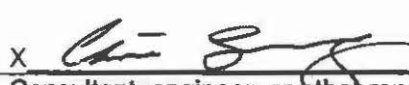
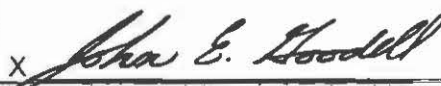


Vermont Wetland Section Wetland Application Database Form (AFFIX TO THE FRONT OF THE APPLICATION)

Applicant Name: Wilmington Water District		Representative Name: SVE/John E. Goodell, P.E.	
Town where project is located: Wilmington		County: Windham	
Project Location Description: Cross country between Ray Hill and Wilmington Heights Roads <small>911 Street Address or direction from nearest intersection</small>			
Project Summary: Replacement Water Transmission Main for Wilmington Water District			
Permit Type Requested (check all that apply) <input type="checkbox"/> Vermont General Permit Coverage <input type="checkbox"/> Wetland Determination <input checked="" type="checkbox"/> Vermont Wetland Permit			
Impact Calculations: Total up proposed impacts from wetland tables listed below			
Total Wetland Impact 905square feet (s.f.)		Total Buffer Zone Impact 5571square feet (s.f.)	
Total Wetland Clearing (qualified linear projects only) 0square feet (s.f.)		Total Buffer Zone Clearing (qualified linear projects only) 5100square feet (s.f.)	
Permit Fees: Make check payable to - State of Vermont			
Wetland Impact Fee: (\$0.75/sf) \$678.75		Administrative Fee: \$240	
Buffer Impact Fee: (\$0.25/sf) \$1,392.75		Total Check Amount: \$3,586.50	
Clearing Fee: (\$0.25/sf) \$1,275.00			
Existing Land Use Type: (check all that apply) <input type="checkbox"/> Forestry <input type="checkbox"/> Residential (Subdivision) <input type="checkbox"/> Industrial/ commercial <input type="checkbox"/> Agriculture <input type="checkbox"/> Transportation <input type="checkbox"/> Parks/Rec/Trail <input type="checkbox"/> Residential (Single Family) <input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Undeveloped			
Proposed Land Use Type: (check all that apply) <input type="checkbox"/> Forestry <input type="checkbox"/> Residential (Subdivision) <input type="checkbox"/> Industrial/ commercial <input type="checkbox"/> Agriculture <input type="checkbox"/> Transportation <input type="checkbox"/> Parks/Rec/Trail <input type="checkbox"/> Residential (Single Family) <input type="checkbox"/> Institutional <input checked="" type="checkbox"/> No Change			
Proposed Impact Type: (check all that apply) <input type="checkbox"/> Buildings <input checked="" type="checkbox"/> Utilities <input type="checkbox"/> Parking <input type="checkbox"/> Septic/Well <input type="checkbox"/> Stormwater <input type="checkbox"/> Driveway <input type="checkbox"/> Road <input type="checkbox"/> Parks/Path <input type="checkbox"/> Agriculture <input type="checkbox"/> Pond <input type="checkbox"/> Lawn <input type="checkbox"/> Dry Hydrant <input type="checkbox"/> Beaver dam alteration <input type="checkbox"/> Silviculture <input type="checkbox"/> Aesthetics <input type="checkbox"/> Other <input type="checkbox"/> No Impact			
Wetland 1: Waterline Crossing Wetland (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted) Location: Off Ray Hill Road, Wilmington, VT			
Wetland Type: POW - Open Water WL Size Class : > 20 acres			
Proposed Alterations			
Wetland Alteration:		Buffer Zone Alteration:	
Wetland Fill: 0s.f.	Temporary: 588s.f.	Temporary: 5571 s.f.	Wetland Alteration Type (check all that apply)
Permanent: 317s.f.	Permanent: 5100 s.f.		<input type="checkbox"/> Dredge <input type="checkbox"/> Drain
			<input checked="" type="checkbox"/> Cut Vegetation <input type="checkbox"/> Stormwater
			<input checked="" type="checkbox"/> Trench/Fill <input type="checkbox"/> Other
Mitigation			
Avoidance and Minimization (s.f. of wetland NOT impacted):		Wetland: >871000s.f.	Buffer Zone >300000s.f.
Wetland Mitigation: (s.f. Gained)		Buffer Zone Mitigation (s.f. Gained):	
Restoration 0s.f.	Enhancement 0s.f.	Restoration 0 s.f.	Enhancement 0s.f
Creation 0s.f.	Conservation 0s.f..	Creation 0s.f	Conservation 0s.f
Reason for Mitigation:		<input type="checkbox"/> Voluntary	
<input type="checkbox"/> Correction of Violation		<input type="checkbox"/> Mitigation to offset permit impacts	

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	Wilmington Water District	
1.2. Applicant Address	PO Box 1927	
1.3. Applicant Phone Number	802-464-3746	
1.4. Applicant Email	wilvtwaterdistrict@gmail.com	
1.5. Applicant Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date: 12-23-15</p> <p>X </p>	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, if other than the applicant or landowner	
2.1. Representative Name	John E. Goodell, P.E.	
2.2. Representative Address	PO Box 1818, Brattleboro, VT 05302	
2.3. Representative Phone Number	802-257-0561	
2.4. Applicant Email	jgoodell@sveassoc.com	
2.5. Representative Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date: 12-23-15</p> <p>X </p>	
3. Landowner	Landowner must sign the application. Use this space if landowner is different from the applicant	
3.1. Landowner Name	Robert Grinold	
3.2. Landowner Address	210 RTE 9 EAST, Wilmington, VT 05363	
3.3. Landowner Phone Number		
3.4. Landowner Email		
3.5. Landowner Easement	<p>Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section.</p> <p>The easement agreement for the re-located section of transmission main is currently being finalized and will be submitted as soon as possible.</p>	
3.6. Landowner Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date:</p> <p>X <u>BY EASEMENT</u></p>	
4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features.	

	Project area is approximately 600FT west of Ray Hill Road and a1475 ft south of the intersection of Mann Roadn and Ray Hill Road.		
5. Site Visit Date and Attendees	<p>Date of visit with District Wetlands Ecologist</p> <p>Vist 1: 10/9/14, Visit 2: 12/4/15</p>	<p>List people present for site visits including Ecologist, landowner, and representatives.</p> <p>Visit 1: Rebecca Chalmers(DEC), Chris Lavoy(WWD), John Goodell(SVE); Visit 2: Rebecca Chalmers(DEC), Todd Menees(DEC), Chris Lavoy(WWD), Peter Larkin(WWD), John Goodell(SVE)</p>	
6. Wetland Classification	<p>The wetland is a Class II wetland because (Choose one):</p> <p>The wetland is mapped on the VSWI map</p>		
7. Description of Entire Wetland or Wetland Complex	<p>Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.</p>		
7.1. Size of Wetland Complex in Acres	<p>Can be obtained from the Environmental Interest Locator Map for mapped wetlands</p> <p>24 acres +/-</p>		
7.2. Natural Community Types Present	<p>List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland</p> <p>60% softwood forested swamp, 30% scrub swamp, 10% emergent wetland.</p>		
7.3. Landscape Position	<p>Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc.</p> <p>Plateau in hillside & along a stream.</p>		
7.4. Wetland Hydrology	<p>Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds.</p> <p>Small stream & groundwater.</p> <p>Include answers to the following where appropriate:</p>		
7.4.1. Direction of flow	<p>For example: stream flows from north to south through the wetland complex.</p> <p>From north to south</p>		
7.4.2. Influence of hydrology on wetland complex	<p>For example: The river provides flood water to the wetland in the spring.</p> <p>Given the small size of the stream and associated drainage area, it appears the primary source of water is ground water.</p>		
7.4.3. Relation to the project area	<p>Distance between the project area and any nearby surface waters.</p> <p>There are no surface waters (ponds/lakes) in the area.</p>		
7.4.4. Hydroperiod	<p>Discuss frequency and duration of flooding, ponding, and/or soil saturation.</p> <p>Flooding is not likely given the small drainage area and ground slopes.</p> <p>Soils are likely saturated in many areas for much of the year.</p>		
7.5. Surrounding Landuse of the Wetland Complex	<p>For example: rural residential and forested; agricultural and undeveloped, Undeveloped</p>		
7.6. Relation to Other Nearby Wetlands	<p>Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question.</p> <p>There is a very small wetland area on a nearby jeep trail that will be used to access the project.</p>		
7.7. Pre-project Cumulative Impacts to the Wetland	<p>Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality.</p> <p>The existing WWD transmission main is partially exposed in a wetland area. Maintenance of the existing line consitutes fixing breaks and brush cutting to keep the route accessible.</p>		

<p>8. Description of Subject Wetland</p>	<p>Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.</p>	
<p>8.1. Context of Subject Wetland</p>	<p>Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. The project area for the relocated section of transmission main can be described as a small upland area that is surrounded by wetland areas. The subject wetland areas are along the edge of this upland area - where the pipe departs from the current pipe alignment.</p>	
<p>8.2. Wetland Landuse</p>	<p>For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Forest</p>	
<p>8.3. Wetland Vegetation</p>	<p>List dominant wetland community type and associated dominant plant species. Tree Stratum: Picea mariana (Black Spruce), Tsuga canadensis (Eastern Hemlock), Abies balsamea (Balsam Fir); Herb Stratum: Onoclea Sensibilis, Dryopteris Intermedia, Parathelypteris noveboracensis, Impatiens capensis, Rubus Hispidus, Spagnum Angustifolium</p>	
<p>8.4. Wetland Soils</p>	<p>Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description 31B Wilmington sandy loam, 0 to 8 percent slopes, very stony, A4 - Hydrogen Sulfide, A12-Thick Dark Surface</p>	
<p>8.5. Wetland Hydrology</p>	<p>Use descriptions from the ACOE Delineation Manual. Surface Water (A1), High Water Table(A2), Saturation(A3), Oxidized Rhizospheres on Living Roots(C3), Geomorphic Position(D2)</p>	
<p>8.6. Buffer Zone</p>	<p>Describe the buffer zone of the subject wetland including:</p>	
<p>8.6.1. General landuse</p>	<p>For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Forest</p>	
<p>8.6.2. Buffer vegetation</p>	<p>List community type and dominant plant species Tree Stratum: Picea, Acer Rubrum, Abies balsamea, Tsuga Canadensis, Herb Stratum: Abies balsamea, Picea rubens, Fagus grandifolia, Tsuga Canadensis, Pinus Strobus, Parathelypteris noveboracensis,</p>	
<p>8.6.3. Buffer soils</p>	<p>Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description 31B Wilmington sandy loam, 0 to 8 percent slopes, very stony</p>	
<p>9. Wetland Determination</p>	<p>If the application involves a wetland determination please answer the following. If not, skip to Section 10.</p>	
<p>9.1. Reason for Petition</p>	<p>Please choose one from the dropdown menu: Add a Section 4.6 presumed wetland to the VSWI map</p>	
<p>9.2. Previous Decisions</p>	<p>Please list all determinations and decisions, if any, issued by the Secretary, Panel or former Water Resources Board, pertaining to the wetland or buffer at issue:</p>	
<p>9.3. Narrative</p>	<p>Please provide any narrative to support the petition for a wetland determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions.</p>	

If the application is only for a Wetland Determination only, skip to Section 13

10. Project Description		
10.1. Overall Project	<p>Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family residence.</p> <p>Re-locate approximately 650 ft of water line to avoid working in an extended length of stream/wetland area. The work is part of an pipe replacement from Ray Hill Road to Wilmington Heights Road in Wilmington, VT.</p>	
10.2. Project Purpose	<p>For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system</p> <p>To replace the existing 4" cast iron transmission main, installed in approximately 1904, due to frequent leaks.</p>	
10.3. Acres Owned by Applicant	<p>Acreege of subject property.</p> <p>0</p>	
10.4. Acres Involved in the Project	<p>Acreege of area involved in the project.</p> <p>Approximately 650 ft of pipe needs to be relocated from the existing alignment, resulting in approximately 0.3 acres of construction area associated with this application. The total length of pipe to be replaced is 5200FT. The section of pipe to be replaced from Ray Hill Road to station 13+50 includes is a significant amount in a wetland area, however pipe replacement in this section has been previously determined to be an allowed use and not requiring of a wetland permit. Also, this section of pipe will be replaced in place by pulling a new pipe (6"HDPE) through the existing pipe using a process known as "pipe bursting". This process significantly reduces any site impacts, particularly when compared to standard open-cut methods.</p>	
11. Project Details	<p>Provide details regarding specific impacts to the wetland and buffer zone</p>	
11.1. Specific Impacts to Wetland and Buffer Zone	<p>List portions of the project that will specifically impact the wetland or buffer zone.</p> <p>Approximately 610FT of the 650FT of pipe to be re-located outside the original alignment is within the wetland buffer area. Impacts will include disturbance during construction and then future brush cutting to maintain an accessible route along the new line. During construction the maximum width of clearing will be 20ft (10ft each side of the pipe). Long term clearing/brush cutting will be limited to a 10ft width (5ft each side of the pipe).</p>	
11.2. Dimension Details	<p>Square footage of buildings, dimension of roads including fill footprint.</p> <p>610FT+/- of piping in wetland buffer, 40ft+/-FT in wetland/stream crossing area.</p>	
11.3. Bridges and Culverts	<p>Culvert circumference, length, placement and shapes, or bridge details.</p>	
11.4. Construction Sequence	<p>Describe any details pertaining to the worked planned in the wetland and buffer in terms of sequence or phasing that is relevant</p> <p>Wetland mats will be placed ahead of the work.</p>	
11.5. Stormwater Design	<p>List any stormwater permits obtained or applied for. Describe any stormwater and/or erosion controls proposed to prevent discharges to the wetland and buffer zone.</p> <p>A construction general permit (3-9020) in the low risk category has been obtained.</p>	
11.6. Permanent Demarcation of Limits of Impact	<p>Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses.</p> <p>No permanent boundaries are planned as future use is limited to maintaining a clear access route over the new pipe of not more than 10 ft wide. The pipe is to be marked at a minum of 300 ft intervals with blue fiberglass waterline marking posts Each post from Station 0+00 to Station 21+00 shall include a sign on the post that reads: "WETLAND AREA: TREE/BRUSH CUTTING</p>	

RESTRICTED TO 5FT EACH SIDE OF PIPE". See plan sheet 7.

<p>12. Wetland and Buffer Zone Impacts</p>								
<p>12.1. Wetland Impacts</p>	<p>Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.</p> <p>Totals</p> <table border="1" data-bbox="565 506 1386 604"> <tr> <td>Wetland Fill</td> <td>s.f.</td> </tr> <tr> <td>Temporary Wetland Impact</td> <td>588 s.f.</td> </tr> <tr> <td>Other Permanent Wetland Impact</td> <td>317 s.f.</td> </tr> </table> <p>Describe in detail the proposed impact.</p> <p>Impact consist of open-cut pipe installation, a stream crossing, and long term cutting of woody brush to keep a 10' wide clear path open.</p>	Wetland Fill	s.f.	Temporary Wetland Impact	588 s.f.	Other Permanent Wetland Impact	317 s.f.	
Wetland Fill	s.f.							
Temporary Wetland Impact	588 s.f.							
Other Permanent Wetland Impact	317 s.f.							
<p>12.2. Buffer Zone Impacts</p>	<p>Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.</p> <p>Totals</p> <table border="1" data-bbox="565 961 1386 1026"> <tr> <td>Temporary Buffer Impact</td> <td>5571 s.f.</td> </tr> <tr> <td>Permanent Buffer Impact</td> <td>5100 s.f.</td> </tr> </table> <p>Describe in detail the proposed impact.</p> <p>Construction of approximately 610 FT of water line, brush cutting in the future to maintain the line.</p>	Temporary Buffer Impact	5571 s.f.	Permanent Buffer Impact	5100 s.f.			
Temporary Buffer Impact	5571 s.f.							
Permanent Buffer Impact	5100 s.f.							
<p>12.3. Cumulative Impacts</p>	<p>List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project.</p> <p>Initial ground disturbance during construction, annual or semi-annual brush trimming to keep the corridor open. These activities should have small, if any, impacts on the overall wetland/buffer function.</p>							
<p>12.4. Avoidance and Minimization</p>	<p>Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.</p>							
<p>12.4.1. Avoidance</p>	<p>Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design.</p> <p>No, the relocated section of pipe must connect to the existing pipeline. The proposed route significantly reduces the amount of pipe to be replaced in the most sensitive wetland areas.</p>							
<p>12.4.2. Minimization</p>	<p>If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts</p> <p>Yes, the relocated pipe route was chosen to minimize impacts and techniches such as use of wetland mats will be used.</p>							
<p>12.4.3. Mitigation</p>	<p>If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse</p>							

	<p>impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts.</p> <p>Relocating the water line significantly reduces the impact on the most sensitive areas of the wetland and by it's purpose mitigates wetland and stream impacts - at additional cost to the WWD. Impacts, will be minimal after construction.</p>	
<p>12.4.4. Compensation</p>	<p>Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here.</p> <p>Relocating the water line out of the wetland and stream area, at additional cost to the WWD, is the reason this permit is required.</p>	
<p>13. Supporting materials</p>	<p>Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.</p>	
<p>13.1. Location map</p>	<p>Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum.</p> <p>See attached ANR Natural Resources map.</p>	
<p>13.2. Site Plans</p>	<p>List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization.</p> <p>Plan Set Cover Sheet - Water System Improvements, By SVE Associates, Decemeber 2015 Sheet 1: Transmission Main Plan Overview, By SVE Associates, Last Revised 2-15-16 Sheet 3: Transmission Main Plan and Profile, By SVE Associates, Last Revised 2-25-16 Sheet 7: Transmission Main Details and Notes, By SVE Associates, Last Revised 2-25-16 Sheet 8: Erosion Control Details, By SVE Associates, Last Revised 9-9-15 Sheet 9: Erosion Control Details, By SVE Associates, Plan Date 6-1-15, No Revisions</p>	
<p>13.3. ACOE Delineation Forms</p>	<p>List by author, location, and date. Required only for Individual Permits.</p> <p>Russell Huntley, PWS - Station 19+00 WET Xing - 10-12-15 Russell Huntley, PWS - Station 19+00 UPL - 12-23-15 Russell Huntley, PWS - Station 18+00 UPL - 12-23-15 Russell Huntely, PWS - Jeep Trail xing - 12-23-15</p>	
<p>13.4. Other Supporting Documents</p>	<p>Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible wetland submittal for determinations; etc.</p> <p>NRCS Web Soil Survey, Stream Crossing Photo Summary, Final Easements for re-located section of main are expected very soon and will be submitted once complete. Please see cover letter request to proceed with review of this application while this is being completed.</p>	
<p>13.5. List of Abutters (Neighbors with land adjoining wetland or buffer zone)</p>	<p>Attach list of names and mailing addresses or submit as word mailing document.</p> <p>TAYLOR, PHILIP JAMES & SULLIVAN, LISA F PO BOX 547 WILMINGTON VT 05363-0547</p> <p>BERNARD, ARNOLD & LINDA 332 RAY HILL RD WILMINGTON VT 05363</p> <p>ALDRICH, YVONNE PO BOX 875 WILMINGTON VT 05363-0875</p>	

DOLAN, JOHN H
 PO BOX 141 WILMINGTON VT 05363-0141

GRINOLD, ROBERT
 210 RTE 9 EAST WILMINGTON VT 05363

13.5.1. Newspaper Notification

If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. *****NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper.**

14. Check Which Functions are Present in the Subject Wetland and in the Wetland Complex.

Wetland Function Summary: (if more than one wetland use supplemental wetland sheets)

Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex
Flood/Storm Storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RTE Species	<input type="checkbox"/>	<input type="checkbox"/>
Surface & Groundwater Protection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Education & Research	<input type="checkbox"/>	<input type="checkbox"/>
Fish Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Recreation/Economic	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Open Space/Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>
Exemplary Natural Community	<input type="checkbox"/>	<input type="checkbox"/>	Erosion Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

15. Coverage under Vermont General Wetland Permit

If applying for an Individual Vermont Wetland Permit or Determination, please proceed to number 16 and answer the remaining application questions.

If applying for Coverage under the Vermont General Wetland Permit, please complete question 15.1 prior to submitting application.

15.1. VWP Vermont General Permit eligibility checklist

If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application:

- The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit
- The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit
- The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules.
- The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values.
- All impacts have been avoided and minimized to the greatest extent possible.
- The wetland complex is not significant for Function 5.5 Exemplary

	<p>Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat.</p> <p><input type="checkbox"/> The activity is not located in or adjacent to a vernal pool, fen, or bog.</p> <p><input type="checkbox"/> The wetland is not at or above 2,500' in elevation (headwaters wetland).</p> <p><input type="checkbox"/> The project is not located in a Class I wetland or associated buffer zone.</p> <p><input type="checkbox"/> The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.</p>	
<p>Stop here if applying for Coverage under the Vermont General Wetland Permit</p>		

<p>Complete the following Functions and Values checklist if applying for an Individual Wetland Permit and/or a Wetland Determination</p>		
<p>Functions and Values</p>	<p>For each Function and Value, first evaluate the entire wetland or wetland complex and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures.</p> <p>If more than one wetland complex is involved, use the Supplemental Wetland Forms.</p>	
<p>16. Storage for Flood Water and Storm Runoff</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Constricted outlet or no outlet and an unconstricted inlet. <input checked="" type="checkbox"/> Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration. <input checked="" type="checkbox"/> If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods. <input type="checkbox"/> Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water. <input type="checkbox"/> Hydrologic or hydraulic study indicates wetland attenuates flooding. <p>If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.</p> <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless 	

	<p>the upstream storage is temporary such as a beaver impoundment).</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland. <input type="checkbox"/> Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures. <input type="checkbox"/> Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. <input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level. <ul style="list-style-type: none"> <input type="checkbox"/> History of downstream flood damage to public or private property. <input type="checkbox"/> Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function. <ul style="list-style-type: none"> <input type="checkbox"/> 1. Developed public or private property. <input type="checkbox"/> 2. Stream banks susceptible to scouring and erosion. <input type="checkbox"/> 3. Important habitat for aquatic life. <input checked="" type="checkbox"/> The wetland is large in size and naturally vegetated. <input type="checkbox"/> Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland. <ul style="list-style-type: none"> <input type="checkbox"/> 1. A large amount of impervious surface in urbanized areas. <input type="checkbox"/> 2. Relatively impervious soils. <input type="checkbox"/> 3. Steep slopes in the adjacent areas. 	
<p>16.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>The subject wetland contributes to storage of flood water and storm runoff by slowing of the runoff as it passes through vegetation and spreading of runoff that comes of the adjacent forest slopes into the gentle slopes in the wetland areas.</p> <p>The wetland area near Station 19+00 includes a small stream channel that passes through the wetland. The drainage area of this stream is relatively small (67 Ac +/-) and includes a well defined stream channel. The wetland area around this stream slows surface flow to the stream and will provide flood storage capacity when the bankfull capacity is exceeded.</p>	
<p>16.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>This project seeks to relocate the existing pipe that is located in the wetland and largely under the existing stream stream channel to an alignment that is outside of the wetland except for a short section between approximately Sta 18+60 and Sta 19+00. The relocated section is within the 50ft wetland buffer. The project is a significant improvement from the existing layout with regard to this function, and will have no undue adverse impact when</p>	

considered as an independent project for the following reasons:

1. The short term ground disturbance during construction will be protected with suitable erosion controls and quickly re-stabilized.
2. Long term impacts consist of cutting brush on a annual or semi-annual basis to keep large trees from growing up on the pipe route only. This cutting will not significantly change the flow rate of stormwater across this buffer area as the slope will not be changed significantly and the surface will ultimately return to a typical forest floor.
3. Once installed, the pipe route should see very little activity and the only reason for future disturbance would be to affect repairs, of which it is a goal of this project that no repairs are required for a very long time.

17. Surface and Ground Water Protection

- Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.
- Constricted or no outlets.
 - Low water velocity through dense, persistent vegetation.
 - Hydroperiod permanently flooded or saturated.
 - Wetlands in depositional environments with persistent vegetation wider than 20 feet.
 - Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
 - Presence of seeps or springs.
 - Wetland contains a high amount of microtopography that helps slow and filter surface water.
 - Position in the landscape indicates the wetland is a headwaters area.
 - Wetland is adjacent to surface waters.
 - Wetland recharges a drinking water source.
 - Water sampling indicates removal of pollutants or nutrients.
 - Water sampling indicates retention of sediments or organic matter.
 - Fine mineral soils and alkalinity not low.
 - The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

Check box if any of the following conditions apply that may

	<p>indicate the wetland provides this function at a <i>lower</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake. <input type="checkbox"/> Presence of ditches or channels that confine water and restrict contact of water with vegetation. <input type="checkbox"/> Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. <input type="checkbox"/> Current use in the wetland results in disturbance that compromises this function. <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is adjacent to a well head or source protection area, and provides ground water recharge. <input type="checkbox"/> The wetland provides flows to Class A surface waters. <input type="checkbox"/> The wetland contributes to the protection or improvement of water quality of any impaired waters. <input checked="" type="checkbox"/> The wetland is large in size and naturally vegetated. 	
<p>17.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>The subject wetland filters and slows surface runoff, allowing for nutrient uptake by vegetation and increased infiltration to groundwater. These functions improve groundwater and surface water quality.</p>	
<p>17.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>Relocating the existing pipe from in the wetland/under the stream to a parallell route in the wetland buffer will consistute an improvement for this function as long term maintenance impacts will substantially less.</p> <p>Taken as an independent project (without consideration of the existing conditions), the project will have no undue adverse impact for the following reasons:</p> <ol style="list-style-type: none"> 1. Construction disturbance will be short in duration and rapidly re-stabilized. 2. Long term impacts will be those associated with the clearing of brush over the pipe and will have no undue adverse impact on this criteria as the area is narrow and spread out (linear project) and future ground disturbance is not required to complete the necessary brush cutting. 3. Future activity will be very limited, allowing the tree canopys to rapidly fill the area of trees that were cut. 	
<p>18. Fish Habitat</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <input checked="" type="checkbox"/> Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut 	

	<p>banks; source of terrestrial insects as fish food; or streambank stability.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers. <input type="checkbox"/> Documented or professionally judged spawning habitat for northern pike. <input type="checkbox"/> Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species. <input checked="" type="checkbox"/> The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources. 	
<p>18.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>The subject wetland contributes to this function by shading of the stream to keep stream temperatures down, providing habitat for insects, amphibians or other food sources for fish downstream, and reducing stream impacts of larger storm events by slowing and filtering storm runoff.</p>	
<p>18.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>The relocation of the existing pipe out of the stream/wetland area (except for the proposed stream crossing) will significantly reduce impacts for this function as brush/tree cutting along the current route directly affects the shade levels along the stream.</p> <p>Taken as an independent project, the relocated pipe route will have no undue adverse impact for the following reasons:</p> <ol style="list-style-type: none"> 1. Construction disturbance for the stream crossing area will be short in duration (1 day for the crossing) and will utilize appropriate water diversion and erosion control methods. 2. Given the small stream width, the proposed perpendicular pipe crossing of the stream, the limited clearing needed to construct the pipe, and the surrounding forest canopy, the short term impact on this function will be very limited and not undue. 3. Long term impacts will be limited to ensuring large brush/trees do not grow up over the pipe route. The tree canopy can be expected to fill openings due to tree cutting and adjacent areas of brush will be allowed to grow up and can be expected to replicate the performance of the existing condition with regard to this function. 	
<p>19. Wildlife Habitat</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <input type="checkbox"/> Provides resting, feeding staging or roosting habitat to 	

support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands.

- Habitat to support one or more breeding pairs or broods of waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer zone.
- Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees.
- Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.
- Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.
- Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
- Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.
- Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
- Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:
 - 1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
 - 2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
 - 3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.

- Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance. Good habitat for these types of species includes large marsh systems with open water components.
- Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle, Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.
- Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.
- Meets four or more of the following conditions indicative of wildlife habitat diversity:
 - 1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;
 - 2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;
 - 3. Located adjacent to a lake, pond, river or stream;
 - 4. Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land;
 - 5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;
 - 6. One of the following:
 - i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;
 - ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;
 - iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;
- Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and
- Contains evidence that it is used by wetland dependent wildlife species.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland

	<p>provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.</p> <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools and seeps are generally small in size, so this does not apply). <input type="checkbox"/> The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use. <input type="checkbox"/> The current use in the wetland results in frequent cutting, mowing or other disturbance. <input type="checkbox"/> The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species. <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland complex is large in size and high in quality. <input checked="" type="checkbox"/> The habitat has the potential to support several species based on the assessment above. <input type="checkbox"/> Wetland is associated with an important wildlife corridor. <input type="checkbox"/> The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist. 	
<p>19.1.Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>The subject wetland provides suitable habitat, refuge, and a source of food for certain amphibians, reptiles and mammals including White Tailed Deer, Black Bear, Bobcat and others due to the wetland's location in a forested mosaic. While the wetland does not include an open water/marsh area, there is a small, intermittent stream that flows through the wetland that expands the range and type of wildlife that may frequent the area. With regard to the larger mammals (Blackbear, Bobcat) the suitability of the area is reduced by the surrounding developments of Ray Hill Road to the north and east and parts of the Chimney Hill Subdivision to the east and south.</p>	
<p>19.2.Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>The relocation of the existing pipe from the wetland/stream area to the proposed route through the wetland buffer and wetland at the stream crossing will reduce impacts to this function by reducing impacts in the wetland/stream area.</p> <p>Taken as an independent project, the relocated pipe route will have no undue adverse impact for the following reasons:</p> <ol style="list-style-type: none"> 1. Construction impacts will be relatively short in duration, will be promptly stabilized, and will have a very small impact area near the stream. 	

2. Long term impacts are those associated with annual or semi-annual brush cutting along the pipe route. The open corridor after brush cutting is of limited size and will not result in increased human activity beyond current levels.

3. Long term impacts associated with the presence of the transmission main already exist and will be reduced by this project due to less brush cutting in the wetland area and reduced likelihood that the pipe will need repairs

20. Exemplary Wetland Natural Community

- Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.
 - Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function.

The wetland is also likely to be significant if any of the following conditions are met:

- Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department.
- Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to:
 - Deep peat accumulation reflecting a long history of wetland formation;
 - Forested wetlands displaying very old trees and other old growth characteristics;
 - A wetland natural community that is at the edge of the normal range for that type;
 - A wetland mosaic containing examples of several to many wetland community types; or
 - A large wetland complex containing examples of several wetland community types.

List species or communities of concern:

Non identified

20.1. Subject Wetland

Please explain how the subject wetland contributes to the function listed above

The subject wetland does not contribute in a meaningful way to this function as it is a fairly common example of a forested wetland without open water/marsh with no evidence of significant ecological functions that contribute to Vermont's natural heritage such as old growth trees or deep peat accumulations.

20.2. Statement of no undue

Please explain how the proposed project will not result in any undue,

<p>adverse impact</p>	<p>adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Since this is not present at a significant level, the proposed pipe relocation, from a wetland area to the wetland buffer area will have no undue adverse impact on this function.</p>	
<p>21. Rare, Threatened, and Endangered Species Habitat</p>	<p><input type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <p><input type="checkbox"/> Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function.</p> <p>The wetland is also likely to be significant if any of the following apply:</p> <p><input type="checkbox"/> There is credible documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists;</p> <p><input type="checkbox"/> There is credible documentation that threatened or endangered species have been present in past 10 years;</p> <p><input type="checkbox"/> There is credible documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department;</p> <p><input type="checkbox"/> There is credible documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank).</p> <p>List name of species and ranking:</p>	
<p>21.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above Based on the readily available information of the Vermont Natural Resource Atlas, the subject wetland does not appear to provide this function as there are no rare, threatened or endangered species shown along or near the route of the pipe.</p>	
<p>21.2. Statement of no adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The proposed project will have no undue adverse impact on this function for the following reasons:</p> <ol style="list-style-type: none"> 1. No rare, threatened, or endangered species have been identified in the project area. 2. The limited size, limited time of disruption, and limited long term disturbance/disruption associated with the project are likely to keep any impacts to unidentified or unknown species in the area from being undue or adverse. 	
<p>22. Education and Research in</p>	<p><input type="checkbox"/> Function is present and likely to be significant: Any of the</p>	

<p>Natural Sciences</p>	<p>following characteristics indicate the wetland provides this function.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Owned by or leased to a public entity dedicated to education or research. <input type="checkbox"/> History of use for education or research. <input type="checkbox"/> Has one or more characteristics making it valuable for education or research. 	
<p>22.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above The subject wetland is not known to provide this function a meaningful level.</p>	
<p>22.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. This project will have no undue adverse impact on current or future use of the wetland for education or research.</p>	
<p>23. Recreational Value and Economic Benefits</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. <ul style="list-style-type: none"> <input type="checkbox"/> Used for, or contributes to, recreational activities. <input type="checkbox"/> Provides economic benefits. <input type="checkbox"/> Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law. <input type="checkbox"/> Used for harvesting of wild foods. <p>Comments:</p>	
<p>23.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above The primary recreational function associated with the subject wetland area is hunting by the landowner. The area is private land, though it is not posted.</p>	
<p>23.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. This project will have no undue adverse impact on this item and will not require any changes to current usage.</p>	
<p>24. Open Space and Aesthetics</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <ul style="list-style-type: none"> <input type="checkbox"/> Can be readily observed by the public; and <ul style="list-style-type: none"> <input type="checkbox"/> Possesses special or unique aesthetic qualities; or <input type="checkbox"/> Has prominence as a distinct feature in the surrounding landscape; <input type="checkbox"/> Has been identified as important open space in a municipal, regional or state plan. <p>Comments:</p>	

<p>24.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above This function is not present at a significant level as the subject wetland area is forested and has significant understory growth.</p>	
<p>24.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The project will have no undue adverse impact on this item as the function is not present at a significant level.</p>	
<p>25. Erosion Control through Binding and Stabilizing the Soil</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Erosive forces such as wave or current energy are present and any of the following are present as well: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. <input type="checkbox"/> Good interspersion of persistent emergent vegetation and water along course of water flow. <input type="checkbox"/> Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. <p>What type of erosive forces are present:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lake fetch and waves <input type="checkbox"/> High current velocities: <input type="checkbox"/> Water level influenced by upstream impoundment <p>If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level. <ul style="list-style-type: none"> <input type="checkbox"/> The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force. <input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level. <ul style="list-style-type: none"> <input type="checkbox"/> The stream contains high sinuosity. <input type="checkbox"/> Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor. 	
<p>25.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above Vegetation in the subject wetland stabilizes the soil and serves to trap and filter sediment from from the adjacent forest slopes. The subject wetland serves to moderate stormwater runoff flows which helps reduce downstream flow velocities and thereby reduce the potential for erosive effects downstream.</p>	
<p>25.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The relocation of the pipe route out of the wetland/stream area and into an</p>	

upland area within the wetland's 50' buffer will improve the subject wetland's performance of this function by reducing brush/tree cutting and disturbance in the wetland and along the stream area.

Taken as an independent project, the proposed pipe route will have no undue adverse impact on this function for the following reasons:

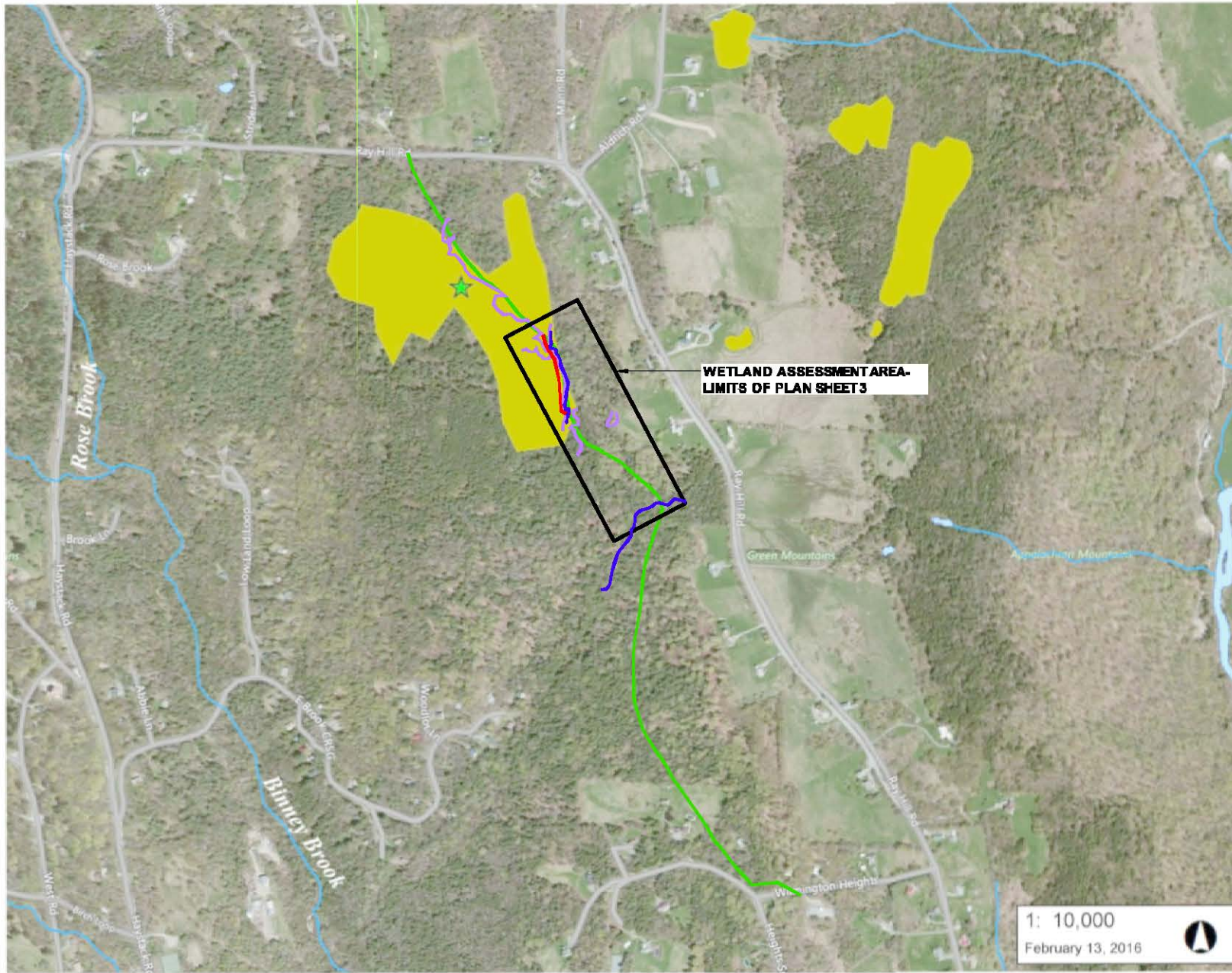
1. Construction disturbance will be limited in duration and well stabilized using appropriate erosion control methods as shown on the project plans.
2. Long term impacts consists of brush cutting to keep the pipe route open, but will not require ground disturbance.
3. Installation of the new line will reduce the need for future excavation & repair of the line.

All Applications Should be Mailed To:

**Vermont Wetlands Program
 Watershed Management Division
 One National Life Drive, Main 2
 Montpelier, VT 05620-3522**

Staff To Complete

Wetland Project Number:		
Wetland Project Name:		DEC ID#:
Date Application Received:		
Request for Information Date:		Information Received Date:
Request for Information Date:		Information Received Date:
Date Application Complete:		Distribution Complete Date:
Notice Begin Date:		Notice End Date:
Final Action Date:		Public Meeting Date:
Check#	Check Amount	Date Check Received
Check#	Check Amount	Date Check Received



**WETLAND ASSESSMENT AREA -
LIMITS OF PLAN SHEET 3**

LEGEND

- Vernal Pools Confirmed - AEA
- Vernal Pools Unconfirmed - AI
- Wetland Projects
- Wetlands - VSWI**
- Class 1 Wetland
- Class 2 Wetland
- Wetlands Advisory Layer
- Rare Threatened Endangered**
- Threatened or Endangered
- Rare
- Significant Natural Community
- Uncommon Species and Other**
- Animal
- Plant
- Natural Community
- Indiana Bat Hibernacula
- Indiana Bat Summer Range**
- Observed
- Potential
- Waterbody
- Stream
- Town Boundary
- WETLAND DELINEATION
- STREAM LOCATION FROM FIELD SURVEY
- EXISTING PIPE TO BE REPLACED
- PIPELINE SECTION TO BE RELOCATED

1: 10,000
February 13, 2016

508.0 0 254.00 508.0 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere
© Vermont Agency of Natural Resources
1" = 833 Ft. 1cm = 100 Meters
THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

NOTES

Map created using ANR's Natural Resources Atlas

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wilmington Water District City/County: Wilmington/Windham Sampling Date: 12/23/2015
 Applicant/Owner: Wilmington Water District State: VT Sampling Point: 18+00 UPL
 Investigator(s): R. Huntley Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): _____ Slope (%): 15%
 Subregion (LRR or MLRA): LRR R Lat: 42-53-11.7 Long: 72-53-01.8 Datum: NAD 83
 Soil Map Unit Name: 31B Wilmington Sand Loam 0-8% Very Stony NWI classification: PF04B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <p align="center">Data Plot located up hill and 20' westerly of flag D7.</p>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: <u>No hydrology indicators present</u>	

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wilmington Water District City/County: Wilmington/Windham Sampling Date: 12/23/2015
 Applicant/Owner: Wilmington Water District State: VT Sampling Point: 19+00 UPL
 Investigator(s): R. Huntley Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): _____ Slope (%): 10%
 Subregion (LRR or MLRA): LRR R Lat: 42-53-10.9 Long: 72-53-00.0 Datum: NAD 83
 Soil Map Unit Name: 18B Worden Loam 3-8% Very Stony NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Data Plot in upland adjacent to jeep trail located 52' from flag A10 and 16' from flag A9	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) ___ Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: 19+00 UPL

Tree Stratum (Plot size: <u>30'd</u>)	Absolute % Cover	Dominant Species?	Indicator Status																			
1. <u>Picea rubens</u>	71	<input checked="" type="checkbox"/>	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)																		
2. <u>Acer Rubrum</u>	28	<input checked="" type="checkbox"/>	FAC																			
3. <u>Abies balsamea</u>	1		FAC																			
4. _____																						
5. _____																						
6. _____																						
7. _____																						
<u>50/20</u>	<u>100</u>	= Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>107</u></td> <td>x 3 = <u>321</u></td> </tr> <tr> <td>FACU species <u>81.5/10.5</u></td> <td>x 4 = <u>326/42*</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>188.5</u> (A)</td> <td><u>647</u> (B)</td> </tr> <tr> <td style="text-align:center;"><u>117.5</u></td> <td style="text-align:center;"><u>363</u></td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.43/3.08</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>107</u>	x 3 = <u>321</u>	FACU species <u>81.5/10.5</u>	x 4 = <u>326/42*</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>188.5</u> (A)	<u>647</u> (B)	<u>117.5</u>	<u>363</u>	Prevalence Index = B/A = <u>3.43/3.08</u>	
Total % Cover of:	Multiply by:																					
OBL species <u>0</u>	x 1 = <u>0</u>																					
FACW species <u>0</u>	x 2 = <u>0</u>																					
FAC species <u>107</u>	x 3 = <u>321</u>																					
FACU species <u>81.5/10.5</u>	x 4 = <u>326/42*</u>																					
UPL species <u>0</u>	x 5 = <u>0</u>																					
Column Totals: <u>188.5</u> (A)	<u>647</u> (B)																					
<u>117.5</u>	<u>363</u>																					
Prevalence Index = B/A = <u>3.43/3.08</u>																						
Sapling/Shrub Stratum (Plot size: <u>15'd</u>)																						
1. <u>Abies balsamea</u>	3	<input checked="" type="checkbox"/>	FAC																			
2. <u>Fagus grandifolia</u>	10.5	<input checked="" type="checkbox"/>	FACU																			
3. _____																						
4. _____																						
5. _____																						
6. _____																						
7. _____																						
<u>6.75/2.7</u>	<u>13.5</u>	= Total Cover																				
Herb Stratum (Plot size: _____)																						
1. <u>Abies balsamea</u>	75		FAC																			
2. _____																						
3. _____																						
4. _____																						
5. _____																						
6. _____																						
7. _____																						
8. _____																						
9. _____																						
10. _____																						
11. _____																						
12. _____																						
<u>75</u>	= Total Cover																					
Woody Vine Stratum (Plot size: _____)																						
1. _____																						
2. _____																						
3. _____																						
4. _____																						
_____	= Total Cover																					
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																						
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																						
Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																						
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																						
Remarks: (Include photo numbers here or on a separate sheet.) Prevalance index calculated both with and without Picea rubens (see 2012 Regional Supplement, 5. Problematic hydrophytic vegetation, No.5.a(1) and still keys out as Non-hydrophytic vegetation.																						

SOIL

Sampling Point: 19+00 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 2.5/2						O	Organic
2-5	7.5YR 2.5/1						L	V dark A
5-18+	7.5YR 3/4						SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type: _____ Depth (inches): _____	

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 18+00 UPL

Tree Stratum (Plot size: <u>30'd</u>)	Absolute % Cover	Dominant Species?	Indicator Status																			
1. <u>Picea</u>	38	<input checked="" type="checkbox"/>	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																		
2. <u>Acer Rubrum</u>	10.5		FAC																			
3. <u>Abies balsamea</u>	36	<input checked="" type="checkbox"/>	FAC																			
4. <u>Tsuga Canadensis</u>	10.5		FACU																			
5. _____																						
6. _____																						
7. _____																						
<u>47.5/19</u>	<u>95</u>	= Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>107</u></td> <td>x 3 = <u>321</u></td> </tr> <tr> <td>FACU species <u>22.5/10.5</u></td> <td>x 4 = <u>490/42</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>229.5</u> (A)</td> <td><u>811</u> (B)</td> </tr> <tr> <td style="text-align:center;"><u>117.5</u></td> <td style="text-align:center;"><u>363</u></td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.53/3.08</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>107</u>	x 3 = <u>321</u>	FACU species <u>22.5/10.5</u>	x 4 = <u>490/42</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>229.5</u> (A)	<u>811</u> (B)	<u>117.5</u>	<u>363</u>	Prevalence Index = B/A = <u>3.53/3.08</u>	
Total % Cover of:	Multiply by:																					
OBL species <u>0</u>	x 1 = <u>0</u>																					
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Column Totals: <u>229.5</u> (A)	<u>811</u> (B)																					
<u>117.5</u>	<u>363</u>																					
Prevalence Index = B/A = <u>3.53/3.08</u>																						
Sapling/Shrub Stratum (Plot size: _____)																						
1. _____																						
2. _____	10.5	<input checked="" type="checkbox"/>	FACU																			
3. _____																						
4. _____																						
5. _____																						
6. _____																						
7. _____																						
_____ = Total Cover																						
Herb Stratum (Plot size: <u>3'd x 4</u>)																						
1. <u>Abies balsamea</u>	50	<input checked="" type="checkbox"/>	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
2. <u>Picea rubens</u>	50	<input checked="" type="checkbox"/>	FACU																			
3. <u>Fagus grandifolia</u>	10.5		FACU																			
4. <u>Tsuga Canadensis</u>	10.5		FACU																			
5. <u>Pinus strobus</u>	3		FACU																			
6. <u>Parathelypteris noveboracensis</u>	10.5		FAC																			
7. _____																						
8. _____																						
9. _____																						
10. _____																						
11. _____																						
12. _____																						
<u>67.5/27</u>	<u>135</u>	= Total Cover																				
Woody Vine Stratum (Plot size: _____)																						
1. _____																						
2. _____																						
3. _____																						
4. _____																						
_____ = Total Cover																						
Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																						
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																						
Remarks: (Include photo numbers here or on a separate sheet.) Prevalance index calculated both with and without Picea rubens, tsuga canadensis & Pinus strobus (see 2012 Regional Supplement, 5. Problematic hydrophytic vegetation, No.5.a(1) and still keys out as Non-hydrophytic vegetation.																						

SOIL

Sampling Point: 18+00 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 2/1						L	
9-10	10YR 4/1						L	Albic
10-12	7.5YR 3/2						L	
12-18	7.5YR 4/6						L	
18+	10YR 3/2						L	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wilmington Water District City/County: Wilmington/Windham Sampling Date: 10/12/2015
 Applicant/Owner: Wilmington Water District State: VT Sampling Point: 19+00 Wet xing
 Investigator(s): R.Huntley Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Drainage Swale Local relief (concave, convex, none): _____ Slope (%): 3%
 Subregion (LRR or MLRA): LRR R Lat: 42-53-10.9 Long: 72-53-00.8 Datum: NAD 83
 Soil Map Unit Name: 31B Wilmington Sand Loam 0-8% Very Stony NWI classification: PF04B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Data plot located 19' from flag A10 and 31' from flag D3 on low ground adjacent to the stream flowing through the area. Limit of wetlands are bank of the stream on the westerly side of the wetlands and the limit of flagged jurisdictional areas on the easterly side.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) ___ Water Marks (B1) ___ Sediment Deposits (B2) ___ Drift Deposits (B3) ___ Algal Mat or Crust (B4) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Sparsely Vegetated Concave Surface (B8)	___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13) ___ Marl Deposits (B15) ___ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) ___ Presence of Reduced Iron (C4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Thin Muck Surface (C7) ___ Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0-6" *</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0-2"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 * Surface water in stream channel, free water observed at 2" in test pit at data point. soils are saturated to surface and have some surface water >1" deep in depressions.

VEGETATION – Use scientific names of plants.

Sampling Point: 19+00 Wet xing

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: _____)																		
1. <u>Picea mariana</u>	59	x	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. <u>Tsuga canadensis</u>	33	x	FACU															
3. <u>Abies balsamea</u>	8		FACW															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
50/20	100	= Total Cover																
Sapling/Shrub Stratum (Plot size: _____)																		
1. _____				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>75</u></td> <td>x 1 = <u>75</u></td> </tr> <tr> <td>FACW species <u>102</u></td> <td>x 2 = <u>204</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>83</u></td> <td>x 4 = <u>332</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>290</u> (A)</td> <td><u>701</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.41</u>	Total % Cover of:	Multiply by:	OBL species <u>75</u>	x 1 = <u>75</u>	FACW species <u>102</u>	x 2 = <u>204</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>83</u>	x 4 = <u>332</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>290</u> (A)	<u>701</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>75</u>	x 1 = <u>75</u>																	
FACW species <u>102</u>	x 2 = <u>204</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>83</u>	x 4 = <u>332</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>290</u> (A)	<u>701</u> (B)																	
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
				= Total Cover														
Herb Stratum (Plot size: _____)																		
1. <u>Onoclea Sensibilis</u>	20		FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Dryopteris Intermedia</u>	50	x	FACU															
3. <u>Parathelypteris noveboracensis</u>	25		FAC															
4. <u>Impatiens capensis</u>	15		FACW															
5. <u>Rubus Hispidus</u>	5		FACW															
6. <u>Spagnum Angustifolium</u>	75	x	OBL															
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
95/38	190	= Total Cover																
Woody Vine Stratum (Plot size: _____)																		
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
				= Total Cover														
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: 19+00 Wet xing

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1						SiL	Mucky A
8-15	10YR 3/2						SiL	
15+	5Y 4/2		5YR 4/6	>10	C	M	LS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wilmington Water District City/County: Wilmington/Windham Sampling Date: 12/23/2015
 Applicant/Owner: Wilmington Water District State: VT Sampling Point: Jeep trail king
 Investigator(s): R. Huntley Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Drainage Swale Local relief (concave, convex, none): _____ Slope (%): 3%
 Subregion (LRR or MLRA): LRR R Lat: 42-53-10.3 Long: 72-52-57.3 Datum: NAD 83
 Soil Map Unit Name: 18B Worden Loam 3-8% Very Stony NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Data plot located southerly of Jeep trail swale crossing in undisturbed wet area	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	_____ Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations:	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0-1+</u> " Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> " Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> " (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 *Wet drainage swale between two uplands with inundation throughout. Jeep trail crosses & disturbs natural vegetation in path and creates ponded ruts, but natural undisturbed areas either side of trail are easily identified as wetlands.

VEGETATION – Use scientific names of plants.

Sampling Point: Jeep trail xing

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula alleghaniensis</u>	10		FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)														
2. <u>Picea mariana</u>	25	x	FACW															
3. <u>Abies balsamea</u>	25	x	FAC															
4. <u>Acer Rubrum</u>	10		FAC															
5. _____																		
6. _____																		
7. _____																		
35/15	75	= Total Cover																
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right">Total % Cover of:</td> <td style="width:50%; text-align:right">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>105</u></td> <td>x 2 = <u>210</u></td> </tr> <tr> <td>FAC species <u>66</u></td> <td>x 3 = <u>198</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>171</u> (A)</td> <td><u>408</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.38</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>105</u>	x 2 = <u>210</u>	FAC species <u>66</u>	x 3 = <u>198</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>171</u> (A)	<u>408</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>105</u>	x 2 = <u>210</u>																	
FAC species <u>66</u>	x 3 = <u>198</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>171</u> (A)	<u>408</u> (B)																	
1. <u>Acer rubrum</u>	10.5	x	FAC															
2. <u>Fagus grandifolia</u>	20	x	FACU															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
15.25/6.1	30.5	= Total Cover																
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
1. <u>Onoclea Sensibilus</u>	85.5	x	FACW															
2. <u>Dryopteris intermedia</u>	10.5		FACU															
3. <u>Parathelypteris noveboracensis</u>	10.5		FAC															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
53/21	106	= Total Cover																
Woody Vine Stratum (Plot size: _____)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
_____	= Total Cover																	
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Jeep trail xing

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	2.5Y	2.5/1					SiL	Mucky A
7-21+	2.5Y	4/2	10YR	4/4	>10	C	M	L
			2.5Y	5/1	>2	D	M	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

Water System Improvements

for the

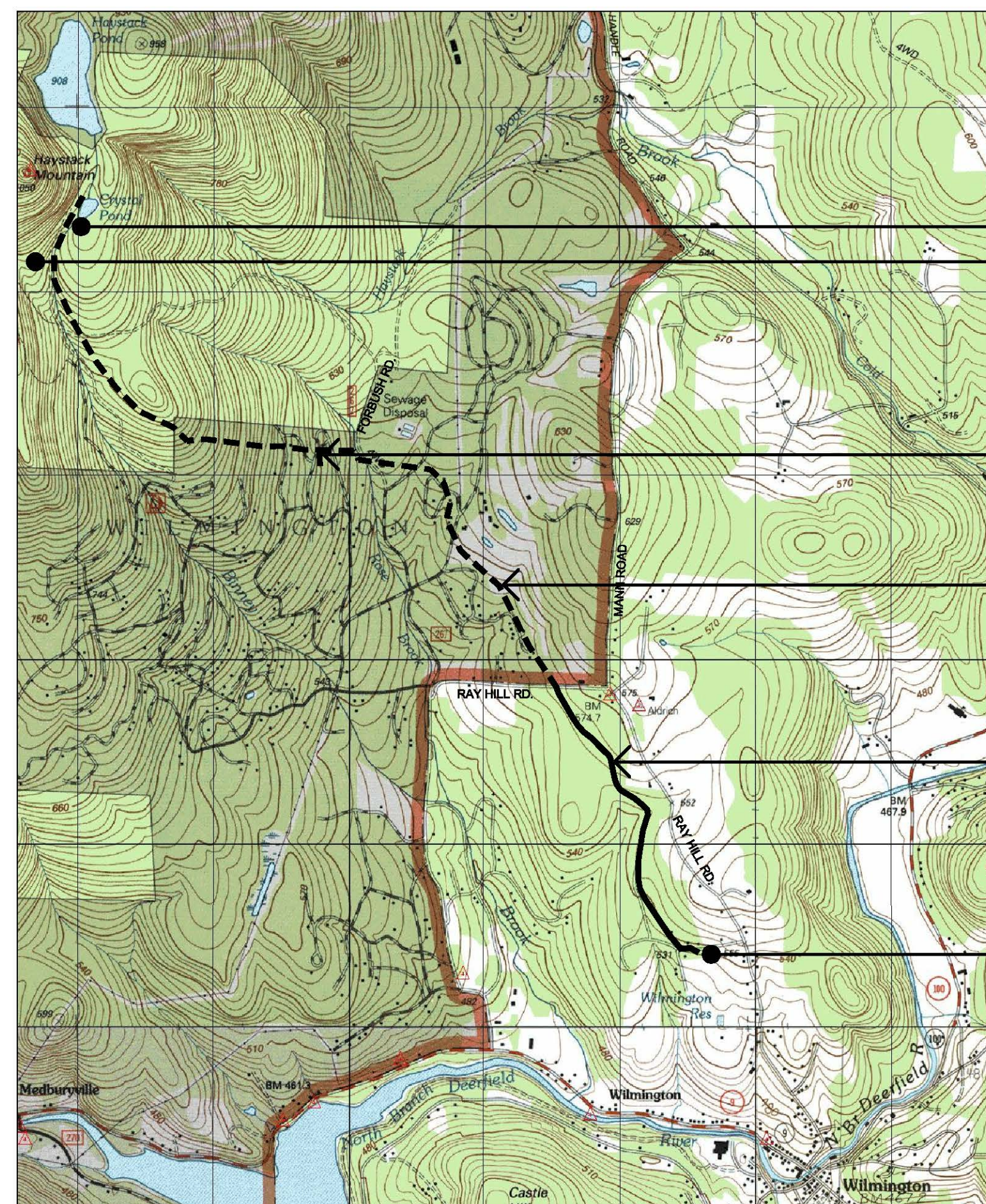
WILMINGTON WATER DISTRICT

Wilmington, Vermont

WSID 5310 / VT DWSRF Loan Number RF3-316

SHEET LIST

NO.	DESCRIPTION
1	TRANSMISSION MAIN PLAN OVERVIEW
2	TRANSMISSION MAIN PLAN AND PROFILE
3	TRANSMISSION MAIN PLAN AND PROFILE
4	TRANSMISSION MAIN PLAN AND PROFILE
5	TRANSMISSION MAIN PLAN AND PROFILE
6	TRANSMISSION MAIN DETAILS AND NOTES
7	TRANSMISSION MAIN DETAILS AND NOTES
8	EROSION CONTROL DETAILS
9	EROSION CONTROL NOTES



PROJECT LOCATION MAP
NOT TO SCALE

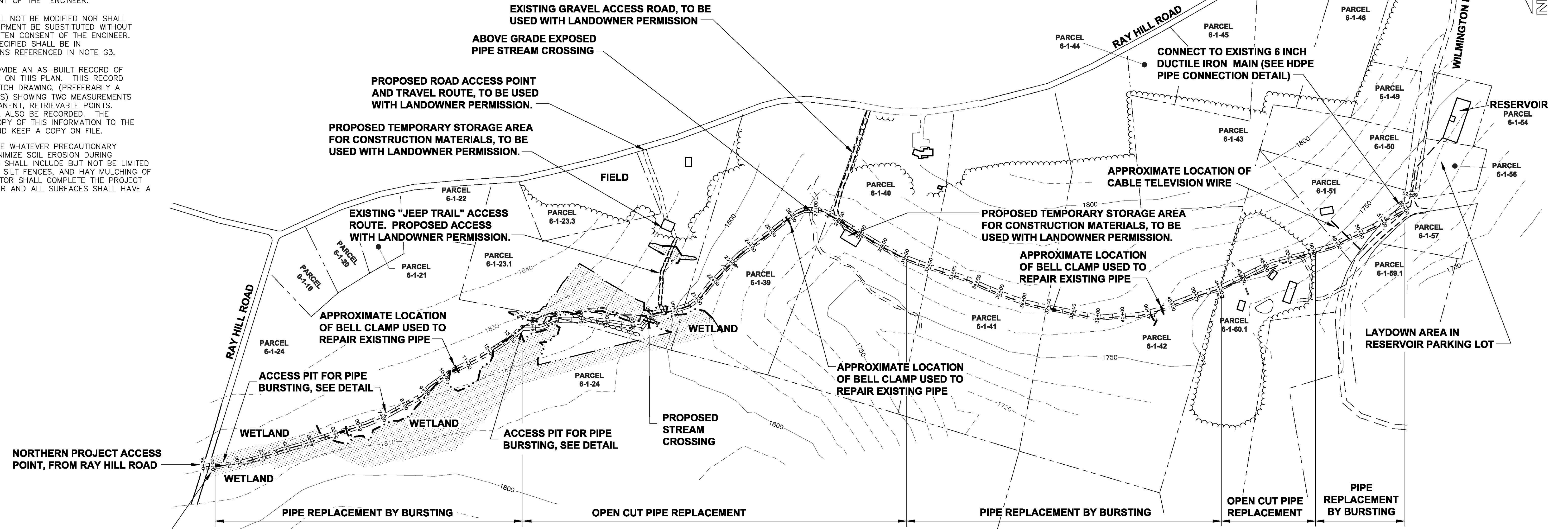
Prepared By
SVE Associates
 P.O. BOX 1818
 Brattleboro, Vermont 05302-1818
 Phone (802) 257-0561 FAX (802) 257-0721
 website: sveassoc.com
 Project Number B4095R
 December 2015

GENERAL NOTES

- G1. THIS PLAN AND THE INFORMATION HEREIN IS THE SOLE PROPERTY OF SVE ASSOCIATES AND IS PREPARED FOR THE SOLE BENEFIT OF OUR CLIENT, THE WILMINGTON WATER DISTRICT. THIS PLAN AND ITS INFORMATION MAY NOT BE USED OR RELIED UPON BY ANY THIRD PARTY EXCEPT WITH THE WRITTEN PERMISSION OF SVE ASSOCIATES.
- G2. PROPERTY LINES AND PROPERTY OWNER INFORMATION SHOWN ARE FROM THE TOWN OF WILMINGTON WEBSITE. NO BOUNDARY SURVEY HAS BEEN COMPLETED FOR THIS PROJECT.
- G3. THIS PLAN SHALL BE USED FOR WATER LINE INSTALLATION ONLY AND SHALL NOT BE USED FOR FILING IN LAND RECORDS OR FOR CONVEYANCE. PROPERTY BOUNDARY INFORMATION, IF SHOWN, IS FOR WATER SYSTEM DESIGN, PERMITTING AND INSTALLATION USE.
- G4. THE CONTRACTOR SHALL ENSURE THAT ALL MATERIALS AND METHODS OF CONSTRUCTION ARE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STATE OF VERMONT AND THE TOWN OF WILMINGTON, VERMONT.
- G5. WATER LINE SHALL BE LAID OUT AND STAKED PRIOR TO CONSTRUCTION. ALL ITEMS SHALL BE CHECKED FOR CONFORMANCE WITH THE APPROVED PLANS AND THE REGULATIONS AS REFERENCED IN NOTE G3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DISCREPANCIES ARE FOUND IN THE PLANS. THE RELOCATION OF ANY ITEM REFERENCED ABOVE SHALL NOT OCCUR WITHOUT THE PRIOR NOTIFICATION AND WRITTEN CONSENT OF THE ENGINEER.
- G6. THE WATER LINE PLANS SHALL NOT BE MODIFIED NOR SHALL THE SPECIFIED MATERIALS OR EQUIPMENT BE SUBSTITUTED WITHOUT THE PRIOR NOTIFICATION AND WRITTEN CONSENT OF THE ENGINEER. MATERIALS OR EQUIPMENT NOT SPECIFIED SHALL BE IN ACCORDANCE WITH THE REGULATIONS REFERENCED IN NOTE G3.
- G7. THE CONTRACTOR SHALL PROVIDE AN AS-BUILT RECORD OF THE VARIOUS COMPONENTS SHOWN ON THIS PLAN. THIS RECORD SHALL BE IN THE FORM OF A SKETCH DRAWING, (PREFERABLY A CLEAN COPY OF THE DESIGN PLANS) SHOWING TWO MEASUREMENTS TO EACH COMPONENT FROM PERMANENT, RETRIEVABLE POINTS. ELEVATIONS OF COMPONENT SHALL ALSO BE RECORDED. THE CONTRACTOR SHALL PROVIDE A COPY OF THIS INFORMATION TO THE SYSTEM OWNER, THE ENGINEER, AND KEEP A COPY ON FILE.
- G8. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONARY MEASURES ARE NECESSARY TO MINIMIZE SOIL EROSION DURING CONSTRUCTION. THESE MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO, THE USE OF HAY BALE DIKES, SILT FENCES, AND HAY MULCHING OF DISTURBED AREAS. THE CONTRACTOR SHALL COMPLETE THE PROJECT IN A TIMELY, WORKMANLIKE MANNER AND ALL SURFACES SHALL HAVE A NEAT, FINISHED APPEARANCE.

ABUTTING PROPERTY OWNERS

PARCEL NO.	OWNER'S NAME
6-1-19	KENNETH J. FRANO
6-1-20	FRANCIS JOSEPH ALFIERI
6-1-21	PETER J. BOISVERT
6-1-22	ARNOLD & LINDA BERNARD
6-1-23.1	YVONNE ALDRICH
6-1-23.3	JOHN H. DOLAN
6-1-24	ROBERT GRINOLD
6-1-39	ROBERT GRINOLD
6-1-40	RANDALL A. DOMINICK, ET AL
6-1-41	JOHN F. & ASHLEY McHALE
6-1-42	LISA F. SULLIVAN & JAMES PHILIP TAYLOR
6-1-43	HENRY R. & BARBARA THOMANN
6-1-44	TODD & AMANDA RAPP
6-1-45	EMILYN W. & SALISBURY L. HUGHES TRUST
6-1-46	WILLIAM HENRY COELLN
6-1-49	VINCENT K. RICE
6-1-50	HARRY A. JR. & JOANNE HORN
6-1-51	GAVIN A., ALASDAIR J. & HUGH DIGNON
6-1-54	WILMINGTON WATER DISTRICT
6-1-56	THOMAS & CHRISTINE McCARTY
6-1-57	ELKIN BONITA
6-1-59.1	AUGUST G. JANDOREK, JR.
6-1-60.1	NICOLE EVANGELISTA



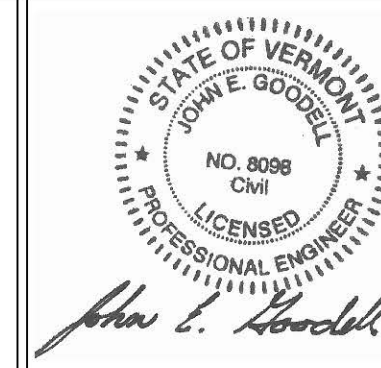
PROJECT OVERVIEW
SCALE: 1"=200'

LEGEND

- PERENNIAL STREAM
- FIELD DELINEATED WETLAND LIMIT BY SVE ASSOCIATES, RUSSELL HUNTLEY LLS, CWS, OCTOBER 12, 2015
- APPROXIMATE / ASSUMED WETLAND BOUNDARY, NOT FIELD DELINEATED
- EXISTING TRANSMISSION MAIN
- PROPOSED 20 FOOT WIDE UTILITY EASEMENT
- APPROXIMATE PROPERTY LINE PER TAX MAP

REV.#	DESCRIPTION	BY & DATE	CHK & DATE	REV.#	DESCRIPTION	BY & DATE	CHK & DATE
1	ADD ACCESS PITS FOR PIPE BURSTING	TJS 6.12.15	JEG 6.12.15				
2	ADD LIMIT OF DISTURBANCE	TJS 8.13.15	JEG 8.13.15				
3	ADD BELL CLAMP LOCATIONS	TJS 9.11.15	JEG 9.11.15				
4	ADD PARCEL LINES AND NUMBERS	TJS 9.23.15	JEG 9.23.15				
5	ADD PROPERTY OWNERS NAMES	TJS 11.17.15	JEG 11.17.15				
6	REVISED ANNOTATIONS	TJS 12.15.15	JEG 12.15.15				
7	SHOW APPROX. WETLAND LIMITS	TJS 2.15.16	JEG 2.15.16				

**PERMIT REVIEW SET
NOT FOR CONSTRUCTION**

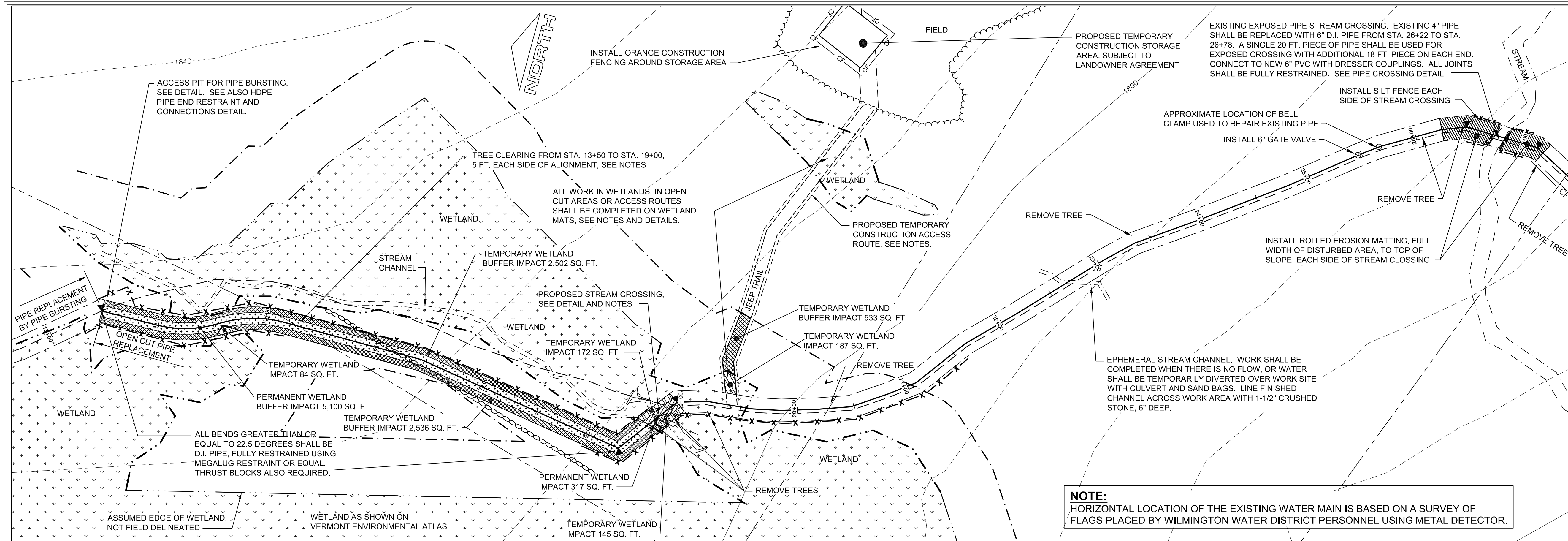


DATE SURVEY: JAN. 2015
DATE PLAN: 6/1/15
DESIGNED BY: JEG
DRAWN BY: TJS
CHECKED BY: JEG
SCALE: AS SHOWN

**TRANSMISSION MAIN PLAN OVERVIEW
RAY HILL ROAD TO WILMINGTON HEIGHTS ROAD
FOR
WILMINGTON WATER DISTRICT**
WILMINGTON, VERMONT

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Engineering Surveying Landscape Architecture Planning
P.O. Box 1818, Brattleboro, VT 05302-1818 Phone (802) 257-0561 Fax (802) 257-0721
website: www.sveassoc.com

PROJ. NO. B4095R
CAD NO. B4095R-07
SHEET
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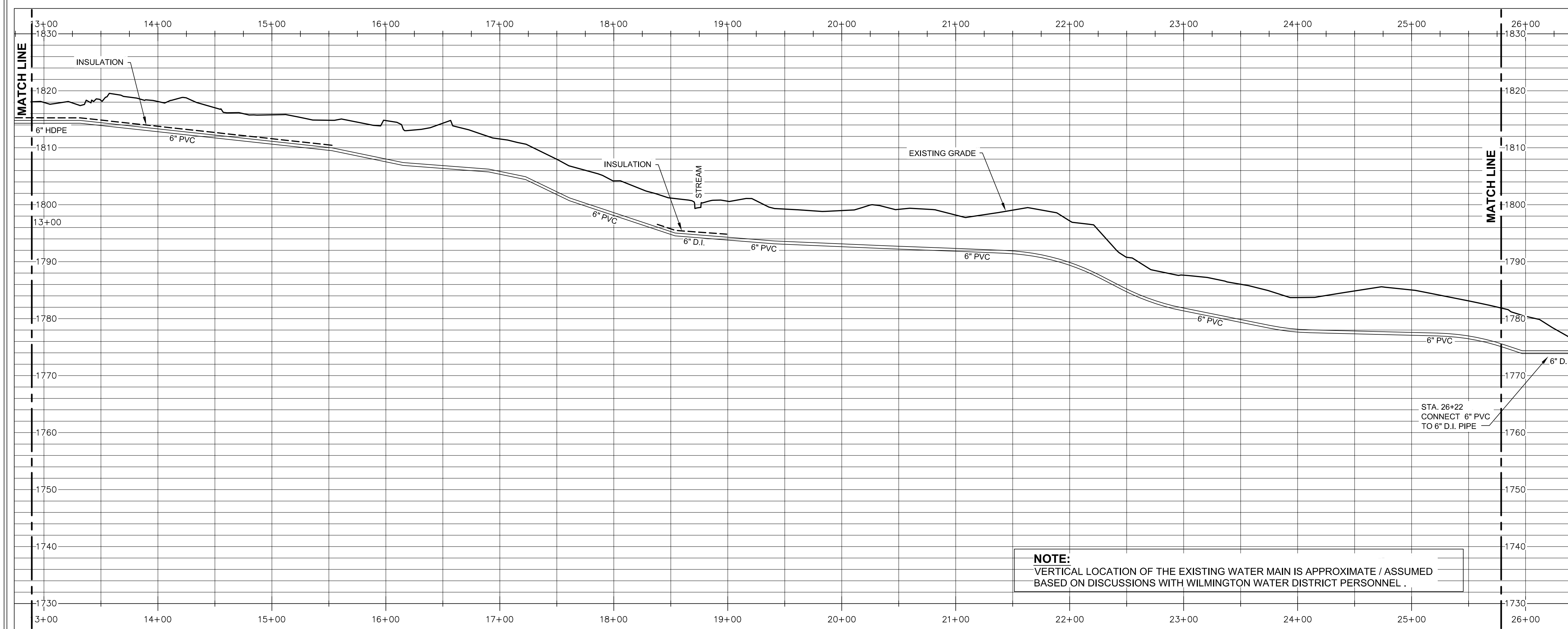


LEGEND

- APPROXIMATE LOCATION OF EXISTING WATER LINE
- 20 FOOT WIDE UTILITY EASEMENT, LIMIT OF CONSTRUCTION / LIMIT OF DISTURBANCE EXCEPT WHERE NOTED, MARK WITH 3" FLAGGING.
- APPROXIMATE PROPERTY LINES PER TAX MAP
- BLAZED TREE
- STREAM
- FIELD DELINEATED WETLAND LIMIT BY SVE ASSOCIATES, RUSSELL HUNTLEY LLS, CWS, OCTOBER 12, 2015
- APPROXIMATE WETLAND BOUNDARY THAT HAS NOT BEEN FIELD DELINEATED
- 50 FOOT WETLAND BUFFER
- WETLAND
- PROPOSED 6 INCH WATER LINE
- LIMIT OF CONSTRUCTION / DISTURBANCE OUTSIDE EASEMENT AREA
- x-x-x-x-x- SILT FENCE
- ▲ THRUST BLOCK
- CF --- CF --- ORANGE CONSTRUCTION FENCING

	TEMPORARY WETLAND IMPACT 1,069 SQ. FT.
	PERMANENT WETLAND IMPACT 317 SQ. FT.
	TEMPORARY WETLAND BUFFER IMPACT 6,604 SQ. FT.
	PERMANENT WETLAND BUFFER IMPACT 5,100 SQ. FT.

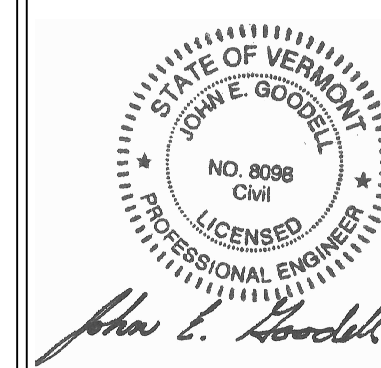
NOTE:
HORIZONTAL LOCATION OF THE EXISTING WATER MAIN IS BASED ON A SURVEY OF FLAGS PLACED BY WILMINGTON WATER DISTRICT PERSONNEL USING METAL DETECTOR.



REV. #	DESCRIPTION	BY & DATE	CHK. & DATE
1	ADD ACCESS PITS FOR PIPE BURSTING	TJS 6.12.15	JEG 6.12.15
2	ADD LIMIT OF DISTURBANCE	TJS 8.13.15	JEG 8.13.15
3	ADD BELL CLAMP LOCATION	TJS 9.11.15	JEG 9.11.15
4	REV. PROFILE AND ANNOTATIONS	TJS 12.15.15	JEG 12.15.15
5	ADD WETLAND IMPACT AREAS	TJS 12.22.15	JEG 12.22.15
6	REVISED WETL. PIT SYMBOL, NOTES	JEG 1.11.16	JEG 1.11.16
7	ADD WETLAND BUFFERS	JEG 2.15.16	JEG 2.15.16
8	REVISED WETLAND BUFFERS	JEG 2.25.16	JEG 2.25.16

SCALE: HORIZONTAL- 1"=50'
VERTICAL- 1"=10'

**PERMIT REVIEW SET
NOT FOR CONSTRUCTION**

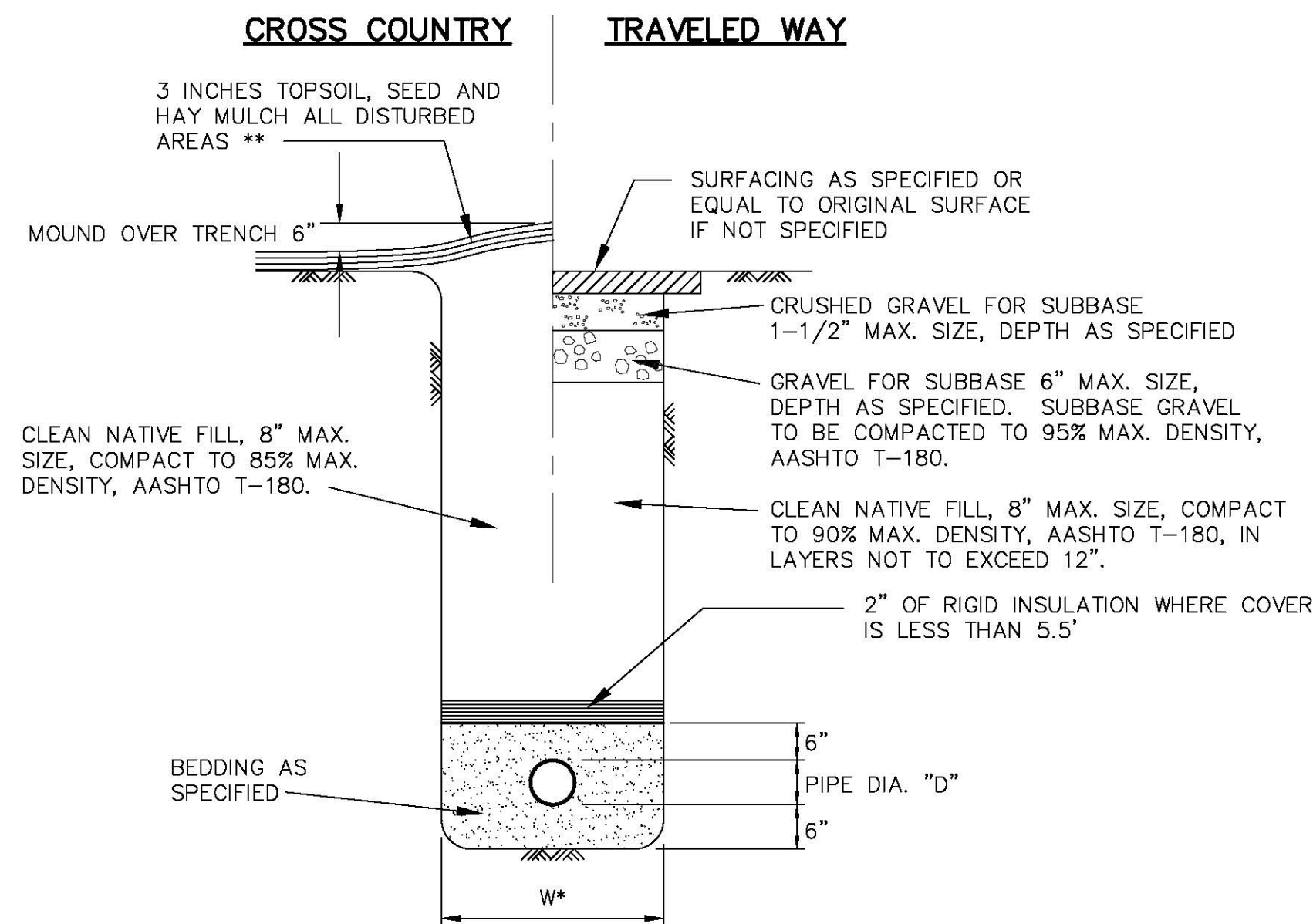


DATE SURVEY: JAN. 2015
DATE PLAN: 6/1/15
DESIGNED BY: JEG
DRAWN BY: TJS
CHECKED BY: JEG
SCALE: AS SHOWN

TRANSMISSION MAIN PLAN AND PROFILE
FOR
WILMINGTON WATER DISTRICT
WILMINGTON, VERMONT

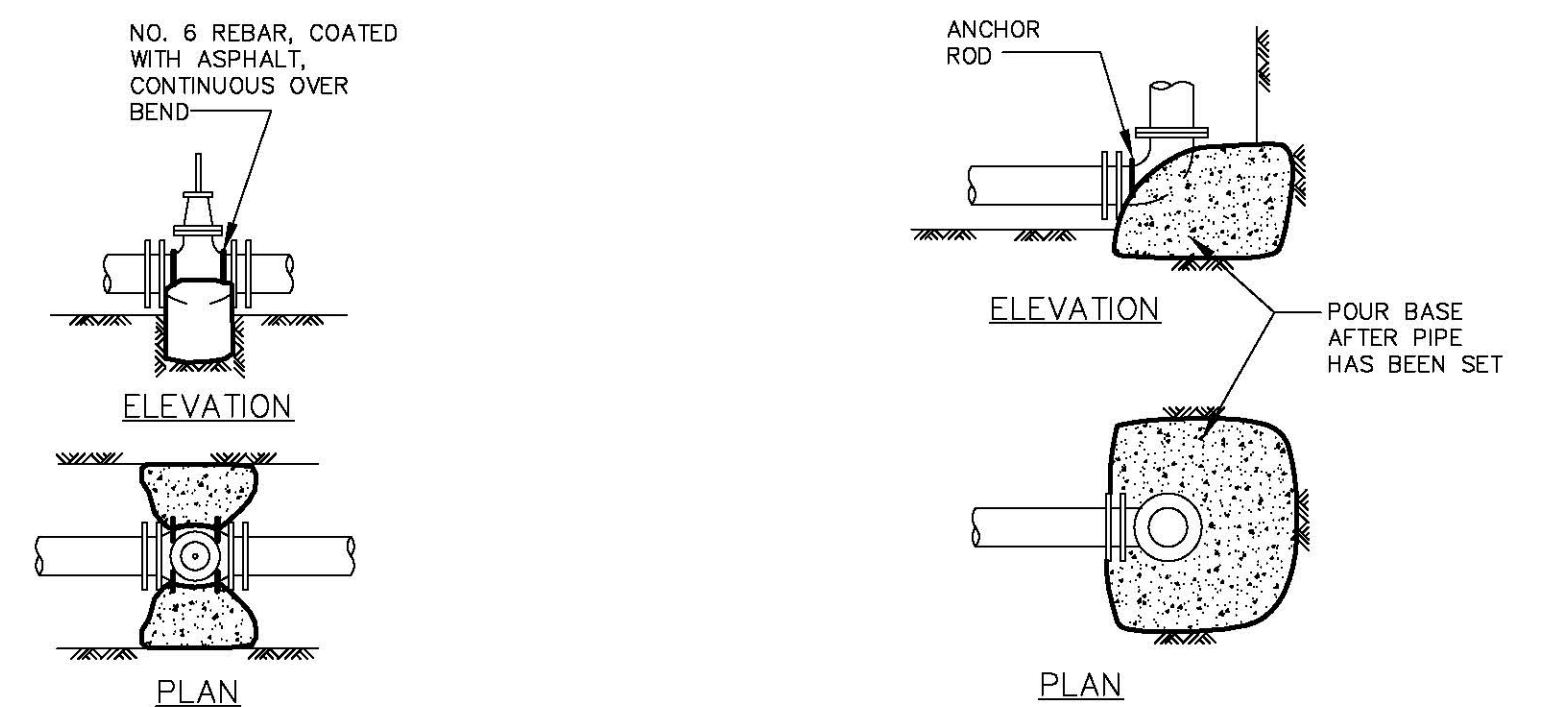
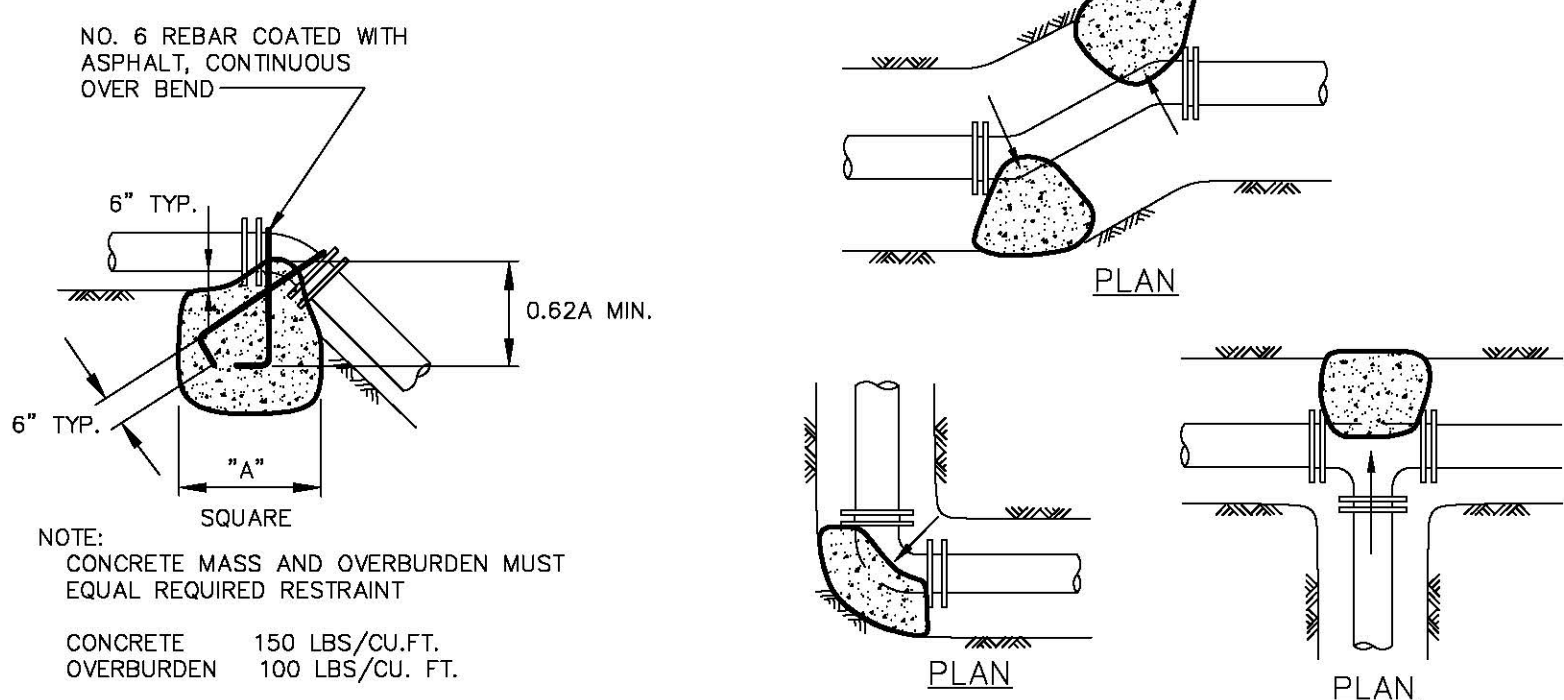
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- * TRENCH WIDTH "W" SHALL NOT EXCEED 3' FOR 12" DIA. AND SMALLER PIPES OR 18"+4/3 D FOR LARGER PIPES. WIDTH LIMITATION SHALL EXTEND FROM THE TRENCH BOTTOM TO 12" ABOVE THE TOP OF THE PIPE.
- ** LAWNS OR OTHER LANDSCAPED AREAS SHALL REQUIRE OTHER OR ADDITIONAL TREATMENT AS SPECIFIED.

TYPICAL PIPE IN TRENCH DETAIL
NOT TO SCALE

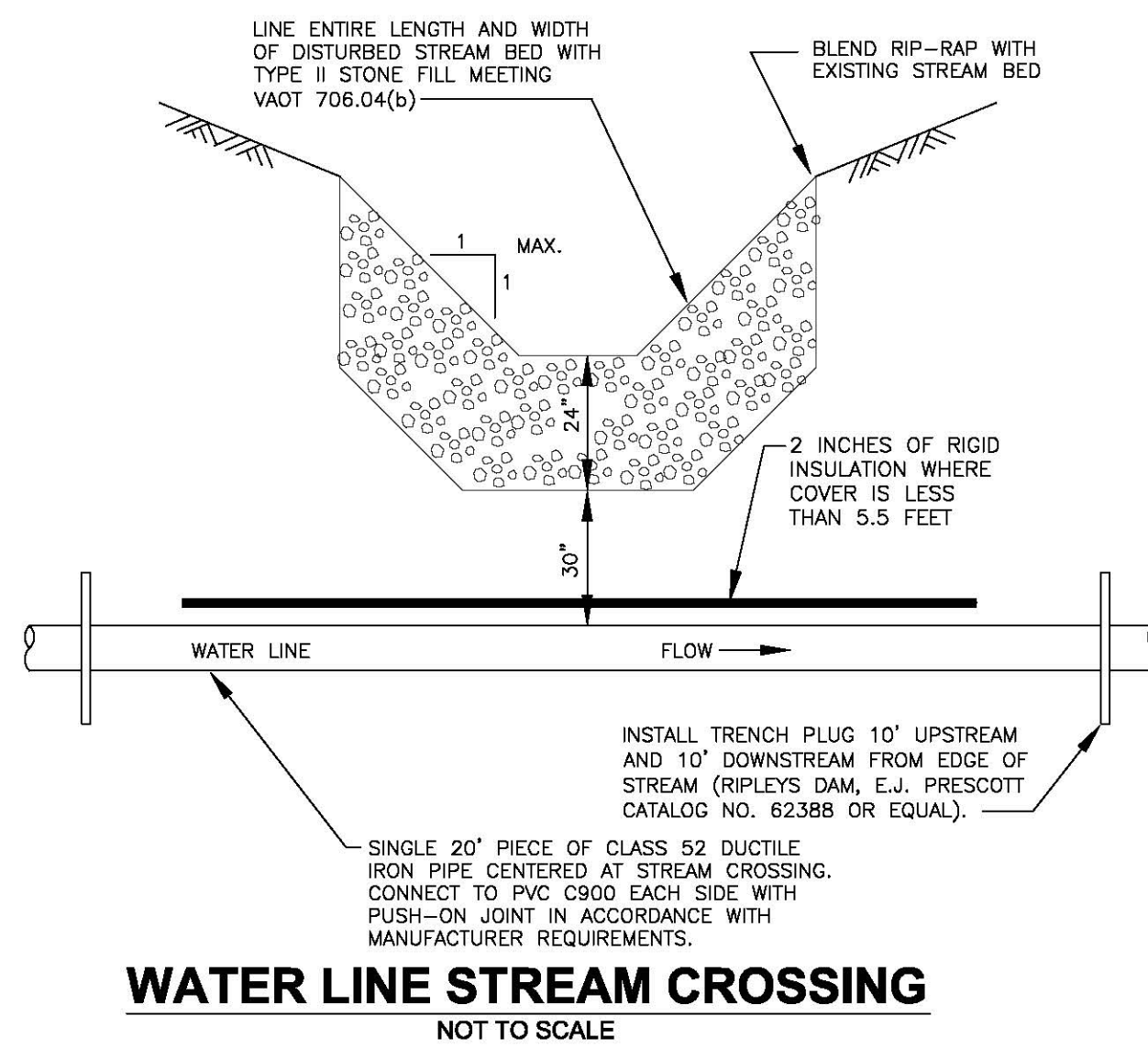


MINIMUM THRUST BLOCK AREA AGAINST UNDISTURBED IN SQ. FT.
200 PSI & 3 TON/SF SOIL BEARING CAPACITY

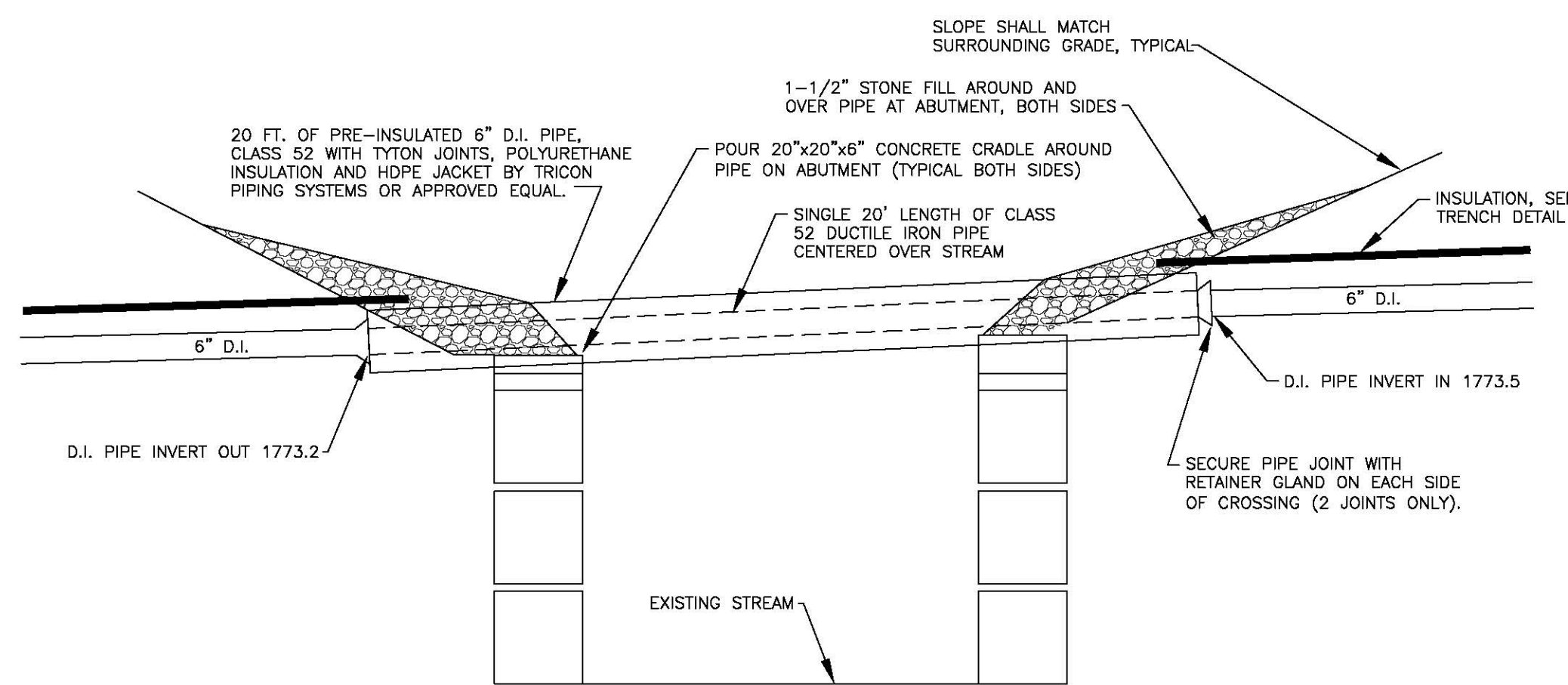
FITTING	WATER MAIN SIZE			
	12"	10"	8"	6"
90° BEND OR TEE	5.5	4.0	2.5	1.5
45° BEND	3.0	2.5	1.5	1.0
22-1/2° BEND	1.5	1.5	1.0	0.5
11-1/2° BEND	1.0	1.0	0.5	0.5

NOTE: FOR ALL PIPE SIZES LESS THAN 4", THRUST BLOCK BEARING AREA SHALL BE 0.5 SQUARE FEET MINIMUM.

THRUST BLOCK DETAIL
NOT TO SCALE



WATER LINE STREAM CROSSING
NOT TO SCALE

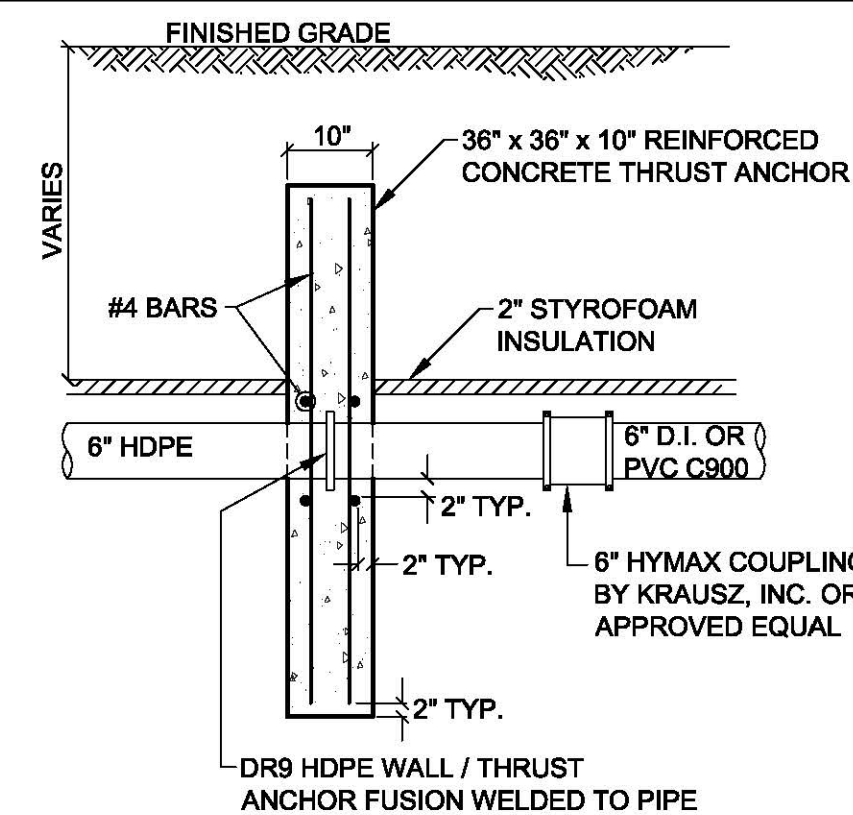


- NOTES**
1. INSTALL SILT FENCE PRIOR TO ANY WORK IN AREA OF CROSSING.
 2. ALL WORK SHALL TAKE PLACE FROM OUTSIDE STREAM BANKS. MECHANIZED EQUIPMENT SHALL NOT ENTER OR CROSS THE STREAM.
 3. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE NO CONCRETE, SOIL, PIPE OR ANY OTHER MATERIAL FALL INTO STREAM.
 4. PIPE CONSTRUCTION AT CROSSING SHALL INCLUDE ONE 20 FOOT LENGTH OF 6 INCH DUCTILE IRON PIPE CENTERED AT CROSSING AND ONE 20 FOOT LENGTH OF 6 INCH DUCTILE IRON PIPE ON EACH SIDE OF CROSSING PIPE (60 FEET OF DUCTILE IRON TOTAL).

AERIAL STREAM CROSSING DETAIL
NOT TO SCALE

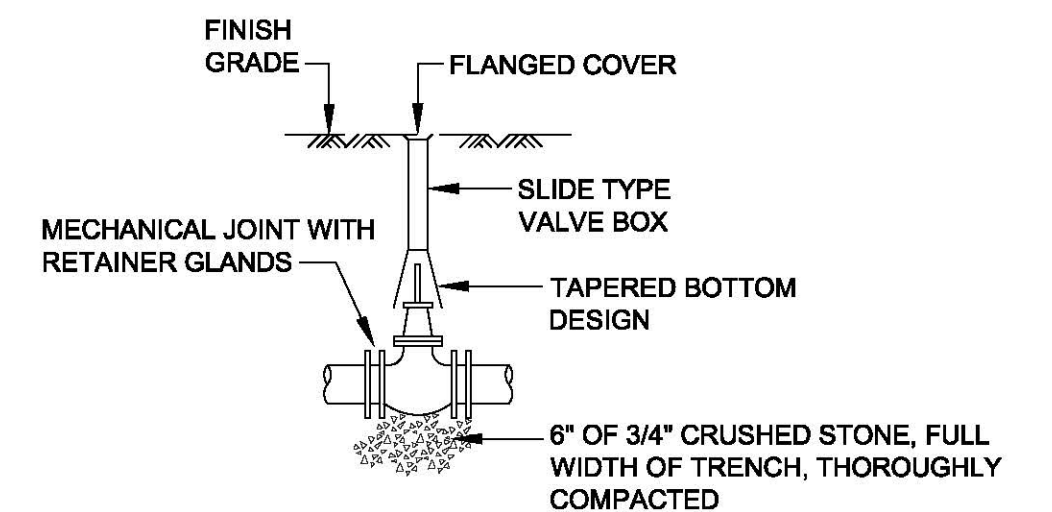
STREAM CROSSING NOTES

1. CONTRACTOR SHALL DIVERT WATER IN STREAM VIA SAND BAGS AND CROSSING CULVERT, PUMPING SYSTEM, OR OTHER APPROVED MEANS.
2. CONTRACTOR SHALL ENSURE BYPASS OPERATION DOES NOT CAUSE EROSION UPSTREAM OR DOWNSTREAM OF THE PIPE CROSSING.
3. CROSSING SHALL BE SCHEDULED TO BE COMPLETED IN 1 DAY. DISTURBED AREA IN STREAM BED SHALL BE STABILIZED WITH STONE FILL AS SHOWN IN DETAIL AND BYPASS REMOVED ONCE STABILIZATION IS COMPLETE.
4. AS SHOWN IN DETAIL, CONTRACTOR SHALL USE A 24" WIDE BUCKET FOR STREAM CROSSING AREA TO MINIMIZE STREAMBED DISTURBANCE.
5. CONTRACTOR SHALL INSTALL AN EQUIPMENT CROSSING FOR THE STREAM USING SWAMP MATTS AS SHOWN ON DETAIL ON SHEET 8. ABSOLUTELY NO DIRECT CROSSING OF THE STREAM WITH EQUIPMENT IS ALLOWED. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND MAINTAIN BEST PRACTICES TO MINIMIZE THE DISTURBANCE TO ANY PORTION OF ANY STREAM ON THIS PROJECT.
6. STREAM CROSSING SHALL BE COMPLETED AFTER ALL SNOW MELT IN PROJECT AREA IS COMPLETE, THERE HAS BEEN NO RAIN FOR THE PREVIOUS 3 DAYS, AND NO RAIN IS PREDICTED FOR AT LEAST 2 DAYS.
7. CONTRACTOR SHALL CONTACT VT DEC RIVER MANAGEMENT ENGINEER AT LEAST 3 WEEKS IN ADVANCE OF PRE-CONSTRUCTION MEETING TO SCHEDULE ATTENDANCE. CONTRACTOR SHALL REVIEW MEANS AND METHODS FOR BYPASS OF WATER DURING CONSTRUCTION WITH VT DEC RIVER MANAGEMENT ENGINEER AT THE PRE-CONSTRUCTION MEETING.



- NOTES**
1. ALL CONCRETE SHALL BE 4,000 PSI MINIMUM.

HDPE PIPE CONNECTION TO D.I. / PVC DETAIL
NOT TO SCALE



- NOTES**
1. GATE VALVE SHALL BE OPEN RIGHT, IRON BODY, BRONZE MOUNTED, NON-RISING STEM, RESILIENT WEDGE GATE AND SHALL MEET THE REQUIREMENTS OF THE AWWA STANDARD FOR GATE VALVES, 3 THRU 48 NPS, FOR WATER AND SEWAGE SYSTEMS 200 PSIG, ANSIAWWA C509-LATEST REVISION.
 2. SOIL AROUND VALVE SHOULD BE THOROUGHLY COMPACTED AND VALVE BOX SHOULD BE CLEAR OF VALVE BODY OR GEAR BOX.

GATE VALVE DETAIL
NOT TO SCALE

PIPE BURSTING NOTES

1. SEE SPECIFICATIONS IN PROJECT MANUAL FOR DETAILED PIPE BURSTING SPECIFICATIONS
2. PIPE BURSTING SHALL BE COMPLETED BY THE STATIC BURSTING METHOD
3. PIPE MATERIAL SHALL BE HIGH DENSITY POLYETHYLENE PIPE IN ACCORDANCE WITH AWWA C906, ASTM F714 AND NSF 61.
4. PIPE SHALL BE SDR 9 WALL THICKNESS.
5. CUTS OR GOUGES, PER ASTM F585 ARE ACCEPTABLE UP TO 10% OF WALL THICKNESS. BEYOND 10% OF WALL, DAMAGE MUST BE REMOVED BY CUTTING DAMAGED SECTION FROM PIPE STRING AND BUTT FUSING THE ENDS.
6. STRIPE ALONG PIPE SHALL BE BLUE IN COLOR TO IDENTIFY PIPE AS POTABLE WATER.

NOTES FOR UTILITY TRENCH CONSTRUCTION

1. **PIPE INSTALLATION:** THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER.
2. **BEDDING:** DUCTILE IRON AND PVC PIPE BEDDING SHALL BE 3/4 INCH CRUSHED STONE MEETING ASTM D2321 CLASS 1A REQUIREMENTS, INCLUDING 100% FINER THAN 1.5 INCH, <=10% PASSING NO. 4 SIEVE, <5% PASSING NO. 200 SIEVE.
3. **SUITABLE MATERIAL:** SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER 8 INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
4. **COMPACTION:** BACKFILL MATERIAL SHALL BE COMPACTED AS FOLLOWS: BEDDING AND BLANKET TO 95% OF MAXIMUM DRY DENSITY. SUITABLE MATERIAL TO 90% OF MAXIMUM DRY DENSITY EXCEPT MATERIAL WITHIN TOP 3 FEET OR ROADS AND ROAD SHOULDERS TO 95% OF MAXIMUM DRY DENSITY.
5. **FOR CROSS-COUNTRY CONSTRUCTION:** BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE UNLESS THIS WILL INTERFERE WITH THE DRAINAGE.

NOTES FOR TRANSMISSION MAIN

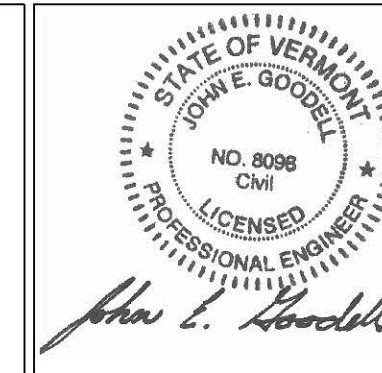
1. WATER DISTRIBUTION PIPE SHALL BE AS INDICATED ON THE PLANS AND INCLUDES: 6" PVC C900, DR 18, PRESSURE CLASS 235 PER AWWA C-900-07, 6" DUCTILE-IRON PIPE, CLASS 52, CEMENT-LINED, BITUMINOUS-COATED IN FULL CONFORMANCE WITH AWWA C-151, C-111 AND C-104, 6" HDPE.
2. VALVES SHALL CONFORM TO AWWA C-509 RESILIENT WEDGE GATE VALVES FOR 4-INCH TO 10-INCH VALVE, AWWA C-504 RUBBER-SEATED BUTTERFLY VALVE FOR 12-INCH AND LARGER VALVES AND AWWA C-800 FOR SMALLER VALVES. ALL FITTINGS TO HAVE MECHANICAL JOINTS WITH RETAINED GLANDS AS DIRECTED BY TOWN. UNDERGROUND SERVICE LINE VALVES AND FITTINGS TO BE IN CONFORMANCE WITH AWWA C-800.
3. MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE SHALL BE 2'30" WITH TWO BRASS WEDGES REQUIRED AT EACH JOINT. MAXIMUM JOINT DEFLECTION FOR PVC C900 PIPE SHALL BE 1" WITH A MINIMUM BEND RADIUS FOR 6" PVC C900 PIPE OF 150 FT. ALL PIPE SHALL BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
4. ALL WATER MAINS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND IN CONFORMANCE WITH AWWA C-600. PIPE SHALL BE BEDDED AS SHOWN ON DETAIL AND AS SPECIFIED IN "NOTES FOR UTILITY TRENCH CONSTRUCTION".
5. WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWER. THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE. WHERE SEWER CROSSES OVER WATER LINE: 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS WITH A MINIMUM OF 18 INCHES OF SEPARATION; 2) IT SHALL BE CONSTRUCTED OF DUCTILE-IRON PIPE (CLASS 50) FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF 3 PIPE LENGTHS; AND, 3) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS SHALL BE PRESSURE TESTED WITHOUT LEAKAGE TO 50 PSI FOR 15 MINUTES.
6. DISINFECTING AND PRESSURE/LEAKAGE TESTING SHALL BE AS FOLLOWS:
A. DISINFECTING WATER MAINS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-651. THE FORM OF CHLORINE SHALL BE SODIUM HYPOCHLORITE SOLUTION AND SHALL BE ADMINISTERED BY CONTINUOUS FEED METHOD.
B. PRESSURE AND LEAKAGE TESTS ON WATER MAINS SHALL BE DONE IN ACCORDANCE WITH AWWA C-600 SECTION 4.
7. IN AREAS WHERE A NEW PIPE IS TO BE LAID VIA OPEN CUT METHOD, THE EXISTING PIPE SHALL BE CUT AND CAPPED AT BOTH ENDS OF THE ABANDONED SEGMENTS.
8. PIPE MARKERS: WATER MAIN PIPE MARKER POSTS SHALL BE PROVIDED AT EACH END OF PIPELINE, AT THE EDGES OF THE OPEN FIELD AND AT 300 FOOT INTERVALS BETWEEN MARKER POSTS. MARKER POSTS SHALL BE BLUE TRI-VIEW PLASTIC MARKERS BY RHINO WITH TEST SCREWS AND "WATER" LABELS, OR APPROVED EQUAL. MARKER POSTS INSTALLED FROM STATION 0+00 TO STATION 21+00 SHALL HAVE 12 INCH BY 18 INCH EXTERIOR GRADE ALUMINUM SIGNS ATTACHED WITH THE FOLLOWING TEXT: "WETLAND AREA: TREE / BRUSH CUTTING LIMITED TO 5 FEET EACH SIDE OF PIPE". SIGN SHALL BE NON-REFLECTIVE WITH WHITE BACKGROUND AND BLACK TEXT.

TYPICAL PIPE BURSTING ACCESS PIT LAYOUT DETAIL
NOT TO SCALE

TREE CUTTING / TREE CLEARING NOTES

1. IN PIPE BURSTING AREAS TREES TO BE CUT WILL BE MARKED IN THE FIELD BY THE WWD WITH YELLOW PAINT. TREES ARE TO BE FELLED IN A MANNER TO MINIMIZE ANY DAMAGE TO OTHER TREES. ONCE FELLED, TREES SHALL BE CUT UP INTO LENGTHS NOT LONGER THAN 4' AND LEFT. TOPS SHALL BE CUT DOWN SO NO PORTION OF THE FELLED TREE IS MORE THAN 3' ABOVE GROUND.
2. STUMPS IN PIPE BURSTING AREAS SHALL BE CUT FLUSH WITH THE GROUND AND LEFT IN PLACE.
3. TREE CLEARING IN OPEN CUT AREAS SHALL BE AS MARKED IN THE FIELD BY THE WWD WITH YELLOW PAINT. TREES ARE TO BE FELLED IN A MANNER TO MINIMIZE ANY DAMAGE TO OTHER TREES. ONCE FELLED, TREES ARE TO BE CUT INTO LENGTHS OF NOT MORE THAN 4' AND LEFT. TOPS SHALL BE CUT DOWN SO NO PORTION OF THE FELLED TREE IS MORE THAN 3' ABOVE GROUND.
4. STUMPS IN OPEN CUT AREAS SHALL BE LEFT IN PLACE IF THE NEAREST EDGE OF THE TREE IS AT LEAST 3' FROM THE PIPE CENTERLINE. STUMPS THAT ARE EXCAVATED FOR PIPE CONSTRUCTION SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED OF PROPERLY.
5. ALL TREE CUTTING IN WETLAND AREAS SHALL BE BY HAND.
6. TREES MAY BE FELLED OUTSIDE THE LIMIT OF CONSTRUCTION TO MINIMIZE THE DAMAGE TO THE RESIDUAL TREES, HOWEVER NO MECHANIZED EQUIPMENT IS ALLOWED OUTSIDE THE LIMIT OF CONSTRUCTION.
7. CUT UP SECTION OF TREES SHALL BE MOVED TO EDGES OF THE LIMIT OF CONSTRUCTION SUCH THAT THERE IS A CLEAR SPACE 5' EACH SIDE OF THE NEW WATER LINE.

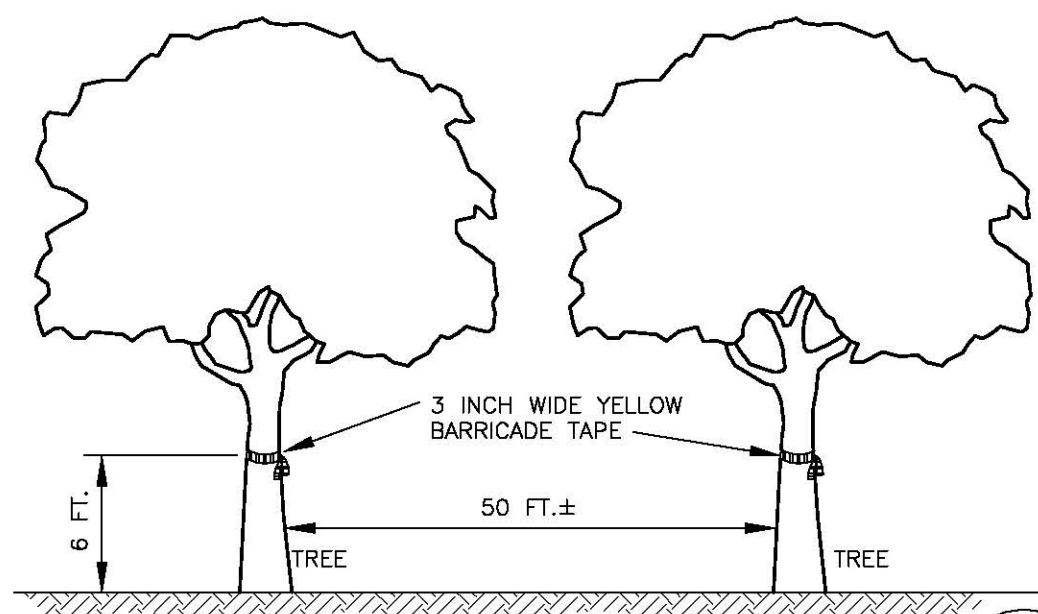
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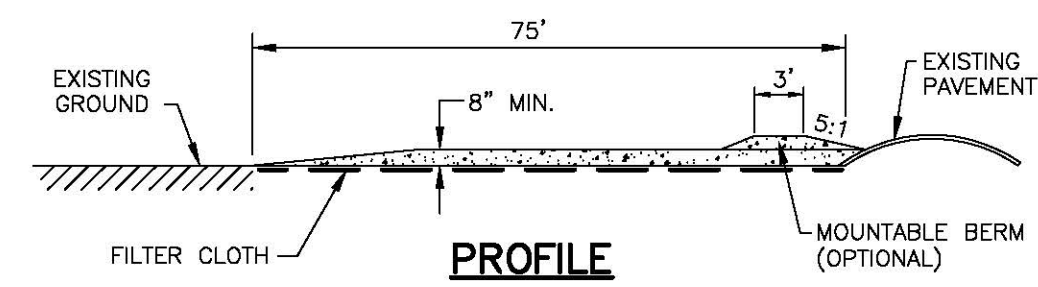
DATE SURVEY: JAN. 2016
DATE PLAN: 6/1/16
DESIGNED BY: JEG
DRAWN BY: TJS
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SCALE: AS SHOWN

TRANSMISSION MAIN DETAILS AND NOTES
FOR
WILMINGTON WATER DISTRICT
WILMINGTON, VERMONT
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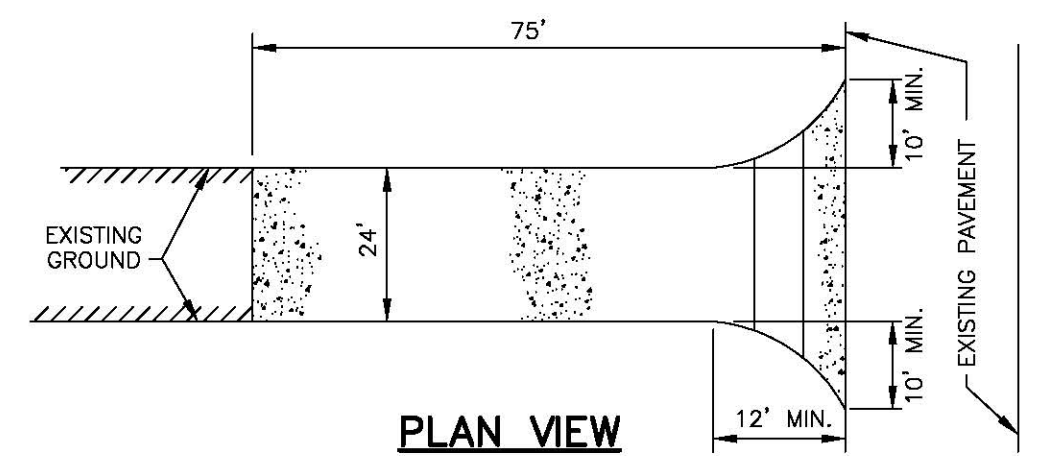
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LIMITS OF DISTURBANCE - FLAGGING
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PROFILE

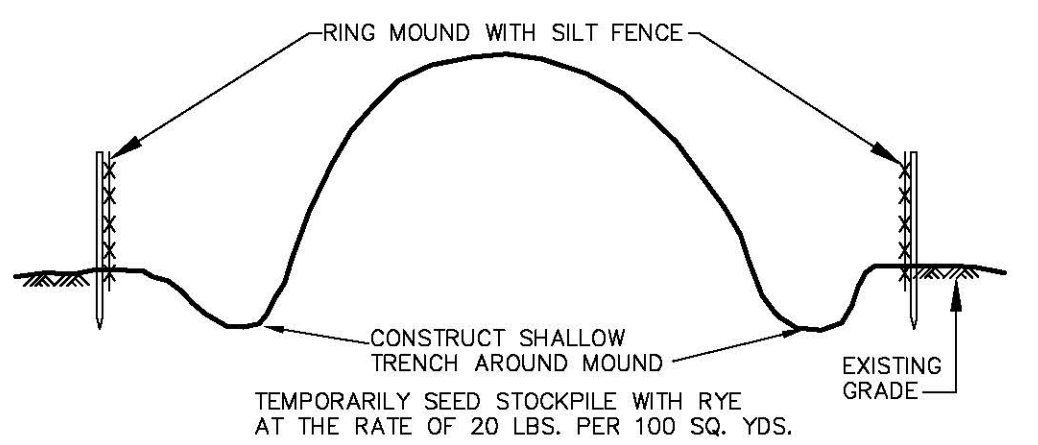


PLAN VIEW

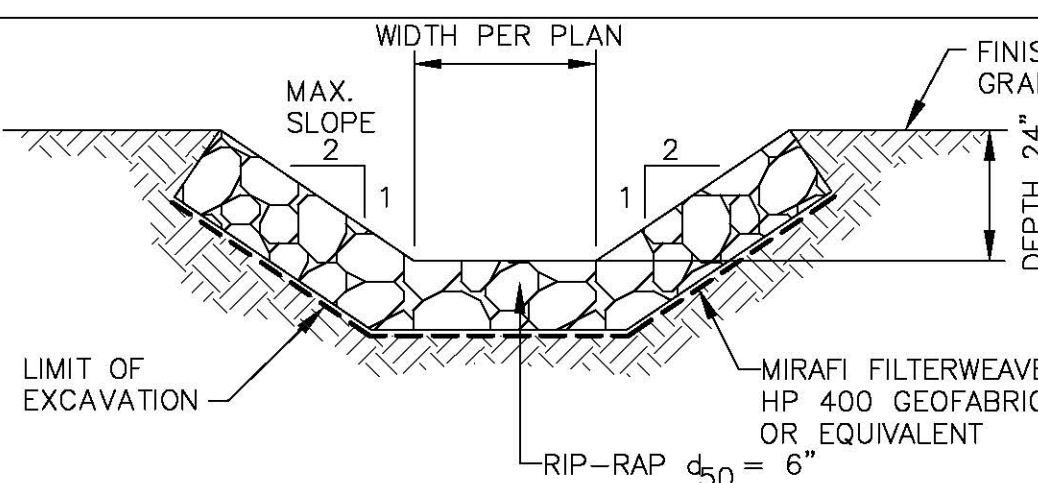
NOTES:

1. STONE SIZE: USE 1-1/2 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH: 75 FEET
3. THICKNESS: NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH: 24 FEET
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER: ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

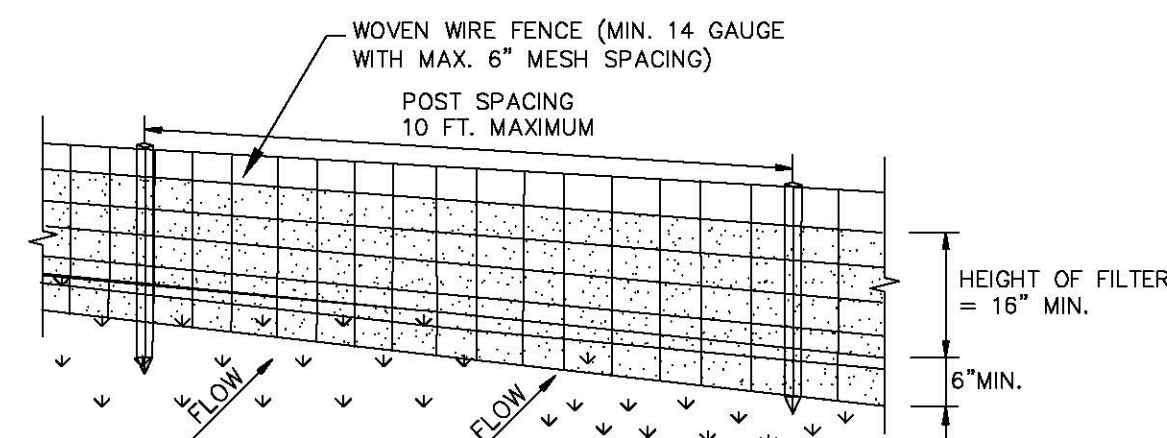
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



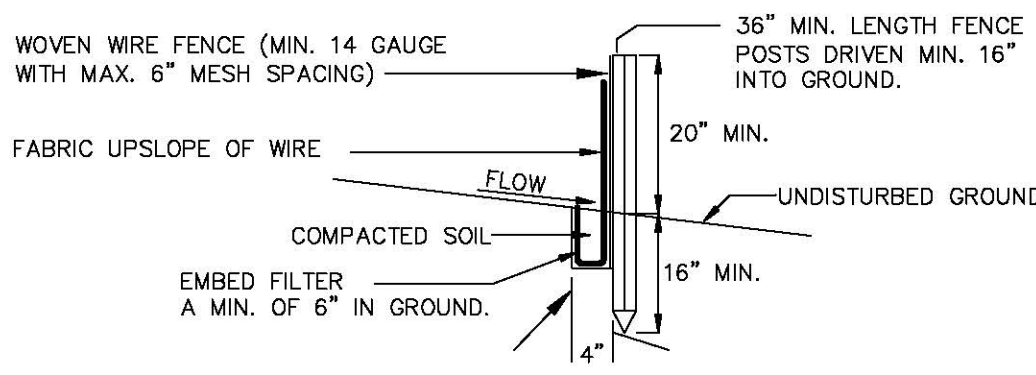
TOPSOIL STOCKPILE SECTION
NOT TO SCALE



TYPICAL RIP-RAP SWALE
NOT TO SCALE



PERSPECTIVE VIEW

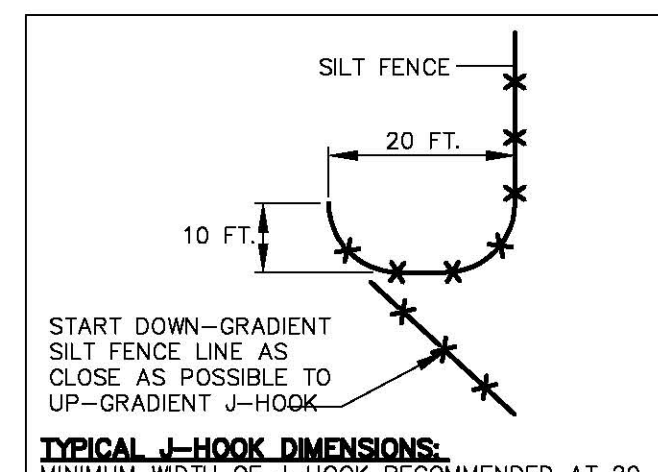
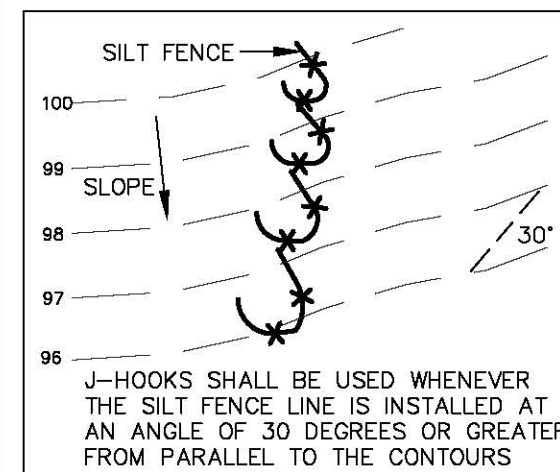


SECTION VIEW

NOTES:

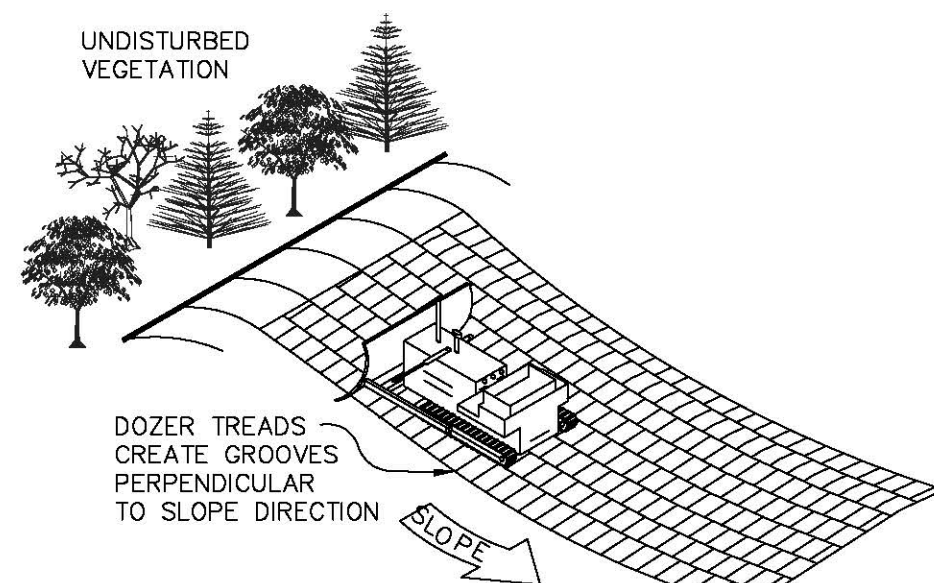
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. WIRE FENCE REINFORCEMENT REQUIRED WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP AND MID-SECTION. FENCE SHALL BE WOVEN WIRE, 6 INCH MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFIX 100X, STABILINKA 1140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOTEX, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.
6. SILT FENCE SHALL NOT BE USED TO DELINEATE LIMITS OF DISTURBANCE.

SILT FENCE DETAIL
NOT TO SCALE

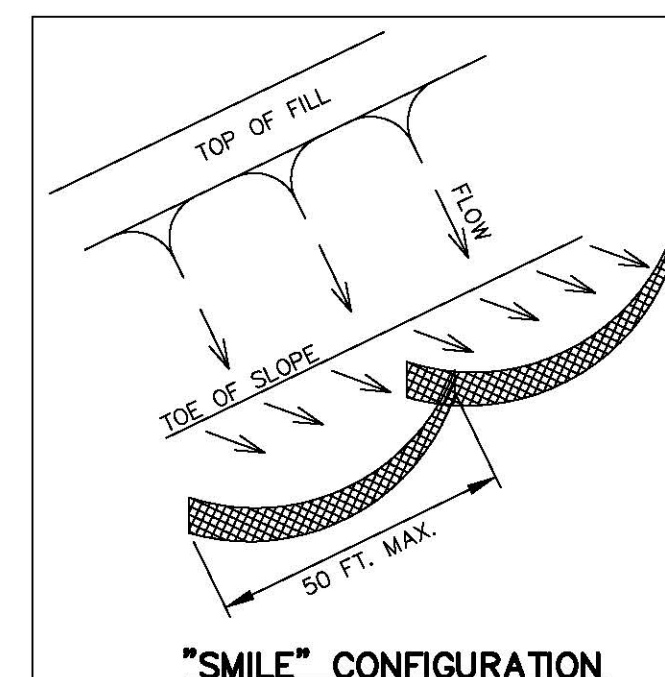


TYPICAL J-HOOK DIMENSIONS:
MINIMUM WIDTH OF J-HOOK RECOMMENDED AT 20 FEET WITH A DEPTH OF 10 FEET. WHERE SPACE IS LIMITED (E.G. ALONG NARROW RIGHTS OF WAY), NARROWER HOOKS CAN BE USED WITH A HIGHER FREQUENCY SPACING. MAXIMUM SPACE BETWEEN SILT FENCE ROWS OR J-HOOKS SHALL BE 25' FOR 2:1 SLOPES; 50' FOR 3:1 SLOPES; AND 75' FOR 4:1 SLOPES.

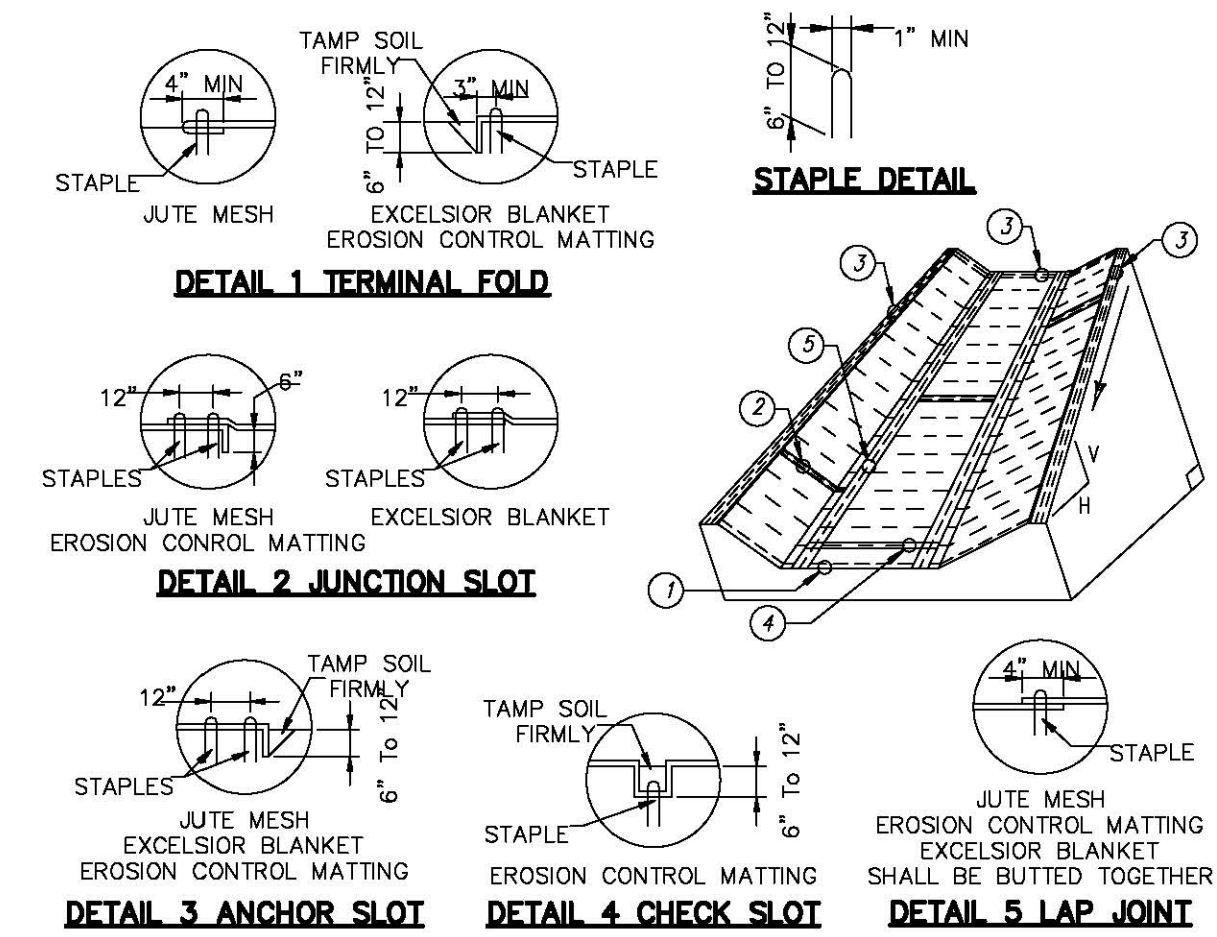
"J"-HOOK CONFIGURATION



SURFACE ROUGHENING
NOT TO SCALE



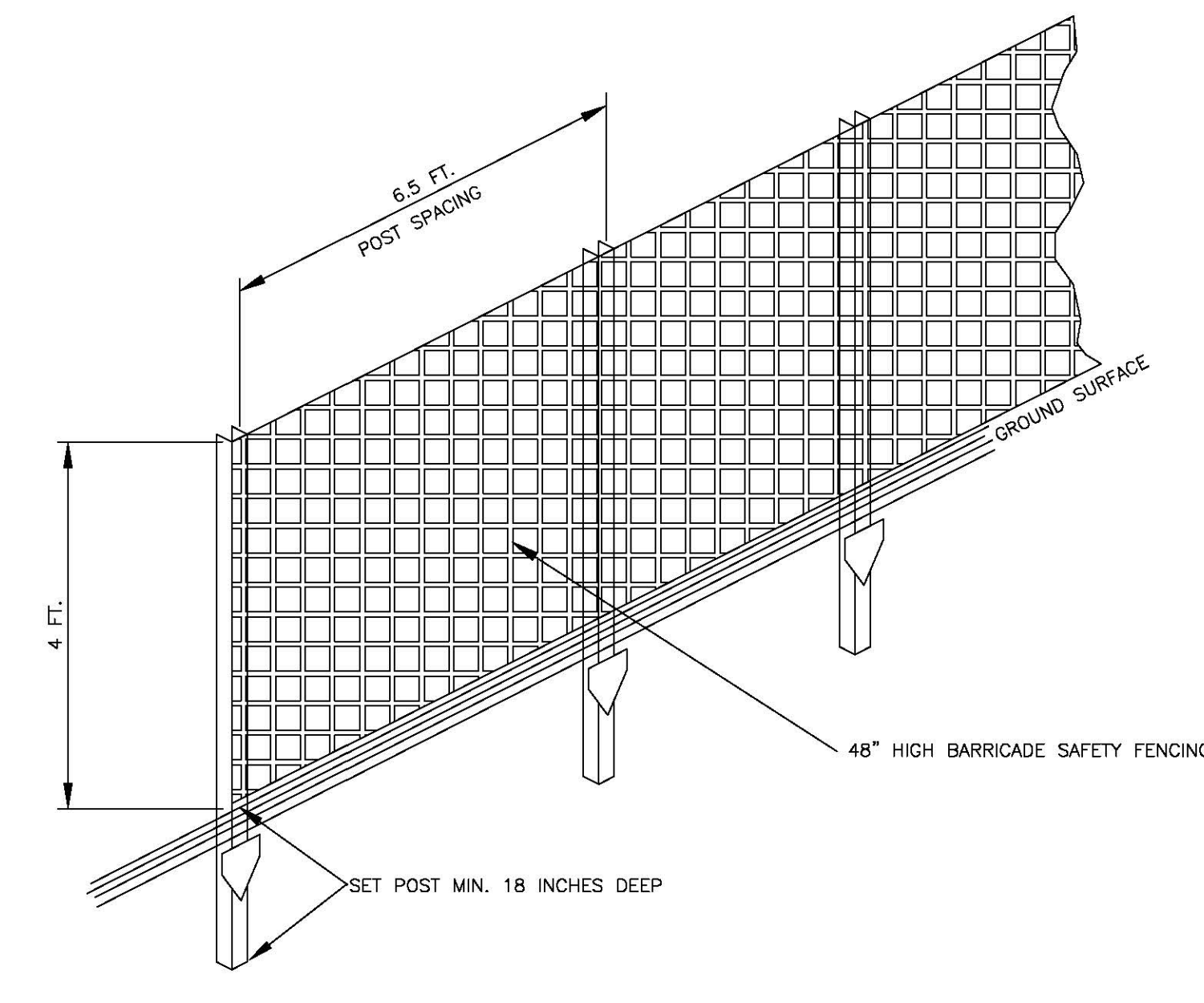
INSTALLATION OF SILT FENCE ON SLOPES
NOT TO SCALE



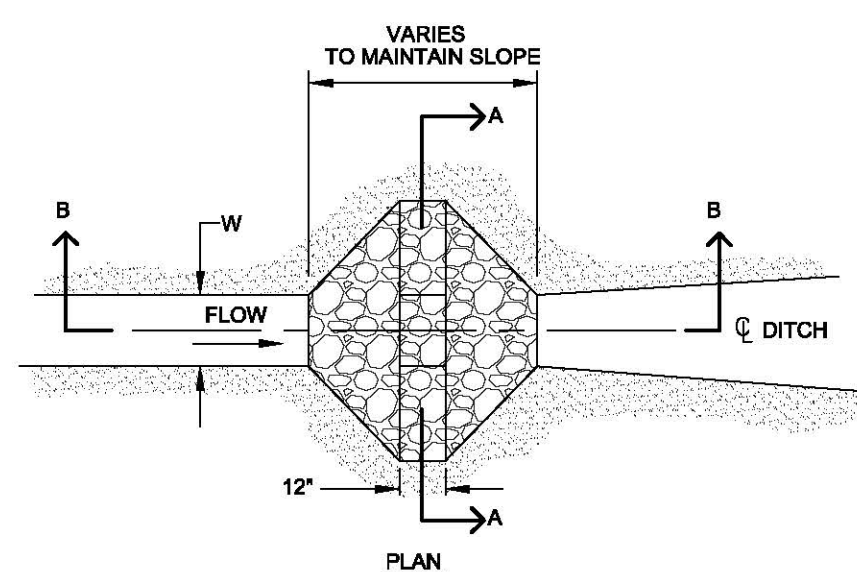
CONSTRUCTION SPECIFICATIONS

1. SPACING: INSTALL RECP EVERY 50 FT. ON SLOPES MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25 FEET.
2. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2 FEET APART AND IN ROWS APPROXIMATELY 3 FEET APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4 FT. X 225 FT. ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4 FT. X 150 FT. ROLL OF MATERIAL.
3. DISTURBED AREA SHALL BE SMOOTHLY GRADED TO ENSURE CLOSE CONTACT BETWEEN RECP AND GROUND.
4. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12 FOOT INTERVALS.
6. INSTALLATION MUST COMPLY WITH MANUFACTURER'S RECOMMENDATIONS.

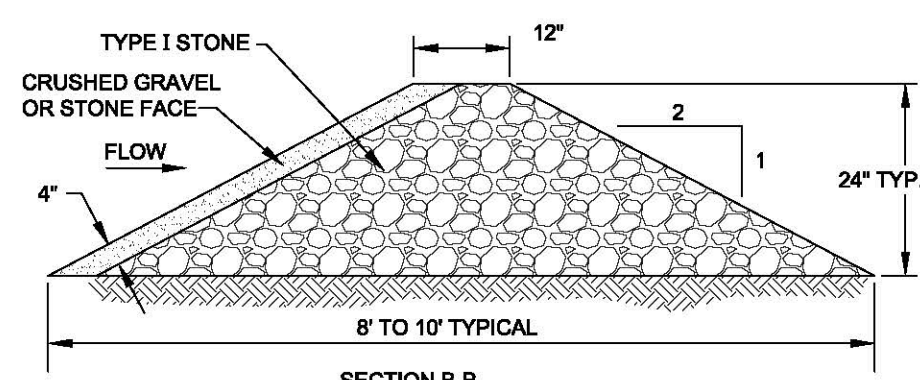
EROSION CONTROL MATTING
NOT TO SCALE



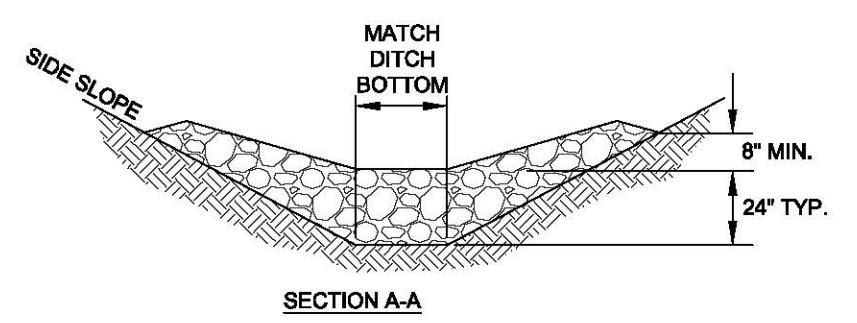
LIMITS OF DISTURBANCE SNOW FENCE DETAIL
NOT TO SCALE



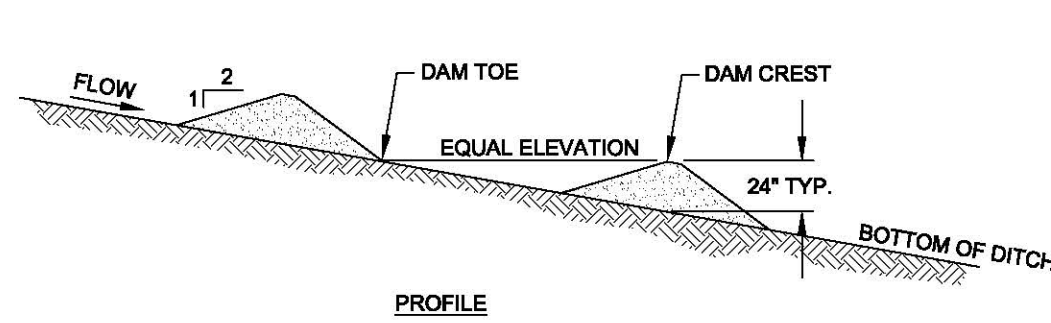
PLAN



SECTION B-B



SECTION A-A

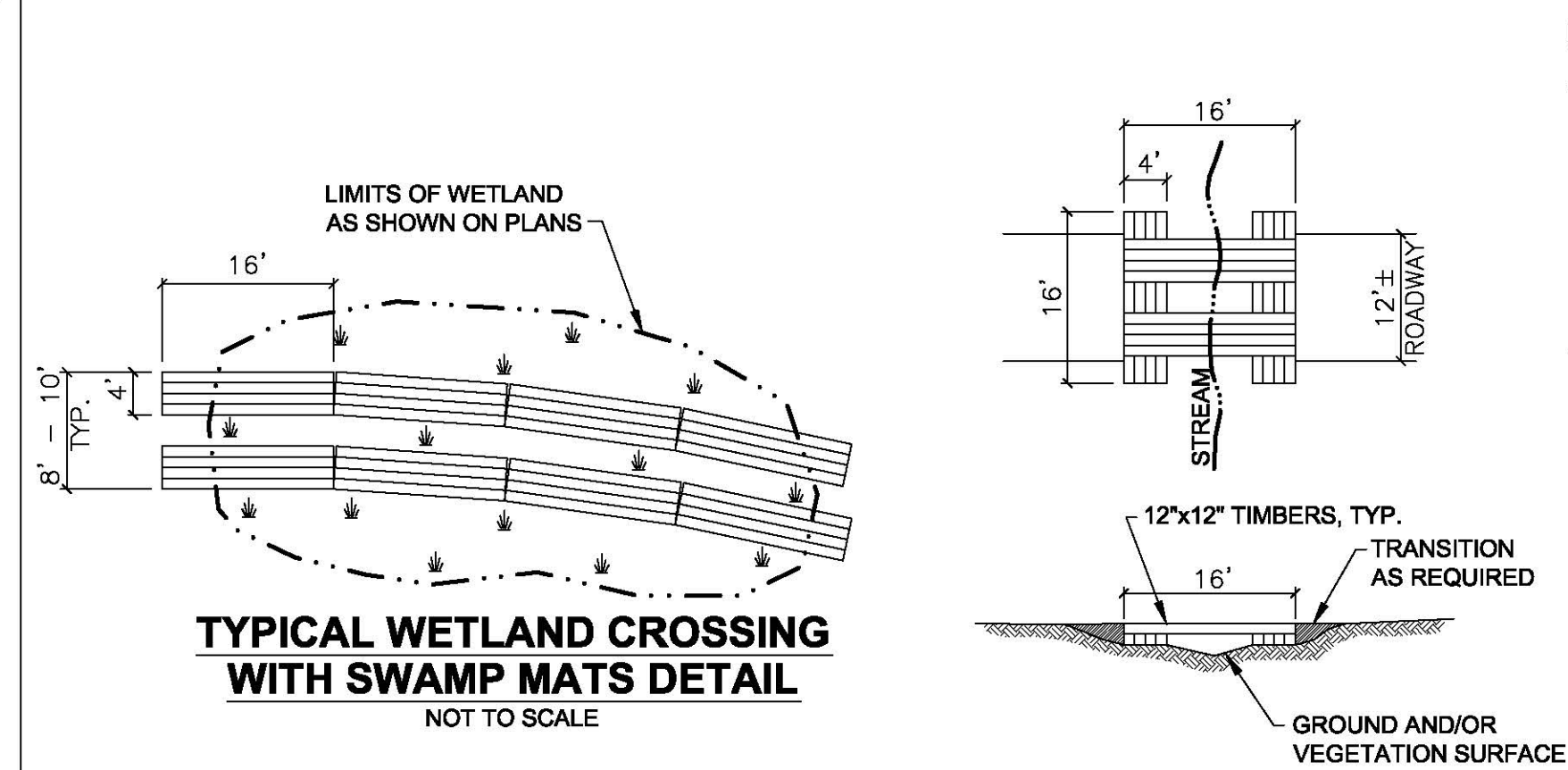


PROFILE

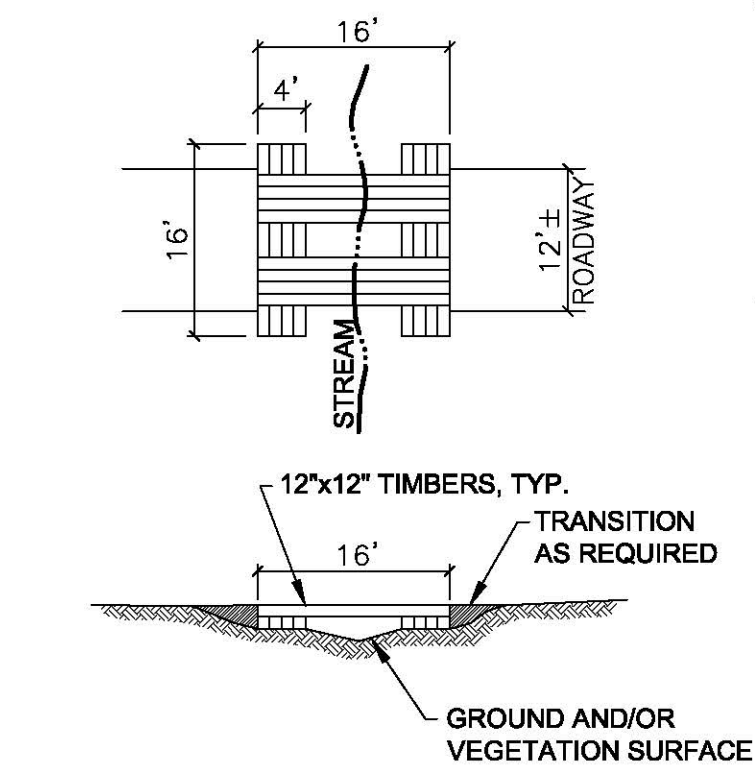
STONE CHECK DAM DETAIL
NOT TO SCALE

STONE DITCH CHECK NOTES:

1. TYPE I STONE VARIES FROM 1-INCH TO 12-INCHES WITH 50% OF THE VOLUME AT LEAST 4-INCHES.
 2. CRUSHED GRAVEL OR STONE THE CRUSHED GRAVEL SHALL BE UNIFORMLY GRADED FROM COARSE TO FINE AND SHALL MEET THE FOLLOWING REQUIREMENTS:
- | GRADING | SIEVE DESIGNATION | MASS (WEIGHT) PASSING SQUARE MESH SIEVES |
|---------|-------------------|--|
| COARSE | 4 INCH | 95 TO 100 |
| | NO. 4 | 25 TO 50 |
| | NO. 100 | 0 TO 12 |
| | NO. 200 | 0 TO 8 |
3. MAXIMUM SPACING OF DITCH CHECKS SHALL BE 100 FEET.



TYPICAL WETLAND CROSSING WITH SWAMP MATS DETAIL
NOT TO SCALE



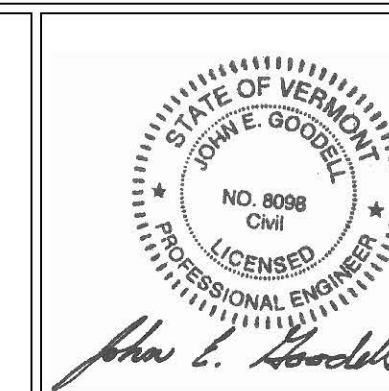
TYPICAL STREAM CROSSING WITH SWAMP MATS DETAIL
NOT TO SCALE

NOTES:

1. SWAMP MATS SHALL BE CONSTRUCTED OF 12" X 12" WOOD TIMBERS BOLTED TOGETHER OR ALTERNATE MATERIAL / CONSTRUCTION AS APPROVED BY THE ENGINEER.
2. SWAMP MATS SHALL BE CARRIED (NOT DRAGGED) AND PLACED AS SHOWN ON SITE PLAN.
3. SWAMP MATS SHALL BE PLACED BEFORE ANY CONSTRUCTION. WHERE SWAMP MATS ARE SHOWN, ALL CONSTRUCTION TRAFFIC SHALL BE ACROSS THE MATS. NO CROSSING OF WETLAND AREAS SHOWN WITH MATS BEFORE OR DURING CONSTRUCTION IS ALLOWED.

REV.#	DESCRIPTION	BY & DATE	CHK & DATE	REV.#	DESCRIPTION	BY & DATE	CHK & DATE
1	ADD SWAMP MAT DETAILS	TJS 9.9.15	JEG 9.9.15				

PERMIT REVIEW SET
NOT FOR CONSTRUCTION



DATE SURVEY: JAN. 2016
DATE PLAN: 6/1/15
DESIGNED BY: JEG
DRAWN BY: TJS
CHECKED BY: JEG
SCALE: AS SHOWN

EROSION CONTROL DETAILS
FOR
WILMINGTON WATER DISTRICT

WILMINGTON, VERMONT
SVE Associates
Engineering Surveying Landscape Architecture Planning
P.O. Box 1818, Brattleboro, VT 05302-1818 Phone (802) 257-0561 Fax (802) 257-0721
website: www.sveassoc.com

PROJ. NO. B4095R
CAD NO. B4095R-07
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NOTIFICATION REQUIREMENTS

- SVE ASSOCIATES SHALL BE CONTACTED TO AMEND THE EROSION CONTROL PLANS PRIOR TO ANY CHANGE IN DESIGN, CONSTRUCTION, OPERATION, PHASING, SCHEDULE OR INCREASE IN EARTH DISTURBANCE.
- IF CONSTRUCTION IS TO OCCUR OUTSIDE OF THE APRIL 15 TO OCTOBER 15 WINDOW, WINTER EPSC REQUIREMENTS MUST BE INCORPORATED INTO THESE PLANS.
- THE ON-SITE PLAN COORDINATOR (OSPC) MUST POST AT THE ENTRANCES TO THE SITE AND VISIBLE TO THE PUBLIC, A NOTICE CONTAINING THE FOLLOWING INFORMATION: PERMIT NUMBER; OSPC NAME AND CONTACT INFORMATION; LOCATION OF WHERE EROSION CONTROL PLANS WILL BE KEPT FOR VIEWING; A BRIEF DESCRIPTION OF THE PROJECT; AND THE TEXT, "VTDEC (802-241-3770) HAS AUTHORIZED THE DISCHARGE OF STORMWATER RUNOFF FROM THIS CONSTRUCTION SITE UNDER PERMIT NO. VT GENERAL PERMIT 3-9020 (NOI #7411-9020)." ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH PERMIT AND DESIGN INCLUDING MATERIALS SUBMITTED WITH PERMIT APPLICATION.

SELF-INSPECTION REQUIREMENTS

- ALL EROSION CONTROL FACILITIES SHALL BE INSPECTED BY, OR UNDER THE DIRECTION OF, THE OSPC AT LEAST ONCE PER SEVEN CALENDAR DAYS AND WITHIN 24-HOURS OF ANY STORM EVENT CAUSING A DISCHARGE OF STORMWATER FROM THE CONSTRUCTION SITE.**
- ANY EVIDENCE OF MEASUREABLE AMOUNTS OF SEDIMENT OR SEDIMENT LADEN WATER LEAVING THE CONSTRUCTION SITE OR ANY VISIBLE DISCOLORATION OF SURFACE WATERS (INCLUDING WETLANDS) SHALL BE NOTED AND IMMEDIATE ACTION TAKEN TO CORRECT THE DISCHARGE, INCLUDING HALTING OR REDUCING CONSTRUCTION ACTIVITIES AS NECESSARY UNTIL THE DISCHARGE AND/OR THE CONDITIONS IS FULLY CORRECTED.
- THE OSPC SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND ANY WATER QUALITY MONITORING DATA AND SHALL NOTE ALL PROBLEM AREAS AND THE MEASURES TAKEN TO CORRECT THOSE PROBLEMS AND PREVENT FUTURE PROBLEMS. THE FORM SHOWN HEREON MAY BE PHOTOCOPIED AND USED.

WINTER CONSTRUCTION LIMITATIONS

A. REQUIREMENTS FOR WINTER SHUTDOWN

- FOR AREAS TO BE STABILIZED BY VEGETATION, SEEDING SHALL BE COMPLETED NO LATER THAN SEPTEMBER 15 TO ENSURE ADEQUATE GROUND COVER.
- COMPLETION OF ALL NON-VEGETATIVE STABILIZATION OF ALL AREAS OF DISTURBED SOILS WITHOUT VEGETATION NO LATER THAN OCTOBER 15.
- WHERE MULCH IS SPECIFIED, APPLICATION RATES SHALL BE DOUBLE THE REGULAR CONSTRUCTION SEASON RATE. APPLY ROUGHLY 2 INCHES OF MULCH WITH 80-90% COVER. MULCH SHOULD BE TRACKED IN OR STABILIZED WITH NETTING.

B. REQUIREMENTS FOR WINTER CONSTRUCTION

- ACCESS POINTS SHALL BE ENLARGED AND STABILIZED FOR SNOW STOCKPILING.
- THE LIMITS OF DISTURBANCE SHALL BE MOVED OR REPLACED TO REFLECT THE BOUNDARIES OF WINTER WORK.
- PROVIDE ADEQUATE CONTROL AND STORAGE OF SNOWMELT. CLEARED SNOW SHALL BE STORED DOWN GRADIENT OF ALL AREAS OF DISTURBANCE. THE STORAGE OF SNOW IN STORMWATER MANAGEMENT STRUCTURES IS PROHIBITED.
- A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS (SILT FENCE, CONSTRUCTION FENCE, ETC.) TO ALLOW FOR SNOW CLEARING AND MAINTENANCE. IN AREAS OF DISTURBANCE WITHIN 100 FEET OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED WITH PERIMETER DIKES, SWALES OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
- DRAINAGE STRUCTURES AND CONVEYANCES SHALL REMAIN OPEN AND FREE OF SNOW AND ICE DAMS.
- INSTALL SILT FENCING AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE IN ADVANCE OF GROUND FREEZING.
- WHERE MULCH IS THE SELECTED STABILIZATION MEASURE, USE DOUBLE THE STANDARD RATE OF MULCH SPECIFIED HEREON.
- NETTING OR OTHER PRACTICES SHALL BE USED TO ANCHOR MULCH TO PREVENT REMOVAL BY WIND.
- TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORKING DAY, WITH THE FOLLOWING EXCEPTIONS:
 - IF NO PRECIPITATION IS FORECASTED WITHIN 24 HOURS, AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
 - DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
- SNOW AND ICE SHALL BE REMOVED TO A THICKNESS OF LESS THAN ONE INCH PRIOR TO STABILIZATION.
- PROVIDE 10 TO 20 FEET OF STONE STABILIZATION IN AREAS SUCH AS THE PERIMETER OF BUILDINGS UNDER CONSTRUCTION, WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED.

STANDARDS FOR EROSION PREVENTION

- TOTAL DISTURBED EARTH AREA SHALL NOT EXCEED 1.0 ACRE AT ANY ONE TIME.**
- TEMPORARY OR PERMANENT STABILIZATION REQUIRED AFTER 7 CONSECUTIVE DAYS OF DISTURBED EARTH EXPOSURE IN ANY ONE LOCATION.**
- SLOPES GREATER THAN 3:1 SHALL HAVE ROLLED EROSION CONTROL PRODUCT (MATTING) INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED HEREIN OR MANUFACTURER RECOMMENDATIONS, WHICHEVER IS MORE STRINGENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL DISTURBED AREAS, INCLUDING WATERING, UNTIL THE AREA IS STABILIZED AS DETERMINED BY THE ENGINEER. RE-SEEDING SHALL BE COMPLETED UNTIL MATURE STAND OF GRASS IS ESTABLISHED TO PROVIDE 90% COVERAGE OF THE SEEDED AREA.
- CUT AND FILL SLOPES SHALL BE A MAXIMUM GRADE OF 3:1 EXCEPT IN AREAS OF ROCK OR AREAS DESIGNATED ON THE PLANS AS SPECIAL CONSTRUCTION.
- TEMPORARY VEGETATION:**
 - SITE PREPARATION REQUIRES THE INSTALLATION OF NECESSARY EROSION CONTROL OR STORMWATER MANAGEMENT PRACTICES AND DRAINAGE SYSTEMS.
 - SLOPE, GRADE AND SMOOTH THE SITE TO FIT THE NEEDS OF SELECTED MULCH PRODUCTS.
 - REMOVE ALL UNDESIRABLE STONE AND OTHER DEBRIS TO MEET THE NEEDS OF ANTICIPATED LAND USE AND MAINTENANCE.
 - APPLY A MINIMUM OF 300-LBS PER ACRE OF 10-10-10 FERTILIZER UNIFORMLY OVER THE AREA TO BE SEEDED.
 - PREPARE THE SEED BED BY TILLING TO A DEPTH OF 3" TO 4". THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHENEVER POSSIBLE.
 - SELECT SEED MIX AND APPLICATION RATE FROM THE TABLE BELOW. THE SEED SHALL BE SPREAD UNIFORMLY OVER THE AREA. THE SOIL SHOULD THEN BE FIRMED BY ROLLING OR PACKING. IF NOT FEASIBLE THE SEED SHALL BE COVERED BY RAKING DISKING OR DRAGGING.
 - IF SPRING, SUMMER OR EARLY FALL: RYEGRASS (ANNUAL OR PERENNIAL) AT 20-LBS PER ACRE
 - IF LATE FALL OR EARLY WINTER: CERTIFIED 'AROSTOOK' WINTER RYE AT 90-LBS PER ACRE
 - ALL DISTURBED AREAS SHALL BE MULCHED FOLLOWING SEEDING, AS FOLLOWS: HAY OR STRAW, APPLIED AT A RATE OF 2-TONS (100-120 BALES) PER ACRE, PROVIDING APPROXIMATELY 90% COVERAGE AND ANCHORED WITH PEG/TWINE, MULCH NETTING, WOOD CELLULOSE FIBER, MULCH ANCHORING TOOL OR TACKIFIER ON SLOPES OVER 25 PERCENT.
- ALL DISTURBED AREAS OF THE SITE TO BE SEEDED AND MULCHED BY SEPTEMBER 15, REGARDLESS OF FINAL GRADING.**
 - CONTINUE TEMPORARY EROSION CONTROL MEASURES UNTIL THE PERMANENT MEASURES ARE SUFFICIENTLY ESTABLISHED AND CAPABLE OF CONTROLLING EROSION. (90% COVERAGE FOR VEGETATED AREAS)

7. PERMANENT VEGETATION:

- SURFACE AND SEEPAGE WATER SHALL BE DRAINED OR DIVERTED FROM THE SITE.
- SITE PREPARATION REQUIRES THE INSTALLATION OF NECESSARY EROSION CONTROL OR STORMWATER MANAGEMENT PRACTICES AND DRAINAGE SYSTEMS.
- REMOVE ALL UNDESIRABLE STONE AND OTHER DEBRIS TO MEET THE NEEDS OF ANTICIPATED LAND USE AND MAINTENANCE.
- TEST SOIL TO DETERMINE IF AMENDMENTS ARE REQUIRED AND THE PROPER APPLICATION RATES.
- APPLY GROUND AGRICULTURAL LIMESTONE TO ATTAIN A PH OF 6.0 IN THE UPPER 2" OF SOIL. APPLY COMMERCIAL FERTILIZER AT 600-LBS PER ACRE OF 5-10-10 OR EQUAL.
- PREPARE THE SEED BED BY TILLING TO A DEPTH OF 3" TO 4". THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHENEVER POSSIBLE.
- SELECT SEED MIX AND APPLICATION RATE. THE SEED SHALL BE SPREAD UNIFORMLY OVER THE AREA. THE SOIL SHOULD THEN BE FIRMED BY ROLLING OR PACKING. IF NOT FEASIBLE THE SEED SHALL BE COVERED BY RAKING DISKING OR DRAGGING.

STANDARDS FOR SEDIMENT CONTROL

- DUST CONTROL FOR DRIVING AREAS:
 - WATER SPRINKLING, SPRAY UNTIL SURFACE IS WET.
 - POLYMER ADDITIVES PER MANUFACTURER RECOMMENDATIONS
 - GEOTEXTILES
 - CHEMICAL APPLICATIONS SHALL NOT BE APPLIED WITHOUT WRITTEN AUTHORIZATION FROM THE VTDEC.
- DUST CONTROL FOR NON-DRIVING AREAS:
 - VEGETATIVE COVER
 - MULCH
 - CHEMICAL APPLICATIONS SHALL NOT BE APPLIED WITHOUT WRITTEN AUTHORIZATION FROM THE VTDEC.
- SILT FENCE: SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN HEREON OR MANUFACTURER RECOMMENDATIONS, WHICHEVER IS MORE STRINGENT. SILT FENCE SHALL BE MIRAFI 100X, FILTER X, STABILINKA T140N OR EQUAL. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR EQUAL.
- EXCAVATED MATERIAL FROM EXCAVATION AND TRENCHING SHALL BE STOCKPILED IN APPROVED LOCATIONS OR USED AS FILL MATERIAL WHERE APPROVED BY THE OWNER'S REPRESENTATIVE OR ENGINEER.
- STOCKPILED MATERIAL SHALL HAVE A SILT FENCE ERECTED AROUND THE PERIMETER. THE STOCKPILE MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL. LOCATE STOCKPILES UPHILL FROM DISTURBED AREAS WHERE POSSIBLE.

SEEDING GUIDE

SEED MIXTURE	VARIETY	RATE IN LBS. PER ACRE	RATE IN LBS. PER 1000 SQ. FT.
MIX #1			
BIRDSFOOT TREFFOIL* OR	EMPIRE/PARDEE	5**	0.10
COMMON WHITE CLOVER*	COMMON	8	0.20
PLUS			
TALL FESCUE	KY-31/REBEL	10	0.25
PLUS			
REDFEET OR	COMMON	2	0.05
RYEGRASS (PERENNIAL)	PENNFINE/LINN	5	0.10

* ADD INNOCULANT IMMEDIATELY PRIOR TO SEEDING
 ** MIX 2.5 LBS. EACH OF EMPIRE AND PARDEE OR 2.5 LBS. OF BIRDSFOOT AND 2.5 LBS. OF WHITE CLOVER PER ACRE.

THIS MIX IS USED EXTENSIVELY IN SHADED AREAS.

MIX #2

SWITCHGRASS	SHELTER, PATHFINDER, TRAILBLAZER OR BLACKWELL	10	0.25
COASTAL PANICGRASS	ATLANTIC	10	0.25

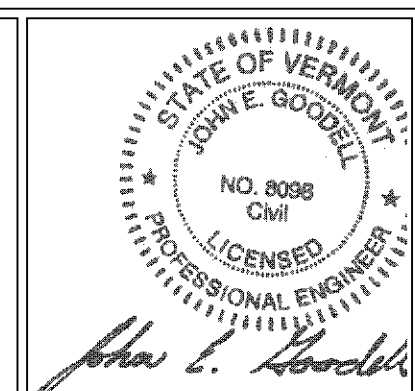
THIS MIX IS SALT TOLERANT, A GOOD CHOICE ALONG ROADSIDES.

MULCH SPECIFICATIONS

MULCH MATERIAL	QUALITY STANDARDS	PER 1000 SQ. FT.	PER ACRE	DEPTH OF APPLICATION	REMARKS
WOOD CHIPS OR SHAVINGS	AIR-DRIED. FREE OF OBJECTIONABLE COARSE MATERIAL	500-800 LBS.	10-20 TONS	2" - 7"	USED PRIMARILY AROUND SHRUB AND TREE PLANTINGS AND RECREATION TRAILS TO INHIBIT WEED COMPETITION. RESISTANT TO WIND BLOWING. DECOMPOSES SLOWLY.
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS & COARSE MATERIALS	90-100 LBS. (2-3 BALES)	2 TONS (100-120 BALES)	COVER ABOUT 90% SURFACE	USE SMALL GRAIN STRAW WHERE MULCH IS MAINTAINED FOR MORE THAN THREE MONTHS. SUBJECT TO WIND BLOWING UNLESS ANCHORED.
GRAVEL CRUSHED STONE	1 1/2" OR ROAD MATERIAL			3"	USE IN FOOT OR VEHICLE TRAFFIC AREAS TO STABILIZE SOIL.

REV.#	DESCRIPTION	BY & DATE	CHK. & DATE	REV.#	DESCRIPTION	BY & DATE	CHK. & DATE

**PERMIT REVIEW SET
NOT FOR CONSTRUCTION**



DATE SURVEY: JAN. 2016
 DATE PLAN: 6/1/15
 DESIGNED BY: JEG
 DRAWN BY: TJS
 CHECKED BY: JEG
 SCALE: N/A

EROSION CONTROL NOTES
 FOR
WILMINGTON WATER DISTRICT
 WILMINGTON, VERMONT

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 Engineering Surveying Landscape Architecture Planning
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