

PERMIT ID# 40990

FOR AGENCY USE ONLY
Town: HARTFORD
Route: VS4
Mile Marker: 2.48 - 2.51
Log Station: 130+94 - 132+52 LT 3/2

VERMONT AGENCY OF TRANSPORTATION
19 V.S.A. § 1111 PERMIT APPLICATION

Owner's/Applicant's Name, Address & Phone No. Town of Hartford % Rich Munge
173 Airport Road, White River Junction, VT 05001

Co-applicant's Name, Address & Phone No. (if different from above) _____

The location of work (town, highway route, distance to nearest mile marker or intersection & which side)
Intersection of Rt 4 and Hartland-Quechee Road

Description of work to be performed in the highway right-of-way (attach sketch)
REPLACEMENT OF EXISTING WATER MAINS AS SHOWN ON SHEET C-2 AND C-10 OF OTHER CREEK ENGINEERING DATED 4-4-16 ATTACHED.

Property Deed Reference Book: _____ Page: _____ (only required for Permit Application for access)

Is a Zoning Permit required? Yes No - If Yes, # _____

Is a 30 VSA § 248 permit required? Yes No - If Yes, # _____

Is an Act 250 permit required? Yes No - If Yes, # _____

Other permit(s) required? Yes No - If Yes, name and # of each Water Supply Division - Construction Permit

Date applicant expects work to begin August 20 16

Owner/Applicant: Rich Munge Position Title: Director of Public Works
(Print name above)

Sign in Shaded area:  Date: 4/28/16

Co-applicant: _____ Position Title: _____
(Print name above)

Sign in Shaded area: _____ Date: _____

- INSTRUCTIONS:**
- Contact the Agency of Transportation, Utilities and Permits Unit (802.828.2653), One National Life Drive, Montpelier, VT 05633, or your local area Agency Transportation Maintenance District to determine your issuing authority.
 - Contact the issuing authority to determine what plans and other documents are required to be submitted with your, under Vermont Statutes Annotated, Title 19, Section 1111, permit application.
 - Complete this TA 210 Form (some information may not apply to you) and attach all necessary documents and submit it to the issuing authority. We require this application to be signed by the property owner or their legally authorized representative. **Original signatures are required on an original TA 210 Form.**
 - The Owner/Applicant and Co-applicant (if applicable) declares under the pains and penalty of perjury that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.
 - If you have any questions contact the issuing authority.

PERMIT APPROVAL

This covers only the work described below: Permission is granted to work within the state highway right-of-way to reconstruct the water main at the US4/Quechee Hartland Road/Waterman Hill Road intersection. All work shall be in accordance with the attached plans and special conditions.

The work is subject to the restrictions and conditions on the reverse page, plus the Special Conditions stated on the attached page(s).

Date work is to be completed November 30, 2016

Date work accepted: _____

By Wang Shuler Issued Date May 3, 2016
Authorized Representative for Secretary of Transportation

By: _____
DTA or Designee

NOTICE: This permit covers only the Vermont Agency of Transportation's jurisdiction over this highway under Vermont Statutes Annotated, Title 19, Section 1111. It does not release the petitioner from the requirements of any other statutes, ordinances, rules or regulations.

No work shall be done under this permit until the owner/applicant has contacted the District Transportation Office at:

District #4, (802) 295-8888

Applicant to Complete

**State of Vermont
Policy, Planning & Intermodal Development Division
Policy, Planning and Research Bureau
Development Review & Permitting Services Section**

One National Life Drive
Montpelier, VT 05633-5001
vtrans.vermont.gov

[phone] 802-828-2653
[fax] 802-828-2456
[ttd] 800-253-0191

Agency of Transportation

May 3, 2016

Town of Hartford
Rich Menge
171 Bridge Street
White River Junction, VT 05001

Subject: Hartford, US4, L.S. 130+94 ~ 132+52 LT & RT
(*Quechee Water Storage Tank and Main*)

Dear Mr. Menge:

Your application for a permit to work within the State Highway right-of-way to reconstruct the water main at the US4/Quechee Hartland Road/Waterman Hill Road intersection has been processed by this office and is enclosed.

Please contact the District Transportation Office #4 prior to starting work in the state highway right-of-way. The telephone number in White River Junction is (802) 295-8888.

Sincerely,



Theresa Gilman
Permitting Services Supervisor
Permitting Services Section

Enclosures

cc: District Transportation Office #4
Mark Youngstrom, Otter Creek Engineering Inc.

SPECIAL CONDITIONS

This permit is granted subject to the restrictions and conditions on the back of the permit, with particular attention given to the Special Conditions listed below. This permit pertains only to the authority exercised by the Vermont Agency of Transportation (Agency) under Vermont Statutes Annotated, Title 19, Section 1111, and does not relieve the Permit Holder from the requirements of otherwise applicable statutes, rules, regulations or ordinances (e.g., Act 250, zoning, etc.). The Permit Holder shall observe and comply with all Federal and State laws and local bylaws, ordinances, and regulations in any manner affecting the conduct of the work and the action or operation of those engaged in the work, including all orders or decrees as exist at present and those which may be enacted later by bodies or tribunals having jurisdiction or authority over the work, and the Permit Holder shall defend, indemnify, and save harmless the State and all its officers, agents, and employees against any claim or liability arising from or based on the violation of any such law, bylaws, ordinances, regulations, order, or decree, whether by the Permit Holder in person, by an employee of the Permit Holder, by a person or entity hired by the Permit Holder, or by a Subcontractor or supplier.

The Permit Holder shall accomplish all work under this permit in accordance with the profile and notes of standard drawing D-20 (copy attached) and the attached plans, Sheets C-2 and C-10 dated April 4, 2016. **Any revisions to these plans prior to or during construction shall be submitted and approved by the Agency prior to construction within the State highway right-of-way.**

A preconstruction meeting to discuss work to be completed must be held prior to the Permit Holder's employees or contractor beginning work. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such meeting.

The Permit Holder shall be responsible for providing a copy of the issued 19 V.S.A. §1111 Permit (VTrans Highway Access and Work Permit) to the Contractor selected to perform the work. The Contractor, working for the Permit Applicant, shall adhere to all conditions referenced in the issued permit.

Please note that the Vermont Agency of Transportation is not a member of Dig Safe. The Permit Holder shall also contact Steve Guyette (802) 343-2188. Mr. Guyette will need to locate and mark all existing buried utility facilities owned by the Agency near the location of the proposed work.

Roadway shoulder areas must be maintained free of unnecessary obstructions, including parked vehicles, at all times while work is being performed under this permit.

All grading within the State Highway right-of-way associated with the proposed construction shall be subject to inspection and approval by the District Transportation Administrator or his or her staff. The Permit Holder shall be responsible for ensuring that all grading work in or on the State Highway right-of-way complies with applicable statutes, rules, regulations or ordinances.

In areas to be grass covered, the Permit Holder shall restore turf by preparing the area and applying the necessary topsoil, limestone, fertilizer, seed, and mulch, all to the satisfaction of the District Transportation Administrator. The Permit Holder shall be responsible for ensuring that all turf restoration work in or on the State Highway right-of-way is in compliance with applicable statutes, rules, regulations or ordinances.

The Permit Holder must install temporary pavement prior to weekend shutdown after completion of backfilling where an open cut excavation has been made through a roadway subject to vehicular traffic or where construction for any roadway widening for turn lanes has been brought to grade. The temporary pavement shall consist of, at least, 2 inches of compacted bituminous concrete. Temporary pavement shall be properly maintained and shall be replaced with permanent pavement prior to completion of the project or suspension of work for the winter season.

The placement, size, shape, and color of all pavement markings must be in accordance with the most recent editions of the MUTCD (Manual on Uniform Traffic Control Devices) and Vermont standards. **All existing pavement markings that become disturbed or overlaid with pavement shall be replaced by the Permit Holder with "in kind" (durable or paint) markings to the satisfaction of the District Transportation Administrator.** The Permit Holder shall bear all costs associated with this work.

The Permit Holder shall replace any disturbed State property bounds. These bounds must be reset by a land surveyor licensed in the State of Vermont.

All hydrant assemblies shall be located outside of the highway safety clear zone unless otherwise approved by the Agency.

Upon completion of the work, the Permit Holder shall be responsible to schedule and hold a final inspection. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such inspection.

The Permit Holder shall provide VTrans Permitting Services Section with a copy of as-built drawings no later than 90 days following the completion of the utility installation, including any additional information regarding the location of the existing underground facilities owned by the Permit Holder and any underground facilities marked by DigSafe or independent utility owners, regardless of utility ownership, encountered during new utility installation.

Should any portion of the utility facility installed within the State Highway right-of-way require relocation due to future highway improvements, the Permit Holder shall bear all expenses, and all necessary adjustments shall be completed in a timely manner.

The installation of the 12-inch water main, encased in a 20-inch steel sleeve and crossing under US4 shall be installed by jacking or boring in accordance with the attached standard D-20. The construction of an 8-inch replacement main running parallel along US4, in the paved shoulder, shall be installed via open cut installation. All repair work associated with the open cut installation shall be in accordance with the Agency's D-20 standard and the conditions of this permit, unless otherwise approved by the District Transportation Administrator.

The Permit Holder must backfill all open trenches or pits at the end of each day. With permission from the District Transportation Administrator, trenches or pits may be left open for short periods of time if properly protected. In no case shall trenches or pits be left open over a weekend. The Permit Holder shall be responsible for ensuring that all trench or pit work in or on the State Highway right-of-way is in compliance with applicable statutes, rules, regulations or ordinances.

Any excavation within 5-feet of from the edge of paved shoulder and more than 5-feet deep must be sheeted to prevent undermining of the highway pavement, unless otherwise approved by the District Transportation Administrator.

Where a trench is excavated within the roadbed, all backfill material within 24 inches of the bottom of pavement shall be new material from a source approved by the District Transportation Administrator. The Permit Holder shall place all backfill material in six inch layers and compacted to not less than 95% of the material's maximum dry density as determined by AASHTO (American Association of State Highway and Transportation Officials) Standard Method of Test, T-99, Method C, using air or mechanical tampers.

The Permit Holder shall install an underground utility warning tape or tracer wire system to detect, locate and identify the approved underground utility facility. As part of the final inspection the District Transportation Administrator may require a conductivity test prior to acceptance of the work. Additionally, if the utility warning system becomes unreliable or inoperable in the future the Agency may require that the Permit Holder repair or install a replacement system.

The Permit Holder shall promptly and unconditionally pay for full repair and restoration of any and all damages to existing underground utility facilities (meaning any underground pipe, conduit, wire or cable, including appurtenances) that have been brought about by the execution of the permitted work. The Permit Holder also is required to pay for any costs to repair the highway following and resulting from any repairs to existing utilities occurring as a result of the work covered by this permit. Except with the specific, written permission of the Engineer, the Permit Holder or his or her contractor shall expose all underground facilities to verify their location and depth, at each location where the authorized boring or drilling work crosses a facility; and at reasonable intervals when closely paralleling a facility. Whenever possible, existing facilities should be crossed at a perpendicular angle. The Permit Holder shall be responsible for obtaining the modification of this permit, if necessary, for any additional survey work before initiating boring or drilling operations under the permit. The Agency will treat the Permit Holder's failure to fully, promptly, and conscientiously comply with all of conditions of this paragraph, including but not limited to the obligation to pay for repairs, as grounds for the Agency to refuse to grant any further requests by the Permit Holder for any other permits for subsurface work unless the Permit Holder furnishes irrevocable financial security, in a type and an amount deemed sufficient by the Agency in its sole discretion, prior to such future subsurface work.

The Permit Holder shall install Agency approved Delineator Posts at the designated locations to clearly and quickly identify manholes, pipelines, valves, underground utilities, etc.

The Permit Holder shall install flexible fiberglass reinforced composite identification Marker Posts at the designated locations to clearly and quickly identify underground utilities. Marker Posts shall be American Public Works Association (APWA) color coded with post decals that identify the utility line.

The Permit Holder shall verify the appropriate safety measures needed, prior to construction, so proper devices and/or personnel are available when and as needed. Traffic control devices, shall be in conformance with the MUTCD (Manual on Uniform Traffic Control Devices), Agency standards and any additional traffic control deemed necessary by the District Transportation Administrator. The Permit Holder's failure to utilize proper measures shall be considered sufficient grounds for the District Transportation Administrator to order cessation of the work immediately.

The Permit Holder will perform construction in such a way as to minimize conflicts with normal highway traffic. When two-way traffic cannot be maintained, the Permit Holder shall provide a sign package that conforms to the MUTCD (Manual on Uniform Traffic Control Devices) or Agency standards, as well as trained Flaggers. The District Transportation Administrator may require a similar sign package with trained Flaggers whenever it is deemed necessary for the protection of the traveling public. In addition, the District Transportation Administrator may require the presence of Uniform Traffic Officers (UTOs); moreover, the presence of UTOs shall not excuse the Permit Holder from its obligation to provide the sign package and Flaggers.

Prior to the start of construction, the Permit Holder and / or their Contractor shall submit a site specific traffic control plan to the Agency for review and approval; allow a minimum of one week for review and approval of each submittal if more than one review is necessary. This plan shall also include ADA pedestrian access throughout the project area and non-working hours traffic flow through the project area

The Permit Holder shall ensure that all workers exposed to the risks of moving highway traffic and/or construction equipment wear high-visibility safety apparel meeting the requirements of ISEA (International Safety Equipment Association) "American National Standards for High-Visibility Safety Apparel," and labeled as ANSI (American National Standards Institute) 107-2004, or latest revisions, for Performance Class 2 or 3 requirements. A competent person - one designated by the Permit Holder's Contractor to be responsible for worker safety within the activity area of the State highway right-of-way -shall select the appropriate class of garment. The Engineer may suspend this permit until compliance is obtained.

As the utility operation moves, flagger signs shall be moved accordingly. At no time should the flagger symbol sign be more than 1,000 feet from the flagger station. Flagger signs shall be covered or turned away from traffic when flagging operations cease for longer than 15 minutes.

Independence; Liability: The Permit Holder will act in an independent capacity and not as officers or employees of the State.

The Permit Holder shall defend the State and its officers and employees against all claims or suits arising in whole or in part from any act or omission of the Permit Holder or of any agent of the Permit Holder. The State shall notify the Permit Holder in the event of any such claim or suit, and the Permit Holder shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit.

After a final judgment or settlement, the Permit Holder may request recoupment of specific defense costs and may file suit in the Washington Superior Court requesting recoupment. The Permit Holder shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Permit Holder.

The Permit Holder shall indemnify the State and its officers and employees in the event that the State, its officers or employees become legally obligated to pay any damages or losses arising from any act or omission of the Permit Holder.

Insurance: Before beginning any work under this Permit the Permit Holder must provide certificates of insurance to show that the following minimum coverages are in effect. It is the responsibility of the Permit Holder to maintain current certificates of insurance on file with the State for the duration of work under the Permit. No warranty is made that the coverages and limits listed herein are adequate to cover and protect the interests of the Permit Holder for the Permit Holder's operations. These are solely minimums that have been established to protect the interests of the State.

Workers' Compensation: With respect to all operations performed under the Permit, the Permit Holder shall carry workers' compensation insurance in accordance with the laws of the State of Vermont.

General Liability and Property Damage: With respect to all operations performed under the Permit, the Permit Holder shall carry general liability insurance having all major divisions of coverage including, but not limited to:

Premises - Operations
Products and Completed Operations
Personal Injury Liability
Contractual Liability

The policy shall be on an occurrence form and limits shall not be less than:

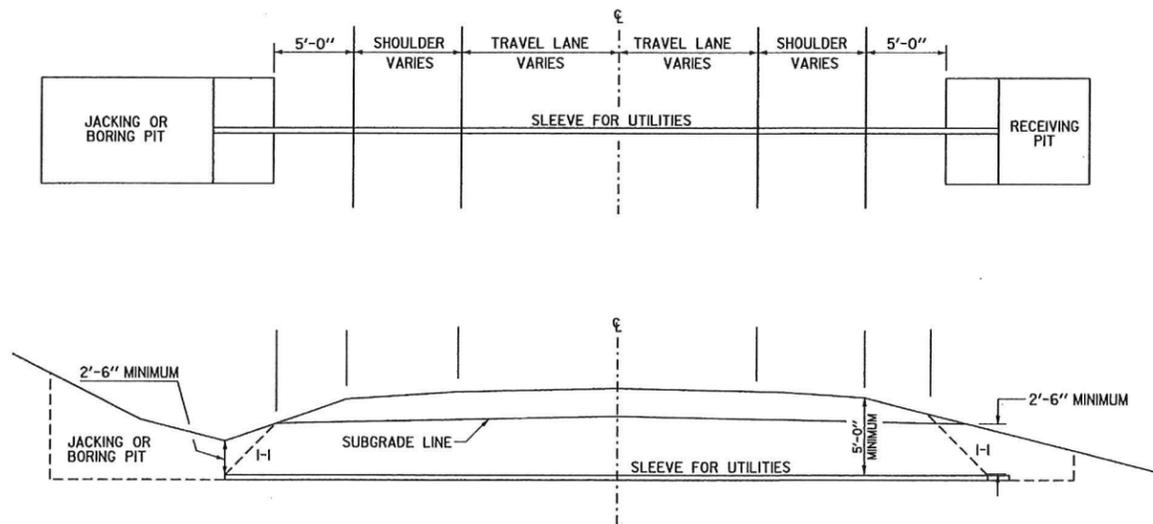
\$2,000,000 Per Occurrence
\$2,000,000 General Aggregate
\$2,000,000 Products/Completed Operations Aggregate
\$ 50,000 Fire/Legal Liability

Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

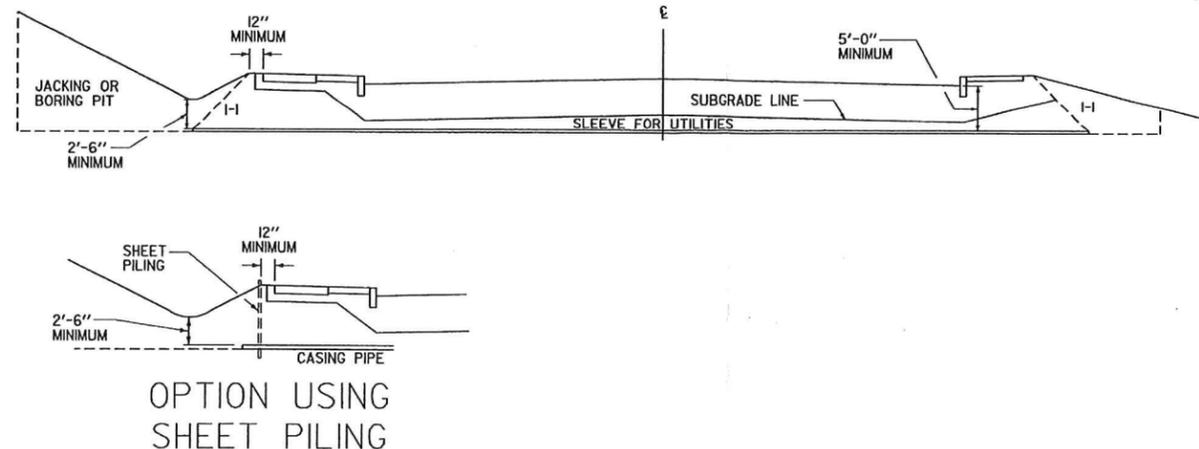
Automotive Liability: The Permit Holder shall carry automotive liability insurance covering all motor vehicles, including hired and non-owned coverage, used in connection with the Permit. Limits of coverage shall not be less than: \$1,000,000 combined single limit.

Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

DETAIL "A" JACKING, BORING, AND DIRECTIONAL BORE - UNCURBED TYPICAL

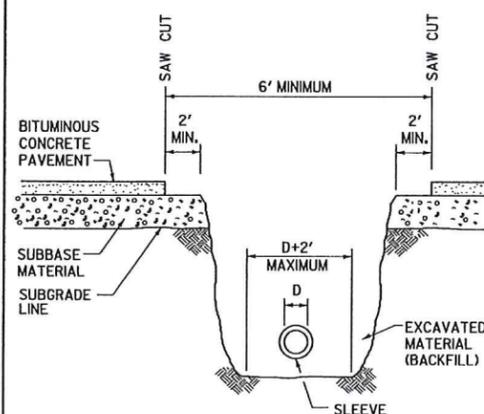


DETAIL "B" JACKING, BORING, AND DIRECTIONAL BORE - CURBED TYPICAL



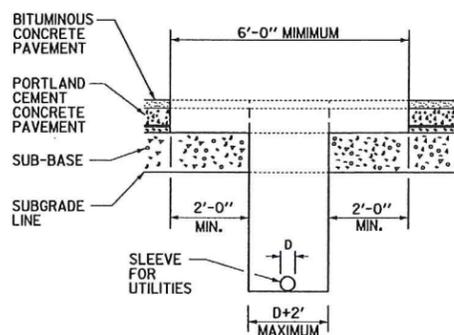
OPEN CUT AND PAVEMENT REPLACEMENT
APPLICABLE ONLY WHEN SPECIFICALLY AUTHORIZED BY HIGHWAY PERMIT

DETAIL "C" OPEN CUT EXCAVATION ACROSS BITUMINOUS CONCRETE PAVEMENT

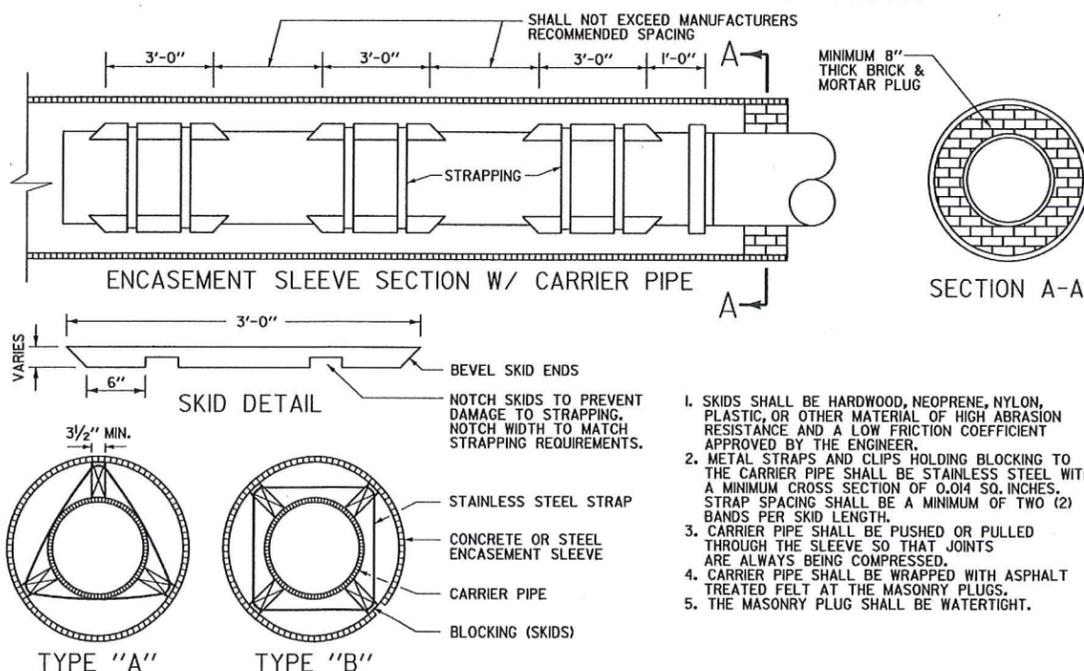


DETAIL "D" OPEN CUT W/ PORTLAND CEMENT CONC. PAVEMENT

IN THE EVENT THAT AN ADJACENT TRANSVERSE JOINT IS LESS THAN FOUR FEET FROM THE CUT, THE PAVEMENT SHALL BE REMOVED TO THAT JOINT.
DRILL & GROUT 4' LONG #5 BARS INTO 2' DEEP HOLES DRILLED EVERY 18" ALONG BOTH SIDES OF SAWN CONCRETE. TIE TOGETHER WITH #5 BARS.



DETAIL "E" CONCRETE OR STEEL SLEEVE



GENERAL NOTES

1. SHEET PILING MAY BE DRIVEN VERTICALLY FIVE (5) FEET OUTSIDE THE SHOULDER POINT, OR ONE (1) FOOT BACK OF THE SIDEWALK, TO ALLOW FOR A SHORTER SLEEVE.
2. SEE DETAIL 'A' OR 'B' FOR DETERMINING SLEEVE LENGTH.
3. IN THE EVENT THAT PERMISSION IS GRANTED TO CUT AN EXISTING PORTLAND CEMENT CONCRETE PAVEMENT, ALL CUTS SHALL BE MADE WITH A SAW TO FULL DEPTH.
4. PORTLAND CEMENT CONCRETE PATCHES SHALL BE PROPERLY CURED FOR SEVEN (7) DAYS BEFORE BEING SUBJECTED TO TRAFFIC LOADS. WHEN HIGH EARLY STRENGTH CEMENT IS USED, PROPER CURING FOR THREE (3) DAYS SHALL BE REQUIRED BEFORE BEING SUBJECTED TO TRAFFIC LOADS. WHEN A HIGH STRENGTH, QUICK SETTING CONCRETE PATCHING COMPOUND IS APPROVED, IT SHALL BE PROPERLY CURED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS BEFORE BEING SUBJECTED TO TRAFFIC LOADS.
5. ALL EXPOSED BITUMINOUS SURFACES SHALL BE COATED WITH EMULSIFIED ASPHALT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
6. BITUMINOUS CONCRETE PAVEMENTS SHALL BE REPLACED WITH BITUMINOUS CONCRETE PAVEMENT AT THE SAME THICKNESS OF THE PAVEMENT BEING REMOVED, AND IN ACCORDANCE WITH THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 406. PORTLAND CEMENT CONCRETE PAVEMENT AND SUBBASE ARE TO BE REPLACED IN KIND. MATERIAL BELOW SUBGRADE TO BE REPLACED WITH EXCAVATED MATERIAL, OR AS DIRECTED BY THE ENGINEER. ALL BACKFILL MATERIAL SHALL BE MADE IN SIX (6) INCH MAXIMUM LIFTS AND COMPACTED TO NOT LESS THAN 95% MAXIMUM DRY DENSITY.
7. THE DIAMETER OF THE ENCASEMENT SLEEVE SHALL BE EQUAL TO THE DIAMETER OF THE CARRIER PIPE PLUS TWELVE (12) INCHES. (SEE VAOT SPECIFICATIONS, SECTION 625, FOR EXCEPTIONS.)

REVISIONS AND CORRECTIONS
DEC. 23, 1974 - ORIGINAL APPROVAL
SEPT. 9, 1975 - CARRIER PIPE AND PORTLAND CEMENT NOTES REVISED
OCT. 30, 1985 - REVISED TO CONFORM WITH 1986 SPECIFICATIONS
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.
MAR. 10, 1995 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.
MARCH 3, 2003 - REVISED TO REFLECT CURRENT DESIGN CRITERIA

APPROVED
[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT
[Signature]
CHIEF OF UTILITIES
[Signature]
FEDERAL HIGHWAY ADMINISTRATION

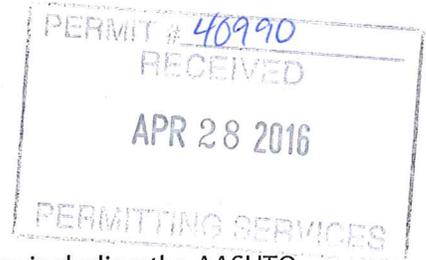
HIGHWAY CROSSING SLEEVES FOR UNDERGROUND UTILITIES



STANDARD D-20

The following Special Requirements apply to all work within the VTrans Highway Rights-of-Way. These requirements may conflict with other portions of the Contract Documents. The more stringent requirement shall govern. These Special Requirements are provided by State of Vermont Agency of Transportation (VTrans).

- 1. DEFINITION OF TERMS
- 2. GENERAL
- 3. TRAFFIC CONTROL AND PROTECTION
- 4. APPROVAL
- 5. JACKING, BORING OR TUNNELING
- 6. EXCAVATION, BACKFILL AND SURFACE RESTORATION



1. **DEFINITION OF TERMS.** The following, selected from various sources including the AASHTO publications, federal regulations and state laws, shall apply:

Applicant: Party(ies) requesting use of the highway right-of-way under 19 V.S.A. §1111.

Agency: Vermont Agency of Transportation (VTrans or VAOT)

Boring: The mechanical auguring of soil, with Standard Penetration Test values less than 100 and/or stone sizes less than 8 inches, to advance casings equal to or less than 36 inches in diameter beneath the roadway.

Carrier: Pipe directly enclosing a transmitted fluid (liquid or gas); or conduit.

Casing: A larger pipe enclosing a carrier.

Conduit or Duct: An enclosed tubular runway for protecting wire or cables.

DTA: The Agency's District Transportation Administrator.

Engineer: The Engineering Services Engineer or his duly authorized representative assigned to reviewing and developing permit conditions and issuance.

Highway, Street or Road: A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Jacking: The excavating of material ahead of the casing by persons using hand tools while the casing is advanced through the hole by jacks, rams, or other mechanical devices. Usually used where the diameter of the hole has a range between 36 inches and 72 inches.

Inspector: The authorized representative of the Agency assigned to make inspections of permit conformance.

MUTCD: Manual of Uniform Traffic Control Devices (for streets and highways).

Pavement Structure: The combination of sub-base, base course, and surface course placed on a sub-grade to support the traffic load and distribute it to the roadbed.

Permit: A license issued by the Vermont Agency of Transportation authorizing an applicant to undertake various types of work or installations within State highway rights-of-way.

Permit Holder: An Applicant in possession of a fully approved permit and/or agreement. This shall include employees, contractors, or others engaged to perform the physical work for, and acting on behalf of, the Permit Holder.

Roadway: The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

Traveled Way: The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Trenched: Installed in a narrow open excavation. Open cut excavation is a synonym for trenched.

Tunneling: The excavation of a material ahead of the casing by using hand or mechanical devices while the casing is advanced through the hole. Usually used where the diameter of the hole is greater than 72 inches.

Untrenched: Installed without breaking ground or pavement surface, such as by jacking, boring or tunneling.

2. **GENERAL.** The applicant (Owner and Contractor) shall apply for and obtain a (Highway) Permit prior to the commencement of any construction within a public highway right-of-way. Permits for work within a State highway right-of-way shall be obtained from the Engineering Services Engineer, Vermont Agency of Transportation, Montpelier, Vermont. Permits for work within a town highway right-of-way shall be obtained from the Selectmen (Trustees) of the appropriate Town (Village).

When the construction work is deemed extensive and/or complicated enough, a preconstruction meeting may be called prior to the start of the work. In these cases, some or all of the following shall be present or represented: District Transportation Administrator, Utilities Engineer, Permit Holder, and in some cases, the Agency Inspector assigned to the project. Others may be present as applicable.

Anticipated and/or known problems, along with tentative solutions, will be discussed at the preconstruction meeting. These may include but not limited to, work scheduling, handling of traffic, safety of the public, affected property owners, drainage, and other such critical construction operations. No work shall proceed until plans and schedules have been approved **in writing** by the Agency.

Upon completion of the work, a final inspection will be held with the same parties present as at the preconstruction meeting. The Permit Holder will be required to restore the highway right-of-way to as good condition as it was prior to his doing work, and to the satisfaction of Agency representatives.

Adequate written notice shall be given to the District Transportation Administrator before any work is done within a State highway right-of-way. A copy of such notice shall be also furnished to the Engineer and Inspector. Inspection by the Agency of Transportation, at the Permit Holder's expense, is permitted under 19 V.S.A. § 1111(e).

Any work shall be performed in such a manner that the roadway, appurtenances, and highway traffic will be safeguarded.

No blasting will be permitted under or adjacent to the highway unless special permission has been received from, and arrangements made with, the District Transportation Administrator.

All earthwork, including rock excavation, shall be suspended within the State Highway right-of-way during the period from December 1 to April 15. The Permit Holder shall check with, and receive instruction and approval from, the District Transportation Administrator regarding restoration of bituminous or gravel surfaces and other necessary work needed for the suspension period. All such work must be completed prior to December 1. The Permit Holder shall be responsible for maintenance of the construction area throughout the construction period, and during the suspension period.

3. **TRAFFIC CONTROL AND PROTECTION**

The extent of the impact on the highway will determine the type of traffic control specified. Suitable barricades, warning and advance warning signs, other devices, and the procedures outlined in the **Manual of Uniform Traffic Control Devices** shall be used to promote the safety and convenience of the traveling public during the construction period.

Proposals with a minimal impact and/or duration shall be in accordance with Agency standards for **Utility Work Zone, Typical Minor Maintenance, and Typical Moving Maintenance Operation**. Proposals with greater impact may require temporary traffic signals, detours, etc., in addition to the normal signing requirements.

At least one-way traffic shall be maintained at all times. Two-way traffic shall be maintained at all times when construction operations are not in progress. Uniformed traffic officers and/or trained flagpersons shall be provided for the control of traffic when two-way traffic cannot be maintained, and at such other times, as may be directed by the District Transportation Administrator or other authorized Agency representatives. Uniformed traffic officers and flagpersons shall have completed a training course given by their employers, and the employer shall certify to the Agency the names of all trained Traffic Control Personnel.

When traffic control becomes so complex that the traffic control cannot be accomplished using the Agency standards, the Permit Holder must submit a traffic control plan to the Agency's Utilities Section for Agency approval prior to beginning work.

4. **APPROVAL.** Before any construction operations are started, Contractor shall submit to Engineer, in triplicate, a detailed written description of the equipment and method he/she proposes to use and acceptable sketches showing details of the proposed operation. If a sub-contractor is to be used for the work, the name and address of the sub-contractor shall be indicated in the written description. **NO** work shall proceed until the Permit Holder's plans and schedules have been approved in writing by the Owner, the Engineer, the District Transportation Administrator and/or the municipality. The Permit Holder shall appoint an emergency person who can be contacted, at any time, should questions and problems arise.

5. **JACKING, BORING, OR TUNNELING.** Installation of a casing pipe under the highway, as indicated on the approved plans, in the specifications, and working drawings shall be done in such a manner that there shall be no, or minimal, interruption to traffic or disturbance of the roadway. The above operations shall be confined to areas outside the roadway, as indicated by the Agency Standard **Highway Crossing Sleeves for Underground Utilities.**

In excavating from within the casing pipe, extreme care shall be exercised to avoid the loss of material from outside the limits of the casing pipe in its final position. Excavation shall be carried ahead of the casing pipe to the extent possible without loss of surrounding material.

When sheet piling is used to form the highway side of the jacking or boring pit, the piling shall be cut off 2 feet below grade; and the remaining sheeting length left in place, undisturbed, following completion of construction operations. The sheet piling may be removed, if deemed necessary, by the District Transportation Administrator and if removed will not damage the structural integrity of the highway.

Open cut excavation for pipe and other underground crossings of the highway is not normally authorized in a Permit and is **NOT** an option of the Permit Holder.

Open cut excavation may be utilized only where attempting jacking, boring, or tunneling methods fail or prove impractical. In those instances, the Permit Holder must obtain appropriate written modifications of the Permit from the Agency prior to using any open cut excavation procedure.

8. **EXCAVATION, BACKFILL, AND SURFACE RESTORATION.** Maximum dimensions of excavation within the highway right-of-way shall conform in general to details shown on the Agency Standard, **Highway Crossing sleeves for Underground Utilities.** When excavating through portland cement concrete pavements, existing reinforcing shall be cut in the center of the trench, and carefully bent out of the way of excavation operations. Immediately following installation of the casing and/or pipe, the trench shall be backfilled with approved material, in 6 inch layers, to the sub-grade line. Each layer shall be compacted to not less than 95% of the maximum dry density, in accordance with AASHTO T-99, Method C, as it is placed.

Where a trench is excavated within the roadbed, all backfill material within 24 inches minimum, of the bottom of pavement (greater depths may be specified elsewhere) shall be new material from a source approved by the District Transportation Administrator. All backfill material shall be placed in 6-inch layers and compacted to not less than 95% of the material's maximum dry density, as determined by AASHTO Standard Method of Test, T-99, Method C, using air or mechanical tampers.

Temporary pavement will be required prior to weekend shutdown after completion of backfilling where an open cut excavation has been made through a roadway subject to vehicular traffic or where construction for any roadway widening for turn lanes has been brought to grade. The temporary pavement shall consist of at least 2 inches of thoroughly compacted bituminous concrete. Temporary pavement shall be properly maintained and shall be replaced with permanent pavement prior to completion of the project or suspension of work for the winter season.

Portland cement concrete pavement patches shall have a minimum thickness of 8 inches, with the top surface shaped to match the adjoining Portland cement concrete pavement. Where the existing Portland cement concrete pavement has been cut and removed (at least 2'-0" wider on each side of the trench), the existing longitudinal reinforcing steel is to be bent back to allow for trench excavation.

The reinforcing steel shall be bent back in place, spliced and new transverse reinforcing steel tied to the longitudinal reinforcing. The reinforcing steel shall be placed to provide a minimum concrete cover of 2-1/2 inches. Portland cement concrete shall then be consolidated and finished to the desired grade. Before being subjected to traffic load, the concrete shall be cured as noted on the Agency Standard **Highway Crossing Sleeves for Underground Utilities**. Adequate steel plates may be used to span the patch while the concrete is curing.

Bituminous pavement shall be replaced with bituminous concrete pavement a minimum of 2 inches thick or equal to the thickness of the adjacent bituminous pavement. The finished surface shall take into consideration possible additional consolidation of the trench backfill.

Sidewalks which have been disturbed by construction operations shall be replaced. Existing granite curb which has been disturbed by the construction may be removed and reset. Removed granite curb not needed for driveway access construction shall be delivered to the nearest District Transportation Garage, or as otherwise directed by, or arranged with, the District Transportation Administrator. New sidewalk and curb installations shall be in accordance with Agency Standards **Portland Cement Concrete Sidewalks**, or as otherwise specified.

The use of landscaping items shall not be permitted within the clear zone or right-of-way, which obstructs sight distances or creates a hazard.

END OF SPECIAL REQUIREMENTS FOR WORK WITHIN VTRANS RIGHTS-OF-WAY SECTION

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SECTION 02340 - CASINGS**PART 1.00 - GENERAL**

1.01 WORK INCLUDED

- A. All labor, materials, services and equipment for furnishing and installing casing(s) crossing under roadways, railways, rivers, etc., as shown or specified, and related work.

1.02 REFERENCE STANDARDS

Information and requirements contained in this Specification are based on the most recent version of the following standards

- A. ASTM Standard Specification A-139 for Electric Fusion (Arc) Welded Steel Pipe.
- B. ASTM Standard Specifications 1248 and 3350 for PE3408 High Density Polyethylene (HDPE) Pressure Pipe, with a cell classification of 345434C.
- C. VTrans Standard Detail D-20 for Highway Crossing Sleeves for Underground Utilities.
- D. VTrans Standard Specification for Construction, Section 625, Sleeves for Utilities.
- E. American Railway Engineering and Maintenance-of-Way Association Section for Pipelines.

1.03 SUBMITTALS

- A. The Contractor shall submit manufacturer's data for each size and type of casing pipe, casing spacers and end seals to be used on the Project, including: dimensions, specifications of materials, class/pressure rating, and appurtenances.

1.04 QUALITY ASSURANCE

- A. The Contractor shall be thoroughly trained and experienced in the skills and equipment required for installation and testing of these items.
- B. The Contractor shall protect materials before, during and after installation. In the event of damage, the Contractor shall immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.
- C. Upon direction of the Engineer, the Contractor shall remove, replace and/or rework all items that do not meet the requirements of this section. The Contractor shall perform all remedial measures at no additional cost to the Owner.
- D. Casing work crossing under existing roadways and/or railways shall be performed without disturbing the road/rail bed and without disrupting highway traffic or rail service unless authorized by Engineer and applicable highway/railway officials.

PART 2.00 - PRODUCTS

2.01 STEEL CASING PIPE

- A. Material: Casings shall be uncoated, steel pipe conforming to ASTM Specification A-139, Grade B, with electric fusion arc welded joints. Hydrostatic pressure test is not required. Manufacturer shall be Pittsburgh Pipe, or approved equal. Casings shall be new and free of rust and scales.
- B. Casing Diameter: The inside diameter of casing pipe shall be at least twelve inches (12") larger than the largest outside diameter (including bells or mechanical joints) of the carrier pipe being installed.
- C. Casing Thickness: The minimum wall thickness for casing with a nominal diameter

thirty inches (30") or less shall be 3/8-inch (0.375"), except it shall be 15/32-inch (0.469") for railway crossings. The minimum wall thickness for casing with a nominal diameter more than thirty inches (30"), but less than forty inches (40") shall be 1/2-inch (0.50"), except it shall be 19/32-inch (0.594") for railway crossings.

- D. Steel pipe shall have a specified minimum yield strength of at least 35,000 psi.

2.02 HIGH DENSITY POLYETHYLENE (HDPE) CASING PIPE

- A. Material: HDPE Casing Pipe shall meet the reference standards, with butt fusion type joints. Hydrostatic pressure test is not required. Manufacturer shall be CSR Polypipe, Flying W, Driscopipe, or approved equal.
- B. Casing Diameter: The inside diameter of casing pipe shall be at least twelve inches (12") larger than the largest outside diameter (including bells or mechanical joints) of the carrier pipe being installed, unless otherwise noted on the Drawings.
- C. Casing Thickness: Pipe shall have a minimum wall thickness meeting DR 17.
- D. HDPE casing is not acceptable for railway crossings.

2.03 CASING SPACERS

- A. Casing Spacers shall be one of the following, or approved equal:
1. Cascade Waterworks Manufacturing Company Model "CCS", bolt-on style, with a shell of 14 gauge, T-304 stainless steel. Shell shall have a 0.090" thick PVC liner. All nuts and bolts shall be stainless steel. Runners shall be made of ultra-high molecular weight polymer or glass reinforced polyester with a low co-efficient of friction.
 2. Pipeline Seal & Insulator, Inc. Style "Ranger II", all non-metallic, molded in segments for field assembly without special tools. Spacer segments shall be secured around carrier pipe with slide-lock. Casing spacer polymer shall have a minimum compressive strength of 3,000 psi and an impact strength of 1.5 ft-lbs/inch.
 3. Wood skids are not an acceptable method of supporting the carrier pipe.
- B. Casing spacers are not required when the carrier pipe is HDPE, however the annular space must be completely filled with pneumatically placed sand or "grits".
- C. Height of the supports and runners combined shall be sufficient to keep the bells of the carrier pipe at least 0.75-inches from the casing pipe wall at all times.
- D. Width of the casing spacers shall exceed the manufacturer's recommendations for the carrier pipe being supported.
- E. Each spacer shall have integral skids extending beyond the outside diameter of the bell or mechanical joint of the carrier pipe.
- F. Casing spacers shall be properly sized and spaced for the casing and carrier pipe sizes, based on manufacturer's recommendations, and the following minimum standards:
1. Pressure carrier pipe: Casing spacers shall be spaced a maximum of eight feet (8') apart along the length of the carrier pipe, with one casing spacer within two feet (2') of each side each pipe joint, with the rest evenly spaced.
 2. Gravity carrier pipe: Casing spacers shall be spaced a maximum of six feet (6') apart along the length of the carrier pipe, with one casing spacer within two feet (2') of each side each pipe joint, with the rest evenly spaced.
 3. Casing spacers shall be installed within two feet (2') of each end of the casing pipe.
- G. Runner height variations shall be provided as required to provide proper slope of

- gravity flow carrier pipe within the casing.
- H. Runner heights shall be provided as required to provide restraint of pressurized carrier pipe.

2.04 CASING END SEALS

- A. Casing end seals shall be "Model C" or "Model S" by Pipeline Seal & Insulator, Inc., "Style CCES" by Cascade Waterworks Manufacturing Company, or approved equal. Casing end seals shall be "seamless" slide on type. Field jointed "wrap around" type casing end seals are not acceptable.
- B. End seals shall be 1/8-inch thick synthetic rubber, with stainless steel bands for compressing the seal around the carrier and casing pipes.
- C. Casing end seals shall be the correct diameters for the casing and carrier pipes.

PART 3.00 - EXECUTION

3.01 GENERAL

- A. Refer to Section 02300 for excavating, bedding, envelope, backfilling and compaction requirements.

3.02 PRODUCT STORAGE AND HANDLING

- A. Handle and transport materials to insure they are in sound, undamaged condition and to prevent damage, in accordance with manufacturer's instructions.
- B. Examine all materials before installing. Defective or damaged materials shall be rejected.
- C. If defective or damaged materials are discovered after installation, the Contractor shall remove and replace the defective piece(s) at no additional cost to the Owner.

3.03 PREPARATION

- A. Boring/drilling/jacking and receiving pits shall be excavated to required depth and dimensions as determined by the Contractor.
- B. The closest edge of boring/drilling/jacking and receiving pit excavations shall not be closer than five (5) feet from the outside edge of the road shoulder.
- C. The Contractor shall provide all necessary shoring, sheeting, dewatering and other provisions necessary for successful completion of the casing installation.

3.04 INSTALLATION

- A. The casing shall be installed by boring, jacking or directional drilling methods, as appropriate, at the locations and elevations shown on the Drawings. If an installation method/technique is not indicated on the Drawings, or defined elsewhere in the Contract, the Contractor may select the method/technique.
- B. Each casing section shall be adequately welded to the other, full circumference, to form a continuous casing.
- C. Casing spacers shall be installed in sufficient number and at proper spacing, to support the weight of the carrier pipe when full of liquid, in accordance with manufacturer's recommendations, and the requirements of Subsection 2.03.
- D. The carrier pipe shall be installed such that the joints are always being compressed.
- E. When the carrier pipe is HDPE, the annular space between the carrier pipe and casing shall be completely filled by pneumatically placing sand or "grits".

- F. After insertion of the carrier pipe into the casing, the ends shall be closed by installing casing end seals. The casing end seals shall completely seal the carrier pipe to the casing to prevent migration of backfill material.

3.05 PROVISIONS FOR UNSUCCESSFUL CASING INSTALLATION

- A. Utilizing "open cut" excavated trench methods for the installation of the casings shall not be the option of the Contractor.
- B. Utilizing "open cut" excavated trench methods for the installation of the casing crossing shall only be considered where attempted boring/jacking/drilling fails or proves impractical due to soil or bedrock conditions, as determined by the Engineer and regulatory officials. Excavation for the crossing of railways is not an option. Failure of boring/jacking/drilling due to inadequate or improper effort, or inadequacy/failure of the Contractor's equipment or material shall not be justification for "open cutting" or justification for requesting payment for an unsuccessful attempt.
- C. If an "open cut" excavated trench is deemed necessary, Contract unit items shall be utilized for compensation of the necessary additional work.
- D. If a casing installation is unsuccessful (i.e., not all the way across), it shall be abandoned by completely filling the casing with flowable fill.

END OF SECTION 02340

PERMIT # 40990
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 APR 28 2016
 PERMITTING SERVICES

STAMP AND SIGNATURE:

 DESIGN ENGINEER

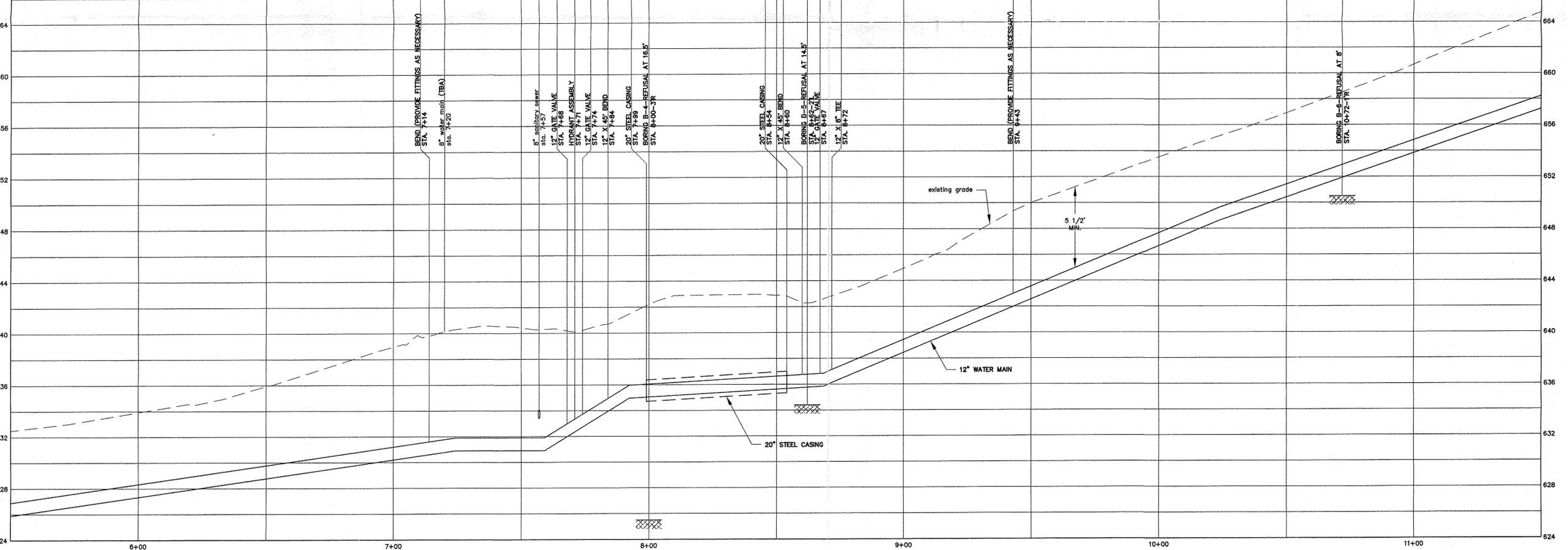
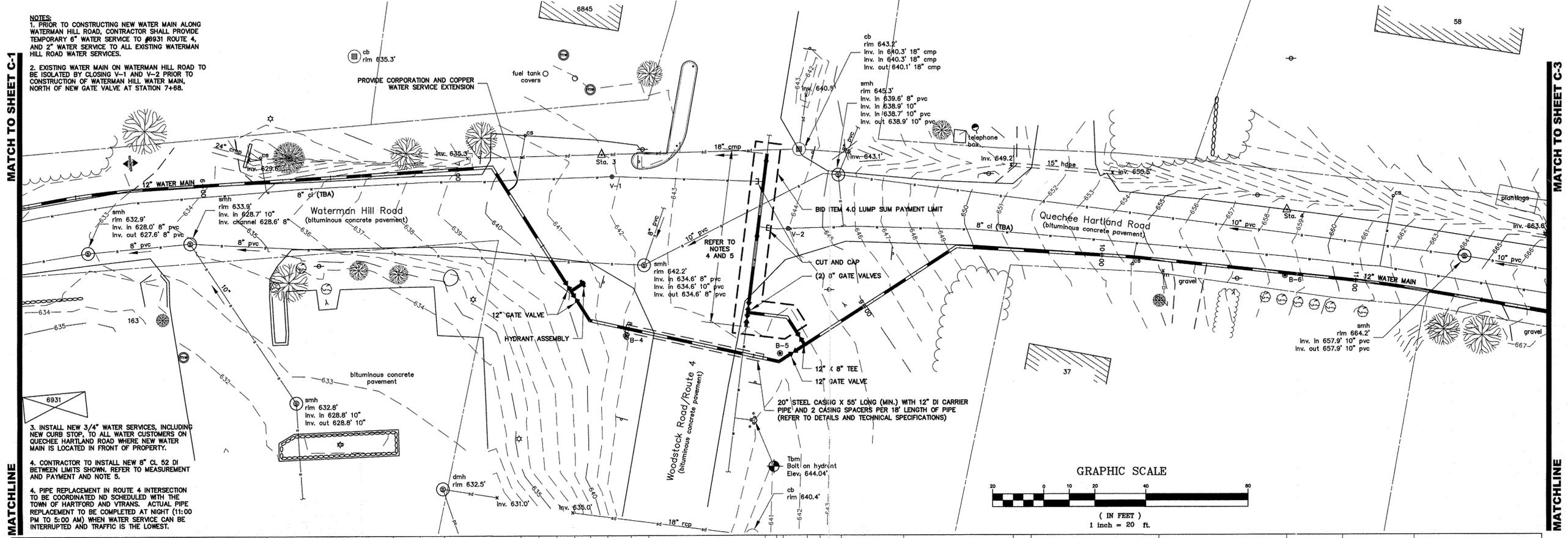
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 OTTER CREEK ENGINEERING, INC.



TOWN OF HARTFORD
QUECHEE WATER STORAGE TANK AND MAIN
HARTFORD, VERMONT

BID
 DATE ISSUED: 4/4/16
 REVISIONS:
 DRAWN BY: HB/JL
 CHECKED BY: MY
 SCALE: 1"=20'
 PROJECT NO.: 758-001
 CADD FILE: 758-001
 TITLE:
SITE PLAN AND WATER MAIN PROFILE

DRAWING NO.
C-2



MATCH TO SHEET C-1

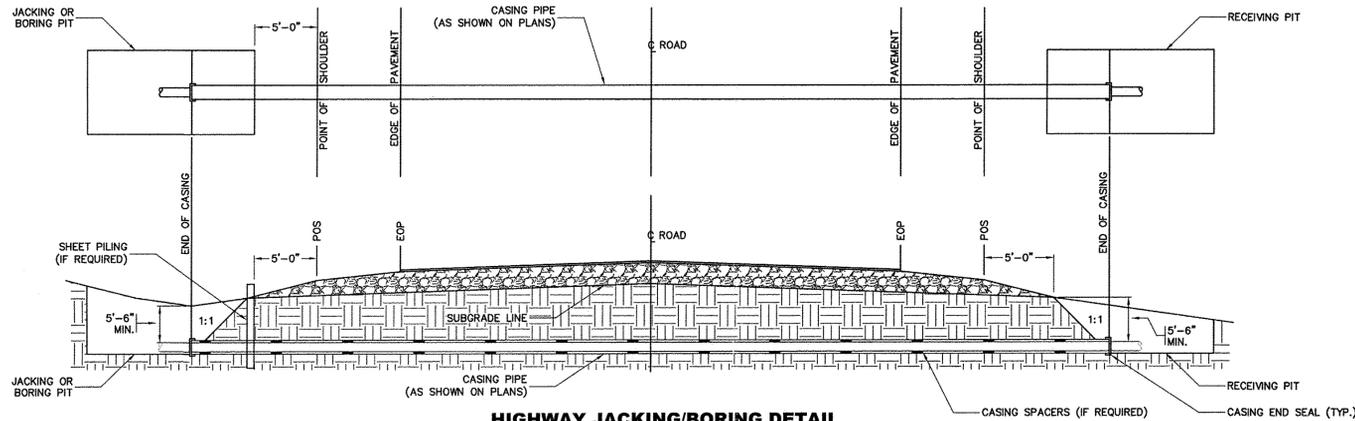
MATCH TO SHEET C-3

EROSION CONTROL NOTES

1. THE PROJECT IS NOT REQUIRED TO OBTAIN COVERAGE UNDER THE STATE OF VERMONT'S CONSTRUCTION GENERAL PERMIT (3-9020).
2. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE STATE OF VERMONT WATER QUALITY STANDARDS. ANY FINES ASSESSED BY REGULATORY AGENCIES FOR THE NONCOMPLIANCE WITH STATE WATER QUALITY STANDARDS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE PERSONNEL REQUIRED TO INSPECT AND MAINTAIN EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) FOR THIS PROJECT.
3. THE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS DO NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY TO OBSERVE, EVALUATE AND CONSIDER ALTERNATIVES AND TO PROPOSE APPROPRIATE RECOMMENDATIONS IN ORDER TO LIMIT POTENTIAL WATER QUALITY IMPACTS.
4. EROSION CONTROL MEASURES SHALL BE MONITORED AND MAINTAINED THROUGHOUT CONSTRUCTION AND REMOVED AFTER PROJECT AREA AND DRAINAGE COURSES ARE FULLY ESTABLISHED AND STABLE.
5. ALL DISTURBED AREAS NOT UNDER ACTIVE CONSTRUCTION SHALL BE STABILIZED BY ROUGH GRADING TO MINIMIZE SLOPES AND MULCHED. FOLLOWING FINAL GRADING OF ANY PORTION OF THE SITE, CONTRACTOR SHALL LOAM, SEED AND MULCH WITHIN ONE WEEK.
6. REFER TO CONTRACT SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
7. THE CONTRACTOR SHALL INSTALL INLET PROTECTION ON ALL CATCH BASINS WITHIN 100 FEET DOWN GRADIENT OF THE ACTIVELY WORKED CONSTRUCTION AREA. INLET PROTECTION BEST MANAGEMENT PRACTICES SHALL BE INSTALLED PRIOR TO THE START OF WORK AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SAFETY NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL WORK SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE, INJURY OR LOSS TO:
 - A. ALL EMPLOYEES ON THE WORK SITE AND OTHER PERSONS WHO MAY BE AFFECTED.
 - B. THE WORK SITE AND ALL THE MATERIALS AND EQUIPMENT TO BE INCORPORATED WHETHER IN STORAGE ON OR OFF THE SITE.
 - C. OTHER PROPERTY AT THE SITE OR ADJACENT, INCLUDING BUT NOT LIMITED TO TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.
2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS (INCLUDING O.S.H.A. REGULATIONS) OF ANY PUBLIC BODY HAVING JURISDICTION OVER THE SAFETY OF PERSONS OR PROPERTY.
3. THE CONTRACTOR SHALL NOTIFY OWNERS OF ADJACENT PROPERTY AND UTILITIES WHEN EXECUTION OF THE WORK WILL AFFECT THEM.
4. THE CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS ALL THE WORK IS COMPLETED.
5. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. CONTRACTOR SHALL COORDINATE WITH DIG-SAFE (888)-344-7233 OR WWW.DIGSAFE.COM A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.
7. AT THE CLOSE OF EACH WORK DAY, THE CONTRACTOR SHALL BACKFILL OR ADEQUATELY BARRICADE ALL OPEN TRENCHES.



HIGHWAY JACKING/BORING DETAIL

NOT TO SCALE

NOTES:

1. SHEET PILING MAY BE DRIVEN VERTICALLY FIVE (5) FEET OUTSIDE THE SHOULDER POINT, TO ALLOW FOR A SHORTER SLEEVE.
2. EARTH BACKFILL TO BE MADE IN SIX (6) INCH LIFTS AND COMPACTED TO NOT LESS THAN 95% MAXIMUM DRY DENSITY.
3. SEE PLANS FOR DETERMINING SLEEVE LENGTH.
4. IN THE EVENT THAT PERMISSION IS GRANTED TO CUT AN EXISTING BITUMINOUS PAVEMENT, ALL CUTS, IF POSSIBLE, SHALL BE MADE WITH A SAW TO A MINIMUM DEPTH OF 1 1/2".
5. BITUMINOUS PAVEMENTS TO BE REPLACED WITH BITUMINOUS CONCRETE. SUB-BASE TO BE REPLACED IN KIND. MATERIAL BELOW SUB-GRADE TO BE REPLACED WITH EXCAVATED MATERIAL OR AS DIRECTED BY THE HIGHWAY ENGINEER.
6. SUB-BASE TO BE REPLACED IN SIX (6) INCH COMPACTED LAYERS.

3/8" MIN. STEEL CASING PIPE SECTIONS SHALL BE JOINED BY CONTINUOUS WELD. REFER TO PLAN AND PROFILE FOR SIZE

CARRIER PIPE - REFER TO PLAN AND PROFILE FOR SIZE AND TYPE.

PNEUMATICALLY PLACED SAND

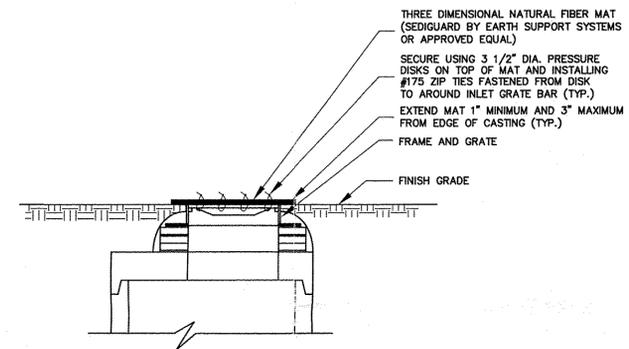
STAINLESS STEEL CASING SPACERS WITH POLYETHYLENE SKIDS, TWO SETS PER SECTION OF CARRIER PIPE, AS MANUFACTURED BY CASCADE WATERWORKS (OR EQUAL)

NOTES:
1. BOTH ENDS OF CASING PIPE SHALL BE SEALED WITH CASCADE MOBELOC END SEALS WITH STAINLESS STEEL BAND CLAMPS. (OR EQUAL)

2. LIMITS OF BORING AND RECEIVING PIT SHALL BE NO LESS THAN 5' FROM THE POINT OF SHOULDER.

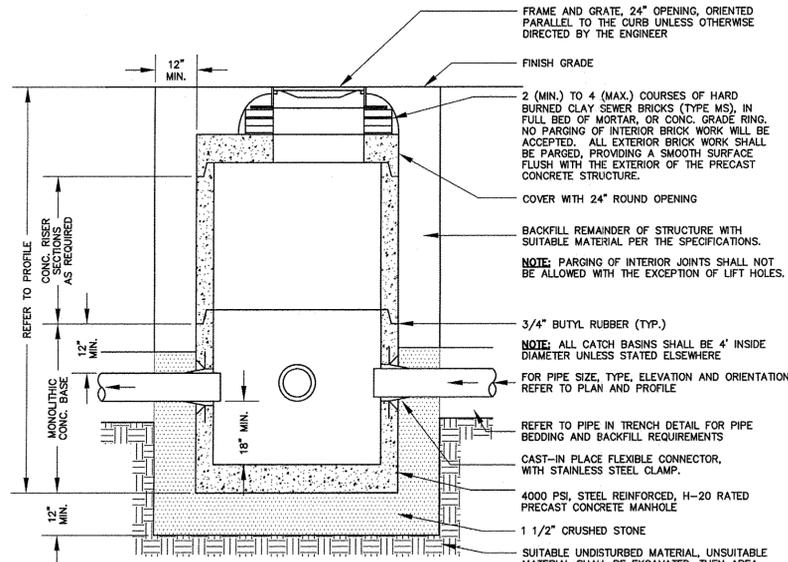
CASING AND CARRIER PIPE DETAIL

NOT TO SCALE



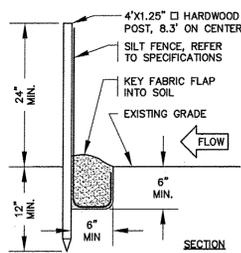
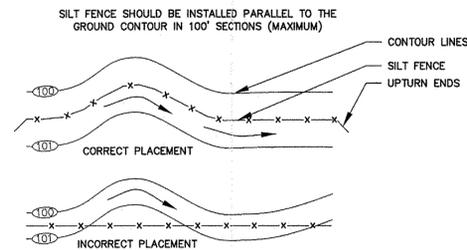
TEMPORARY CATCH BASIN INLET FILTER DETAIL

NOT TO SCALE



CATCH BASIN DETAIL

NOT TO SCALE



HOW TO ATTACH TWO SILT FENCES (TOP VIEW)

SILT FENCE DETAIL

NOT TO SCALE

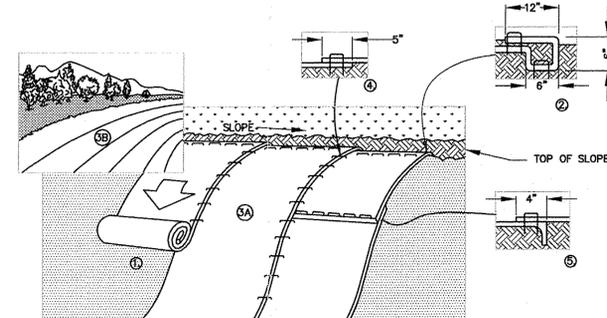
NOTES:

1. SILT FENCE SHALL BE INSTALLED AT THE DOWNHILL SIDE OF CONSTRUCTION ACTIVITIES BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. REFER TO TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.

2. ROTATE BOTH POSTS AT LEAST 180° IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.

3. DRIVE BOTH POSTS 12" MINIMUM INTO THE GROUND AND BURY THE FABRIC FLAP IN THE TRENCH.



NOTES:

1. SOIL SHALL BE PREPARED PRIOR TO INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BLANKET AT TOP OF THE SLOPE TO BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. TRENCH SHALL BE BACKFILLED AND COMPACTED AFTER STAPLING. SECURE BLANKET OVER SOIL WITH ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 5" OVERLAP.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE SHALL BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 4" OVERLAP. BURY END OF LOWER FABRIC 6" DEEP AND STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. ROLLED EROSION CONTROL PRODUCT REQUIRED ON ALL SLOPES 3:1 (3' HORIZ. TO 1' VERT.) OR GREATER.
7. ROLLED EROSION CONTROL PRODUCT SHALL BE DRY AND DEGRADABLE PROCESSED NATURAL OR POLYMER FIBERS MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX, COMPLYING WITH SPECIFICATIONS.

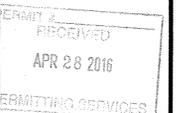
ROLLED EROSION CONTROL PRODUCT DETAIL

NOT TO SCALE

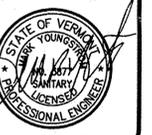


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STAMP AND SIGNATURE:



DESIGN ENGINEER

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TOWN OF HARTFORD
QUECHEE WATER STORAGE TANK AND MAIN
HARTFORD, VERMONT

BID	
DATE ISSUED:	4/4/16
REVISIONS:	
DRAWN BY:	HB/JL
CHECKED BY:	MY
SCALE:	SHOWN
PROJECT NO.:	758-001
CADD FILE:	758-001 Details
TITLE:	
NOTES AND DETAILS	
DRAWING NO.	

C-10