TOWN OF CALAIS, VERMONT ROAD AND BRIDGE STANDARDS

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AMENDED BY THE SELECTBOARD

ON APRIL 14, 2014

Approved by State of Vermont Agency of Transportation on 3/31/14

Selectboard Members
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Town of Calais,
Vermont Road and
Bridge Standards

First Adopted by the Calais Selectboard on February 10, 2014

The Town of Calais hereby adopts the following Town Road and Bridge Standards which shall govern the design, construction, reconstruction, maintenance and repair of all town roads and bridges, including any new road proposed by or conveyed to the Town.

The Selectboard reserves the right to modify the standards for a particular project, whether for design, construction, reconstruction, repair or maintenance activities, where, because of physical circumstances or other conditions, there is no practical possibility that the activities can be completed in strict conformance with these provisions. Any modifications to the Standards

must be done in a manner that is consistent with the Guiding Principles listed below. All such activities must comply both with these Standards and with all applicable local, state and federal approvals, permits and duly adopted standards. Fiscal reasons are not a basis for modification of the Standards.

If any federal or state funding is involved in a project, the VTrans district office will be notified prior to any field changes taking place that would alter the original scope of work.

GUIDING PRINCIPLES:

These Standards shall be interpreted to carryout the following Guiding Principles.

- Design, construction, reconstruction, repair and maintenance activities on our roads, culverts and bridges ("Road Work") shall be consistent with and, where possible, enhance the rural character of our town and shall take into account and respect the agricultural, natural, historic, scenic and cultural features of our Town.

- All Road Work shall enhance flood hazard and inundation avoidance and shall protect the water quality of our lakes and ponds by the maximal use of innovative natural stormwater control mechanisms such as rainfall force attenuation (via tree canopies) and/or dispersion of stormwater to roadside verge shoulders, buffered areas and settlement structures.

- All Road Work shall enhance the safety of all users of our roads through traffic calming measures, such as tree-lined narrow roads with widths and speed limits appropriate to the designation of the road.

- All Road Work shall take into account and encourage agricultural uses and non-motorized uses of our roads such as walking, running, bicycling, horseback riding and carriage driving.

- Roadway reconstruction activities shall be undertaken to address particular problems and not to reconstruct entire roads.

  In general, healthy trees within the Town rights-of-way that are 5 inches or larger in diameter at breast height shall not be removed without notice to affected parties and after an appropriate public process. See "Community Notice and Involvement" Section of these Standards.

ROADWAYS: Road Classifications, Width and Speed Limits

- **Classifications:** Only for purposes of fixing the <u>maximum</u> width of the travelled portion and fixing the <u>maximum</u> possible speed limit, within six months of the adoption of these Standards the Selectboard will designate each of the gravel roads, or segments of certain gravel roads, in Calais as one of the following:
  - a Collector;
  - a Secondary Road; or
  - a Very Low Traffic Road

Definitions:

A 'Collector' is a road that currently carries, or in the future should carry, a substantial portion of the traffic out of, or into, Calais via Route 14, the County Road, and, possibly, to Route 12 or Route 2. A 'Collector' is a road that does now, or the Selectboard determines should in the future, function as one of the few primary routes to and from those paved arteries.

A 'Very Low Traffic Road' is every Class 4 road and some Class 3 roads that currently have, or should be encouraged to have, very low traffic because of its location, characteristics or housing density and which is overall suited to being narrow and to having a low speed limit.

A 'Secondary Road' is any other Class 3 road. Because of its current or anticipated slightly higher traffic and its location another characteristics, such a road would be slightly wider and have a somewhat higher maximum speed limit than a 'Very Low Traffic Road'.

- **Road Widths:** The total travelled portion of gravel roadways, including all graveled surface but not including any of the vegetated verge, shall be constructed, repaired or maintained at no more than the following maximum widths:
    - 20 feet for Collectors.
    - 14 feet for Secondary Roads.
    - 12 feet for Very Low Traffic Roads.

- **Speed Limits:** The Selectboard may set lower speed limits on roads or road sections that have particular hazards or where there are other reasons for lower speed limits, but otherwise:
    - The speed limit on paved sections of Route 14 and County Road shall not exceed 50 mph.
    - The speed limit on 'Collectors' shall not exceed 35 mph.
    - The speed limit on 'Secondary Roads' shall not exceed 30 mph.
    - The speed limit on 'Very Low Traffic Roads' shall not exceed 25 mph.

ROADWAYS: Ditching, Storm Water Management and Erosion Control Design Standards

- Ditches shall not be created or maintained where the road grade is essentially level (less than 3% grade), unless there is no possibility for dispersion of stormwater or seepage to the verge shoulder or further away from the road or where silt-laden stormwater is likely to directly enter surface waters essentially untreated.

- Ditches shall not be created or maintained where roads can be crowned so that stormwater sheets laterally to the edge of the road and then into a permeable surface – vegetated or forest litter-covered – unless there are nearby surface waters into which silt-

laden stormwater from the road is likely to reach essentially untreated.

- Even where the road is on a grade, ditching shall be minimized where there are no nearby surface waters into which silt-laden stormwater from the road is likely to reach essentially untreated.

- Where ditches are allowed under these Standards, low-sloped ditches with U-shaped bottoms with frequent turnouts shall be installed when constructing new or reconstructing existing ditches. In cases where topography limits turnouts and width of ditches, all efforts to limit the depth and width of ditches shall be taken. Construction or maintenance of ditches shall include biodegradable, non-welded matting to stabilize side- slopes where slopes are greater than 1:2 and less than 1:1½; apply seed and mulch to any raw or exposed side-slope if slopes are less than 1:2.

- Whenever soils are disturbed by ditch maintenance activities with grades equal to and greater than 5%, 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.

- No ditches shall be constructed any larger than needed for stormwater runoff, that is, not for the purpose of accommodating snow storage.

- Ditches shall not be so deep so as to be a hazard to traffic and shall be such that a car could drive out of it.

- Where at all possible, ditches shall be turned out frequently by pulling the soil back toward the road at the end of the turnout so that stormwater can easily exit the turnout. Where there is the likelihood of runoff from the ditch or turnout reaching surface waters, there must be adequate outlet protection, either an infiltration pond/area or a vegetated or structural (rock) filtering area at the end of the turnout. Turnouts shall be seeded and mulched.

- Existing ditches that are functioning adequately and are well vegetated shall not be disturbed unless they are actively eroding.

- Soil exposed during ditch and slope construction, repair or maintenance, must be stabilized immediately. Temporary erosion prevention and sediment control practices must be installed and maintained during construction activities and until the ditch and slopes are permanently stabilized with vegetation.

- Careful attention must be given to areas vulnerable to erosion and immediately adjacent or discharging to surface water and/or roadway drainage facilities.

- The following are minimum erosion control measures:

    - Seed and mulch all ditches with grades less than 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.

- When check dams are used, they must meet criteria outlined in the "*Standards and Specifications for Check Dams,"* from the *Vermont Standards and Specifications for Erosion Prevention and Sediment Control as of February 24, 2014. 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.* Six to 12 inch large stone shall be used when smaller stones would be washed downstream.

- When constructing new or substantially reconstructing side slopes, vegetative stabilization techniques shall be used whenever possible. If it is necessary to use stone, appropriately sized stone armament on slopes that are 1:1½ or greater shall be used. If Perennial streams are affected by the toe of slope the project must conform to the statewide Stream Alteration standards.

ROADWAYS: Sub-base, Top Course and Finished Height Design Standards

- All new or substantially reconstructed gravel roads shall have at least a 12-inch thick processed gravel sub-base, with an additional 3 inches (minimum) top course of crushed gravel or crushed slate (without larger stones) and of sufficient quality so as to compact after grading and produce a travel surface with minimal loose gravel and which is safe and smooth enough for motorized and non-motorized users.

- All new or substantially reconstructed paved roads shall have at least a 15 inch thick processed gravel sub-base.

- Except when necessary under these Standards to eliminate berms, the finished height of a roadway after reconstruction, repair or maintenance activities should not be significantly higher or lower that the height of the roadway before the work unless there is a good reason (such as separation from the water table) and the effect on adjacent properties has been taken into account.

ROADWAYS: Other Standards

- Where allowed by the topography and physical conditions, every Class 2 and Class 3 gravel road must have a vegetated verge on each side. The vegetated verge may include grass, weeds, shrubbery forest duff and even trees. The vegetated verge may be part of a low angle beginning of a ditch, where ditching is allowed under these Standards and is necessary.

- The vegetated verge must be 2' to 4' wide on each side, unless there are rock outcroppings or large or canopy-making trees or other obstacles within that distance, to provide room for extra large vehicles such as school buses and agricultural machinery to pull over.

- The use of perforated underdrains, or other alternatives to deep roadside ditches, shall be considered when dealing with problems caused by under-road seeps or

springs or by wet areas adjacent to roads.

- All road construction, repair and maintenance activities – including normal grading – shall include seeding and mulching the verge as part of the activity.
- To the extent practical, as part of road or bridge construction, reconstruction, repair or maintenance activities, or independent of such activities, unless clearly inconsistent with the scenic character of the road or area or unless opposed by the landowner, trees shall be planted within the Town's right-of-way to provide shade, control dust, lessen erosion by rainfall attenuation and add scenic qualities on roads where they do not already exist or where tree disease or die-off requires additional plantings.
- Tree branches may be removed only to eliminate safety hazards or to provide adequate clearance for traffic. Only the branch that is causing the hazard or interfering with adequate clearance may be removed. Branches shall be cut in accordance with the Vermont Urban and Community Forestry Program pruning guidelines. Even in such cases, the tree canopy shall be preserved to the greatest extent possible.
- Roadside mowing shall take into account and protect the flowers and other scenic vegetation except when mowing them is necessary for safety.

ROADWAYS: Grading and Maintenance

- Grading shall be done so as to maintain no more than the maximum widths allowed for the travelled portion of that road. The initial pass grading in each direction shall not disturb verge shoulder or ditching (where allowed) and final spread grading shall not widen the travelled portion beyond the maximum width allowed.
- All gravel roadways shall be graded so to promote sheeting of water which will result in lateral surface water flow to the verge shoulder and in water not remaining on the road surface.
- Grading shall result in effective crowning of the road. For roadways that are not banked, this generally means a 1/2 to 3/4 inch per foot crown for gravel roads.
- Proper grading techniques for gravel roadways shall be used to avoid creating a ridge or berm between the crown and the ditch.
- Roads with side berms shall be graded so that the berms are non-existent and stormwater can freely sheet off the road and into a buffered surface area or an allowed ditch.
- Where grading alone is insufficient to eliminate berms which are preventing stormwater from sheeting off the road into the verge, the road shall be raised by adding material.
- Gravel that accumulates on the sides of the roads shall be periodically pulled back onto the travelled portion of the road and the verge area immediately mulched or reseeded.
- Attention shall be paid to minimizing loose gravel through the choice of top course material and the use of grading techniques which will maintain a safe travel surface for motorized and non- motorized users.

- Grading and snowplowing shall avoid injuring trees, tree roots and stone walls.
- Dust suppression material shall be applied immediately after grading and as frequently as needed to control dust.

ROADWAYS: Non-Motorized Uses

- Lane widths on paved roads shall be minimized where allowable to provide the adequate and safe paved shoulders possible for bicyclists and pedestrians.
- Signs shall be installed at the entrances to Calais and at strategic points to remind motor vehicle drivers to share the road with agricultural and non-motorized users.
- To the greatest extent possible, roads shall be tree-lined to provide shade and minimize dust.
  Whenever dusty conditions are likely to develop, dust suppression materials shall be applied immediately after grading and as frequently as needed thereafter.
- Loose gravel on road surfaces shall be minimized; the existing scenic qualities of the roads shall be maintained; and restoration activities such as tree planting and/or seeding and mulching shoulders shall be implemented.
- All roads, except Collectors, Route 14 and the paved portion of County Road, shall have pullouts at intervals along level and straight sections of roads.

ROADWAYS: Restoration

- Existing roads that do not meet these Standards or do not comply with the Guiding Principles shall be restored to be consistent with them to the greatest extent possible pursuant to a multi- year plan to be adopted by the Selectboard within two years of the adoption of these Road and Bridge Standards. The plan shall provide recommendations for specific roads or road segments.

CULVERTS AND BRIDGES:

- Where an existing large culvert or bridge has been in place for many years, has not failed or been overwhelmed under natural circumstances with significant damage resulting, is not in immediate danger of failure or being so overwhelmed, is not clearly inadequate for existing or imminently expected traffic and is of some historic, scenic or cultural importance, the culvert or bridge shall not be replaced. Nevertheless, where there is well-founded concern that the culvert or bridge is clearly inadequate for likely future extreme water flows and where significant damage is likely to result, creative alternatives shall be considered such as hardened flow-over or flow-around pathways or parallel culverts that would allow the preservation of the existing culvert or bridge with minimal impact on the historic, scenic or cultural values.
- When a new large culvert (diameter > 5 feet) or bridge is to be built, the design of the culvert or bridge, abutments or wing walls and any necessary guardrails shall take into account the historic or scenic context of the road and area and shall accommodate to the

extent possible non-vehicular traffic needs.

- 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.

- Regarding the diameter of culverts that carry only stormwater under a road from or to a roadside ditch, replacement of existing culverts, and any new culvert, must have a minimum diameter of 18 inches or equivalent square inch opening or such larger diameter that would be capable of passing the maximum stormwater flow reasonably expected in the roadside ditch If, because of the diameter of the culvert, the culvert must be placed at a depth significantly greater than that of the (either) roadside ditch, the culvert entrance and/or exit must be protected so as to not be a hazard to vehicles. Culverts that are working or that can be cleaned or made serviceable need not be replaced.

- Regarding the diameter of driveway culverts, all new driveway culverts must have a minimum diameter of 15 inches or equivalent square inch opening or such larger diameter that would be capable of passing the maximum stormwater flow reasonably expected in the roadside ditch at the driveway. Driveway culverts are not necessary unless the portion of the road to which the driveway connects needs a ditch.

- When installing or replacing culverts, appropriate techniques such as headwalls and wing walls shall be used where there is erosion or undermining of the culvert or where it is expected to occur.

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

GUARDRAILS

- When roadway, culvert, bridge, or retaining wall construction or reconstruction projects result in hazards such as fore slopes, drop offs, or hazardous fixed obstacles, a roadside barrier such

  as guardrail shall be considered if it is not practical to alter the slope or to otherwise mitigate or eliminate the hazard. The most current version of the AASHTO Roadside Design Guide will be consulted during the analysis of the hazard and the subsequent treatment of that hazard.

- Guardrails shall only be used to protect against injury from roadside hazards such as trees, natural rock outcroppings, drop offs or structural abutments only where there is clear and significant risk of injury to occupants of vehicles moving at the speed limit or at an appropriate speed in dangerous conditions.

- Where used, guardrails shall be unobtrusive, no larger than necessary and fit with the character of the road. Guardrails shall be made using effective AASHTO approved standards for wooden or box beam rails and posts. (See AASHTO standard 5.4.1.11

Backed Timber Guardrail)

MISCELLANEOUS RELATED MATTERS:

Community Notice and Involvement

- Any Road Work, other than entirely routine or minor repairs, grading or snow plowing, and maintenance, shall be preceded by adequate notice to all townspeople in the area affected and, if there is significant concern or opposition expressed, presented to the Selectboard for its approval.

Access Management

- The town has a process in place to review all new driveway accesses and development roads where they intersect Town roads.

Training

- Town highway maintenance crews must collectively attend a minimum total of 6 hours of training per year on road manage*me*nt practices that reflect the Guiding Principles of these Standards. The town crew foreman must keep documentation of their attendance for a period of three years.

Certification of Compliance
for
Town Road and Bridge Standards

We, the Legislative Body of the Municipality of Calais certify that we have reviewed, understand and comply with the Town Road and Bridge Standards passed and adopted by the Selectboard on 4-14, 2014.

We further certify that our adopted Town Road and Bridge Standards [✓] do [ ] do not meet or exceed the minimum requirements included in the January 23, 2013 VTrans template.

Date: 4-14-2014

Denise Wheeler, Chair

(Duly Authorized Administrator)