Town of Ashland
New Hampshire 03217

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CONSTRUCTION STANDARDS FOR STREETS AND ROADS

Authority

In accordance with and under the authority of New Hampshire Revised Statutes Annotated, Chapter 41, Section 11 and Chapter 47, Section 17, VII and VIII, authorizing the Board of Selectmen to regulate work in public ways and places in the Town of Ashland, the following Ordinance is enacted.

Purpose

It is the express intent and purpose of this Ordinance, and the specifications it contains, to strictly regulate the standards to be applied in the construction, reconstruction, repair, opening or work in public roadways of the Town of Ashland in order to provide for the public welfare, the public health and to promote the public safety. These standards are intended to work in conjunction with, but not supercede, the rules, regulations and ordinances of the Planning Board.

Section 1. Construction Supervision

The construction of streets, drainage facilities, sidewalks and curbs must be done under the supervision of the Public Works Director and the Town Manager of the Town of Ashland and/or their authorized agents.

Section 2. Pre-Construction Meeting

Before any construction begins, the builder, his contractor(s), the Public Works Director, Chief of Police, Fire Chief, Sewer, Water and Electric Superintendents, Code Enforcement Officer, Inspection Engineer representing the Town, Town Planner and the Town Manager and their duly authorized agent(s), will conduct a pre-construction meeting, the purpose of which is to clarify the design and construction standards contained herein and to establish a workable inspection schedule for the project. It shall be the responsibility of the contractor to organize this meeting, keep minutes and distribute the same.

The Town of Ashland prohibits discrimination on the basis of race, color, national origin, sex, sexual orientations, religion, age, disability, marital or family status.
The Town of Ashland is an equal opportunity employer.

Section 3. Maintenance of Survey Stakes

The builder shall preserve the grade stakes, propelty line markers and right-of-way bounds until the completion of the streets so that the Town or its agents can readily verify data (check the grade) at any location and if stakes or any markers are removed or destroyed the stakes shall be replaced at the expense of the builder by an approved licensed surveyor.

Before street or improvement construction begins the applicant shall cause grade stakes to be placed at 50-foot intervals. Each stake shall be driven firmly beyond the toe or top of slope in a location where it will not be disturbed by construction operations and be clearly marked, by a licensed surveyor, to give the following information:

- Station Number
- Offset from center-line
- Cut or fill to finish center-line grade

Also, the builder shall place grade control stakes at 50 foot intervals and located near the shoulder break point or 2 feet outside of the proposed curb line or both sides of the roadway. Each stake shall be marked with the center-line station and a finished grade mark.

Section 4. Clearing and Grubbing

The limits of clearing and grubbing shall be laid out on the ground before any other work commences and shall extend five (5) feet beyond the excavation and embankment slope limits. Trees designated by the Town or its agent(s) will be saved; paiticular reference is made to fruit, ornamental or shade trees or plants at the edge of roadside slopes.

A. Clearing

Clearing shall be performed by cutting and disposing of all trees, down timber, stubs, brush, bushes and debris.

B. Grubbing

All stumps and large roots within the limits of construction shall be removed and disposed of to a depth of three (3) feet below sub-grade. Excavation caused by grubbing shall be filled with suitable material that shall be compacted to conform to the surrounding ground.

C. Roadside Cleanup

Roadside cleanup of leaning, dead, unsound and unsightly trees, branches, stubs, refuse, and slash, shall be preformed generally to a limit of approximately fifteen

(15) feet outside the toe and top of slopes and the material disposed of appropriately.

D. Inspection

The Town or its agent(s) shall be notified so that approval of the clearing and grubbing can be made before any further work may progress.

Section 5. Excavation and Embankment

This section shall govern the excavation, placement and compaction of embankment and the necessary disposal of other material.

A. Excavation

Excavation here refers to the removal of earth, rock and muck.

1. **Conservation of Growth:** Excavation shall be carefully performed in the proximity of trees and shrubs designated to be saved so as not to cause undue injury to the designated trees or shrubs.

2. **Topsoil:** Topsoil and other desirable humus material shall be removed in excavation areas and also in fill areas to such depths as directed by the Public Works Director. Topsoil shall not be removed from the project site without the written approval of the Town following the issuance of an earth removal permit.

3. **Rock Excavation:** All boulders that cannot be removed shall be broken off to a depth of not less than twelve (12) inches below the sub-grade. Solid rock shall be removed to a depth of not less than twelve (12) inches below sub-grade and as required for ditches in cut sections. No rock excavation by blasting shall be performed without prior written approval of the Public Works Director and the Fire Chief and only after all required permits have been obtained and are on site.

4. **Muck Excavation:** Muck excavation consists of the removal of deposits of saturated or unsaturated mixtures of soils and organic matter not suitable for roadway foundation material regardless of moisture content. Muck shall be removed and suitable portions thereof may be used on the embankment slopes or other appropriate uses approved by the Public Works Director. The excavation work shall be handled in a manner that will not permit the entrapment of muck within the backfill; the backfilling of the excavated area shall follow immediately behind the excavation of the muck in order that any soft material which is pushed ahead of the backfill can be removed.

5. **Common Excavation:** Common excavation consisting of all excavation not included in the above classifications and unusable for roadway construction shall be removed. With the approval of the Pubic Works Director, suitable material may be used in fill areas and unsuitable material may be used to flatten slopes where possible.

B. Embankment

Embankments shall be formed of suitable and acceptable excavated or borrow material and brought to the required lines and grades. Embankment materials shall be placed and compacted in full uniform layers not exceeding twelve (12) inches. Continuous leveling and manipulation shall be employed to insure uniform density. Where end dumping is employed, embankment material shall be dumped on the layer of embankment being constructed and bulldozed ahead into place. End dumping over compacted work which allows material to roll into place will not be permitted by the Public Works Director.

I. **Backfill of Holes:** Holes resulting from the removal of stumps, boulders, and the like, within the zone of anticipated frost action, shall be filled and compacted with material similar to that surrounding the hole.

2. **Unstable Areas:** Material used to backfill excavated muck shall consist of rock or granular material, so graded that, of the material passing the No. 4 sieve, not more than 70% will pass the No. 40 sieve and not more than 12% will pass the No.200 sieve. The process shall be as specified under Muck Excavation above. Material shall be placed compacted in full uniform layers not exceeding lifts of 12 inches.

3. **Waste Material:** Waste materials from clearing, grubbing, and roadside cleanup and from rock, muck and common excavation classified by the Public Works Director as unsuitable for use in the construction of roads, streets and landscaping shall not be deposited in any wetland or other property within the Town, including any public disposal facility, if at Town expense, but may be deposited in pit(s) dug on-site and covered with material and in a manner acceptable to the Public Works Director. The pit(s) shall be away from any construction areas in a non-buildable buffer area that is acceptable to the Public Works Director. The builder shall identify all such burial sites on the completed as-built plans filed at the completion of the project with the Town.

4. **Rock Embankment:** Rock embankment shall consist of rock fragments placed in layers not to exceed 4 feet. The rocks lifts shall be worked in

such a manner as to close the voids with smalls and fines when available othelwise use earth to make a tight surface prior to place the next lift.

5. **Earth Embankment:** Earth shall be placed in layers the full width of the roadway, generally parallel to the finished grade. The layers shall not exceed 12 inches of loose depth. Each layer shall be spread to a unifonn thickness and compacted to at least 95% of maximum density prior to placing the next layer. The Public Works Director at the applicant's expense may require density tests.

6. **Grading:** Embankments shall be graded at all times to -ifisure the proper run-off of water. Any saturation of nonporous material due to the builders selected method of operation shall occasion suspension of additional work as specified by the Public Works Director until the situation has been rectified.

7. **Winter Construction:** No embankments shall be constructed on frozen earth materials. Each layer of material shall be compacted to the specified density before it freezes.

8. **Borrow:** When suitable and acceptable, and excavated material from the job site has been exhausted, borrow materials may be brought onto the job, if prior written pem1ission of the Public Works Director has been obtained concerning the quality of the material at the source.

Section 6. Drainage

The builder shall provide adequate disposal of surface run-off. Location of drainage ways, easements and structures shall have been designed using the topography contour lines on the final plat as specified in these regulations.

A. **Culverts:** In addition to the location as determined above, the length of a culvert structure shall be graphically determined by cross- section scale drawing(s) of the proposed street showing existing ground, side ditches, back slope(s), side slope(s), sub-grade, finished grade and the culvert, with headwall(s) if required. For skew installations, a plan view also shall be drawn to scale. Culverts without headwalls or drop inlets shall be extended to the intersection of the street side slope with the old ground in an earth fill section; or with the back slope in an earth cut section governed by the cover over the culvert specified below. Culverts with headwalls may be shorter as governed by the intersection of the street side slope with the back of the headwall 5 inches below the top of the headwall. Culverts also can be terminated by catch basins located on the normal ditch line of an earth cut section. The minimum inside diameter of any culvert under streets shall be twelve (12) inches; a larger size may be required as a result of the rainfall information discussed and designs required in these regulations, as well as the general necessity for adequate disposal of surface water. Culverts may be plastic if

loading can be achieved and if approved by the Public Works Director. Locking devices for field jointing culvert sections shall meet the manufacturer's specifications. Driveways of the subdivision street(s) shall have a minimum culvert size of twelve (12) inches. The pipe shall be placed on prepared bedding of fine granular material to fit the lower I 0% of the pipe height and to ensure that the flow line of the pipe(s) will conform to the required grade line. The minimum culvert slope required to maintain a self-cleaning water velocity is 0.4%. Acceptable material for culvert pipes and closed drainage system pipes shall be smooth walled PVC or Hancor HDPE pipes.

B. **Under-Drains:** The Town may require the builder to provide under-drains to remove water from the roadway sub-grade.

C. **Ditch Grades:** Roadside ditch grades shall not be less than I% to prevent ponding. Steep roadside ditch grades may require energy absorbing crushed stone and/or cross culvert relief if anticipated flow is significant.

D. **Headwalls and Catch Basins:** A stone or masonry headwall on the inlet end of a culvert, when required, shall be designed to prevent physical damage to the culvert pipe and have a base, below the pipe, to avoid seepage and erosion below the culveli. Headwalls on the outlet end of the culveli may be required, but without a deep base. Catch basins or drop inlets may be required in areas with curb inlets or located in normal ditch lines of an earth cross section. All stone or masonry headwalls shall be constructed in accordance with NH DOT Standard Specifications. All drainage catch basins, drop inlets and manholes shall be pre-cast reinforced concrete constructed to NH DOT Standard Specifications. All frames and grates shall be cast iron and shall meet or exceed NH DOT specification and shall be Type B 4 flange frame and cast iron grate.

E. **Backfilling:** All backfill material for culvert trenches, headwalls, drop inlets, catch basins and manholes shall be soil approved by the Public Works Director. Backfill material shall be free of hard lumps or clods larger than 3 inches in diameter, and free of rocks and stumps. Uniformly fine material shall be placed next to any of the culverts, headwalls, and basins liable to denting or breaking. Approved castings are LeBaron L24SGI and Neenah R3405A.

Backfill shall be in layers not exceeding 6 inches at near optimum moisture content and care shall be exercised to backfill under the haunches of culverts and in firm contact with the sides. Compaction shall not be less than 95% in the vicinity of pipes.

F. **Intersections:** Special consideration will be needed where streets or roads intersect established streets or roads to provide proper drainage and avoid conditions leading to accumulation of ice during freezing weather.

G. **Easements:** Drainage easements shall be obtained by the builder over an adjacent land that will be subjected to an increased flow of surface water because of the alterations caused by the construction.

H. **Inspections:** All material supplied for the drainage work shall be certified by the applicant to the Town of Ashland. The Public Works Director, or his designee, shall inspect and approve all materials before placement. The Public Works Director, or his designee, shall be notified as to when the installation of each item required will occur. No backfilling will be done until the installation has been inspected. No drainage structures shall be placed until the base upon which they will sit has been inspected. The Public Works Director will inspect all backfilling.

Section 7. Fine Grading of the Sub-Grade

Upon completion of excavation, placement of embankment and installation and backfilling of drainage structures, the sub-grade shall be fine graded to conform to the sub-grade profile and cross slope. High spots shall be honed down and low spots filled with material acceptable to the Public Works Director. The process of vibratory compacting shall continue until no further depressions result. Slopes and ditches shall be shaped to reasonably smooth surfaces in keeping with the character of the adjacent terrain and merge into it without any noticeable break. Culverts and waterways shall be cleared of all obstructions. Rubbish, brush, loose rock, boulders and all other debris from the construction work shall be removed and disposed of as directed by the Public Works Director. The entire roadway must present a uniformly finished appearance at the completion of fine grading. The Public Works Director shall be notified so that approval of fine grading of the sub-grade, side and back slopes and ditches can be made before any further work can progress.

Base courses shall be furnished and placed on previously prepared sub-grade or base course. The materials shall be free from organic materials and shall conform to the following gradations:

A. Gravel

The base 12" course depth shall consist of gravel that conforms to Section 304 of the latest issue of the standard specifications for road and bridge construction, State of NH DOT.

B. Crushed Gravel

The top aggregate base course shall be a minimum of 6 inches of crushed gravel for all the street sizes regardless of whether a pavement is to be installed later or not. The required grading is:

Sieve Size	Percentage by Weight Passing
3 inch	100
2 inch	95-100
I inch	55-85
No. 4	27-52
No. 200 (based on the fraction passing the No.4 sieve)	0-12

At least 50 percent by weight of the materials retained in the I-inch sieve shall have a fractured face. If the crushed gravel is to be paved with bituminous concrete, the crushed gravel shall be "washed" to remove fines. Crushed gravel must conform to Section 304 of standard specifications for road and bridge construction, State of NH DOT.

Section 8. Placement of Gravel and Crushed Gravel

A. The sub-grade shall be to the specified crown and grade and maintained in a smooth condition, free from holes and ruts. If the hauling equipment should cause ruts in the sub-grade or previously placed base course, the equipment shall be operated only on the course being placed, behind the spreading equipment.

B. Care shall be taken to avoid segregation when placing gravel and crushed gravel. When base course material is dumped in piles, it should be dumped in the course being placed and spread at once onto the previously placed layer. If spreading equipment is not available, dumping will not be permitted. Any segregation which occurs shall be remedied or the materials removed and replaced at the applicant's expense.

C. Each entire layer of gravel shall be thoroughly scarified for the depth of the layer to bring all oversized stones to the surface for disposal prior to placing the subsequent course. Such scarifying will not be required when the contractor's method of operation is such that oversized stones are not delivered to the project.

D. Prior to fine grading, hard spots in the surface of the top layer shall be eliminated by scarifying the top 4 inches.

E. Previously tested and accepted materials contaminated by earthen, organic, or other foreign matter, or degraded by hauling equipment, to such an extent that the materials cease to meet the requirements, shall be removed and replaced or otherwise made acceptable at the builder's expense.

F. To prevent segregation of crushed gravel during spreading and to assist in obtaining the required density of the mixture, water shall be added to the crushed gravel prior to performing the grading operations. The course shall be maintained

in a moist condition until it is covered. Water shall be uniformly applied over the other base courses during compaction in the amount necessary for proper consolidation.

G. The compaction of gravel and crushed gravel shall be done with an approved vibratory roller until 95% of maximum density is achieved.

H. The Public Works Director shall be notified so that approval of the placement and compaction of the gravel courses may be made before any further work progresses.

I. **Source Approval:** The source(s) of gravel and crushed gravel shall be as approved by the Public Works Director prior to bringing the materials to the job site.

J. **Fine Grading of Top Course:** The top course of 6 inches of crushed gravel shall be fine graded to conform to the profile grade of this course and the cross slope. High spots shall be removed and low spots filled with approved material. The process of rolling shall continue until no further depressions result.

K. **Inspection:** The Public Works Director shall be notified so that approval of fine grading of the top course can occur before any further work progresses.

Section 9. Pavement Surface

All streets shall be surfaced with bituminous materials as approved by the Public Works Director that shall conform to Section 401 of the State of NH DOT standard specifications for road and bridge construction and in accordance with the following:

A. Bituminous Concrete

A minimum of 3 inches of bituminous concrete, plant hot mixes (2-inch base and I-inch wearing surface). The bituminous material shall be asphalt cement of penetration grade 100-200.

B. Approvals

The Public Works Director or his agent shall approve the paving contractor and materials to be used. No paving shall be done until the top course of the base courses has been approved.

C. Placing Hot Bituminous Pavement

(a) **Weather Limitations.** Mixtures shall be placed only when the underlying surface is substantially dry, frost free and the surface temperature is at least 40 degrees F. and rising. The Public Works Director may permit, in

the case of sudden rain, the placing of mix then in transit from the plant, if laid on a base free from pools of water, provided all other specifications are met. No load shall be sent out so late in the day that spreading and compaction cannot be completed during daylight. Wearing course shall not be placed after October I st of any year.

(b) In special instances, when the Public Works Director determines that it is in the best interests of the Town, he or she may waive the requirements of paragraph (a) above.

(c) Any material delivered to the spreader having a temperature lower than 250 degrees F. shall not be used.

(d) Compaction of Hot Bituminous Pavement

Immediately after the bituminous has been spread, struck off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. The initial rolling shall be done with a static steel-wheeled roller followed by the use of a vibratory roller. The minimum weight of static steel-wheeled rollers shall be 8 tons. A vibratory steel-wheeled roller shall have a minimum applied dynamic force of 27,000 pounds (Manufacturer's Rated Capacity). Vibratory rollers shall have separate controls for energy and propulsion and be specifically designed to compact bituminous mixtures. When a vibratory roller is being used, the vibration shall be stopped while the roller is stopped or reversing its direction of travel.

Base courses shall be rolled until all roller marks are eliminated. The wearing course shall be rolled until all roller marks are eliminated, and a minimum density of 95% of laboratory specimens, made by the AASHTO T-24 method in the proportions of the job-mix formula, has been obtained.

Section 10. Miscellaneous

A. Utilities

Utilities will be placed after the project has been brought to sub-grade and rough slope work has been completed. Their respective companies will inspect the lines. It is required that all electric, telephone, cable and other lines be placed underground in conduit.

B. Guardrails

Guardrails will be required where slopes drop more than 3 feet vertically from the height of the break in shoulder to the original grade on a slope steeper than 4:I or

in other hazardous areas which will be determined by the Public Works Director. Where a guardrail is required, it shall be constructed and placed in accordance with NH DOT Construction Specifications and the AASHTO Roadside Design Guide.

C. Survey and Monument Standards for Streets and R.O.W.'s

Permanent survey monuments shall be set in the boundary of all property corners and rights-of-way at intersection of streets, point of curvature and point of tangency of curves; the point of intersection of short curves may be used instead, where such is practical, at the discretion of the Public Works Director. Monuments shall be placed on both sides of the street and R.O.W.'s.

All monuments used as property corners and to designate rights-of-way will be granite at least 4" X 4" and 42" long and shall be installed after the sub-grade of the street is in place. A plug, brass plate, or pin shall serve as a reference point and a magnetic rod or other suitable metal device shall be located adjacent to the monument to allow for recovery.

All surveys shall be prepared and all monuments shall be set in accordance with the minimum standards adopted by the NH Land Surveyors Association for Standard Propelty Surveys. All survey bounds will be located in New Hampshire state plane coordinates.

D. Traffic Control and Street Name Signs

Traffic control and street name signs of a size, type and design approved by the Public Works Director shall be erected by the builder.

Section 11 Post Approval Procedures

A. As-Built Drawings

Following completion of all improvements, the builder shall submit As-Built Plan(s) to the Board. The plan(s) shall be drawn to scale and shall indicate by angles and dimensions, all underground or overhead utilities, road profiles and center line elevations and final grading plans showing swales and ditches. The plan(s) shall show all easements, dedicated roadways, roadbeds and other improvements. Accompanying said plans shall be all of the above plans on a CAD format compatible with that used by the Town.

B. Planning Board Approvals

Upon completion of all the required improvements and the completion of any maintenance period required by the Planning Board the builder shall provide

evidence that the Planning Board has released the street or way for acceptance by the Board of Selectmen as a public highway.

Section 12. Construction Standards

The Public Works Director may attach hereto drawings depicting construction standards to be used in the construction of streets to become public highways under this ordinance.

Section 13. Adoption

These regulations are adopted by the Board of Selectmen on the date indicated below and repeal all previously adopted regulations previously adopted for standards for the construction of streets intended as public highways or to be accepted as public highways by the Town of Ashland..

6/5/23
Date Adopted

Board of Selectmen