(d) listing	Parameter/Units	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

b. The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be provided to EPA or the Washington State Department of Ecology (Ecology) upon request.

c. The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in 5.b and 6.b below. All such reports must be submitted within 30 day s of measurement to EPA at the following address:

USEPA – Region 10
NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
1200 6th Avenue, Suite 900
OCE-133
Seattle, WA 98101
(206) 553-1846

d. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA approved listing of impaired waters that exists on January 29, 2009, or the date when the operator's complete NOI is received by EPA, whichever is later. The most

recent EPA approved 303(d) list is available on Ecology's website at www.ecy.wa.gov/programs/wq/303d/2008/index.html.

e. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; or

(3) Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If the receiving water background turbidity is 50 NTU or less, the water quality standard is 5 NTU over background. If the receiving water background turbidity is more than 50 NTU, the water quality standard is 10% over background.

If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within seven days of the discharge that exceeded the standard.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than ten days of the discharge that exceeded the standard.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

f. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or,

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

9.7.3.4 Sampling & Limitations – For Sites Discharging to TMDLs

a. Discharges to a waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

i. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

(1) Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

(2) Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

ii. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

iii. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

iv. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

b. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to February 16, 2012, or prior to the date the operator's complete NOI is received by EPA, whichever is later.

Completed TMDLs are available on Ecology's website at www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html, or by phone at (360) 407-6460.

9.7.4. WAR12000I: Indian country within the State of Washington

9.7.4.1 **Kalispel Tribe**. The following conditions apply only for discharges on the Kalispel Reservation:

a. The operator shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards, and;

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department (KNRD) at the same time as it is submitted to the EPA, and;

c. The operator shall submit all Storm Water Pollution Prevention Plans (SWPPP) to KNRD thirty (30) days prior to beginning any discharge activities for review, and;

d. The operator shall be responsible for reporting any exceedance of Tribal Water Quality Standards to KNRD at the same time it is reported to EPA, and;

e. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the operator shall attain a cultural resource clearance letter from KNRD.

f. All tribal correspondence pertaining to the General Permit for Discharges from Construction Activities shall be sent to:

Kalispel Tribe Natural Resources Department
Water Resources Program
PO Box 39
Usk, WA 99180

9.7.4.2 **Lummi Nation**. The following conditions apply only for discharges on the Lummi Reservation:

a. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.

b. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Stormwater Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

c. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 together with supplements and amendments thereto).

d. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt by EPA.

e. Each operator shall submit a signed hard copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.

f. Stormwater Pollution Prevention Plans, Notice of intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226-9298

g. Please see the Lummi Nation website (www.lummi-nsn.gov) and/or the Lummi Natural Resources Department website (http://lnnr.lummi-nsn.gov/LummiWebsite/Website.php?PageID=53) to review a copy of Title 17 of the Lummi Code of Laws, associated regulations, and the references upon which the conditions identified above are based.

9.7.4.3 **Makah Tribe**. The following conditions apply only for discharges on the Makah Reservation:

a. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.

b. The operator shall submit a Storm Water Pollution Prevention Plan to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

c. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

d. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Ray Colby
Makah Tribal Water Quality
Water Quality Specialist
(360) 645-3162
colby.ray@centurytel.net
PO Box 115
Neah Bay, WA 98357

9.7.4.4 **Puyallup Tribe of Indians**. The following conditions apply only for discharges on the Puyallup Reservation:

a. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to lower water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

b. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

c. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department – Bill Sullivan and Char Naylor

d. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review.

e. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department at the address listed above.

f. The permittee shall submit all stormwater pollution prevention plans to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

g. The permittee shall conduct benchmark monitoring for turbidity and nutrients, complying with Section 3 monitoring requirements.

h. The permittee shall notify Bill Sullivan and Char Naylor prior to conducting inspections at construction sites generating stormwater discharged to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Action Area" – all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. See 50 CFR 402. For the purposes of this permit and for application of the Endangered Species Act requirements, the following areas are included in the definition of action area:

- The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
- The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
- The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Agricultural Land" - cropland, grassland, rangeland, pasture, and other agricultural land, on which agricultural and forest-related products or livestock are produced and resource concerns may be addressed. Agricultural lands include cropped woodland, marshes, incidental areas included in the agricultural operation, and other types of agricultural land used for the production of livestock.

"Antidegradation Policy" or "Antidegradation Requirements" - the water quality standards regulation that requires States and Tribes to establish a three-tiered antidegradation program:

1. Tier 1 maintains and protects existing uses and water quality conditions necessary to support such uses. An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur. Where an existing use is established, it must be protected even if it is not listed in the water quality standards as a designated use. Tier 1 requirements are applicable to all surface waters.
2. Tier 2 maintains and protects "high quality" waters -- water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) "fishable/swimmable"

uses. Water quality can be lowered in such waters. However, State and Tribal Tier 2 programs identify procedures that must be followed and questions that must be answered before a reduction in water quality can be allowed. In no case may water quality be lowered to a level which would interfere with existing or designated uses.

3. Tier 3 maintains and protects water quality in outstanding national resource waters (ONRWs). Except for certain temporary changes, water quality cannot be lowered in such waters. ONRWs generally include the highest quality waters of the United States. However, the ONRW classification also offers special protection for waters of exceptional ecological significance, i.e., those which are important, unique, or sensitive ecologically. Decisions regarding which water bodies qualify to be ONRWs are made by States and authorized Indian Tribes.

"Arid Areas" – areas with an average annual rainfall of 0 to 10 inches.

"Bank" (e.g., stream bank or river bank) – the rising ground bordering the channel of a water of the U.S.

"Bluff" – a steep headland, promontory, riverbank, or cliff.

"Borrow Areas" – the areas where materials are dug for use as fill, either onsite or off-site.

"Bypass" – the intentional diversion of waste streams from any portion of a treatment facility. See 40 CFR 122.41(m)(1)(i).

"Cationic Treatment Chemical" – polymers, flocculants, or other chemicals that contain an overall positive charge. Among other things, they are used to reduce turbidity in stormwater discharges by chemically bonding to the overall negative charge of suspended silts and other soil materials and causing them to bind together and settle out. Common examples of cationic treatment chemicals are chitosan and cationic PAM.

"Commencement of Earth-Disturbing Activities" - the initial disturbance of soils (or 'breaking ground') associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Commencement of Pollutant-Generating Activities" – at construction sites (for the purposes of this permit) occurs in any of the following circumstances:

- Clearing, grubbing, grading, and excavation has begun;
- Raw materials related to your construction activity, such as building materials or products, landscape materials, fertilizers, pesticides, herbicides, detergents, fuels, oils, or other chemicals have been placed at your site;
- Use of authorized non-stormwater for washout activities, or dewatering activities, have begun; or
- Any other activity has begun that causes the generation of or the potential generation of pollutants.

"Construction Activities" – earth-disturbing activities, such as the clearing, grading, and excavation of land.

"Construction and Development Effluent Limitations and New Source Performance Standards" (C&D Rule) – as published in 40 CFR § 450 is the regulation requiring effluent limitations guidelines

(ELG's) and new source performance standards (NSPS) for controlling the discharge of pollutants from construction sites.

"Construction Site" – the land or water area where construction activities will occur and where stormwater controls will be installed and maintained. The construction site includes construction support activities, which may be located at a different part of the property from where the primary construction activity will take place, or on a different piece of property altogether. The construction site is often a smaller subset of the lot or parcel within which the project is taking place.

"Construction Support Activities" – a construction-related activity that specifically supports the construction activity and involves earth disturbance or pollutant-generating activities of its own, and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

"Construction Waste" – discarded material (such as packaging materials, scrap construction materials, masonry products, timber, steel, pipe, and electrical cuttings, plastics, and styrofoam).

"Conveyance Channel" – a temporary or permanent waterway designed and installed to safely convey stormwater flow within and out of a construction site.

"Corrective Action" – for the purposes of the permit, any action taken to (1) repair, modify, or replace any stormwater control used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

"Critical Habitat" – as defined in the Endangered Species Act at 16 U.S.C. 1531 for a threatened or endangered species, (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

"CWA" – the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Dewatering" – the act of draining rainwater and/or groundwater from building foundations, vaults, and trenches.

"Discharge" – when used without qualification, means the "discharge of a pollutant."

"Discharge of a Pollutant" – any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

"Discharge Point" – for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the construction site.

"Discharge-Related Activity" – activities that cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged.

"Discharge to an Impaired Water" – for the purposes of this permit, a discharge to an impaired water occurs if the first water of the U.S. to which you discharge is identified by a State, Tribe, or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the water of the U.S. to which you discharge is the first water of the U.S. that receives the stormwater discharge from the storm sewer system.

"Domestic Waste" – for the purposes of this permit, typical household trash, garbage or rubbish items generated by construction activities.

"Drainageway" – an open linear depression, whether constructed or natural, that functions for the collection and drainage of surface water.

"Drought-Stricken Area" – for the purposes of this permit, an area in which the National Oceanic and Atomospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif.

"Earth-Disturbing Activity" or "Land-Disturbing Activity" – actions taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, site preparation (e.g., excavating, cutting, and filling), soil compaction, and movement and stockpiling of top soils.

"Effective Operating Condition" – for the purposes of this permit, a stormwater control is kept in effective operating condition if it has been implemented and maintained in such a manner that it is working as designed to minimize pollutant discharges.

"Effluent Limitations" – for the purposes of this permit, any of the Part 2 or Part 3 requirements.

"Effluent Limitations Guideline" (ELG) – defined in 40 CFR § 122.2 as a regulation published by the Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

"Electronic Notice of Intent" (eNOI) – EPA's online system for submitting electronic Construction General Permit forms.

"Eligible" – for the purposes of this permit, refers to stormwater and allowable non-stormwater discharges that are authorized for coverage under this general permit.

"Emergency-Related Project" – a project initiated in response to a public emergency (e.g., natural disaster, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

"Endangered Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose

protection under the provisions of this Act would present an overwhelming and overriding risk to man.

"Excursion" – a measured value that exceeds a specified limit.

"Existing Project" – a construction project that commenced construction activities prior to February 16, 2012 (April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"Exit Points" – any points of egress from the construction site to be used by vehicles and equipment during construction activities.

"Exposed Soils" – for the purposes of this permit, soils that as a result of earth-disturbing activities are left open to the elements.

"Federal Operator" – an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

"Final Stabilization" – on areas not covered by permanent structures, either (1) vegetation has been established, or for arid or semi-arid areas, will be established that provides a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the natural background vegetative cover, or (2) non-vegetative stabilization methods have been implemented to provide effective cover for exposed portions of the site.

"Hazardous Materials" or "Hazardous Substances" or "Hazardous or Toxic Waste" – for the purposes of this permit, any liquid, solid, or contained gas that contain properties that are dangerous or potentially harmful to human health or the environment. See also 40 CFR §261.2.

"Historic Property" – as defined in the National Historic Preservation Act regulations means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

"Impaired Water" or "Water Quality Impaired Water" or "Water Quality Limited Segment" – for the purposes of this permit, waters identified as impaired on the CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

"Impervious Surface" – for the purpose of this permit, any land surface with a low or no capacity for soil infiltration including, but not limited to, pavement, sidewalks, parking areas and driveways, packed gravel or soil, or rooftops.

"Indian Country" or "Indian Country Lands" – defined at 40 CFR §122.2 as:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

"Infeasible" – for the purpose of this permit, infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

"Install" or "Installation" – when used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

"Intermittent (or Seasonal) Stream" – one which flows at certain times of the year when groundwater provides water for stream flow, as well as during and immediately after some precipitation events or snowmelt.

"Jar test" – a test designed to simulate full-scale coagulation/flocculation/sedimentation water treatment processes by taking into account the possible conditions.

"Landward" – positioned or located away from a waterbody, and towards the land.

"Level Spreader" – a temporary stormwater control used to spread stormwater flow uniformly over the ground surface as sheet flow to prevent concentrated, erosive flows from occurring.

"Linear Project" – includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

"Minimize" – to reduce and/or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

"Municipal Separate Storm Sewer System" or "MS4" – defined at 40 CFR §122.26(b)(8) as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and

4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"National Pollutant Discharge Elimination System" (NPDES) – defined at 40 CFR §122.2 as the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an 'approved program.'

"Native Topsoil" – the uppermost layer of naturally occurring soil for a particular area, and is often rich in organic matter, biological activity, and nutrients.

"Native Vegetation" – the species of plants that have developed for a particular region or ecosystem and are considered endemic to that region or ecosystem.

"Natural Buffer" – for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the vegetation, exposed rock, or barren ground that exists prior to commencement of earth-disturbing activities.

"Natural Vegetation" – vegetation that occurs spontaneously without regular management, maintenance or species introductions, removals, and that generally has a strong component of native species.

"New Operator of a New or Existing Project" – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

"New Project" – a construction project that commences construction activities on or after February 16 (or on or after April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"New Source" – for the purpose of this permit, a construction project that commenced construction activities after February 1, 2010.

"New Source Performance Standards (NSPS)" – for the purposes of this permit, NSPS are technology-based standards that apply to construction sites that are new sources under 40 CFR 450.24.

"Non-Stormwater Discharges" – discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

"Non-Turbid" – a discharge that does not cause or contribute to an exceedence of turbidity-related water quality standards.

"Notice of Intent" (NOI) – the form (electronic or paper) required for authorization of coverage under the Construction General Permit.

"Notice of Termination" (NOT) – the form (electronic or paper) required for terminating coverage under the Construction General Permit.

"Operational" – for the purpose of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

"Operator" – for the purpose of this permit and in the context of stormwater discharges associated with construction activity, any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).

This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Ordinary High Water Mark" – the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris.

"Outfall" – see "Discharge Point."

"Permitting Authority" – for the purposes of this permit, EPA, a Regional Administrator of EPA, or an authorized representative.

"Point(s) of Discharge" – see "Discharge Point."

"Point Source" – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" – defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Pollutant-Generating Activities" – at construction sites (for the purposes of this permit), those activities that lead to or could lead to the generation of pollutants, either as a result of earth-disturbance or a related support activity. Some of the types of pollutants that are typically found at construction sites are:

- sediment;
- nutrients;
- heavy metals;
- pesticides and herbicides;
- oil and grease;
- bacteria and viruses;

- trash, debris, and solids;
- treatment polymers; and
- any other toxic chemicals.

"Pollution Prevention Measures" – stormwater controls designed to reduce or eliminate the addition of pollutants to construction site discharges through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

"Polymers" – for the purposes of this permit, coagulants and flocculants used to control erosion on soil or to enhance the sediment removal capabilities of sediment traps or basins. Common construction site polymers include polyacrylamide (PAM), chitosan, alum, polyaluminum chloride, and gypsum.

"Prohibited Discharges" – discharges that are not allowed under this permit, including:

1. Wastewater from washout of concrete;
2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Soaps or solvents used in vehicle and equipment washing;
5. Toxic or hazardous substances from a spill or other release; and
6. Waste, garbage, floatable debris, construction debris, and sanitary waste from pollutant-generating activities.

"Provisionally Covered Under this Permit" – for the purposes of this permit, EPA provides temporary coverage under this permit for emergency-related projects prior to receipt of a complete and accurate NOI. Discharges from earth-disturbing activities associated with the emergency-related projects are subject to the terms and conditions of the permit during the period of temporary coverage.

"Receiving Water" – a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Run-On" – sources of stormwater that drain from land located upslope or upstream from the regulated site in question.

"Semi-Arid Areas" – areas with an average annual rainfall of 10 to 20 inches.

"Site" – for construction activities, the land or water area where earth-disturbing activities take place, including construction support activities.

"Small Construction Activity" – defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Small Residential Lot" – for the purpose of this permit, a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

"Snowmelt" – the conversion of snow into overland stormwater and groundwater flow as a result of warmer temperatures.

"Spill" – for the purpose of this permit, the release of a hazardous or toxic substance from its container or containment.

"Stabilization" – the use of vegetative and/or non-vegetative cover to prevent erosion and sediment loss in areas exposed through the construction process.

"Steep Slopes" – where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

"Storm Sewer System" – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) designed or used for collecting or conveying stormwater.

"Stormwater" – stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Control Measure" - refers to any stormwater control, BMP, or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

"Stormwater Controls" – see "Stormwater Control measure."

"Stormwater Discharge Associated with Construction Activity" – as used in this permit, a discharge of pollutants in stormwater to waters of the United States from areas where land-disturbing activities (e.g., clearing, grading, or excavation) occur, or where construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants), are located.

"Stormwater Inlet" – a structure placed below grade to conduct water used to collect stormwater runoff for conveyance purposes.

"Stormwater Team" – the group of individuals responsible for oversight of the development and modifications of the SWPPP, and oversight of compliance with the permit requirements. The individuals on the "Stormwater Team" must be identified in the SWPPP.

"Storm Event" – a precipitation event that results in a measurable amount of precipitation.

"Storm Sewer" – a system of pipes (separate from sanitary sewers) that carries stormwater runoff from buildings and land surfaces.

"Subcontractor" – for the purposes of this permit, an individual or company that takes a portion of a contract from the general contractor or from another subcontractor.

"Surface Water" – a "Water of the United States" as defined in 40 CFR §122.2.

"SWPPP" (Stormwater Pollution Prevention Plan) – a site-specific, written document that, among other things: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

"Temporary Stabilization" – a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

"Thawing Conditions" – for the purposes of this permit, thawing conditions are expected based on the historical likelihood of two or more days with daytime temperatures greater than 32˚F. This date can be determined by looking at historical weather data. Note: the estimation of thawing conditions is for planning purposes only. During construction the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

"Threatened Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

"Tier 2 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(2), those waters thatare characterized as having water quality that exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

"Tier 2.5 Waters" – for antidegradation purposes, those waters designated by States or Tribes as requiring a level of protection equal to and above that given to Tier 2 waters, but less than that given Tier 3 waters. Some States have special requirements for these waters.

"Tier 3 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(3), Tier 3 waters are identified by states as having high quality waters constituting an Outstanding Natural Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

"Total Maximum Daily Load" or "TMDL" – the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Toxic Waste" – see "Hazardous Materials."

"Turbidity" – a condition of water quality characterized by the presence of suspended solids and/or organic material.

"Uncontaminated Discharge" – a discharge that does not cause or contribute to an exceedence of applicable water quality standards.

"Upland" - the dry land area above and 'landward' of the ordinary high water mark.

"Upset" – Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

"Water-Dependent Structures" – structures or facilities that are required to be located directly adjacent to a waterbody or wetland, such as a marina, pier, boat ramp, etc.

"Water Quality Standards" – defined in 40 CFR § 131.3, and are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, and an antidegradation policy to protect high-quality waters. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the Act.

"Waters of the United States" – defined at 40 CFR §122.2 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (1) through (4) of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

In applying this definition, EPA will consider applicable Court cases and current guidance.

"Wetland" – those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. On-site evaluations are typically required to confirm the presence and boundaries of wetlands.

"Work day" – for the purposes of this permit, a work day is a calendar day on which construction activities will take place.

Acronyms

C&D – Construction & Development

CGP – Construction General Permit

CFR – Code of Federal Regulations

CWA – Clean Water Act

eNOI – Electronic Notice of Intent

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FWS – United States Fish and Wildlife Service

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NMFS – United States National Marine Fisheries Service

NOI – Notice of Intent

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRCS – National Resources Conservation Service

POTW – Publicly Owned Treatment Works

SPCC – Spill Prevention Control and Countermeasure

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

USGS – United States Geological Survey

WQS – Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

B.1 EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
5 Post Office Square
Boston, MA 02109-3912

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
CTR12000I	Indian country within the State of Connecticut
MAR120000	Commonwealth of Massachusetts (except Indian country)
MAR12000I	Indian country within the State of Massachusetts
NHR120000	State of New Hampshire
RIR12000I	Indian country within the State of Rhode Island
VTR12000F	Areas in the State of Vermont subject to construction by a Federal Operator

B.2 EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR12000I	Indian country within the State of New York
PRR120000	Commonwealth of Puerto Rico

B.3 EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR120000	District of Columbia
DER12000F	Areas in the State of Delaware subject to construction by a Federal Operator

B.4 EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Protection Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

The States of Alabama, Florida, Mississippi, and North Carolina are the NPDES Permitting Authority for the majority of discharges within their respective States. EPA Region 4 is the NPDES Permitting Authority for all Indian country lands within any other Region 4 State except Catawba lands in South Carolina.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ALR12000I	Indian country within the State of Alabama
FLR12000I	Indian country within the State of Florida
MSR12000I	Indian country within the State of Mississippi
NCR12000I	Indian country within the State of North Carolina
RE412000I	Indian country within any other Region 4 State (except Catawba lands in South Carolina)

B.5 EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community

B.6 EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
LAR12000I	Indian country within the State of Louisiana
NMR120000	State of New Mexico, except Indian country
NMR12000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR12000I	Indian country within the State of Oklahoma
OKR12000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR12000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR12000I	Indian country within the State of Texas

B.7 EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
IAR12000I	Indian country within the State of Iowa
KSR12000I	Indian country within the State of Kansas
NER12000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

B.8 EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
COR12000F	Areas in the State of Colorado, except those located on Indian country, subject to construction activity by a Federal Operator
COR12000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR12000I	Indian country within the State of Montana
NDR12000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR12000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR12000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR12000I	Indian country within the State of Wyoming

B.9 EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ASR120000	Island of American Samoa
AZR12000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR12000I	Indian country within the State of California
GUR120000	Island of Guam
JAR120000	Johnston Atoll
MPR120000	Commonwealth of the Northern Mariana Islands
MWR120000	Midway Island and Wake Island
NVR12000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

B.10 EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
AKR12000I	Indian country within the State of Alaska
AKR12-000F	Areas in the the Denali National Park and Preserve subject to construction by a Federal Operator
IDR120000	State of Idaho, except Indian country
IDR12000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR12000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR12000F	Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator
WAR12000I	Indian country within the State of Washington

Appendix C - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

C.1 Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

> *Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.*

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver. You can access the calculator from EPA's website at:www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet (www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you can submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, which certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part C.4 of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for NPDES permit coverage, unless you qualify for the Water Quality Waiver as described in section B below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of your records. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is 5 or above, you must obtain NPDES permit coverage.

C.2 TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern for the impaired water and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA-established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;

3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C.3 Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his/her small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

C.4 Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix D - Endangered Species Act Requirements

The purpose of this guidance is to assist you in complying with the requirements in Part 1.1.e of the permit requiring you to demonstrate that you meet one of the criteria listed in this appendix with respect to the protection of any and all species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or of habitat that is federally-designated as "critical habitat" under the ESA in order to be eligible for coverage under this permit.

This guidance provides you information on the following:

- **Section D.1:** ESA Eligibility Criteria
- **Section D.2:** Guidance for Determining Which ESA Criteria Applies

D.1 ESA Eligibility Criteria

You must certify in your NOI that you meet one of the eligibility criteria listed below in order to be eligible for coverage under this permit. You must also specify in the NOI the basis for your selection of the applicable eligibility criterion.

> Note: (1) Regardless of the criterion selected, you must provide documentation in your SWPPP that is sufficient to support your determination that you satisfy the requirements of the particular criterion. (2) While coordination between you and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service (together, the "Services") is not necessarily required in all cases, EPA encourages you to coordinate with the Services and to do so early in the planning process prior to submitting your NOI.

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of this permit.

Criterion B. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

Criterion C. Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

Criterion D. Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion E. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion F. Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility criteria in this section to remain eligible for coverage under this permit. Documentation of these requirements must be kept as part of your SWPPP (see Part 7.2.14.1).

D.2 Guidance for Determining Which Criterion Applies

Part 1.1.5 of the permit requires that you meet one of the six criteria listed above in order to be eligible for coverage under the permit.

You must follow the procedures in Steps 1through 6 to determine the ESA criterion under which your site is eligible for permit coverage.

D.2.1 Step 1 - Determine if Your Discharges and Discharge-Related Activities Were Already Addressed in Another Operator's Valid Certification that Included Your Action Area.

- **If your discharges and discharge-related activities <u>were</u> already addressed in another operator's valid certification that included your action area** (e.g., a general contractor or developer may have completed and filed an NOI for the entire action area with the necessary ESA certifications (Criterion A, C, D, E, or F)), *you may select eligibility Criterion B on your Notice of Intent form*.

  By certifying eligibility under Criterion B, you must comply with any terms and conditions imposed under the eligibility requirements of Criterion A, C, D, E, or F to ensure that your discharges and discharge-related activities are protective of listed species and/or critical habitat.

  > Note: If you are unable to meet these eligibility requirements, then you may either establish eligibility under one of the other criterion, or you may consider applying to EPA for an individual permit.

  Under Criterion B, you must provide documentation in your SWPPP of any of these terms and conditions, as well as the other operator's basis for establishing eligibility. You must also provide a description of the basis for your selection of Criterion B on your NOI form, including the eligibility criterion (A, C, D, E, or F) that was certified to by the previous operator, and must provide the Tracking Number from the other operator's notification of authorization under this permit.

  If your certification is based on another operator's certification under criterion C, you must provide the documentation required in the NOI for criterion C, namely: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If discharges and discharge-related activities from your site <u>were not</u> addressed in another operator's valid certification that included your action area,** you must follow the applicable procedures in Steps 2 through 5 below.

D.2.2 Step 2 - Determine if Listed Threatened or Endangered Species or their Designated Critical Habitat(s) are Likely to Occur in your Site's Action Area

You must determine, to the best of your knowledge, whether species listed as either threatened or endangered, or their critical habitat(s) (see definitions of these terms in Appendix A), are located in your site's action area. To make this determination, you should first determine if listed species and/or critical habitat are expected to exist in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. For FWS

terrestrial and aquatic species information, you can use FWS' on-line mapping tool, the Information, Planning, and Consultation (IPAC) System, located at http://www.fws.gov/ipac/.

Note: To determine the field office that corresponds to your project site, visit http://www.fws.gov/endangered/regions/index.html and http://www.nmfs.noaa.gov/ (under the left tabe for "Regions").

In most cases, species and/or critical habitat lists allow you to determine if any such species or habitat exists in your county or township. You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- ***If there <u>are</u> listed species and/or critical habitat in your county or township***, you should contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species are known to exist in your action area and if any critical habitat areas have been designated that overlap your action area.
    - If your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species and/or critical habitat could exist in your action area, you must:
        - Do **one or more** of the following:
            - Conduct visual inspections. This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
            - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located in the action area and whether there are likely to be adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful to conduct in conjunction with Steps Two, Three, or Four of these instructions.
            - If required, conduct an environmental assessment under the National Environmental Policy Act (NEPA). Some construction activities might require review under NEPA for specific reasons, such as federal funding or other federal involvement in the project. Note: Coverage under the CGP does not trigger such a review for individual projects/sites. EPA has complied with NEPA in the issuance of the CGP.

        and

- Follow the instructions in Steps 3 – 5 below, as applicable. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

- ***If there are <u>no</u> listed species in your county or township and <u>no</u> critical habitat areas in your action area,*** *you may check eligibility criterion A on your NOI form*. You must also provide a description of the basis for the criterion selected on your NOI form and provide documentation supporting the criterion selected in your SWPPP.

D.2.3 Step 3 - Determine if the Construction Activity's Discharges or Discharge-Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

If in Step 2 you determine based on communication with your local FWS, NMFS, or State or Tribal Heritage Center, or other determination, that listed species and/or critical habitat could exist in your action area, you must next assess whether your discharges or discharge-related activities are likely to adversely affect listed threatened or endangered species or designated critical habitat.

Potential adverse effects from discharges and discharge-related activities include:

- *Hydrological*. Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.

- *Habitat*. Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater controls, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.

- *Toxicity*. In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you should contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are not</u> likely****, then you may select eligibility criterion C on the NOI form*. You must provide the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or

designated critical habitat (in miles). You must also provide a copy of your site map with your NOI.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are</u> likely,*** you must follow Step 4 below.

D.2.4 Step 4 - Determine if Measures Can Be Implemented to Avoid Adverse Effects

If you make a preliminary determination in Step 3 that adverse effects from your construction activity's discharges or discharge-related activities are likely to occur, you can still receive coverage under eligibility criterion C of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage.

These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating stormwater controls, or by modifying the "footprint" of the construction activity. If you are unable to ascertain which measures to implement to avoid the likelihood of adverse effects, you must coordinate or enter into consultation with the FWS and/or NMFS, in which case you would not be eligible for coverage under eligibility criterion C, but may instead be eligible for coverage under eligibility criterion D, E, or F (described in more detail in Step 5).

- **If you are able to install and implement appropriate measures to avoid the likelihood of adverse effects,** *then you may check eligibility criterion C on the NOI form.* The measures you adopt to avoid or eliminate adverse affects must be implemented for the duration of the construction project and your coverage under the CGP. You must also provide a description of the basis for the criterion selected , and the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If you cannot ascertain which measures to implement to avoid the likelihood of adverse effects,** you must follow the procedures in Step 5**.**

D.2.5 Step 5 - Determine if the Eligibility Requirements of Criterion D, E, or F Can Be Met

If in Step 4 you cannot ascertain which measures to implement to avoid the likelihood of adverse effects, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting criterion D, E, or F.

- **Criterion D:** You have coordinated with the Services and have addressed the effects of your site's discharges on federally-listed threatened or endangered species and federally-designated critical habitat, which resulted in a written concurrence from the relevant Service(s) that your site's discharges are not likely to adversely affect listed species or critical habitat.

  If you have met the requirements of criterion D, *you may select eligibility criterion D on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between you and the applicable Service in your SWPPP.

- **Criterion E:** Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS and that consultation addresses the effects of your discharges and discharge-related activities on federally-listed and threatened species and designated critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

  Note that most consultations are accomplished through informal consultation. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

  Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

  Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuarine, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

  If you have met the requirements of criterion E, *you may select eligibility criterion E on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

- **Criterion F:** Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of your discharge(s) and discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22 for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

  If you have met the requirements of criterion F, *you may select eligibility criterion F on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

Appendix E – Historic Property Screening Process

Background

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of Federal "undertakings", such as the issuance of this permit, on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. To address any issues relating to historic properties in connection with the issuance of this permit, EPA has developed the screening process in this appendix that enables construction operators to appropriately consider the potential impacts, if any, of their installation of stormwater controls on historic properties and to determine whether actions can be taken, if applicable, to mitigate any such impacts. Although the coverages of individual construction sites under this permit do not constitute separate Federal undertakings, the screening process in this appendix provides an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit.

Key Terms

Historic property- prehistoric or historic districts, sites, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and remains that are related to and located within such properties

SHPO – The State Historic Preservation Officer for a particular state

THPO or Tribal representative – The Tribal Historic Preservation Officer for a particular Tribe or, if there is no THPO, the representative designated by such Tribe for NHPA purposes

Instructions for All Construction Operators

You are required to follow the screening process in this appendix to determine if your installation of stormwater controls on your site has the potential to cause effects to historic properties, and whether or not you need to contact your SHPO, THPO, or other tribal representative for further information. You may not submit your NOI until you have completed this screening process. The following four steps describe how applicants can meet the historic property requirements under this permit:

Step 1 *Are you installing any stormwater controls that require subsurface earth disturbance?*

The first step of the screening process is to determine if you will install stormwater controls that cause subsurface earth disturbance. The installation of the following types of stormwater controls require subsurface earth disturbance:

- Dikes
- Berms
- Catch Basins
- Ponds
- Ditches
- Trenches
- Culverts
- Channels
- Perimeter Drains

- Swales

Note: This list is not intended to be exhaustive. Other stormwater controls that are not on this list may involve earth-disturbing activities and must also be examined for the potential to affect historic properties.

Note: You are only required to consider earth-disturbing activities related to the installation of stormwater controls in the NHPA screening process. You are not reqired to conside other earth-disturbing activities a the site. If you are installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, your project has the potential to have an effect on historic properties. If this is the case, then you must proceed to Step 2.

If you are not installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, then you may indicate this on your NOI, and no further screening is necessary. During the 14-day waiting period after submitting your NOI, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

Step 2 *Have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances precluded the existence of historic properties?*

If you are installing a stormwater control that requires subsurface earth disturbance, you must next determine if it has already been determined that no historic properties exist on your site based on prior professional cultural resource surveys or other evaluations, or that the existence of historic properties has been precluded because of prior earth disturbances.

If prior to your project it has already been determined that no historic properties exist at your site based on available information, including information that may be provided by your applicable SHPO, THPO, or other tribal representative, then you may indicate this on your NOI, and no further screening steps are necessary. Similarly, if earth disturbances that have occurred prior to your project have eliminated the possibility that historic properties exist on your site, you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If neither of these circumstances exists for your project, you must proceed to Step 3.

Step 3 *If you are installing any stormwater controls that require subsurface earth disturbance, you must determine if these activities will have an effect on historic properties.*

If your answer to the questions in Steps 1 and 2 is "no", *then you must assess whether your earth-disturbing activities related to the installation of stormwater controls will have an effect on historic properties. This assessment may be based on historical sources, knowledge of the area, an assessment of the types of earth-disturbing activities you are engaging in, considerations of*

any controls and/or management practices you will adopt to ensure that your stormwater control-related earth-disturbing activities will not have an effect on historic properties, and any other relevant factors. If you determine based on this assessment that earth disturbances related to the installation of yous stormwater controls will not cause effects to historic properties, you may indicate this on your NOI, and document the basis for your determinatioin in your SWPPP and no further screening steps are necessary. In this case you must also attach a copy of your site map to your NOI. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If none of the circumstances in Steps 1-3 exist for your project, you must proceed to Step 4.

Step 4: *If you are installing any stormwater controls that require subsurface earth disturbance and you have not satisfied the conditions in Steps 1-3, you must contact and consult with the appropriate historic preservation authorities.*

Where you are installing stormwater controls that require subsurface earth disturbance, and you cannot determine in Step 3 that these activities will not have effects on historic properties, then you must contact the relevant SHPO, THPO, or other tribal representative to request their views as to the likelihood that historic properties are potentially present on your site and may be impacted by the installation of these controls.

> *Note: Addresses for SHPOs and THPOs may be found on the Advisory Council on Historic Preservation's website (www.achp.gov/programs.html). In instances where a Tribe does not have a THPO you should contact the appropriate Tribal government office designated by the Tribe for this purpose when responding to this permit eligibility condition.*

You must submit the following minimum information in order to properly initiate your request for information:

1. Project name (*i.e.*, the name or title most commonly associated with your project);
2. A narrative description of the project;
3. Name, address, phone and fax number, and email address (if available) of the operator;
4. Most recent U.S. Geological Survey (USGS) map section (7.5 minute quadrangle) showing actual project location and boundaries clearly indicated; and
5. Sections of SWPPP site map (see Part 7.2.6) that show locations where stormwater controls that will cause subsurface earth disturbance will be installed (see Step 1).

Without submitting this minimum information, you will not have been considered to have properly initiated your request. You will need to provide the SHPO, THPO, or other tribal representative a minimum of15 calendar days after they receive these materials to respond to your request for information about your project. You are advised to get a receipt from the post office or other carrier confirming the date on which your letter was received.

If you do not receive a response within15 calendar days after receipt by the SHPO, THPO, or other tribal representative of your request, then you may indicate this on your NOI, and no further screening steps are necessary. Or, if the applicable SHPO, THPO, or other tribal representative responds to your request with an indication that no historic properties will be affected by the installation of stormwater controls at your site, then you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If within 15 calendar days of receipt of your request the applicable SHPO, THPO, or other tribal representative responds with a request for additional information or for further consultation regarding appropriate measures for treatment or mitigation of effects on historic properties caused by the installation of stormwater controls on your site, you must comply with this request and proceed to Step 5.

Step 5: *Consultation with your applicable SHPO, THPO, or other tribal representative*.

If, following your discussions with the appropriate historic preservation authorities in Step 4, the applicable SHPO, THPO, or other tribal represenative requests additional information or further consultation, you must respond with such information or to consult to determine impacts to historic properties that may be caused by the installation of stormwater controls on your site and appropriate measures for treatment or mitigation of such impacts. If as a result of your discussions with the applicable SHPO, THPO, or tribal representative, you enter into, and comply with, a written agreement regarding treatment and/or mitigation of impacts on your site, then you may indicate this on your NOI, and no further screening steps are necessary.

If, however, agreement on an appropriate treatment or mitigation plan cannot be reached between you and the SHPO, THPO, or other tribal representative within 30 days of your response to the SHPO, THPO, or other tribal representative's request for additional information or further consultation, you may submit your NOI, but you must indicate that you have not negotiated measures to avoid or mitigate such effects. You must also include in your SWPPP the following documentation:

1. Copies of any written correspondence between you and the SHPO, THPO, or other tribal representative; and
2. A description of any significant remaining disagreements as to mitigation measures between you and the SHPO, THPO, or other tribal representative.

After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, ACHP or other tribal representative may request that EPA place a hold on authorization based upon concerns regarding potential adverse effects to historic properties. EPA, in coordination with the ACHP, will evaluate any such request and notify you if any additional measures to address adverse effects to historic properties are necessary.

Appendix F - List of Tier 3, Tier 2, and Tier 2.5 Waters

EPA's CGP has special requirements for discharges to waters designated by a state or tribe as Tier 2/2.5 or Tier 3 for antidegradation purposes under 40 CFR 131.12(a). See Parts 1.2.3 and 3.3.

The list below is provided as a resource for operators who must determine whether they discharge to a Tier 2/2.5 or Tier 3 water. Only Tier 2/2.5 or Tier 3 waters specifically identified by a water quality standard authority (e.g., a state, territory, or tribe) are identified in the table below. Many authorities evaluate the existing and protected quality of the receiving water on a pollutant-by-pollutant basis and determine whether water quality is better than the applicable criteria that would be affected by a new discharge or an increase in an existing discharge of the pollutant. In instances where water quality is better, the authority may choose to allow lower water quality, where lower water quality is determined to be necessary to support important social and economic development. Permittees are not required to identify those waters which are evaluated on an individual basis.

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
MAR120000	**Commonwealth of Massachusetts, except Indian Country lands**	
	Tier 2 and Tier 2.5 waters are identified and listed in 314 CMR 4.06 Basin Classification. (314 CMR 4 can be found at DEP's web page at http://www.mass.gov/dep/service/regulations/314cmr04.pdf)	
	Tier 2	Tier 2 waters are listed on a parameter-by-parameter basis.
	Tier 2.5	Tier 2.5 waters are listed as "outstanding resource waters" on the website: http://www.mass.gov/dep/water/laws/tblfig.pdf
NHR120000	**State of New Hampshire**	
	Tier 2/2.5	There is no list of Tier 2/Tier 2.5 waters. New dischargers should contact Ken Edwardson at Kenneth.Edwardson@des.nh.gov.
	Tier 3	Env-Ws 1708.05(a) Surface waters of national forests and surface waters designated as "natural" under RSA 483:7-a, I shall be considered outstanding resource waters (ORW). "Natural waters" are listed at http://www.gencourt.state.nh.us/rsa/html/L/483/483-15.htm. Surface waters of national forests are not included in an official list. For further questions, new dischargers should contact Thelma Murphy (EPA Region 1's stormwater coordinator) at murphy.thelma@epa.gov.
PRR120000	**Commonwealth of Puerto Rico**	
	Tier 3	Tier III waters are those which are classified as either Class SA or Class SE. Class SA waters are defined as "Coastal waters and estuarine waters of high quality and/or exceptional ecological or recreational value whose existing characteristics shall not be altered, except by natural causes, in order to preserve the existing natural phenomena." Class SA waters include bioluminiscent lagoons and bays such as La Parguera and Monsio José on the Southern Coast, Bahía de Mosquito in Vieques, and any other coastal or estuarine waters of exceptional quality of high ecological value or recreational which may be designated by Puerto Rico, through Resolution, as requiring this classification for protection of the waters. Class SE waters are defined

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		as "Surface waters and wetlands of exceptional ecological value, whose existing characteristics should not be altered in order to preserve the existing natural phenomena." Class SE waters include Laguna Tortuguero, Laguna Cartagena and any other surface water bodies of exceptional ecological value as may be designated by Puerto Rico through Resolution.
DCR120000	**District of Columbia**	
	Tier 2/2.5	Rock Creek and its tributaries and Battery Kemble Creek and its tributaries are considered Special Waters of the District of Columbia (SWDC) under its antidegradation program.
MNR12000I	**Fond du Lac Band of MN Chippewa**	
	Tier 3	Six lakes are presently identified as Tier 3: (1) Dead Fish, (2) Jaskari, (3) Miller (Mud), (4) Perch, (5) Rice Portage, (6) Wild Rice.
	Grand Portage Band of MN Chippewa	
	Tier 2/2.5	All waters, not already classified as Tier 3, are high quality Tier 2 waters. (see Grand Portage Reservation Water Quality Standards, Section VI & VII, Pages 14-16).
	Tier 3	"The portion of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary." (see Section VII, Page 16).
WIR12000I	**Lac du Flambeau Band of the Lake Superior Chippewa**	
	Tier 2	All named waters, including wetlands, not specified under an antidegradation classification.
	Tier 2.5	Bills Lake, Birch Lake, Bobidosh Lake, Bog Lake (SE SE Sec. 31, T40NR6E), Bolton Lake, Broken Bow Lake, Chewalah Lake, Clear Lake (Sec. 2, T39NR4E), Corn Great, Great, Corn Lake, Little "Least/Lesser", Crawling Stone Lake, Big, Crawling Stone Lake, Little, Crescent Lake, Crooked Lake, Big, David Lake, Ellerson Lake, Middle, Ellerson Lake, West, Elsie Lake "Boundary Lake", Fat Lake, Fence Lake, Gresham Creek, Green Lake (NW NW Sec. 19, T41R6E), Grey Lake, Gunlock Lake, Haskell Lake, Headflyer Lake (Sec. 19, T41NR5E), Highway Lake (NW NW Sec. 19, T41NR5E), Horsehead Lake (SE SW Sec. 9, T40NR5E), Hutton's Creek, Ike Walton Lake, Lily Lake (SE SW Sec. 35, T40NR5E), Little Ten Lake, Lodge Lake "L. Rice" (NW NW Sec. 8, T41NR6E), Lucy Lake, Mindys Lake (Sec. 8, T40NR5E), Minette Lake, Mitten Lake, Monk's Lake (Sec. 13, T40NR5E), Moving Cloud Lake, Mud Creek, Muskesin Lake, Patterson Lake, Placid Twin Lake (North), Placid Twin Lake (South), Plummer Lake, Poupart Lake, Prairie Lake (NE SW Sec. 13, T40NR4E), Raven Lake, Ross Allen Lake, Sand Lake, Little, Scott Lake (Sec. 22, T40N, R4E), Shishebogama Lake, Signal Lake, Snort Lake (Sec. 5, T41N, R6E), Spring Lake "Jerms", Squirrel Lake, Statenaker Lake "Hollow", Stearns Lake "Hourglass", Sugarbush "Hidden Lake" (NW NW Sec. 17, T41NR5E), Sugarbush Creek, Sugarbush Lake, Little, Sugarbush Lake, Lower, Sugarbush Lake, Middle, Sugarbush Lake, Upper, Sunfish Lake, Tippecanoe Lake, Tomahawk River, To-To Tom Lake, Toulish Lake, Trout River, Warrior Lake, White Sand Lake, Whitefish Lake

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		"Cattail Lake" (Sec. 34, T40N5R), Wishow Lake, Wyandock Lake
	Tier 3	Bear River (1st bridge to Reservation boundary), Big Springs (Sec. 25, T40NR4E), Black Lake, Cranberry Lake, Doud Lake, Eagle Lake, Gene Lake, Johnson Springs, Little Trout Lake, Lost Lake (Sect. 1, T41NR4E), Mishonagon Creek, Munnomin (Jesse, Duck) Lake, Negani (Hegani) Lake, Reservation Line Lake, Spring Creek, Tank Lake, Thomas Lake, Wild Rice Lake, Zee Lake
NMR120000	**State of New Mexico**	
	Tier 3	(1) Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness; and (2) the waters within the United States forest service Valle Vidal special management unit including: (a) Rio Costilla, including Comanche, La Cueva, Fernandez, Chuckwagon, Little Costilla, Holman, Gold, Grassy, LaBelle and Vidal creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; (b) Middle Ponil creek, including the waters of Greenwood Canyon, from their headwaters downstream to the boundary of the Elliott S. Barker wildlife management area; (c) Shuree lakes; (d) North Ponil creek, including McCrystal and Seally Canyon creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; and (e) Leandro creek from its headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit. (3) the named perennial surface waters of the state, identified in Subparagraph (a) below, located within United States department of agriculture forest service wilderness. Wilderness are those lands designated by the United States congress as wilderness pursuant to the Wilderness Act. Wilderness areas included in this designation are the Aldo Leopold wilderness, Apache Kid wilderness, Blue Range wilderness, Chama River Canyon wilderness, Cruces Basin wilderness, Dome wilderness, Gila wilderness, Latir Peak wilderness, Pecos wilderness, San Pedro Parks wilderness, Wheeler Peak wilderness, and White Mountain wilderness. (a) The following waters are designated in the Rio Grande basin: (i) in the Aldo Leopold wilderness: Byers Run, Circle Seven creek, Flower canyon, Holden Prong, Indian canyon, Las Animas creek, Mud Spring canyon, North Fork Palomas creek, North Seco creek, Pretty canyon, Sids Prong, South Animas canyon, Victorio Park canyon, Water canyon; (ii) in the Apache Kid wilderness Indian creek and Smith canyon; (iii) in the Chama River Canyon wilderness: Chavez canyon, Ojitos canyon, Rio Chama; (iv) in the Cruces Basin wilderness: Beaver creek, Cruces creek, Diablo creek, Escondido creek, Lobo creek, Osha creek; (v) in the Dome wilderness: Capulin creek, Medio creek, Sanchez

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		canyon/creek; (vi) in the Latir Peak wilderness: Bull creek, Bull Creek lake, Heart lake, Lagunitas Fork, Lake Fork creek, Rito del Medio, Rito Primero, West Latir creek; (vii) in the Pecos wilderness: Agua Sarca, Hidden lake, Horseshoe lake (Alamitos), Jose Vigil lake, Nambe lake, Nat lake IV, No Fish lake, North Fork Rio Quemado, Rinconada, Rio Capulin, Rio de las Trampas (Trampas creek), Rio de Truchas, Rio Frijoles, Rio Medio, Rio Molino, Rio Nambe, Rio San Leonardo, Rito con Agua, Rito Gallina, Rito Jaroso, Rito Quemado, San Leonardo lake, Santa Fe lake, Santa Fe river, Serpent lake, South Fork Rio Quemado, Trampas lake (East), Trampas lake (West); (viii) in the San Pedro Parks wilderness: Agua Sarca, Cañon Madera, Cave creek, Cecilia Canyon creek, Clear creek (North SPP), Clear creek (South SPP), Corralitos creek, Dove creek, Jose Miguel creek, La Jara creek, Oso creek, Rio Capulin, Rio de las Vacas, Rio Gallina, Rio Puerco de Chama, Rito Anastacio East, Rito Anastacio West, Rito de las Palomas, Rito de las Perchas, Rito de los Pinos, Rito de los Utes, Rito Leche, Rito Redondo, Rito Resumidero, San Gregorio lake; (ix) in the Wheeler Peak wilderness: Black Copper canyon, East Fork Red river, Elk lake, Horseshoe lake, Lost lake, Sawmill creek, South Fork lake, South Fork Rio Hondo, Williams lake. (b) The following waters are designated in the Pecos River basin: (i) in the Pecos wilderness: Albright creek, Bear creek, Beatty creek, Beaver creek, Carpenter creek, Cascade canyon, Cave creek, El Porvenir creek, Hollinger creek, Holy Ghost creek, Horsethief creek, Jack's creek, Jarosa canyon/creek, Johnson lake, Lake Katherine, Lost Bear lake, Noisy brook, Panchuela creek, Pecos Baldy lake, Pecos river, Rio Mora, Rio Valdez, Rito Azul, Rito de los Chimayosos, Rito de los Esteros, Rito del Oso, Rito del Padre, Rito las Trampas, Rito Maestas, Rito Oscuro, Rito Perro, Rito Sebadilloses, South Fork Bear creek, South Fork Rito Azul, Spirit lake, Stewart lake, Truchas lake (North), Truchas lake (South), Winsor creek; (ii) in the White Mountain wilderness: Argentina creek, Aspen creek, Bonito creek, Little Bonito creek, Mills canyon/creek, Rodamaker creek, South Fork Rio Bonito, Turkey canyon/creek. (c) The following waters are designated in the Gila River basin: (i) in the Aldo Leopold wilderness: Aspen canyon, Black Canyon creek, Bonner canyon, Burnt canyon, Diamond creek, Falls canyon, Fisherman canyon, Running Water canyon, South Diamond creek; (ii) in the Gila wilderness: Apache creek, Black Canyon creek, Brush canyon, Canyon creek, Chicken Coop canyon, Clear creek, Cooper canyon, Cow creek, Cub creek, Diamond creek, East Fork Gila river, Gila river, Gilita creek, Indian creek, Iron creek, Langstroth canyon, Lilley canyon, Little creek, Little Turkey creek, Lookout canyon, McKenna creek, Middle Fork Gila river, Miller Spring canyon, Mogollon creek, Panther canyon, Prior creek, Rain creek, Raw Meat creek, Rocky canyon, Sacaton creek, Sapillo creek, Sheep Corral canyon, Skeleton canyon, Squaw creek, Sycamore canyon, Trail canyon, Trail creek, Trout creek, Turkey creek, Turkey Feather creek, Turnbo canyon,

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		West Fork Gila river, West Fork Mogollon creek, White creek, Willow creek, Woodrow canyon. (d) The following waters are designated in the Canadian River basin: in the Pecos wilderness Daily creek, Johns canyon, Middle Fork Lake of Rio de la Casa, Middle Fork Rio de la Casa, North Fork Lake of Rio de la Casa, Rito de Gascon, Rito San Jose, Sapello river, South Fork Rio de la Casa, Sparks creek (Manuelitas creek). (e) The following waters are designated in the San Francisco River basin: (i) in the Blue Range wilderness: Pueblo creek; (ii) in the Gila wilderness: Big Dry creek, Lipsey canyon, Little Dry creek, Little Whitewater creek, South Fork Whitewater creek, Spider creek, Spruce creek, Whitewater creek. (f) The following waters are designated in the Mimbres Closed basin: in the Aldo Leopold wilderness Corral canyon, Mimbres river, North Fork Mimbres river, South Fork Mimbres river. (g) The following waters are designated in the Tularosa Closed basin: in the White Mountain wilderness Indian creek, Nogal Arroyo, Three Rivers. (h) The wetlands designated are identified on the maps and list of wetlands within United States forest service wilderness areas designated as outstanding national resource waters published at the New Mexico state library and available on the department's website.

Appendix G – Buffer Guidance.

The purpose of this guidance is to assist you in complying with the requirements in Part 2.1.2.1 of the permit regarding the establishment of natural buffers or equivalent sediment controls. This guidance is organized as follows:

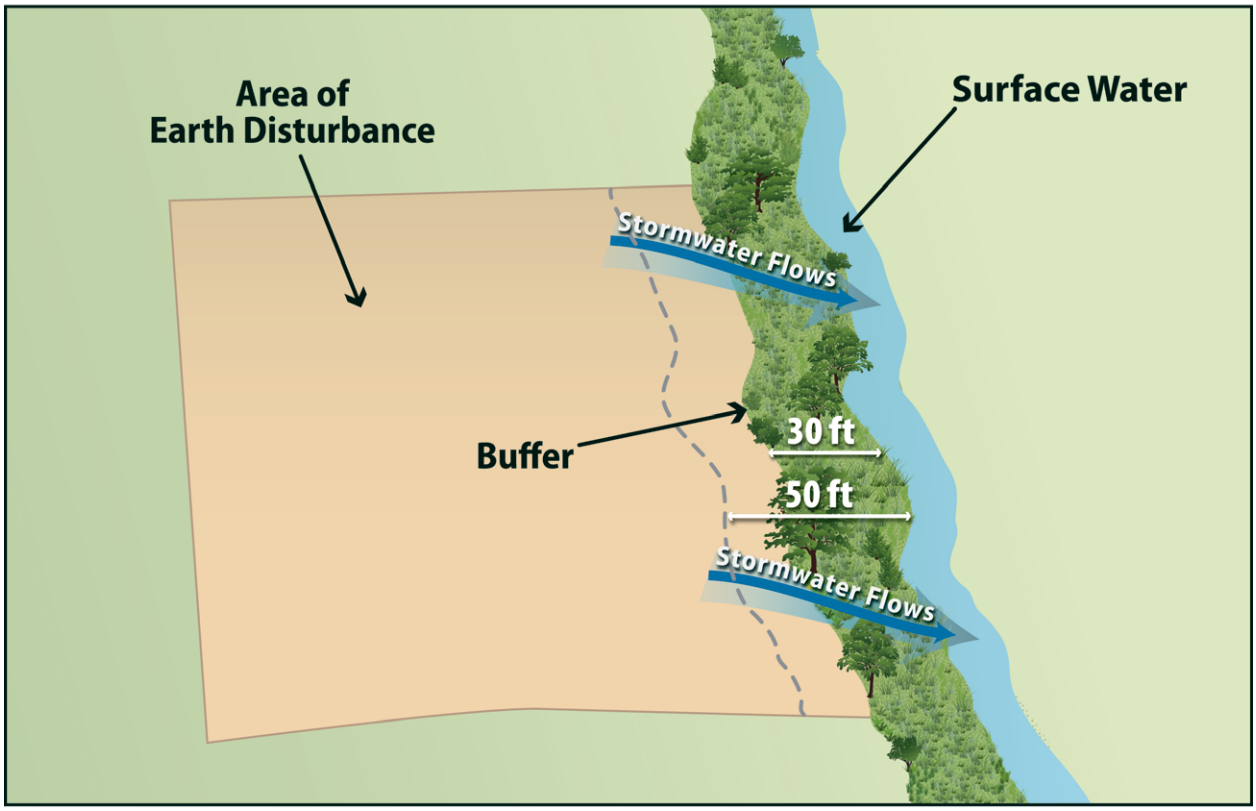
G.1 Sites That Are Required to Comply with Part 2.1.2.1

The purpose of this part is to help you determine if the requirements in Part 2.1.2.1 apply to your site.

G.1.1 Step 1 - Determine if Your Site is Within 50 Feet of a Surface Water

Part 2.1.2.1 applies to you only if your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site. Figure G – 1 illustrates when a site would be required to comply with the requirements in Part 2.1.2.1 due to their proximity to a surface water. If the surface water is not located within 50 feet of the earth-disturbing activities, Part 2.1.2.1 does not apply.

Figure G - 1. Example of earth-disturbing activities within 50 feet of a surface water.



If you determine that your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site, the requirements in Part 2.1.2.1 apply, except for certain circumstances that are described in Step 2.

Note that where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, or if a portion of area within 50 feet of the surface water is owned by another party and is not under your control, the buffer requirements in Part 2.1.2.1 still apply, but with some allowances.

Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

Note that EPA does not consider designed stormwater control features *(e.g., stormwater conveyance channels, storm drain inlets, stormwater basins)* that direct storm water to surface waters more than 50 feet from the disturbance to constitute surface waters for the purposes of determining if the buffer requirements apply.

G.1.2 Step 2 - Determine if Any Exceptions to the Requirements in Part 2.1.2.1 Apply

The following exceptions apply to the requirements in Part 2.1.2.1:

- If there is no discharge of stormwater to surface waters through the area between the disturbed portions of the site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented controls measures, such as a berm or other barrier, that will prevent such discharges.
- Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part.

  Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you <u>are</u> required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either compliance alternative 2 or 3 below, you are not expected to compensate for the reduction in buffer function that would have resulted from the area covered by these preexisting disturbances. Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

  If during your project, you will disturb any portion of these preexisting disturbances, the area removed will be deducted from the area treated as natural buffer.
- For "linear construction projects" (see Appendix A), you are not required to comply with this requirement if site constraints *(e.g., limited right-of-way)* prevent you from complying with the requirements of the alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale for why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.
- For "small residential lot" construction *(i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre),* you have the option of complying with the requirements in Part G.2.3 of this appendix.
- The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

  - Construction approved under a CWA Section 404 permit; or

- Construction of a water-dependent structure or water access areas *(e.g., pier, boat ramp, trail)*.

Note that you must document in your SWPPP if any disturbances related to any of the above exceptions occurs within the buffer area on your site.

G.2 COMPLIANCE ALTERNATIVES GUIDANCE

If in Part G.1 of this guidance you determine that the buffer requirements apply to your site, you have three compliance alternatives from which you can choose:

1. Provide and maintain a 50-foot buffer undisturbed natural buffer (Part 2.1.2.1a.i);[1] or
2. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.ii);[1] or
3. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.iii).[1]

The compliance alternative selected above must be maintained throughout the duration of permit coverage.

The following provides detailed guidance for how you can comply with each of the compliance alternatives. Part G.2.1 below provides guidance on how to provide and maintain natural buffers consistent with the alternatives 1 and 2, above. Part G.2.2 below provides guidance on how to comply with the requirement to provide a 50-foot buffer equivalent through erosion and sediment controls consistent with alternatives 2 and 3, above.

G.2.1 Guidance for Providing and Maintaining Natural Buffers

The following guidance is intended to assist you in complying with the requirements to provide and maintain a natural buffer during construction. This part of the guidance applies to you if you choose either alternative 1 (50-foot buffer) or alternative 2 (a buffer of < 50 feet supplemented by additional erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), or if you are providing a buffer in compliance with one of the small residential lot compliance alternatives in Part G.2.3 below.

[1] *For the compliance alternatives in 1 and 2, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2 and 3, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Part G.2.2 of this Appendix for a discussion of how to determine equivalent reductions.*

G.2.1.1 *Buffer Width Measurement*

Where you are retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:

1. The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or
2. The edge of the stream or river bank, bluff, or cliff, whichever is applicable.

Refer to Figure G – 2 and Figure G - 3. You may find that specifically measuring these points is challenging if the flow path of the surface water changes frequently, thereby causing the measurement line for the buffer to fluctuate continuously along the path of the waterbody. Where this is the case, EPA suggests that rather than measuring each change or deviation along the water's edge, it may be easier to select regular intervals from which to conduct your measurement. For instance, you may elect to conduct your buffer measurement every 5 to 10 feet along the length of the water.

Additionally, note that if earth-disturbing activities will take place on both sides of a surface water that flows through your site, to the extent that you are establishing a buffer around this water, it must be established on both sides. For example, if you choose alternative 1 above, and your project calls for disturbances on both sides of a small stream, you would need to retain the full 50 feet of buffer on both sides of the water. However, if your construction activities will only occur on one side of the stream, you would only need to retain the 50-foot buffer on the side of the stream where the earth-disturbance will occur.

Figure G - 2. This image shows buffer measurement from the ordinary high water mark of the water body, as indicated by a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and/or the presence of litter/debris.

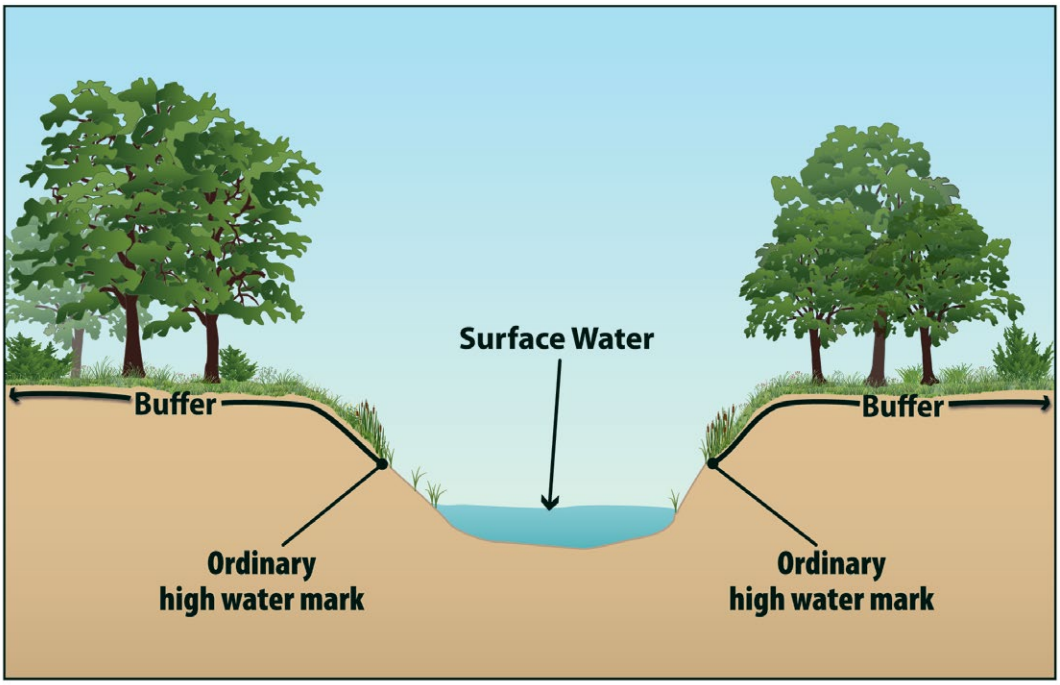
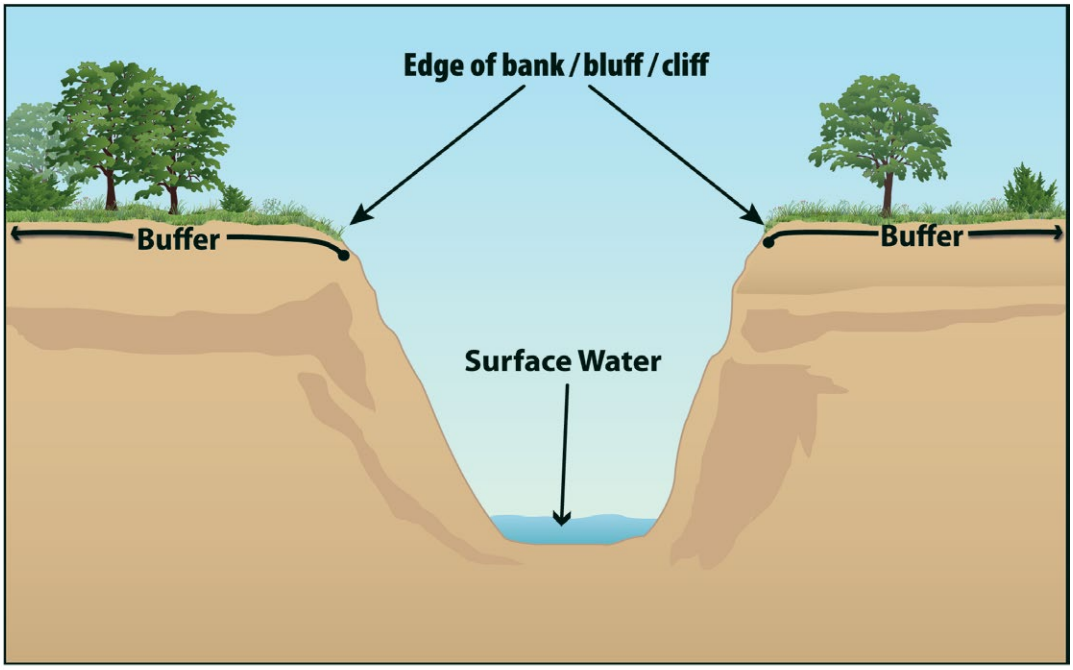


Figure G - 3. This image shows buffer measurement from the edge of the bank, bluff, or cliff, whichever is applicable.



G.2.1.2 *Limits to Disturbance Within the Buffer*

You are considered to be in compliance with this requirement if you retain and protect from construction activities the natural buffer that existed prior to the commencement of construction. If the buffer area contains no vegetation prior to the commencement of construction (e.g., sand or rocky surface), you are not required to plant any additional vegetation. As noted above, any preexisting structures or impervious surfaces are allowed in the buffer provided you retain and protect from disturbance the vegetation in the buffer outside the preexisting disturbance.

To ensure that the water quality protection benefits of the buffer are retained during construction, you are prohibited from conducting any earth-disturbing activities within the buffer during permit coverage. In furtherance of this requirement, prior to commencing earth-disturbing activities on your site, you must delineate, and clearly mark off, with flags, tape, or a similar marking device, the buffer area on your site. The purpose of this requirement is to make the buffer area clearly visible to the people working on your site so that unintended disturbances are avoided.

While you are not required to enhance the quality of the vegetation that already exists within the buffer, you are encouraged to do so where such improvements will enhance the water quality protection benefits of the buffer. (Note that any disturbances within the buffer related to buffer enhancement are permitted and do not constitute construction disturbances.) For instance, you may want to consider targeted plantings where limited vegetation exists, or replacement of existing vegetation where invasive or noxious plant species (see http://plants.usda.gov/java/noxiousDriver) have taken over. In the case of invasive or noxious species, you may want to remove and replace them with a diversity of native trees, shrubs, and herbaceous plants that are well-adapted to the climatic, soil, and hydrologic conditions on the site. You are also encouraged to limit the removal of naturally deposited leaf litter, woody debris, and other biomass, as this material contributes to the ability of the buffer to retain water and filter pollutants.

If a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you are only required to retain and protect from construction activities the portion of the buffer area that is under your control. For example, if you elect alternative 1 above (provide and maintain a 50-foot buffer), but 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you must only retain and protect from construction activities the 40-foot buffer area that occurs on the property on which your construction activities are taking place. EPA would consider you to be in compliance with this requirement regardless of the activities that are taking place in the 10-foot area that is owned by a different party than the land on which your construction activities are taking place that you have no control over.

G.2.1.3 *Discharges to the Buffer*

You must ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls (*for example, you must comply with the Part 2.1.2.2 requirement to establish sediment controls around the downslope perimeter of your site disturbances*), and if necessary to prevent erosion caused by stormwater flows within the buffer, you must use velocity dissipation devices. The purpose of this requirement is to decrease the rate of stormwater flow and

encourage infiltration so that the pollutant filtering functions of the buffer will be achieved. To comply with this requirement, construction operators typically will use devices that physically dissipate stormwater flows so that the discharge entering the buffer is spread out and slowed down.

G.2.1.4 *SWPPP Documentation*

You are required to document in your SWPPP the natural buffer width that is retained. For example, if you are complying with alternative 1, you must specify in your SWPPP that you are providing a 50-foot buffer. Or, if you will be complying with alternative 2, you must document the reduced width of the buffer you will be retaining (and you must also comply with the requirements in Part 2.1.2.1c to describe the erosion and sediment controls you will use to achieve an equivalent sediment reduction, as described in Part G.2.2 below). Note that you must also show any buffers on your site plan in your SWPPP consistent with Part 7.2.6.3. Additionally, if any disturbances related to the exceptions in Part 2.1.2.1e occur within the buffer area, you must document this in the SWPPP.

G.2.2 Guidance for Providing the Equivalent Sediment Reduction as the 50-foot Buffer

If you are selecting Alternative 2 (provide and maintain a buffer that is less than 50 feet that is supplemented by additional erosion and sediment controls that, together, achieve the equivalent sediment load reduction as the 50-foot buffer) or Alternative 3 (implement erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), the following guidance is intended to assist you in demonstrating that you will achieve the equivalent sediment reduction as the 50-foot buffer.

G.2.2.1 *Determine Whether it is Feasible to Provide a Reduced Buffer*

EPA recognizes that there will be a number of situations in which it will be infeasible to provide and maintain a buffer of any width. While some of these situations may exempt you from the buffer requirement entirely (see G.1.2), if you do not qualify for one of these exemptions, there still may be conditions or circumstances at your site that make it infeasible to provide a natural buffer. For example, there may be sites where a significant portion of the property on which the earth-disturbing activities will occur is located within the buffer area, thereby precluding the retention of natural buffer areas. EPA believes there are likely to be other examples of situations that make it infeasible to provide any buffer area.

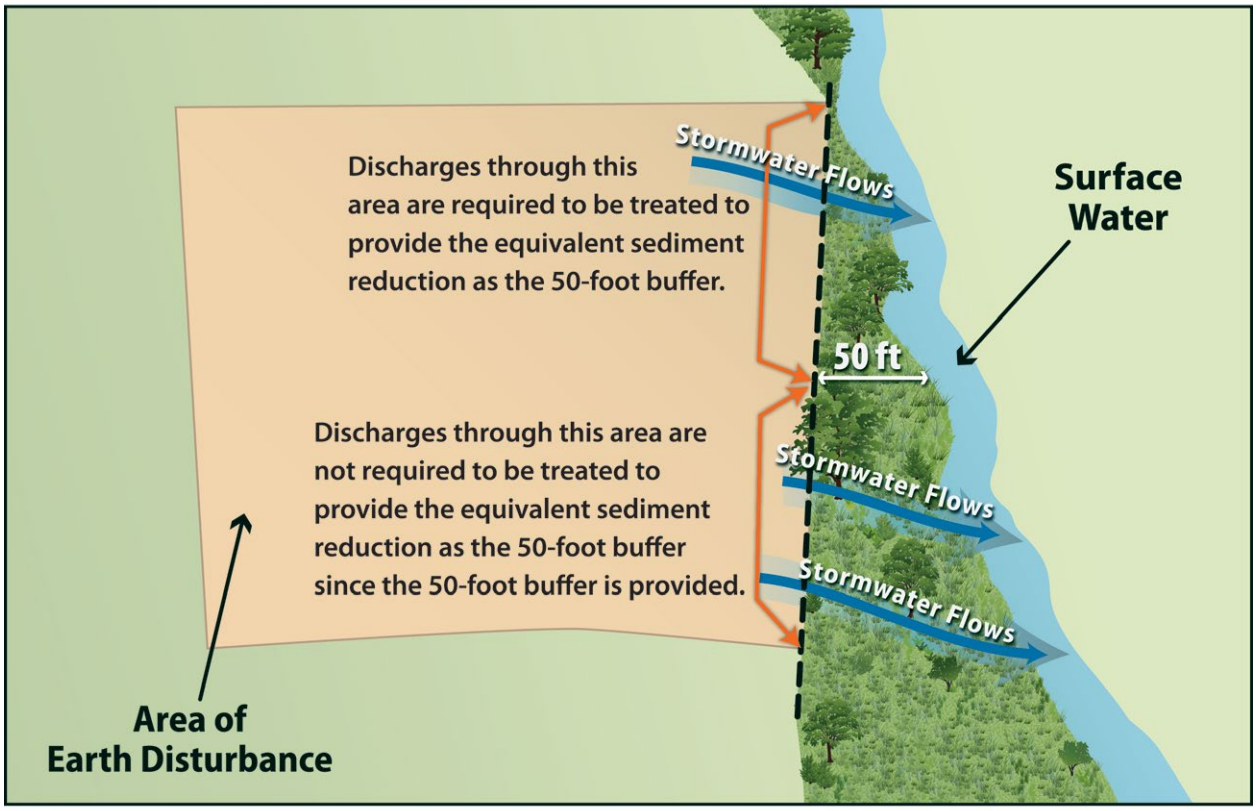
Therefore, in choosing between the 2 different compliance alternatives (Alternative 2 or 3), you should only elect to comply with Alternative 2 if it is feasible for you to retain any natural buffer on your site. (Note: For any buffer width retained, you are required to comply with the requirements in Part G.2.1, above, concerning the retention of vegetation and restricting earth disturbances.) Similarly, if you determine that it is infeasible to provide a natural buffer of any size during construction, you should elect to comply with Alternative 3. After making this determination, you should proceed to Part G.2.2.2 to determine how to provide controls that, together with any buffer areas that is being retained, if applicable, will achieve an equivalent sediment load reduction as the 50-foot buffer.

G.2.2.2 *Design Controls That Provide Equivalent Sediment Reduction as 50-foot Buffer*

You must next determine what additional controls must be implemented on your site that, alone or in combination with any retained natural buffer, achieve a reduction in sediment equivalent to that achieved by a 50-foot buffer.

Note that if only a portion of the natural buffer is less than 50 feet, you are only required to implement erosion and sediment controls that achieve the sediment load reduction equivalent to the 50-foot buffer for discharges through that area. You would not be required to provide treatment of stormwater discharges that flow through 50 feet or more of natural buffer. See Figure G - 4.

Figure G - 4 Example of how to comply with the requirement to provide the equivalent sediment reduction when only a portion of your earth-disturbances discharge to a buffer of less than 50-feet.



To comply with this requirement, you are required to do the following:

Step1 - Estimate the sediment reduction expected from your site if you had retained a 50-foot natural buffer;

Step 2 - Design controls that alone or in combination with any width of buffer retained achieve the equivalent sediment removal efficiency as that expected from the 50-foot buffer; and

Step 3 - Document in your SWPPP how your controls will achieve the equivalent sediment removal efficiency of the 50-foot buffer.

Guidelines to help you work through these requirements are provided below.

a. <u>Step 1 - Estimate the Sediment Reduction from the 50-foot Buffer</u>

In order to design controls that match the sediment removal efficiency of a 50-foot buffer, you first need to know what this efficiency is for your site. The sediment removal efficiencies of natural buffers vary according to a number of site-specific factors, including precipitation, soil type, land cover, slope length, width, steepness, and the types of sediment controls used to reduce the discharge of sediment prior to the buffer. EPA has simplified this calculation by developing buffer performance tables covering a range of vegetation and soil types for the areas covered by the CGP. See Attachment 1, Tables G - 8 through G - 15. Note: buffer performance values in Tables G - 8 through G - 15 represent the percent of sediment captured through the use of perimeter controls (e.g., silt fences) and 50-foot buffers at disturbed sites of fixed proportions and slopes.[2]

Using Tables G - 8 through G - 15 (see Attachment 1), you can determine the sediment removal efficiency of a 50-foot buffer for your geographic area by matching the vegetative cover type that best describes your buffer area and the type of soils that predominate at your site. For example, if your site is located in Massachusetts (Table G - 9), and your buffer vegetation corresponds most closely with that of tall fescue grass, and the soil type at your site is best typified as sand, your site's sediment removal efficiency would be 81 percent.

In this step, you should choose the vegetation type in the tables that most closely matches the vegetation that would exist naturally in the buffer area on your site regardless of the condition of the buffer. However, because you are not required to plant any additional vegetation in the buffer area, in determining what controls are necessary to meet this sediment removal equivalency in Step 2 below, you will be able to take credit for this area as a fully vegetated "natural buffer."

Similarly, if a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you can treat the area of land not

[2] EPA used the following when developing the buffer performance tables:

- The sediment removal efficiencies are based on the U.S. Department of Agriculture's RUSLE2 ("Revised Universal Soil Loss Equation 2") model for slope profiles using a 100-foot long denuded slopes.
- Sediment removal was defined as the annual sediment delivered at the downstream end of the 50-foot natural buffer (tons/yr/acre) divided by the annual yield from denuded area (tons/yr/acre).
- As perimeter controls are also required by the CGP, sediment removal is in part a function of the reduction due to a perimeter control (i.e., silt fence) located between the disturbed portion of the site and the upstream edge of the natural buffer and flow traveling through a 50-foot buffer of undisturbed natural vegetation.
- It was assumed that construction sites have a relatively uniform slope without topographic features that accelerate the concentration for erosive flows.
- It was assumed that vegetation has been removed from the disturbed portion of the site and a combination of cuts and fills have resulted in a smooth soil surface with limited retention of near-surface root mass

To represent the influence of soil, EPA analyzed 11 general soil texture classifications in its evaluation of buffer performance. To represent different types of buffer vegetation, EPA evaluated 4 or more common vegetative types for each state/territory covered under the permit. For each vegetation type evaluated, EPA considered only permanent, non-grazed and non-harvested vegetation, on the assumption that a natural buffer adjacent to the surface water will typically be undisturbed. EPA also evaluated slope steepness and found that sediment removal efficiencies present in Tables G -8 through G - 15 are achievable for slopes that are less than nine percent.

under control as having the equivalent vegetative cover and soil type that predominates on the portion of the property on which your construction activities are occurring.

> *For example, if your earth-disturbances occur within 50 feet of a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10 foot area adjacent to the stream as having the equivalent soil and vegetation type as predominates in the 40 foot area under your control. You would then make the same assumption in Step 2 for purposes of determining the equivalent sediment removal.*

Alternatively, you may do your own calculation of the effectiveness of the 50-foot buffer based upon your site-specific conditions, and may use this number as your sediment removal equivalency standard to meet instead of using Tables G - 8 through G - 15. This calculation must be documented in your SWPPP.

b. <u>Step 2 - Design Controls That Match the Sediment Removal Efficiency of the 50-foot Buffer</u>

Once you have determined the estimated sediment removal efficiency of a 50-foot buffer for your site in Step 1, you will be required to select stormwater controls that will provide an equivalent sediment load reductions. These controls can include the installation of a single designed control, such as a sediment pond, additional perimeter controls, or other type of device. Alternatively, you may elect to install a combination of stormwater controls and to retain some amount of a buffer. Whichever control(s) you select, you must demonstrate in your SWPPP that the controls will provide at a minimum the same sediment removal capabilities as the 50-foot buffer (Step 1). You are allowed to take credit for the removal efficiencies of your required perimeter controls in your calculation of equivalency, because these were included in calculating the buffer removal efficiencies in tables G - 8 through G - 15. (Note: You are reminded that the controls must be kept in effective operating condition until you have completed final stabilization on the disturbed portions of the site discharging to the surface water.)

To make the determination that your controls and/or buffer area achieve an equivalent sediment load reduction as the 50-foot buffer, you will need to use a model or other type of calculator. As mentioned above, there are a variety of models available that can be used to support your calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other models. A couple of examples are provided in Attachment 3 to help illustrate how this determination could be made.

If you are retaining a buffer of less than 50 feet, you may take credit for the removal that will occur from the reduced buffer and only need to provide additional controls to make up the difference between the removal efficiency of a 50 foot buffer and the removal efficiency of the narrower buffer. For example, if you are retaining a 30 foot buffer, you can account for the sediment removal provided by the 30-foot buffer retained, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided. To do this, you would plug the width of the buffer that is

retained into RUSLE or another model, along with other stormwater controls that will together achieve a sediment reduction equivalent to a natural 50-foot buffer.

As described in Step 1 above, you can take credit for the area you have retained as a "natural buffer" as being fully vegetated, regardless of the condition of the buffer area.

> *For example, if your earth-disturbances occur 30 feet from a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10-foot area as a natural buffer, regardless of the activities that are taking place in the area. Therefore, you can assume (for purposes of your equivalency calculation) that your site is providing the sediment removal equivalent of a 30-foot buffer, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided.*

c. <u>Step 3 - Document How Site-Specific Controls Will Achieve the Sediment Removal Efficiency of the 50-foot Buffer</u>

In Steps 1 and 2, you determined both the expected sediment removal efficiency of a 50-foot buffer at your site, and you used this number as a performance standard to design controls to be installed at your site, which alone or in combination with any retained natural buffer, achieves the expected sediment removal efficiency of a 50-foot buffer at your site. The final step is to document in your SWPPP the information you relied on to calculate the equivalent sediment reduction as an undisturbed natural buffer.

EPA will consider your documentation to be sufficient if it generally meets the following:

- For Step 1, refer to the table in Attachment 1 that you used to derive your estimated 50-foot buffer sediment removal efficiency performance. Include information about the buffer vegetation and soil type that predominate at your site, which you used to select the sediment load reduction value in Tables G - 8 through G - 15. Or, if you conducted a site-specific calculation for sediment removal efficiency, provide the specific removal efficiency, and the information you relied on to make your site-specific calculation.
- For Step 2: (1) Specify the model you used to estimate sediment load reductions from your site; and (2) the results of calculations showing how your controls will meet or exceed the sediment removal efficiency from Step 1.

If you choose Alternative 3, you must also include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

G.2.3 Small Residential Lot Compliance Alternatives

In this part of Appendix G, EPA provides additional compliance alternatives for operators of small residential lots. In accordance with Part 2.1.2.1e.iv, operators of small residential lots who do not provide a 50-foot buffer are not required to make the demonstration outlined in Part G.2.2.2. Instead, qualifying operators can comply with the buffer requirement by choosing to implement a set of traditional sediment and erosion controls from the menu of practices provided in Part G.2.3.2.

A **small residential lot** is a lot or grouping of lots being developed for residential purposes that will disturb less than 1 acre of land, but that is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

EPA has developed two different alternatives for compliance. The following steps describe how a small residential lot operator would achieve compliance with these 2 alternatives.

G.2.3.1 *Step 1 – Determine if You are Eligible for the Small Residential Lot Compliance Alternatives*

In order to be eligible for the small residential lot compliance alternatives, the following conditions must be met:

a. The lot or grouping of lots meets the definition of "small residential lot"; and

b. The operator must comply with all other requirements in Part 2.1.2.1, including:

i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

ii. Document in the SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device, all natural buffer areas.

G.2.3.2 *Step 2 – Implement the Requirements of the Small Residential Lot Compliance Alternative Selected*

You must next choose from one of two small residential lot compliance alternatives and implement the stormwater control practices associated with that alternative.

Note: The compliance alternatives provided below are not mandatory. Operators of small residential lots can alternatively choose to comply with the any of the options that are available to other sites in Part 2.1.2.1a, described in Parts G.2.1 and G.2.2 in this appendix.

a. <u>Small Residential Lot Compliance Alternative 1</u>

Alternative 1 is a straightforward tiered- technology approach that specifies the controls that a small residential lot must implement based on the buffer width retained. To achieve compliance with Alternative 1, you must implement the

controls specified in Table G – 1 based on the buffer width to be retained. See footnote 3, below, for a description of the controls you must implement.

For example, if you are an operator of a small residential lot that will be retaining a 35-foot buffer and you choose Small Residential Lot Compliance Alternative 1, you must implement double perimeter controls between earth disturbances and the surface water.

In addition to implementing the applicable control, you must also document in your SWPPP how you will comply with Alternative 1.

Table G - 1. Alternative 1 Requirements[3]

Retain 50-foot Buffer	Retain <50 and >30 foot Buffer	Retain ≤ 30 foot Buffer
No Additional Requirements	Double Perimeter Controls	Double Perimeter Controls and 7-Day Site Stabilization

b. <u>Small Residential Lot Compliance Alternative 2</u>

Alternative 2 specifies the controls that a builder of a small lot must implement based on both the buffer width retained and their risk of sediment discharge. By incorporating the sediment risk, this approach may result in the implementation of controls that are more appropriate for the site's specific conditions.

Step 1 – Determine Your Site's Sediment Risk Level

To meet the requirements of Alternative 2, you must first determine your site's sediment discharge "risk level" based on the site's slope, location, and soil type. To help you to determine your site's sediment risk level, EPA has developed five different tables for different slope conditions. You must select the table that most closely corresponds to your site's average slope.

For example, if your site's average slope is 7 percent, you would use Table G – 4 to determine your site's sediment risk.

After you determine which table applies to your site, you must then use the table to determine the "risk level" (e.g., "low", "moderate", or "high") that corresponds to your site's location and predominant soil type.[4]

For example, based on Table G - 3, a site located in New Hampshire with a 4 percent average slope and with predominately sandy clay loam soils would fall into the "moderate" risk level.

[3] **Description of Additional Controls Applicable to Small Residential Lot Compliance Alternatives 1 and 2:**

- **No Additional Requirements:** If you implement a buffer of 50 feet or greater, then you are not subject to any additional requirements. Note that you are required to install perimeter controls between the disturbed portions of your site and the buffer in accordance with Part 2.1.2.2.
- **Double Perimeter Control:** In addition to the reduced buffer width retained on your site, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart.
- **Double Perimeter Control and 7-Day Site Stabilization:** In addition to the reduced buffer width retained on your site and the perimeter control implemented in accordance with Part 2.1.2.2, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart, and you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days of the temporary or permanent cessation of earth-disturbing activities.

[4] One source for determining your site's predominant soil type is the USDA's Web Soil Survey located at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Table G - 2. Risk Levels for Sites with Average Slopes of ≤ 3 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Low	Moderate	Low	Moderate	Moderate
American Samoa	Moderate	Moderate	Moderate	Moderate	High
Massachusetts and New Hampshire	Low	Moderate	Low	Low	Moderate
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Low
Washington D.C.	Low	Moderate	Low	Low	Moderate

Table G - 3. Risk Levels for Sites with Average Slopes of > 3 Percent and ≤ 6 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	Moderate	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Low	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 4. Risk Levels for Sites with Average Slopes of > 6 Percent and ≤ 9 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	High	Moderate	High	High
Puerto Rico	Moderate	High	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 5. Risk Levels for Sites with Average Slopes of > 9 Percent and ≤ 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	Moderate	High	Moderate	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Moderate	Low	Moderate	Moderate
Washington D.C.	Moderate	High	Moderate	Moderate	High

Table G - 6. Risk Levels for Sites with Average Slopes of > 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	High	High	High	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	High	High	Moderate	High	High
Idaho	Low	Low	Low	Low	Moderate
New Mexico	Moderate	Moderate	Moderate	Moderate	High
Washington D.C.	High	High	Moderate	High	High

Step 2 – Determine Which Additional Controls Apply

Once you determine your site's "risk level", you must next determine the additional controls you need to implement on your site, based on the width of buffer you plan to retain. Table G - 7 specifies the requirements that apply based on the "risk level" and buffer width retained. See footnote 3, above, for a description of the additional controls that are required.

> *For example, if you are the operator of a small residential lot that falls into the "moderate" risk level, and you decide to retain a 20-foot buffer, using Table G-7 you would determine that you need to implement double perimeter controls to achieve compliance with Part 2.1.2.1.*

You must also document in your SWPPP your compliance with Alternative 2.

Table G - 7. Alternative 2 Requirements[2]

Risk Level Based on Estimated Soil Erosion	Retain ≥ 50' Buffer	Retain <50' and >30' Buffer	Retain ≤30' and >10' Buffer	Retain ≤ 10' Buffer
Low Risk	No Additional Requirements	No Additional Requirements	Double Perimeter Control	Double Perimeter Control
Moderate Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization
High Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization	Double Perimeter Control and 7-Day Site Stabilization

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ATTACHMENT 1

Sediment Removal Efficiency Tables[5]

EPA recognizes that very high removal efficiencies, even where theoretically achievable by a 50-foot buffer, may be very difficult to achieve in practice using alternative controls. Therefore in the tables below, EPA has limited the removal efficiencies to a maximum of 90%. Efficiencies that were calculated at greater than 90% are shown as 90%, and this is the minimum percent removal that must be achieved by alternative controls.

Table G - 8. Estimated 50-foot Buffer Performance in Idaho*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Tall Fescue Grass	42	52	44	48	85
Medium-density Weeds	28	30	28	26	60
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	25	26	24	24	55
Northern Mixed Prairie Grass	28	30	28	26	50
Northern Range Cold Desert Shrubs	28	28	24	26	50

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 9. Estimated 50-foot Buffer Performance in Massachusetts and New Hampshire*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Warm-season Grass (i.e., Switchgrass, Lemongrass)	79	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	78	90	90	90	90
Tall Fescue Grass	76	90	81	89	90
Medium-density Weeds	66	76	60	72	66

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

[5] The buffer performances were calculated based on a denuded slope upgradient of a 50-foot buffer and a perimeter controls, as perimeter controls are a standard requirement (see Part 2.1.2.2).

Table G - 10. Estimated 50-foot Buffer Performance in New Mexico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Tall Fescue grass	71	85	80	86	90
Medium-density Weeds	56	73	55	66	78
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	53	70	51	62	67
Southern Mixed Prairie Grass	53	71	52	63	50
Southern Range Cold Desert Shrubs	56	73	55	65	53

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 11. Estimated 50-foot Buffer Performance in Washington, DC*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	81	90	90	90	90
Tall Fescue Grass	79	90	83	89	90
Medium-density Weeds	71	79	66	75	74

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 12. Estimated 50-foot Buffer Performance in American Samoa*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	82	90	90	90	83
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	85
Dense Grass	82	90	90	90	83
Tall Fescue Grass	82	89	82	89	79
Medium-density Weeds	70	73	62	75	59

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 13. Estimated 50-foot Buffer Performance in Guam*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	80	90	90	90	89
Warm-season Grass (i.e., Switchgrass, Lemongrass)	80	90	90	90	90
Dense Grass	79	90	90	90	89
Tall Fescue Grass	76	90	80	88	87
Medium-density Weeds	63	73	53	68	61

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 14. Estimated 50-foot Buffer Performance in Puerto Rico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	83	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	83	90	90	90	90
Dense Grass	83	90	90	90	90
Tall Fescue Grass	82	90	84	90	89
Medium-density Weeds	72	78	65	76	64

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 15. Estimated 50-foot Buffer Performance in Virgin Islands*

Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	85	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	86	90	90	90	90
Dense Grass	85	90	90	90	90
Tall Fescue Grass	85	90	88	90	89
Medium-density Weeds	75	77	71	78	63

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

ATTACHMENT 2

Using the Sediment Removal Efficiency Tables – Questions and Answers

- *What if my specific buffer vegetation is not represented in Tables G - 8 through G - 15?* Tables G - 8 through G - 15 provide a wide range of factors affecting buffer performance; however, there may be instances where the specific buffer vegetation type on your site is not listed. If you do not see a description of the type of vegetation present at your site, you should choose the vegetation type that most closely matches the vegetation type on your site. You can contact your local Cooperative Extension Service Office (www.csrees.usda.gov/Extension) for assistance in determining the vegetation type in Tables G - 8 through G - 15 that most closely matches your site-specific vegetation.
- *What if there is high variability in local soils?* EPA recognizes that there may be a number of different soil type(s) on any given construction site. General soil information can be obtained from USDA soil survey reports (http://websoilsurvey.nrcs.usda.gov) or from individual site assessments performed by a certified soil expert. Tables G - 8 through G - 15 present eleven generic soil texture classes, grouping individual textures where EPA has determined that performance is similar. If your site contains different soil texture classes, you should use the soil type that best approximates the predominant soil type at your site.
- *What if my site slope is greater than 9 percent after final grade is reached?* As indicated in the buffer performance tables, the estimated sediment removal efficiencies are associated with disturbed slopes of up to 9 percent grade. Where your graded site has an average slope of greater than 9 percent, you should calculate a site-specific buffer performance.
- *How do I calculate my own estimates for sediment reduction at my specific site?* If you determine that it is necessary to calculate your own sediment removal efficiency using site-specific conditions (e.g., slopes at your site are greater than 9 percent), you can do so by choosing from a range of available mathematical models that are available to facilitate this calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other equivalent models.
- *What is my estimated buffer performance if my site location is not represented by Tables G - 8 through G - 15?* If your site is located in an area not represented by Tables G - 8 through G - 15, you should use the table that most closely approximates conditions at your site. You may also choose to conduct a site-specific calculation of the buffer performance.
- *What if only a portion of my site drains to the buffer area?* If only a portion of your site drains to a surface water, where that water is within 50 feet of your construction activities, you are only required to meet the equivalency requirement for the stormwater flows corresponding to those portions of the site. See Example 2 below for an example of how this is expected to work.

ATTACHMENT 3

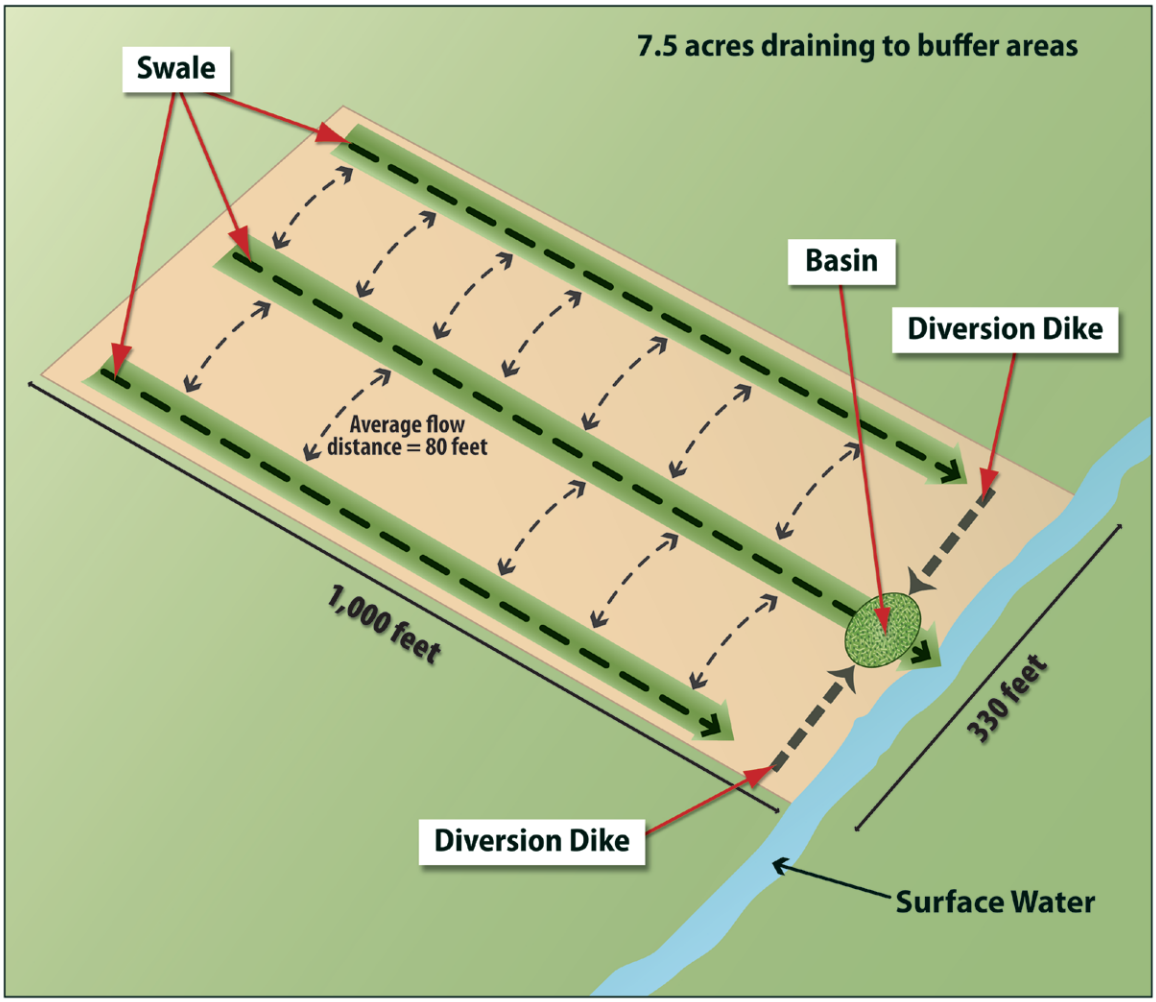
Examples of How to Use the Sediment Removal Efficiency Tables

Example 1. Comparatively Wet Location (7.5 acre site located in Massachusetts)

The operator of a 7.5-acre construction site in Massachusetts has determined that it is infeasible to establish a buffer of any size on their site, and is now required to select and install controls that will achieve an equivalent sediment load reduction as that estimated in G - 9 for their site conditions. The first step is to identify what percentage of eroded sediment is estimated to be retained from a 50-foot buffer. For this example, it is assumed that the site has a relatively uniform gentle slope (3 percent), so Table G - 9 can be used to estimate the 50-foot buffer sediment load reduction. If the site's buffer vegetation is best typified by cool-season dense grass and the underlying soil is of a type best described as loamy sand, the 50-foot buffer is projected to capture 90 percent of eroded sediment from the construction site.

The second step is to determine what sediment controls can be selected and installed in combination with the perimeter controls already required to be implemented at the site (see Part 2.1.2.2), which will achieve the 90 percent sediment removal efficiency from Table G - 9. For this example, using the RUSLE2 profile model, it was determined that installing a pair of shallow-sloped diversion ditches to convey runoff to a well-designed and maintained sediment basin provides 99 percent sediment removal. Because the estimated sediment reduction is greater than the required 90 percent that a 50-foot buffer provides, the operator will have met the buffer requirements. See Figure G - 5. The operator could also choose a different set of controls, as long as they achieve at least a 90 percent sediment removal efficiency.

Figure G - 5. Example 1 – Equivalent Sediment Load Reductions at a 7.5 ac Site in MA.



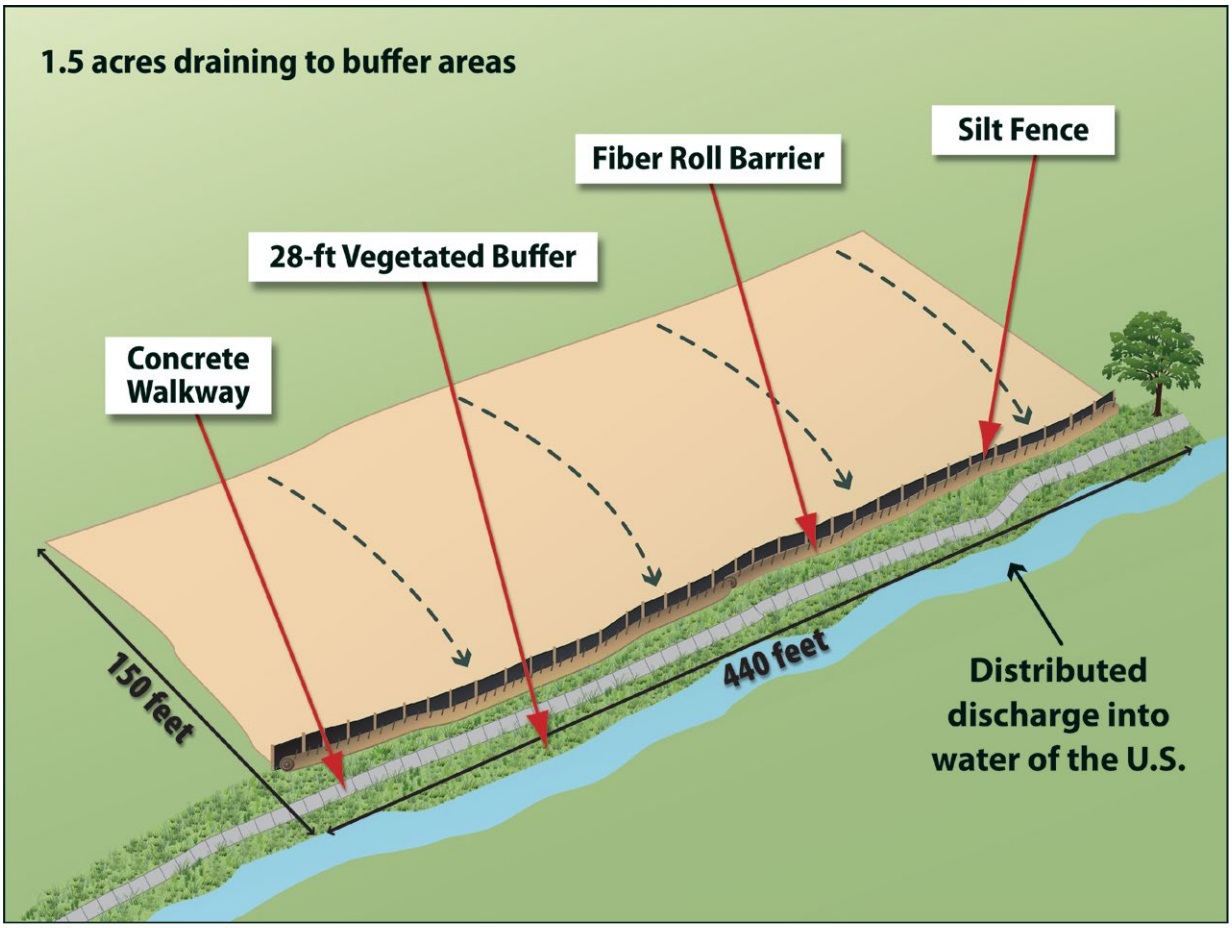
Example 2. Arid Location With Pre-existing Disturbances in the Natural Buffer (6.5 acre site located in New Mexico)

An operator of a site in New Mexico determines that it is not practicable to provide a 50-foot buffer, but a 28-foot buffer can be provided. Because the operator will provide a buffer that is less than 50 feet, the operator must determine which controls, in combination with the 28-foot buffer, achieve a sediment load reduction equivalent to the 50-foot buffer. In this example, the project will disturb 6.5 acres of land, but only 1.5 acres of the total disturbed area drains to the buffer area. Within the 28-foot buffer area is a preexisting concrete walkway. Similar to Example 1, the equivalence analysis starts with Step 1 (Part G.2.2.2) with a review of the New Mexico buffer performance (Table G - 10). The operator determines that the predominate vegetation type in the buffer area is prairie grass and the soil type is similar to silt, and that the site is of a uniform, shallow slope (e.g., 3 percent grade). Although the operator will take credit for the disturbance caused by the concrete walkway as a natural buffer in Step 2, here the operator can treat the entire buffer area as being naturally vegetated with prairie grass. Based on this information, the operator refers to Table G - 10 to estimate that the 50-foot buffer would retain 50 percent of eroded soil.

The second step is to determine, based on the 50 percent sediment removal efficiency found in Table G - 10, what sediment controls in combination with the 28-foot buffer area, can be

implemented to reduce sediment loads by 50 percent or more. The operator does not have to account the reduction in buffer function caused by the preexisting walkway, and can take credit for the entire 28-foot buffer being fully vegetated in the analysis. For this example, using the RUSLE2 profile model, the operator determined that installing a fiber roll barrier between the silt fence (already required by Part 2.1.2.2) and the 28-foot buffer will achieve an estimated 84 percent sediment removal efficiency. See Figure G - 6. Note that this operator is subject to the requirement in Part 2.1.2.1b.i to ensure that discharges through the silt fence, fiber roll barrier, and 28-foot buffer do not cause erosion within the buffer. The estimated sediment reduction is greater than the required 50 percent; therefore the operator will have met the buffer alternative requirement.

Figure G - 6. Example 2 – Equivalent Sediment Load Reductions at a 6.5 ac Site in NM.



Appendix H – 2-Year, 24-Hour Storm Frequencies

Part 2.1.3.2 of the permit indicates that if you install a sediment basin, one of the design requirements is to provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained. This appendix is intended to provide a guide to permittees to determine the volume of precipitation associated with their local 2-year, 24-hour storm event.

The permittee should start out by determining their local 2-year, 24-hour storm volume. The rainfall frequency atlases, technical papers, and the Precipitation Frequency Data Server (PFDS) developed by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) serve as national standards for rainfall intensity at specified frequencies and durations in the United States. Operators of construction projects subject to the numeric effluent limits can use these standards to determine their local 2-year, 24-hour storm. Table H-1 identifies methods for determining precipitation frequency based on permit area. EPA notes that permittees may also use alternative peer-reviewed data sources not listed in Table H - 1 to determine the 2-year, 24-hour storm for their site.

Table H -1 – Method to Determine Precipitation Frequency Based on Permit Area

PERMIT AREA	METHOD TO DETERMINE PRECIPITATION FREQUENCY
District of Columbia	PFDS; NOAA Atlas 14, Vol. 2
Idaho	NOAA Atlas 2, Vol. 5; Technical Paper 40
Massachusetts	Technical Paper 40
New Hampshire	Technical Paper 40
New Mexico	PFDS; Technical Paper 40
Selected Pacific Islands	PFDS; Technical Paper 40
Puerto Rico and the U.S Virgin Islands	PFDS; Technical Paper 40
Other	PFDS; Technical Paper 40; NOAA Atlas 2 or 14

How to Determine Your Local 2-year, 24-hour Storm Size

Projects located in the **District of Columbia, New Mexico, Puerto Rico, U.S. Virgin Islands, or Pacific Island**s can use the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html or use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm to determine their precipitation frequency.

The PFDS is an easy to use, point-and-click interface to official U.S. precipitation frequency estimates and intensities. The opening PFDS screen is a clickable map of the United States. Upon clicking on a state, a state-specific interface appears. From this page the user selects the following:

- A location: Either via clicking on the map or manually entering a longitude/latitude coordinate;
- Type of output: Depth-Duration Frequency (DDF) or Intensity-Duration-Frequency (IDF)
- Units: millimeters or inches; and
- Type of estimate: Point or areal.

Additionally, PFDS also serves as a tool for providing references and other information for other current precipitation frequency standards that are not yet updated.

Projects located in the **District of Columbia, Puerto Rico, U.S. Virgin Islands, or Pacific Islands** can use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm or access the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html to determine their precipitation frequency.

Projects located in **Massachusetts and New Hampshire**, or other areas not covered by the PFDS or NOAA Atlases will need to use TP-40 to identify the precipitation frequency. TP-40 provides a map of the continental U.S. for the 2-year, 24-hour rainfall. TP40 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No40.pdf. (See also attached map of TP-40)

Projects located in **Idaho** can use the NOAA Atlas 2, Vol. 5 to determine their precipitation frequency. NOTE: Precipitation Frequencies on the NOAA Atlas 2, Vol. 5 are in tenths of an inch and will have to be converted to inches to determine precipitation frequency. NOAA Atlas 2, Vol. 5 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas2_Volume5.pdf. (See also attached map of NOAA Atlas 2, Vol. 5)

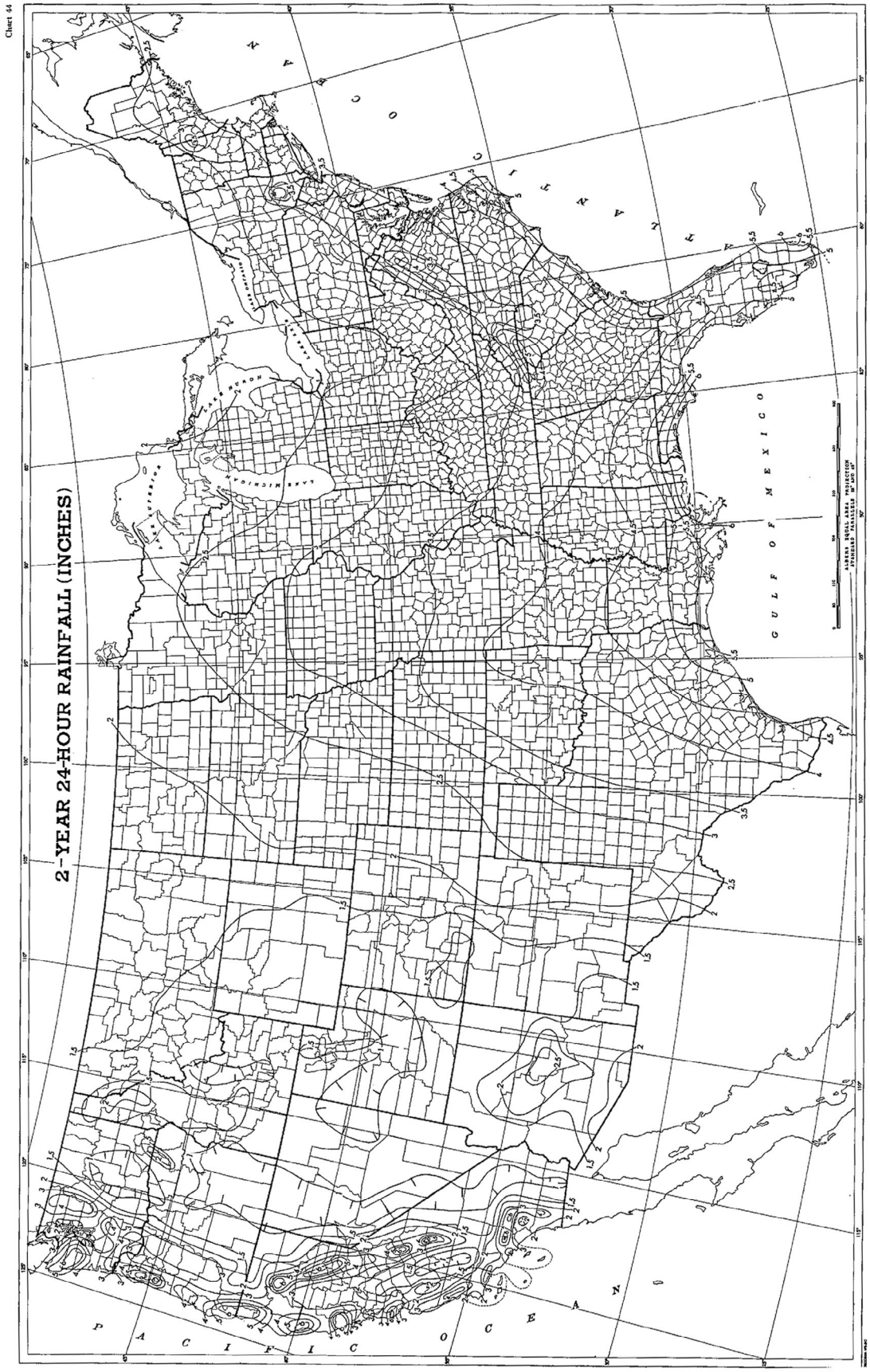
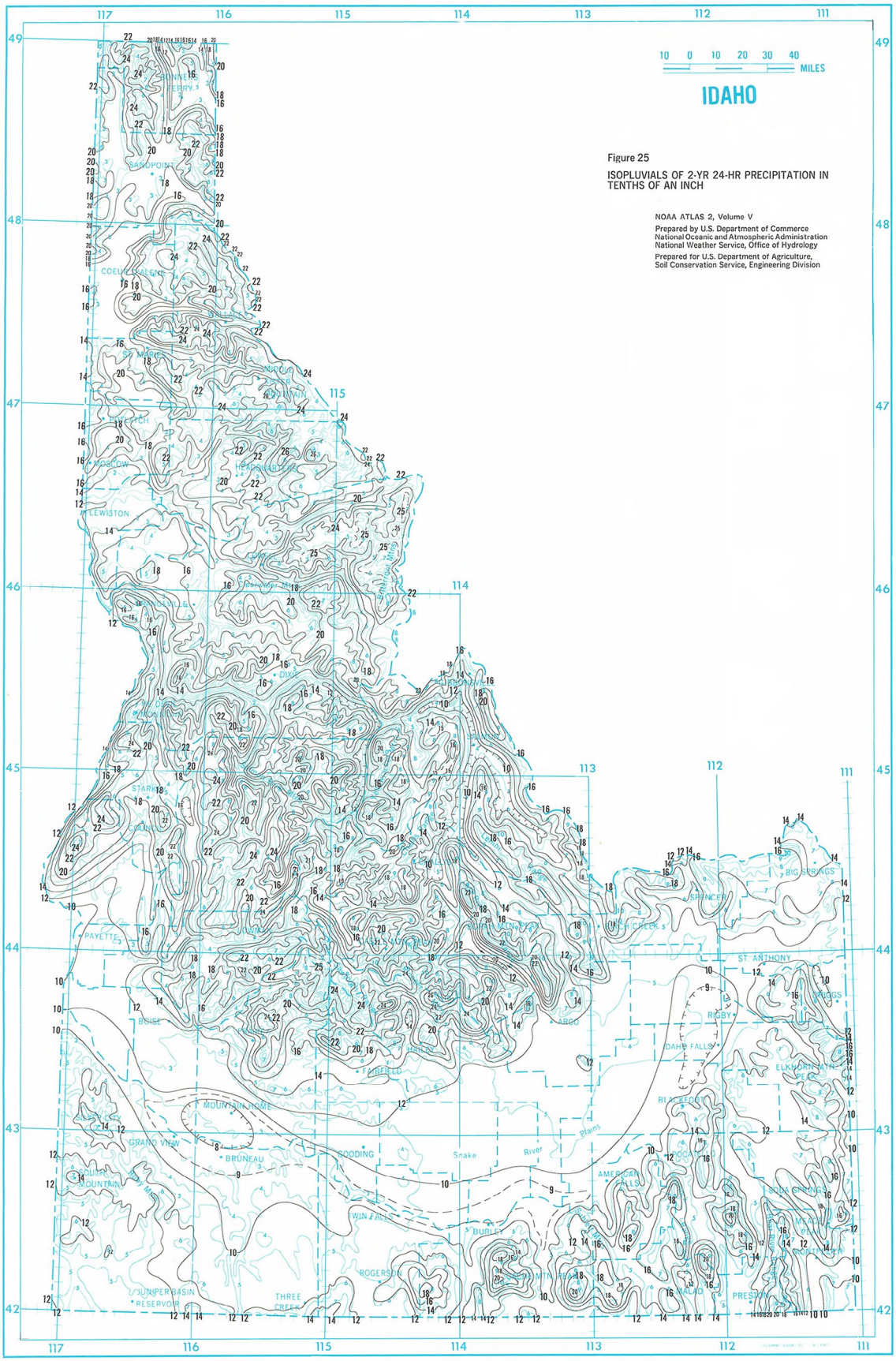


Chart 44
2-YEAR 24-HOUR RAINFALL (INCHES)
GULF OF MEXICO
PACIFIC OCEAN


10 0 10 20 30 40
MILES
IDAHO
Figure 25
ISOPLUVIALS OF 2-YR 24-HR PRECIPITATION IN TENTHS OF AN INCH
NOAA ATLAS 2, Volume V
Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division
Snake River Plains

Appendix I - Standard Permit Conditions

Standard permit conditions in Appendix I are consistent with the general permit provisions required under 40 CFR 122.41.

I.1 Duty To Comply.

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

I.1.1 You must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards, even if the permit has not yet been modified to incorporate the requirement.

I.1.2 Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (61 FR 252, December 31, 1996, pp. 69359-69366, as corrected in 62 FR 54, March 20, 1997, pp.13514-13517) as mandated by the Debt Collection Improvement Act of 1996 for inflation on a periodic basis. This rule allows EPA's penalties to keep pace with inflation. The Agency is required to review its penalties at least once every 4 years thereafter and to adjust them as necessary for inflation according to a specified formula. The civil and administrative penalties following were adjusted for inflation starting in 1996.

I.1.2.1 *Criminal Penalties.*

a. *Negligent Violations*. The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both.

b. *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

c. *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon

conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 and can fined up to $2,000,000 for second or subsequent convictions.

d. *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.1.2.2 *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $37,500 per day for each violation).

I.1.2.3 *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows

a. *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $37,500).

b. *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $177,500).

I.2 Duty to Reapply.

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once EPA issues it.

I.3 Need to Halt or Reduce Activity Not a Defense.

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.4 Duty to Mitigate.

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

I.5 Proper Operation and Maintenance.

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

I.6 Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

I.7 Property Rights.

This permit does not convey any property rights of any sort, or any exclusive privileges.

I.8 Duty to Provide Information.

You must furnish to EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), within a reasonable time, any information that EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA or an authorized representative upon request, copies of records required to be kept by this permit.

I.9 Inspection and Entry.

You must allow EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

I.9.1 Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

I.9.2 Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

I.9.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

I.9.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

I.10 Monitoring and Records.

I.10.1 Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

I.10.2 You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of EPA at any time.

I.10.3 Records of monitoring information must include:

I.10.3.1 The date, exact place, and time of sampling or measurements;

I.10.3.2 The individual(s) who performed the sampling or measurements;

I.10.3.3 The date(s) analyses were performed

I.10.3.4 The individual(s) who performed the analyses;

I.10.3.5 The analytical techniques or methods used; and

I.10.3.6 The results of such analyses.

I.10.4 Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

I.10.5 The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

I.11 Signatory Requirements.

I.11.1 All applications, including NOIs, must be signed as follows:

I.11.1.1 For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

I.11.1.2 For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

I.11.1.3 For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive

officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

I.11.2 Your SWPPP, including changes to your SWPPP, inspection reports, and any other compliance documentation required under this permit, must be signed by a person described in Appendix I, Subsection I.11.1 above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

I.11.2.1 The authorization is made in writing by a person described in Appendix I, Subsection I.11.1;

I.11.2.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

I.11.2.3 The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

I.11.3 Changes to Authorization. If an authorization under Part 1.7 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 1.7 must be submitted to EPA. See Table 1 in Part 1.7.2 of the permit. However, if the only change that is occurring is a change in contact information or a change in the facility's address, the operator need only make a modification to the existing NOI submitted for authorization.

I.11.4 Any person signing documents in accordance with Appendix I, Subsections I.11.1 or I.11.2 above must include the following certification:

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

I.11.5 For persons signing documents electronically, in addition to meeting other applicable requirements in Appenidx I, Subsection I.11, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication).

I.11.6 The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.12 Reporting Requirements.

I.12.1 Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

I.12.1.1 The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

I.12.1.2 The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

I.12.2 Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

I.12.3 Transfers. This permit is not transferable to any person except after notice to EPA. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination pursuant to Part 8. The new owner or operator must submit a Notice of Intent in accordance with Part 1.7 and Table 1. See also requirements in Appendix I, Subsections I.11.1 and I.11.2.

I.12.4 Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

I.12.4.1 Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.

I.12.4.2 If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.

I.12.5 Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

I.12.6 Twenty-four hour reporting. In addition to reports required elsewhere in this permit:

I.12.6.1 You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

I.12.6.2 The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(m)(3)(ii))

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limit for any numeric effluent limitation. (See 40 CFR 122.44(g).)

I.12.6.3 EPA may waive the written report on a case-by-case basis for reports under Appendix I, Subsection I.12.6.2 if the oral report has been received within 24 hours.

I.12.7 Other noncompliance. You must report all instances of noncompliance not reported under Appendix I, Subsections I.12.4, I.12.5, and I.12.6, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix I, Subsection I.12.6.

I.12.8 Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

I.13 Bypass.

I.13.1 Definitions.

I.13.1.1 Bypass means the intentional diversion of waste streams from any portion of a treatment facility See 40 CFR 122.41(m)(1)(i).

I.13.1.2 Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

I.13.2 Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix I, Subsections I.13.3 and I.13.4. See 40 CFR 122.41(m)(2).

I.13.3 Notice.

I.13.3.1 Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass. See 40 CFR 122.41(m)(3)(i).

I.13.3.2 Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix I, Subsection I.12.6 (24-hour notice). See 40 CFR 122.41(m)(3)(ii).

I.13.4 Prohibition of bypass. See 40 CFR 122.41(m)(4).

I.13.4.1 Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix I, Subsection I.13.3.

I.13.4.2 EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix I, Subsection I.13.4.1.

I.14 Upset.

I.14.1 Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

I.14.2 Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix I, Subsection I.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. See 40 CFR 122.41(n)(2).

I.14.3 Conditions necessary for a demonstration of upset. See 40 CFR 122.41(n)(3). A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

I.14.3.1 An upset occurred and that you can identify the cause(s) of the upset;

I.14.3.2 The permitted facility was at the time being properly operated; and

I.14.3.3 You submitted notice of the upset as required in Appendix I, Subsection I.12.6.2.b (24 hour notice).

I.14.3.4 You complied with any remedial measures required under Appendix I, Subsection I.4.

I.14.4 Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, have the burden of proof. See 40 CFR 122.41(n)(4).

I.15 Retention of Records.

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

I.16 Reopener Clause.

I.16.1 Procedures for modification or revocation. Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

I.16.2 Water quality protection. If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 1.7.5 of this permit, or the permit may be modified to include different limitations and/or requirements.

I.16.3 Timing of permit modification. EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

I.17 Severability.

Invalidation of a portion of this permit does not necessarily render the whole permit invalid. EPA's intent is that the permit is to remain in effect to the extent possible; in the event that any part of this permit is invalidated, EPA will advise the regulated community as to the effect of such invalidation.

Appendix J - Notice of Intent (NOI) Form and Instructions

Part 1.7.1 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOI. However, if you are given approval by the EPA Regional Office to use a paper NOI form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 3510-9	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the operator identified in Section II of this form meets the eligibility requirements of Parts 1.1 and 1.2 of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in Part 8 of the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOI Form

Have you been given approval from the Regional Office to use this paper NOI form*? ☐ YES ☐ NO

If yes, provide the reason you need to use this paper form, the name of the EPA Regional Office staff person who approved your use of this form, and the date of approval:

Reason for using paper form: _____

Name of EPA staff person: _____

Date approval obtained: _____

*** Note: You are required to obtain approval from the applicable Regional Office prior to using this paper NOI form.**

II. Permit Information

Tracking Number (EPA Use Only):

Permit Number: (see Appendix B of the CGP for the list of eligible permit numbers)

III. Operator Information

Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

IRS Employer Identification Number (EIN): –

Point of Contact:

First Name, Middle Initial, Last Name:

Mailing Address:

Street:

City: State: Zip Code: -

NOI Preparer (Complete if NOI was prepared by someone other than the certifier):

Prepared by:

First Name, Middle Initial, Last Name:

Organization:

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

For the project/site for you are seeking permit coverage, provide the following information:

Latitude/Longitude (Use one of three possible formats, and specify method):

Latitude 1. ___ ___° ___ ___' ___ ___" N (degrees, minutes, seconds)
2. ___ ___° ___ ___. ___ ___' N (degrees, minutes, decimal)
3. ___ ___. ___ ___ ___ ___° N (degrees decimal)

Longitude 1. ___ ___ ___° ___ ___' ___ ___" W (degrees, minutes, seconds)
2. ___ ___ ___° ___ ___. ___ ___' W (degrees, minutes, decimal)
3. ___ ___ ___. ___ ___ ___ ___° W (degrees decimal)

Latitude/Longitude Data Source: ☐ U.S.G.S. topographic map ☐ EPA web site ☐ GPS ☐ Other: _____

If you used a U.S.G.S. topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 or WGS 84 ☐ Unknown

Is your project/site located in Indian Country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property: _____

Are you requesting coverage under this NOI as a "federal operator" as defined in Appendix A? ☐ YES ☐ NO

Estimated Project Start Date: / / Estimated Project Completion Date: / /

Estimated Area to be Disturbed (to the nearest quarter acre): .

Have earth-disturbing activities commenced on your project/site? ☐ YES ☐ NO

If yes, is your project an "emergency-related project? ☐ YES ☐ NO

Have stormwater discharges from your project/site been covered previously under an NPDES permit? ☐ YES ☐ NO

If yes, provide the Tracking Number if you had coverage under EPA's CGP or the NPDES permit number if you had coverage under an EPA individual permit:

V. Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ YES ☐ NO

Are there any surface waters within 50 feet of your project's earth disturbances? ☐ YES ☐ NO

Receiving Waters and Wetlands Information: (Attach a separate list if necessary)

Provide the name(s) of the first surface water that received stormwater directly from your site and/or from the MS4:	**Provide the names of any impaired waters to which you discharge and the pollutant(s) for which they are impaired**		**Provide the names of any waters to which you discharge for which there is an EPA approved or established TMDL, the name of the TMDL, and the pollutant(s) for which there is a TMDL**		
	Surface water name:	**Pollutant(s) causing the impairment:**	**Surface water name:**	**TMDL name:**	**Pollutant(s) for which there is a TMDL:**

Impaired Waters

Describe the methods you used to complete the above table:

Are any of the surface waters to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding Natural Resource Water)? (See Appendix F).

☐ YES ☐ NO

If yes, name(s) of receiving water(s) and its designation (Tier 2, Tier 2.5 or Tier 3): _____

VI. Chemical Treatment Information

Will you use polymers, flocculants, or other treatment chemicals at your construction site? ☐ YES ☐ NO

If yes, will you use cationic treatment chemicals at your construction site*? ☐ YES ☐ NO

If yes, have you been authorized to use cationic treatment chemicals by your applicable EPA Regional Office in advance of filing your NOI*? ☐ YES ☐ NO

If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

Please indicate the treatment chemicals that you will use: _____

* Note: You are ineligible for coverage under this permit unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

VII. Stormwater Pollution Prevention Plan (SWPPP) Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

SWPPP Contact Information:

First Name, Middle Initial Last Name:

Organization Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

VIII. Endangered Species Protection

Using the instructions in Appendix D of the CGP, under which criterion listed in Appendix D are you eligible for coverage under this permit (only check 1 box)?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

Provide a brief summary of the basis for criterion selection listed in Appendix D (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service, specific study): _____

If you select criterion B, provide the Tracking Number from the other operator's notification of authorization under this permit:

If you select criterion C, you must attach a copy of your site map (see Part 7.2.6 of the permit), and you must answer the following questions:

What federally-listed species or federally-designated critical habitat are located in your "action area": _____

What is the distance between your site and the listed species or critical habitat (miles): _____

If you select criterion D, E, or F, attach copies of any letters or other communications between you and the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

IX. Historic Preservation

Are you installing any stormwater controls as described in Appendix E that require subsurface earth disturbance? (Appendix E, Step 1) ☐ YES ☐ NO

If yes, have prior surveys or evaluations conducted on the site have already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E, Step 2) ☐ YES ☐ NO

If no, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? (Appendix E, Step 3) ☐ YES ☐ NO

If no, did the SHPO, THPO, or other tribal representative (whichever applies) respond to you within the 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties? (Appendix E, Step 4) ☐ YES ☐ NO

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions

☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls

☐ Other:

_____

_____

X. Certification Information

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

First Name, Middle Initial, Last Name: _____ _____ _____

Title: _____

Signature: _____ Date: ___ / ___ / _____

Email: _____

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Who Must File an NOI Form

Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits stormwater discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) permit. Operator of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with the permit conditions. If you have questions about whether you need a NPDES stormwater permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755.

Completing the Form

Obtain and read a copy of the 2012 Construction General Permit, viewable at www.epa.gov/npdes/stormwater/cgp. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit the original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOI Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOI. Note that you are not authorized to use this paper NOI form unless the Regional Office has approved its use. Verbal approval from the Regional Office is sufficient. Where you have obtained approval to use this form, indicate the reason you need to use this form, the name of the EPA Regional Office staff person who provided approval for use of this form, and the date that approval was provided. See www.epa.gov/npdes/stormwater/contacts for a list of EPA Regional Office contacts.

Section II. Permit Number

Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide a point of contact, the operator's mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the full name, organization, phone number and email address of the NOI preparer.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

Provide the latitude and longitude of your facility either in degrees, minutes, seconds; degrees, minutes, decimal; or degrees decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to www.epa.gov/npdes/stormwater/cgp for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used. If known, enter the horizontal reference datum for your latitude and longitude. The horizontal reference datum used on USGS topographic maps is shown on the bottom left corner of USGS topographic maps; it is also available for GPS receivers. If you use EPA's web siting tool, or if you are unsure of the horizontal reference datum for your site, please check the "unknown" box.

Indicate whether the project is in Indian country lands or located on a property of religious or cultural significance to an Indian tribe, and if so, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property.

Indicate whether you are seeking coverage under this permit as a "federal operator" as defined in Appendix A.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 10/06/2012). Indicate to the nearest quarter acre the estimated area to be disturbed.

Indicate whether earth-disturbing activities have already commenced on your project/site. If earth-disturbing activities have commenced on your site because stormwater discharges from the site have been previously covered under a NPDES permit, you must provide the CGP Tracking Number or the NPDES permit number if coverage was under an individual permit.

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Section V. Discharge Information

Indicate whether discharges from the site will enter into a municipal separate storm sewer system (MS4), as defined in Appendix A.

Also, indicate whether any surface waters (as defined in Appendix A) exist either on or within 50 feet from your site. Note that if "yes", you are required to comply with the requirement in Part 2.1.2.1 of the permit to provide natural buffers or equivalent sediment controls.

You must specify the names of any surface waters that receive stormwater directly from your site and/or from the MS4 to which you discharge. You must also specify the names of any surface waters that you discharge to that are listed as "impaired" as defined in Appendix A, including any waters for which there is an approved or established TMDL, and the pollutants for which the water is impaired or for which there is a TMDL. This information will be used to determine if the site discharges to an impaired waterbody, which triggers additional requirements in Part 3.2.2 of the permit. Applicants must specify which method they used to determine whether or not their site discharges to impaired waters. Also, if a TMDL has been approved or established, identify the title or reference of the TMDL document.

Indicate whether discharges from the site will enter into a surface water that is designated as a Tier 2, Tier 2.5, or Tier 3 water. A list of Tier 2, 2.5, and 3 waters is provided as Appendix F. If the answer is "yes", name all waters designated as Tier 2, Tier 2.5, or Tier 3 to which the site will discharge.

Section VI. Chemical Treatment Information

Indicate whether the site will use polymers, flocculants, or other treatment chemicals. Indicate whether the site will employ cationic treatment chemicals. If the answer is "yes" to either question, indicate which chemical(s) you will use. Note that you are not eligible for coverage under this permit to use cationic treatment chemicals unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. Examples of cationic treatment chemicals include, but are not limited to, cationic polyacrylamide (C-PAM), PolyDADMAC (POLYDIALLYLDIMETHYLAMMONIUM CHLORIDE), and chitosan.

Section VII. Stormwater Pollution Prevention Plan (SWPPP) Information

All sites eligible for coverage under this permit are required to prepare a SWPPP in advance of filing the NOI, in accordance with Part 7. Indicate whether the SWPPP has been prepared in advance of filing the NOI.

Indicate the street, city, state, and zip code where the SWPPP can be found. Indicate the contact information (name, organization, phone, fax (optional), and email) for the person who developed the SWPPP for this project.

Section VIII. Endangered Species Information

Using the instructions in Appendix D, indicate under which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species and designated critical habitat. A description of the basis for the criterion selected must also be provided.

If criterion B is selected, provide the Tracking Number for the other operator who had previously certified their eligibility under criterion A, C, D, E, or F. The Tracking Number was assigned when the operator received coverage under this permit, and is included in the notice of authorization.

If criterion C is selected, you must attach copies of your site map. See Part 7.2.6 of the permit for information about what is required to be in your site map. You must also specify the federally-listed species or federally-designated critical habitat that are located in the "action area" of the project, and provide the distance between the construction site and any listed endangered species or their critical habitat.

If criterion D, E, or F is selected, attach copies of any communications between you and the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

Section IX. Historic Preservation

Use the instructions in Appendix E to complete the questions on the NOI form regarding historic preservation.

Section X. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage.

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Modifying Your NOI

If after submitting your NOI you need to correct or update any fields on this NOI form, you may do so by submitting a paper modification form, which you can obtain at the following link: http://www.epa.gov/npdes/pubs/cgp_modify.pdf

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Submitting Your Form

Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

Appendix K - Notice of Termination (NOT) Form and Instructions

Part 8.3 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOT. However, where your EPA Regional Office specifically authorizes you to use a paper NOT form, you are required to complete and submit the following form.

NPDES FORM 3510-13	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF TERMINATION (NOT) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Termination constitutes notice that the operator identified in Section II of this form is no longer authorized discharge pursuant to the NPDES Construction General Permit (CGP) from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOT Form

Have you been given approval from the Regional Office to use this paper NOT form*? ☐ YES ☐ NO

*** Note: You must have been given approval by the Regional Office prior to using this paper NOT form.**

II. Permit Information

NPDES Stormwater General Permit Tracking Number:

Reason for Termination (Check only one):

- ☐ You have completed earth-disturbing activities at your site, and you have met all other requirements in Part 8.2.1.
- ☐ Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.
- ☐ You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

III. Operator Information

Name:

IRS Employer Identification Number (EIN): –

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

V. Certification Information

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

First Name, Middle Initial, Last Name:

Title:

Signature: _____ Date: / /

Email:

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Who May File an NOT Form

Permittees who are presently covered under the EPA-issued 2012 Construction General Permit (CGP) for Stormwater Discharges Associated with Construction Activity may submit an NOT form when: (1) earth-disturbing activities at the site are completed and the conditions in Parts 8.2.1.1 thru 8.2.1.5 are met; or (2) the permittee has transferred all areas under its control to another operator, and that operator has submitted and obtained coverage under this permit; or (3) the permittee has obtained coverage under a different NPDES permit for the same discharges.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOT Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOT. Note that you are not authorized to use this paper NOT form unless the Regional Office has approved its use.

Section II. Permit Number

Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center. If you do not know the permit tracking number, refer to http://www.epa.gov/npdes/stormwater/cgp or contact EPA's NOI Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

You have completed earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.6.3) and you have met all other requirements in Part 8.2.1.

Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.

You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address, telephone number, and email address of the operator. Optional: enter the fax number of the operator.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section V. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address.

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Submitting Your Form:
Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

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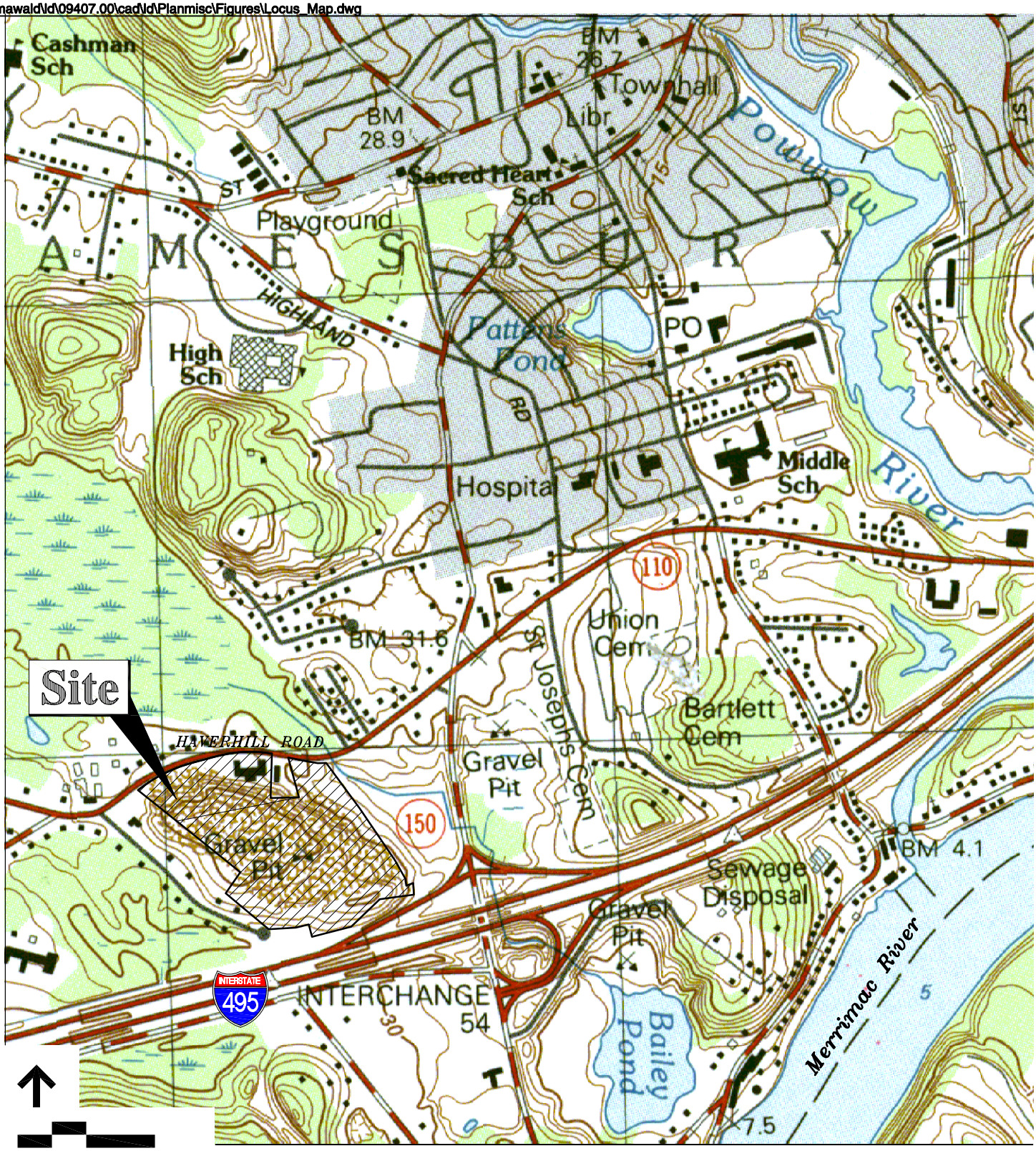
Attachment C
Site Maps

- Site Location Map
- Site Aerial Map
- Natural Heritage and Endangered Species Map
- FEMA Flood Insurance Rate Map
- Soil Map

\\mawald\ld\09407.00\cad\ld\Planmisc\Figures\Locus_Map.dwg



Source: Office of Geographic and Environmental Information (MassGIS) - Commonwealth of Massachusetts Executive Office of Environmental Affairs

Vanasse Hangen Brustlin, Inc.

Locus Map

Figure 1
March 19, 2007

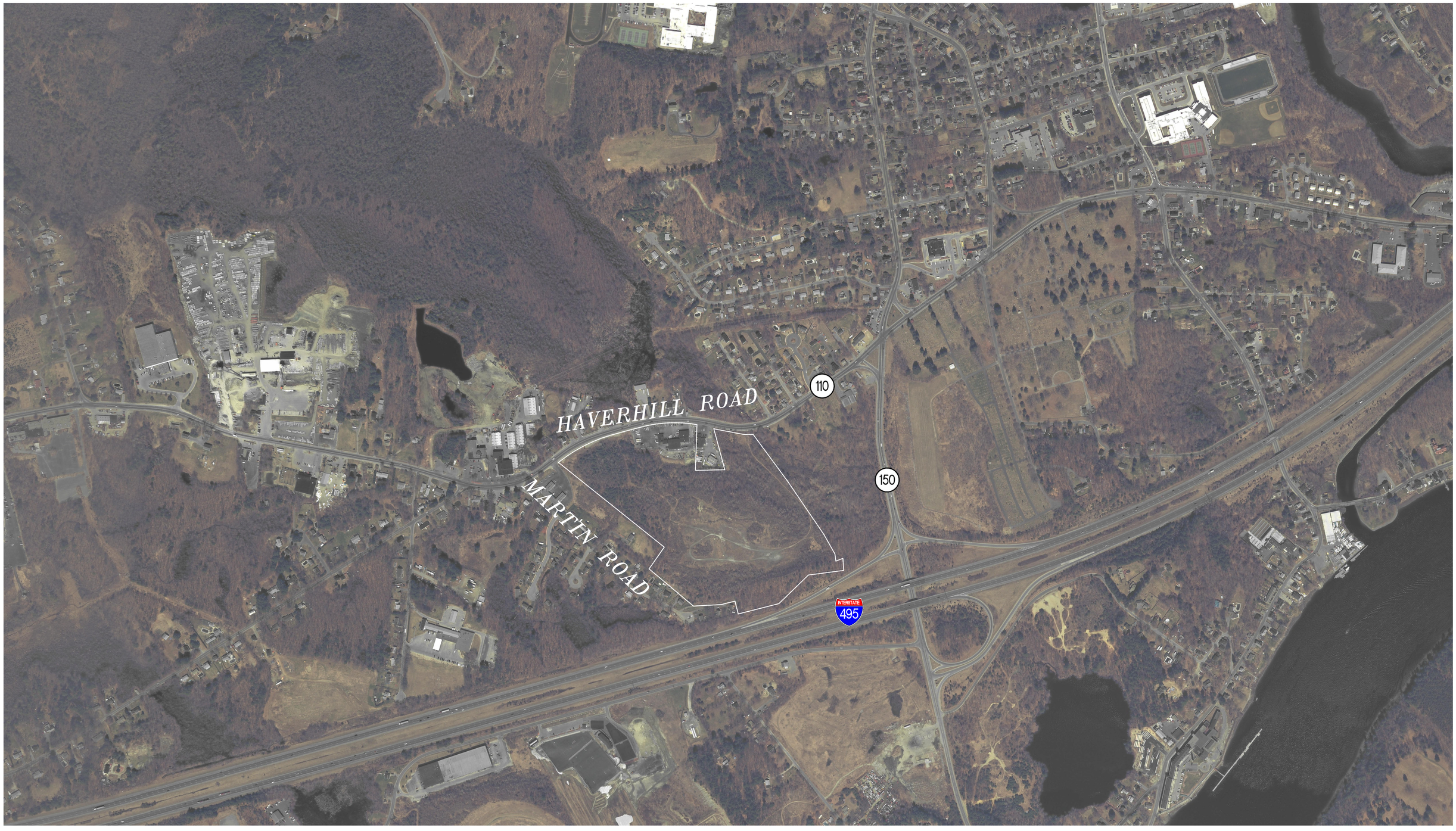
Amesbury Heights

Haverhill Road
Amesbury, Massachusetts

Amesbury Heights

Amesbury, Massachusetts

Site Plan Exhibit



vhb

Prepared for: ZBA
Date: April 27, 2006

N

0 300 600 Feet

\\vhb\proj\Wat-LD\09407.03\graphics\BOARDS\Aerial-EXHIBIT.dwg

\\vhb\proj\Wat-LD\09407.03\GIS\Project\NHESP_Amesbury.mxd

Source: USGS 2009, Mass GIS, Advanced Solar Products

N

0 300 600 1,200 Feet

Legend

boundary

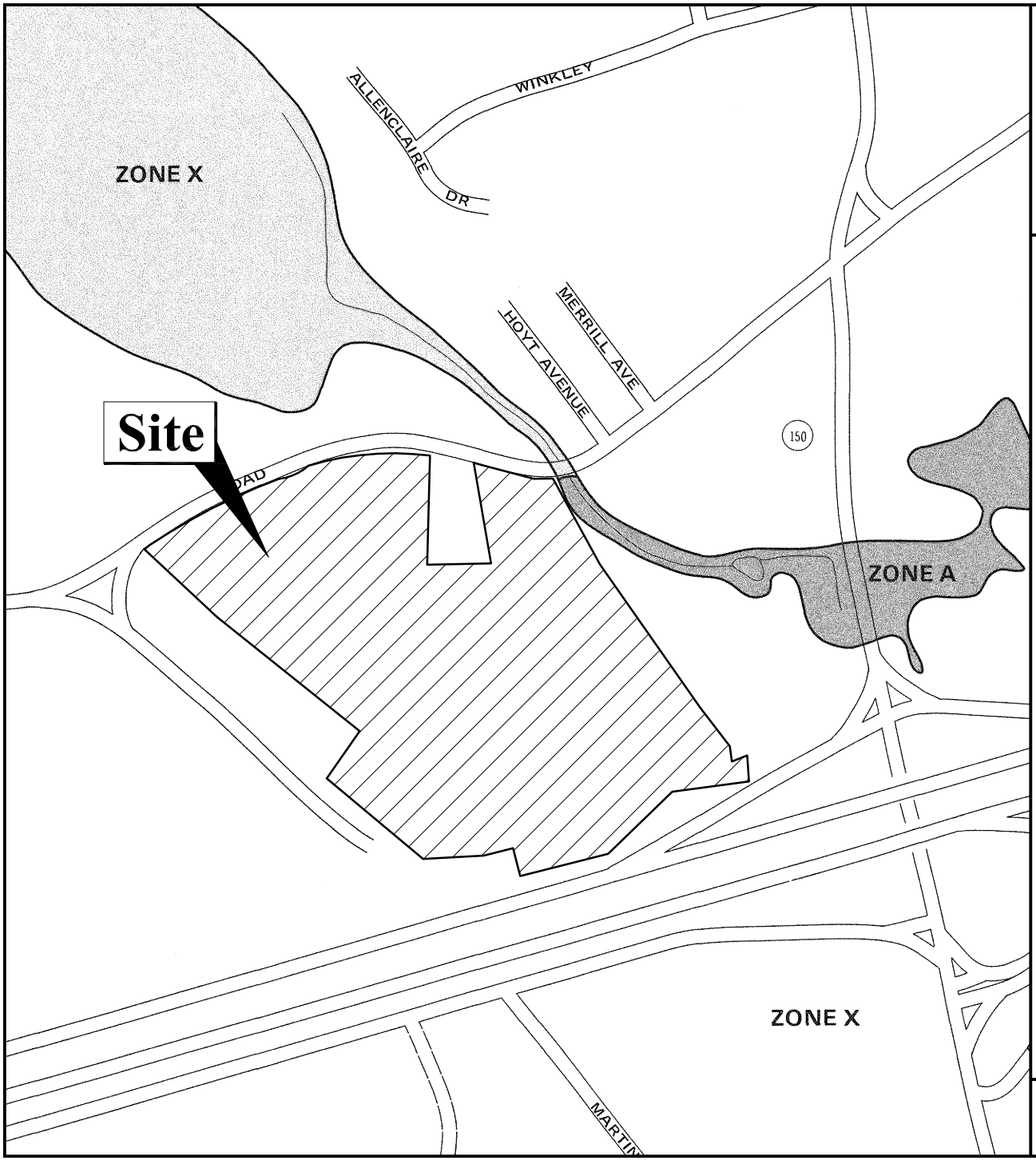
NHESP Estimated Habitats of Rare Wildlife and NHESP Priority Habitats of Rare Species

vhb

Figure 3
NHESP Map

36 Haverhill Road
Amesbury, MA

March 2015



N

APPROXIMATE SCALE

500 0 500 FEET

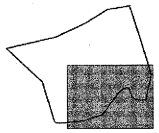
NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
AMESBURY,
MASSACHUSETTS
ESSEX COUNTY

PANEL 4 OF 4
(SEE MAP INDEX FOR PANELS NOT PRINTED)



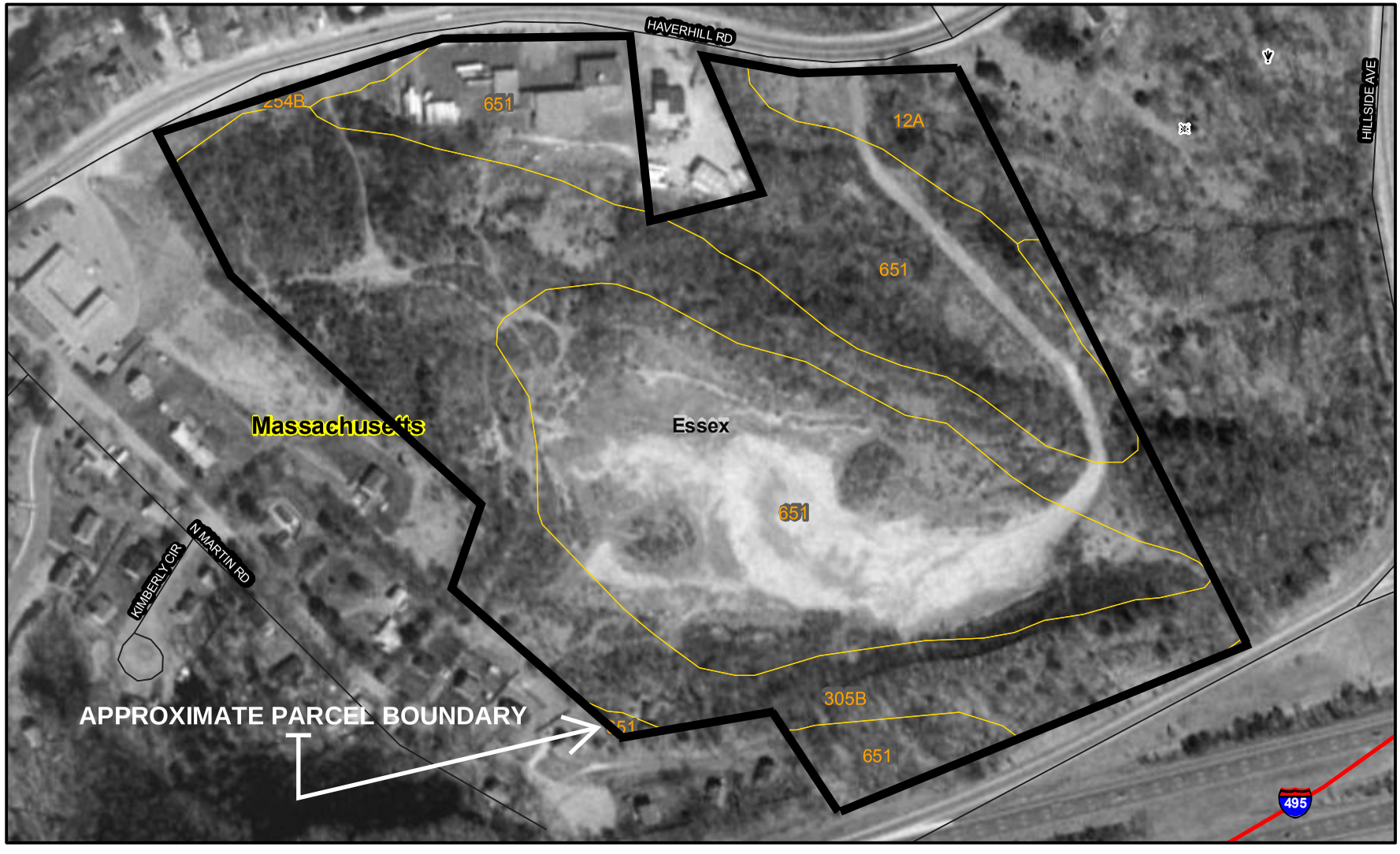
PANEL LOCATION

COMMUNITY-PANEL NUMBER
250075 0004 C

MAP REVISED:
AUGUST 3, 1992

Federal Emergency Management Agency

Amesbury Heights



Meters
0 30 60 120

Feet
0 50 100 200 300 400

Amesbury Heights

MAP LEGEND

- Soil Map Units
- Cities
- Detailed Counties
- Detailed States
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Oceans
- Escarpment, bedrock
- Escarpment, non-bedrock
- Gulley
- Levee
- Slope
- Blowout
- Borrow Pit
- Clay Spot
- Depression, closed
- Eroded Spot
- Gravel Pit
- Gravelly Spot
- Gulley
- Lava Flow
- Landfill
- Marsh or Swamp
- Miscellaneous Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Slide or Slip
- Sinkhole
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Perennial Water
- Wet Spot

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 19

Soil Survey Area: Essex County, Massachusetts, Northern Part
Spatial Version of Data: 2
Soil Map Compilation Scale: 1:15840

Map comprised of aerial images photographed on these dates:
3/29/1995; 4/3/1995; 4/11/1998

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend Summary

Essex County, Massachusetts, Northern Part

Map Unit Symbol	Map Unit Name
12A	Maybid silt loam, 0 to 3 percent slopes
254B	Merrimac fine sandy loam, 3 to 8 percent slopes
305B	Paxton fine sandy loam, 3 to 8 percent slopes
651	Udorthents, smoothed

Maybid series

The Maybid series consists of fine, illitic, nonacid, mesic Typic Humaquepts. These deep, very poorly drained soils are on old lakebeds and outwash plains. The soils formed in silty and clayey, glacial lake or marine sediments. Slopes range from 0 to 3 percent.

Maybid soils formed in the same kind of material as moderately well drained Buxton soils, poorly drained Scantic soils, and well drained Suffield soils. They are similar to Birdsall and Whately Variant soils. Maybid soils have more clay than the Birdsall soils. They have more clay and less sand in the solum than the Whately Variant soils.

Typical pedon of Maybid silt loam, in the town of Amesbury, in a wooded area 100 yards east of Woodward Road, at the Massachusetts-New Hampshire state line:

A1—0 to 7 inches; very dark gray (10YR 3/1) silt loam; moderate fine and medium granular structure; friable, slightly sticky, nonplastic; many fine medium and coarse roots; medium acid; clear smooth boundary.

A2g—7 to 11 inches; gray (5Y 5/1) silty clay loam; moderate medium and coarse angular blocky structure; friable, sticky, slightly plastic; common fine medium and coarse roots; medium acid; clear wavy boundary.

B2g—11 to 19 inches; greenish gray (5GY 5/1) silty clay; few fine prominent brown (7.5YR 4/4) mottles; massive; firm, sticky, plastic; very few fine roots; neutral; gradual wavy boundary.

C1g—19 to 27 inches; greenish gray (5GY 5/1) silty clay; massive; firm, sticky, plastic; neutral; gradual wavy boundary.

C2g—27 to 60 inches; dark greenish gray (5GY 4/1) silty clay; massive; firm, sticky, plastic; neutral.

The thickness of the solum ranges from 18 to 30 inches. The soil is typically free of coarse fragments, but a few pebbles are in some pedons. The reaction of the A horizon is strongly acid or medium acid, the B horizon medium acid to neutral, and the C horizon slightly acid to neutral.

The A1 horizon has hue of 10YR to 5Y, value of 2 or 3, and chroma of 0 to 2. It is silt loam or silty clay loam and typically has a very high organic matter content. In some pedons the surface horizon is muck. The A2 horizon has hue of 5Y, 5GY, or 5BG; value of 4 to 6; and chroma of 0 to 2. In some pedons it is distinctly or prominently mottled. The horizon is silty clay loam or silty clay.

The B horizon has hue of 5Y or 5GY, value of 4 or 5, and chroma of 0 to 2. It ranges from silty clay loam to clay. Mottles are distinct or prominent. It has prismatic or blocky structure, or it is massive.

The C horizon has hue of 5Y, 5GY, 5G, or 5BG; value of 4 or 5; and chroma of 0 or 1. It is silty clay or clay.

Medisaprists

Medisaprists in this survey area are very poorly drained and consist of areas that have more than 16 inches of organic material above mineral soil material. The soils formed in vegetative debris that accumulated under water. They are in depressions and broad drainageways and are along the margins of large ponds and lakes. Slopes are less than 1 percent.

Medisaprists are closely associated with most of the mineral soils in the survey area. They are similar to Ipswich, Westbrook, and Whitman soils. Medisaprists formed in freshwater marshes, whereas Ipswich and Westbrook formed in saltwater marshes. Medisaprists formed in organic material, and Whitman soils formed in mineral material.

Medisaprists have an organic solum that ranges from 16 inches to more than 60 inches thick. Depth to mineral soil varies from 16 inches to more than 6 feet. Coarse fragments consisting of tree stumps, trunks, stems, and branches make up 0 to 30 percent of the soils. The soils are extremely acid to medium acid.

The surface tier ranges from black to very dark grayish brown hemic or sapric material, and the subsurface tier is black, very dark grayish brown or reddish brown to dark brown sapric material. Layers of hemic material less than 7 inches thick are in most pedons.

The bottom tiers are usually sapric material with layers of hemic material less than 10 inches thick.

The underlying mineral soil material is strongly gleyed outwash, glacial till, lacustrine, or marine sediments.

Melrose series

The Melrose series consists of coarse-loamy over clayey, mixed, mesic Typic Dystrochrepts. The soils are deep and well drained and are on glaciolacustrine plains and deltas. They formed in acid glaciolacustrine deposits overlain by sandy glacial outwash material derived from schist and gneiss. Slopes range from 3 to 8 percent. In this survey area the soils are a taxadjunct to the Melrose series because they have a thicker sandy subsoil than is defined for the series. This difference does not significantly affect the use and management of the soils.

Melrose soils formed in the same kind of material as moderately well drained Elmwood soils, poorly drained Swanton soils, and very poorly drained Whately Variant soils. They are similar to Agawam and Suffield soils. Melrose soils have more silt and clay and less sand in the substratum than the Agawam soils. They have more sand and less silt in the solum than the Suffield soils.

Typical pedon of Melrose fine sandy loam, 3 to 8 percent slopes, in the town of Amesbury, on a wooded knoll 400 feet west of Buttonwood Road:

A1—0 to 4 inches; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; friable; many fine, medium, and coarse roots; strongly acid; abrupt smooth boundary.

B21—4 to 20 inches; dark yellowish brown (10YR 4/4) to yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; very friable; many fine, medium, and coarse roots; strongly acid; clear wavy boundary.

B22—20 to 32 inches; light olive brown (2.5Y 5/4) loamy sand; very weak fine granular structure; very friable; common to few fine and medium roots; strongly acid; abrupt wavy boundary.

IIC—32 to 60 inches; olive gray (5Y 5/2) silty clay; massive; firm, very sticky, very plastic; very few fine roots in upper 6 inches; medium acid.

The depth to the clayey substratum ranges from 18 to 40 inches. The soil is typically free of gravel, although there is some coarse material where this soil is adjacent to gravelly outwash deposits. Reaction in unlimed areas ranges from strongly acid to medium acid in the solum, and from strongly acid to neutral in the underlying fine-textured material.

The A horizon has hue of 10YR and value and chroma of 2 to 4. It ranges from very fine sandy loam to sandy loam.

The B21 horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. It ranges from fine sandy loam to coarse sandy loam. The B22 horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 or 6. It ranges from fine sandy loam to loamy sand.

The IIC horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 to 3. It is silty clay or varved silt and clay. The IIC horizon is massive or has thick, platy structure. In some pedons there are a few clay films in pores and on some ped faces.

Merrimac series

The Merrimac series consists of sandy, mixed, mesic Typic Dystrochrepts. The soils are deep and somewhat excessively drained (fig. 14). Merrimac soils formed in acid glacial outwash material derived mainly from granite and gneiss. They are on outwash plains, terraces, kames, and eskers. Slopes range from 0 to 25 percent.

Merrimac soils formed in the same kind of material as very poorly drained Scarboro soils, moderately well drained Sudbury soils, and poorly drained Walpole soils. They are similar to Agawam and Hinckley soils. Merrimac soils have more gravel in the substratum than the Agawam soils. They have less sand and gravel in the solum than the Hinckley soils.

Typical pedon of Merrimac fine sandy loam, 0 to 3 percent slopes, in the town of Newbury, 300 yards south of the junction of Ocean Avenue and Water Street in the town of Newburyport:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak very fine to medium granular structure; very friable; common fine and medium roots; 5 percent fine gravel; strongly acid; abrupt smooth boundary.

B21—8 to 18 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak very fine to medium granular structure; very friable; few fine roots; 5 percent fine gravel; strongly acid; abrupt wavy boundary.

B22—18 to 26 inches; yellowish brown (10YR 5/6) sandy loam; weak fine and medium granular structure; very friable; 10 percent fine gravel; strongly acid; abrupt wavy boundary.

IIC—26 to 60 inches; light olive brown (2.5YR 5/4) gravelly sand consisting of stratified sand, gravel, and cobblestones; single grain; loose; 30 percent rounded gravel, 10 percent cobblestones; medium acid.

The solum thickness ranges from 18 to 28 inches and generally corresponds to the depth to stratified sand and gravel. The solum commonly is 5 to 15 percent coarse fragments, but some horizons range from 0 to 30 per-

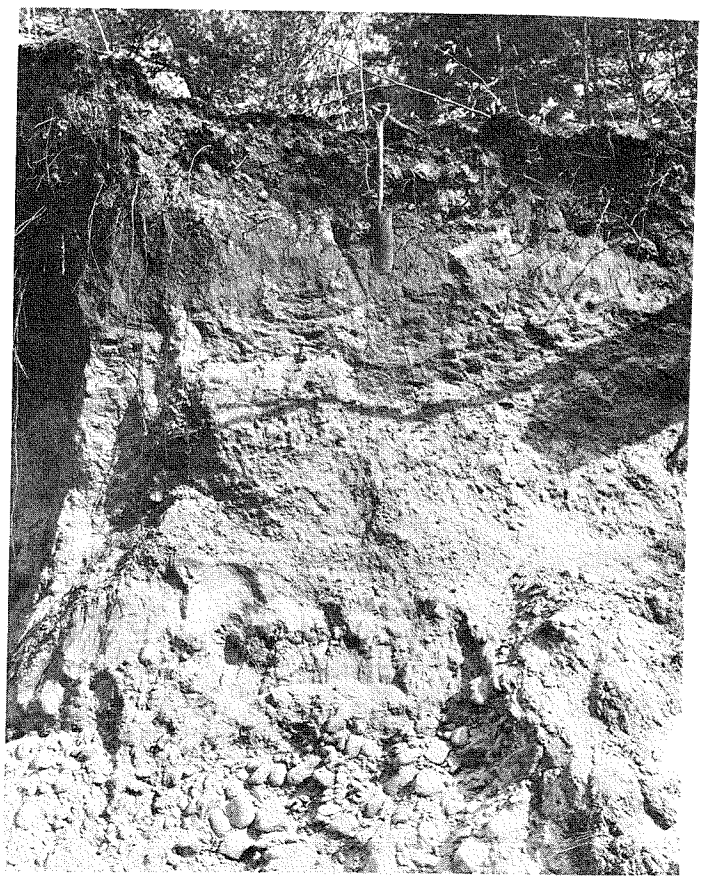


Figure 14.—A deep cut in an area of Merrimac fine sandy loam shows a contrasting layer at a depth of about 26 inches.

B21—9 to 17 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine and medium granular structure; very friable; many fine roots; strongly acid; abrupt wavy boundary.

B22—17 to 23 inches; light olive brown (2.5Y 5/4) fine sandy loam; few fine faint light olive gray (5Y 6/2) and olive yellow (2.5Y 6/6) mottles; weak fine and medium granular structure; friable; common fine roots; strongly acid; abrupt wavy boundary.

IIC1—23 to 30 inches; olive (5Y 4/3) loamy sand; few fine faint light olive gray (5Y 6/2) and light olive brown (2.5Y 5/4) mottles; massive; very friable; strongly acid; abrupt wavy boundary.

IIC2—30 to 38 inches; olive (5Y 4/3) loamy fine sand; many medium prominent light olive gray (5Y 6/2) and strong brown (7.5YR 5/8) mottles; massive; very friable; strongly acid; abrupt wavy boundary.

IIC3—38 to 60 inches; light olive brown (2.5Y 5/4) stratified fine and medium sand; many medium prominent light brownish gray (2.5Y 6/2) and strong brown (7.5YR 5/8) mottles; single grain; loose; strongly acid.

The thickness of the solum ranges from 18 to 34 inches but is typically 20 to 30 inches. The content of coarse fragments is less than 10 percent, by volume, in the solum and less than 20 percent in the C horizon above a depth of 40 inches. There are gravelly layers below a depth of 40 inches in some pedons. The reaction in unlimed areas ranges from medium acid to very strongly acid.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. In undisturbed areas there is an A1 horizon 2 to 4 inches thick that is 1 or 2 units darker in value or chroma or both. The A horizon is fine sandy loam or very fine sandy loam.

The B21 horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. The B22 horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6. The B22 horizon has mottles with chroma of 2 or less. The texture of the B22 horizon is fine sandy loam, sandy loam, or loamy fine sand.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 to 4. The C horizon has distinct or prominent mottles. It is loamy fine sand, loamy sand, fine sand, or medium sand.

Paxton series

The Paxton series consists of coarse-loamy, mixed, mesic Typic Fragiochrepts. These deep, well drained soils are on uplands. The soils formed in glacial till. Slopes range from 3 to 45 percent. In this survey area the soils are a taxadjunct to the Paxton series because they have clay films in the fragipan that are not in the defined range for the series. They also have a stronger grade of structure in the fragipan. These differences do not significantly affect the use and management of the soils.

Paxton soils formed in the same kind of material as poorly drained Ridgebury soils, very poorly drained Whitman soils, and moderately well drained Woodbridge soils. They are similar to Charlton and Montauk soils. Paxton soils have a fragipan, which the Charlton soils do not have. They have less sand in the fragipan than the Montauk soils.

Typical pedon of Paxton fine sandy loam, 8 to 15 percent slopes, in the town of Amesbury, in an idle field on the hillside 700 feet east of the junction of Martin Road and Massachusetts Route 110:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; 10 percent gravel, 5 percent cobblestones; extremely acid; abrupt smooth boundary.

B21—6 to 15 inches; yellowish brown (10YR 5/6) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; 10 percent gravel, 5 percent cobblestones; strongly acid; abrupt wavy boundary.

B22—15 to 21 inches; light olive brown (2.5Y 5/4) gravelly fine sandy loam; moderate fine and medium subangular blocky structure; firm; few fine and medium roots; 15 percent gravel, 10 percent cobblestones; strongly acid; clear wavy boundary.

Bx1—21 to 36 inches; olive brown (2.5Y 4/4) gravelly fine sandy loam; strong medium and thick platy structure; very firm; thin clay films in some pores and on some ped faces; 15 percent gravel, 10 percent cobblestones; strongly acid; gradual wavy boundary.

Bx2—36 to 60 inches; olive (5Y 4/3) gravelly fine sandy loam; strong thick platy structure; very firm; thin clay films in most pores and on some ped faces; white coating between peds when dry; 25 percent gravel, 10 percent cobblestones; medium acid.

The depth to the fragipan ranges from 18 to 32 inches. The rock fragment content ranges from 5 to 35 percent in the solum and 10 to 35 percent in the fragipan. Reaction is slightly acid to strongly acid.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. The A1 horizon, where present, has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. The A horizon is fine sandy loam or loam or gravelly analogues of these textures.

The B horizon has hue of 7.5YR or 10YR, value of 5, and chroma of 6 or 8 in the upper part and hue of 10YR or 2.5Y, value of 5, and chroma of 4 or 6 in the lower part. The horizon is sandy loam, fine sandy loam, or loam or their gravelly analogues. The structure is granular, subangular blocky, or platy.

The fragipan has hue of 2.5Y and 5Y, value of 4 or 5, and chroma of 3 or 4. It is fine sandy loam, sandy loam, or the gravelly analogues of these textures. It has strong, thin to thick, platy structure. In some pedons it has a few yellowish brown mottles.

Pipestone series

The Pipestone series consists of sandy, mixed, mesic Entic Haplaquods. These deep, somewhat poorly drained soils are on glacial outwash plains. The soils formed in sandy glacial outwash. Slopes range from 0 to 3 percent. In this survey area the soils are a taxadjunct to the Pipestone series because the C horizon has a yellower hue than is defined in the range for the series. This difference does not significantly affect the use and management of the soils.

Pipestone soils formed in the same kind of material as moderately well drained Deerfield soils, very poorly drained Scarboro soils, and excessively drained Windsor soils. They are similar to Walpole and Wareham soils. Pipestone soils have a spodic horizon, which the Walpole and Wareham soils do not have.

Typical pedon of Pipestone loamy sand, in the town of Salisbury, in a wooded area 1,500 feet north of the junction of Main Street and the Interstate 95 connector road:

O1—4 to 3 inches; undecomposed leaves and twigs.

O2—3 inches to 0; reddish black (10YR 2/1) decomposed organic remains.

A1—0 to 4 inches; black (10YR 2/1) loamy sand; weak fine and medium granular structure; friable; many fine medium and coarse roots; less than 5 percent rounded coarse fragments 2 to 5 millimeters in diameter; extremely acid; abrupt smooth boundary.

A2—4 to 8 inches; gray (10YR 5/1) sand; single grain; loose; many fine medium and coarse roots; 5 percent rounded coarse fragments 2 to 5 millimeters in diameter; extremely acid; clear wavy boundary.

B21ir—8 to 15 inches; dark yellowish brown (10YR 4/4) loamy sand; streaks of very dark grayish brown (10YR 3/2); few medium faint strong brown (7.5YR 5/6) mottles; single grain; loose; many fine and medium roots; 5 percent rounded coarse fragments 2 to 5 millimeters in diameter; very strongly acid; clear wavy boundary.

B22ir—15 to 21 inches; olive brown (2.5Y 4/4) loamy sand; many fine and medium prominent gray (N 5/0) and dark reddish brown (5YR 3/4) mottles; single grain; loose; common fine and medium roots; common nodules 5 to 25 millimeters in diameter of weakly cemented material with a dark reddish brown (2.5YR 3/4) outer shell and a dark reddish brown (2.5YR 2/4) core; 10 percent rounded coarse fragments 2 to 20 millimeters in diameter; very strongly acid; clear wavy boundary.

IIB3ir—21 to 32 inches; light olive brown (2.5Y 5/4) medium sand; many coarse prominent yellowish red (5YR 4/6) mottles; single grain; loose; few fine roots; few nodules 5 to 25 millimeters in diameter of weakly cemented material with a very dusky red (2.5YR 2/2) center; 10 percent rounded coarse fragments 2 to 20 millimeters in diameter; very strongly acid; clear wavy boundary.

IIIC1—32 to 38 inches; olive gray (5Y 5/2) fine sand; many medium prominent dark reddish brown (5YR 3/4) mottles; massive; loose; few fine roots; 5 percent rounded coarse fragments 2 to 20 millimeters in diameter; strongly acid; clear wavy boundary.

IVC2—38 to 60 inches; gray (5Y 5/1) stratified fine and medium sand with lenses of very fine sand; many medium prominent strong brown (7.5YR 5/6) mottles; massive; loose; 5 percent rounded coarse fragments 2 to 50 millimeters in diameter; strongly acid.

The thickness of the solum ranges from 20 to 36 inches. Gravel is in some pedons but comprises less than 10 percent of the volume. Reaction in the upper part of the solum ranges from extremely acid to neutral. Reaction of the lower part of the solum and of the substratum ranges from strongly acid to neutral.

The A1 horizon has hue of 7.5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. It is loamy sand, fine sand, or sand. Cultivated areas have an Ap horizon 6 to 8 inches thick that is very dark gray (10YR 3/1) loamy sand. The A2 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2. It is sand or loamy sand.

The upper part of the B horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. The lower part of the B horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 5. The B horizon is loamy sand, sand, or fine sand. Some pedons have varying amounts of cemented material consisting of nodules 5 to 25 millimeters in diameter.

The C horizon has hue of 5Y, value of 5 or 6, and chroma of 1 to 3 and is mottled. It is sand or fine sand.

Raynham series

The Raynham series consists of coarse-silty, mixed, nonacid, mesic Aeric Haplaquepts. These deep, poorly drained soils are on outwash plains and old lakebeds. The soils formed in lacustrine deposits. Slopes range from 0 to 3 percent. In this survey area the soils are a taxadjunct to the Raynham series because the B horizon has a matrix with chroma of 3 or 4 and does not have a dominant chroma of 2 within 20 inches, as is required for the series. The soils also have more sand in part of the substratum than is defined for the series. These differences do not significantly affect the use and management of the soils.

Raynham soils formed in the same kind of material as moderately well drained Belgrade soils, very poorly

Typical pedon of Swanton fine sandy loam, 0 to 3 percent slopes, in the town of Salisbury, in a wooded area off Ferry Road, 50 yards north of the radio station antenna:

O1—2 inches to 1 inch; undecomposed deciduous leaves and twigs.
O2—1 inch to 0; partly decomposed leaves and twigs.
Ap1—0 to 2 inches; very dark brown (10YR 2/2) fine sandy loam; weak fine granular structure; very friable; many fine medium and coarse roots; medium acid; abrupt irregular boundary.
Ap2—2 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam; few fine faint strong brown (7.5YR 5/6) mottles; weak fine granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.
B21g—8 to 19 inches; olive (5Y 5/3) fine sandy loam; many medium prominent gray (5Y 6/1) and yellowish red (5YR 5/8) mottles; weak fine granular structure; friable; common fine roots; strongly acid; clear wavy boundary.
B22g—19 to 28 inches; olive gray (5Y 4/2) fine sandy loam; common fine prominent gray (5Y 6/1) and yellowish red (5YR 5/8) mottles; moderate thick platy structure; firm; medium acid; clear wavy boundary.
IIC1—28 to 38 inches; mottled olive (5Y 4/3) silty clay loam; many medium distinct yellowish red (5YR 5/6) mottles; massive; firm; thin clay films in some pores; medium acid; clear wavy boundary.
IIC2—38 to 60 inches; olive (5Y 4/3) silty clay; common fine prominent light gray (5Y 6/1), yellowish red (5YR 5/6), and dark reddish brown (2.5YR 2/4) mottles; weak very thick platy structure controlled by varved sediments; very firm; slightly acid.

The thickness of the coarse-loamy mantle ranges from 18 to 40 inches. The solum is generally free of coarse fragments. Reaction in the solum ranges from strongly acid to medium acid and in the substratum from medium acid to neutral.

The A horizon has hue of 7.5YR to 2.5Y, value of 2 or 3, and chroma of 1 or 2. It is typically fine sandy loam but ranges from sandy loam to very fine sandy loam.

The B horizon has hue of 2.5Y or 5Y, value of 3 to 5, chroma of 1 to 3 and is distinctly or prominently mottled. It is generally fine sandy loam but ranges from sandy loam to very fine sandy loam.

Some pedons have a IIB horizon that has hue of 2.5Y or 5Y, value of 5 or 6, chroma of 2 or 3 and is mottled. The horizon ranges from silty clay loam to clay.

The IIC horizon has hue of 5Y, value of 4 or 5, and chroma of 1 to 3. It ranges from silty clay loam to clay and is varved in some pedons.

Udipsamments

Udipsamments consist of deep, excessively drained soils with light gray, grayish brown, and gray medium sand. The soils formed in wind-deposited sand from the nearby coastal beaches. Udipsamments are on sand dunes subject to wind-controlled deflation and deposition. Slopes range from 3 percent to more than 50 percent.

Udipsamments are similar to Windsor soils but are stratified and grayer than the Windsor soils.

Udorthents

Udorthents consist of areas from which soil material has been excavated and of nearby areas where the material has been deposited. This material ranges from a mixture of sand and gravel to silty loam. Slopes range from 0 to 25 percent.

Udorthents are associated with many different soils and with Urban land but do not have the structures that are characteristic of Urban land.

Unadilla series

The Unadilla series consists of coarse-silty, mixed, mesic Typic Dystrochrepts. These deep, well drained soils are on old lakebeds. The soils formed in glaciolacustrine deposits. Slopes range from 0 to 15 percent.

Unadilla soils formed in the same kind of material as moderately well drained Belgrade soils, very poorly drained Birdsall soils, and poorly drained Raynham soils. They are similar to Agawam, Hadley, and Suffield soils. Unadilla soils have more very fine sand and less fine sand than the Agawam soils; are more developed than the Hadley soils, which formed in recent alluvium; and have more sand and less silt throughout the profile than the Suffield soils.

Typical pedon of Unadilla very fine sandy loam, 3 to 8 percent slopes, in the town of Rowley, in a wooded area that was once cultivated, 800 feet northeast of the junction of Stackyard Road and Far Patmos Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) very fine sandy loam; weak fine and very fine granular structure; very friable; many fine medium and coarse roots; very strongly acid; abrupt smooth boundary.
B21—9 to 17 inches; yellowish brown (10YR 5/4) very fine sandy loam; weak fine and very fine subangular blocky structure; very friable; many fine medium and coarse roots; strongly acid; clear wavy boundary.
B22—17 to 29 inches; light olive brown (2.5Y 5/4) very fine sandy loam; massive; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Uncoated steel	Concrete
					Ft					
HWE*:										
Hinckley	A	None	---	---	>6.0	---	---	Low	Low	High.
Windsor	A	None	---	---	>6.0	---	---	Low	Low	High.
IW*:										
Ipswich	D	Frequent	Very brief	Jan-Dec	+1-0.0	Apparent	Jan-Dec	---	High	High.
Westbrook	D	Frequent	Very brief	Jan-Dec	+1-0.0	Apparent	Jan-Dec	---	High	High.
LeA, LeB Leicester	C	None	---	---	0-1.5	Apparent	Nov-May	High	Low	High.
Lr*:										
Limerick	C	Frequent	Brief	Oct-Jun	0-1.5	Apparent	Nov-Jun	High	High	Low.
Rumney	C	Frequent	Brief	Oct-May	0-1.5	Apparent	Nov-Jun	High	High	High.
Ma Maybid	D	None	---	---	0-0.5	Perched	Nov-Aug	High	High	Moderate.
MC*, MD*. Medisaprists										
MeB Melrose	C	None	---	---	>6.0	---	---	Moderate	Moderate	Moderate.
MmA, MmB, MmC, MmD Merrimac	A	None	---	---	>6.0	---	---	Low	Low	High.
MoB, MoC, MoD, MsB, MsC, MsD, MxC Montauk	C	None	---	---	>6.0	---	---	Moderate	Low	High.
NnA, NnB Ninigret	B	None	---	---	1.5-3.5	Apparent	Nov-Apr	Moderate	Low	High.
PaB, PaC, PaD, PbB, PbC, PbD, PcC, PcD, PcE Paxton	C	None	---	---	>6.0	---	---	Moderate	Low	Moderate.
Pe Pipestone	A	None	---	---	0.5-1.5	Apparent	Oct-Jun	Moderate	Low	Moderate.
Pg*. Pits, gravel										
Qu*. Quarries										
Ra Raynham	C	None	---	---	0.5-2.0	Apparent	Nov-Jun	High	High	Moderate.
RdA, RdB Ridgebury	C	None	---	---	0-1.5	Perched	Nov-May	High	High	High.
R1A*, R1B*:										
Ridgebury	C	None	---	---	0-1.5	Perched	Nov-May	High	High	High.
Leicester	C	None	---	---	0-1.5	Apparent	Nov-Mar	High	Low	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Uncoated steel	Concrete
					Ft					
RnC*, RnD*: Rock outcrop.										
Buxton	C	None	---	---	1.0-3.0	Perched	Nov-May	High	High	Moderate.
RoC*, RoD*: Rock outcrop.										
Charlton	B	None	---	---	>6.0	---	---	Low	Low	High.
Hollis	C/D	None	---	---	>6.0	---	---	Moderate	Low	High.
Rx*: Rock outcrop.										
Hollis	C/D	None	---	---	>6.0	---	---	Moderate	Low	High.
Sa Saco Variant	C	Frequent	Brief	Nov-May	0-1.0	Apparent	Nov-Jun	High	High	Moderate.
ScA, ScB Scantic	C	None	---	---	0-1.0	Perched	Oct-Jun	High	High	Moderate.
Se Scarboro	D	Rare	---	---	0-1.0	Apparent	Jan-Dec	High	Moderate	High.
SgB, SgC, ShB, ShC Scituate	C	None	---	---	1.0-3.0	Perched	Dec-Apr	High	Moderate	High.
SrA, SrB Sudbury	B	None	---	---	1.0-3.0	Apparent	Dec-Apr	Moderate	Low	High.
SsB, SsC Suffield	C	None	---	---	>6.0	---	---	High	Moderate	Moderate.
StA, StB, StC, SuB, SuC Sutton	B	None	---	---	1.5-3.5	Apparent	Nov-Apr	Moderate	Low	High.
SwA, SwB Swanton	B/D	None	---	---	0-1.5	Apparent	Nov-May	High	High	Moderate.
UAC*. Udipsamments										
UD*. Udorthents										
UnA, UnB, UnC Unadilla	B	None to rare	---	---	>6.0	---	---	Moderate	Low	Moderate.
Ur*. Urban land										
WaA, WaB Walpole	C	None	---	---	0-1.0	Apparent	Nov-Apr	High	Low	High.
Wb Walpole Variant	C	None	---	---	0-1.0	Apparent	Nov-Jun	High	High	High.
WeA, WeB Wareham	C	None	---	---	0-1.5	Apparent	Sep-Jun	Moderate	Moderate	High.
Wf Whately Variant	C	None	---	---	0-1.0	Apparent	Nov-Jun	High	High	Moderate.

See footnote at end of table.

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Attachment D
NOI, Order of Conditions, and EPA Authorization

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

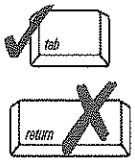
WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number: 002-0936

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From: Amesbury Conservation Commission
1. Conservation Commission

2. This issuance is for (check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

a. First Name	b. Last Name	c. Company
		Boston North Properties, LLC

98 Elm Street
d. Mailing Address

e. City/Town	f. State	g. Zip Code
Salisbury	MA	01952

4. Property Owner (if different from applicant):

a. First Name	b. Last Name	c. Company

d. Mailing Address

e. City/Town	f. State	g. Zip Code

5. Project Location:

a. Street Address	b. City/Town
36 Haverhill Road and Martin Road North #RR	Amesbury

c. Assessors Map/Plat Number	d. Parcel/Lot Number
Map 86	Lots 25 and 47

Latitude and Longitude, if known (**note:** electronic filers will click for GIS locator):

e. Latitude	f. Longitude
42 50' 28" N	70 56' 33" W

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

a. County	b. Certificate (if registered land)
Essex - South	

c. Book	d. Page
26521	126

7. Dates:

a. Date Notice of Intent Filed	b. Date Public Hearing Closed	c. Date of Issuance
March 19, 2007	July 9, 2007	August 13, 2007

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Site Plans Issued for Notice of Intent Issued March 19, 2007 Latest Issue June 25, 2007
a. Plan Title

b. Prepared By	c. Signed and Stamped by
Vanasse Hangen Brustlin, Inc.	

d. Final Revision Date	e. Scale
June 25, 2007	varies - see list in Condition #20

f. Additional Plan or Document Title	g. Date
Notice of Intent, Stormwater Management Report Revised june 25, 2007	

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

a. ☒ Public Water Supply
b. ☐ Land Containing Shellfish
c. ☒ Prevention of Pollution
d. ☒ Private Water Supply
e. ☐ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☒ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**

c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

3. ☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available) _____ a. linear feet

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. ☒ Bank	1157 a. linear feet	1157 b. linear feet	1008 c. linear feet	1008 d. linear feet
5. ☒ Bordering Vegetated Wetland	1898 a. square feet	1898 b. square feet	2860 c. square feet	2860 d. square feet
6. ☐ Land Under Waterbodies and Waterways	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
	_____ e. cu.yd dredged	_____ f. cu.yd dredged		

B. Findings (cont.)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
7. ☐ Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. ☐ Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. ☒ Riverfront area	41599 a. total sq. feet	41599 b. total sq. feet		
Sq ft within 100 ft	14304 c. square feet	14304 d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	27295 g. square feet	27295 h. square feet	i. square feet	j. square feet

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

10. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. ☐ Land Under the Ocean	a. square feet	b. square feet		
	c. cu.yd dredged	d. cu.yd dredged		
12. ☐ Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. ☐ Coastal Beaches	a. square feet	b. square feet	c. c/y nourishmt.	d. c/y nourishmt.
14. ☐ Coastal Dunes	a. square feet	b. square feet	c. c/y nourishmt.	d. c/y nourishmt
15. ☐ Coastal Banks	a. linear feet	b. linear feet		
16. ☐ Rocky Intertidal Shores	a. square feet	b. square feet		
17. ☐ Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. ☐ Land Under Salt Ponds	a. square feet	b. square feet		
	c. cu.yd dredged	d. cu.yd dredged		
19. ☐ Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	a. cu.yd dredged	b. cu.yd dredged		
21. ☐ Land Subject to Coastal Storm Flowage	a. square feet	b. square feet		

C. General Conditions Under Massachusetts Wetlands Protection Act

(only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.

2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.

3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.

6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

9. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MA DEP"]

"File Number 002-0936 "

C. General Conditions Under Massachusetts Wetlands Protection Act

10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.

12. The work shall conform to the plans and special conditions referenced in this order.

13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.

14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.

17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

18. All work associated with this Order is required to comply with the Massachusetts Stormwater Policy Standards.

Special Conditions:

If you need more space for additional conditions, select box to attach a text document ☒

See Attached.

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☒ Yes ☐ No
2. The Amesbury Conservation Commission (Conservation Commission) hereby finds (check one that applies):
3. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

a. Municipal Ordinance or Bylaw _____ b. Citation _____

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

4. ☒ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

Amesbury Wetlands Protection Bylaw (a. Municipal Ordinance or Bylaw) — Article 34 (b. Citation)

The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

If you need more space for additional conditions, select box to attach a text document ☒

c. The special conditions relating to municipal ordinance or bylaw are as follows:

See Attached.

AMESBURY HEIGHTS

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:
002-936

E. Issuance

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.
Please indicate the number of members who will sign this form:
This Order must be signed by a majority of the Conservation Commission.

8-14-07
1. Date of Issuance

4
2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

Notary Acknowledgement

Commonwealth of Massachusetts County of Essex

On this 13th (Day) of August (Month) 2007 (Year)

Before me, the undersigned Notary Public, Thornton Lallier David Lavering, (Name of Document Signer)
personally appeared Steven Langlois, Cory Riley

proved to me through satisfactory evidence of identification, which was/were

Known to me
Description of evidence of identification

to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

As member of Amesbury (City/Town) Conservation Commission

DAYLE R. BELL
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS
MY COMM. EXPIRES JAN. 21, 2011

Dayle R Bell
Signature of Notary Public

Dayle R. Bell
Printed Name of Notary Public

1/21/2011
My Commission Expires (Date)

Place notary seal and/or any stamp above

This Order is issued to the applicant as follows:

☐ by hand delivery on
Date

☒ by certified mail, return receipt requested, on
8/14/07
Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant. Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order or Determination, or providing written information to the Department prior to issuance of a Superseding Order or Determination.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

Section G, Recording Information is available on the following page.

G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 7 of this form shall be submitted to the Conservation Commission listed below.

Amesbury Conservatio Commission
Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Amesbury Conservation Commission
Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Haverhill Road and Martin Road North #RR — Project Location
002-0936 — DEP File Number

Has been recorded at the Registry of Deeds of:

County | Book | Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book | Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

ATTACHMENT TO ORDER OF CONDITIONS

Applicant: Boston North Properties, LLC

Site Address: 36 Haverhill Road and Martin Road North #RR

DEP File: 002-0936

Pursuant to Massachusetts Wetlands Protection Act and Regulations and Amesbury Wetlands Protection Bylaw:

ADDITIONAL FINDINGS

This parcel **is not** within habitat of state-protected rare wildlife species, and it **does not** contain certified vernal pools, according to the October 1, 2006 Map of Estimated Habitats of Rare Wildlife and Certified Vernal Pools, published by the Massachusetts Natural Heritage and Endangered Species Program.

This Order is issued under the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40.

In accordance with the Regulations at 310 CMR 10.54(3), the Amesbury Conservation Commission ("ACC" or "the Commission") finds that the applicant has overcome the presumption that the existing Bank (intermittent stream located in the interior section of the site) plays a role in protecting the interests of public or private water supply, to groundwater supply, to flood control, to storm damage prevention, to the prevention of pollution, and to the protection of fisheries and wildlife habitat. Therefore, the applicant is not required to provide full replication at a ratio of 1:1 linear feet of impacted to replicated Bank. The applicant will provide approximately 990 linear feet of replicated Bank in two segments to mitigate for the loss of certain wildlife habitat features identified during the Wildlife Habitat Evaluation and to provide habitat enhancements.

The Commission further finds that additional native woody vegetation placed up gradient of the western-most replicated bank channel and between the replicated bank and the developed areas will provide a necessary buffer or screening from the adjacent residential community, particularly in areas where said channel is closest to the parking lot

The Commission finds that the BVW Wetland Replication Area 1 will receive untreated stormwater originating from offsite (Route 110 - Haverhill Road). The Commission finds that it is necessary for the applicant to incorporate a permanent sedimentation basin up gradient of Wetland Replication area # 1 for the purpose of preventing the sedimentation of the replication area. This basin should be sized to adequately handle the flow from smaller storm events where pollutant concentrations are typically higher.

The Commission finds that the replication area for loss of Isolated Vegetated Wetlands (IVW) is proposed to be oversized in order to accommodate the future alteration of Area H (1946 s.f.) and Area I (2164 s.f.), which would be presented to the Commission under a future Notice of Intent filing. Proposed alteration of these two IVWs is not necessary to accommodate the current proposed project, and will not be permitted unless and until a Notice of Intent is filed and Order of Conditions issued approving such alteration in the future. This does not represent any guarantee that the Commission will permit such alteration in the future and any such future proposals should seek to minimize or avoid impacts to these resources if possible. The Commission finds that the proposed layout and stormwater management improvements meet the performance standards of the State Stormwater Standards, upon incorporation of the changes specified in Special Conditions 26d, 26e, 26f, and 26g.

This Order permits: The construction of 5 residential apartment buildings, a clubhouse, pool, emergency access road, parking areas, stormwater management facilities, utilities, and sidewalk to Route 110/Route 150 Intersection from access road at 36 Haverhill Road and Martin Road North # RR. In addition this order permits the control of invasive species and the mitigation of impacts as proposed and as required by the following conditions.

SPECIAL CONDITIONS

GENERAL CONDITIONS:

19. Approval of this application does not constitute compliance with any law or regulation other than MGL Chapter 131, Section 40, Wetlands Regulations CMR 10.00, and the Town of Amesbury Wetlands Protection Bylaw. It is the responsibility of the applicant to procure all other applicable federal, state and local permits and approvals associated with this project.

20. The work shall conform to the following:

    Notice of Intent filed by: Boston North Properties, LLC

    Invasive Species Control Plan

    Site plans prepared by: Vanasse Hangen Brustlin, Inc.

    Entitled: Ste Plans Issued for Notice of Intent – Issued March 19, 2007, Latest Issue June 25, 2007, including the following drawings and as revised by condition # 24

    C-1 Legend and General Notes
    C-2 Overall Site Plan
    C-3 Wetland Impacts and Erosion Control Plan
    C-4.1 Layout Plan
    C-4.2 Layout Plan
    C-5.1 Grading and Drainage Plan
    C-5.2 Grading and Drainage Plan
    C-6.1 Utility Plan

C-6.2 Utility Plan
C-7.1 Landscape Plan
C-7.2 Landscape Plan
C-8.1 Site Details
C-8.2 Site Details
C-8.3 Site Details
C-9 Detention Basin Profiles

21. The ACC reserves the right to impose additional conditions on this project including but not limited to additional or modified erosion control / siltation controls during construction, if it deems that site conditions warrant such measures to mitigate potential impacts.

22. A copy of this Order of Conditions and the plan approved in this Order shall be available on site at all times when work is in progress.

23. In conjunction with the sale of this property or any portion thereof before a Certificate of Compliance has been issued, the applicant or current landowner shall submit to the ACC a signed statement by the buyer that he/she is aware of an outstanding Order of Conditions on the property and has received a copy of the Order of Conditions.

PRE-CONSTRUCTION CONDITIONS:

24. This Order of Conditions must be recorded in its entirety at the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property; and recording information (Registry book and page numbers or Land Court certificate number) must be submitted to the Amesbury Conservation Commission ('Commission' hereinafter) in writing, before any work approved in this Order commences. In the case of the recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, the Final Order shall be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is to be done. The recording information shall be submitted to the Amesbury Conservation Commission on the form at the end of this Order prior to commencement of the work.

25. A sign shall be displayed at the site not less then two (2) feet or more than three (3) square feet in size bearing the words,

"MA DEP File Number 002-0936"

26. Prior to the start of construction the applicant shall submit to the Conservation Agent a complete set of plans stamped by a Registered Professional Engineer.

These plans shall be revised to incorporate the following conditions to the satisfaction of the Conservation Agent:

a. The applicant shall incorporate native woody vegetation along the channel banks, but not within the channel bottom, to further enhance wildlife habitat values of the western-most Bank replication area.

b. The Applicant shall incorporate a permanent sedimentation basin up gradient of Wetland Replication area # 1 for the purpose of preventing the sedimentation of the replication area. Maintenance provisions for this area shall be added to the Long Term Stormwater Operation and Maintenance Measures included as Appendix E of the Stormwater Management Report. The revised Appendix E and shall be submitted to the Conservation Agent.

c. The applicant shall anticipate and identify on the plan the additional temporary wetland alterations within the BVW, particularly between Replication Areas 4 and 5, that will occur during construction, and shall plan for additional restoration plantings accordingly.

d. A synthetic erosion control matting shall be used to stabilize the swales proposed within the center of the site contributing to Bioretention Basin F, due to the fact that they will be constructed at a steep slope (approximately a 10% slope).

e. Bioretention Basin F (Pond P4G in the HydroCAD model) shall de designed to detain the 10-year storm and safely pass the 100-year storm without impacting the nearby clubhouse building.

f. The applicant shall demonstrate that detention of the water quality volume is being met in the extended detention basins and bioretention systems on the site. According to the MA Stormwater Policy, Volume 2, the average detention time for small storms (including the water quality volume) in an extended detention basin should be no less than 6 hours. Simply accounting for a volume larger than the water quality volume in the basin is not sufficient to demonstrate this.

g. Erosion control matting and check dams shall be used in the drainage ditch along the emergency access road to stabilize the ditch and slow the flow of water.

27. Prior to commencing any activity on the site, the applicant shall submit a project/construction-sequencing plan to the Conservation Agent. This plan will be revised and updated through the Environmental Monitor reports in conditions # 43 and 44.

28. Prior to commencing any activity on site, the applicant shall submit to the Conservation Agent a revised Invasive Species Control Program that includes

three years of monitoring and uses an herbicide that is approved for use in wetland areas, such as Rodeo, substituted for Roundup.

29. Prior to commencing any activity on site, the applicant shall submit to the Conservation Agent a revised Appendix F that includes details on de-icing, including the proposed method/chemicals to be used for de-icing. Such methods shall not include the use of sodium chloride based chemicals.

30. A statement signed by the applicant, owner of the property and the person responsible for the construction of the project that such individuals understand the terms and conditions as specified in the Order and that such persons agree to comply with the provisions of the Wetlands Protection Act, local Bylaw and this Order.

31. The applicant shall secure a Section 401 Water Quality Certification for the proposed project and shall provide a copy of same to the Commission prior to the start of work.

32. Prior to the pre-construction meeting and commencement of any activity on this site, the boundaries of all wetland resource areas shall be identified by flagging, spaced at intervals not greater than 25-feet apart. Wetland flags shall be checked and replaced as necessary and maintained until a Certificate of Compliance is issued for the project.

33. Prior to the pre-construction meeting and commencement of any activity on this site, all erosion control devices approved under this Order shall be properly installed as shown on approved site plans dated June 25, 2007. Unless shown on the plans otherwise, erosion control barriers shall consist of entrenched silt fence backed by double-staked hay bales. The Amesbury Conservation Commission and/or its Agent shall inspect and approve such installation at a pre-construction meeting. The erosion control devices must remain in place until the Commission or its Agent has authorized their removal. All workers must be instructed not to work beyond this limit. In any areas where the limit of work is within 20 feet of abutting property, the erosion control shall be surveyed in and the property boundary clearly marked with flagging to prevent encroachment on abutting property.

34. Prior to the pre-construction meeting, the applicant shall designate an "Environmental Monitor", such as a Registered Professional Engineer, Registered Professional Land Surveyor, or Professional Wetland Scientist, who shall be responsible for monitoring all activity within wetland resource areas and buffer zones to ensure compliance with this Order of Conditions. The Environmental Monitor will immediately notify the Conservation agent of any matter that requires attention by the Commission or the agent. The name and phone number of the Environmental Monitor must be provided to the Conservation Agent in the event that this person has to be contacted, due to an emergency at the site, during any 24-hour period, including weekends. This person shall be given the authority to

stop construction for erosion control purposes. The Environmental Monitor will be required to inspect all erosion control devices and oversee cleaning and the proper disposal of related waste products. Cleaning shall include removal of any entrapped silt.

35. The applicant shall notify the ACC in writing of the names, addresses and business telephone numbers of the projects supervisor, the contractor and the Environmental Monitor responsible for the work, and for the ensuring compliance with this Order.

36. **Once the above mentioned pre-construction requirements are complete, the applicant shall contact the Conservation Office prior to site preparation or construction and shall arrange an on-site PRE-CONSTRUCTION MEETING with a representative from the Amesbury Conservation Commission (ACC), the project supervisor, the contractor responsible for work, the engineer, the wetland scientist, the Environmental Monitor and the applicant to ensure all of the Conditions of this Order are understood. Please contact the Amesbury Conservation Commission office at (978) 388-8110 ext. 317 at least one week prior to any activity to arrange the pre-construction meeting.**

37. Inform all contractors and subcontractors of the conditions and provisions of this Order. This Order shall be included in all construction contracts and subcontracts dealing with the work authorized by this order, and shall supercede other contract requirements.

CONSTRUCTION CONDITIONS:

38. Accepted engineering and Best Management Practices for construction standards shall be followed in the conduct of all work.

39. An adequate stockpile of erosion control materials shall be on site at all times for emergency or routine replacement and shall include materials to repair or replace silt fences, hay bales, erosion control blankets, stone riprap, filter berms or any other devices planned for use during construction.

40. Erosion control devices may be modified based upon experience at the site with the approval of the Conservation Agent and the oversight of the Environmental Monitor. All such devices shall be inspected, cleaned or replaced during construction and shall remain in place until such time as stabilization of all areas that may impact resource areas is permanent.

41. The Environmental Monitor shall inspect and direct the maintenance of all erosion and sedimentation control measures and drainage structures on site. Such inspection shall occur regularly (at least weekly); and immediately after 0.5 inches of precipitation. Any entrapped silt to be removed shall be removed to an area

outside of the buffer zone and wetland resource areas; silt fence and hay bales shall be replaced as necessary.

42. The Environmental Monitor shall conduct site inspections on site for compliance with this Order at a minimum of once per week and after rainstorms of 0.5 inches or more. These inspections shall include the inspection of wetland resource areas for siltation, turbidity, and / or other water quality impacts.

43. The Environmental Monitor shall submit a written report to the Conservation Agent at least ONCE a month, or otherwise arranged by the ACC, when construction activities are occurring on site and for as long thereafter as grounds remains unstablized. The Environmental Monitor must certify that, to the best of his / her knowledge and belief based on a careful site inspection, all work is being performed in compliance with this Order of Conditions. In the event that any work is not in compliance with this Order of Conditions, the Environmental Monitor must outline the steps necessary to bring the work into compliance.

44. These reports required in condition # 43 shall include what work is anticipated to be completed over the next reporting period (this will update the construction sequence required in condition # 27); current condition of erosion and sedimentation controls; describe any erosion or sedimentation repair and / or replacement; and describe any erosion or sedimentation problems and mitigation measures implemented. Such reports shall continue until the applicant has requested a less frequent reporting schedule or an end to reports and this request has been approved in writing by the Conservation Agent.

45. No alteration or activity shall occur beyond the limit or work as defined by the siltation barriers shown on the approved plans.

46. All equipment shall be inspected regularly for leaks. Any leaking hydraulic lines, cylinders or any other components shall be fixed immediately.

47. All waste generated by, or associated with, the construction activity shall be contained within the construction area, and away from the resource area. There shall be no stump dumps, burying of stumps or any material onsite. The applicant shall maintain a dumpster (or other suitable means) at the site for the storage and removal of such construction material off-site. However, no trash dumpsters will be allowed within 100-feet to any areas subject to protection under the Act or local bylaw.

48. Equipment storage and refueling operations shall be situated in an upland area at a distance greater than 100-feet from any resource area.

49. Any damage caused as a direct result of this project to any wetland resource areas shall be the responsibility of the applicant to repair, restore and / or replace. Sedimentation or erosion into these areas shall be considered damage to wetland

resource areas. If sediment reaches these areas the Commission shall be contacted and a plan for abatement of the problem and proposed restoration / mitigation measures shall be submitted for approval and implementation.

50. The applicant shall apply a dense native groundcover (seed mix) and shall perform vigilant monitoring of the invasive species for a minimum of three (3) growing seasons as part of the invasive species control program in the two proposed invasive species management areas in order to ensure successful invasive species control.

51. All wetland restoration areas, replacement areas, and planting areas within the buffer zone or riverfront areas shall be inspected monthly from May through October of each year for the presence of invasive species such as common reed (Phragmites australis), purple loosestrife (Lythrum salicaria), autumn olive (Elaegnus umbellate), and tartarian honeysuckle (Lonicera tatarica). Such species shall be removed through appropriate methods consistent with the Invasive Species Control Program submitted to the Commission dated June 25, 2007 or other methods as approved by the Conservation Agent. The results of these inspections and any actions taken shall be included in the monthly reports submitted by the Environmental Monitor.

52. Within thirty days of completion of construction on any given portion of the project, all disturbed areas in the completed portion of the site shall be permanently stabilized with vegetative cover, using sufficient top soil to assure long-term vegetative growth. Continued maintenance of this area, in a manner which assures permanent stabilization and precludes any soil erosion, shall be the responsibility of the applicant.

53. Subsequent to seeding, disturbed areas will be covered with a straw or hay mulch, erosion control blanket or netting, or other suitable material in order to provide an adequate surface protection until seed germination (hydro-seeding with an appropriate seed/mulch blend approved by the Environmental Monitor meets the terms of this condition). Preference should be given to erosion control netting with biodegradable stitching.

54. If soils are to be left in a disturbed state for longer than two months, a temporary cover of rye or other grass should be established to prevent erosion and sedimentation. All disturbed areas will be graded, loamed and seeded prior to November 1st of each year. If work continues past November 1st and the season is not appropriate for plant growth, exposed surfaces shall be stabilized by other appropriate erosions control measures, firmly anchored, to prevent soils from being washed by rain or flooding Outside of the growing season, exposed soil finish grade surfaces shall be stabilized with a layer of mulch hay until climate conditions allow for seeding.

55. Cement trucks and/or tools shall not be washed out in any wetland resource or buffer zone area, or into any drainage system. Any deposit of cement or

concrete products into a buffer zone or wetland resource area shall be immediately removed.

56. All stockpiles of soils within the buffer zone or the Riverfront Area existing for more than one day shall be surrounded by a row of entrenched silt fence and/or hay bales. Stockpiles to be on site for more than 30 days shall be seeded with annual rye or covered. There shall be no stockpiling outside the approved limit of work.

57. De-watering activities anticipated shall be supervised by the designated Environmental Monitor. This designee must be on-site while work specific to de-watering activities is initiated. Activities shall be monitored by the Environmental Monitor to ensure that sediment laden water is appropriately settled prior to discharge toward the wetland resource areas. No discharge of water is allowed directly into an area subject to jurisdiction under the MA Wetlands Protection Act and / or the Amesbury Wetlands Bylaw. If emergency de-watering requirements arise, the applicant shall submit a contingency plan to the Conservation Agent for approval, which provides for the pumped water to be contained in a settling basin, to reduce turbidity prior to discharge into a resource area.

58. Riprap material shall be clean and free of trash, tree stumps, roots, and other deleterious material.

59. The contractor will take all steps necessary to control dust onsite so that adverse effects on adjacent resource areas and / or habitat do not occur.

60. No excavated materials shall be disposed of in violation of any local, state, or federal laws.

61. Replication construction activities must be supervised by a wetland specialist who shall be a professional with experience in wetland replication, wetland hydrology and a working knowledge of botany. Such a person shall be retained to supervise and monitor construction of the wetland replication areas until the replication area meets the requirements of this Order of Conditions. This may be performed by the Environmental Monitor if they meet the above qualifications.

62. Written reports shall be submitted to the Conservation Commission one week following the construction of the replacement wetlands and restoration areas and at regular intervals of at least every three months until a Certificate of Compliance is issued. The reports shall describe the hydrologic conditions of the restoration area, wetland vegetation (species, coverage, and vigor) and any remedial work that may be necessary.

63. If any change is made in the above-described plan(s) which may or will alter an area subject to protection under the Wetlands Protection Act, 310 CMR 10.00 or

the Amesbury Wetland Protection Bylaw, the applicant shall inquire from the Commission or its agent, prior to implementing the change in the field, whether the change is significant enough to require the filing of a new Notice of Intent. Any errors in the plans or information submitted by the applicant shall be considered changes and the above procedures shall be followed.

STORMWATER MANAGEMENT CONDITIONS:

64. The applicant, owners, and their successors and assignees, shall maintain all culverts, collections basins, traps, outlet structures, subsurface storage areas, and other elements of the drainage system, in order to avoid blockages and siltations which might cause failure of the system and / or detrimental impacts to on-site or off-site resource areas, and shall maintain the integrity of vegetative cover on the site. This shall be a continuing condition in perpetuity.

65. Any pipe outfall and / or drainage swales that are identified during construction as requiring frequent remedial care shall be brought to the ACC's attention. Alternative methodologies may be warranted in such cases and should be proposed to the ACC.

66. All construction and post-construction stormwater management shall be conducted in accordance with supporting documents submitted with the Notice of Intent, the Department of Environmental Protection Stormwater Management Policy and as approved by the Commission in this Order of Conditions. The Long Term Stormwater Operation and Maintenance Measures included as Appendix E of the Stormwater Management Report and as revised per this Order and the snow management plan included in Appendix F as revised shall be maintained on site by the property manager.

AFTER CONSTRUCTION:

67. **Upon completion of the project, the applicant shall submit the following to the Amesbury Conservation Commission to request a Certificate of Compliance (COC):**
    a. WPA Form 8A- Request for a Certificate of Compliance;
    b. A letter from the applicant requesting the Certificate of Compliance with the following information included:
        i. Name and address of current landowner;
        ii. The name and address of the individual or other entity to whom the COC is to be issued;
        iii. The street address and lot number for the project; and DEP file #
        iv. An "As-Built" plan signed and stamped by a Registered Professional Engineer or Land Surveyor showing post-construction conditions within all areas under the jurisdiction of the Massachusetts Wetlands

Protection Act and the Amesbury Wetlands Protection Bylaw. This plan shall include at a minimum

1. All wetland resource area boundaries with associated buffer zones and regulatory setback areas taken from the plan(s) approved in this Order of Conditions;
2. Locations and elevations of all stormwater management conveyances, structures and best management designs, including foundation drains, constructed under this Order within any wetland resource area or buffer zone;
3. Distances from any structures constructed under this Order to wetland resource areas - "structures" include, but are not limited to, all buildings, septic system components, wells, utility lines, fences, retaining walls, and roads/driveways;
4. A line delineating the limit of work - "work" includes any filling, excavating and/or disturbance of soils or vegetation approved under this Order;
5. Wetland resource replication areas constructed under this Order.

v. A letter from a Registered Professional Engineer certifying compliance of the property with this Order of Conditions, and detailing any deviations that exist, and their potential effect on the project. A statement that the work is in "substantial compliance" with no detailing of the deviations shall not be accepted.

vi. Post-construction photographs demonstrating compliance with this Order, including established vegetation where required.

68. Erosion control devices shall remain in place and functioning properly until all exposed soils have been stabilized with final vegetative cover and the Commission and / or its Agent has authorized their removal.

PERPETUAL CONDITIONS:

The following conditions are ongoing and do not expire with the issuance of the Certificate of Compliance:

69. Stormwater management shall be conducted in accordance with supporting documents submitted with the Notice of Intent, the Department of Environmental Protection Stormwater Management Policy and as approved by the Commission in this Order of Conditions. The Long Term Stormwater Operation and Maintenance Measures included as Appendix E of the Stormwater Management Report and as revised per this Order shall be maintained on site by the property manager.

70. The applicant, owners, and their successors and assignees, shall maintain all culverts, collections basins, traps, outlet structures, subsurface storage areas, and other elements of the drainage system, in order to avoid blockages and siltations which might cause failure of the system and / or detrimental impacts to on-site or off-site resource areas, and shall maintain the integrity of vegetative cover on the site. This shall be a continuing condition in perpetuity.

71. Snow Removal and deicing shall be performed in accordance with the plans submitted with the Notice of Intent, and Appendix F of the Stormwater Management Report as revised per condition # 29. A copy of Appendix F shall be maintained on site.

72. Water quality to the adjacent Bordering Vegetated Wetlands (BVW) shall be not differ significantly following the completion of the project from the pre-development conditions. There shall be no sedimentation into the resource areas from discharge pipes or surface runoff leaving the site. This shall be a continuing condition in perpetuity.

73. Fertilizers utilized for landscaping and lawn care shall be slow release, low-nitrogen types (<5%), and shall not the used within 25-feet of a resource area. Pesticides and herbicides shall not be used within 100-feet of a wetland resource area except as part of the approved invasive species control plan. This condition shall survive the Order of Conditions and shall run with the title of the property.

Attachment E
Inspection Forms

Amesbury Heights

Site Inspection Form

Report No. ____

Page **1** of ____

Date / Time of Inspection: _____ Weather Conditions:_____

Recent Precipitation Event:_____

Construction Activities Underway:_____

_____

Status of Existing BMPs

Erosion Control Measure	Status – Cleaning or Repair Needed	Comments/Notes
Straw Wattle	☐yes ☐no	
Gravel Construction Entrance	☐yes ☐no	
Catch Basin Protection	☐yes ☐no	
Diversion Channels	☐yes ☐no	
Temporary Sediment Basins	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	

N/A – Not applicable

In the event of a spill refer to the Spill Response Procedure and contact appropriate agencies. Refer to Section 5.2 for Spill Prevention Plan and Response Procedures.

General Comments (Attached figures to show locations of concern):

Are additional Erosion Control Measures Needed?

☐ No ☐ Yes If yes, describe:_____

_____

Report No. .___

Are sediment/pollution discharges from the site present?

☐ No ☐ Yes If yes, describe:_____

_____

_____

Describe any corrective action required at this time: _____

_____

_____

_____

_____

_____

Notes:_____

_____

_____

_____

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above.

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

Stormwater Control Manager:_____ Date: _____

Qualifications: _____

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Attachment E
Inspection Forms

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Amesbury Heights

Site Inspection Form

Report No. ____

Page **1** of ____

Date / Time of Inspection: _____ Weather Conditions:_____

Recent Precipitation Event:_____

Construction Activities Underway:_____

_____

Status of Existing BMPs

Erosion Control Measure	Status – Cleaning or Repair Needed	Comments/Notes
Straw Wattle	☐yes ☐no	
Gravel Construction Entrance	☐yes ☐no	
Catch Basin Protection	☐yes ☐no	
Diversion Channels	☐yes ☐no	
Temporary Sediment Basins	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	
	☐yes ☐no	

N/A – Not applicable

In the event of a spill refer to the Spill Response Procedure and contact appropriate agencies. Refer to Section 5.2 for Spill Prevention Plan and Response Procedures.

General Comments (Attached figures to show locations of concern):

Are additional Erosion Control Measures Needed?

☐ No ☐ Yes If yes, describe:_____

_____

Report No. .___

Are sediment/pollution discharges from the site present?

☐ No ☐ Yes If yes, describe:_____

_____

_____

Describe any corrective action required at this time: _____

_____

_____

_____

_____

_____

Notes:_____

_____

_____

_____

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above.

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

Stormwater Control Manager:_____ Date: _____

Qualifications: _____

Attachment F
Corrective Action Form

Stormwater Construction Corrective Action Form

General Information			
Project Name			
NPDES Tracking No.		**Location**	

Non Compliance

	BMP / activity	Date Observed	Date Corrected	Corrective Action Needed and Notes
1				
2				
3				
4				

Corrective Action

Describe how any incidents of non-compliance have been addressed:

CERTIFICATION STATEMENT

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

Print name and title:

_____

Signature:_____

Date:_____

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Attachment G
SWPPP Amendment Log

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SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

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Attachment H
Subcontractor Certifications/Agreements

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SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company:	
Address:	
Telephone Number:	
Type of construction service to be provided:	
Signature:	
Title:	
Date:	

Attachment I
Grading and Stabilization Activities Log

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Grading and Stabilization Activities Log

Date Grading Activity Initiated	Description of Grading Activity	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

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Attachment J
Training Log

Stormwater Pollution Prevention Training Log

Project Name: _____

Project Location: _____

Instructor's Name(s): _____

Instructor's Title(s): _____

Course Location/Date: _____

Course Length (hours): _____

Stormwater Training Topic

Stormwater Training Topic: *(check as appropriate)*

- ❑ Sediment and Erosion Controls
- ❑ Emergency Procedures
- ❑ Stabilization Controls
- ❑ Inspections/Corrective Actions
- ❑ Pollution Prevention Measures

Specific Training Objective:

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Attachment K
Delegation of Authority

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Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

Name of person/position: _____

Company: _____

Address: _____

City, State, zip _____

Phone _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

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

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

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Attachment L
Historic Properties Documentation

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Attachment M
Safe DrinkingWater Act Class V Underground Injection Well Registration

THIS SECTION IS NOT APPLICABLE TO THE PROJECT.

Attachment N
Endangered Species Documentation

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Attachment O
Hazardous Waste Oil Spill Report

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Hazardous Waste / Oil Spill Report

Date: ___/___/_____ Time: _____ AM / PM

Exact location _____

Type of equipment:_____ Make:_____ Size:_____

License or S/N:_____ Weather Conditions:_____

On or near water ☐ Yes If yes, name of body of water:_____

☐ No

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

_____

_____

Measures taken to contain or clean up spill: _____

_____

_____

Amount of chemical / oil recovered: _____ Method:_____

Material collected as a result of clean up

_____ drums containing: _____

_____ drums containing: _____

_____ drums containing: _____

Location and method of debris disposal:_____

Name and address of any person, firm, or corporation suffering damages:_____

_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring:_____

_____

Spill reported to General Office by:_____Time: _____AM / PM

Spill reported to DEP / National Response Center by:_____

DEP Date: __/__/__ Time:_____AM / PM Inspector:_____

NRC Date: __/__/__ Time:_____AM / PM Inspector: _____

Additional comments: _____

_____

_____