

TOWN OF CHESTER

ROAD AND BRIDGE SPECIFICATIONS

Article 1 – Town Road and Bridge Specifications

The Town of Chester hereby adopts the following Town Road and Bridge Specifications which will apply to the construction, repair, and maintenance of all town roads and bridges. These Specifications include management practices and are being adopted in order to:

- a). Provide for the safety and welfare of the traveling public
- b). Reduce the avoidable dangers we expose our emergency forces to
- c). Construct, repair and maintain roads, bridges and driveways to a minimum acceptable Town Standard
- d). Minimize damage to road infrastructure during flood events
- e). Enhance water quality protections by minimizing sediment delivery to surface waters and/or wetlands

The Select Board reserves the right to modify the standards for a particular project or repair or maintenance activities where, because of unique physical circumstances or conditions, there is no possibility that the project or activities can be completed in strict conformance with these provisions. Any modifications to the standards must be done in a manner that serves the underlying intent of the management practice, be it public safety, flood hazard avoidance, or water quality protection. Fiscal reasons are not a basis for modification of the standards. Questions about modifications to the standards should be directed to the VTrans District Office.

The Town must comply with all applicable state and federal approvals, permits and duly adopted standards when undertaking road and bridge activities and projects.

Any new road regulated by and/or to be conveyed to the Town shall be constructed according to the minimums of these standards (see Article 3). If any federal and/or state funding is involved in a project, the VTrans district office must be notified prior to any field changes taking place that would alter the original scope of work.

Roads in the Town of Chester can be classified as follows:

Class I - Town Highway: Town highways designated by the State which form the extension of a state highway and carry a state highway route number.

Class II - Town Highway: Town highways designated by the Select Board and used for the purpose of securing trunk lines of improved highways from town to town and to places which by their nature have more than normal amounts of traffic.

Class III - Town Road: Town highways designated by the Select Board with the approval of the agency, which are not Class 1 or 2 highways.

Class IV – Unmaintained Town Road: All other town highways which are not class 1, 2 or 3 town highways or unidentified corridors.

Private Road: A non-public road serving 2 or more lots.

Trails: Trails are not to be considered town highways and the town is not responsible for any maintenance including culverts and bridges.

Driveways: An access serving only one lot.

Road Construction, Base and Grading:

1. The right of way for all new roads shall be a minimum of fifty (50) feet, and the traveled portion shall be constructed in the middle of the right of way. (moved this from below as it probably only pertains to when laying out a new road.)
2. All new or substantially reconstructed roads shall meet the following standards:
 - a). Minimum design speed will be 25 mph.
 - b). New roads and driveways will intersect perpendicular (at a 90 degree angle) with existing roads whenever possible.
 - c). Adjacent to the existing asphalt paved roads, “stone wheel scrubbers ” may be required, using 5” crushed stone, to help alleviate soil deposits from construction vehicles onto the existing asphalt paved roads. These wheel scrubbers will be constructed to the width of the new road, and for a distance of 75 feet from the edge of the adjacent existing asphalt road shoulder.
 - d). Vertical clearance to utilities will be as set forth by the appropriate Utility companies. Minimum vertical clearance to trees and branches will be 14 feet for the width of the traveled way, including shoulders.
 - e). Sight distances for all roads and driveways will be as shown on the latest edition of the Vermont Agency of Transportation Standard Drawings B-71. A copy of this Standard Drawing is attached.
3. All new or substantially reconstructed roads will have a maximum grade of 12% for a distance of up to 300 feet, then the grade must return to 10% for 300 feet before returning back to the 12% grade.
4. All new or substantially reconstructed roads serving 3 houses will have a traveled width of 16 feet with a minimum shoulder width of 2 feet on each side. All new or substantially reconstructed roads serving 4 or more houses will have a traveled width of 20 feet with a minimum shoulder width of 2 feet on each side.
5. All new or substantially reconstructed gravel roads shall have at least a twelve (12) inches thick processed gravel sub-base, with no stone larger than six (6) inches, and an additional six (6) inches top course of crushed gravel with no stone larger than one-and-one quarter (1 1/4) inches; all materials must be properly compacted.

6. All new or substantially reconstructed asphalt paved roads shall have at least a 15 inches thick processed gravel sub-base.
7. All roads must be graded so that water does not remain on the road surface. For roadways that are not super-elevated, this generally means a 2-4% (1/4" – 1/2" per ft) crown for gravel roads, and a 1-2% (1/8" – 1/4" per ft) crown for paved roads to promote sheeting of water.
8. In addition, new roads will be constructed in a manner that allows adequate space for shoulders and ditching without creating unstable uphill or downhill slopes. Ditch lines must be lower than the bottom of the bank run gravel. All materials used must meet State of Vermont roadway construction specifications.
9. 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 will be removed.
10. Any item of work not specifically covered by these specifications contained herein will be designed and constructed in accordance with the latest version Vermont Agency of Transportation "Vermont State Standards for the Design of Transportation Construction, Reconstruction and Rehabilitation on Freeways, Roads and Streets".

Asphalt Paving:

Asphalt pavement on all roads shall meet Vermont State Highway specifications, and shall be of a hot bituminous concrete mix. Pavement depth shall be based on several factors, including number of vehicle trips, type of trips (i.e. heavy truck volumes), and frost depth. The bituminous concrete is to be laid and rolled by experienced crews in two layers. The minimum depths shall be as follows, unless otherwise specified by the Selectboard:

1. Minimum pavement depths for low volume road (with average daily trips 110 or less): 1.75" Type II base course, 1.25" of Type III top course for a 3" minimum compacted total pavement depth.
2. All other roads: 2.5" Type I or Type II base course, 1.5" Type III top course for a 4" minimum compacted total pavement depth.

Ditches and Slopes:

1. Soil exposed during ditch and slope construction, repair or maintenance must be treated immediately following the operation and temporary erosion prevention and sediment control practices must be installed and maintained during construction activities and until the ditch or slope is permanently stabilized.
2. The following are minimum erosion control measures. Careful attention must be given to areas vulnerable to erosion and immediately adjacent or discharging to surface waters and/or roadway drainage facilities:

- a). Seed and mulch ditches and slopes with grades less than ~~3%~~ 5% when undertaking projects or repairs or maintenance activities that result in exposed soil. Vegetation must be established and monitored. If vegetation is not established within 10 days of placement, install biodegradable non-welded matting with seed.
- b). Stone line all new or reconstructed ditches or whenever soils are disturbed by maintenance activities with grades equal to and greater than 5%; alternatively, install stone check dams. The check dams must meet criteria outlined in the "Standards and Specifications for Check Dams," from the *Vermont Standards and Specifications for Erosion Prevention and Sediment Control*. Specifically, dams must be placed so that the crest of the downstream check dam is at the same elevation as the base of the upstream dam.
- c). Create parabolic (wide "u" shaped) ditches when constructing new or substantially reconstructing ditches, rather than narrow "V" shaped ditches wherever lateral space allows. Ditches with gradual side slopes (maximum of 1:2, vertical to horizontal ratio) and a wide bottom (at least two feet) are preferred. Use biodegradable, non-welded matting to stabilize side-slopes where slopes are greater than 1:2 and less than 1:1 ½; apply seed and mulch to any raw or exposed side-slope if slopes are less than 1:2.
- d). All ditches must be turned out to avoid direct outlet into surface waters. There must be adequate outlet protection at the end of the turnout, either a structural (rock) or vegetative filtering area. Water shall be diverted out of ditches as follows:
 - 1). every 400 feet on roads with slopes of 1-2%
 - 2). every 300 feet on roads with slopes of 3-5%
 - 3). every 200 feet on roads with slopes of 5-10%; and
 - 4). every 150 feet on roads with slopes over 10%.
- e). If in the best professional engineering judgment of the VTrans Operations Division, there is a cost effective ditch treatment that will meet the intent of the management practices described above, but represents a departure from these standards, the municipality may implement the more cost effective ditch treatment alternative with the professional recommendation submitted in written form by VTrans prior to the municipality executing the work.
- f). When constructing new or substantially reconstructing side slopes, use appropriately sized stone armament on slopes that are 1:1 ½ or greater. If perennial streams are affected by the toe of slope the project must conform to the statewide Stream Alteration standards.

Culverts and Bridges:

1. On any culvert replacement project or new culvert installation, except as provided herein for driveways, the minimum roadway culvert diameter will be eighteen (18) inches.

2. Replacement of existing bridges and culverts and any new bridges and culverts must be designed in accordance with the VTrans Hydraulics Manual, and, in the case of perennial streams, conform to the statewide Stream Alteration standards. The capacity determination shall also take into account specific site conditions such as the importance of the road functioning during critical events, historic ice formation, high water conditions, high debris and/or sediment loads, and downstream development at risk, which may necessitate larger or heavier structures.

3. All new driveway culverts must have a minimum diameter of 15 inches, and will be a minimum of thirty (30) feet in length.

4. All culverts will be installed according to standard construction practice and will also be installed per manufacturer's specifications to insure proper installation and performance. Culverts must be new, and may be either sixteen (16) gauge galvanized steel or dual wall High Density Polyethylene (HDPE) silt tight to meet ASTM standards. All adjacent ditches will be regraded as required to maintain and assure proper flow characteristics. Side by side culvert installations will not be permitted.

5. When installing, or replacing culverts, use appropriate techniques such as headwalls and wingwalls, where there is erosion or ~~and~~ undermining or where it is expected to occur.

6. A splash pad or plunge pool must be installed at the outlet of new or repaired drainage culverts where there is erosion or where erosion may occur. Splash pads and plunge pools are not appropriate for use in streams supporting aquatic life.

7. Roads with no discernible slope will have at least one eighteen (18) inch cross culvert every 500 feet. Depending on slope, this minimum shall be increased as follows:

- a). every 400 feet on roads with slopes of 1-2%
- b). every 300 feet on roads with slopes of 3-5%
- c). every 200 feet on roads with slopes of 5-10%
- d). every 150 feet on roads with slopes over 10%.

8. Minimum width of traveled way over bridges shall be 14 feet in width. Minimum culvert length will be as specified herein, or as required to accommodate the total width of traveled way and shoulders, including adjacent slopes.

Guardrails:

When roadway, culvert, bridge, or retaining wall construction or reconstruction projects result in hazards such as foreslopes, drop offs, or fixed obstacles within the designated clear-zone, a roadside barrier such as guardrail must be installed. The most current version of the *AASHTO Roadside Design Guide* will govern the analysis of the hazard and the subsequent treatment of that hazard.

Training:

Town highway maintenance crews must collectively attend a minimum total of 6 hours of training per year on best road management practices. The town must keep documentation of their attendance for a period of three years.

Article 2 –Permits for Work within Town Rights-of-Way

In accordance with 19 V.S.A. §1111, an Access Permit is required for all construction, reconstruction or maintenance done within Town rights-of-way. Such a permit shall not be required for work completed by the Town of Chester. An Access Permit is also required for any private road or driveway construction or reconstruction done within the Town road Right-of-Way, where the driveway joins a Town road.

Approval for any access which joins a Town road must be obtained from the Director of Public Works, or in their absence, the Town Manager. This approval will be obtained prior to any construction.

Standards:

1. All work subject to an access permit shall meet the Town Road and Bridge Specifications herein.
2. New roads being joined to an existing asphalt paved Town road must be paved with 2 lifts totaling 3" deep and with bituminous concrete for at least the first one-hundred (100) feet from the edge of the paved travel way of the paved Town road. Gravel base will be as specified herein.
3. Unless specifically stated herein, all new road access to an existing Town road will be built in accordance with the standards outlined on the latest edition of the Vermont Agency of Transportation Standard Drawings A-76. A copy of this Standard Drawing is attached.
4. In the event that there are physical conditions or limitations that may affect culvert installation, a field review prior to installation, with the Director of Public Works, will be required. Culvert placement will be reviewed with the Director of Public Works prior to installation.
5. Any structure, exclusive of culverts and except as provided herein for driveways, with a span greater than thirty-six (36) inches on all new private roads will be designed by a registered Professional Engineer licensed to practice in the State of Vermont, and will be in accordance with Town Road and Bridge Specifications as well as the most current Vermont Agency of Transportation design manuals, and must comply with all State permits and regulations.
6. The installation of any structure or bridge on any new road, as identified in this section, must be inspected and certified by a registered Professional Engineer licensed to practice in the State of Vermont.

7. Culvert placement will be reviewed with the Director of Public Works prior to installation.
8. Unless specifically stated herein, all new driveway access to an existing Town road will be built in accordance with the standards outlined on the latest edition of the Vermont Agency of Transportation Standard Drawings B-71. A copy of this Standard Drawing is attached.
9. The cost of an access culvert is the responsibility of the property owner. The property owner is responsible for maintenance and future replacement of the access culvert. The Town of Chester assumes no responsibility for access culverts damaged in the normal maintenance of the Town Highway/Road.
10. New driveways accessing a Town road must be 12 feet in width for the portion of which that is located within the Town right-of-way, and must be constructed and maintained to these Road and Bridge Specifications, including ditches and culverts. Bridges on new driveways that are within the Town Right-of-Way must be designed and constructed in accordance with the requirements outlined in these Specifications.
11. These standards shall also apply to temporary roads that drain onto Town highways and roads.

Article 3 – Accepting a Private Road as a Town Highway

The acceptance of a highway is initiated through one of two means: motion of the Select Board or petition filed by persons who are either voters or landowners and whose number is at least five percent of the voters in the Town of Chester (19 V.S.A. §708(a)).

The Select Board has the authority in its sole discretion to accept or refuse to accept any road as a Town road. The Town of Chester will not consider the taking-over of any private road or private right-of-way unless there are a minimum of 4 completed houses that are served by said road, and the road meets all current Town Road and Bridge Standards outlined herein.

The standards listed herein are considered minimum and are presented for purposes of guiding construction and maintenance. Applicants must notify the appropriate Vermont State Agencies having jurisdiction to determine whether there are any specific permits that are required for the work. With respect to existing roads that are being considered for adoption, the Select Board reserves the right to consider modifying the standards for a particular project, where, because of unique physical circumstances or conditions, including topographical or other physical conditions, the project cannot be completed in strict conformance with the provisions of these Road and Bridge standards, and that the modification is therefore necessary for the project to be completed in a reasonable manner. The modification must be the least variance possible from these standards to afford the relief necessary to permit the project to be completed, and such modifications

must be presented by the permit holder's design Engineer. Fiscal reasons are not a basis for modification of the standards.

The applicant shall be responsible to pay for any road and bridge upgrades necessary in order to meet the Town Road and Bridge standards per Article 3. The applicant shall also be responsible to pay for an inspection(s) by a qualified professional (e.g. engineer licensed in the State of Vermont) of the roads and bridges in order to determine compliance with the Town Road and Bridge standards. Certification by this qualified professional that the road meets these standards shall be a requirement of acceptance as a town highway.

Article 4 – Special Conditions

The following special conditions apply for activities that require an access permit under Article 2 as well as for any petition to accept a private road or right-of-way as a town highway under Article 3:

1. The Director of Public Works may approve an alternate to road base construction material and depths, if one is presented by a registered Professional Engineer licensed to practice in the State of Vermont on behalf of the permit holder.
2. In the event that there are physical conditions or limitations that may affect culvert installation, a field review prior to installation, with the Director of Public Works, will be required. (moved from page 5)
3. The permit holder will take all precautions to safeguard the traveling public during the performance of the work.
4. Gravel, base and surface courses of existing adjacent roads will be replaced by the permit holder if damaged or disturbed during the adjacent construction of the new road or driveway.
5. No structure or storage facilities or worker vehicle parking are permitted within the Town road Right-of-Way during construction.
6. All construction and material costs, including required designs and certifications, will be the sole responsibility of the permit holder.
7. All applicable Town Zoning, Subdivision and Flood Hazard Regulations will be part of these specifications.
8. The permit holder will be liable and responsible for any damage, repair or maintenance of the road, bridge, drain, ditch, slope, post or culvert, including headers, within the Town road Right-of-Way.
9. The specifications outlined herein are not intended to supersede any zoning or planning requirements. In the event of a conflict, the more stringent will apply.

Adoption:

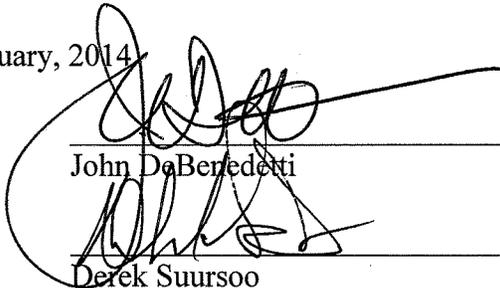
The Town of Chester Road and Bridge Specifications are hereby passed and adopted by the Select Board of the Town of Chester on this 20th day of May, 2009.

/s/ Richard Jewett
/s/ Derek Suursoo
/s/ John DeBenedetti
/s/ Michael Westine
/s/ Julie Ladieu-Walton

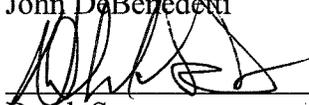
Amended on this 16th day of March, 2011.

/s/ John DeBenedetti
/s/ Derek Suursoo
/s/ William Lindsay
/s/ Thomas Bock
/s/ Arne Jonynas

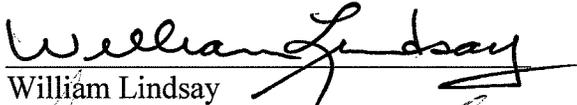
Amended this ~~16~~ day of February, 2014



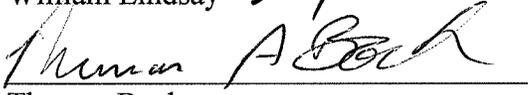
John DeBenedetti



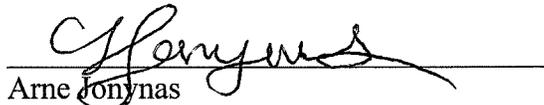
Derek Suursoo



William Lindsay



Thomas Bock



Arne Jonynas