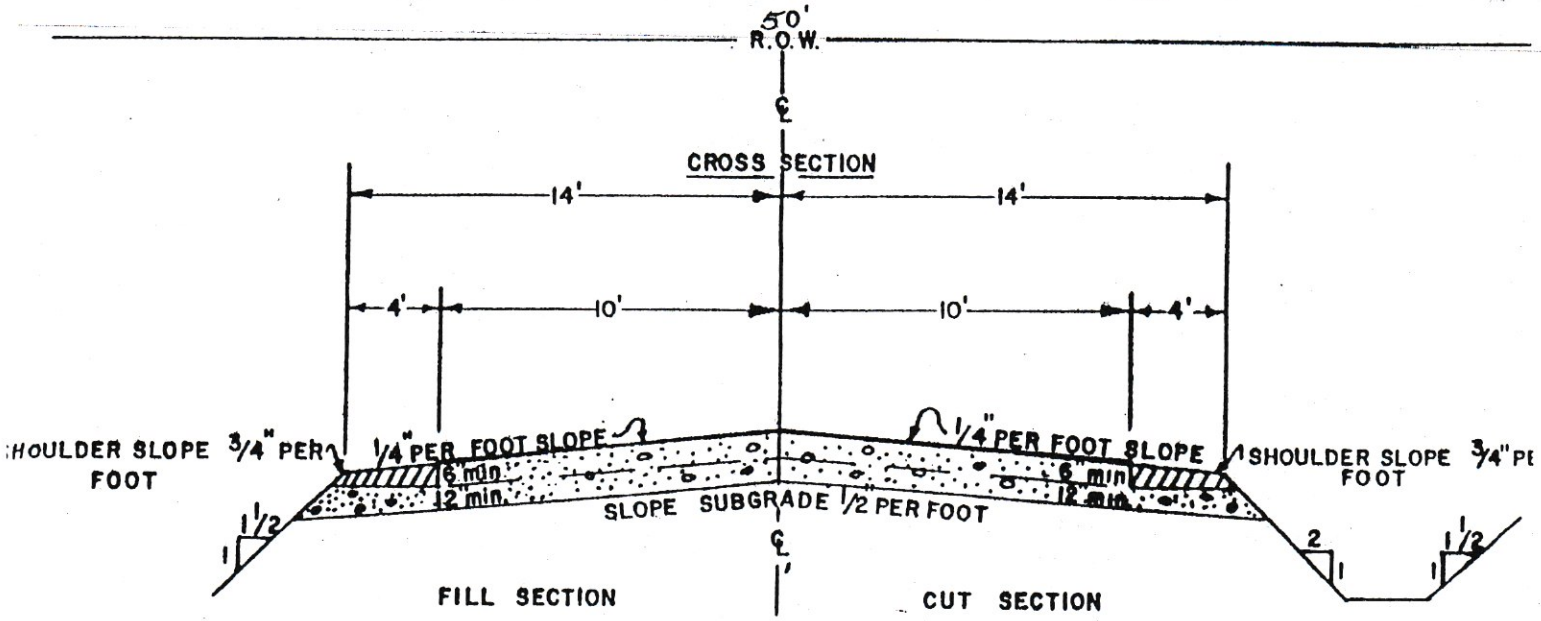
Adopted 7/11/89
Revised 9/12/89
REVISED 6/18/91

SPECIFICATIONS FOR
TOWN OF HECTOR ROADS

STANDARD CROSS SECTION DETAIL DRAWING



SECTION I

The following specifications will be required for any roads to be built and dedicated to the Town.

DEFINITIONS:

1. Cul-de-sac: A residential street with one end open for public vehicles and pedestrians access and the other end terminates in a vehicle turn-around.
2. Easement: A right granted to use certain land for a special purpose not inconsistent with the general property rights of the owner.
3. Right-of-Way: Land open for use as a street, alley or crosswalk, 50 foot minimum, deeded to the town.
4. Sight Triangle: The triangle formed by the intersection of two streets and a diagonal line, measured 20 feet from the intersection, connecting the two streets. The driver of a vehicle approaching the street intersection must have a line of sight free of obstacles.
5. Street: A general term used to describe a right-of-way, municipally or privately owned, serving as a means of vehicular and pedestrian travel, furnishing space for sewers and public utilities. The streets are classified as follows:
   A. Rural Street or Road: A rural street or road shall be considered as one on which the majority of lots fronting thereon; shall have a minimum net area of 25,000 square feet, and a minimum road frontage of 125 feet. The street or road shall have an average daily traffic volume of less than 250 vehicles per day.

5. Street: (continued)
   B. Local Residential Street: A street used as the principal means of access to adjacent residential properties serving only a comparatively small number of dwellings. The street will have an average daily traffic volume of less than 50 vehicles per day.
   C. Collector Street or Road: A street or road connecting local residential streets to each other, to community facilities and to primary or major thoroughfares, serving only neighborhood traffic. A collector street or road shall have an average daily traffic flow of 250 or more vehicles per day.

SECTION II

ROADWAY REQUIREMENTS:

A. General Requirements:
   1. All new and improved streets and roads shall be centered in the right-of-way.
   2. All streets and roads shall have a minimum grade along its centerline of 1% (one (1) foot per 100 foot run), and a maximum grade along its centerline of 10% (ten (10) foot per 100 foot run). In all cases the maximum grade shall not last more than 1500 feet. The centerline grade at an intersection shall not exceed 3% in any direction for a distance of 200 feet from the intersecting centerlines. If it is not feasible to maintain the grades stated, or achieve the grades, a request to waive the requirement must be submitted.
   3. Roadway cross grade slopes on the driving lane pavement shall have a minimum cross slope of 1/4 inch per foot and a maximum of 1/2 inch per foot.
   4. Shoulder cross grade slopes on paved shoulders shall be a minimum of 1/2 inch per foot and a maximum of 1 inch per foot. Gravel shoulders shall have a minimum cross slope of 1 inch per foot and a maximum of 2 inch per foot.
   5. Reverse curves shall have a tangent of at least 100 feet measured at the centerline. Preferably more on collector streets.
   6. All intersections should be designed to be at right angles (90 degrees). Waivers for other intersections must be approved, and none will be approved for less than a 75 degree intersection.
   7. Curbs, when approved, must be a minimum of 6 inches above road grade and should be offset a minimum of one (1) foot more than designed road widths. Curbs must be continuous around corners with a minimum 50 foot tangent of roadways.
   8. Cul-de-sac streets shall be over 400 feet and no more than 1000 feet in length and must have a minimum 130 foot diameter paved circle with a 150 foot right-of-way diameter minimum. (See diagram) The length of the cul-de-sac shall be determined by the emergency vehicle accessibility at all times and the topography of the land (road grades, pipe crossing, land slides, falling trees and rocks, etc.).

A. General Requirements: (continued)

9. All piped drainage must have a minimum 20 year life span and a minimum grade of one-eighth inch per foot.

10. ~~Curves shall not be less than 150 foot radius for local~~ residential streets and not less than 300 foot radius for rural roads and streets.

11. Road alignment between control points should be as high a standard as is commensurate with the topography, terrain, the design traffic and the reasonably obtainable right-of-way. Sudden changes between curves of widely different radii or between long tangents and sharp curves must be avoided. Insofar as feasible, the design should embody frequent passing opportunities. Where crest vertical curves and horizontal curves occur at the same location, there must be above minimum sight distance design to assure that the horizontal curve is visible as drivers approach. The road right-of-way must be wider at these locations.

12. Private roadways shall meet the same requirements as public roadways.

13. On all roads with grades greater than 10%, a stone and oil double surface treatment will be required with 1ST stone at .50 gals. per sq. yd.

14. Side slopes of a roadway must not exceed a 4:1 slope for stability and traffic safety.

15. All pipe inverts shall have a maximum depth of 10 feet below the road surface. See Page 4,#7C.

16. All utilities to be located in the Town right-of-way must be approved by the Town before the road is accepted.

17. All roads built to be dedicated to the Town must be completed in a two year period.

B. Specific Requirements:

1. Plans:

Roadway plans will include the following details in addition to the general road layout.

a. Detail of road sections where culverts are placed under a road.

b. Road cross section to include depth of sub-base, base, distance from edge of pavement to bottom of open ditch, depth of open ditch from edge of shoulder. If concrete gutters or swayles are planned, a typical road cross with the swayle must be provided.

c. Sub-surface drainage structures must have cross section of the buried pipes and catch basins as well as location on the road plan.

2. Street and Road Width:

a. Rural Street or Road: Minimum two (2) paved lanes each ~~ten (10) foot wide~~ with a minimum ~~five (5) foot wide~~ shoulder on each side of roadway. Eleven (11) foot lanes with four (4) foot shoulders are preferable.

b. Local Residential Streets: Minimum two (2) paved lanes each eleven (11) foot wide and four (4) foot shoulders and a ditch for runoff, or five (5) foot shoulders with surface gutters for drainage runoff.

c. Collector Street or Road: Minimum two lanes eleven (11) foot wide and one eight (8) foot parking lane. A minimum sixty (60) foot right-of-way.

B. Specific Requirements: (continued)

3. Right-of-Way Widths:
Sixty (60) foot minimum. Larger right-of-way widths depend on drainage, maintenance, topography and future traffic growth resulting in more safety for the motorist and property owner and more economical maintenance. Within the right-of-way there will be no obstructions to line of sight such as trees, bushes, buildings, fences, etc.

4. Curve Radius at Intersections:
   a. Local and rural streets or roads - a 30 foot minimum at right triangles.
   b. Primary and collector streets or roads - a 40 foot minimum.

5. Alignment of Intersecting Streets:
Intersecting streets or roads shall meet at approximately a 90 degree angle. Never at an angle less than 75 degrees. Intersections must be aligned opposite each other coming onto the same street or road.

6. Sight Distances:
For the placement of intersections and private driveways.
   a. Streets or roads at 60 m.p.h., a minimum 600 foot.
   b. Streets or roads at 50 m.p.h., a minimum 500 foot.
   c. Streets or roads at 40 m.p.h., a minimum 400 foot.
   d. Streets or roads at 30 m.p.h., a minimum 300 foot.
   e. Streets or roads at 20 m.p.h., a minimum 200 foot.

These distances are presuming there is less than a three (3) foot change in vertical and horizontal curves of the approaching roadways for these distances.

7. Drainage Along Roadways:
Required on all roadways and streets.
   a. Open ditches must have a minimum grade of 2% and a maximum grade of 10% within the roadway. Some permanent kind of erosion control must be incorporated on all runoff grades. Grades of 5% or more must provide substantially more erosion control. All open ditches must be a minimum five (5) foot from the outside edge of the driving lane. All open ditches must be a minimum one (1) foot deeper than the outside edge of pavement to a maximum of four (4) foot. A concrete swayle may be utilized in place of a ditch, however, the design must be approved by the Town. If either can not meet the grade requirements, an alternate design can be submitted to the Town for consideration and/or approval.
   b. The side slopes of an open ditch will not be greater than 4:1 on the driving lane side of the ditch. The slope on the outside will not be greater than 3:1.
   c. All pipes under roads and driveways must have a minimum 12 inches of cover material above the pipe. The minimum driveway culvert size will be 18" in diameter. See Page 3, #A15.

8. Material Requirements:
All materials used in construction of a Town road must be approved by either the Town Engineer or the Highway Superintendent. The developer must provide a sieve analysis and a compaction test on the proposed materials prior to start of any construction. The source of the gravel must also be from a State approved site.

B. Specific Requirements: (continued)

8. Material Requirements (continued)

a. Materials used for the sub-base must meet the specifications as stated in para. 304-2.02 type 1 or 3 of the 1985 NYS Standard Specifications, as ammended.

b. Materials used for the base must meet the specifications as stated in para. 304-2.02 type 2 or type 4 of the 1985 NYS Standard Specifications, as ammended.

c. Stone utilized for surface treatment shall meet the requirements stated in para. 703.02 Table 703.05 of the 1985 NYS Standard Specifications, as ammended.

d. Oils shall meet the requirements of item number 702-3301, for limestone; and item number 702-4201, for native stone of the 1985 NYS Standard Specifications, as ammended.

e. Bituminous pavement materials shall meet the following requirements of the 1985 NYS Standard Specifications as ammended:

1. Base - Item number 403.13
2. Top - Item number 403.16

9. Sub-Grade:

The sub-grade under all paved areas, including ditch backslope, shall be brought to the true grade as indicated in the cross-section. All topsoil and organic materials shall be removed before preparation of the sub-grade. Any areas that are below grade shall be brought to grade with suitable compacted gravel materials and shall be adequately shaped. After bringing the sub-grade to shape, it shall be rolled with a smooth steel wheel roller weighing not less than ten (10) tons. After rolling, the surface shall be true grade in cross-section and any depression shall be satisfactorily eliminated. Any soft or unsuitable material shall be removed and replaced as directed by the Town, and again reshaped and re-rolled until there is no movement under the roller. Upon completion of compaction of the sub-grade stabilization fabric, approved by the Town, will be laid unless waived by the town.

10. Sub-Base Course:

The sub-base course shall consist of a minimum of 12 inches of clean bank-run gravel with no stone over 4 inches in diameter, with compaction requirements the same as the sub-grade. Placement of the material will conform to para. 304-3.01 of the NYS DOT Road Construction Manual.

11. Base Course:

The base course shall consist of a minimum of 6 inches of approved Type 2 or Type 4 (Modified) material which the sieve analysis shall be 2 inches or less, consistent with para. 304-2.01 of the NYS DOT Road Construction Manual. If an approved type 4 gravel is used, and has a fine content of over 7%, it must be stabilized with calcium chloride at time of placement. The base course shall be laid in courses of not more than 4 inches of compacted material at any one time, with proper rolling with a ten-ton roller at the completion of each course of gravel. All holes or depressions found in rolling shall be filled with gravel and the surface shall be re-rolled until it conforms to the lines and grades shown on the cross-section.

B. Specific Requirements: (continued)

11. Base Course: (continued)

In all cases, the course must be so thoroughly compacted that it will not weave under the roller. This course shall not be laid in excess of 500 lineal feet without being rolled and thoroughly filled so as to render it waterproof.

The Town shall determine the depth of the base course within the limits specified, dependent on field conditions.

In all cases, the materials used for the base course and the construction methods shall be carried out in accordance with said para. 304-3.01. Sub-grade preparation under the ditch backslope shall be consistent with the sub-grade furnished under the pavement areas.

After the base course has been completed, it shall be treated with calcium chloride at the rate of 1/3 or a gallon of 712-02 Type B per square yard. This course shall be left at least five (5) calendar months before applying the surface course to allow for settling. The contractor shall repeat the application as required by the Town, until the wearing surface (surface treatment or hot pavement) has been applied.

12. Grade:

Maximum 10% grade allowed.

13. Mandatory Surfacing:

The laying of the course will not be permitted until the base course has been in place for at least five (5) calendar months. No paving is allowed during the period from October 1 to May 1, or during any period when the temperature is below 60 degrees F or above 95 degrees F except with written permission of the Town.

Prior to laying this course, the base course shall be brought to line and cross-section, as shown on the plans, shall be thoroughly compacted and shall be approved in writing by the Town.

Option 1: Double Surface Treatment

The surface shall then be sealed by two (2) applications of one-half gallon per square yard of (State DOT approved) MS-2 type oil and followed by a coating of Number One crushed limestone at the rate of approximately 30 pounds per square yard, per each course, immediately after the spreading of the oil. Additionally excess loose stone must be removed prior to spraying the next coat of oil.

A wearing surface shall then be provided by an application of 1/3 plus (.35) gallon per square yard (State DOT approved) MS-2 type oil and followed by a coat of Number One A stone, at the rate of 20 pounds per square yard.

In situations where a concrete swayle is used for drainage, the seam where the concrete and the base meet shall be sealed.

Where finish grade on the drainage ditch is in excess of five (5) feet per 100 feet, the ditch shall be paved with bituminous materials as required and approved by the Town.

B. Specific Requirements: (continued)

13. Optional surfacing (continued)

Option 2: Bituminous Concrete Pavement

When this option is used, two layers are required; a base and a top course.

a. Base: The base course will be a minimum of 3 inches of item 403.13.

b. Top: On top of the base course of asphalt, a minimum of 1 inch of item 403.16.

c. Placement of the materials will be consistent with the NYS DOT Road Construction Manual.

14. Shoulders:

The construction of the shoulders shall conform to the same requirements as the construction of the sub-grade, sub-base, and base. The shoulders will be constructed at the same time as the road way utilizing the same material, placement and lift requirements.

15. General:

No open cuts in the roadway will be permitted after placing of surface courses except as approved in writing by the Town.

Street cross-section shall be consistent with the Plan attached unless otherwise approved in writing by the Town.

16. Performance Bond/Letters of Credit:

The Town may, at its discretion, require the purchase of a performance bond, a letter of credit or an escrow account in a form acceptable to the Town Attorney in an amount established by the Town for the purpose of making sufficient funds available to enable the Town to complete infrastructure improvements required of the development in conjunction with site plan or other approval.

17. Additional Requirements:

The Highway Superintendent has the power to require additional specifications if the situation demands at his discretion.

Town of Hector
Highway Department
5097 NYS Rt. 227
Burdett, NY 14818
607-546-5288

Project Address: _____

_____

_____

Owner: _____

INSPECTION OF ROADWAY SHEET

Each step of the roadway being built must be inspected by the Highway Superintendent as it is completed. The inspection place, time and person must be so noted and signed on the inspection sheet. The original sheet will be held by owner and Town having a copy of each inspection. A minimum of twenty-four (24) hour notice of inspection must be given.

SUB-GRADE:

Inspected by: _____ Date: _____
Location: _____
Section: _____
Weather Conditions: _____
Notes: _____
_____
_____
_____

SUB-BASE COURSE:

Inspected by: _____ Date: _____
Location: _____
Section: _____
Weather Conditions: _____
Notes: _____
_____
_____
_____

BASE-COURSE:

Inspected by: _____ Date: _____
Location: _____
Section: _____
Weather Conditions: _____
Notes: _____
_____
_____
_____

SURFACE COURSE:

Inspected by: _____ Date: _____
Location: _____
Section: _____
Weather Conditions: _____
Notes: _____
_____
_____
_____

RECOMMENDED APPROVAL: _____ Yes _____ No

BY: _____ Date: _____