

Town
of
Hartford, Vermont

Department of Public Works
Specifications

Adopted: November 13, 2012

Effective date: January 12, 2013

TOWN AUTHORIZATION

The Town of Hartford Department of Public Works Specifications (Specifications) shall become effective upon adoption by the Selectboard. All construction within the Town subsequent to the adoption of these Specifications shall conform to the requirements of this document. These Specifications are intended to supplement the information and requirements included in specific ordinances contained within the Town of Hartford Code, including any subdivision or site development plan Standards. Definitions can be found in the applicable Highway, Water or Wastewater sections of the Town Code. Where information contained within these Specifications appears to be in conflict with information contained in specific Ordinances, the Ordinance shall take precedence.

Amendments to this document shall be made from time to time, in order to remain current with the introduction of new technology, materials, and testing protocols pertinent to public works infrastructure, and to remain in conformance to current State or Federal requirements.

STATEMENT OF PURPOSE

The Town of Hartford, Vermont (Town) hereby promulgates the following Public Works Department Specifications, which shall apply to the construction, maintenance and repair of all public development infrastructure and utilities.

The Standards and Specifications listed here are considered minimum and are presented for purposes of guiding engineering, construction, and maintenance personnel to provide a uniform level of quality for future infrastructure systems. The Standards listed here are intended to promote the general public health, safety, and welfare of Town residents, businesses, and visitors, and to prevent the degradation of natural and sensitive environmental resources. The Selectboard reserves the right to modify the Standards for a particular project, where, because of unique physical circumstances or conditions, there is no possibility that the project can be completed in strict conformance with these provisions. Any modifications to the Standards must be done in a manner that protects the underlying intent of these Specifications, and fiscal reasons are not a basis for modification of the Standards. Questions about modifications to the Standards or specific requests for waiver of any portion of these Specifications should be directed in writing to the Town of Hartford Director of Public Works Department.

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PART 1
GENERAL CONDITIONS AND REQUIREMENTS

SECTION 100 GENERAL CONDITIONS AND REQUIREMENTS

SECTION 110 GENERAL PROCEDURES FOR ACCEPTANCE OF PUBLIC INFRASTRUCTURE

1. Projects shall be reviewed by the Town of Hartford (Town) Staff for conformance with the provisions of the applicable Town Ordinance. As part of the review process other Town Staff from the Public Works Department, the Fire Department, the Police Department, and other Departments or Boards may review portions of the project for eventual transfer of ownership to the Town. The Board of Selectmen is ultimately responsible for accepting any infrastructure into Town ownership and maintenance based on the recommendations of other Town boards, commissions and departments.
2. Refer to Chapter 75 Article VII of the Town Ordinance for the requirements of the road acceptance policy.
3. Refer to Chapter 152 of the Town Ordinance for the requirements of municipal acceptance of sanitary sewer extensions.
4. Refer to Chapter 245 of the Town Ordinance for the requirements of municipal acceptance of water extensions.

SECTION 120 WORKMANSHIP

1. All materials, design, and workmanship must meet nationally accepted Standards and practices along with the applicable Standards contained in these Specifications.
2. The Town recognizes the Vermont Agency of Transportation (VTrans) Standard Specifications for Construction (latest edition) and Standard Drawings as a supplemental source for Standards that may not be detailed within these Specifications. Where a conflict arises between the published Standards in this Specification and other published Standards by VTrans or the Town Ordinance, the more stringent shall apply.
3. All work impacting the Town-owned infrastructure shall be performed only by persons/contractors with demonstrated experience in the type of work, and this person/contractor shall be approved by the Public Works Director or his representative.
4. The Contractor shall be responsible for ensuring that there is a supervisor or responsible individual with the authority to make decisions for the Contractor under his/her direct employ on the job site at all times that construction is underway, whether or not the construction is being accomplished by a subcontractor hired by a general contractor.
5. During the progress of construction and upon completion, all work shall conform to these Specifications and the lines, levels, and grades indicated on the plans accepted by the Town. Field revisions required due to conditions encountered during installation must be approved by the Design Engineer of record and accepted by the Public Works Director prior to acceptance of the completed work.
6. The Contractor shall furnish required submittals for all materials or systems related to infrastructure that will ultimately become Town-owned to the Public Works Director for review as part of the overall submittal review and approval process. Where required by the Town on these materials, the Contractor shall furnish a certificate from the manufacturer or supplier certifying that the equipment or materials comply with the approved contract drawings.

SECTION 130 SAFETY AT THE WORK SITE

1. Safety at a development work site is the responsibility of the Applicant/Owner or their designated contractors. The Applicant/Owner shall be held responsible for all damages to property or otherwise occurring as a result of failure to maintain work site access control and safety.
2. All work performed shall be in conformance with applicable VOSHA regulations, VTrans and FHWA construction safety Standards. The Town shall have the authority to suspend any activity within a Town Right-of-Way (ROW) that does not conform to applicable regulations and require correction of non-conforming activities or conditions.
3. The general public shall be protected by the Contractor performing work at the site from any and all hazards connected with the construction work. Open trenches, materials, or equipment within the working limits of the public ROW are to be adequately guarded. Barricades and other access control devices left overnight shall be properly lighted.
4. The Town will require the Contractor to provide proof of insurance meeting the minimum requirements outlined in the project contract documents and any specific Town requirements, whichever is more stringent, for all work within public ROWs. The policy will name the Town as a covered party for all work within the public ROW or for infrastructure that will become Town owned.

SECTION 131 CONSTRUCTION AND WARNING SIGNS

1. Construction approach signs, as required, shall appear at each end of a public highway under construction, and on all intersecting public highways. The exact placement of any sign will depend upon the alignment of the highway corridor and the character of the roadside. The placement and minimum spacing shall comply with the requirements of the VTrans Standards for construction.
2. The design of signs shall conform to the Standards contained in the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.
3. All warning signs shall be constructed of a durable material acceptable to the Public Works Director. No material shall be accepted that will deteriorate due to exposure to the weather during the required life of the sign.
4. The Contractor shall be responsible for placement and maintenance of signs prior to the beginning of work commencement and during construction activities.

SECTION 132 MAINTENANCE AND PROTECTION OF TRAFFIC

1. When work associated with any project infringes on the public ROW, the Contractor shall provide uniformed traffic police or certified flag persons if required by the Town. Only uniformed traffic police shall direct traffic at signalized intersections, and the cost of traffic control personnel shall be paid by the Contractor.
2. Traffic maintenance will conform to the VTrans Standard Specifications and Design Standards. The Contractor shall provide all barriers, directional signage, and traffic warning equipment required to define the limits of active work and the safe lanes of travel.

3. The Contractor shall notify the Public Works Director at least two calendar weeks in advance of any required closure of a Town highway. Closure of a highway will only be considered if no other means of traffic control will facilitate the work being accomplished. The Contractor shall work with the Town to establish a suitable alternate route for traffic and shall provide well marked and appropriately lighted detour signs at his own expense, and shall include such media as deemed required to inform the traveling public.
4. Where pedestrian access is impacted by project work, the Contractor shall provide a safe passage for pedestrians around the work zone through the use of fencing, barriers, signage and other appropriate methods.
5. The Contractor shall coordinate at least one week in advance with any property owner whose property access will be impacted by construction activities. The Contractor will limit any complete closure of property access to a minimum and will maintain at least one lane of access into the property at all other times.

SECTION 140 PROTECTION AND REPAIR OF EXISTING UTILITIES

1. The Contractor shall notify DigSafe prior to any excavation in the public ROW or utility easement limits, except in the case of emergency repair. In emergency situations the Contractor shall notify the Public Works Department.
2. The Contractor shall notify the Town Public Works Department to mark Town-owned water, sanitary, or storm sewer within the project area at least 48 hours in advance of any work in the area.
3. The Contractor shall notify the Public Works Department a minimum of 72 hours prior to any scheduled work within the limits of the public ROW or prior to the installation of any infrastructure that will ultimately be taken over by the Town.
4. Whenever existing aboveground or underground utilities or structures are identified or encountered during construction activities, they shall be protected and firmly supported by the Contractor at no expense to the Town or utility. Any damage to existing utilities resulting from the Contractor's operations will be repaired at the Contractor's expense within a time period that will not place an unreasonable burden on the utility users.

SECTION 145 INSTALLATION OF NEW UTILITIES

1. All electric, telephone, intercommunications, and cable television shall be placed underground where feasible as determined by the Public Works Director or Representative.
2. The Contractor shall not, without written consent of the property owner in the form of a temporary or permanent easement, enter or occupy any private land. No excavation shall take place within a public ROW without first obtaining written authorization or an approved permit from the Town or VTrans, as applicable.
3. Underground utilities to be taken over by the Town should be located within the public ROW but a minimum of five feet outside of the edge of paved travel lanes.
4. Utility easements shall be of sufficient width and length to serve both the proposed project, and existing and anticipated development adjacent to the project. A utility

easement outside of the public ROW for a single sanitary sewer, storm sewer, or water line will be twenty feet wide at a minimum. Where both a sewer and water line are

present, the easement shall be thirty feet wide at a minimum. Where infrastructure is located deeper than six feet below grade, additional easements widths may be required. Easements for other utilities should be reviewed and approved by the Public Works Director.

SECTION 150 PERMITS

1. It is the Contractor's or Owner's responsibility to obtain all Federal, State, Local, and utility company permits necessary for the construction of the project prior to the initiation of construction.
2. The Contractor or Owner is responsible for maintaining these permits in force during the length of the contract and for taking all required actions to comply with the contents of the permits.
3. Copies of the permit shall be maintained at the job site and readily available for inspection by Federal, State, or Local regulatory officials.

SECTION 200 *Reserved for future*

SECTION 300 PRECONSTRUCTION MEETING

SECTION 310 PURPOSE AND ATTENDANCE OF PRECONSTRUCTION MEETING

1. Once project approval has been obtained from applicable Town, State or federal agencies and before any site work begins, the Contractor or Owner shall request a preconstruction meeting at least five working days in advance of the start of construction. The purpose of this meeting is to clarify any outstanding issues, review the plans, coordinate the construction schedule, and define required assistance or inspection from the Town for those elements designated to be taken over by the Town.
2. The preconstruction meeting will be facilitated and run by the project Design Engineer or the Applicant, and invitations to participate shall be sent to the Director of Public Works and the Town Planner. Other participants may include the Contractor, Subcontractors, Federal or State representatives, the Design Engineer, and other required parties with an interest in the project.
3. Prior to scheduling the preconstruction meeting, the following shall be completed:
 - a. All necessary legal documents relating to the project including temporary and permanent easements shall have been approved and recorded.
 - b. Any securities required by the Town to guarantee the completion of the improvements shall be established and the necessary forms completed and approved by the Town.
 - c. All required Town permits shall be obtained and maintained in the construction files.
 - d. Copies of all State or Federal permits shall be maintained in the construction files and available for Town inspection

- e. A schedule for work completion shall be prepared that is sufficiently detailed to indicate points of Town interface for inspections, final connections, or acceptance of work.

SECTION 320 PRECONSTRUCTION MEETING AGENDA

1. The Preconstruction Meeting shall include at a minimum:
 - a. Review of the approved plans and construction schedule.
 - b. Identification of any material Specifications or shop drawings that will require review and approval by Town personnel.
 - c. Review of the pertinent sections of the Department of Public Works Specifications with emphasis on construction inspection requirements and schedule, record drawing requirements, curbstop and valve ties and wastewater tie requirements and/or forms, municipal acceptance of infrastructure, and procedure for review of changes to approved project documents.
 - d. Establishment of contact persons involved including mailing address information, email, and telephone contact information.
 - e. Review of emergency or after hour notification procedures including on site posting of emergency contacts.
 - f. Review of erosion and sediment control plan.
 - g. Review of the requirements outlined in Federal, State or Local permit documents.
 - h. Review of other site specific construction related information including maintenance of traffic, pedestrian access safety, work limits definition, dust and noise control, working hours, and site safety.

SECTION 400 CONSTRUCTION INSPECTION AND TESTING

SECTION 410 GENERAL

1. The Town may require a third party resident inspector to provide periodic inspection of all infrastructure to be turned over to the Town to confirm installation of these facilities in general conformance to the approved plans and Specifications. The cost of the third party inspector will be the responsibility of the Owner or Applicant.
2. The inspector shall work under the supervision of a Vermont Registered Professional Engineer. The Registered Professional Engineer shall submit copies of all daily inspection reports, field notes and testing results to the Public Works Director.
3. The Town may also require scheduled inspections or review of infrastructure being installed as determined at the pre-construction meeting. The Contractor will provide notification of at least 48 hours to the Public Works Director prior to a schedule inspection.
4. The Town resident inspector must be on-site during all work involving connection to, modification of, or interruptions of service related to municipally owned infrastructure including water, sanitary sewer, and stormwater management systems.
5. Copies of all final testing results shall be provided to the Town as part of the documentation required for acceptance of infrastructure systems.

SECTION 420 ROAD AND STREET INSPECTION REQUIREMENTS

1. Specific inspection and work completion scheduling information is included in the Chapter 75 of the Town Ordinance. Contractor shall comply with all requirements included in that section specific to roadways to be conveyed to the Town.
2. Specific testing requirements are further defined in Section 850 of the Highway Standards and Specifications and in Section 950 of the Bicycle and Pedestrian Facilities Specifications are included in these Specifications.

SECTION 430 TOWN WATER INSPECTION REQUIREMENTS

To be written later

SECTION 440 TOWN SANITARY SEWER INSPECTION REQUIREMENTS

To be written later

SECTION 450 TOWN STORMWATER MANAGEMENT AND DRAINAGE INSPECTION REQUIREMENTS

To be written later

SECTION 500 RECORD DRAWINGS

SECTION 510 GENERAL

1. Record drawings are to be prepared for all infrastructure to be conveyed to the Town. Record drawings are to be prepared from actual field surveys of the completed construction, field measurements of critical dimensions and elevations, and field observations by the Contractor and any required third party inspector.
2. Record drawings shall include copies of location tie sheets for any buried utilities that require this information in a format established by the Town.
3. A final set of record drawings shall be submitted to the Town upon completion of the project. This record drawing document set will consist of one mylar or reproducible drawing set, two sets set of prints and a CD with the AutoCAD files for the drawings provided in a format and version acceptable to the Town. All drawings will bear an original stamp and signature of the Owner's Engineer who is required to be a registered professional engineer in the State of Vermont. Where plats are included, those final plats will require a stamp and signature from a licensed Vermont Land Surveyor with a certification that all property corner markers have been set in accordance with the plat. The record drawings will become the property of the Town and will be archived for future reference.
4. If operating equipment or systems are being conveyed to the Town, the Owner shall supply a minimum of three complete Operations and Maintenance (O&M) manuals to the Town as part of the Record Drawing submittal.

SECTION 520 TOWN HIGHWAY RECORD DRAWINGS

1. Chapter 75 Transportation Ordinance contains further guidance regarding record drawings and information to be furnished to the Town.
2. Record information for Town Highways shall include surveyed locations of the following, as a minimum. Specific sections of the Town Ordinance may require additional detailed survey.
 - a. Width of pavement from curb to curb or shoulder to shoulder
 - b. ROW dimensions and locations
 - c. Locations of property or ROW monuments
 - d. Width of sidewalks or bikepaths
 - e. Location and dimensions of green strips or planter islands, including any street trees installed with identification of type
 - f. Location of street lights
 - g. Location of driveways, curb cuts, pedestrian access tip downs, and crosswalks
 - h. Horizontal locations, sizes, and inlet and outlet inverts for all cross culverts
3. Record information for Town Highways shall also include surveyed or measured locations (with ties) for buried utilities, valve boxes, center location and elevation of installed utility structures, and other permanent fixtures or structure installed within the highway ROW. Typical cross sections of all improvements related to highways, sidewalks, or other access ways shall be provided showing installed thickness and materials of construction for all sub-base materials.
4. Provide a copy of all final test results as required in these Specifications on sub-base materials, concrete pavement, bituminous concrete pavement, and shoulder materials.

SECTION 530 TOWN WATER DISTRIBUTION RECORD DRAWINGS

1. Record information for water distribution piping shall include survey or measured locations of the following, as a minimum:
 - a. Accurate horizontal alignment and top of pipe elevations for all water lines.
 - b. Designation of all piping materials of construction, sizes, joint types, pressure rating or class, and any special features such as encasement, anti-corrosion wrap, etc..
 - c. As constructed water line profiles with accurate location of any crossing utilities, location of additional insulation, and presence of pipe detector tape for non-metallic piping.
 - d. Accurate measurements to all valves, hydrants, tees, elbows ($\frac{1}{4}$ bend or larger), corporation stops, curb stops, or specialty fittings from permanent fixtures such as telephone poles, building foundation corners, hydrants, etc. The locations of all isolation valves, corporation stops, and curb stops will be shown on the record drawings and submitted on a swing tie form with a minimum of three swing ties.
2. If water infrastructure is being installed prior to any lot development, all curb boxes shall be marked with surface stakes so that subsequent contractors can easily locate them when building services are connected.

3. Provide three bound copies of any O&M Manual associated with specialty water systems including storage or pressure tanks, booster pumps, pressure reducing stations, or control systems.
4. Provide a copy of all pressure testing records, and disinfection bacterial sampling records for all pipe sections with a certification that piping systems comply with the testing requirements in the contract documents and these Specifications.

SECTION 540 TOWN SANITARY SEWER RECORD DRAWINGS

1. Record information for sanitary sewer piping and components shall include survey or measured locations of the following, as a minimum:
 - a. Accurate horizontal alignment and invert elevations for all sanitary sewer lines.
 - b. Designation of all piping materials of construction and joint types.
 - c. As constructed sewer line profiles with accurate location of any crossing utilities, location of additional insulation, and other pertinent information.
 - d. Accurate measurements to all service tees or wyes for building connections. The connection distances shall be noted on the record drawings as measured from the nearest downstream manhole and shall be shown on the record drawings and submitted on a swing tie form with a minimum of three swing ties to a permanent site feature.
 - e. Accurate locations and elevations of the center of all manhole access covers. Where access covers are to be buried or paved over, the locations of these covers will be shown on the record drawings and submitted on a swing tie form with a minimum of three swing ties to a permanent site feature.
 - f. Accurate measurement of all pipe inverts entering or leaving a manhole including measurement of the inverts of any external or interior drop pipe structures.
 - g. The location of any special construction feature such as a utility trench impervious dam to seal horizontal trench sections, pipe anchoring, or similar trench construction features.
2. If sanitary sewer infrastructure is being installed prior to any lot development, all service connection stubs shall be marked with surface stakes so that subsequent contractors can easily locate them when building services are connected.
3. Provide three bound copies of any O&M Manual associated with specialty sewer systems including pump stations, associated detention systems for power outage storage, valve vaults, flow metering or sampling systems, and other specialty construction.
4. Provide a copy of all leakage tests on pipelines and sewer manholes, deflection testing, and other required testing on specialty systems such as pump stations with a certification that piping systems comply with the testing requirements in the contract documents and these Specifications.

SECTION 550 TOWN STORMWATER MANAGEMENT RECORD DRAWINGS

1. Record information for stormwater management components shall include survey or measured locations of the following, as a minimum:
 - a. Accurate horizontal alignment and invert elevations for all culverts or storm drain lines, including any under drains or foundation drains that may tie into them.

- b. Accurate horizontal locations, key elevations, and materials of construction for any specialty construction such as headwalls, inlet or outlet stone armoring, plunge pools, or flared culvert inlets.
- c. Designation of all piping materials of construction, pressure class, and joint types.
- d. Accurate locations, elevations, and swing ties of the center of all catch basin inlet grates or drain manhole access covers.
- e. Accurate locations and descriptions of any specialty stormwater inlets such as curb inlets, drop inlets, etc.
- f. Accurate measurement of all pipe inverts entering or leaving a catch basin or drain manhole. Where catch basins are equipped with sumps, a measurement of the lowest invert of the sump should also be provided.
- g. The location of any special construction feature such as a oil traps, debris screens or traps, sediment removal equipment, contaminant filtration systems, etc. that are located inside catch basins or drain manholes.
- h. The location and dimensions of all storm water management or treatment facilities including buried detention, surface detention ponds, control or outlet structures for these systems, treatment swales, infiltration trenches, drywells, etc.
- i. Alignment, cross section, bottom elevations, and materials of construction for all open drainage ways.
- j. Location and width of any drainage easements associated with the project.

SECTION 600 *Reserved*

**PART 2
TECHNICAL STANDARDS
AND
SPECIFICATIONS**

SECTION 700 EROSION PREVENTION AND SEDIMENT CONTROL SPECIFICATIONS

SECTION 710 GENERAL PROVISIONS

1. In general, any construction activity that disturbs one or more acres of land, or is part of a larger redevelopment plan that will disturb one or more acres of land, requires coverage under the Vermont Agency of Natural Resources (VANR) Department of Environmental Conservation (DEC) Construction General Permit (GPC) 3-9020 for Stormwater Runoff from Construction Sites. If a permit is required to be obtained under the CGP3-9020, the Owner/Applicant will provide a copy of the permit to the Town prior to the start of construction.
2. Site development that results in an off-site discharge of stormwater may also be required to obtain coverage under the VANR-DEC General Permit 3-9015. Consult the VANR-DEC Stormwater Section to determine if a permit under GP 3-9015, or a site specific permit may be required. If a permit is required, the Owner/Applicant will provide a copy of the permit with a schedule of any required maintenance or reporting to the Town prior to the start of construction.
3. The VANR-DEC Stormwater Section has a variety of helpful manuals of practice on their website and these are recommended for use in planning and implementing erosion and sediment control during construction and stormwater management after construction. These include:
 - a. Vermont Low Impact Development Guide for Residential and Small Sites;
 - b. The Vermont Stormwater Manual, Volumes I and II;
 - c. The Environmental Protection Rules, Chapter 18, Stormwater Management;
 - d. Low Risk Site Handbooks for Erosion Prevention and Sediment Control (for low risk sites or unregulated sites);
 - e. Vermont Standards and Specifications for Erosion Prevention and Sediment Control Plan (for moderate risk sites).
4. Erosion or sediment transport can be caused by uncontrolled or unmanaged stormwater on the site, and also by wind action. It is the intent of this specification to require positive control of water-borne and wind-blown sediment at construction sites.
5. All projects, regardless of whether they are covered under a VANR-DEC stormwater permit, require positive measures during construction to prevent erosion and sediment transport off-site. Additionally post-construction stormwater management features must be incorporated into the site development design.

SECTION 720 EROSION PREVENTION AND SEDIMENT CONTROL REQUIREMENTS

1. Design development plans submitted for review and approval by the Town shall clearly indicate all temporary construction erosion prevention and sediment control measures, final stabilization treatments of all disturbed surfaces, permanent stormwater management practices, and all discharge points off-site of stormwater.
2. If a site is permitted by the VANR-DEC as a moderate or high risk site, the Town will require a copy of the Erosion Prevention and Sediment Control Plan to be filed with the Department of Public Works for review and comment prior to the start of construction.
3. Regardless of whether a site is permitted under the VANR-DEC Stormwater Permit Programs, the discharge of sediment-laden water from the project site is prohibited. The

Town reserves the right to investigate sediment releases and inform the proper permitting authorities if frequent violations occur and no action is taken to correct such violations of the intent of the stormwater regulations.

4. No work shall be performed at the site until all erosion prevention and sedimentation control measures are in place. These include provisions to control:
 - a. Tracking of sediment off site due to vehicle access or material transport.
 - b. Discharge of untreated stormwater to a surface water of the State.
 - c. Discharge of untreated stormwater to a Town stormwater conveyance culvert, catch basin, or drainage ditch.
 - d. Discharge of untreated stormwater into a sensitive receptor such as a natural area or a wetland.
 - e. Discharge of any stormwater flow whether treated or untreated onto an adjacent property (unless there is a pre-existing drainage pattern present).
 - f. Erosion at earth material stockpile areas.
 - g. Wind-borne dust from disturbed and unstabilized areas.
 - h. Discharge of stormwater into designated treatment or detention areas before they are fully stabilized and ready to accept flow.
 - i. Treatment of all detained stormwater or groundwater removed during site dewatering operations prior to discharge off-site.
5. The Contractor shall clearly delineate the limits of construction with construction fence or flagging to limit the area of construction disturbance to the minimum required to implement the work. Construction phasing and temporary stabilization will be implemented to control the amount of disturbed soil surfaces open to wind or water action.
6. The Owner/Applicant and their Contractor(s) are responsible for implementation of the required best management practices at the construction site, for maintaining the control practices to maintain their efficiency during construction, and for removing the temporary practices once full site stabilization is achieved.
7. In general, soil disturbance or the application of seeding for vegetative stabilization is restricted to the time frame between May 1st and October 15th. If soil disturbance occurs outside of that time frame the Contractor will be required to implement more stringent winter condition practices as necessary. This will be clearly defined in any design drawings or erosion prevention and sediment control plans.
8. Erosion prevention and sediment control measures shall be inspected on the minimum frequency defined based on time or storm events within any written plan required by the VANR-DEC and maintained as needed. If no VANR-DEC permit is required due to the size or estimated risk of disturbance, then the Contractor shall inspect, record and maintain the on-site measures on a weekly basis. The Contractor shall maintain a copy of inspection results for review by the Town.
9. The Contractor is responsible for all costs associated with dust control and shall ensure that no dust is created as part of the construction activities that would constitute a safety hazard or nuisance to adjacent properties or roadways. If sediment is tracked off-site by construction activities or traffic access, the Contractor, at his expense, shall clean adjacent Town highway road surfaces with a wetted power broom within 24 hours of the incident.

SECTION 730 MATERIALS

1. It is not the intent of these Specifications to specifically identify or define acceptable materials or methods to be utilized for erosion prevention or sediment control. Refer to the Best Management Practices defined in the previously referenced VANR-DEC Standards, Specifications, and manuals of practice for materials and methods acceptable for use in the State of Vermont.
2. Materials utilized for control methods must perform adequately in the field. The Town reserves the right to shut down construction activities and require additional corrective measures to be put in place if Town inspections reveal inadequate, damaged, or poorly maintained systems resulting in sediment transport off site or visibly turbid water being discharged off site. Any costs associated with project construction delays or additional sediment control systems as a result of Town intervention shall be the sole responsibility of the Contractor and Owner.
3. In general, the following comments highlight areas typically requiring special attention in planning and designing site erosion prevention or sediment control measures:
 - a. Wherever possible, vegetated buffers shall be maintained between active work areas and adjacent properties, natural or sensitive receptors, or stormwater conveyance ditches.
 - b. All soil stockpile areas must be stabilized as soon as possible after placement, are to be located on uphill sides of disturbed areas where possible, and are to be protected with perimeter controls. Stockpiles that are intended to be left in place over the winter must be fully stabilized prior to October 1.
 - c. Slopes that are 3 horizontal to 1 vertical or steeper typically require surface netting to stabilize the slope, allow vegetation of the surface, and reduce erosion potential. Materials utilized in erosion control netting should be UV degradable or biodegradable within a one to three year period depending upon the application.
 - d. Refer to Section 825 Item 6 of this Specification for specific recommendations on drainage ditch treatments based on slope.
 - e. Construction activities should be phased to control the amount of unstabilized disturbed areas on site to those recommended in the Vermont stormwater references. If necessary, temporary stabilization can occur until final site development and stabilization can be implemented.
 - f. Seed mixtures for temporary or permanent stabilization shall be selected based on the USDA-NRCS recommendations for Vermont. Avoid the introduction of any plants listed on the VANR Invasive, Exotic Plants of Vermont List, or the Vermont Agricultural Department Noxious Weed Quarantine List.
 - g. Refer to the VTrans Standard Specifications for Construction for additional recommendations on material selection and installation for turf establishment and erosion prevention and sediment control measures.

SECTION 740 INSTALLATION

1. Installation of erosion prevention and sediment control measures shall be in accordance with manufacturer's recommendations, the VANR-DEC stormwater references previously noted, and the VTrans Standard Specifications for Construction.

SECTION 750 TESTING AND INSPECTION

1. No testing is required of erosion prevention or sediment control materials. The Contractor shall rely primarily on visual observation of treatment effectiveness and turbidity of water leaving the work site. Where required specifically by a Vermont Stormwater Permit, the Contractor shall conduct and record turbidity readings at the defined points and designated frequency.
2. The Contractor is required to monitor the condition and performance of all installed erosion prevention and sediment control measures being implemented on the site on a frequency specified in a site specific Erosion Prevention and Sediment Control Plan, or at least once per week if the site is unregulated. The Contractor shall complete required repairs, reinstallation, or replacement of damaged materials. The Contractor will also install additional control materials if warranted by site conditions.
3. At a minimum, the following areas will be monitored and inspected:
 - a. All areas that have been cleared, graded, or excavated and that have not yet received final stabilization.
 - b. All stormwater controls (including pollution prevention measures) installed at the site to comply with Vermont stormwater permit requirements or as depicted on approved site plans.
 - c. Material, waste, borrow, or equipment storage and maintenance areas.
 - d. All areas where stormwater typically flows within the site, including drainage ways designed to divert, convey, and/or treat stormwater;
 - e. All points of discharge from the site.
 - f. All locations where stabilization measures have been implemented.

SECTION 800 HIGHWAY STANDARDS AND SPECIFICATIONS

SECTION 810 GENERAL PROVISIONS

1. The purpose of these Specifications is to establish a set of Standards to ensure consistency of all future highway and related infrastructure construction. As future municipal reconstruction or maintenance of existing systems occurs, the Town will upgrade its highway systems in accordance with these Standards.
2. All highway systems shall be designed in accordance with this and related sections of these Specifications and in conformance with applicable Standard details by a Professional Engineer registered in the State of Vermont. The Applicant shall provide for a Professional Engineer registered in the State of Vermont to oversee construction and to certify to the Town in writing that all construction was performed in compliance with these Specifications and any Town approved development or Site Plans.
3. These Specifications will supersede any previously issued Standards, Policies, or Specifications promulgated by the Town Selectboard where specific materials, dimensions, geometry, installation methods, testing requirements, or other design Standards are defined. Where these Specifications conflict with previously promulgated Standards or Specifications, these Specifications will take precedence.
4. The following resources were used to develop these Standards. Where questions arise, the most current edition of the Manuals and Specifications should be consulted.

- a. VTrans Highway Standards with specific reference to A-76 and B-71, the *Vermont State Standards for the Design of Transportation Construction, Reconstruction and Rehabilitation on Freeways, Roads and Streets*;
 - b. The AASHTO *Policy on Geometric Design of Highways and Streets*;
 - c. The *Vermont Better Backroads Manual*; and
 - d. The Vermont Local Roads Program *Road Design and Maintenance Handbook*
5. In situations where higher standards are desired or the above standards do not address an aspect of design, Town staff will endeavor to identify those issues early in the review process. In these cases other resources and reference materials may be consulted.

SECTION 815 RELATED IMPROVEMENTS IN THE RIGHT-OF-WAY (ROW)

1. Improvements within the Town ROW will require a Permit. The applicant shall refer to Part 4 Standard Forms and Documents for ROW Excavation and Improvements Within the Public ROW forms contained in this document.
2. Landscaping: Native species are preferred and invasive species should not be planted. Trees and shrubs must be salt tolerant. Proposed plantings shall be reviewed by the Town Tree Warden. Example documents for further guidance include but are not limited to:
 - a. Vermont Agency of Natural Resources Department of Environmental Conservation (VANR-DEC) *Invasive Species Watch List*;
 - b. VANR-DEC *Non-Native Plant and Animal Species in Aquatic and Wetland Habitats in Vermont*;
 - c. Vermont Agency of Agriculture quarantine lists.
3. Mailboxes/Newspaper Boxes: A United States Post Office approved mailbox shall be installed with the bottom of the box at a vertical height of between 41 to 45 inches from the road surface, unless road or curb conditions prevent this. The mailbox shall be set back 8 inches from the front face of the curb or road edge to the mailbox door. Installation of curbside mailboxes must meet the US Post Office specific construction Standards, which can be found at your local Post Office. Newspaper boxes must be a minimum of 8 inches from the face of the curb or road edge. It is the landowner's responsibility to identify, apply for, and obtain any relevant approvals from the US Postal Service or newspaper distributor. The Town will not be held responsible for damage caused to mailboxes from routine Town maintenance activities including snow plowing. See Part 3 Standard Details for mailbox installation guidelines.
4. Fences: Fences may not exceed 3½ feet in height and must be located a minimum of 10 feet off the shoulder of the road. The Town will not be held responsible for damage to fences located within the Town ROW from Town maintenance, including snow plowing activities.
5. Miscellaneous Lighting: Lampposts, path/driveway lights, and decorative lights shall be not create a highway safety hazard. Lighting determined by the Director of Public Works or designee to create a safety hazard to the public travel way due to excessive glow must be removed immediately. The Town will not be held responsible for damage to lighting located within the Town ROW from Town maintenance, including snow plowing activities.

6. Street Lighting: Street lighting shall be installed within the Town as outlined in the Chapter 75 Transportation Ordinance of the Town Code. In general:
 - a. Street lighting may be installed at street intersections, at the end of dead end roads, and on the sidewalk side of the street, where applicable.
 - b. The light shall be of a downshielded luminaire type. All utility company pole mounted street lights shall have cut-off fixtures and use LED fixtures as approved by Town, Efficiency Vermont and the Electric Utility Provider. All street lighting shall conform to the guidelines in the Outdoor Lighting Manual for Vermont Municipalities.
 - c. Stand alone ornamental light fixtures installed within the right of way shall be as manufactured by Spring City and shall consist of a Spring City Parkwood Post and Spring City Washington Refractive Globe with finial or equivalent. The lighting element shall be LED.

SECTION 820 GEOMETRIC STANDARDS FOR ROAD CONSTRUCTION

1. Right-of-Way (ROW): The ROW shall be a minimum of 50 feet in width with wider slope and drainage ROWs as deemed necessary by the Director of Public Works or designee. The center line of the road shall be located in the center of the ROW unless otherwise approved by the Director of Public Works or designee. The ROW conveyed shall intersect at least one existing Class 1, 2, 3 Town or State highway.
2. Travel Lane Width and Shoulders: The travel lane width of a road shall be determined by traffic flow, projected current and potential future service demands, and function of the roadway. The travel lane width does not include associated shoulder width. Shoulders are the portion of roadway contiguous with the travel lane and are designed for accommodation of stopped vehicles for emergency use, and for lateral support for the base surface road courses. The required width of the travel lanes and shoulders will be identified by the following road types, which are intended for two lane traffic travel. Refer to Chapter 75 Town of Hartford Transportation Ordinance for further definition of road classifications and types.
 - a. **Rural Principal Arterial** highways shall typically be 12 feet travel lane width with four-foot shoulders. Such arterial highways are generally State-aid highways that link State or Town roads together to facilitate travel through the community. The travel lanes and shoulders of these highways will be paved.
 - b. **Rural Minor Arterial, Rural Major Collector, and Rural Minor Collector** highways shall have a minimum 11 feet travel lane width with a minimum of two-foot shoulders. The traveled way and shoulders of these highways will be paved. The Director of Public Works or designee may allow gravel shoulders for rural minor collectors if appropriate for surrounding area.
 - c. **Rural Local** highways shall have a minimum 8 feet travel lane width and shoulders based on the following table. These roads are intended to allow access to adjacent lands over relatively short distances from other Town highways. The travel way of these highways will be paved. The Town Manager or designee may allow a gravel surface if a highway serves an ADT of less than 50. The Town Manager or designee will consider such factors as adjacent road surface already being graveled and road grade.

TABLE 1 - TWO-WAY RURAL LOCAL HIGHWAY DESIGN			
Typical ADT	Minimum Lane Width (FT)	Minimum Shoulder (FT)	Maximum No. of Units Served
<25	8	None	3 or less
25 to 50	8	2	Up to 6
51 to 200	9	2	Up to 25
201 to 400	10	2	Up to 50
>400	11	3	>50

The road type required will be recommended during the planning review process by the Town Manager or designee. In the event that the applicant is not in agreement with the decision, an appeal may be made in writing to the Selectboard. All new highway corridors will consider “complete streets” principles of safety and accommodation of all transportation users, as expressed in the Vermont Complete Streets Law effective July 2011.

The overall highway corridor widths summarized above do not include on-street parking allowances or bicycle lanes. Wider shoulders may be required to accommodate required pedestrian and bicycle access as outlined in the Complete Streets Legislation and where guardrails are installed.

3. Crown: A roadway crown is created on road surfaces where the pavement centerline is at the highest elevation and the road surfaces on either side slope uniformly downward to the edge of the shoulder or roadway in order to promote proper drainage of road surfaces. Road surfaces shall be designed to positively drain to minimize ponding, water infiltration, icing, or other related water caused conditions. For roadways that are not superelevated, provide a 2% to 4% (¼" to ½" per foot) crown for gravel roads and a 1% to 2% (⅛" to ¼" per foot) crown for paved roads to promote sheeting of water off pavement surfaces. Proper grading techniques for gravel roadways will be used to avoid creating a ridge or berm between the crown and the ditch. Any berm along the roadway shoulder that prevents the proper sheeting of water from the pavement surface shall be removed.
4. Grades: The grade of a road is defined as the measure of the road’s steepness as it rises and falls along its route. A road incline or slope is calculated by comparing its measured elevation rise or fall to the horizontal distance over which the change in elevation occurs. Grade, or slope, is typically expressed as a percent.

Minimum grades are typically a function of providing for positive road drainage. Maximum grades are dependent on existing site conditions, the type of vehicles the road is designed for, road construction and maintenance costs, traffic volume and design speeds. For the purpose of these Specifications, road grades have been selected to allow unimpeded year round access by emergency, fire or police vehicles.

- a. Minimum road grades shall be ½ percent based on drainage considerations.
- b. **Rural Principal Arterial, Rural Minor Arterial, and Rural Major Collectors** are recommended to be less than 8% grade, but in no case shall exceed 10% grade at any point within their alignment.
- c. **Rural Minor Collector** highways shall not exceed 10% grade at any point within their alignment.
- d. **Rural Local** highways shall not exceed 10% grade at any point within their alignment.
- e. The maximum grade within 50 feet of an intersection shall be 4%.

Finished grades (transverse and longitudinal) shall be smoothed to eliminate sharp dips in traveled surface to permit efficient snow removal and proper drainage.

5. Curves: Proper design of horizontal and vertical curve geometry is vital for providing overall vehicle stability, maximizing vehicle/pedestrian visibility, maximizing drive site distance and reaction times, and promoting smooth, uniform traffic flow and control.
 - a. The radius of horizontal curves shall be long enough to permit easy flow of traffic, including trucks, road maintenance equipment, and emergency vehicles at the road design speed.
 - b. Horizontal curves will be designed to minimize intermediate obstructions to line of sight or safety in curve negotiation under two way traffic conditions. Trees, boulders, and other obstructions shall be removed on horizontal curves to provide adequate sight distance.
 - c. Horizontal curve radii and site distance will be designed based on maximum design speed. Under no circumstances will a horizontal curve less than 100 feet as measured on the roadway centerline or a site distance of 150 feet be permitted.
 - d. Vertical curves shall have the following minimum lengths:
 At crest: length equals $(28) \times$ (algebraic difference in intersecting grades)
 At sag: length equals $(35) \times$ (algebraic difference in intersecting grades)
 In no case shall a vertical curve length be less than 50 feet.

**SECTION 825 DRIVEWAYS, INTERSECTIONS, AND OTHER RELATED
HIGHWAY CONSTRUCTION**

1. The applicant shall refer to Part 4 Standard Forms and Documents for Driveway Permit and ROW Excavation Permit applications contained in this document.
2. Driveways, Entrances, and Approaches: It is the intent of these Specifications to allow only one access point to a parcel. Multiple curb cuts or oversize access entrances may be requested during planning review based on zoning district, proposed use, or existing area setting. Access onto State highways may be further restricted in entrance location, dimensions, or type by VTrans. Refer to Chapter 75 of the Town Ordinance for Permit requirements.
 - a. Temporary access onto Town highways will require review and approval by the Director of Public Works or designee prior to installation. Examples of such temporary uses include site construction entrances, maintenance access, or logging access roads. These temporary usages will be discontinued once the approved activity is completed and will be returned to pre-existing conditions or permanently closed to prevent continued future access to the satisfaction of the Director of Public Works or designee. It is further recognized that existing agricultural fields may have multiple access points that are designed for intermittent or seasonal usage and pre-date the adoption of the Town Ordinance. The Town assumes no responsibility for maintaining these access points while conducting normal road maintenance, corridor reconstruction, or drainage course grading or cleaning. The Town will not by it's action, cause such agricultural access points to become unusable.
 - b. Driveways shall not interrupt the natural or ditch line flow of drainage water. Driveway culverts shall be aligned to optimize flow and maintain the functionality of existing adjacent culverts. Driveways must have sufficiently sized culverts installed by the homeowner or developer. These culverts shall conform to the requirements of these Specifications and the Town driveway permit application.
 - c. Driveway culverts shall be designed based on the projected stormwater flow that must be passed by the culvert, and on the size of any upstream or downstream culverts within the same flow channel. The minimum design storm that will be

used to size culverts is the 25-year storm event.

- d. In no case shall the culvert pipe under a driveway be less than a 15-inch diameter pipe. Refer to the VTrans Culvert and Ditch Procedures guidance document.
 - e. The property owner is responsible to maintain the culvert in good operating condition and free of accumulated debris or blockage. Maintenance, repair, and replacement of private driveway culverts remain the responsibility of the property owner even if the culvert is located within the municipal ROW.
 - f. The Director of Public Works or designee may waive the requirement for a culvert where shallow ditch lines or a natural drainage course exists to channel the water away from the road. Driveways constructed without a culvert may be required to have a pavement swale at a point beyond the road shoulder to accommodate stormwater runoff across the driveway entrance.
 - g. Driveways will be located using an all-season safe sight distance in each direction. Site distances shall conform to the requirements of the Vermont State Design Standards for highways.
 - h. Driveways that are designed for two way traffic are to have angles of intersection with the public road of 90 degrees or very near 90 degrees. Two-way traffic driveways with skews greater than 20 degrees are discouraged. One-way traffic driveways have a preferred intersection angle of 90 degrees but can be permitted with a skew of between 0 and 30 degrees.
 - i. No driveway will be permitted to be constructed within 100 feet of an intersecting street. Where adequate distance is available, it is recommended that a minimum of 150 feet be maintained.
 - j. Under no circumstances shall a driveway permit allow construction which will result in drainage directly onto a Town highway. In the event a driveway causes damage to a Town highway through improper construction, maintenance, or grading, it shall be the responsibility of the property owner to make necessary repairs upon notification in writing by the Town. In the event such repairs as are required are not made within 30 days, the Town shall take whatever steps are necessary to ensure the interests of the Town and shall bill the property owner for any expenses involved.
 - k. All commercial driveways approaching paved State or Local roads shall have paved aprons extending to the road ROW. All residential driveways approaching paved State or Local roads shall have a three-foot wide paved apron. Refer to Standard drawings for further information on driveway alignment and grading at access points.
4. Culverts: Culverts are drainage structures consisting of a closed conduit that conveys water from a roadside drainage ditch or other naturally occurring channel or waterway transversely under a roadway. Culverts shall be installed during the construction of the highway and prior to highway subbase and surface preparation and placement. Backfill in excavations for culverts shall be compacted to prevent or minimize settling in surface, shoulders or slopes.

Culverts should be covered with a minimum of 30 inches of suitable backfill material. In general, culverts shall be installed in all low spots and be of sufficient size to handle the anticipated runoff.

- a. Highway culverts shall be properly sized for anticipated runoff, but in no case shall be less than 18 inches in diameter.
- b. Driveway culverts shall be properly sized for roadside ditch flow as previously discussed, but in no case shall be less than 15 inches in diameter.

- c. All culverts are to be evaluated and sized by a Professional Engineer registered in the State of Vermont. Any culvert with a drainage area greater than 0.25 square miles (160 acres) will require a hydraulic study.
 - d. Culverts for State, Rural Principal Arterial, Rural Minor Arterial and Rural Major Collector Highways shall be designed for the Q50 storm event. Rural Minor and Rural Local highways shall be designed for a minimum Q25 storm event. The consequences of larger storm events should also be evaluated and provisions made to mitigate higher flows to minimize damage to adjacent road surfaces or road subbase.
 - e. All culverts 36" in diameter or larger shall be designed according to the latest revision of the VTrans Hydraulic Manual.
 - f. The installation of a single culvert is preferred over multiple culverts.
 - g. Culverts should be located and constructed to allow annual routine maintenance and cleaning.
 - h. Culverts shall be orientated to consider natural hydrology and effectively capture entering stormwater without excessive entrance losses or increased potential for pluggage by debris.
 - i. The inlet and outlet of culverts will be suitably protected by properly sized stone armoring based on anticipated flow conditions.
 - j. For culverts 36" in diameter or smaller, the allowable headwater should be no greater than 1.5 times the diameter at the design storm. For culverts greater than 36" in diameter consult the VTrans Hydraulic Manual for further direction.
 - k. Under no circumstance will the allowable headwater depth at the design frequency be allowed higher than the road shoulder elevation.
4. Headers: Headers or headwalls serve several purposes including anchoring of culverts, protection of roadway embankments, marking inlet and outlets for equipment operators or maintenance crews, preventing erosion at culvert inlet/outlet sections, increasing the hydraulic efficiency of the culvert, or shortening the required length of culvert where other site constraints limit it. Headers or headwalls should be designed to conform to the character of the highway setting.

Headers shall be installed at the inlet of all culverts and may be either reinforced concrete a minimum of 8 inches thick, large flat un-mortared rock tightly placed, or large cemented rock. The inside edge of headers shall be at least 8 feet from the outside edge of the shoulder.

5. Drainage Ditches: Roadside ditches are open drainage channels paralleling the highway embankment and surface, and typically located within the highway ROW. The primary function of the roadside ditch is to collect water run-off from the road surface and other areas adjacent to the ROW, and transport the accumulated water to an acceptable discharge point. The secondary function of the roadside ditch is to drain the base of the roadway to prevent saturation and loss of pavement integrity. The following sections relate to stormwater drainage associated specifically with road surfaces. Refer to Section 1300 (*to be completed in the future*) of these Specifications for additional details regarding stormwater management and drainage.

Drainage ditches should be designed as an extension of the road surface and shoulder and shall be provided where necessary. Ditches shall be constructed to prevent infiltration of water into the roadway subbase and to conduct storm drainage to waterways and absorption areas. Accordingly, drainage ditches adjacent to roads shall be at least 6

inches below the roadway subbase or 18 inches below finished grade to minimize spring breakup conditions.

Ditches shall be shaped to prevent excessive erosion on both shoulder and right-of-way or bank sides of the ditch cross section. Typically a parabolic (wide “U”-shaped) drainage ditch shall be constructed for all new or reconstructed ditch locations. Narrow “V”-shaped ditches shall be avoided unless site conditions constrain available ditch dimensions. Typically ditches should be constructed with:

- a. A wide bottom at least 2 feet wide; and
- b. Side slopes with a maximum slope of 1 vertical to 2 horizontal.

Open drainage ditches shall be treated to reduce erosion and to remove sediments and other pollutants from runoff water by:

- a. Seeding and mulching ditches having a slope of less than 2%;
- b. Placing biodegradable, non-welded matting and seed in ditches with slopes between 2% and 5%; and
- c. Stone-lining ditches having a slope of 5% or greater. Stone shall be sized based on ditch slope and projected design flow rates and volumes.
- d. No ditches shall be paved with asphalt or any other material that results in excessively fast runoff speeds.

Ditches should be turned out prior to discharge into receiving surface waters. The outlet turnout should be protected against erosion or sediment transport by use of structural controls such as rock lining or natural vegetated zones that reduce flow velocities and offer filtering of sediment in stormwater.

6. Intersections: Roadway intersections shall be aligned as nearly as possible at right angles (90 degrees) with a minimum allowable intersection angle of 60 degrees.

The center line of no more than two accepted ROWs shall intersect at any one point.

Any intersection of two highways with a third highway shall be separated by a distance of not less than 150 feet between the road centerlines.

7. Dead-end Streets and Cul-De-Sac: Proposed dead-end streets and cul-de-sacs shall be reviewed and approved by the emergency fire service during the planning review process and shall not exceed the ability of the fire department to provide emergency services to the proposed building location(s). An approved cul-de-sac or other turn around (hammerhead or tee) shall be provided for emergency vehicle turnaround whenever a dead-end street exceeds 150 feet in length.

Cul-de-sacs and dead-end streets will only be permitted under the following circumstances:

- a. The total length from a paved Town highway shall be approved by the emergency fire service but, in no case, shall exceed a length of 1,200 feet.
- b. The street shall be constructed with an approved turnaround with a minimum outside radii of 35 feet. Where a center island is provided to minimize impervious surface, a minimum clear access width of 20 feet shall be provided.
- c. The cul-de-sac shall be built to the same subgrade, subbase, and pavement base Specifications contained in this document for the access road.
- d. Provisions shall be made on the outside perimeter for snow removal.

Streets shall be arranged to provide for extension or connection of eventual street systems necessary to develop abutting land in future subdivisions.

8. Turnoffs: Turnoffs may be considered in lieu of road widening in order to maintain the rural and aesthetic character of an existing road. Turnoffs with adequate elevations and site distances, surface, drainage ditches, and culverts will be provided to permit safe passing under summer and winter conditions, and shall be dimensioned and constructed to enable effective and efficient snow removal. Proposals for turnoffs shall be provided to the Director of Public Works or designee for review and approval prior to construction.
9. Bridges: For the purpose of this specification, a bridge is defined as any structure with a clear span greater than 6 feet. Plans for bridges must be submitted for review prior to construction. Construction will be authorized only after a review by the VTrans and the Town, or an engineer selected by the Town, and has verified that the bridge will meet all applicable VTrans and Town Specifications.

All bridges will require a hydraulic and hydrologic engineering study as part of the review and approval process.

- a. All bridges shall be designed according to the latest revision of the VTrans Hydraulics Manual.
- b. Where FEMA or Town flood studies exist that define floodways and flood plains for an existing surface water body, the bridge shall be designed to not adversely affect the floodway or cause an increase in flood elevation for the 100-year storm event.
- c. All bridge structures shall be designed to allow for the passage of ice or debris.

The Town may require an alternate bridge design if it determines the proposed bridge would impose a future financial burden on Town resources or is inconsistent with other Town bridge and infrastructure. Any costs associated with the review of the bridge design will be paid by the applicant. The Director of Public Works or designee may waive the requirements for outside engineering review of short span bridges (i.e. those between 6 feet to 20 feet in span).

10. Slopes, Banks, and Guardrails: Roadway slopes and banks shall be designed to promote roadbed support, safety of vehicle operation, prevention of erosion, proper management of stormwater, suitability for roadside maintenance, pedestrian safety and access (if required), and adequate slope stability to prevent slope failure and the road conditions and use.

Roadway design further defines the need for a clear zone. This is defined as the total roadside border area, starting at the edge of the travel way that is available for safe use by an errant vehicle. The clear zone is an unobstructed, relatively flat area beyond the edge of the travel way that allows a driver to stop safely, or regain control of a vehicle that leaves the travel way without overturning or colliding with roadside objects.

Vertical or sharp cut faces, excepting ledge, shall not be permitted. VTrans Standards A-60, A-61, and A62 should be referred to for ledge and slopes in rock excavations.

Side slopes and banks should be no greater than 1 vertical to 3 horizontal. The Director of Public Works or designee may consider slopes as steep as 1 vertical to 1½ horizontal due to other site constraints. Soil stability of banks shall be a design consideration and slopes and banks shall be designed and constructed to prevent instability, slides, washes, or other disturbance to the slope, bank surface, or subsurface.

Banks shall not interfere with snow removal. After construction and final grading of banks, banks will be seeded and mulched to minimize surface erosion. Additional

stabilization fabric, geogrid, riprap or other structural stabilization techniques shall be provided where necessary.

Where significant, steep or abrupt topographic elevation changes, or roadside obstructions are present within the designated clear zone, the use of properly designed guardrail will be required. The most recent version of the AASHTO Roadside Design Guide will govern the analysis of the hazard and the subsequent mitigation of that hazard. In general:

- a. Where slopes are 2:1 or steeper and the height of drop-off at the edge of shoulder exceeds 5 feet, guard rail should be installed.
- b. Where slopes are 3:1, guard rail may not be needed if the area at the bottom of the slope is free of hazards.
- c. Where slopes are 4:1 or flatter, guard rail is not normally required.
- d. Where required, steel guard rail system shall be provided in accordance with VTrans Specifications and Standards.
- e. An additional 3-foot widening of the roadbed surface is recommended for proper support of guard rail posts at the outside of shoulders.

SECTION 830 MATERIALS OF CONSTRUCTION

1. General Roadway Construction Standards: The dimensions, Specifications, and standard details included in this section are intended for low traffic volume conditions (<250 ADT) and where heavy truck traffic is infrequent. Where heavy trucks are common or increased traffic is expected an engineering and/or geotechnical assessment should be performed to determine appropriate thickness of subbase and surface treatment. VTrans Standards shall be consulted when completing this assessment.
2. Sand Borrow and Cushion: This item shall consist of a subbase course of sand constructed on a prepared subgrade in accordance with the sections as shown on the standard drawings. Sand shall consist of material reasonably free from silt, loam, clay, or organic matter. It shall conform to the Vermont Standard Specification for sand borrow, No. 703.03A. It shall be obtained from approved sources and shall meet the requirements set forth in this table:

Sieve Designation	Percentage By Mass (Weight) Passing Square Mesh Sieves
2 inches	100
1½ inches	90 – 100
½ inches	70 – 100
No. 4	60 – 100
No. 100	0 – 20
No. 200	0 – 8

3. Bankrun Gravel for Subbase: This item shall consist of a base course composed of bank run gravel with maximum stone size of 4 inches and constructed on a prepared subgrade in accordance with the sections shown on the standard drawings. All materials shall be secured from approved sources. Such gravel shall consist of hard, durable stones, which show uniform resistance to abrasion and which are intermixed with sand or other approved binding material. It shall meet the requirements of Vermont Standard Specification Item No. 704.04A, Gravel for Subbase. The gravel shall be uniformly graded from coarse to fine and shall meet the grading requirements set forth in this table:

Sieve Designation	Percentage By Mass (Weight) Passing Square Mesh Sieves
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No. 4	20 - 60
No. 100	0 - 12
No. 200	0 - 86

The maximum size stone particle shall not exceed 2/3 of the thickness of the layer being placed or 4 inches, whichever is smaller. All bottom course material shall be deposited and spread so as to distribute the material in uniform layers, compacted at optimum moisture content. Percent wear shall not be more than 50% when tested in accordance with AASHTO T 96.

4. Fine Crushed Gravel and Coarse Crushed Gravel for Subbase: This item shall consist of an upper course of crusher run gravel to be placed over the bottom course of bank run gravel which will have been prepared in accordance with these Specifications. This upper course shall conform to the following Specifications and be placed in accordance with the lines, grades, and typical cross-sections as shown in the accepted drawings. Material shall meet Vermont Standard Specification Item No. 704.05A – Fine crushed and coarse crushed gravel for subbase.

All materials shall be secured from approved sources. This gravel shall consist of angular and round fragments of hard durable rock of uniform quality throughout, reasonably free from thin elongated pieces, soft or disintegrated stone, dirt or other objectionable matter. The grading requirements shall conform to the following table:

Fine Crushed Gravel	
Sieve Designation	Percentage By Mass (Weight) Passing Square Mesh Sieves
2 inches	100
1½ inches	90 - 100
No. 4	30 - 60
No. 100	0 - 12
No. 200	0 - 6

Coarse Crushed Gravel	
Sieve Designation	Percentage By Mass (Weight) Passing Square Mesh Sieves
4 inches	95 - 100
No. 4	25 - 50
No. 100	0 - 12
No. 200	0 - 6

Percent wear shall not be more than 40% when tested in accordance with AASHTO T 96. At least 50% by mass (weight) of the material coarser than the No. 4 sieve shall have at least one fracture face in accordance with Vermont Standard Test Procedure AOT-MRD 23. This upper course of crusher run gravel shall be deposited and spread in a uniform layer, and compacted at optimum moisture content. Fine crushed gravel or coarse crushed gravel shall not be placed until the subgrade has been placed and compacted as indicated by the plans and Specifications and approved of by the Engineer.

5. Dense Graded Crushed Stone for Subbase (Alternate): This item shall consist of clean, hard, uniformly graded, crushed stone. It shall be sufficiently free from dirt, deleterious material, and pieces that are structurally weak and shall meet the following requirements and be placed in accordance with the lines, grades, and typical cross-sections as shown in

the accepted drawings. Material shall meet Vermont Standard Specification Item No. 704.06A – Dense graded crushed stone for subbase.

All materials shall be secured from approved sources. This stone shall consist of angular fragments of hard durable rock of uniform quality throughout, reasonably free from thin elongated pieces, soft or disintegrated stone, dirt or other objectionable matter. The grading requirements shall conform to the following table:

Dense Graded Crushed Stone	
Sieve Designation	Percentage By Mass (Weight) Passing Square Mesh Sieves
3½ inches	100
3 inches	90 - 100
2 inches	75 - 100
1 inch	50 - 80
½ inch	30 - 60
No. 4	15 - 40
No. 200	0 - 6

The percent of wear of the crushed stone shall be not more than 40% when tested in accordance with AASHTO T 96. When the aggregate is composed of crushed igneous rock, the percent of wear of the crushed stone shall be not more than 50% when tested in accordance with AASHTO T 96. Not more than 30% by mass (weight) of the material coarser than the 4.75 mm (No. 4) sieve shall consist of thin and/or elongated pieces in accordance with Vermont Standard Test Procedures AOT-MRD 22. This upper course of crushed stone shall be deposited and spread in a uniform layer, and compacted at optimum moisture content. Dense graded crushed stone shall not be placed until the subgrade has been placed and compacted as indicated by the plans and Specifications.

6. Pavement: Paving is required for Rural Principal Arterial, Rural Minor Arterial, Rural Major Collector, and Rural Minor Collector Highways. Rural Local Highways shall be paved unless conditions outlined in Section 820 Item 2c are met.

Pavement shall be in accordance with the Marshall Mix Design method for bituminous concrete pavement systems. This type of pavement shall be composed of mineral aggregate, mineral filler if required, and bituminous material, plant mixed and laid hot. This pavement shall be constructed in two courses on the prepared or existing base in accordance with these Specifications and in conformity with the lines, grades, thickness and typical cross-sections shown on the accepted drawings. All bituminous pavement shall be in accordance with VTrans specification sections 406 and 702.

- a. The coarse aggregate shall consist of clean, hard crushed rock or screened crushed gravel free from dirt or foreign matter. It shall be reasonably free from soft and elongated pieces.
- b. The fine mineral aggregate shall consist of sand or a mixture of sand and stone screenings. The sand shall consist of clean, hard, durable grains, free from dirt, unsuitable material, and pieces which are structurally weak.
- c. The asphalt binder shall conform to all the requirements as set forth by the State of Vermont Standard Specifications for Highway Construction (Section 702).

7. Curbing: Curbing shall be provided as required in Town subdivision or planning documents, or where necessary to collect stormwater or provide separation between pedestrian and vehicle access ways.

- a. Vertical granite curb shall be obtained from approved sources and shall meet requirements of VTrans Sections 729.01. Mortar shall be Type I and shall meet

the requirements of VTrans specification section 707.01. Curb shall be cut from hard durable quartered granite, grey in color and free from seams, cracks or other structural defects. Curb stones shall be furnished in minimum lengths of 6 feet and the top surface shall be sawed to true plane $\frac{1}{8}\pm$ -inch. The top front arris line shall be rounded to a $\frac{1}{2}$ -inch radius and the front face shall be smooth quarry split. The top 8 inches of the front face shall have no projections greater than 1 inch or depressions deeper than $\frac{1}{2}$ -inch.

- b. Portland cement concrete curb shall be constructed in accordance with VTrans specification Section 616. All concrete used in the construction of roadway curbs shall be air entrained 5.0% \pm 1% so determined by an air meter. This concrete shall have a 28-day compressive strength of 3,500 psi and meet State of Vermont Standard Specifications for Class B concrete, Section 541. A mineral admixture substitution for Portland Cement of up to 20% fly ash or 20% ground, granulated blast furnace slag (GGBFS) is allowed.
8. Geotextile Fabrics: Soil stabilization fabric shall be a woven geotextile and shall comply with the requirements of VTrans specification section 720. Drainage fabric for wrapping underdrains shall be a needle-punched, non-woven geotextile and shall comply with the requirements of VTrans specification section 720 and having a sufficient water transmission rate suitable for the application.
9. Guard Rails: Steel beam guardrail is the only acceptable guardrail material and shall be supplied and constructed in accordance with VTrans specification section 621, the VTrans Standard Details, and the approved construction plans.
10. Signage: All signs shall be in conformance with the Manual on Uniform Traffic Control Devices (MUTCD)
11. Traffic Signals: All traffic signals shall be in conformance with the Manual on Uniform Traffic Control Devices. Generally traffic signals will meet the following minimum requirements:
 - a. Minimum 9 phase controller in-ground mounted box.
 - b. Exclusive left turn signals for each approach, where required.
 - c. An exclusive pedestrian access phase.
 - d. Pedestrian buttons on each corner with audible alarm and ADA compliant pedestrian signal call.
 - e. Programmable fire pre-emption device mounted on arm
 - f. Metal pole and arm, design to be approved by Director of Public Works or designee
 - g. Signal heads light weight plastic with flat black glare reduction shields
 - h. Proper signage
12. Pavement Markings: All temporary and permanent pavement markings shall durable reflectorized pavement marking in accordance with VTrans specification Section 646 and 708.08, and the approved construction plans. Details not shown on the plans shall conform to the requirements of MUTCD.
13. ROW monuments: ROW monuments are a physical structure or object that serves to perpetuate the location of a corner to point on a boundary. Monuments shall typically be installed at all street corners and all points of curvature and/or tangency as shown on the accepted plans.

- a. The location of monuments shall be established by a surveyor licensed to practice in the State of Vermont.
 - b. The monuments shall be erected at locations indicated on the plans, or as directed by the Director of Public Works or designee. They shall be set vertically and to a depth so that the top of the monument is at an established grade. The monuments are to be set in place after all other street development is completed.
 - c. Monuments shall be durable and stable. Monuments shall be identified with the license number of the surveyor in responsible charge (Vt Statute Chapter 45, Title 26 Section 2502).
14. Cement Concrete Driveway Aprons (Private and Commercial Drives): Portland cement concrete driveway aprons shall be installed not less than 6 inches thick, and in some high traffic/high weight areas, not less than 8 inches thick at the discretion of the Director of Public Works or designee.
- a. All concrete used in the construction of roadway aprons shall be air entrained 5.0% ±1% so determined by an air meter. This concrete shall have a minimum 28-day compressive strength of 3,500 psi and meet State of Vermont Standard Specifications for Class B concrete, Section 541.
 - b. A mineral admixture substitution for Portland Cement of up to 20% fly ash or 20% ground, granulated blast furnace slag (GGBFS) is allowed.
15. Bituminous Concrete Driveway Aprons (Private and Commercial Drives): For materials, preparation of subgrade, and construction methods refer to sections on bituminous concrete pavement.
16. Culverts: All culverts and associated hardware and couplings shall be supplied and installed in accordance with VTrans Specification Section 601 and 711. Refer to Section 1300 (*to be completed in the future*) of these specifications for additional requirements.

SECTION 840 INSTALLATION

1. Layout: The centerline of any road improvement shall be established in the field at no greater than 50-foot intervals with relevant information regarding cut, fill, elevation, and station offset provided at each grade stake. Any change in approved alignment or profile due to differing field conditions must immediately be brought to the attention of the Director of Public Works or designee prior to construction. Any relocation of road systems not installed in accordance with approved plans or modified without written approval from the Town shall be completed at the expense of the developer.
2. Preparation of Roadway Subgrade: The horizontal alignment and profile of roadways shall include an evaluation of existing subsurface conditions. Prior to the placement of roadway subbase or pavement, the existing subgrade shall be prepared as noted below:
- a. Objectionable and unsuitable materials shall be removed and replaced with sand or bank run gravel. All loam, muck, stumps and other improper foundation material shall be removed from within the limits of the fully extended road shoulders. In embankment areas, suitable foundation material shall be placed in 1-foot layers and compacted to form a stable subgrade.
 - b. Ledge and boulders shall be removed to at least 18 inches below subgrade and replaced with sand or bank run gravel.
 - c. Subgrade shall meet the lines and grades shown on the drawings.
 - d. If the proposed roadway is in a wet area, the Director of Public Works or designee may require additional gravel plus sand cushion and underdrain to ensure a stable road. The use of geotextiles may also be considered for stabilizing unpaved roads

prone to erosion or frost action. When using geotextiles, the soil type, permeability of subgrade, specific fabric type and traffic load guidelines must be considered before application.

- e. Underdrains shall be installed where necessary to provide subgrade stabilization or to prevent the accumulation of water beneath the roadway in areas of highly frost reactive soils.
- f. The subgrade surface shall conform exactly in cross section to the finished road surface. Crowning and banking of curves shall be required.
- g. Compaction is required on any portion of the subgrade which has been disturbed by excavation or which has been filled during the construction of the subgrade.
- h. All ditches and drains will be constructed so that they effectively drain the subgrade prior to the placement of any base material. An additional 6 inches of sand cushion shall be placed over any clay subgrade.

Refer to the Town's standard details included in Part 3 of this specification for typical roadway cross sections and installation details. The minimum acceptable roadway cross section will include:

- a. A thickness of sand cushion required by over-excavation of ledge or unsuitable materials, installed in 6-inch lifts and compacted to 95% of maximum dry density to establish the subgrade surface.
- b. 18-inches of roadway subbase consisting of bankrun gravel installed in 6-inch lifts and compacted to 95% of maximum dry density. Additional thickness of subbase material may be required based on traffic loading, anticipated weight of vehicles, and other existing geotechnical conditions.
- c. 6-inches of roadway upper base of crushed gravel fully compacted.
- d. 2-inches of bituminous concrete base course (minimum).
- e. 1-inch of bituminous concrete wearing course (minimum).
- f. Maximum thickness of pavement may need to be increased based on anticipated traffic volume and type of vehicle. Refer to VTrans Pavement Design and latest revision of AASHTO Guide for Design of Pavement Structures for pavement evaluation guidelines.

- 3. General Site Excavation: All general excavation including trenching for utility or underdrain installation shall conform to the following general provisions, as applicable:
 - a. All excess materials resulting from clearing, grubbing, or excavation shall be disposed of off-site in compliance with any Town or State regulations. Burial of stumps, slash, or other waste material on-site is not permitted.
 - b. No excavation shall be performed until the minimum sedimentation and erosion control measures included in these Specifications and shown on the approved development plans are installed.
 - c. Excavated material remaining on-site shall be stockpiled within the project work limits or at a pre-approved off-site location and protected with proper erosion control and sediment transport barriers.
 - d. Frozen materials shall not be utilized in excavation backfill.
 - e. All disturbed earth areas shall be temporarily stabilized until final pavement installation or permanent stabilization is completed, in accordance with applicable Town and State erosion and sediment control practices at construction site.
- 4. Pavement Construction Methods: Equipment for spreading and finishing the bituminous concrete mixture shall be a mechanical spreading and finishing machine provided with an activated screed and heated if required. The machine shall be capable of spreading the mixture without segregation. Application of bituminous concrete pavement shall conform in all respects to Vermont Standard Specifications Section 406. These

requirements shall include but not be limited to the following.

- a. Weather conditions - The plant mixed material shall not be placed between November 1 and May 1. Bituminous wearing course materials shall not be applied before May 15th or after October 15th. The material shall not be placed when the air temperature at the paving site is in the shade and away from artificial heat is below 40°F for courses of 1¼ inches or greater in compacted thickness or below 50°F for courses less than 1¼ inches in compacted thickness.
 - b. Spreading and finishing - Immediately before placing the bituminous mixture, the existing surface shall be cleaned of all loose or unsuitable material. Contact surfaces of pavement, curbing, gutters and manholes shall be painted with a thin, uniform coat of Emulsified Asphalt Type RS-1 immediately prior to placement of the mixture against them.
 - c. Compaction - Immediately after the bituminous mixture has been spread, struck off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. Along forms, curbs, headers, walls and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot or lightly oiled hand tampers, smoothing irons or with mechanical tampers. On depressed areas, a trench roller may be used or cleated compression strips may be used under the roller to transmit compression to the depressed area.
 - d. Surface tolerance - The base course shall be finished to within a grade tolerance of ½ inch, provided that this deviation is not maintained for a distance longer than 50 feet, and provided that the required crown or superelevation is maintained. The surface will be tested by the Town using a 16-foot straight edge at selected locations parallel with the center line. Any variations exceeding ⅛ of an inch between any two contacts shall be satisfactorily eliminated. A 10-foot straight edge may be used on a vertical curve. The straight edges shall be provided by the Contractor.
5. Vertical Granite Curb: Vertical granite curb shall be constructed on a prepared subbase in accordance with these Specifications, the cross-section shown on the standard drawings, and the alignment and location included on the approved site plans.
- a. Excavation shall be made to the required depth and the base material shall be compacted to a firm true surface. A fine dirty stone such as “Shur-Pac” may be used to level the bed for the curb.
 - b. Curb stones shall be set so that the front arris line conforms to the line and grade shown on the plan.
 - c. No joints larger than 1 inch will be permitted between stones. All joints shall be completely filled with Type I Mortar and shall be neatly pointed on front and top.
 - d. Concrete bedding shall be poured on each side of the installed curb to the dimensions shown on the standard details.
 - e. After the anchoring concrete is set, topsoil shall be filled against the back of curb and shall be blended to existing lawns.
6. Cast-in-Place Concrete Curb: Portland cement concrete curb will be constructed on a prepared subgrade in accordance with these Specifications, the cross-section shown on the standard drawings, and the alignment and location included on the approved Site Plans. Portland cement concrete curb shall be constructed in accordance with VTrans specification Section 616.
- a. All boulders, organic material, soft clay, spongy material, and any other objectionable material shall be removed and replaced with approved subbase material. The concrete curbing shall be built to the required line and grade on a subbase of gravel 6 inches in depth which shall be fully compacted.

- b. The forms shall be of metal or of acceptable planed and matched lumber, and of such construction that a smooth surface will be produced. All forms shall in accordance with VTrans subsection 541.09.
- c. Just prior to placing the concrete, the subgrade shall be moistened. The concrete, mixed to the proper consistency, shall be placed in the forms and thoroughly tamped in place so that all honeycombs will be eliminated and sufficient mortar will be brought to the surface. The use of vibrators or other compaction equipment to move the concrete within the forms is not approved.
- d. The curbing shall immediately, upon removal of the forms, be rubbed down to a smooth and uniform finish, no plastering or patching will be allowed.
- e. After the forms have been removed, the trench shall be backfilled with approved gravel and fill as needed and thoroughly tamped, care being taken not to affect the alignment or grade of the curbing.
- f. Quarter-inch expansion joints shall be placed at intervals of 20 feet for continuous pours. At intervals not greater than 10 feet not less than 5 feet, the concrete curbs shall be scored for a depth equal to one-third the total depth of the concrete.
- g. Curing of concrete curbs shall be in accordance with VTrans subsection 541.17.
- h. No concrete shall be poured on a frost or thawing subgrade or during unseasonable weather conditions, or when the temperature is 40°F or lower and falling.

7. Private or Commercial Driveway Aprons:

- a. All boulders, organic material, soft clay, spongy material, and any other objectionable material shall be removed and replaced with approved material. The subgrade shall be properly shaped, rolled and uniformly compacted to conform with the accepted cross-sections and grades.
- b. 18 inches of compacted, approved gravel shall be installed on the subgrade to accepted cross-sections and grades.
- c. The forms for the concrete shall be made of wood or metal, well oiled, straight, free from warps or kinks and of sufficient strength. They shall be staked securely enough to resist the pressure of the concrete to be deposited. They shall not vary from the approved line and grade and shall be kept so until the concrete has set.
- d. Half inch transverse expansion joints shall be placed where the driveway apron and driveway joins the sidewalk and curb or pavement.
- e. The curbing installed across the front of the concrete entrance driveway shall protrude a maximum of 1½ inches above the finished roadway surface at the entrance to the driveway. The depressed entrance curb shall be constructed with a smooth and gradual depression transition which shall not exceed 9 inches in length.
- f. The section of sidewalk at the driveway shall be constructed to a thickness of not less than 6 inches, but in some areas not less than 8 inches.
- g. Curing of concrete shall be in accordance with VTrans subsection 541.17.
- h. No concrete shall be poured on a frost or thawing subgrade or during unseasonable weather conditions, or when the temperature is 40°F or lower and falling.
- i. Bituminous driveway aprons shall be installed in accordance with previously specified installation methods for bituminous concrete pavement.

850 TESTING AND INSPECTION

- 1. General: All testing shall be paid for by the developer and coordinated with the third party inspector and Director of Public Works or designee. The developer shall provide

the Town with a proposed testing schedule, certification and qualification information on the contracted testing laboratory at the Preconstruction Meeting. The results of all testing shall be maintained on-site by the contractor, and made available for review to the Director of Public Works or designee, as requested. If tests indicate that materials do not meet Standards specified, the developer or contractor shall make whatever corrections are required to remedy the incorrect work, and complete follow-up testing of the corrected work.

- a. Locations of the sampling and testing shall be documented on the project drawings.
 - b. Sampling and testing shall be done by an independent testing laboratory.
 - c. Samples shall be random and representative of the material being installed.
 - d. Samples shall be taken from installation location or from trucks on-site as construction proceeds, and not from source.
2. A minimum of two (2) working days notice for all inspections shall be given to the Director of Public Works or designee on the proper notification form. The developer shall provide, at his/her expense, full or part time construction supervision performed under the supervision of a Registered Professional Engineer at a minimum of two (2) hours per day during road base construction. The Registered Professional Engineer shall submit copies of all daily inspection reports/field notes and testing results to the Director of Public Works or designee in a timely manner.
3. Testing Frequency and Type: This section is not meant to be a definitive testing schedule for each project. Testing shall be completed in accordance with applicable VTrans quality assurance standards, good engineering and construction practices, and suppliers' recommendations. In general:
- a. A minimum of one sieve analysis shall be collected and analyzed for each type of material to be installed, and at a frequency of at least one sample for each 500 linear feet of roadway.
 - b. In order to document compliance of all subbase materials involved in construction, compaction testing of subbase and base material shall be completed at minimum 100 foot intervals at two foot (2') depth at changes in material and as required by the Public Works Director or designee or at more frequent intervals per the recommendations of the design engineer.
 - c. Compression test cylinders will be made and tested by a qualified testing laboratory with four test specimens collected from each day's concrete pour, or at a minimum frequency on larger projects of four test specimens for each 50 cubic yards of concrete installed. One cylinder will be tested at 7 days and three at 28 days.
 - d. Bituminous concrete pavement will be tested in accordance with VTrans Standards Section 406.
 - e. Field checks on installed bituminous concrete using a 16 foot straightedge shall be completed to check for depressions or other irregularities.
4. The Director of Public Works or designee shall be notified two (2) working days in advance to inspect the construction of any and all streets at the following phases of construction. The Director of Public Works or designee may request additional inspections.
- a. Preparation of subbase and proof-roll.
 - b. Installation of base material.
 - c. Completion of finished grading and crown measurement.
 - d. During and after the placement of the base coat of bituminous pavement.

- e. During and after the placement of the top coat of bituminous pavement.
5. A pre-paving meeting will be held at the site prior to paving the base coat of asphalt. The meeting shall include the Director of Public Works or designee, developer's engineer, contractor, paving contractor, and developer. Grades will be shot and verified by developer's engineer after the finished grading of the road base. The Director of Public Works or designee shall approve the final grading prior to paving. A schedule for paving shall be determined by the developer's engineer shall provide continuous inspection during the paving operation. A final inspection by the Director of Public Works or designee will be made after the completion of all road, curbs, driveways, sidewalks, and bicycle paths. The final inspection shall include, but not be limited to, the following general checklist:
 - a. Settlement, depression, or imperfections in the finish surface.
 - b. Seeding, stabilization, and erosion control on cut and fill slopes.
 - c. Town Standard requires ninety percent (90%) growth coverage.
 - d. Surface drainage (during rainstorm).
 - e. General appearance.
 - f. Material testing results and all lab reports and field notes.
 - g. Record Drawings complete and on file.
6. Any work deviating from the approved Plans and Specifications or that contains faulty workmanship shall be removed, replaced and/or repaired at the Developer's expense prior to acceptance by the Town.

SECTION 900 BICYCLE AND PEDESTRIAN FACILITIES

910 GEOMETRIC STANDARDS

1. Sidewalks: The following dimensional or layout parameters apply to Town sidewalks:
 - a. Sidewalks shall be a minimum of 5 feet wide to allow for safe access and maintenance, and may be as wide as 10 feet in central business areas.
 - b. The surface of the sidewalk must be firm, stable and slip-resistant. Cementitious concrete shall be used in commercial and urban neighborhoods. Bituminous concrete will be considered in low density residential neighborhoods. Any drainage grates inset into the sidewalk can be no larger than ½-nch across.
 - c. Sidewalks must have a slope of less than 1:20; otherwise it will be considered a ramp, and will be subject applicable ADA Standards. An increase in access elevation of more than ½-nch will require the construction of a ramp, elevator or other compliant facility. ADA-compliant sidewalks must provide an alternative to stairs and escalators. Cross slopes shall be between 1% and 1½%.
 - d. Curb ramps are required wherever a sidewalk crosses a curb. These ramps must have a slope of less than 1:12, must be at least 36 inches wide and must contain a detectable cast iron warning device with a raised dome surface. Ramps must not project into the street, and where there is a marked crosswalk, the ramp must be contained entirely in the width of the crosswalk.
 - e. Because of existing site constraints, sidewalks may need to be located near obstructions, such as telephone poles, traffic signal cabinets or other utilities and infrastructure. Where such obstructions exist, the sidewalk must be constructed to allow the minimum width requirement of 36 inches between the edge of an

obstruction and the edge of the sidewalk. In some cases, if a sidewalk cannot be constructed to comply with this guideline, the obstruction may need to be removed or relocated.

- f. Portland cement concrete sidewalks shall be constructed not less than 5 inches thick for residential applications and 8 inches thick for commercial applications. Where the sidewalk crosses a driveway the depth of concrete shall match the thickness of driveway pad for the full width full width of the driveway. The sidewalk shall be constructed in accordance with these Specifications and the cross-sections as shown on the standard drawings and the Specifications defined in the VTrans specification section 618.
2. Crosswalks: Crosswalks shall be provided at all designated pedestrian crossing points. The preferred width of a crosswalk is 8 feet. A wider crosswalk may be used where high pedestrian volumes exist or where it is desirable to increase the visibility of a crossing. The minimum width of a crosswalk is 6 feet.
 3. Bicycle Lanes: The geometry and dimensions of bicycle lanes will generally be influenced by existing street geometry and setting, traffic volume, and traffic speed. It is the intent of the Town to implement the requirements of the Vermont Complete Streets legislation recently enacted in 2011. For specific guidance on recommended arrangements of bicycle lanes, geometry and dimensions, marking and signage please refer to the following documents:
 - a. VTrans *Vermont Pedestrian and Bicycle Facility Planning and Design Manual, 2002*;
 - b. VTrans *Bicycle and Pedestrian Plan, 1998*;
 - c. VTrans *Pedestrian and Bicycle Policy Plan, 2008*; and
 - d. VTrans Standards for different classifications of roads.

920 MATERIALS

Refer to Section 830 of this specification for material requirements related to subbase granular materials, concrete, bituminous concrete pavement, pavement marking, or signage.

930 INSTALLATION

1. Refer to Section 840 of this Specification for material installation requirements related to site and subbase preparation, subbase granular materials, concrete, bituminous concrete pavement, pavement marking, or signage.
2. Cast-in-Place Concrete Sidewalk: Portland cement concrete sidewalk will be constructed on a prepared subgrade in accordance with these Specifications, the cross-section shown on the standard drawings, and the alignment and location included on the approved site plans. Portland cement concrete sidewalk shall be constructed in accordance with VTrans specification Section 616.
 - a. All boulders, organic material, soft clay, spongy material, and any other objectionable material shall be removed and replaced with approved subbase material. The subgrade shall be properly shaped, rolled and uniformly compacted to conform to the accepted cross-sections and grades.
 - b. The concrete sidewalk will be constructed on a minimum of 18 inches of granular subbase as shown on the Standard Details in Part 3 of this specification.
 - c. The forms for the concrete shall be made of wood or metal, well oiled, straight, free from warps or kinks and of sufficient strength. They shall be staked securely

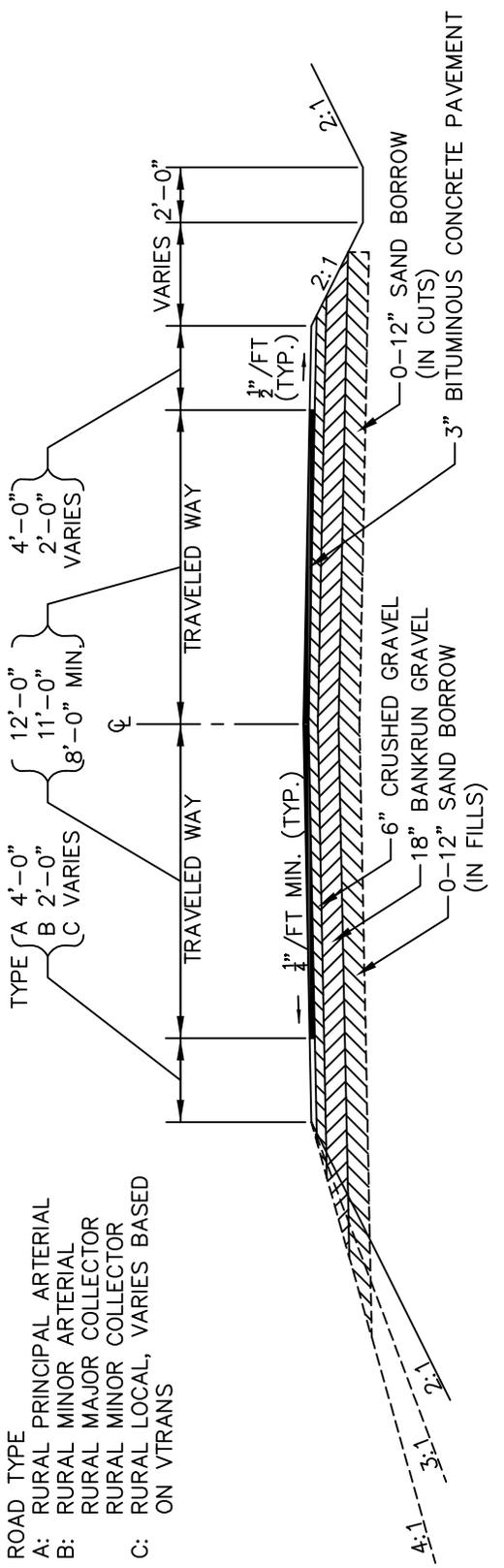
- enough to resist the pressure of the concrete to be deposited. They shall not vary from the approved line and grade and shall be kept so until the concrete has set
- d. Just prior to placing the concrete, the subgrade shall be moistened. The concrete, mixed to the proper consistency, shall be placed in the forms and thoroughly tamped in place so that all honeycombs will be eliminated and sufficient mortar will be brought to the surface. After this, the surface shall be brought to a smooth even finish by means of a wooden float. The surface shall be broom finished. All faces adjacent to the forms shall be spaded so that after the forms are stripped, the surface of the faces will be smooth, even and free of honeycombs. All edges shall be tool rounded with an edger having a ¼-inch radius.
 - e. Quarter inch transverse expansion joints shall be placed at intervals not exceeding 20 feet. Expansion joints will be equipped with a minimum of three (3) #3 smooth 24-inch long dowels centered on the joint, placed no closer than 12 inches to the edge of the sidewalk, and spaced 12 to 18 inches on center, depending upon the width of the sidewalk. Preformed joint filler with a thickness of ¼-inch shall be installed at these joints.
 - f. Expansion joints shall be formed around all appurtenances such as manholes, utility poles, and other obstructions extending into and through the sidewalk.
 - g. Sidewalks shall have a tooled joint scored to a depth of no less than ⅓ of the total sidewalk depth every 5 feet.
 - h. Curing of concrete curbs shall be in accordance with VTrans subsection 541.17.
 - i. Backfill shall be suitable material as defined in the construction plans and shall be placed and tamped until firm and solid. Backfilling shall follow immediately after the concrete forms have been removed.
 - j. No concrete shall be poured on a frost or thawing subgrade or during unseasonable weather conditions, or when the temperature is 40°F or lower and falling.

940 TESTING

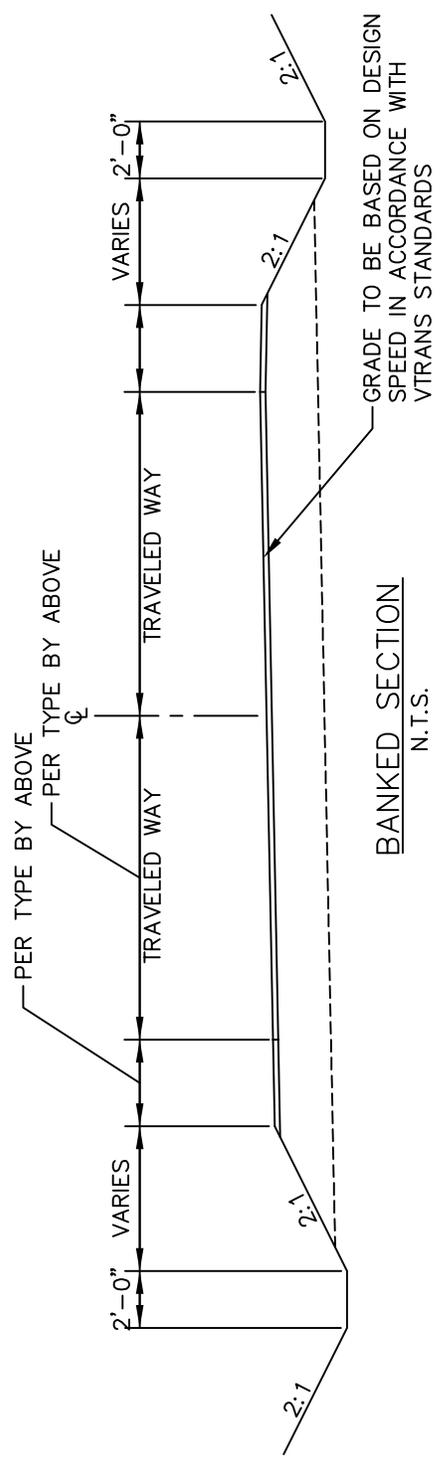
Refer to Section 850 of this specification for testing requirements related to subbase granular materials, concrete, bituminous concrete pavement, pavement marking, or signage.

PART 3
STANDARD DETAILS

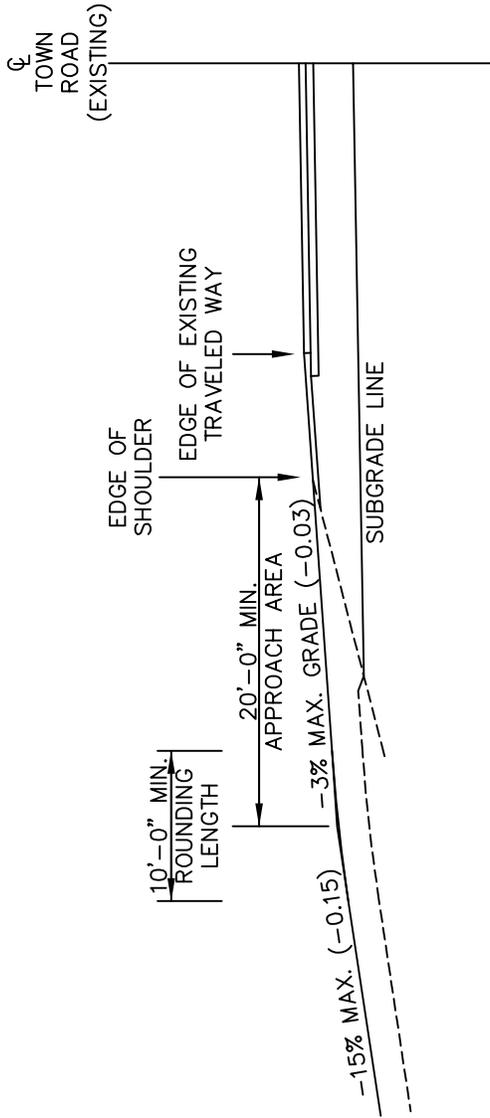
- ROAD TYPE
- A: RURAL PRINCIPAL ARTERIAL
- B: RURAL MINOR ARTERIAL
- C: RURAL MAJOR COLLECTOR
- RURAL MINOR COLLECTOR
- RURAL LOCAL, VARIES BASED ON VTRANS



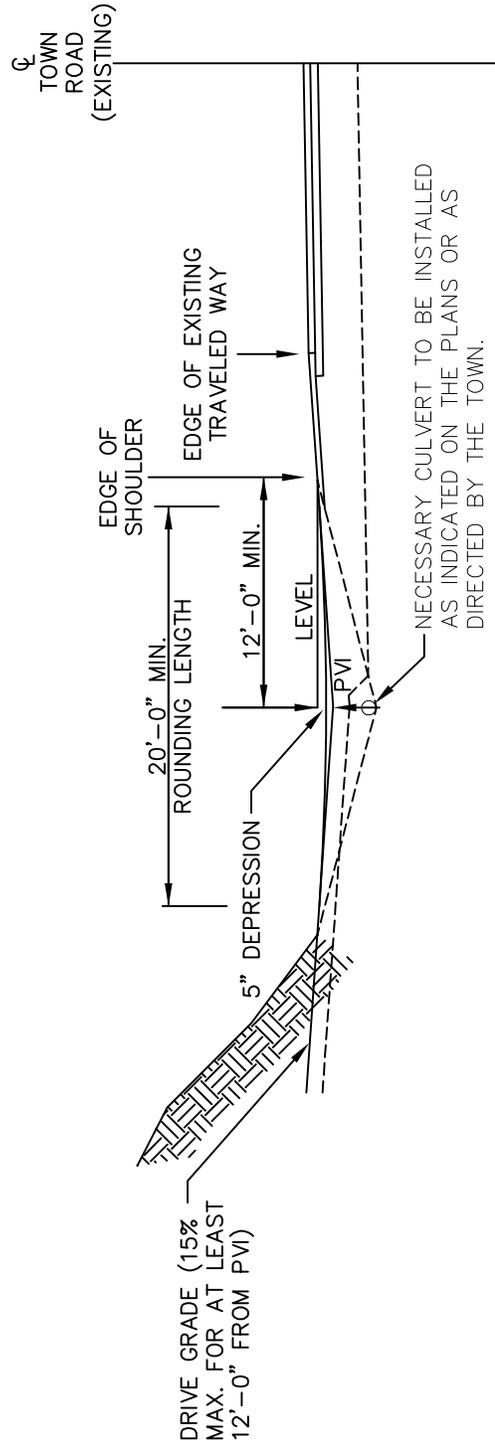
NORMAL SECTION
N.T.S.



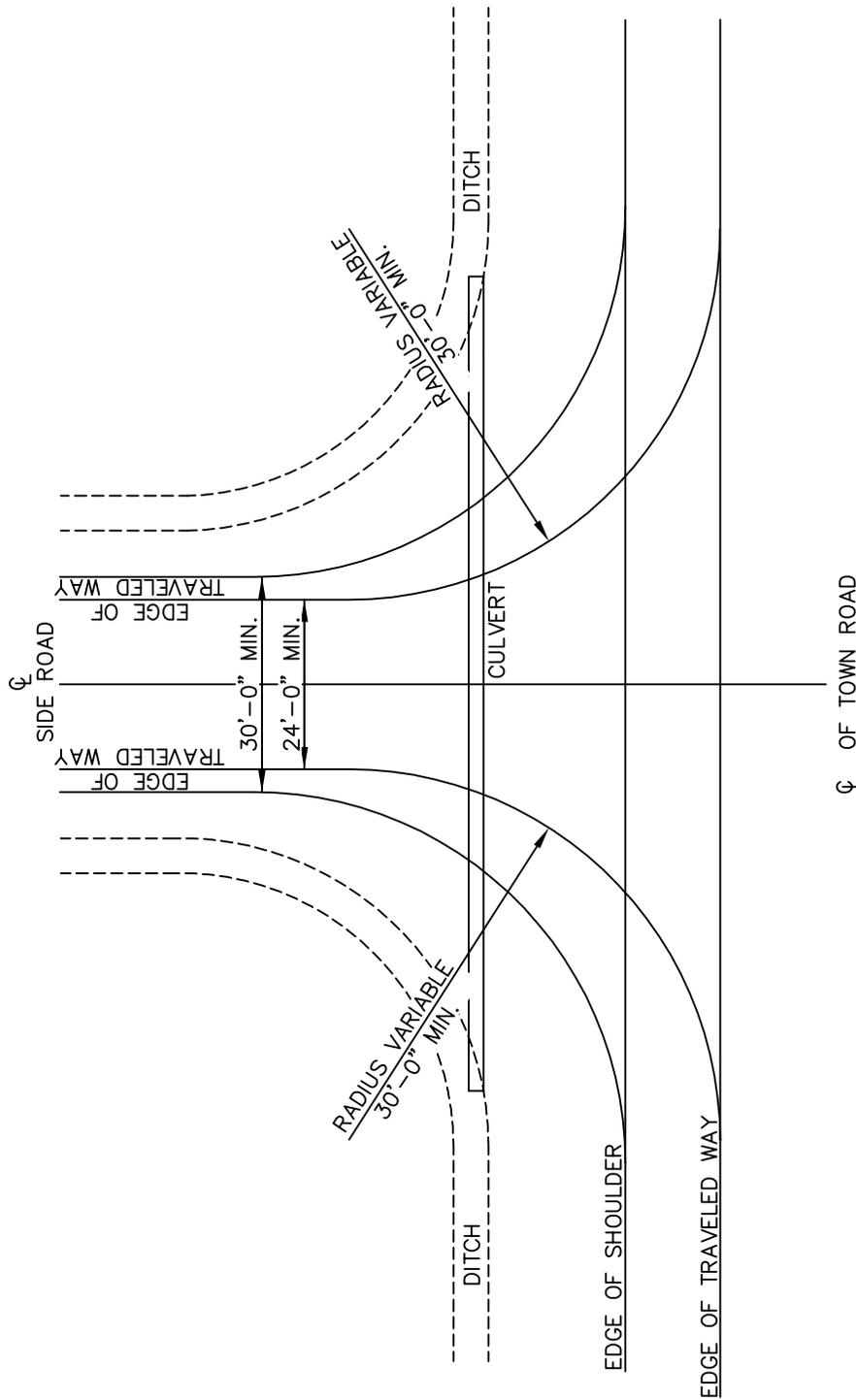
BANKED SECTION
N.T.S.



FILL SECTION
N.T.S.

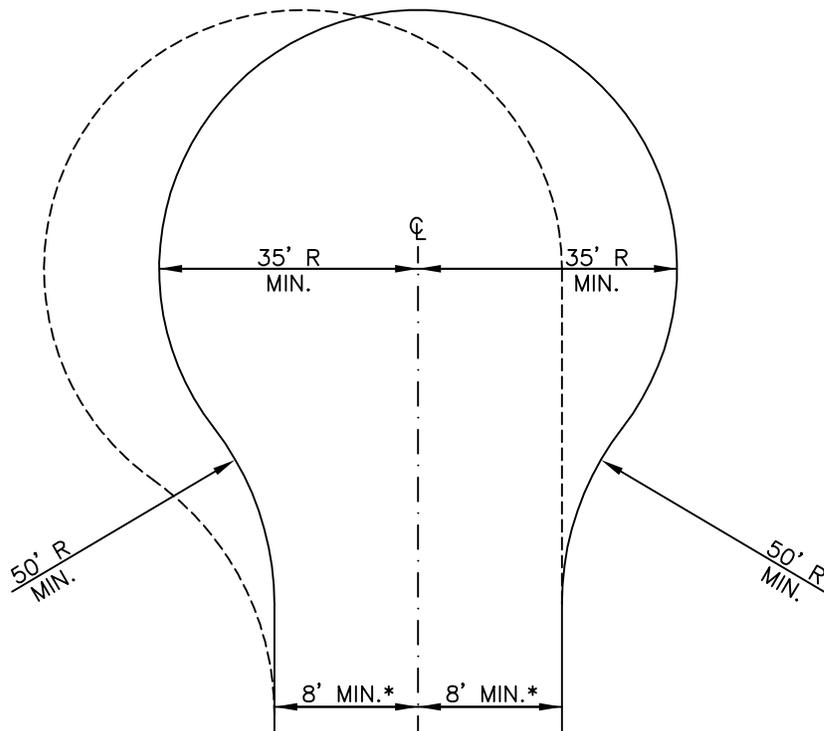


CUT SECTION
N.T.S.



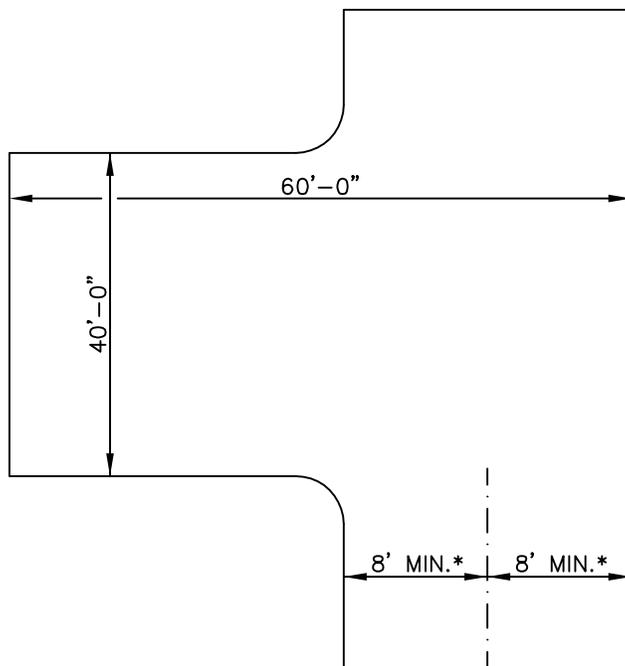
TOWN OF HARTFORD
 TYPICAL PLAN OF
 SIDE ROAD/TOWN ROAD INTERSECTION
 HARTFORD, VERMONT

DETAIL 11-2
 LAST REVISED: 5/2012

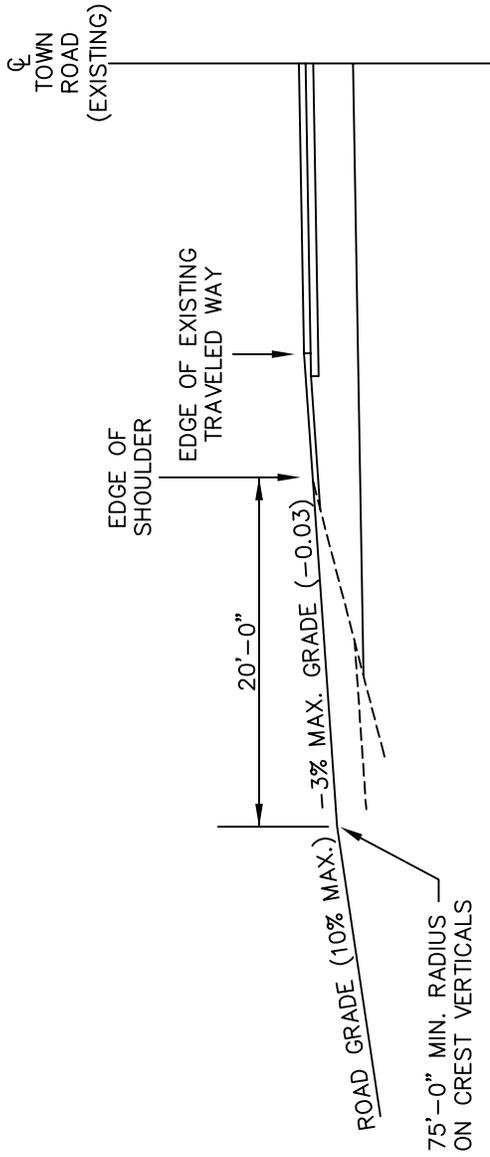


*ACTUAL WIDTH BASED ON ROAD CLASSIFICATION

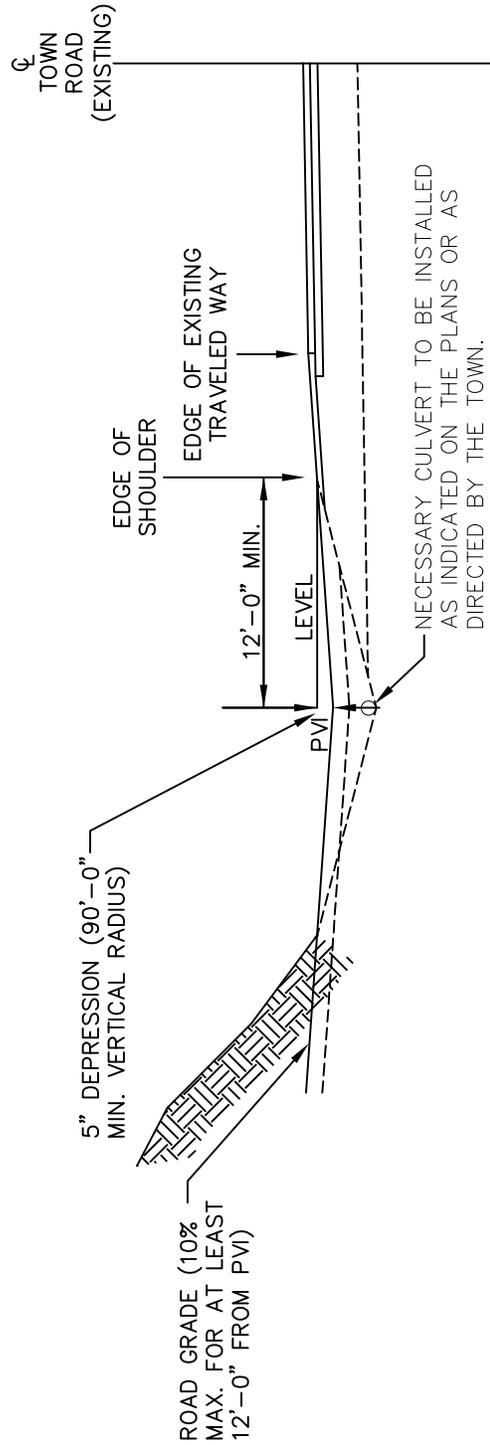
ROUND CUL-DE-SAC
N.T.S.



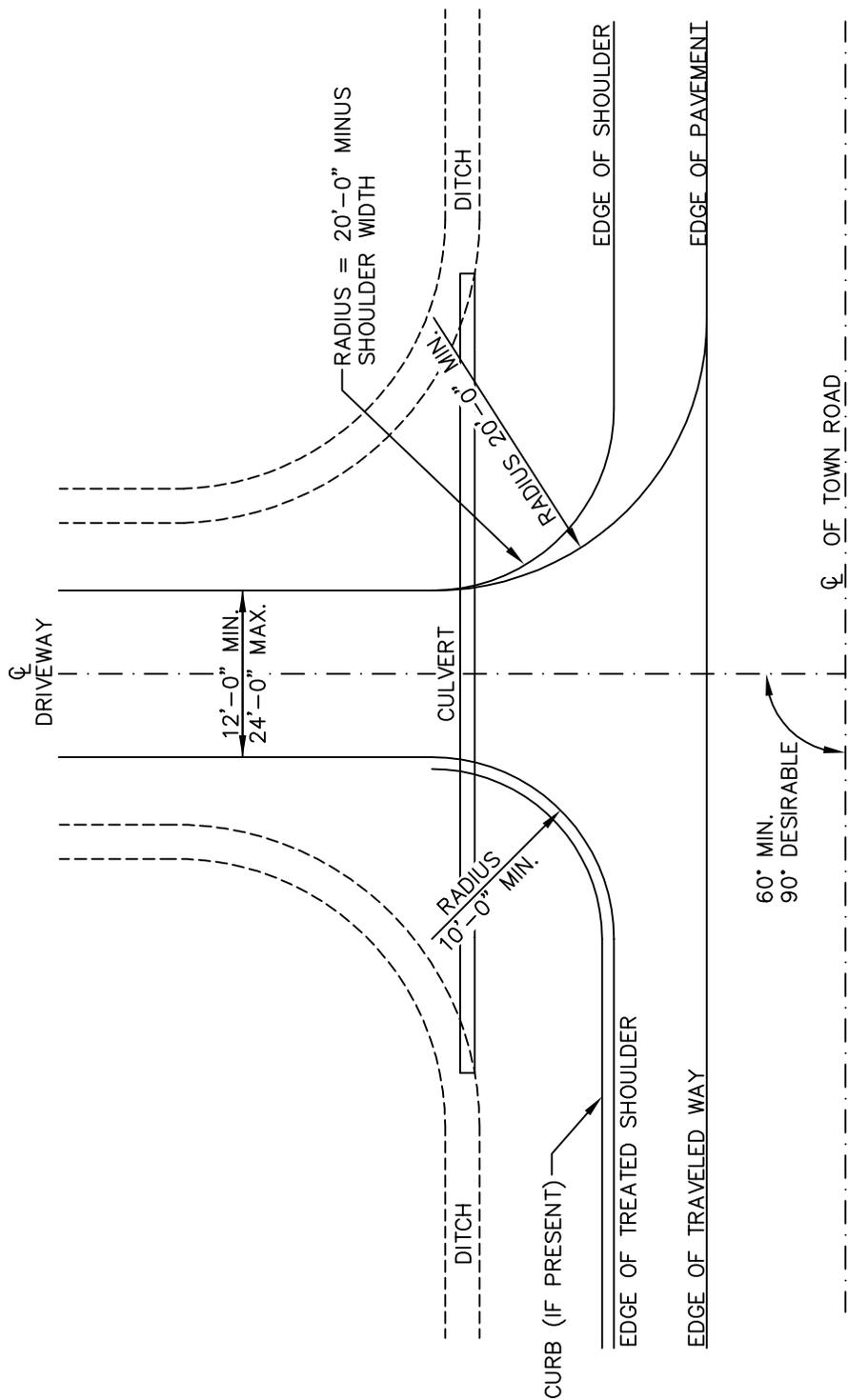
"T" TURN-A-ROUND
N.T.S.



FILL SECTION
N.T.S.

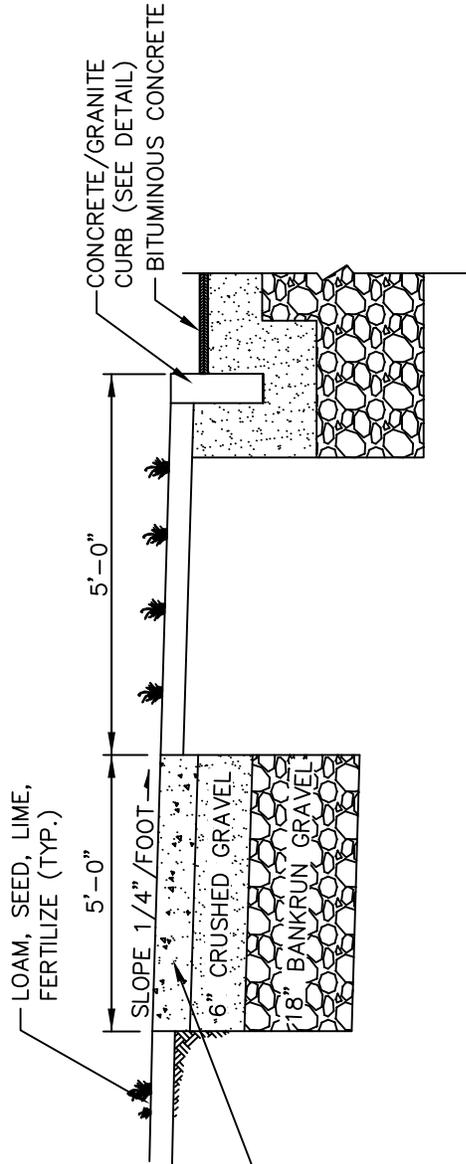


CUT SECTION
N.T.S.



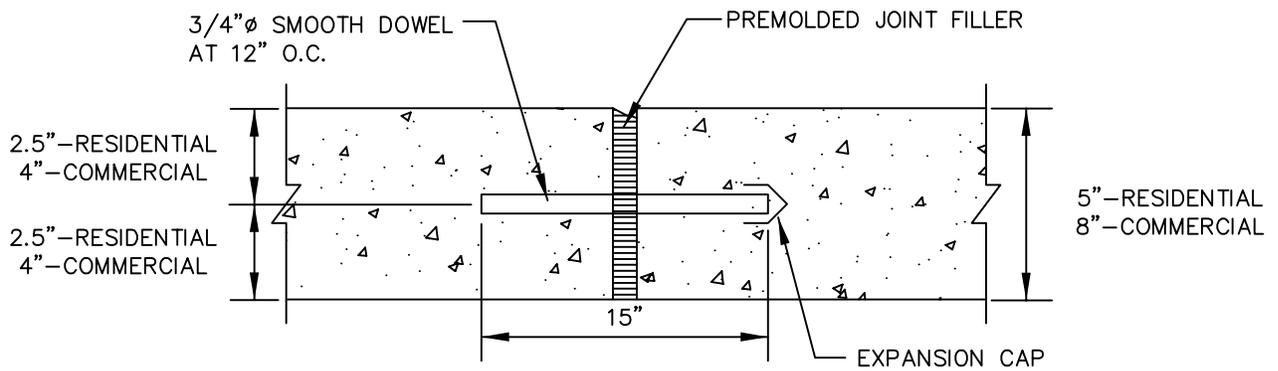
TOWN OF HARTFORD
 TYPICAL PLAN OF
 DRIVEWAY/TOWN ROAD INTERSECTION
 HARTFORD, VERMONT

DETAIL 12-2
 LAST REVISED: 05/2012



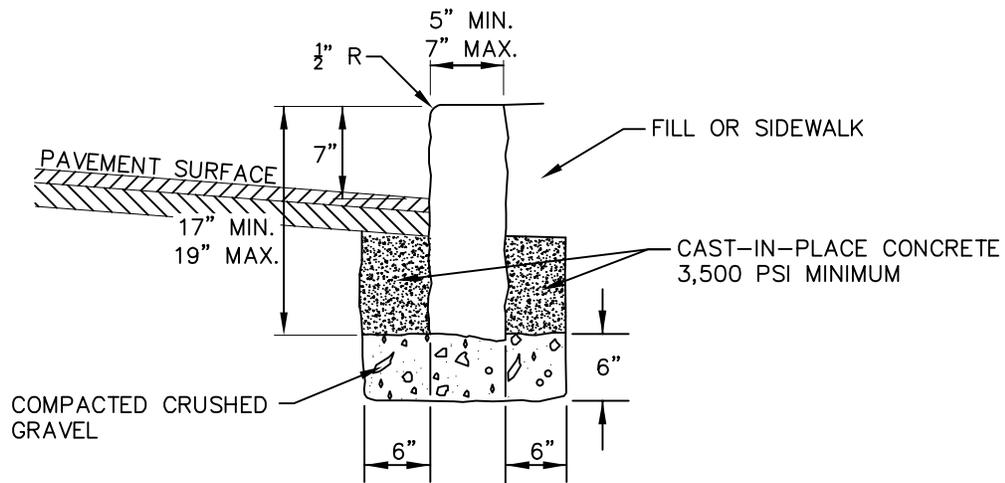
5" RESIDENTIAL/8" COMMERCIAL THICK, 3,500 PSI CONCRETE SIDEWALK, EXPANSION JOINTS AT 20' MAX. O.C. W/CONTROL JOINTS AT 5'

CURB AND CONCRETE SIDEWALK
N.T.S.

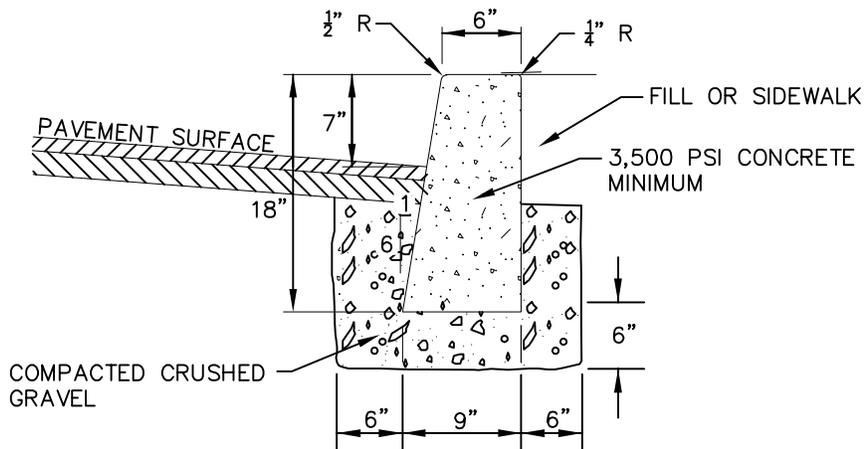


CONCRETE DOWEL
N.T.S.

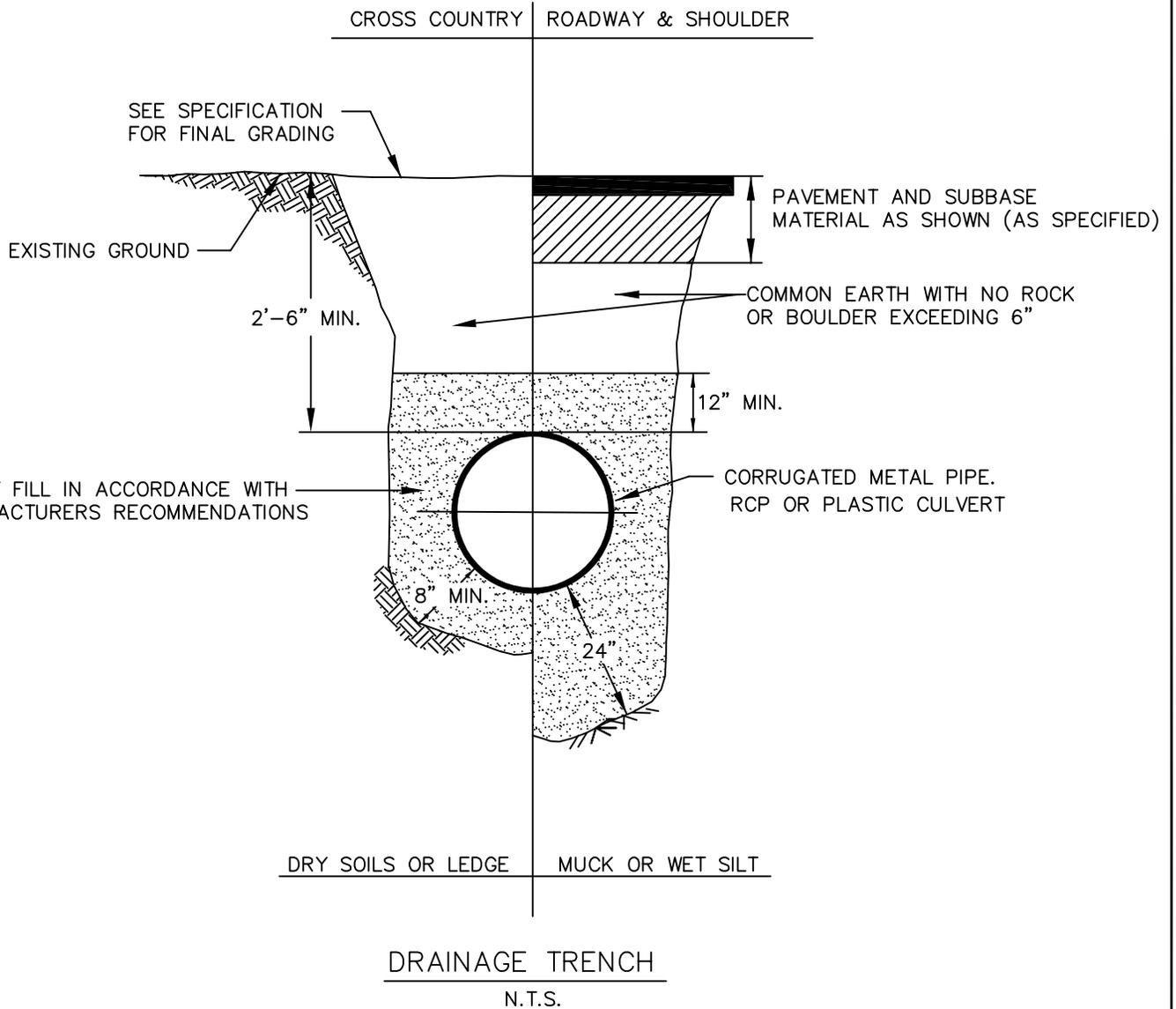
1. ALL NEW OR REPLACEMENT CONCRETE SIDEWALK SHALL BE DOWELED INTO EXISTING CONCRETE PAVEMENT
2. REMOVE EXISTING SIDEWALK BACK TO NEAREST EXPANSION OR SAWCUT JOINT.

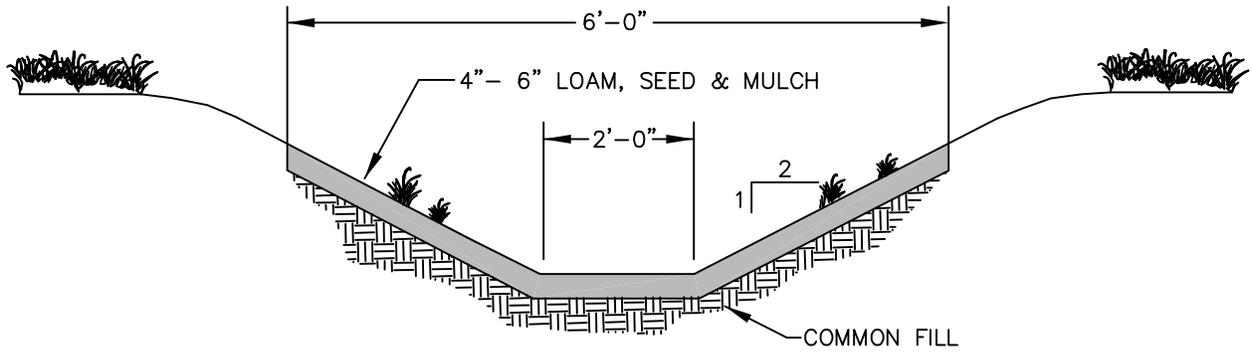


VERTICAL GRANITE CURB
N.T.S.



CAST-IN-PLACE
CONCRETE CURB
N.T.S.

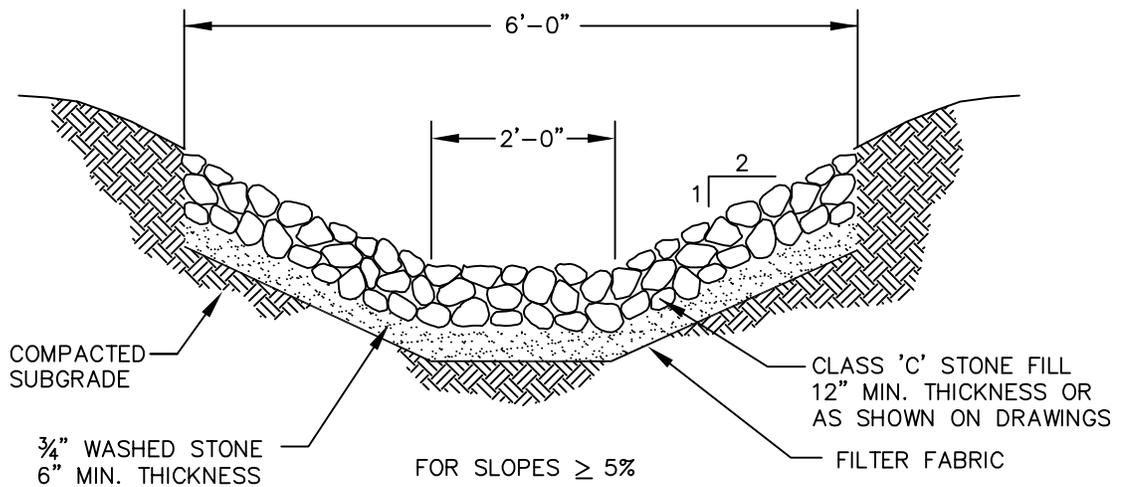




GRASS LINED DITCH

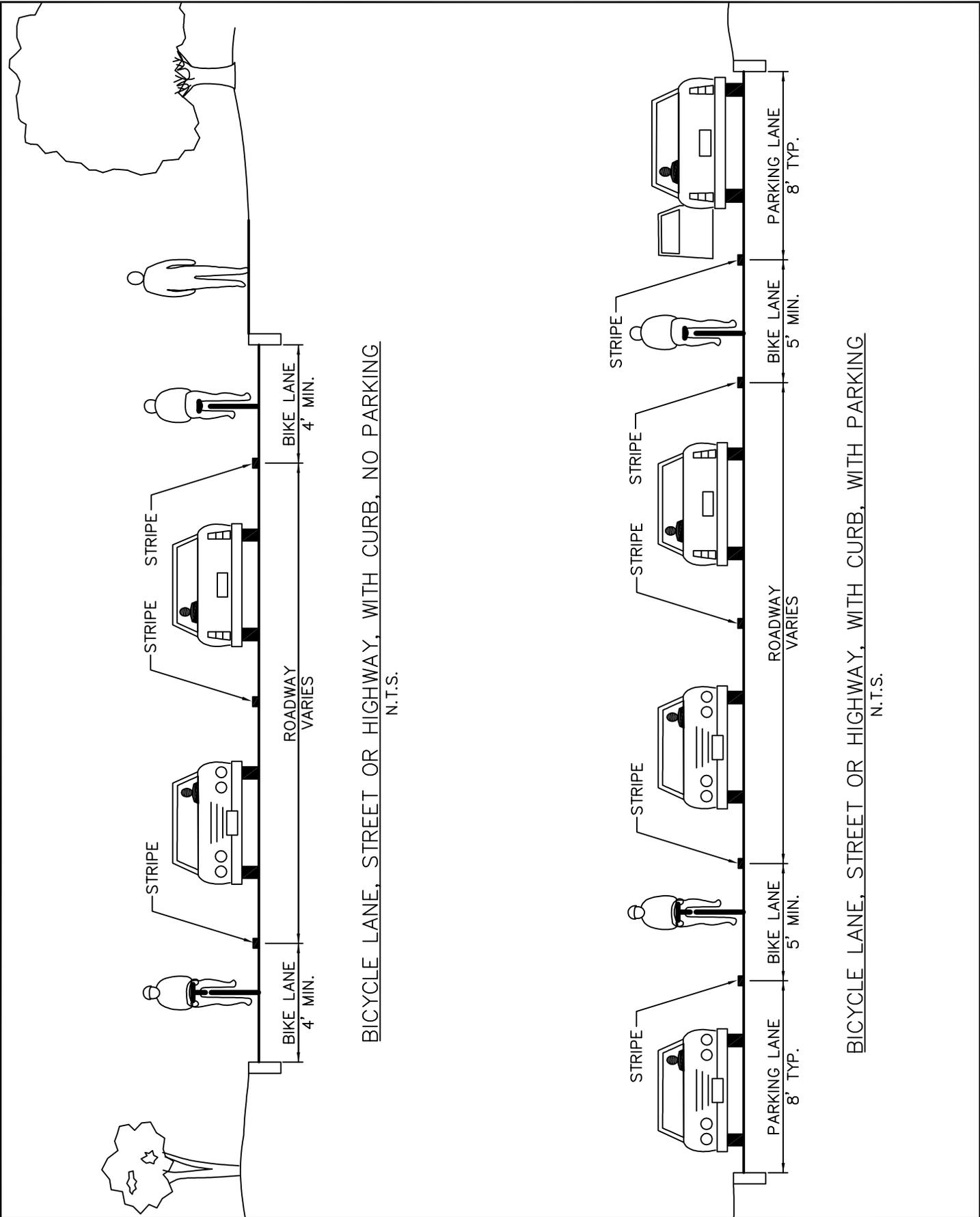
N.T.S.

1. GRASS LINED DITCHES SUITABLE FOR SLOPES < 2%.
2. PLACE BIO-DEGRADABLE MATTING FOR SLOPES BETWEEN 2% AND 5%.



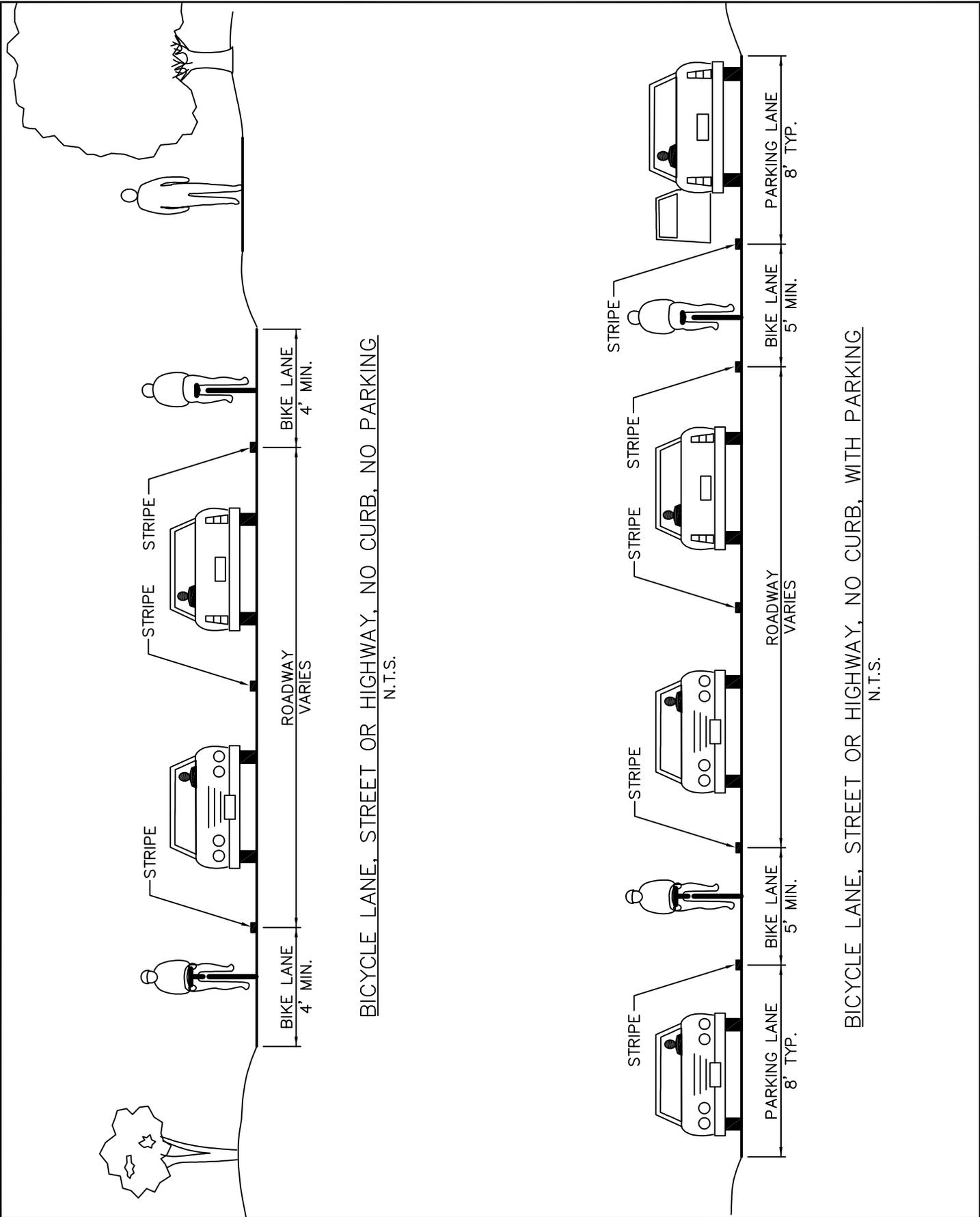
STONE LINED DITCH

N.T.S.



BICYCLE LANE, STREET OR HIGHWAY, WITH CURB, NO PARKING
N.T.S.

BICYCLE LANE, STREET OR HIGHWAY, WITH CURB, WITH PARKING
N.T.S.

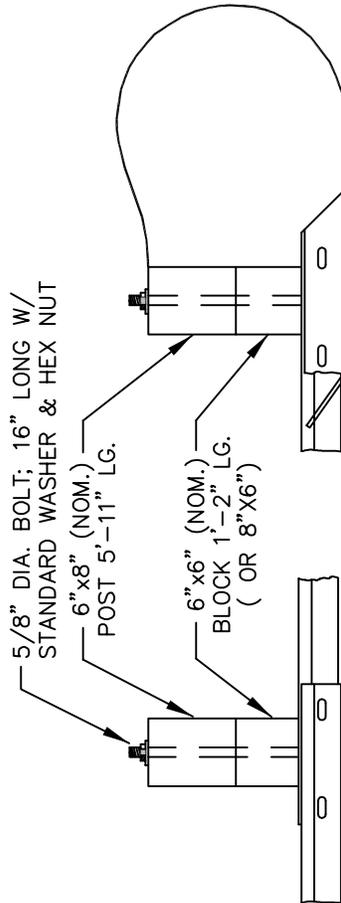


BICYCLE LANE, STREET OR HIGHWAY, NO CURB, NO PARKING
N.T.S.

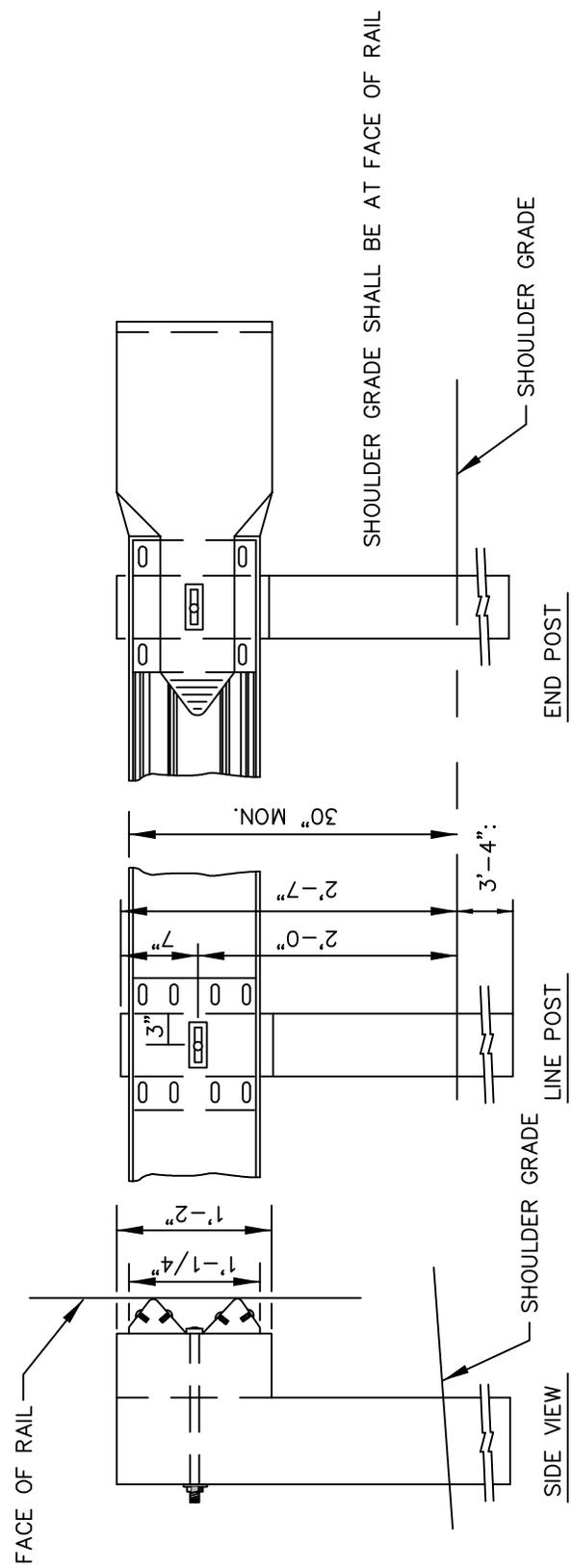
BICYCLE LANE, STREET OR HIGHWAY, NO CURB, WITH PARKING
N.T.S.

NOTES:

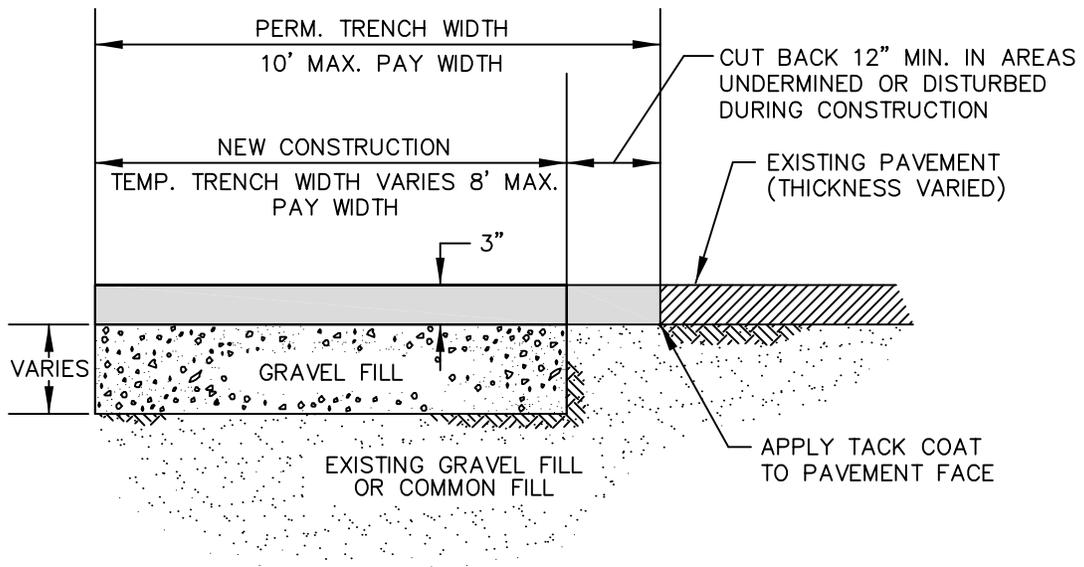
1. STEEL POSTS, OFFSET BLOCKS, ANCHORS, PLATES AND FITTINGS TO BE GALVANIZED.
2. ALL DIMENSIONS SUBJECT TO MANUFACTURERS TOLERANCE.
3. RAIL PANELS AND END SECTIONS TO BE GAGE STEEL.
4. ALL PARTS TO CONFORM TO CURRENT STANDARD SPECIFICATIONS.
5. WHEN GUARDRAIL IS CONSTRUCTED AT UP TO 4' FROM THE EDGE OF PAVEMENT, THE GUARDRAIL HEIGHT WILL BE SET FROM THE GRADE AT THE EDGE OF PAVEMENT. WHEN GUARDRAIL IS CONSTRUCTED MORE THAN 4' FROM THE EDGE OF PAVEMENT, THE GUIDE RAIL WILL BE SET FROM THE GRADE AT FACE OF RAIL.



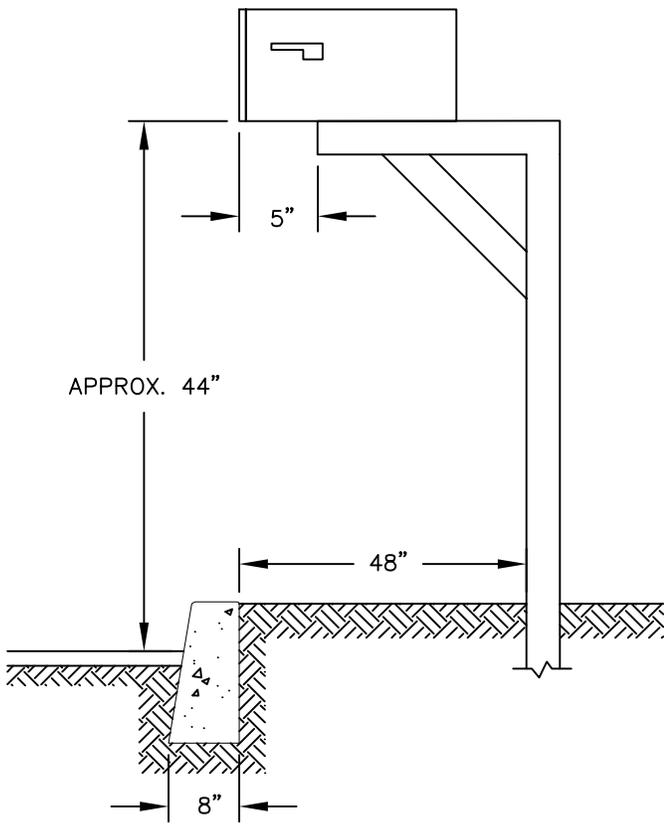
PLAN FOR WOOD POST & OFFSET BLOCK



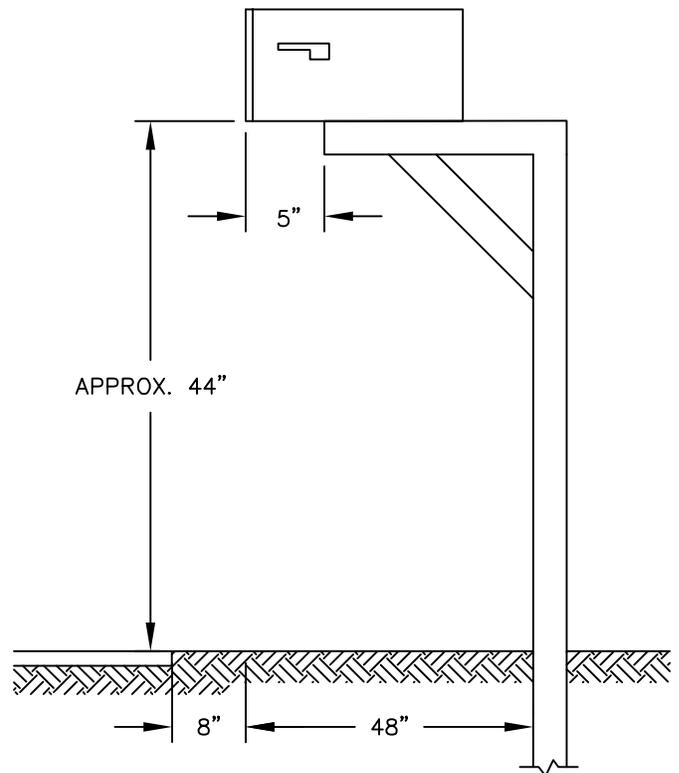
STEEL BEAM GUARDRAIL
N.T.S.



PAVEMENT SAWCUT & TRENCH PAVEMENT
N.T.S.



MAILBOX WITH CURB



MAILBOX WITH NO CURB

NOTES:

1. POST MUST BE OF ADEQUATE STRENGTH AND SIZE.
2. POSTAL BOX MUST BE PLACED TO CONFORM WITH STATE LAWS, POSTAL REGULATIONS, AND TOWN PUBLIC WORKS SPECIFICATIONS.

PART 4
STANDARD FORMS AND DOCUMENTS

TOWN OF HARTFORD
EXCAVATION PERMIT APPLICATION

Fee _____ (made payable to the Town of Hartford) Town Exc. Application #: _____

Diagram Attached: Yes _____ No _____ Date of Application: _____

The undersigned applies for permission to break or dig up the ground on: _____

_____ Street/ Road near _____ for
the purpose of _____

on said Street/ Road, in accordance with the applicable conditions and provisions of the Hartford Transportation Ordinance Chapter 75, and subject to the further condition that the undersigned will indemnify and save harmless the Town of Hartford against and from all suits and actions of every name and description brought against it and all costs and damages to which said Town may be put on accord of, or by reason of, any injury to the person or property of another resulting from negligence or carelessness of the undersigned, or from the use of said street by the undersigned for the purpose as noted above, and subject to the further condition, that all refilling shall be carefully done in accordance with the attached specifications.

It is further understood, that, if during the next **two (2)** years any depressions shall occur, or the road shall be unduly washed on account of applicant breaking or digging up the ground on said street, the undersigned will compensate the Town for refilling or grading and indemnify and save the Town of Hartford harmless from all loss by suits or otherwise resulting from these causes including reasonable attorneys' fees.

The undersigned hereby furnishes a bond or escrow in the amount of \$ _____ to the Town for a period of twenty-four (24) months as security for the obligation of the undersigned hereunder to restore the highway in accordance with attached specifications. In event that the Town demands that the undersigned compensate the Town for refilling or grading and payment is not made, then Town shall have the right to obtain payment from the bond or escrow.

It is further agreed that the work will commence on _____ and to be completed on or before _____, 20 _____. Any changes in these dates require notification to and approval from the Department of Public Works (802-295-3622).

Prior to issuance of the permit, the applicant is required to discuss excavation plans and its effect on vehicle and pedestrian traffic. In cases of emergency excavations, the applicant may be allowed to waive this process by contacting the Public Works Department at (802-295-3622).

Federal and State law requires excavators to notify utility companies before excavating. Indicate **Dig Safe Authorization Number and effective Date:** _____

Applicant's Signature _____ Telephone Number _____

Company Name _____ Emergency Contact _____

Address _____

TOWN OF HARTFORD
EXCAVATION –APPROVED PERMIT

Exc. Permit # _____

This permit certifies that _____ has permission to break or dig up the ground on _____ Street / Road near _____.

Work will commence on _____ and be completed on or before _____, 20____. Any changes in these dates require notification to and approval from the Public Works Department.

Further the Town hereby receipts for a bond or escrow from:

In the amount of \$ _____ as security for _____
_____ and obligations hereunder to restore the highway.

Conditions on approval (if any) _____

This permit is hereby accepted and its conditions agreed to:

Applicant Signature: _____ Date: _____

Public Works Signature: _____ Date: _____

NOTE: This permit expires December 31st of the year of issuance. Re-application is necessary if work not completed on commencement dates (as listed above).

For Department of Public Works Use Only:

Application Fee
Received: _____

Bond Scheduled for
Release: _____

TOWN OF HARTFORD
BOND FORM

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

Hereinafter called Surety, are held and firmly bound unto:

Town of Hartford
171 Bridge Street, White River Junction, Vermont 05001

Hereinafter called Town, in the penal sum of _____ Dollars,
\$(_____) in lawful money of the United States, for payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, an EXCAVATION PERMIT NO. _____ issued to the Principal by the Town, dated _____, 20__ a copy of which is hereto attached and made a part hereof for the construction of: _____

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms and conditions of said EXCAVATION PERMIT, with or without notice to the Surety and during the two(2) year guaranty period, and if he shall satisfy all claims and demands incurred under such EXCAVATION PERMIT, and shall fully indemnify and save harmless the TOWN from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Town all outlay and expense which the Town may incur in making good any default, then this obligation shall be void: otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees the WORK to be preformed thereunder and outlined in the Excavation Permit accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, alteration or addition to the terms of the Excavation Permit.

PROVIDED, FURTHER, that no final settlement between the TOWN and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESSWHEREOF, this instrument is executed in _____ counterparts (number) each one of which shall be deemed an original, this the _____ day of _____, _____.

ATTEST:

(Principal)

(Principal Secretary)

By: _____

(Address)

(Witness as to Principal)

(Address)

(Surety)

By: _____

(Attorney-in-fact)

ATTEST

(Witness as to Surety)

(Address)

Note: Date of BOND must not be prior to date of PERMIT.

If CONTRACTOR is Partnership, all partners should execute BOND.

Important: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the STATE where the Project is located.



TOWN OF HARTFORD, VERMONT
PUBLIC WORKS DEPARTMENT
173 AIRPORT ROAD, WHITE RIVER JUNCTION, VERMONT 05001
TEL: 802-295-2580 * FAX: 802-281-7051

EXCAVATION PERMIT GUIDELINES

1. Application & Permit

- a. The application fee of \$ _____ is non refundable. Check should be made payable to the Town of Hartford.
- b. Diagram of location of any other related materials is required for review.
- c. Bond amount will be determined by the Director of Public Works or his designee.
- d. Dig Safe Authorization Number and Effective Date is the responsibility of the contractor.
- e. Certificate of Insurance (minimum coverage requirements \$1,000,000).
- f. Please sign both the *Application* page and the *Permit* Page.
- g. Applicant is responsible for presenting this application/permit package in its entirety and explaining scope of work to Department of Public Works, whom may require certain conditions be met (i.e.; emergency access to road, state certified flag person, etc.).
- h. Bonds are held for twenty-four months (2 years). Bonds will be released by the Town of Hartford only and should not automatically expire. The contractor may request reduction or release of bond/moneys at the end of 18 months.

2. Trench Excavation Specifications

- a. It is the contractor's responsibility to contact Public Works if there are any questions or if unclear about what is required. Refer to Town Of Hartford Department of Public Works specs.

3. Permit Bond

- a. This is an example Permit Bond. Insurance companies may use their own form. Please inform your insurance company that this is a 2-year bond and that it shall not automatically expire at the end of its term. Authorization from the Town of Hartford Town Manager must be obtained before the bond is released. An Irrevocable Letter of Credit is also acceptable in place of a bond.

4. Return these Completed Forms to Public Works:

- a. Permit Application
- b. Original Permit Bond
- c. Original Certificate of Insurance

NOTE: Work can not start until all paperwork is completed, turned in and permit is approved by the Town. This includes submission of an Authorized Dig Safe Number, Original Permit Bond and Certificate of Insurance.

TOWN OF HARTFORD

ROAD ACCEPTANCE CHECKLIST AND APPLICATION

APPLICANT _____

ADDRESS _____

_____ PHONE: _____

LOCATION OF ROAD

DATE: _____

	<u>STATUS</u>	<u>CONDITIONS</u>
Plans Complete	_____	_____
Conveyance Instrument	_____	_____
Inspection Reports	_____	_____
Performance Bond	_____	_____
Base Condition	_____	_____
Surface Condition	_____	_____
Signing	_____	_____
Travel Way Width	_____	_____
Shoulder Width	_____	_____
ROW Width	_____	_____
Clearing	_____	_____
Ditches/Culverts	_____	_____
Slopes and Banks	_____	_____
Guard Rail	_____	_____
Curves	_____	_____
Grades	_____	_____
Cul-de-Sacs	_____	_____
Utilities (Water, sewer, storm drains, elec., etc)	_____	_____
Engineer's Report on Speed Limits	_____	_____
Other	_____	_____

Reviewed by Superintendent or Engineer Date _____ By _____

Conditions and Requirements Met _____

“As Builts” and conveyances satisfactory _____

24 Month Maintenance Started _____

Further conditions of Acceptance _____

Accepted by Board of Selectmen _____ By _____

Recorded _____

TOWN OF HARTFORD
DRIVEWAY ENTRANCE APPLICATION

Application No. _____ Map: _____ Lot: _____
Application is hereby made by _____
whose address is _____ Phone No. _____
for property owner _____ whose address is _____
to construct an entrance(s) to and on the _____ side of _____ Street (or highway)
in the TOWN OF HARTFORD at a point _____ feet from (road/street, stream, property line, etc.)
It is proposed to use the entrance(s) for access to (business, residence, etc.) _____.

Items required to complete this application:

1. Site plan showing entrance location, culvert location and size, grades of entrance.
2. Mark out center line of driveway with grade stake and green flagging.
3. Application fee of \$ _____.
4. Drainage structures as are necessary to maintain existing highway drainage are to be furnished by the applicant and are to be of design approved by a Registered Vermont Licensed Professional Engineer, to withstand a 25 year flood event, but shall not be less than fifteen(15) inches in diameter. A letter from engineer that reviewed the site for the culvert.

Upon the approval of the location of the entrance(s) it is agreed that:

1. Any entrance(s) constructed is/are for the bona fide purpose of securing access to said property and that the highway right-of-way shall not be used for any other purpose than travel.
2. The grade of the entrance(s) is to be such as will permit a safe and controlled entrance to the highway at all seasons and so designed that any water from the entrance(s) will discharge into the highway gutter or drainage system.
3. No entrance(s) or drainage installation constructed on the right-of-way as an exercise of this permit shall be relocated or its dimensions altered without written permission of the Town of Hartford.
4. Said entrance(s) shall be constructed in accordance with the Town of Hartford Transportation Ordinance and Department of Public Works Specifications.
5. Such exceptions or additional provisions as may be deemed necessary by the Town of Hartford as indicated on the permit are acceptable.
6. It is agreed that the land owner will hold harmless the **Town of Hartford** and its duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Signature of Applicant _____ Date _____ 20 _____

Signature of Property Owner _____

Phone _____

E-mail address _____

TOWN OF HARTFORD
DRIVEWAY ENTRANCE PERMIT

Permit/Application No. _____

Map: _____ Lot: _____

Pursuant to the appropriate ordinance and regulation of the Town of Hartford, you are hereby granted permission to construct a _____ entrance(s) at the location described in the application for access to a (business, residence or other)_____. Such entrance shall be plainly staked for inspection. A separate Right of Way Excavation Permit shall be obtained before commencing construction of the driveway.

Failure to adhere to the provisions of this application and permit shall render this permit null and void. This permit expires December 31st of the year of issuance if driveway entrance is not complete.

Additional provisions and exceptions. _____

This permit is hereby accepted and its provisions agreed to this _____ day of _____, 20 _____

Signed: _____
Applicant

Signed: _____
Property Owner

Address: _____

Address: _____

Approved by: _____ Date: _____
Director of Public Works / Highway Superintendent

It shall be unlawful to construct or maintain any driveway, entrance, or approach within the limits of the right-of-way of any street or highway without a written permit from the Town of Hartford. The Town Manager or designee shall prepare, for approval by the Board of Selectmen, rules and regulations as to the grade and location of driveways, entrances and approaches on highways as will adequately protect and promote the safety of the traveling public. No permit shall be required for any existing driveway entrance approach that predates the Town's practice of issuing driveway permits unless the property use changes or grade, width, or location of same is changed. Henceforth, culverts or other drainage facilities less than fifteen (15) inches in diameter shall not be allowed. The fee for such permit shall be set by the Board of Selectmen and shall be paid upon application.

Penalty. Whoever violates any provision of this ordinance or the rules and regulations made under authority thereof shall be fined not more than five hundred (\$500.00) dollars.



Map/Lot No. _____

**TOWN OF HARTFORD
APPLICATION TO INSTALL AN IMPROVEMENT
IN THE PUBLIC RIGHT-OF-WAY**

Name _____ Mailing Address _____

Phone day _____

Phone evening _____ Street Address _____

Description of improvement (list attached sketch or plans as required by Town) _____

I, the undersigned, understand that it is my responsibility to:

- Contact Digsafe before commencing work.
- Maintain the improvement.
- Remove the improvement if it is determined to be a safety hazard or hindrance to highway maintenance activities.

I further understand that the Town of Hartford is not responsible for damages to this improvement caused by the Town.

Signature

Date

Administrative Use

Site visit conducted on _____ by _____

Application is Approved Denied Approved with modifications/conditions

Reason for Denial _____

Modifications/Conditions _____

Signature _____

Title

Date