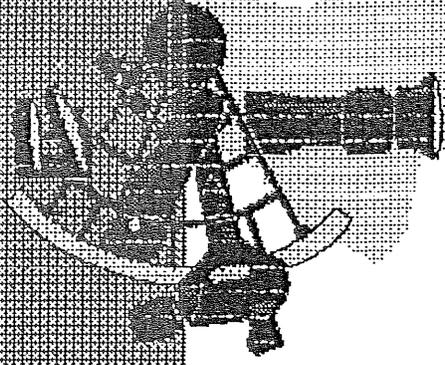


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ROAD CONSTRUCTION TOWN OF RAYMOND STANDARDS

Standards for Road Construction are to be considered an addendum to the Subdivision, Site Plan and Excavation Regulations of the Town of Raymond, New Hampshire. These Standards have been duly adopted by the Raymond Planning Board as such.

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ROCKINGHAM COUNTY
REGISTRY OF DEEDS

STANDARDS FOR CONSTRUCTION TOWN OF RAYMOND, N.H.
ADDENDUM TO THE SUBDIVISION, SITE PLAN AND EXCAVATION REGULATIONS

Standards for Construction

- 1. Method and quality of work shall conform to the Town of Raymond, New Hampshire Land Use Regulations and/or the State of New Hampshire Department of Transportation (DOT) Standard Specifications for Road and Bridge Construction, current edition, whichever is the more stringent, for all proposed street and/or roads, whether public or private. Approval by the Town shall mean approval by the Board of Selectmen, Raymond Planning Board or their authorized agents. Decisions made by the Raymond Planning Board relative to compliance with Subdivision Regulations or the Board of Selectmen regarding acceptability as a Town Road shall be final.**

- 2. Prior to clearing and grubbing, the Town's authorized agent accompanied by the owner and/or contractor, shall review the plan of the road way, schedule and scope of construction and approve or disapprove it. A seven (7) day notification to the Town's authorized agent shall be provided before construction of road ways begins.**
 - 2.1 This work shall include clearing and grubbing to a minimum depth of four feet below existing grades and replacement of unsuitable material with clean, well draining, granular material.**
 - 2.2 This work shall include the removal and disposal of all stone walls and fences within the right of way except as noted in Section 2.3.**
 - 2.3 Work shall include the preservation from injury or defacement of all vegetation, stone walls and objects designated by the Raymond Planning Board to remain.**
 - 2.4 All stumps, large roots and any organic material within the right of way shall be completely removed.**
 - 2.5 All stumps shall be excavated and removed in accordance with RSA 149M.1 and Town regulations regarding same.**
 - 2.6 Stumps shall not be removed until the developer presents an approved removal and disposal plan.**
 - 2.7 All debris shall be disposed of outside of the right of way.**
 - 2.8 Clearing and grubbing shall extend to a minimum of 4' -0" below existing grade and for the entire length and width of the right of way (ROW) unless approved for alternative limits by the Raymond Planning Board.**

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- 3. The subgrade of the road bed shall be constructed to the required width, grade and cross section as shown on the typical section on file with the Raymond Planning Board .**
- 3.1 All testing of embankments, i.e.; gradation, compaction, etc. shall be performed by an independent testing laboratory approved by the State to perform such test and shall be paid for by the subdivider.
- 3.2 Upon completion of subgrade, the proposed center lines shall be laid out and profiles shall be taken by a registered land surveyor on the center lines of all roads and submitted for approval.
- 3.3 Prior to placing any gravel subbase, the Town or its authorized agent shall be notified with 7 day notice of the subgrades completion. The Town or its agent shall inspect the subgrade and either approve said subgrade as suitable for placing gravel subbase or deny subgrade with appropriate reasons recorded.
- 4. All common backfill material shall be of suitable nature with no stumps, roots, sod, or frozen lumps permitted. All excavation and embankments shall be brought within required lines and grades. Fine grading of the subgrade shall be within 1/2" of the final grade.**
- 4.1 Suitable material shall be free of debris, pieces of pavement, organic matter, topsoil, wet or soft muck, peat, clay, silt and all excavated ledge or rocks over 6" in its largest dimension. Suitable material for reuse shall be approved for said reuse by the Raymond Planning Board or its designated agent. All suitable material shall have a maximum of 15% of it's total weight passing a #200 sieve.
- 4.2 Earth excavation shall consist of all material not classified as rock. Any suitable material as defined above may be used to flatten slopes where possible.
- 4.3 Earth embankments shall consist of all suitable material other than rock. The soil shall be placed in not more than 12" layers with 95% modified proctor compaction before successive layers are placed.
- 4.4 Rock excavation to the required subgrade, shall consist of removal of all solid rock which requires for its removal: drilling, blasting, weeding, or sledging. In road ways, rock removal shall be to a depth of 4' -0" below road way finish grade.
- 4.5 Rock embankments shall consist of solid rock placed in not more than 2' -0" lifts. Rocks shall be placed to the best advantage of road way construction. All rock embankment plans, under road ways, shall be designed and stamped by a Registered Professional Engineer and shall incorporate use of a filter fabric or material to control particle migration between road bedding and rock embankment.

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- 4.6 Muck excavation shall consist of the removal and disposal of organic matter which is not suitable for road way foundation material. In those locations where the road alignment crosses swamp or marshlands or other similar soil that is incapable of supporting expected loads, such inadequate soil shall be entirely removed and replaced with suitable materials. The Raymond Planning Board or its designated agent shall require the subdivider to submit evidence either by boring tests or other investigation to determine the depth of composition and stability of the subgrade.
- 4.7 Embankment fill within four feet of finished grade shall contain no stone greater than any dimension of six (6) inches. From four to ten feet below finished grade, stones up to four cubic feet are allowable. Below ten feet, rocks up to one cubic yard are allowable. Areas around culverts and proposed utility corridors must conform to the six inch requirement. All embankments shall be compacted in accordance with the Standard Specifications (State of New Hampshire) to 95% of the soils modified proctor value.
- 5. All drainage construction shall conform to the following regulations at a minimum.**
- 5.1 All culverts shall be reinforced concrete pipe Class III, IV or V. Pipe shall be bell and spigot or tongue and groove type with elastomeric oil resistant compression ring jointing. All pipe shall have a minimum cover of 2 feet. Minimum culvert size shall be 15". Class III shall be used under shoulder and green areas. Class IV under road ways and Class V under fill areas deeper than 15' -0", or shallower than 2' -0".
- 5.2 Headwalls of a type currently used by the N.H. Department of Transportation or otherwise approved shall be constructed at the ends of all pipes which drain to the surface of the ground.
- 5.3 If, during construction, any hidden springs or water sources are encountered, perforated under drain of a minimum 4 (four) inches in diameter shall be installed in a 12 (twelve) inch wide by 12 (twelve) inch high crushed stone bed, wrapped in filler fabric in locations satisfactory to the Town.
- 5.4 If it is discovered that there are wet areas, swales, etc. which are not handled by culverts shown in the drainage plan, additional culverts shall be installed as required and at the applicant's expense.
- 5.5 Catch basins, grates and frames shall be of a standard type approved by the N.H. DOT. There shall be no tees or angles in pipes, all such connections must occur at basins or manholes.

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6. A bank run gravel subbase of 12 (twelve) inches, placed in two 6 (six) inch lifts, containing no stone larger than 6 (six) inches and compacted to 95% of the optimum modified proctor density shall be constructed on the approved subgrade in accordance with the currently used DOT Standard Specifications. The width and depth of the gravel subbase shall be in accordance with the typical section on file with the Raymond Planning Board. The contractor shall have the gravel subbase tested by an approved laboratory for gradation and density. The cost of such testing to be paid for by the subdivider. Material used for gravel subbase shall meet or exceed the N.H. DOT specifications for gravel subbase, Division 300 ; Paragraph 2.4 "Gravel".
- 6.1 A crushed gravel base containing no stone larger than 1 1/2 inches in diameter shall be constructed on the approved bank run gravel subbase. This shall be placed in a 6 (six) inch lift and compacted to 95% of the optimum modified proctor density. Crushed gravel shall meet or exceed the standard for same established by DOT Standard Specifications Division 300; Paragraph 2.5- "Crushed Gravel." Modified crushed gravel shall not be acceptable.
- 6.2 All compaction shall be for the full width of the road way and shoulders and shall be done with water and machinery designed for that purpose. Boxing of the engineered base shall not be acceptable and will be grounds for rejection.
- 6.3 Scarification of any or all layers may be required to determine the existence of large or unsuitable objects.
- 7. The construction of Bituminous Concrete Pavement and materials used shall be in accordance with the currently used N.H. DOT Standard Specifications for Highways and Bridges.**
- 7.1 Bituminous concrete pavement shall be constructed in two courses as shown on the typical section. Minimum two (2) inch binder (using 3/4" stone), minimum 1 (one) inch top (using 1/2" stone) as measured after compaction. Binder must be in place within one year of crushed gravel. Top shall not be placed any sooner than six months or one winter after the binder, unless approved otherwise by the Planning Board.
- 7.2 A maximum tolerance of 1/4 inch in 10 (ten) feet in any direction from the theoretical plane will be allowed.
- 7.3 Pavement shall not be placed before May 1 or after October 1 without approval of the Planning Board or its designated agent.
- 7.4 Bituminous concrete pavement shall be supplied and applied by a State approved paving contractor in accordance with the latest edition of the State of N.H. DOT Standard Specifications for Road and Bridge Construction.
- 7.5 Binder shall be DOT type "B" 3/4" binder mix. Wearing Coarse shall be DOT type "E" 1/2" finish mix.

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- 7.6 No Certificate of Occupancy shall be issued by the Town until road way is constructed up to and including 2" binder course of asphalt.
- 7.7 Bituminous concrete pavement on collector and arterial roads shall be constructed in three courses to 4 inches in thickness consisting of a 1 1/2" base course, 1 1/2" binder course and 1" wearing course.
- 8. On all fills in excess of 4 (four) to 1 (one) slope, or at other hazardous locations, guard rails will be installed in accordance with the current N.H. DOT Specifications.**
- 9. Top soil shall consist of a loose friable soil with no ad mixture, refuse, or material toxic to plant growth. Top soil shall be free from stones, lumps, stumps, or similar objects larger than 2" in greatest diameter. Prior to stripping material to be used as top soil, it shall have demonstrated by the occurrence upon it of health crops, grass or other plant growth, that it is of good quality and reasonable from drainage. All top soil material shall be approved for use by the Raymond Planning Board or its designated agent. All disturbed areas shall receive a minimum 4" layer of approved top soil.**
- 9.1 All disturbed and graded areas shall be seeded with the Rockingham County Slope mix (USDA approved) at the rate of 65 lb. per acre
- 9.2 All seeded areas shall be fertilized with an analysis of 5- 10-10 and be applied at the rate of 50 lb. per 1,000 square feet.
- 9.3 All seeded areas shall be mulched within 24 hours of seeding. A good quality of mulch hay shall be used and applied at the rate of two tons per acre.
- 9.4 Where a cut slope is more than 10 feet or a fill slope more than 20 feet, distances to be measured along the slope and the Raymond Planning Board determines that these open slopes detract from the wooded character of Raymond, trees of not less than 6 feet in height shall be planted on 20 foot centers or as directed.
- 10. Signs with names of streets conforming to standards of the Town of Raymond shall be erected. All stop signs and traffic control signs, as required, shall be placed as well. House delineator signs as required and deemed necessary by the Raymond Fire Department shall also be installed.**
- 10.1 Street name signs shall be independently supported, not fastened to utility poles.
- 10.2 Delineator posts shall be placed at one hundred foot (100') intervals on both sides of the road and four feet (4') back from the edge of pavement.

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- 10.3 Delineators shall also be required at end of guard rails with red reflectors at the beginning, green reflector at the end and silver reflectors in middle, every one hundred feet (100').
11. The subdivider shall construct all portions of driveways within the proposed Town right of way at the same time as the road is constructed except as otherwise approved. Where driveway culverts are required they shall be a minimum of 12 (twelve) inch diameter, 20 feet long, made of corrugated steel or concrete. Headwalls conforming to N.H. DOT regulations shall be installed both ends of all culverts. The driveway shall slope away from the road for 25 feet from edge of pavement. The driveway shall be paved from lot line to edge of highway pavement with 2 inch hot bituminous pavement.
- 11.1 All drives shall be constructed to conform to typical driveway sections and details for the town of Raymond, N.H.
- 11.2 A minimum sight distance of 200 feet shall be required for all proposed and newly installed driveways.
- 11.3 Only one driveway entrance per lot is permissible. There shall be only one point of access/egress per lot.
- 11.4 Driveways shall be 14' in width. Driveway entrances shall flare as it approaches the pavement 20' measured at the existing edge of roadway pavement.
- 11.5 If wetlands are crossed or infringed upon, a dredge and fill permit shall be required from the State Wetlands Board.
- 11.6 Where required, driveway culverts shall be a minimum of twelve inches (12") in diameter and twenty feet (20') long; and must be constructed of either corrugated metal or reinforced concrete. Culverts made of aluminum shall **not** be acceptable.
- 11.7 Headwalls constructed of stone rubble and mortar, conforming to State of New Hampshire, Department of Transportation, Standard Specifications and Details for Construction of Bridges and Highways shall be installed at both ends of all culverts. All driveway headwalls shall be constructed to the same elevation as the driveway. The width shall be determined by the depth of the culvert.
- 11.8 The driveway shall slope away from the edge of the paved roadway at a slope of 2% for a distance of 25 feet, and be paved to the depth of 2 inches from the existing road pavement edge to the applicant's property line.

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11.9 Driveways not completed at the time of Certificate of Occupancy issuance shall require the owner to provide the Town of Raymond with a cash bond to cover unacceptable or incomplete driveway construction prior to certificate release. Said cash bond shall be based at a minimum on the following stipulated values:

Pavement completion.....	\$1,000.00
Culvert completion.....	\$1,000.00
Headwall completion.....	\$1,000.00
Excavation & Filing.....	\$ 500.00
Loam, seed, establish growth.....	\$ 500.00

11.10 All driveways shall intersect the Town's roadway at a perpendicular angle to the center line of each.

12. Curbing shall be granite and installed and sidewalks shall be concrete paves in sand bedding, concrete or installed and constructed in accordance with the Standard Specifications. The curb reveal shall be a minimum of 6 inches above finished pavement grade.

12.1 Sidewalks shall be constructed in accordance with DOT Standard Specifications - Section 608 Sidewalks.

12.2 The total thickness at bituminous sidewalks shall be two inches (2") placed on six inches (6") of compacted crushed gravel.

12.3 The total thickness of concrete sidewalks shall be four inches (4") placed on six inches (6") of compacted crushed gravel

12.4 Concrete sidewalks shall utilize a 6" x 6" steel reinforcing mechanism.

12.5 Crushed gravel shall be as specified in Section C-6.24 of these regulations and compacted to 95% of its maximum modified proctor density value.

12.6 The bottom course of sidewalk asphalt shall be type C binder and the top course shall be type F 3/8" wearing course.

12.7 Curbing shall be constructed in accordance with DOT Standard Specification 609 Curbs, Granite Vertical.

13. The Town of Raymond, New Hampshire shall require all road ways under construction to be inspected by the Town's designated agent.

13.1 Mandatory inspections shall be scheduled for each of seven construction milestones plus miscellaneous progress inspections, at a minimum.

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- 13.2 It shall be the obligation of the subdivider and/or his authorized agent planning any road way construction to do the following:
- a. Advise the Raymond Planning Board, Public Works Director or authorized agent of his intent to begin construction.
 - b. Arrange for a pre construction conference with all appropriate parties.
 - c. Request the inspection and approval for each of seven construction milestones.
 - d. Arrange for center line grade staking at each construction milestone.
 - e. Make appropriate arrangements for payment of inspection fees to the Town of Raymond, New Hampshire.
 - f. Identity names of all roadways for approval by the Raymond Planning Board.
- 13.3 Road inspection fees shall be assessed to the developer as follows:
- a. An amount equaling not less than five percent (5%) of the estimated road way bond shall be made payable to the Town Treasurer.
 - b. This fee shall cover the cost of a Town appointed inspector who shall monitor and inspect improvements for compliance with approved plans and required construction standards.
 - c. Said five percent (5%) inspection fee shall be held in escrow by the Town for reimbursement of all inspection cost.
 - d. Any interest accrued by the escrow plus 10% of the total escrow, amount shall be claimed by the Town to off set cost incurred in administrating said escrow account.
 - e. Inspection by Town employee shall be charged at regular or pro rated hourly rate, plus benefits, plus 100% for overhead.

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- f. The Town's inspection representative shall be reimbursed on a time and expenses basis. Charges shall be based on actual hours devoted to each project by authorized representative at his or her payroll rate times the standard salary benefit multiplier times and overhead and profit multiplier.
- g. Mileage shall be reimbursed at the rate of \$.30 per mile from the inspection representative's office to the project site and back.
- h. All costs incurred by the Town to insure the satisfactory construction of Town road ways are intended to be covered by this escrow. Said other costs may include attorney's fees, soils specialists and materials testing to name but a few.
- i. After satisfactory completion and acceptance of the bonded road way, any mechanism used portions of the escrow shall be returned to the applicant upon reimbursement of all outstanding costs and invoices.
- j. If due to conditions out of the control of the Town and its representative additional inspection fees are required, said project's inspection requirements shall be reassessed and additional payment of escrow costs shall be required from the applicant.

13.4 Mandatory minimum inspection milestone shall be as follows:

- Pre Clearing and Grubbing
- Post Clearing and Grubbing
- Sub Grade
- Bank Run Gravel
- Crushed Gravel
- Paving
- Completion

13.5 Prior to construction milestone one, or any site construction, the Applicant shall be required to schedule and attend a pre construction conference. Said conference shall be held at a mutually agreed upon location and be attended by the following persons at a minimum:

- Public Works Director or authorized agent.
- Town Planning Board or their designee
- The Applicant
- The Applicant's agents, contractor and/or engineer

13.6 All attendees shall receive a minimum seven day advance notice of pre construction conference scheduling.

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13.7 The Applicant shall supply an appropriate number of copies of the final and approved construction plans for distribution to responsible and interested parties.

13.8 After completion of the wearing course of asphalt and all slope work, the developer will submit as built plans to include the following:

- a. Plan view, including all right of way and easements, adjoining property boundaries with lot number, edge of shoulder, drainage, utilities, drives and other special features requested by the Town.
- b. Profiles of all highways.
- c. Statement from engineer designing the roads or other engineer acceptable to the Town that the roads were constructed according to the design as approved and to these regulations, or alternatively, listing all discrepancies and stating that they pose no threat to public health and safety and will pose no additional expense to the Town.
- d. Seal of licensed land surveyor preparing plan.
- e. As built plans must be updated if any additional work is required or done.

14. All applicants shall be required to prepare and submit a road bond estimate form.

- 14.1 A road way bond for all proposed improvements shall be calculated before any construction shall begin on the proposed road way.
- 14.2 Said road bond shall use the appended bond estimate form and unit prices.
- 14.3 Five percent (5%) inspection fee shall be based on total road bond work required from start to completion.
- 14.4 Actual road bond amount is due only upon request for building permits. Said bond shall be only for work remaining to complete proposed construction, unacceptable work and contingencies.

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15. All utilities shall be located under ground and shall be installed as near the right of way line as practicable and in no case shall be installed so as to be a hazard to the public.

15.1 No manholes, shut off or other surface structures shall be located within the pavement, whenever possible.

15.2 Existing Base Course of pavement which are disturbed for utility cuts will be replaced using the maximum requirements from Town trench permit. Finish course of pavement shall not be disturbed for utility cuts.

15.3 Water lines shall be installed on opposite side of road way from telephone and electric lines and in accordance with Town of Raymond, N.H. Water Department regulations.

16. The Town will not perform any maintenance on any road, including snow plowing, until the road is accepted by the Town.

16.1 The following are required for maintenance acceptance by the Highway foreman:

- a. Road construction must be substantially complete except for the wearing course of pavement. All incomplete items must be bonded.
- b. All subdivision, impact and inspection fees must have been paid.
- c. Full as built plans including profiles and engineers' statement must have been received and approved.
- d. A maintenance bond or maintenance agreement for two years after substantial completion, to cover latent defects must have been received.
- e. A copy of the highway plan and a deed transferring the right of way to the Town of Raymond must be recorded at the Rockingham County Registry of Deeds.
- f. Vote of the Raymond Board of Selectmen to accept the completed and dedicated roadway.