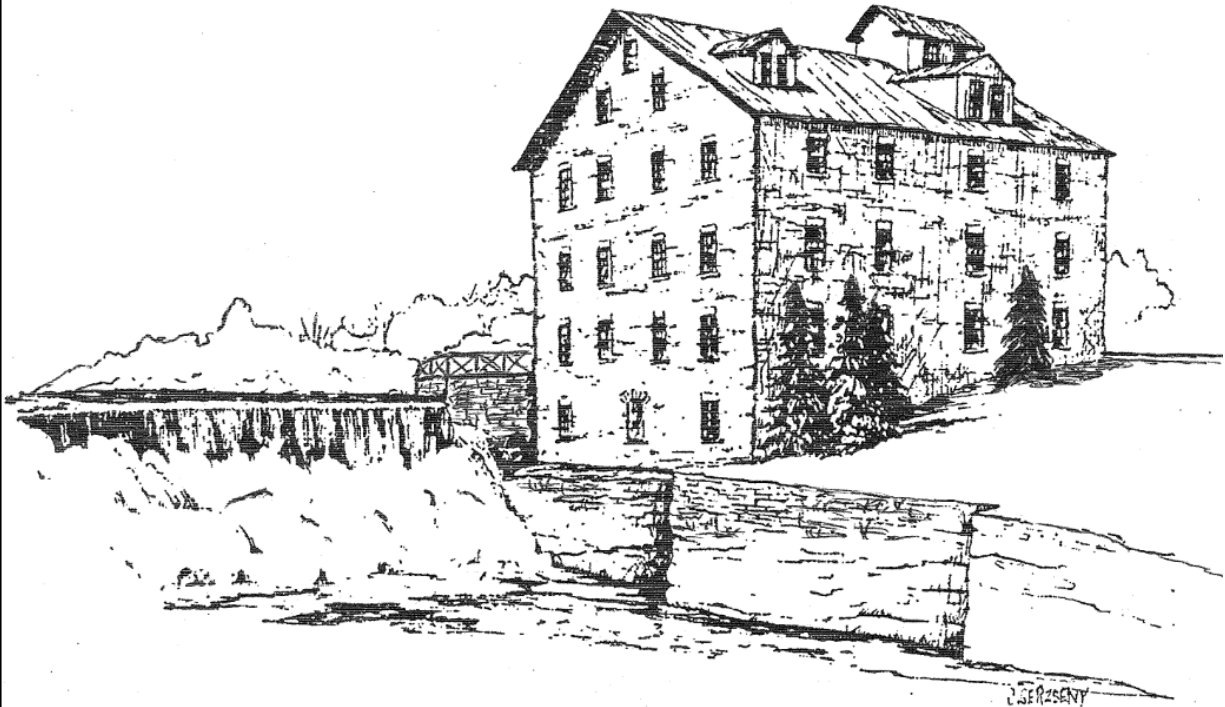


# TOWN OF MENDON

## DESIGN CRITERIA & CONSTRUCTION SPECIFICATIONS FOR LAND DEVELOPMENT

FEBRUARY 16, 2017



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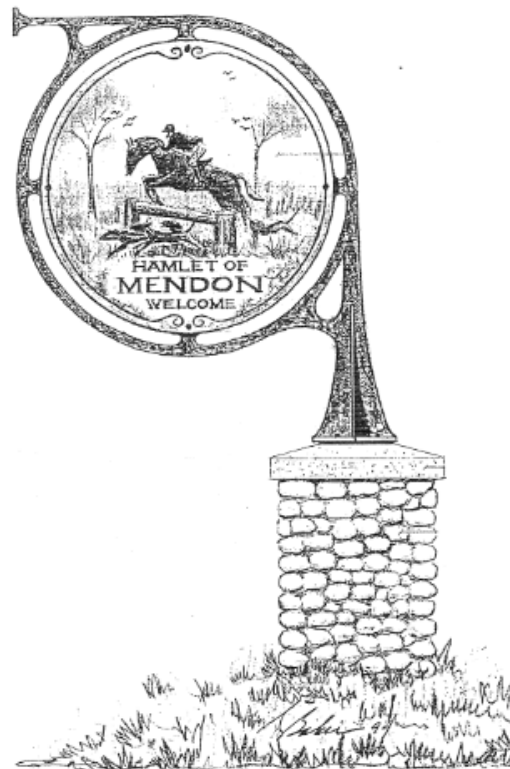
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**Reference**

Town of Mendon Design Criteria & Construction Specifications for Land Development prepared by Larsen Engineers.

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## **DESIGN CRITERIA & CONSTRUCTION SPECIFICATIONS FOR LAND DEVELOPMENT**

### **TOWN OF MENDON, MONROE COUNTY, NEW YORK**

#### **SECTION 1 - General Information**

##### 1.01 Purpose

The purpose of these specifications is to provide minimum criteria for the design and construction of improvements within the Town of Mendon, which upon the satisfactory completion thereof, may be offered for dedication to the Town of Mendon or may remain under private ownership of residents or developers for perpetual operation and maintenance. The information contained in this document shall be used in conjunction with the regulations provided in the Town Codes and shall apply to all improvements within the Town of Mendon.

The criteria established is intended to provide minimum standards and guidelines which may be upgraded to serve the best interests of the municipality. The information in this booklet is provided to aid in the submission of material in a uniform manner to expedite the various review and approval procedures.

These criteria shall govern in all areas of private, public, residential, industrial and commercial development. In the event that there is a conflict in the documents, the Town Zoning Code shall be the governing document in definition and details.

##### 1.02 Responsibility

It is the responsibility of the Developer to insure preparation of Plans sufficient to meet the standards and requirements herein incorporated. Said Plans shall be prepared by a professional, licensed in the State of New York, who shall have experience in design of land development.

The municipality and/or its representatives shall review the proposed Plans as to their compliance with the standards and conditions encountered while meeting the best interests of the Municipality.

It is the responsibility of the Contractor, acting for the Developer, to construct the facilities in conformance with the approved Plans, Town of Mendon's Construction Specifications, Standards, and approving agency requirements.

Construction observation may be required for some or all projects within the Town of Mendon and it is the responsibility of the Owner, Developer, and Contractor to coordinate with the Town of Mendon and Code Enforcement Officer prior to construction.

The final results of the project remain the prime responsibility of the Owner and until the development is satisfactorily approved by the Town of Mendon, said development shall not be accepted for dedication. If required, the Design Engineer shall provide a certificate of completed construction to the Town of Mendon and the approving agencies.

### 1.03 Building Permits

Building permits shall not be granted until the following items have been completed that apply to the proposed project:

1. An approved subdivision plat or easement map(s) are filed at the Monroe County Clerk's Office.
2. An approved site plan, with agency signatures, is on file in the Town Building Department.
3. Special Use Permit has been obtained.
4. Area variances or use variances have been granted.
5. Letter of credit or Bonds are established.
6. Application or outstanding fees have been paid.

#### 1.04 Dedication of Improvements

All utilities proposed for dedication to the Town of Mendon or to an Approving Agency (Monroe County Water Authority, RG&E, etc...) shall be completed, tested and approved prior to individual hookups being permitted.

Streets proposed for dedication to the Town of Mendon shall be considered only when 60% of the lots have been issued a Certificate of Occupancy OR after seven (7) years have passed with all proposed improvements completed in accordance with the approved plans and procedures outlined within the following document and Town Code. A two (2) year Maintenance Bond will be required upon request for dedication to insure the Town against unexpected maintenance and defects that may appear.

#### 1.05 Utilities

Public utilities (storm sewer, drainage swales, water, gas, electrical, street lighting, or other public utilities) are encouraged to be placed within a streets right-of-way in lieu of areas immediately adjacent to the right-of-way via easements. All public and private utilities shall be required to be placed underground. It is the responsibility of the developer to notify the utility provider of these policies. Private utilities shall be placed outside of the public right-of-ways.

Proposed public utilities shall be sized to accommodate future capacity and growth. The developer shall work with the Town and approving agencies on a projected capacity. Where proposed developments abut adjacent lands suitable for future development, utilities shall be installed up to the adjacent property line. If required, easements shall be granted to the Town for access and maintenance purposes.

Public watermains proposed within the Town of Mendon shall be required, at a minimum, to extend along the entire parcel frontage to the adjoining lot. Only under special circumstances shall this be waived (Major drainage channels, high bedrock, stream crossing, etc.) Prior to waiving this requirement, formal review between Monroe County Water Authority and the Town of Mendon will be required. The developers will also be

required to notify residents within 1 mile that public water is being proposed within the project area and the potential for connecting into public water may be available with participation on their part.

Lighting, Drainage, Water, or other districts may be required by the Town. Where required by the Planning Board, the developer shall first be responsible for the installation of the utilities in accordance with the Board's condition of final approval. Once installed and operational, the Town Board shall thus be requested to take action to create the necessary districts. All costs associated with District Formation shall be paid by the developer.

Where proposed development abuts adjacent lands suitable for future development, utilities shall be installed within the site seeking approval up to the property line and an easement granted to the Town for access and maintenance purposes.

The Town of Mendon does not control or maintain sanitary sewer systems within the municipality. If proposed within the boundaries of the Town of Mendon, the developer or resident is responsible for obtaining approval from the controlling agency and notify the Town of Mendon regarding the proposed project. Elements of the proposed project may require additional review and approval by the Town of Mendon prior to authorization to proceed.

All utilities proposed for dedication to the Town of Mendon or to an Approving Agency (Monroe County Water Authority, RG&E, etc...) shall be completed, tested and approved prior to individual hookups being proposed. All public and private utilities shall be required to be placed underground.

#### 1.06 Driveways

All entrances onto a Town, State, or County Road shall be reviewed by the Town Highway Superintendent prior to establishment. Applications should include a plan and profile of the proposed driveway location. Application to State and County Highway Departments will also be required prior to approval. See accompanying sections for additional details.

### 1.07 Road Construction

Due to the general soil conditions within the Town and normal construction sequences for development, the following procedures shall be followed:

- a) Binder material shall not be placed prior to the completion and approval of all underground utilities and inspection of the base by the Highway Superintendent.
- b) The weather and seasonal limitations as specified under the Standard Specifications of New York State D.O.T. shall apply for placing of bituminous mixtures.
- c) No Certificates of Occupancy will be approved until the binder surface has been constructed.

### 1.08 Haul Roads

Haul roads are temporary roads built to facilitate the movement of people, materials and equipment along the route of a job off of existing public roads. Haul roads may be required by the Planning Board, when applicable upon review with the Town Highway Superintendent and/or Town Engineer. All vehicles 10 tons or more are required to use the haul roads. Performance bonds may also be considered as an option in lieu of construction of a haul road for necessary repair and maintenance of existing public roads.

### 1.09 Mailbox & Post Placement

Pressure treated wooden posts minimum 4"x4" should be installed a minimum of 2' back from the edge of pavement. The box shall be installed at a minimum height of 42" and no more than 48" from the ground surface. If you are installing a decorative mailbox, consider replacing it during the snow season with a standard mailbox. Plastic/fiberglass is prone to become brittle in cold temperatures and is more susceptible to breakage. Although every effort is taken to avoid



post/mailbox damage, it occasionally occurs when roads are plowed. The Town of Mendon's policy is to replace any mailbox damaged by the Highway Department with a standard metal mailbox and 4"x4" treated wooden post. Attached in the appendix are some suggested installation details.

#### 1.10 House Number

Shall be installed in accordance with the NYS Building Code Requirements.

#### 1.11 Street Names

Names shall be sufficiently different in sound and spelling from other names in the Town of Mendon and post offices contiguous to the Town of Mendon so as not to cause confusion. A proposed street, which is a continuation of an existing street shall bear the same name.

All proposed dedicated streets shall be reviewed first by 911 and the Town of Mendon prior to approval.

#### 1.12 Financial Guarantees

The following guarantees will be required:

##### A) Letter of Credit

Prior to construction, the Town of Mendon shall require the developer to provide a surety (Letter of Credit or Performance Bond) in favor of the Town for all proposed improvements to be dedicated to the Town or those items needed to closeout construction. The irrevocable letter of credit shall be submitted by the developer in an amount determined by the Developer's Engineer and approved by the Town Engineer.

The amount shall include but not be limited to the following items:

- 1) Mass Grading.
- 2) Roads, gutters, sidewalks, trails, cul-de-sacs, temporary turnarounds, storm sewers, stormwater management facilities, landscaping, erosion control, street signs, monuments, Record Maps, potential construction cost increases, etc.
- 3) Contingency Factor 10%
- 4) Owner's Guarantee 5%
- 5) Inspection 10%

B) Maintenance Guarantee and Method of Release of Funds

An irrevocable Letter of Credit, bond, cash, or a certified check shall be provided guaranteeing the maintenance of improvements against deterioration traceable to inadequate installation of materials in the amount of 10% of the total Letter of Credit amount for a period of two (2) years after acceptance by the Town. The release of the financial guarantee will not be accepted until the entire project is ready for dedication. See accompanying sections for additional details.

1.13 Record Map Information

Prior to acceptance of utilities and dedicated features by the Town or Approving Agencies, the developer shall submit a final record map to the Town Engineer for review and approval. This plan shall be drawn to scale, include dimensions, angles and distances, (minimum of three (3) tie distances for laterals, curb shut-offs, and monuments), storm sewer inverts and top of grate, road profile and centerline elevations, final grading plan for ditches and stormwater management facilities. Filed easements with liber and page number shall also be provided.

1.14 Review of Plans

If construction has not commenced within 12 months after final approval, the plans must be resubmitted for completeness and conformance with current regulations.

## **SECTION 2 - Design Criteria**

### 2.01 Sewage Disposal Systems

#### A. Individual On-Site Wastewater Treatment Systems

1. Individual on-site wastewater treatment systems must conform to the minimum requirements established by the Monroe County Department of Health and obtain approval prior to construction.
2. No person shall alter, repair or extend an on-site wastewater treatment system in Monroe County unless a permit has first been obtained.
3. In the event of septic system failures the Monroe County Department of Health and Town of Mendon shall be notified.
4. Septic systems shall be designed by a Licensed Professional.
5. Special circumstances may require plumbing and proposed designs to accommodate future sanitary sewer connection points.
6. 50% future expansion areas for absorption fields shall be provided on each lot and shown on the site design plans meeting minimum setback requirements.

#### B. Alternate Systems

The following additional restrictions shall apply to alternate septic systems approved by the Monroe County Department of Health.

1. Taper sections on any fill or built-up system shall terminate or tie into existing grades a minimum of 100 feet from any property line.
2. Fill limits shall include 50% future expansion area.

## 2.02 Storm Drainage Systems

### A. General Design Criteria

This section is to provide guidance for the design of storm drainage facilities within the Town of Mendon. These facilities shall be designed to collect and transport the run-off from streets, lawns, paved areas, roof areas, and upstream areas while meeting the Town of Mendon and NYSDEC requirements. The developer is required to follow the most current edition of the New York State Stormwater Management Design Manual and the latest version of the State Pollutant Discharge Elimination System ("SPDES") General Permit for stormwater discharges from construction activities and submit a Notice of Intent (NOI) form to obtain permit coverage. A copy of the NOI and SWPPP are to be provided to the Town of Mendon prior to submitting to NYSDEC for review and approval.

Projects located within the Irondequoit Creek Watershed shall comply with the threshold requirements established and most current manual edition. Special circumstances, as determined by the Town Engineer or Code Enforcement Officer may permit these requirements to be waived. All projects disturbing soil in excess of one acre will need to adhere to the NYSDEC requirements noted above.

In general, the preservation of natural watercourses is preferable to the construction of drainage channels and wherever practical such natural watercourses should be preserved. Storm sewers and drainage facilities shall be based upon a design flow with the minimum return interval of ten (10) years. The design of natural watercourse channels shall depend upon the drainage area according to the following table:

#### DESIGN RETURN INTERVALS FOR NATURAL WATERCOURSES

<u>Drainage Area</u>	<u>Recurrence Interval</u>
Above 20 square miles	100 years
Between 4 to 20 square miles	50 years
Less than 4 square miles	25 years

Storm drains and channels shall be designed and provided to adequately convey the anticipated runoff from the development, as well as, all contributing area upstream or uphill from the development in question. The minimum size piping used for storm drains shall be twelve (12") inches in diameter, except that catch basin crossovers may be eight (8") inch diameter piping.

The rainfall intensity curve shown in the Appendix of this manual shall be used for computing anticipated rainfall. The minimum coefficient of runoff to be used is 0.2. Runoff within the subdivision shall be computed by the Rational Formula, TR-20 or other computer modeling software using the "10 year storm". Design of major channels or piping systems conveying water through the subdivision shall be designed using the "25 year storm". Time of concentration to first inlet shall be taken as not less than five (5) minutes and not more than fifteen (15) minutes. The design engineer shall give particular attention to time of concentration in hilly areas. Analysis of the time of concentration shall be submitted to the Town for review and approval.

Open channels serving as main drainage ways normally will not be accepted by the town where, by engineering design, it has been established that the future flow (under conditions of full development) could be conveyed in a pipe system, up to and including a size of forty-eight (48") inches in diameter or equivalent. Where a forty-eight (48") inch diameter pipes system is not adequate, the town may require an eight (8") inch thick concrete gutter of adequate width, based on required capacity of the drainage way, to substantially contain flows. The concrete gutter shall be constructed as per the standard details provided herein. The developer's engineer bears the responsibility of providing technical design data in this regard, which shall be submitted to the Town Engineer for approval.

The developer's engineer shall be responsible for furnishing, as part of their plans to be presented before the Planning Board, full and sufficient calculations and details of all hydraulic structures. This includes, but is not limited to, cross sections of drainage channels, special manholes and all such other items as may be necessary to

establish fully the methods and materials to be followed in construction.

The developer's engineer shall design the vertical control of their subdivision so that surcharge of storm drainage systems will not cause a backup or flooding of basements. This will normally require that cellar drains not be connected to the storm drainage system unless (a) the cellar floor is higher than pavement grade in order that the street drainage system can run fully surcharged or (b) that basements drainage discharges through a sump pump and check valve.

In the design of storm drainage piping systems, an "N" of 0.013 shall be used for smooth pipe and an "N" of 0.024 shall be used for corrugated metal pipe, unless the corrugated metal pipe has an approved "smooth" lining where "N" of 0.013 may be used.

Where open swales or creeks are involved, the banks shall be constructed with slopes no steeper than one (1) horizontal on three (3) vertical. If for any reason this cannot be achieved, the watercourse shall be piped.

Storm sewer piping along the side or rear of a structure shall be extended past the proposed residence.

B. Accommodations for House and Lot Storm Drainage

Finished ground level adjacent to house foundation wall shall be a minimum of one (1') foot higher than the edge of pavement or shall provide a minimum slope of 2% away from the foundation to a swale, culvert, or other collection system. Provisions shall be made for draining positively the surface of each lot by proper grading and construction of swales, ditches or drains. These items shall receive the same careful design attention as the street drainage system.

Provisions shall be made for disposing of roof and basement drainage into the street drainage system. This shall be accomplished with the use of storm sewer laterals. When positive discharge from the basement drain cannot be obtained by gravity,

sump pumps with appropriate check valves shall be installed. Discharge points shall be a minimum of 20 feet from a property line and have rip-rap protection and screening.

Where storm sewers are not available, roof and basement drainage shall be discharged to splash blocks. Discharge points shall be a minimum of 20 feet from a property line and have rip-rap protection. No laundry, sanitary, or kitchen wastes shall be discharged to a storm drainage system. No drain connections from garage floors shall be permitted to enter drainage swales.

Storm drain laterals shall have cleanouts at maximum intervals of 100 feet.

Rear yard swales shall have a minimum grade of 2%. Where this cannot be provided, a concrete gutter is required. Under no conditions will a grade of less than 1% be allowed for drainage swales.

Yard inlets shall be provided along swales to collect runoff from a maximum distance of three (3) lots or four hundred (400') feet (in any one direction), whichever is less.

C. Stormwater Management Facilities

Stormwater management facilities, sedimentation basins, infiltration facilities and erosion control measures in all new land development shall be provided where, in the judgment of the Town Engineer and compliance with the latest NYSDEC requirements; it is felt necessary in order to provide proper drainage and/or erosion control.

Plan view and details are required to show the pond location, size, inlet structures, and outlet structures as well as any appurtenances. All stormwater management facilities shall be constructed with a minimum 1:3 side slope from base of pond to top of bank. If to be dedicated to the Town, a twenty-five (25') foot access easement shall be provided around all portions of said pond and pond maintenance road to allow access or the pond shall be located on lands dedicated to the Town of Mendon. If the facilities are not to

be dedicated to the Town, then a temporary access easement over the maintenance road, outfall structure and forebays are required to allow access to the facility during construction.

In designing the detention facilities, attention shall be given to the types of soils found in the site. The Town may require that the pond bottom be lined or constructed of impervious soils or manufactured sealants (i.e. Bentonite) to prevent seepage or piping of stored water along the underlying bedrock.

During design, the Town may require the Developer to provide a soils report done by a professional soils engineer to determine if the on site material meets the requirements for infiltration capacity or as a pond liner.

The Developer's engineer shall submit, with his final plans, drainage calculations justifying the size of pipes, channels, impoundment basins, and related structures.

Stormwater management facilities shall be required to mitigate the impact of land development to downstream properties and drainage systems. The increased rates of stormwater run-off may cause environmental problems downstream such as highly erosive velocities, flooding and over-topping of banks. The Town may require stormwater basins where deemed appropriate and to have these basins designed in a manner compatible with these specifications. The purpose of this regulation is:

1. To establish the basic general philosophy for these facilities;
2. To set forth a series of parameters or rules governing the design.

While the Town reserves the right to establish particular parameters in each individual instance, the general philosophy is to permit runoff from any particular development to an amount no more than would normally occur under a natural, undeveloped condition, for the particular design storm. The discharge from these facilities shall be at a rate equivalent to the discharge from the upstream area under a natural, undeveloped condition.



The Developer shall design all storm drainage improvements in conformance with the Town's requirements. Where on site detention/retention is not required, the Developer shall submit the equivalent fees for their share of any off-site facilities.

The Town reserves the right to establish other more restrictive parameters. For example, if the downstream area has been subject to floods in the past, even while the upstream areas were not developed, and if the Town deems it desirable and appropriate to remedy this situation, they may at their discretion, require an impoundment area of the size and type, which can assist in rectifying the downstream flooding situation.

The following represents the basic philosophy regarding stormwater discharge:

1. No developed area shall discharge more stormwater into adjacent culverts and channels than occurs under a natural undeveloped condition.
2. The flow capacity of channels and culverts immediately downstream from a development does not necessarily govern the adequacy of the total drainage system downstream
3. As one travels downstream in any given drainage basin (and, therefore, from any given development) the area contributing to any drainage channel is increasing and the drainage channel typically increases in capacity.
  - a) Culverts and channels downstream from any development may be able to handle the total runoff from that development alone, but this does not imply that said channels and culverts can handle the total runoff to that location.
  - b) If downstream facilities are known to be inadequate in size prior to development and therefore, flooding at certain times occurs, the proposed development may be required to significantly reduce proposed runoff rates and or make improvements downstream to accommodate the proposed development. Prior to design the developer should review

with the Town Engineer to evaluate and review the area for any known issues.

D. Engineering Procedures

In order to arrive at an engineering estimate of storm flows and proposed detention pond size, the engineer should proceed according to the steps listed herein. The Design Engineer may also be required to identify impacts of particular site drainage on the watershed as a whole. The use of computer modeling by developer's engineers is permitted. However, proper documentation of the variables and procedures for the software should be submitted to the Town Engineer for review and approval.

1. The design engineer shall design the stormwater facility in accordance with the following regulations:
  - a) Ponds located on streams shall be designed using the recurrence interval specified in the design criteria section.
  - b) Ponds located off stream shall be designed as per the following:
    - 1) With a direct discharge to the stream, use a ten (10) year storm
    - 2) With no direct discharge to the stream (i.e., discharge into piped system, culvert, etc.), use a twenty-five (25) year storm.
  - c) All ponds shall have an emergency spillway designed such that a one hundred (100) year storm can be routed through the pond without overtopping the banks.
  - d) Requirements of the New York State Department of Environmental Conservation shall be considered and shall be used in cases where they are more stringent than these regulations.

- e) All detention/retention facilities shall be designed to address the impacts of a 2 year, 10 year, 25 year, and 100 year storm.
2. The developer's engineer shall use existing topographic maps and the appropriate rainfall charts and graphs to determine the maximum expected natural rate of runoff ( $C=0.2$ ) for the design storms from an undeveloped site. Factors affecting this rate include slope of land, surface cover, area of drainage basin and the presence of lack of well-defined natural channels. This rate of runoff shall be the controlling allowable discharge from any development in the area under question for the given design storm. If downstream sewers, culverts or channels have a capacity of less than the derived rate, this downstream capacity shall control as the allowable discharge rate. The runoff coefficient for developed conditions shall be a weighted number based upon area of impervious surfaces.
  3. Design the collection system using the standard rational method, TR-20, or other methods as approved by the Town Engineer.
  4. With an area designated for the location of the pond, determine the maximum depth of the pond.
  5. Bench marks shall be set on outfall structure elevations.
  6. Design an outlet structure, which discharges water as a continuous function of head and which will discharge the maximum allowable flow at maximum pond depth. Lesser storms should discharge approximately proportional lesser flows.
  7. Provide inflow hydrographs for a number of design storms of different durations and make a straight line approximately to an outflow hydrograph starting with  $Q_0=0$  at  $t=0$  and assuming that good pond design is based on the outflow reaching its peak just as the inflow equals the outflow.
  8. Calculate the accumulated volume for each of the above cases. The one giving the greatest volume is the critical storm for this retention pond.
  9. If desired, make a more detailed analysis using the now determined critical storm and standard flood routing techniques. Otherwise, use the above estimated volume and size the area of the pond.

E. Flood Hazard Prevention

Flood hazard prevention shall include the control of soil erosion of land surface and drainage channels and the prevention of inundation and excessive ground water seepage by comprehensive site grading and the establishment of adequate elevations of buildings, building openings and roadways above the observed, anticipated or computed water levels of storm sewers, streams, channels, floodplains, detention basins and swales.

No alteration of the existing characteristics of the area shall take place without the specific approval of the regulatory agency and the Town Engineer as to the adequacy of the protective measures taken, if any. The effects of such development on upstream and downstream reaches of the watercourses, as well as adjacent properties, shall be defined by the applicant.

All development proposed within the special Flood Hazard Area as delineated by the National Flood Insurance Program and defined by the Federal Insurance Administration shall comply with the various regulations set forth by the Federal Insurance Administrator and the Town of Mendon.

No fill is permitted within a floodway fringe or floodway. Any filling within a floodplain shall be compensated with an excavated area that is 1.25 times the volume filled within the designated floodplain. The compensatory storage area shall be located in an area adjacent to the affected floodplain. No filling within a floodplain shall be allowed without a Floodplain Development Permit first being issued by the Town Code Enforcement Officer (CEO). Where developments are located in the lower reaches of a watershed, the Town Engineer may elect to waive all requirements for detention/retention facilities to allow runoff to pass through the area before impact of upstream runoff is observed.

F. Erosion Control

1. General

In order to ensure that the land can be developed without danger of flooding or erosion of downstream areas, the Town shall require the developer to follow the latest version of the New York State Standards and Specifications for Erosion and Sediment Control and MS4 requirements. The Town Engineer shall verify that the required procedures are being put into practice. Such procedures may include:

- a) Exposing the smallest practical area of land at any one time during development; no more than 5 acres of disturbance is permitted at one time without written authorization from the New York State Department of Environmental Conservation (NYSDEC).
- b) Installation of temporary vegetation and/or mulching to protect critical areas as soon as grading is complete;
- c) Installation of adequate drainage facilities to accommodate the increased runoff caused by changed soil and surface conditions during and after development. The developer's engineer shall show, as part of their submitted plans, the interceptor swales and sedimentation basins along the lower edges of all developments. Significant topographic data and design grades for the swales shall be shown on the plans;
- d) Fitting of the development plan to the topography and soils so as to minimize the erosion potential;
- e) Retention and protection of natural vegetation wherever possible;
- f) Installation of adequate protective measures when slopes in excess of 1 on 3 are graded; and minimizing such steep grading. This shall include geotextiles with organic material matting;

- g) Installation and maintenance of geotextile fabrics over catch basin, yard inlet, or outlet structures;
- h) Installation of other protective measures as required by the Town Engineer.

## 2. Design and Implementation

It shall be the sole responsibility of the developer's engineer to incorporate into the subdivision and/or site plans adequate methods of erosion abatement for approval by the Town Engineer.

This design shall be shown on the approved grading plan and consist of, but not limited to staked straw bale buffers, sediment basins and silt fence. The Town Engineer, or other field representative, reserves the right to modify these erosion control measures, if deemed necessary. Adequate funds shall be held in the Irrevocable Letter of Credit, Bond or Surety to assure that these systems are installed and maintained during the completion of all site work.

The design of an erosion control plan shall be in accordance with "Guidelines for Urban Erosion and Sedimentation Control" published by the NYS Chapter of the Soil and Water Conservation Society. The Town Engineer, or other field representative, reserves the right to modify or order periodic maintenance of said erosion control measures.

If when determined by the Town Code Enforcement Officer, Highway Superintendent and/ or the Town Engineer, that any part of the erosion control plan has not been implemented; the Town Code Enforcement Officer may place a STOP WORK ORDER on the project until the deficiency has been brought into conformance.

If any portion of the erosion control devices fail, causing downstream siltation, the developer shall bear the cost for any associated clean up or removal of silt from drainage

ways, culverts, or ponds. The Town reserves the right to hold contingency money to insure proper remediation.

G. Storm Drains

1. Minimum pipe size - 12 inch diameter
2. Minimum velocity when flowing full - 3 fps
3. Maximum manhole and catch basin spacing - 300 lineal feet.
4. In general, only natural waterways may be continued in open channels. Street drainage and other parts of a storm sewer system shall be in closed conduit. When gradient and tributary runoff require conduit greater than 36 inches in diameter, then open channel design may be considered after review by the municipality.
5. All pipes shall be smooth bore.

H. Storm Laterals

Laterals installed to the right-of-way or easement line shall be a minimum of 6 inches in diameter. Sump pumps and roof runoff will be required to discharge to storm laterals or, in the absence of storm sewers, to splash pads directed to side or rear yard drainage swales.

I. Catch Basins

Catch basins shall be placed at all low points and intersections with maximum spacing of 300 feet. Catch basin leads shall only be connected to the storm sewers at manholes except in those areas where the storm sewer is 24 inches in diameter or greater.

J. Storm Manholes

Storm manholes shall be designed to accommodate the pipes entering and exiting the structures. A schedule of manhole diameters shall be provided on the final plan.

K. Drainage Easements

Drainage easements shall be provided when requested by the Town. The minimum easement width shall be 25 feet. Where open channel drainage is permitted, easements shall be of a proper width to permit adequate maintenance as approved by the Town.

2.03 Watermains & Services

All work and materials for dedicated or private watermains and services shall be in accordance with the Monroe County Water Authority requirements.

2.04 Grading

A. General

The finished grading on developed lands shall provide for the effective removal of storm water runoff to a drainage system. In general, the Design Engineer shall try to establish a finished grade at the structure line to permit a minimum of 2.0 percent grade away from the structure to the drainage system.

Drainage shall generally be to side or rear lot swales provided:

1. Swales are of a proper cross-section to permit ease of maintenance by the individual owner.
2. Easements are provided for access and/or maintenance where necessary.
3. Where multi-lot grading is proposed, all swales along future common lot lines and mass grading required for positive drainage shall be installed prior to issuance of any Certificate of Occupancy within the development. Easements will be required in this instance to cover all affected lots.



B. Grading Plan

A Grading Plan shall be submitted, with the final plan for any development, showing at a minimum the following items:

1. Existing contours.
2. Proposed finish contours.
3. Spot elevations of proposed finish grades at key locations.
4. First floor and garage floor elevations.
5. Minimum elevations of any architectural opening where flood hazard areas exist.
6. Culvert invert elevations.
7. All elevations shall be established from USC&GS datum and the plan shall show a site benchmark.
8. Drainage flow directional arrows.

2.05 Driveway Design Requirement

Design and location of driveways shall be in accordance with Town Standards contained in these regulations and the requirements of the New York State Department of Transportation Policy and Standards for Entrances to State Highways. These standards shall also apply to driveways entering on County and Town roads and streets.

A. Vertical Alignment

1. Maximum recommended grade shall not exceed 10%.
2. Finish grade at right-of-way line shall be not more than 2 feet above finish grade at centerline and the driveway slope within the lot shall not be greater than 10 percent.
3. A leveling area of 3 percent maximum adjacent to the right-of-way shall be provided which is a minimum of 30 feet in length from the edge of the street pavement.
4. Driveway shall slope away from the edge of road pavement at the same slope as the road shoulder, and the slope shall extend at least the full width of the shoulder so as not to create a bump

or depression in the shoulder area unless shown otherwise in Standard Details.

5. All driveways shall be designed so as to avoid the sheeting of surface water runoff onto an adjacent highway.

#### B. Horizontal Alignment

1. Minimum radius along the centerline of driveways shall be 60 feet.
2. Minimum radius along the inside edge of driveway shall be 35 feet unless shown otherwise in Standard Details.
3. Driveway pavement shall extend a minimum of 20 feet back from the edge of travel lane or to the right-of-way line whichever is greater.
4. Driveway turnaround areas, when practical, should be incorporated into all plans.
5. All driveways shall be designed so as to avoid the sheeting of surface water runoff onto an adjacent public highway.
6. All driveways are to be a minimum 10 feet from the property lines.
7. All driveways shall be a minimum of 50 feet from all intersections as measured from the shoulder.
8. All driveways shall be a minimum width of 12'.

#### C. Application Requirements

1. All entrances in to a Town highway will be approved by the Town Highway Superintendent. No entrance shall be established prior to the Superintendent issuing a driveway permit that stipulates any special conditions under which the entrance is to be constructed.
2. Written application including a plan and a profile of the driveway may be required by the Highway Superintendent for approval.

D. Fire Department Requirements

All common driveways regardless of length and individual driveways, which are longer than 500 feet, shall be constructed to support HS-20 loading and provide an emergency pull off area that is 20' x 80' at intervals of 500' for emergency access clearance from the edge of the driveway to any obstruction as per fire code. Plans and details of such driveways shall be submitted to the Fire Department for review.

2.06 Driveway or Road Culverts

New culvert installation shall be the responsibility of the landowner. The Town Highway Superintendent or Town Engineer shall approve the proposed location, size and material of such culverts.

The Town reserves the right to remove and/or install driveway or roadway culverts along existing Town roads to properly transmit surface drainage as determined by the Highway Superintendent.

Design and location of culverts shall be in accordance with applicable Town Standards and requirements of NYSDOT Policy and Standards for Entrances to State Highways. These standards shall apply also to driveways entering on County and Town roads and streets.

- A. Shall be provided along existing road frontage lots to properly convey roadside drainage. The culverts shall be set to the proper grade to allow the natural flow of water. All culverts set shall be subject to the review of the Highway Superintendent having jurisdiction on the road.
- B. Driveway culverts shall be no smaller than 12". N12 smooth-bore plastic pipe unless a waiver is granted by the Highway Superintendent.
- C. The culverts shall be a minimum of 40' in length and extend a minimum of 3 feet beyond the edge of the driveway pavement. End sections and riprap material or other energy dissipation material should be used as determined by the Highway Superintendent.

- D. Elevations to be set by U.S.C. & G.S. datum.
- E. Culverts shall have a minimum of 12 inches of cover.

## 2.07 Roads

The following designations will be used by the Town to classify roads and their respective design criteria.

- A. Town Collector
- B. Local (subdivision)
- C. Private (non-dedicated)
- D. Industrial road

The basic considerations of each road classification are as follows:

- A. Town Collector
  - 1. Provides connections to major roads and represents major traffic pattern throughout the Town
  - 2. Design speed of 55 MPH, unless otherwise approved by the Town
  - 3. High volume traffic
  - 4. Provides access to local roads
  - 5. Relatively low density of development abutting such a road
  - 6. Represents typical road built or reconstructed by the Town Highway Department
- B. Local (Subdivision)
  - 1. Densities as permitted by the zoning ordinance
  - 2. Design speeds of 35 MPH or less

3. Low volume of traffic
4. Individual driveways at regular intervals
5. Usually no effect on overall Town traffic pattern

C. Private (non-dedicated)

1. Low volume of traffic
2. Has no effect on overall Town traffic pattern
3. Design speed of 35 MPH or less
4. Maintenance covered by deed agreement or Homeowner's Association depending on number of units.

D. Industrial Road

1. Provides access to established and future commercial and industrial areas
2. Provides access to local roads
3. Relatively low density of residential traffic
4. High volume truck/tractor trailer traffic

Each of these roads has basic characteristics that may be varied to be consistent with unique proposals of development and construction. The individual variations of the conditions will not be permitted if they sacrifice design safety or maintenance of a proposed road type. Standard roads shall comply with the typical cross sections provided in this criteria.

## 2.08 General Road Design Considerations

A. Right-of-Way

1. Minimum width 60 feet for dedicated roads.

2. Private underground utilities to be located on easements beyond right-of-way limit.
3. All dead end streets shall be constructed to the property line and have a hammerhead turnaround designed in accordance with the standards in the Appendix of this manual, unless otherwise approved by the Town Highway Superintendent.

B. Horizontal Alignment

The following factors shall be incorporated into the design of each road type:

1. Sight distance must conform to minimum safe stopping sight distance per "Geometric Design of Highways and Streets" AASHTO Latest Edition.
2. Clear sight at intersections
3. No centerline intersection angles less than 75 degrees.
4. Minimum centerline radius of 150 feet.
5. Road pavement intersections shall have a minimum of 35-foot radius.
6. Cul-de-sacs shall not exceed 1,000 feet in length and end with either a cul-de-sac or a hammerhead turnaround (see Appendices K1 - L for design and radius requirements).
7. Access to future developments will be provided to property lines.
8. Tangent sections shall be used between curves to maintain the proper flow of traffic at design speeds.
9. The intersection of new subdivision roads or streets shall be at least 500 feet from existing or proposed intersections unless a variation is granted by the Town.
10. Street jogs with center-line offsets of less than 125 feet shall be avoided.

11. Residential entrances shall be a minimum of 20 feet wide unless a waiver is granted by the Town Highway Superintendent.
12. Commercial entrances shall be a minimum of 40 feet wide unless a waiver is granted by the Town Highway Superintendent.

C. Vertical Alignment

The minimum length of vertical curves shall be based upon current AASHTO distance, passing sight distance, riding comfort, and headlight sight distance. Vertical curves are required whenever changes in grade exceed 1 percent.

D. Sight Distance Requirements

Refer to the most current edition of AASHTO, *A Policy on Geometric Design of Highways and Streets*, for sight distance and stopping distance requirements.

E. Road Grades

1. Minimum - 0.7 percent with shoulders; 0.5 percent with gutters.
2. Maximum - 8.0 percent - Maximum grade may exceed 8 percent for short distances with engineering justification.

F. Leveling Areas

Leveling areas shall be incorporated at all street intersections for a minimum distance of 100 feet from the edge of the pavement and the grade shall not exceed 3 percent.

Leveling areas for driveways shall be a minimum distance of thirty (30) feet from the edge of highway right-of-way and the grade shall not exceed three percent (3%).

G. Road Widths

<u>Class</u>	<u>Pavement Width</u>	<u>Edge Treatment</u>	<u>Drainage</u>
Town Collector	28 ft. min.	5 ft. Shoulder	Roadside Swale
Local (Subdivision)	22 ft.	Gutter	Storm sewer
Private	12 ft.	3 ft. Shoulder	Roadside Swale
Commercial/Industrial	24 ft.	5 ft. Paved/ Gutter	Roadside Swale/ Storm sewer

H. Special Considerations

1. Roadside Swale - Where grades exceed 5 percent and/or unstable soil conditions warrant, the swales shall be designed to control flow velocities.
2. Underdrains / Stone Weeps – Will be required on all Town Collector, Local, and Industrial roads, unless proven to be unnecessary. The method used shall be subject to the review of the Town Highway Superintendent.

All pipe shall be perforated and shall be a minimum of four inches (4") in diameter.

3. Frontage Development - Where frontage development is to be approved along collector roads, the Planning Board may require that the roadside swale be enclosed in conduit along the fronts of the development. Such conduits shall be of the proper size to accommodate anticipated flows as previously outlined. A parallel access road may also be considered by the Planning Board and discussed during sketch plan submittal.



## 2.09 Road Design

### A. General Requirements

The Design Engineer shall consider the proposed use of the road or street when preparing a design. The following criteria is listed as minimum standards to be considered by the designer. It is the intent of these requirements to obtain a road and a base that is stable and capable of supporting H-20 loading to the sites.

### B. Minimum Design Standards for Each Road Type

#### 1. Town Collector

- a. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- b. One 3-inch lift of Type 1 crusher-run stone.
- c. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.
- d. Asphaltic concrete courses shall be 3 inches compacted of Type 3 binder and 1 ½ inch compacted of Type 7F top.
- e. Stabilized shoulder constructed of crushed stone with a single seal of 0.4 gal/S.Y. hot bituminous liquid with 25#/S.Y. of 1st stone.

#### 2. Local/Subdivision

- a. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- b. One 3-inch lift of Type 1 crusher-run stone.
- c. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.
- d. Asphaltic concrete courses shall be 3 inches of Type 3 binder and 1 ½ inch of Type 7F.
- e. Concrete gutter.

3. Private

- a. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- b. Fabric shall be used in all areas of unstable sub-base.
- c. A private drive off a dedicated road shall:
  - 1) Be designed to keep surface water flows from entering the travelway of the dedicated street.
  - 2) Provide soil erosion measures on the site as it is being developed.
  - 3) Provide an adequately sized culvert with end sections or headwall treatment.
  - 4) Finish grade and seed the area immediately upon completion of the private drive base.
  - 5) Provide a hard surface from the edge of the existing pavement at least 30 feet toward the developed site.
  - 6) No private drive should exceed a slope of 3 percent from the edge of the pavement to a point 30 feet into the property being developed to provide a leveling area.
  - 7) Maximum grade within the development site shall be 10 percent.

4. Commercial/Industrial Road

- a. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- b. One 3-inch lift of Type 1 crusher-run stone.
- c. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.

- d. Asphalt concrete courses shall be 3 compacted inches of Type 1 Base, 3 compacted inches of Type 3 binder and 1 ½ compacted inches of Type 7F top.
- e. 5' paved shoulders constructed of two 6 inch lifts of No. 2 and 3 crushed stone, one 6 inch lift of Type 2 crusher-run stone, 3 inches of compacted Type 3 binder, and 1 ½ inches of Type 7F top. See Appendix. Gutters with underground conduit may be installed/required instead of 5' stabilized shoulders.

NOTE: All depths are compacted thicknesses.

## 2.10 Excavation and Embankment

- A. Proof rolling in embankment sections may be waived by the Superintendent. Specific references to New York State Department of Transportation contract documents and agreements are not part of these specifications. The cost of furnishing all materials, labor and equipment necessary to satisfactorily complete the work will be at the owner's expense.
  - 1. Whenever unsuitable material or soft clay, quicksand, muck or wet spots are encountered in the subgrade area, the following shall be accomplished:
    - a. The unsuitable material must be removed to the limits determined by the Superintendent.
    - b. The area shall be properly drained with six- or eight-inch-diameter perforated underdrain as directed by the Superintendent.
    - c. DuPont Fabric Typar R-3401 or equal, approved by the Superintendent, shall be placed over the entire area.
    - d. The area shall be filled with stone or gravel material and compacted in 12" lifts.
  - 2. The Superintendent or Town Engineer must approve the subgrade prior to placement of underdrain and subbase materials.

3. The roadbed limits of work shall be six inches wider on each side than the total width of the designed pavement and gutter shown on the approved typical road section.
  4. Foundation courses for permanent roads shall not be used for access or haul roads in wet weather during winter or frozen conditions or at such times when the subgrade could intrude into the foundation course.
  5. Three classes of subgrade have been established based upon the following three soil classifications:
    - a. Soil Class 1: well-drained gravel or sand soils.
    - b. Soil Class 2: average clay/loam soils which are not plastic when wet.
    - c. Soil Class 3: heavy clay soils which are plastic when wet.
- B. The Superintendent will make the determination of subgrade class based upon the written test results provided under Materials, of these specifications.

## 2.11 Materials

- A. All materials to be incorporated into the work shall be approved by the Highway Superintendent.
- B. The Superintendent may require in situ soil testing to determine the character of the in situ soil. In situ soil testing will be by the owner or his representative, and the written results from the tests will be submitted to the Superintendent for evaluation and the determination as to soil characteristic and class. All required testing shall be at the expense of the owner. In the areas to be deeded to the Town of Mendon for highway right-of-way, the earthwork construction operations relating to excavation and embankments that require compaction shall not be performed from November 1 to April 1 except with the written permission of and under such special conditions and restrictions as may be imposed by the Superintendent.

- C. When testing of the in situ soils is required, the tests shall be conducted by a certified and competent soils testing laboratory.
- D. Any testing and certification of other materials to be incorporated into the work shall be done at the expense of the owner when requested by the Town.

## 2.12 Concrete Gutters

Concrete gutters with a maximum invert depth of 1-1/2 inches below the pavement edge of the gutter shall be provided along the edges of all local roads (and may be required along industrial roadways) to be dedicated to the Town of Mendon. A typical cross-section is shown in the Appendix.

## 2.13 Sidewalks

Where required by the Planning Board, sidewalks shall be concrete and installed in accordance with design standards contained in the Appendix. All sidewalk surfaces are to be continuous in accordance with the Americans with Disabilities Act. Where sidewalks are to cross driveways, the driveways are to be saw cut for the concrete sidewalk.

## 2.14 Monuments

Monuments per the Appendix shall be located at:

- a) P.C. and P.T. of all horizontal curves along one side of the right-of-way.
- b) Maximum of 1,000 feet along one side of right-of-way line.

### **SECTION 3 - Material Specifications**

#### 3.01 General Information

The materials intended to establish the degree of excellence are herein included and deemed to be of satisfactory quality for installation within the Town of Mendon. When new materials may be made available, their use may be permitted in limited test sections with the restriction that should these materials prove unsatisfactory through the test period as established by the Town, they shall be removed and replaced with those herein called for at no expense to the municipality.

#### 3.02 Storm Drain

##### A. Reinforced Concrete Pipe

Shall be supplied in conformance with ASTM C-76 Class II. Joints shall be of the bell and spigot type with compression type joint ASTM C443.

##### B. Polyvinyl Chloride (PVC) Pipe

Shall meet the requirements of ASTM D-3034 or ASTM F679, minimum wall thickness SDR 35 with elastomeric gasket joint, ASTM D-3212.

##### C. Corrugated Steel Pipe

All pipes shall be coated inside and outside and have joints made with connecting bands. Thickness gauge will be dependent on the load conditions, except that 16 gauge shall be the minimum allowable thickness.

##### D. High Density Polyethylene (HDPE)

All pipes shall be N12 smooth interior and shall conform to AASHTO M-294. All fittings shall conform to ASTM D1248.

E. Storm Laterals

PVC conforming to ASTM D-3034, with a wall thickness SDR-35 and a minimum pipe diameter of 6 inches.

F. Catch Basin Leads

Shall be a minimum of 12 inches in diameter; cross-over pipes are to be perforated, minimum of 8 inches in diameter.

1. Reinforced Concrete Pipe.
2. Polyvinyl Chloride Pipe (PVC).
3. Corrugated Steel Pipe.

G. Underdrains

1. Shall be a minimum of 4 inches in diameter, perforated polyethylene.
2. Required on all Town Collector, Local and Industrial Roads unless proven to be unnecessary by the Town Highway Superintendent.

3.03 Manholes and Manhole Ladders

A. Manholes

Precast reinforced concrete sections shall be manufactured in accordance with ASTM Specification C-478. Riser sections shall have tongue and groove ends and super "O" joints and gaskets conforming to ASTM C-443. Manhole bases may be pre-formed or poured in the field. Roof slabs shall be precast structural concrete, reinforced for H-20 loading and 30 percent impact loading. A 24-inch diameter hole shall be eccentrically located in the roof slab. In place of preformed openings in base sections, flexible manhole sleeves (rubber boots/A lok) cast directly into the base walls may be used with compatible pipe material.

All manholes shall be sealed inside and outside completely with two coats of heavy-duty water repellent protective coating which complies with ASTM Specification D-450, Type B.

Manholes constructed of other materials shall be considered for approval following a review of said manhole construction. In specifying these manholes, the Developer's Engineer shall submit adequate design data and/or shop drawings to substantiate the materials.

B. Manhole Ladders and Steps

Manhole ladders or steps shall be provided in all sanitary and storm manholes and shall be constructed of one of the following materials.

1. Non-corrodible, aluminum magnesium alloy ladders, with intermediate supports at 5-foot intervals.
2. Forged aluminum with drop front design and grooved tread surface.
3. Nylon / Co-Polymer Polypropylene with steel reinforcement manhole steps.
4. Cast iron steps shall not be used.

Steps shall be cast into the walls of riser sections and shall be aligned in each section to form a continuous ladder with rungs equally spaced vertically in the assembled manhole at a distance of 12 inches apart. The first step shall be no more than 30 inches from the manhole cover.

3.04 Frames and Covers

A. Storm Manhole Frames and Covers

Shall be Neenah R-1723 or Syracuse Castings 1009 with a vented cover or other approved equal. The inside diameter for clearance shall be a minimum of 24 inches.



B. Catch Basin Frames and Grates

Shall be rectangular, galvanized (ASTM A-123) and sized to fit gutter inlets or field inlets. The gutter grates shall be NYSDOT size no. 9 to fit the catch basin inside dimensions of 24" x 24". The minimum field inlet shall be NYSDOT size no. 9 to fit a field inlet of 24" x 24" inside dimension.

Catch basin manholes shall be set to allow a NYSDOT size no.9 grate to be installed.

Frames and grates shall be as specified in NYSDOT Specification Drawing 655-6R1 and Section 655 of the NYSDOT Standard Specification Manual. All grates shall be bolted to the frames.

3.05 Water Mains

All work and materials for dedicated or private watermains and services shall be in accordance with the Monroe County Water Authority requirements.

All public hydrants shall be painted yellow and all private hydrants shall be painted red. Hydrants not placed into service shall have a black bag placed over them.

3.06 Concrete Sidewalks, Curbs and Gutters

A. Concrete

1. Shall be a minimum of 4000 psi (28 day strength) Class A concrete conforming to NYSDOT Specification 609.
2. Air entraining admixture conforming to ASTM Specification C-260.
3. Bituminous expansion material shall conform to NYSDOT Specification.
4. Curing and sealing compound - conforming to ASTM C-309, Type I, Class B for curing and sealing.

5. Third party testing is required by the Town of Mendon.

3.07 Road Materials

A. Sub-Base and Base Courses

1. Crusher run stone shall conform to NYSDOT Specification Section 304, Type 2.
2. Aggregate shall conform to NYSDOT Gradation Table 703-4, size as specified.
3. Crushed Stone for Underdrain.  
NYSDOT 703-0201, Crushed Stone, consisting of equal parts of Size 1 and 2 washed crushed stone.

B. Bituminous Pavement

1. Binder course shall conform to NYSDOT Specification Section 403, Type 3 (Dense Binder).
2. Top course shall conform to NYSDOT Specification Section 403, Type 7F2.

C. Tack Coat

Shall conform to NYSDOT Specification Section 407. The grade shall depend on the specific use intended.

D. Premoulded Bituminous Joint Filler

Shall conform to NYSDOT Specification Section 705-07.

E. Underdrains

Shall be 4 inch perforated SDR-35 PVC per NYSDOT 706-15 or High Density Polyethylene Tubing per AASHTO M-252.

Mirafi is required to be provided under roadways unless determined otherwise by the Town Highway Superintendent.

### 3.08 Monuments

- A. Monuments shall consist of one-half inch (1/2") diameter reinforcing rod embedded in concrete four inches (4") in diameter by thirty inches (30") deep as shown in the Appendix. Manufacturer shall be Berntsen, 3/4"x3" rod, cap marked Town of Mendon R.O.W.
- B. All monuments shall be shown on finished plans.
- C. Monuments shall be set as a minimum at all exterior corners of the subdivision, on one side of each street and at all changes of direction in the right-of-way.
- D. Maximum of 1,000 feet at one side of the right-of-way.
- E. Monuments shall be set by a licensed land surveyor before the final Letter of Credit Release.

### 3.09 Equivalentents

The mention of apparatus, articles or materials by name and such specific description of same as is made herein are intended to convey to the Developer and his Contractor an understanding of the degree of excellence required. The Town of Mendon shall be the sole judge of the qualifications of the offerings and will determine all questions regarding the conformance of any offer outside the specifications.

For any project it will be assumed that the Developer will furnish the exact materials specified on the plans and specifications unless the Developer files with the Town of Mendon prior to any use in the development, the names and complete description of each article which he proposes to substitute for approval by the Town Board of Mendon.

Any costs incurred by the Town or its representatives associated with the verification of substitute equipment and materials will be the responsibility of the Developer.

## **SECTION 4 - Installation**

### 4.01 General Information

#### A. Pre-Construction Meeting

A pre-construction meeting shall be requested by the Developer and scheduled through the Town Development Office (Code Enforcement Officer) prior to the start of construction. The Developer, his Contractor and Design Engineer shall meet with all utility representatives, Town Highway Superintendent, Town Engineer and project observers to discuss the overall project, its impacts and schedules. A project construction sequence shall be presented in writing and discussed at this meeting.

The following are required to be completed prior to having a preconstruction meeting:

1. Site Plans shall have final Site Plan Approval and be signed by Planning Board Chairman. For projects requiring subdivision approval, a copy of the filed county map with liber & page number shall be provided to the Town.
2. A final SWPPP is to be completed and NOI submitted to NYSDEC.
3. All utility companies are to have received a copy of the signed Final Plans for review prior to attending the preconstruction meeting.
4. All agency approvals and/or permits are to be received and forwarded to the Town Development Office (Code Enforcement Officer).
5. A Letter of Credit, Bond, or other Surety reviewed by the Town Engineer and accepted by the Town Board.

#### B. Meaning of Drawings

The Contractor shall abide by and comply with the true intent and meaning of all drawings and of the specifications taken as a whole. If the Contractor believes that the construction indicated on the

project drawings will not, when executed, produce safe and substantial results or if it appears that there is any discrepancy in the drawings, it is his duty to immediately notify the Developer's Engineer, in writing, and to thereafter proceed only upon written order.

C. Protection of Property and Work

1. The Contractor shall conduct his operations to prevent damage to trees, garden plots, shrubbery, pipelines, conduits, buildings and other structures. The Contractor shall use all necessary precautions to protect the work and adjacent structures of all kinds during construction and shall so conduct his operations that at no time shall the work or such structures be endangered.
2. Responsibility and damage - the Developer shall be responsible for all parts of his work, temporary or permanent, until the project is complete and shall thoroughly protect all work, finished or unfinished, against damage from any cause as all work is at the Contractor's risk until the same is accepted by the Developer. The use of part or all of the work by the Town as provided for in these specifications shall not relieve the Developer of this responsibility. The Contractor shall be responsible for damage to life and property due to his operations and shall provide all necessary guards, rails, night lights, etc.

D. Construction Schedule

The Developer shall provide a construction schedule showing the order in which work will be completed at the preconstruction meeting. The schedule shall be reviewed at the preconstruction meeting and revised if necessary. No work will begin until an acceptable schedule is on file with the Town of Mendon. Hours of Operation within the Town of Mendon are the following:

1. Weekdays from 7:00 am to 7:00 pm.
2. Saturdays from 7:00 am to 6:00 pm

3. Sundays – No work is permitted.
4. No work is permitted on National Holidays

E. Permits

The Developer shall secure all necessary permits from the Town and approving agencies prior to the start of construction.

F. Existing Utilities or Structures

Before construction begins near any existing utility or structure, the Contractor shall notify the appropriate Owner of his intention and their instructions as to the protection of their property must be followed. Before commencing work, the Contractor shall determine the exact location of any structure or underground utility in order that the Contractor's project will not damage or disrupt these facilities.

The Contractor shall maintain site as needed to prevent entry of mud, debris, etc. into existing utilities or onto streets near the site as required.

All existing underground facilities shall be checked for damage before backfilling. In the event a facility is damaged, the Owner of that facility shall be notified by the Contractor so as to insure an acceptable repair and/or replacement.

G. Facilities for Observation

The Contractor shall furnish all reasonable facilities and aid to the construction observers for safe and convenient footways, scaffolds, ladders, etc., that may be needed for the examination and review of any part of the work. The Town of Mendon may stop work when the Contractor has no responsible agent on the project or if the Town feels that the Contractor is not performing the work in the best interests of the municipality.

Disorderly, intemperate and incompetent persons shall not be allowed on the project. The employees who neglect or refuse to follow the construction observer's instructions shall be permanently removed from the project by the Contractor. Failure to conform to these controls may warrant refusal of the municipality to consider the development for dedication.

H. Layout

It shall be the responsibility of the Developer to have the work carefully laid out by qualified surveying or engineering personnel in a manner that will assure accurate completion of the work.

I. Defective Work

The review of the work shall not relieve the Developer of any of his obligations to comply with the specifications. Any defective work shall be made good and any unsuitable materials which have been previously overlooked by the Town or its representatives shall be removed and replaced. If the work or any part thereof shall be found defective at any time before the final acceptance of the project, the Developer shall make good such defect in a manner satisfactory to the Town.

4.02 Grading

Completion of grading per the grading plan to within 1 foot of design grade shall precede any trench excavation. Such grading shall include house "pads", removal of enough material to form "box" for road base, surface drainage channels, required temporary situation basins, etc.

Construction brush and debris will not be buried on the site. Wood materials shall be cut, chipped, mulched or removed from the site and deposited in a permitted construction/demolition landfill.

#### 4.03 Trench Excavation

##### A. Excavation

Under this term will be included all excavation in trenches and pits, together with all backfilling and embankments that may be needed for the laying of the utilities and appurtenances or that may be necessary for the laying, changing and construction of any water, sewers, conduits, culverts, drainage ditches or water courses, or for any other incidental work that may be required or ordered by the Town or its representative.

It is the Contractor's sole responsibility to make sure that all work shall be conducted in strict accordance with the Federal Safety Standards of OSHA.

##### B. Width of Trenches

The trenches shall be of such width as may be required by the Design Engineer to insure proper laying and handling of the pipes and appurtenances, proper tamping and backfilling operations. In all cases, trenches should be kept as narrow as possible. The Contractor shall be responsible to provide sheeting/bracing or other requirements to insure the safety of his workmen in conjunction with the proper installation of the pipe.

##### C. Depth of Trenches

In general, the trenches shall be excavated to such a depth to properly install utilities to the grade established in the field by the Design Engineer. The depth of the excavation shall allow the proper bedding material to be placed under the pipe.

Any extra excavated depth by the Contractor shall be filled with compacted crushed stone to the proper grade required.

The trenches for water pipe shall, in general, be excavated to such depth as will provide six inches (6") of cover over the top of the pipe from the elevation of the greatest recorded frost penetration.



In no instance shall this thickness of cover be less than 5'-0" for PVC pipe from finished grade except in places where said pipe is required to pass over or under any existing pipes, other structures or will be within a cut area for future highway widening and as noted on the plans. Minimum cover when crossing under roads or highways shall be six feet (6').

D. Tunneling/Boring

Work shall generally be conducted in open trenches or excavations, with proper protection. Tunneling/ Boring shall be done only in areas specifically called for by the design plans with design details approved by the Town.

E. Blasting

No blasting is allowed unless approved by the Town of Mendon.

F. Bailing and Draining

The Contractor shall furnish a sufficient pumping plant and shall provide and maintain, at his own expense, satisfactory drainage whenever needed in the trench and other excavations during the progress of the work and up to final inspection. No structures shall be laid in water. Water shall not be allowed to flow or rise upon any concrete or other masonry or flow on adjacent lands. All water pumped or bailed from the trench or other excavation shall be conveyed in a proper manner to a suitable point of discharge and may require temporary siltation traps.

G. Bottom of Trench

The bottom of the trench shall be carefully graded and formed according to the directions of the Design Engineer, before any structures are laid thereon. When other instructions or design are not indicated, all trenches shall be excavated in a straight line. In hard pan, boulder formations or rock, the excavation shall extend at least 6 inches below the bottom of the pipe and a carefully

compacted bed of crushed stone screenings placed in the bottom of the trench up to the level of the spring line of the pipe.

It is the intention of this specification to achieve not less than Class "B" pipe bedding.

H. Suitable Bedding and Safety Backfill Material

It shall be the responsibility of the Contractor to generally utilize material excavated from the trench in order to provide the required backfill to meet the listed specifications unless crossing an existing or proposed road. Should the nature of the soil be such that the Contractor is unable to meet the above requirements by selecting, with reasonable care, from the excavated material, he shall provide the following materials, if so ordered by the Town.

Sand, stone or concrete cradle when the trench bottom does not provide sufficient bearing capacity or when specification requires specific bedding for certain utilities.

Sand encasement shall be ordered by the Town of Mendon when the trench is excavated in rock, boulders, or hard pan and none of the material above this level is suitable for backfilling the pipe.

4.04 Pipe Installation

A. Line and Grade

All pipes and appurtenances of whatever character shall, when set, conform to the alignments and grades required by the Design Engineer. All of the required special castings and other fixtures that are indicated upon the plans, or that may be required during the progress of the work, shall be installed in their proper positions. Saddle connections on sanitary sewer shall be concrete cradled. Wye connections may be stone encased with the approval of the Town of Mendon.

B. Laying Pipe and Castings

The Contractor shall use suitable tools and appliances for the safe and convenient handling and laying of all utilities and appurtenances. All pipes and castings shall be carefully examined by the Contractor for defects and no pipe or casting which is known to be defective shall be laid. All PVC pipe shall be glossy with the manufacturer's marks legible. If defective pipe or castings should be discovered after being laid, these shall be removed and replaced with sound pipe or castings. The pipes shall be cleaned before they are laid and shall be kept clean until they are accepted with the completed work. All ends of the pipes shall be watertight capped to exclude water and debris from entering the pipes except during the actual pipe laying.

Sewers shall be built to the lines and grades between manholes as shown on the project drawings. The Contractor shall provide sufficient grade control to properly install the pipe and appurtenances. Sewer pipe shall be laid upgrade with spigots placed in the direction of flow. All pipes shall be fitted together to form a smooth, even invert. Pipes disturbed after laying shall be removed and relaid.

After the pipe has been placed and adjusted to line and grade, the bed shall be trimmed to support the pipe for its entire length. Material used for bedding shall be thoroughly compacted under the bottom and the haunches of the pipe. The trench shall then be backfilled to above the top of the pipe and carefully compacted to hold the pipe in position.

C. Cutting Pipe

Whenever it may be necessary to cut any straight pipe for any purpose, cutting shall be done to the satisfaction of the Engineer by skilled workmen with proper tools, in such manner as will not cause any cracking of the pipe.

#### 4.05 Manhole Construction

##### A. General

Manholes shall be constructed of the size, type and at the locations shown on the Plans, or as designated by the Design Engineer in the field.

The manhole bed shall be excavated level and include a minimum of 6 inches of crushed stone.

Manhole risers and flat slab covers shall be precast reinforced units. Manhole bases may be precast "Monobase" or field poured with 3,500 concrete psi.

Eccentric cone sections may be used on the top of manhole riser sections if the inside height dimension from the bench wall to the bottom of the eccentric section exceeds 8 feet.

Interior and exterior concrete surfaces shall be sealed by the supplier and touched up or recoated by the Contractor with like material.

Any pipe entering a manhole shall be neatly cut with proper sharp tools before installation in the manhole. Pipe shall not be "chipped off" after installation.

All openings and joints in the manhole sections shall be completely filled once the sections are set, with non-shrink grout\* and after initial set, waterproofed on the inside and outside with a coal tar coating.

\*NOTE: When PVC is used all openings around pipes shall be completely filled with 100 percent epoxy non-shrink grout.

Before each barrel of the manhole is set, the joint shall be cleaned and the barrel correctly aligned, so that the steps form a continuous ladder. The first step shall be no more than 30 inches below finished grade and continue to the top of the bench wall.

It is the intent of these specifications to construct first-class manholes, which will exclude all ground water, by means of carefully constructed foundations, tight barrel joints and the coating of the inside and outside of the manholes.

B. Frames and Covers

The frames shall be firmly set in a bed of not less than one full inch of cement mortar and adjusted to the finished grade. The manhole frame may be set directly on the concrete roof slab, providing the top will be at the proper grade; otherwise, precast concrete spacers or bricks shall be mortared to the roof slab to raise the frame to the proper grade. A maximum of three courses of spacers or bricks shall be used to adjust the frames and grates to the proper grade.

C. Inverts

Inverts shall be constructed in all manholes. The inverts may be constructed of the mainline pipe or brick (Grade SS) and shall be the depth of the pipe. When PVC material is used, all brick, concrete or other masonry material that interfaces with the PVC shall be adhered to the PVC with 100 percent epoxy non-shrink grout. Manholes with 2 or more inverts shall have a smooth transition of flow.

D. Drop Manholes

Wherever the invert of the entering sewer is more than 2 feet above the invert of the outlet sewer, it shall be connected with a vertical outside drop with a clean-out pipe half bricked up. When drops are placed, the entire excavation around the drop pipe shall be filled with 3,000 psi concrete (or stone encasement with Town approval) extending not less than 2 feet along the main sewer.

The clean-out opening in the barrel of the manhole shall be cut in after the manhole wall pipe is in place and the joint between the clean-out pipe and the manhole wall shall be thoroughly sealed with cement mortar on the inside and bituminous joint material on the outside.

E. Shallow Sewer Manholes

Where any manhole is less than 4 feet from invert to bottom of roof slab, the Contractor is to provide a shallow sewer manhole. The

roof slab shall be precast structural concrete reinforced to withstand a concentrated H-20 load plus 30 percent impact. The slab shall be formed to fit into the ends of the vertical pipe and shall have a full bearing for its entire circumference.

F. Sealing of Manholes

All manholes shall be sealed with two coats of sealer as applied by the manhole manufacturer to the entire interior and exterior surfaces in minimum dry thickness of 11 mils per coat. Application shall be in accordance with the coating manufacturer's recommendations and shall be certified thereto by the suppliers. Before placement in the field, abraded areas shall be touched up with two coats by the Contractor. Covers and other exposed surfaces shall also be coated in the field. Improper materials or mil thickness shall be cause for rejection of manhole sections.

4.06 Catch Basins

Catch basins shall be constructed as shown in the Appendix or as shown on the plans for special conditions. Catch basins shall be constructed of precast concrete.

All catch basins shall be coated inside and outside with two coats of heavy-duty coal tar sealer.

4.07 Sewer Laterals and Water Services

Sewer laterals and water services shall be installed to the right-of-way (or easement) line for all lots. Each service shall be located with a two-inch by four-inch (2"x 4") hardwood or pressure-treated stake extending a minimum of three feet (3') above finished grade. The stakes shall be color coded in conformance with Industrial Code 53 to denote the type of service they represent.

Sewer connections on new sewer main installations shall be made with wye fittings only. Connections to an existing sewer main shall be made with approved saddles.

Select backfill shall be provided for all service trenches. Bedding and backfill quality shall be at the discretion of the Town representatives at the site.

#### 4.08 Backfilling and Finishing

##### A. General

Trenches shall be immediately backfilled following the installation of utilities unless specifically changed in writing by the Design Engineer. The roadways and sidewalks shall be left unobstructed, with their surface in a safe passable condition. The trench shall be tamped sufficiently to prevent settlement of or damage to existing or newly installed structures.

##### B. Backfill Immediately After Approval

Only select earth material shall be deposited around the utility and appurtenances covering them by hand for a depth of at least 12 inches above the pipe. This earth shall be thoroughly tamped as it is being placed so as to fill the lower portion of the trench thoroughly to give utilities a Class B bed for their entire length. The material must not be thrown down from above faster than the workmen below can properly distribute and compact it.

##### C. Restrictions as to Materials

No rock or frozen materials shall be placed in trenches within existing or proposed streets. Such material may be used in fields where immediate compaction is not necessary and at least 2 feet of select fill has been placed over the pipe.

##### D. Backfilling Pavement Crossings

All utility lines or laterals that cross existing or proposed streets shall be backfilled with crusher run stone conforming to NYSDOT 304-2.02 Gradation Type 2. Crushed or screened gravel may be used with the approval of the Town of Mendon.

Material shall be compacted in lifts of 1 foot maximum to the elevation of the road subgrade. From there the backfill shall conform to the material specifications for individual road sections.

In no instance shall spare native material be used for backfill to be excavated at a later date for crusher run stone backfill.

Backfill shall be compacted in accordance with Section 4.09.

E. Cleaning Up

All roadways, intersections, gutters, and sidewalks shall be routinely cleaned of accumulated debris, sediment and tools throughout the construction process.

As the work progresses or as directed by the Design Engineer, all rubbish or refuse, unused materials and tools, shall be removed at once from along and near the trench line construction.

Rough clean up along the route shall immediately follow installation procedures. Large spoil banks will not be permitted in developed areas.

Final clean up and landscaping shall proceed immediately after the installation, testing and approval of the facility. Erosion control measures must be maintained throughout the construction process and removed only upon the approval of the Town.

In all cases, the project site shall be restored to a condition equal to or better than that, which previously existed.

4.09 Compaction

Compaction densities specified herein shall be the percentage of the maximum density obtainable at optimum moisture content as determined and controlled, in accordance with AASHTO Standard T-10, Rodded Unit



Weight. Field density tests shall be made in accordance with AASHTO Standard T-238.

Each layer of backfill shall be moistened or dried as required and shall be compacted to the following densities, unless otherwise specified.

A. Select Fill

Under all existing or proposed roads, driveways, parking areas 95%  
All other areas 85%

B. Methods and Equipment

Methods and equipment proposed for compaction shall be subject to the approval of the Town. Compaction by rolling or operating heavy equipment over fill areas shall be conducted in a manner by which injury to existing utilities and structures shall be avoided. Any pipe or structure damaged thereby shall be replaced or repaired as directed by the Town at the expense of the Developer.

C. Testing

1. Field density tests may be ordered by the Town as necessary and will be paid for by the Developer.
2. The Developer shall furnish all necessary samples for laboratory tests and shall provide assistance and cooperation during field tests. The Developer shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.

Any areas found to be below required compaction densities shall be removed and replaced with new material at the Developer's expense. The methods of operation and/or the backfill materials shall be changed to meet required compactions.

Inadequate compaction shall be cause for the Town to issue a stop work order on a project.

#### 4.10 Testing of Underground Utilities

##### A. General Information

Upon the satisfactory completion of the installation of the underground utilities, the Contractor shall proceed to test each of the installed facilities as herein specified. These tests shall be conducted in the presence of the Town. No test will be accepted unless witnessed by the Town. Records and date of these tests shall be submitted to the municipality as part of the record drawing information.

Water used by the Developer during any testing procedures will be paid for by the Developer - all hydrants for water supply or testing use shall be operated by the Monroe County Water Authority.

##### C. Storm Drains

All storm sewers shall be flushed clean by the Contractor and in the presence of the Town the lines shall be lamped.

##### E. Defective Areas

In any areas where satisfactory results of applied tests cannot be obtained, the defective portion of the system shall be located and replaced with new material.

That portion of the system shall then be retested until satisfactory results are obtained. Use of repair clamps will not be permitted by the Town.

#### 4.11 Surface Improvements

##### General Information

The Contractor shall not proceed to construct any surface improvements, including roads, gutters and/or sidewalks until the underground system has been installed, tested and approved by the Town.

Careful attention shall be given by the Contractor to obtain the necessary compaction densities as specified. In general, the soils in Town of Mendon preclude ultimate compaction in a short period of time due to the high clay content in the soil. Therefore, paving of the top road surface may be delayed by order of the Town of Mendon for a period of seven (7) months or at least until a winter season has passed since the completion of the road binder course.

#### 4.12 Roads/Streets

##### A. Subgrade

The subgrade shall be graded to remove all unsatisfactory or unstable material. Where material is removed below the subgrade elevation, suitable granular material shall be used to bring the road to proper subgrade. Where ground water or poor soil conditions exist, the Developer shall be required to install perforated underdrain and crushed stone weeps to drain the base. The entire subgrade surface shall be thoroughly compacted according to NYSDOT Specification 203-3.12.

Fabric filter material shall be required by the Town of Mendon to stabilize the base or subbase before the Contractor proceeds with installation. This requirement may be waived by the Town Highway Superintendent upon submission of appropriate subsurface soil test results to prove that this fabric is unnecessary.

No movement shall be observed in the subgrade material as the roller passes.

When the subgrade is completed, the Contractor shall notify the Town Highway Superintendent and the Town Engineer for a base determination. Upon the review and written approval of the subgrade by the Highway Superintendent and the Town Engineer, the base material may be placed.

B. Base Material

Approved base materials shall be uniformly deposited and compacted in layers with a roller, according to NYSDOT Specifications. Rolling shall begin at the sides and continue toward the center and shall continue until there is no movement of the course ahead of the roller. After compaction, the top surface of this course shall not extend above the theoretical elevation for this course and when tested with a straightedge 16 feet in length, any bump or depression over 1/4 inch from the theoretical grade line shall be satisfactorily eliminated. When the base has been prepared to the satisfaction of the Highway Superintendent, the Developer may place the binder course. If base conditions are changed as determined by the Highway Superintendent before the binder is placed, he may order the Developer to seal the stone with a rapid sealing liquid asphalt emulsion as specified in NYSDOT Section 702-10 or 702-11 with 0.5 gallons per square yard as determined by the conditions and not more than 24 hours prior to placement of binder asphalt.

C. Bituminous Pavement

1. Binder shall be placed and compacted to a minimum finished layer thickness of 3 inches with a self-propelled asphalt spreader and rolled according to NYSDOT Specifications 401-3.06 and 401-3.12. Before applying the top course, any irregularities in the binder course shall be eliminated but at no time will "cold patch" or "winter mix" be allowed on the binder for repair work.
2. Before the surface course is placed, the binder will be cleaned by the installer and inspected by the Highway Superintendent and Town Engineer to determine the

condition of the pavement. It shall be necessary to apply a tack coat at the rate of 0.1-gallon/square yard before placing the surface unless this requirement is waived by the Highway Superintendent.

3. Surface Course shall be placed and compacted to a minimum finished layer thickness of 1 1/2 inches with a self-propelled asphalt spreader and rolled in accordance with NYSDOT Specifications 401-3.06 and 401.3.12.

D. Continuation of Existing Road

When construction of a road is continued from an existing road or previous developed section, the pavements shall be joined with a triangular cut of at least 15 feet from edge of the pavement to the centerline of the old pavement. The intent of this provision is to eliminate any grade difference and make a smooth riding transition.

All pavement joints shall receive a tack coat before placing the binder or top course.

E. Stabilized Shoulders

Stabilized shoulders shall be constructed to the dimensions shown on the typical sections. Construction methods shall conform to NYSDOT Specification 410-3.01. The base course shall consist of a wedge of crusher run stone with a single surface treatment.

G. Underdrains

Underdrains shall be installed in conformance with NYSDOT Specification 605 and underdrain filter Type 1 per NYSDOT Specification 605-2.02. The underdrain shall be laid on four inches (4") of compacted stone and require six inches (6") of stone above and around the pipe.

#### 4.13 Concrete Gutters and Sidewalks

##### A. Concrete Gutters

1. Concrete gutters shall be a minimum of 6 inches in depth and constructed true to the shape, line and grade on a thoroughly compacted base. The gutters may be constructed using a slip form method or in-place formwork.
2. Joints between sections shall be placed every 10 feet at right angles to the flow line and must be "wet struck" 1/8 inch wide and 3/4 inch deep. Full depth bituminous expansion joints shall be placed every 50 feet and at all structures or inlets.
3. Gutters shall be broom finished before the joints are struck and the finish shall be consistent throughout the project.
4. Gutters shall be cured and sealed by spraying with an approved curing and sealing compound at the rate recommended by the manufacturer.
5. One coat of curing and sealing compound shall be applied when the work is complete and another coat after the gutters have set for 48 hours.
6. The use of burlap or coverings for curing or protection is not acceptable until after the concrete has been sprayed and set.
7. Prior to final paving, the gutters shall be flooded and checked for horizontal and vertical line and grade and finish. If any gutters are found to be constructed in an unacceptable manner by the Superintendent of Highways, they shall be removed and replaced. They shall also be backed up with select fill (no cobbles greater than 3 inches) to help prevent any movement during paving.
8. Gutter replacements shall conform to the existing gutter regarding finish and color.

B. Concrete Sidewalks

1. Shall be designed to meet the Americans with Disabilities Act (ADA) requirements.
2. Minimum 4 inches in depth and constructed true to shape, line and grade. Sidewalks installed through driveways shall be 5 inches thick and be reinforced with 6" x 6" wire mesh (10 gauge). Concrete shall be minimum 4000 psi, Class A, air entrained.
3. Minimum width shall be 5 feet or to match existing.
4. The base shall be thoroughly compacted crusher run stone with a thickness of 4 inches. The base material shall extend 6 inches outside each edge of the concrete sidewalk.
5. A cross slope of 1/4 inch per foot shall be maintained for positive drainage toward street level.
6. Construction joints shall be wet struck at 5-foot increments and be 3/4 inch deep. Full depth bituminous expansion joints shall be placed every 25 feet and at all castings.
7. Sidewalks shall be broom finished and have troweled edges with a corner radius of 1/4 inch. The finish shall be consistent throughout the project.
8. Two coats of approved curing and sealing compound shall be applied. One coat immediately following the finish work and the second coat 48 hours later.
9. A 10-foot sidewalk easement may be required.
10. Crosswalks and signage shall be provided as per the ASHTO and NYSDOT standards and in accordance with ADA requirements.

C. Testing

1. The Contractor shall obtain in accordance with ASTM C-31 two samples from every other truck delivering concrete to the site and have the samples compression tested by an independent testing laboratory.

2. Results of these tests shall be submitted to the Town Highway Superintendent.

#### 4.14 Monuments

The monuments shall be installed at those locations shown on the approved final plan and as located in the field by a Licensed Land Surveyor. They shall be installed to a depth of at least 30 inches below finished grade with the top surface to be flush with finished grade. Upon the installation of the monuments the location shall be certified to the Town by a Licensed Land Surveyor as to their accuracy.

#### 4.15 Final Grading

Upon satisfactory completion of the utilities and roads, the entire area within the right-of-way shall be raked, graded and hydroseeded according to the approved plans.

The site Contractor shall be responsible for all work within the right-of-way while also maintaining the erosion control. In those areas where home building has started, clean up and site maintenance will then become the responsibility of the builder.

Debris and spoil banks created during the development (not home building) of the site shall be entirely removed and/or disposed of from the site. No burying of debris or material shall be allowed on approved or proposed building lots.

#### 4.16 Final Cleaning

During the time period between initial installation and testing and acceptance for dedication, debris and/or sediment may accumulate in the utility systems. The Developer shall be responsible to flush and remove this debris from the system prior to the final inspection for dedication.



#### 4.17 Signs

The Town of Mendon Highway Department will be responsible for the installation of street signs on all roads to be dedicated as soon as construction begins provided all fees have been paid by the developer. Cost for the street signs and posts will be the requirement of the developer.

#### 4.18 Crosswalk Requirements

Are to comply with the Manual Uniform Traffic Control Devices (MUTCD) requirements.

## **SECTION 5 - Requirements for Dedication and Project Acceptance**

### 5.01 General

All construction within the right-of-way or on lands to be dedicated to the Town shall be complete with final site reviews and written approvals of the construction by the following:

1. Monroe County Water Authority
2. Town of Mendon Code Enforcement Officer
3. Highway Superintendent
4. Town Engineer

### 5.02 Monuments

Monuments shall have been set in their required locations and certified to the Town.

### 5.03 Grading

Final grading and hydroseeding shall be completed within the right-of-way and all spoil removed from the site.

### 5.04 Landscaping

All landscaping is to be completed as per the approved site plans and inspected by the Town of Mendon.

### 5.05 Street Signs

All street and traffic signs shall be properly set in their designated locations.

### 5.06 Record Information

Record Information shall be provided in accordance with the New York State Department of Transportation (NYSDOT) Land Surveying Standards and Procedures Manual, latest revision. Standards procedures, Control Network Densification and Extensions Surveys are performed to Federal

Geodetic Control Subcommittee Standards and Specifications approved by NYSDOT and the National Geodetic Survey.

The following information shall be provided as described:

1. One (1) mylar and two (2) paper sets are to be submitted to the Town of Mendon.
2. Locations and Elevations of all storm manholes, catch basins, culverts, this includes invert and top elevations of Sanitary sewers, watermain, storm sewers, slopes, size and lengths.
3. Locations and Elevations of all water system valves, curb boxes, fire hydrants, storm sewer lateral and main connection at wyes, clean-outs, water service line and curb box, street signs.
4. Finished centerline elevations and slopes of road surfaces and gutters, including road name and curve table.
5. Liber/page number of any easements or right-of-way and including floodplain numbers.
6. Any other significant details affecting the operation or maintenance of any system by the town or districts.
7. All record data and test results shall be supplied to the Town/Districts and are subjected to review and approval at least 15 days prior to any dedication procedure.
8. If the developer cannot provide the record information as detailed above the Town may elect to complete the record information at the Developer/owners expense.

#### 5.07 Letter of Credit Approval Procedure

The following is the require procedure for review and approval of letters of credit:

1. Developer submits the following to the Town Code Enforcement Officer:
  - a) Cover letter identifying the project and requested letter of credit amount.
  - b) Completed "Engineers Estimate" for all items to be constructed.

2. Town Code Enforcement Officer forwards to Town Engineer the following:
  - a) Copy of developers submittal package
  - b) Transmittal Letter
3. Town Engineer compares Letter of Credit Estimate to plans and prepares a review letter to be submitted to the Town Code Enforcement Officer.
4. Code Enforcement Officer reviews Town Engineer's letter and submits to the Town Board with recommendation of action regarding adequacy of the surety.
6. Town Board accepts by resolution the surety.

#### 5.08 Letter of Credit Release Procedure

The following is the required procedure for review and approval of letters of credit releases:

1. Developer submits the following to the Town Engineer:
  - a) Cover letter identifying the project and requested letter of credit to be released.
  - b) Completed "Town of Mendon Letter of Credit Release Form"
  - c) Completed "Engineer's Estimate".
2. Town Engineer compares Engineer's Estimate to the approved plans and submits a letter of recommendation to the Code Enforcement Officer. Including the following:
  - a) Cover letter with recommendation
  - b) A completed and signed "Letter of Credit Release Form" submitted by developer
  - c) Copy of Developer's engineers estimate

5.09 Maintenance Guarantee

The submission and acceptance of a two (2) year Maintenance Bond or Letter of Credit (LOC) for all improvements to be offered to the Town for dedication. Maintenance LOC shall be written by a surety licensed to do business in New York State and they shall be in the amount of 10 percent of the dedicated items. [The Maintenance LOC shall be approved as to form and content by the Municipal Attorney prior to any dedication procedure.]

5.10 Final Release of Funds

The Town Board, upon recommendation from the Code Enforcement Officer, Town Engineer, and Highway Superintendent, shall authorize the final release of monies retained in the Letter of Credit.

# APPENDICES A-Z

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APPENDIX: A

DATE: FEBRUARY 2017

**MRB** | *group*

ENGINEERING/ARCHITECTURE/SURVEYING, D.P.C.  
145 Culver Road, Suite 160, Rochester, N.Y. 14620

LETTER OF CREDIT ENGINEER'S ESTIMATE  
SUMMARY SHEET

Based on Engineer's Estimate Dated: \_\_\_\_\_

Project Name: \_\_\_\_\_

Mass Grading \$ \_\_\_\_\_  
10% Contingency \$ \_\_\_\_\_

Erosion Control Measures \$ \_\_\_\_\_  
10% Contingency \$ \_\_\_\_\_

Drainage & Stormwater Systems \$ \_\_\_\_\_  
10% Contingency \$ \_\_\_\_\_

Landscaping \$ \_\_\_\_\_  
10% Contingency \$ \_\_\_\_\_

Roadways \$ \_\_\_\_\_  
10% Contingency \$ \_\_\_\_\_

Road Signs \$ \_\_\_\_\_

Record Drawings & Monuments \$ \_\_\_\_\_

Construction Observation (Estimated) \$ \_\_\_\_\_

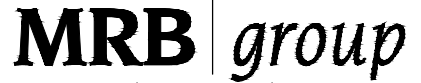
Construction Administration (Estimated) \$ \_\_\_\_\_

**TOTAL ESTIMATE OF COSTS** \$ \_\_\_\_\_

2 Year Maintenance Bond Amount \$ \_\_\_\_\_

APPENDIX: B

DATE: FEBRUARY 2017



ENGINEERING/ARCHITECTURE/SURVEYING, D.P.C.  
145 Culver Road, Suite 160, Rochester, N.Y. 14620

LETTER OF CREDIT RELEASE

PROJECT NAME \_\_\_\_\_ ESTIMATE NO. \_\_\_\_\_

\_\_\_\_\_ DATE \_\_\_\_\_

MRB PROJECT NO. \_\_\_\_\_

Total Construction To Date \$ \_\_\_\_\_

Less Retainage \$ \_\_\_\_\_

A. Construction Value To Be Released \$ \_\_\_\_\_

B. Engineering Costs \$ \_\_\_\_\_

C. Construction Observation Costs \$ \_\_\_\_\_

D. Other Costs \$ \_\_\_\_\_

Amount Previously Released Through Estimate No. \_\_\_\_\_ \$ \_\_\_\_\_

Amount Authorized For Release \$ \_\_\_\_\_

LETTER OF CREDIT INFORMATION

1) Original Amount \$ \_\_\_\_\_

2) Authorized For Release Per Estimate Nos.

\_\_\_\_\_ \$ \_\_\_\_\_

\_\_\_\_\_ \$ \_\_\_\_\_

\_\_\_\_\_ \$ \_\_\_\_\_

\_\_\_\_\_ \$ \_\_\_\_\_

\_\_\_\_\_ \$ \_\_\_\_\_

Subtotal \$ \_\_\_\_\_

\* Balance Remaining In Letter Of Credit Through This Statement

\$ \_\_\_\_\_

\* The balance amount shall be sufficient to insure satisfactory completion of the remainder of the development.

\_\_\_\_\_  
Project Engineer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Developer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Municipal Engineer

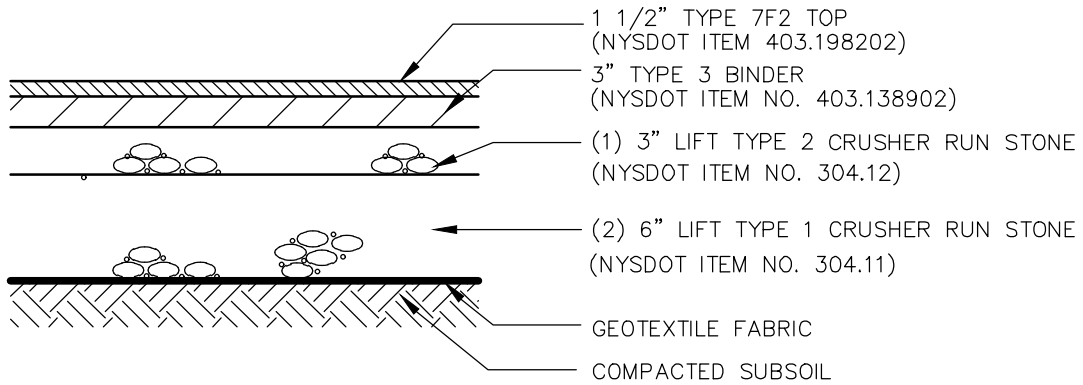
\_\_\_\_\_  
Date

\_\_\_\_\_  
Fiscal Officer

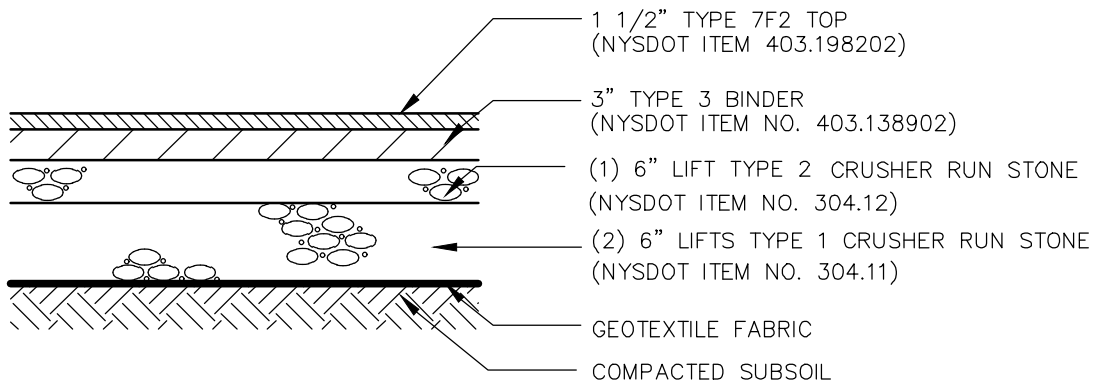
\_\_\_\_\_  
Date

LETTER OF CREDIT EXPIRES \_\_\_\_\_

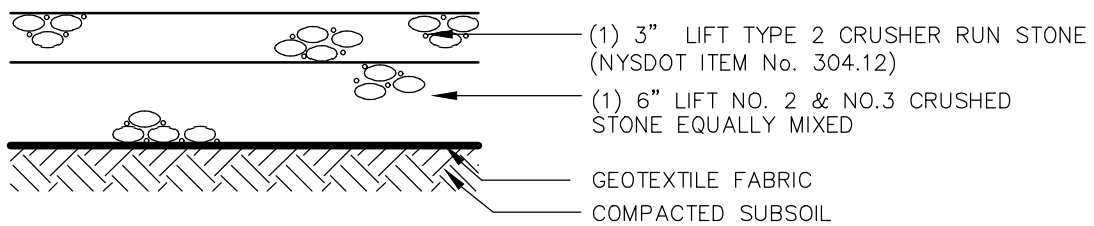




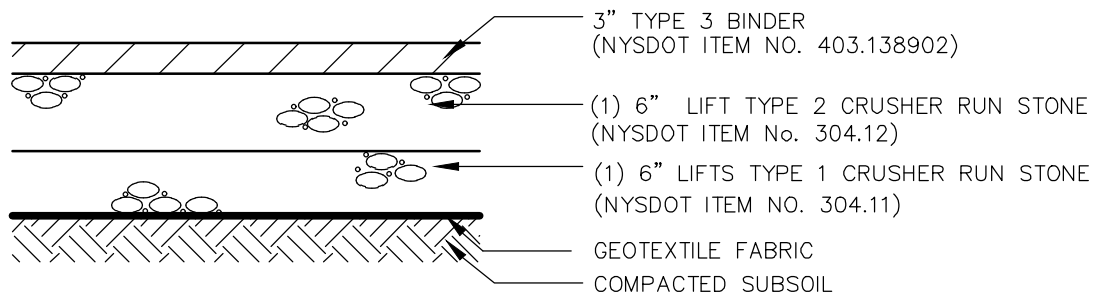
TOWN COLLECTOR/LOCAL/SUBDIVISION ROAD



COMMERCIAL/INDUSTRIAL ROAD



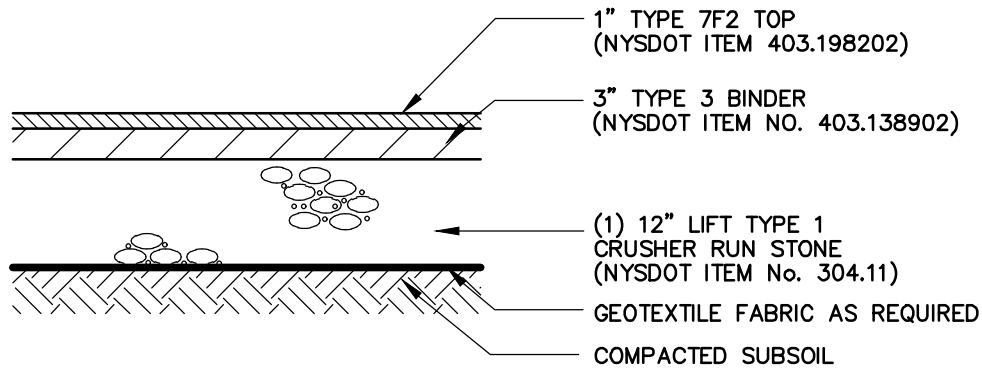
PRIVATE GRAVEL ROAD/DRIVE (1 LOT ONLY)



PRIVATE PAVED ROAD/DRIVE (2 TO 4 LOTS ONLY)

**PAVEMENT CROSS SECTIONS & NOTES (1 OF 2)**

(N.T.S.)



**NOTE:**

USE 2" TYPE 3 BINDER AND 1" TYPE 7F2 TOP MIX FOR PRIVATE ROAD/DRIVE AREAS.

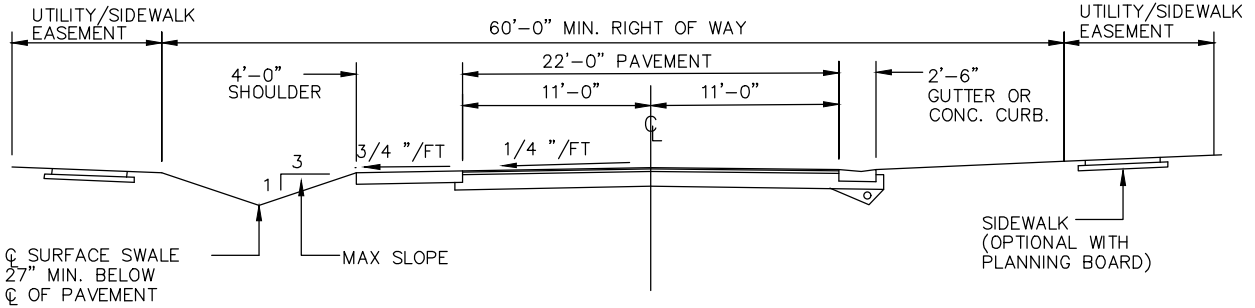
**4' STABILIZED SHOULDER**

NOTES:

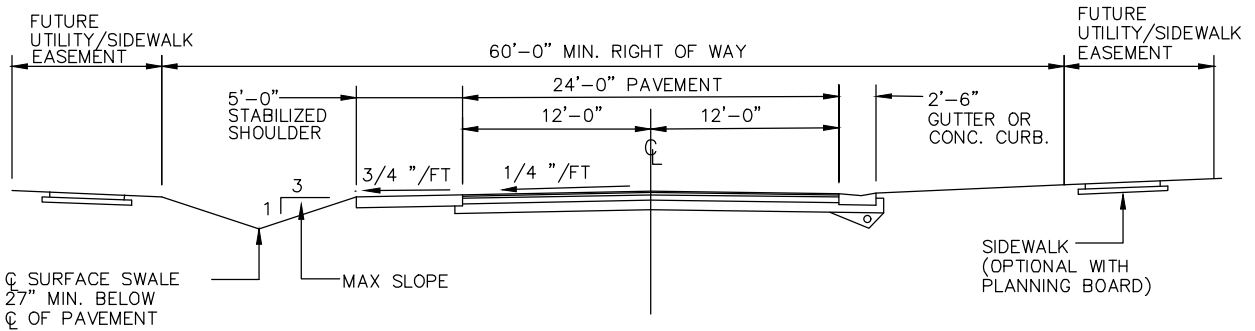
1. ASPHALT CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH NYS DOT GENERAL SPECIFICATIONS FOR BITUMINOUS CONCRETE WITH THE EXCEPTION THAT THE TOP COURSE SHALL BE PLACED A MINIMUM OF ONE (1) YEAR AFTER THE INSTALLATION OF THE BINDER ASPHALT. MINIMUM OUTSIDE TEMPERATURE AT TIME OF PLACEMENT 50 F. TACK COAT SHALL BE APPLIED BETWEEN THE BINDER COURSE AND THE TOP COURSE.
2. BASE SHALL BE ROLLED AND COMPACTED WITH A VIBRATORY ROLLER CAPABLE OF PRODUCING A MINIMUM DYNAMIC VIBRATION FORCE OF 27,000 LBS. OR EQUIVALENT 3 WHEEL 10 – 12 TON ROLLER.
3. ALL TOPSOIL, STUMPS, ROOTS, OR OTHER ORGANIC MATERIAL IS TO BE REMOVED PRIOR TO PLACING FILL OR SHAPING THE ROAD BOX.
4. ROAD CONSTRUCTION SHALL GENERALLY OCCUR BETWEEN MAY 15TH AND OCT. 15TH.
5. ALL UNPAVED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE TOPSOILED, FERTILIZED AND SEEDDED.
6. THE ROAD SHALL BE TACK COATED PRIOR TO PLACEMENT OF TOP COURSE OF ASPHALT.

**PAVEMENT CROSS SECTIONS & NOTES (2 OF 2)**

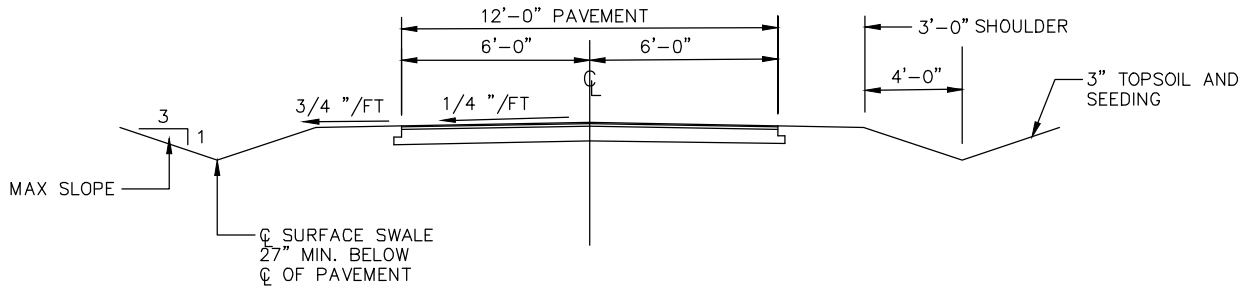
(N.T.S.)



TOWN COLLECTOR/LOCAL/SUBDIVISION ROAD



COMMERCIAL/INDUSTRIAL ROAD

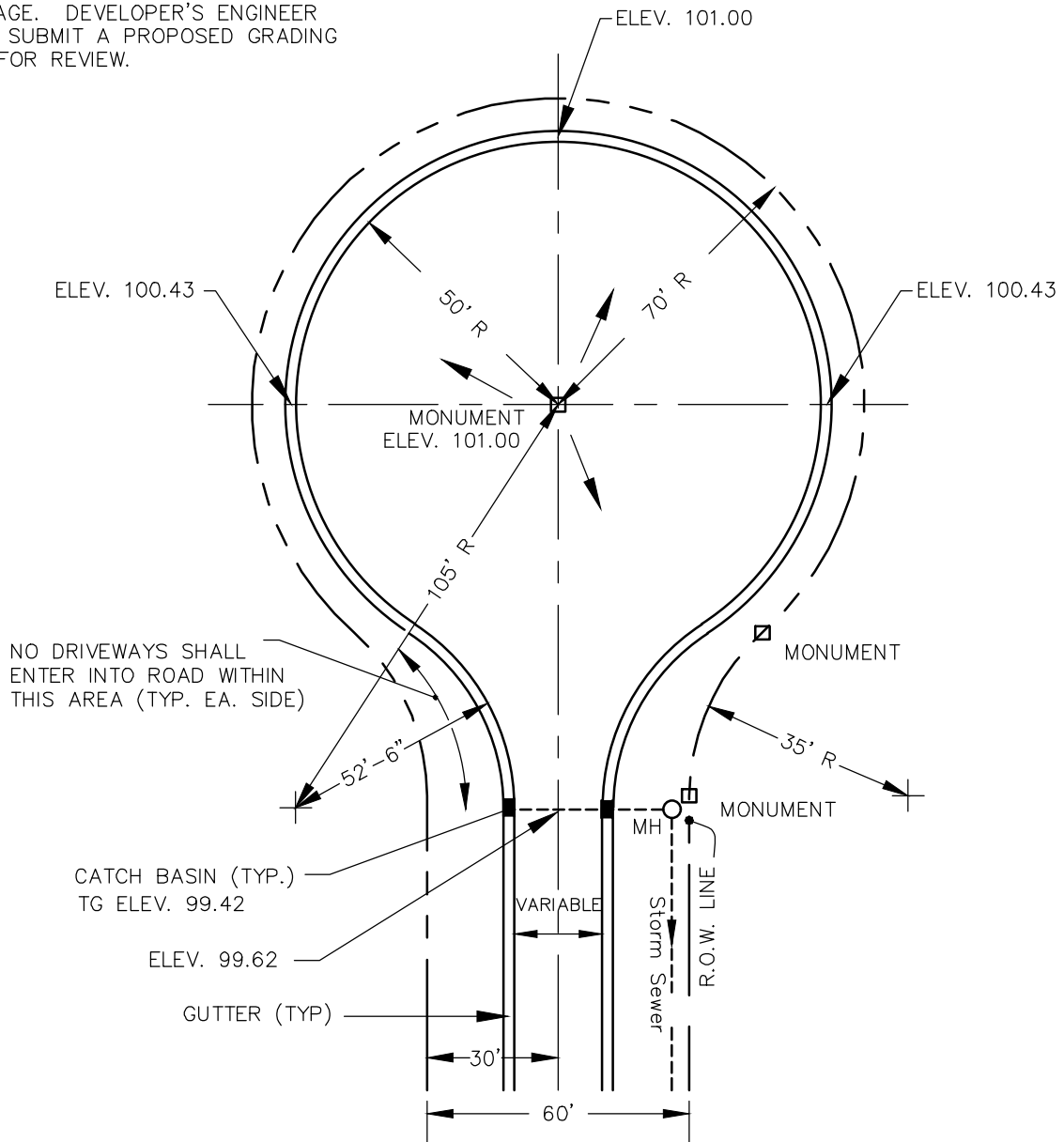


PRIVATE ROAD 2 TO 4 LOTS

**TYPICAL ROAD CROSS SECTIONS**

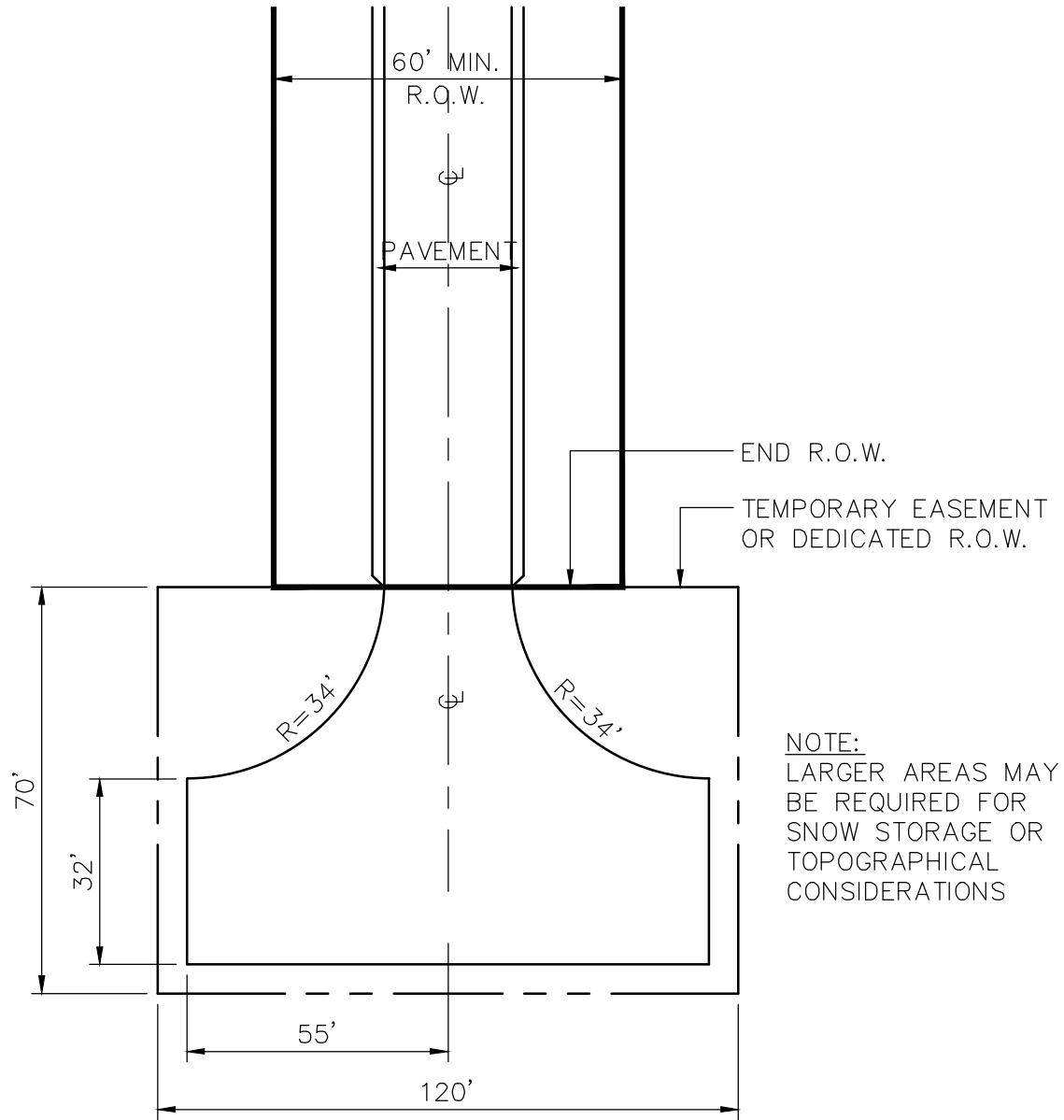
(N.T.S.)

NOTE:  
ELEVATIONS ARE SHOWN TO CONVEY  
TYPICAL GRADING SCHEME FOR  
DRAINAGE. DEVELOPER'S ENGINEER  
SHALL SUBMIT A PROPOSED GRADING  
PLAN FOR REVIEW.



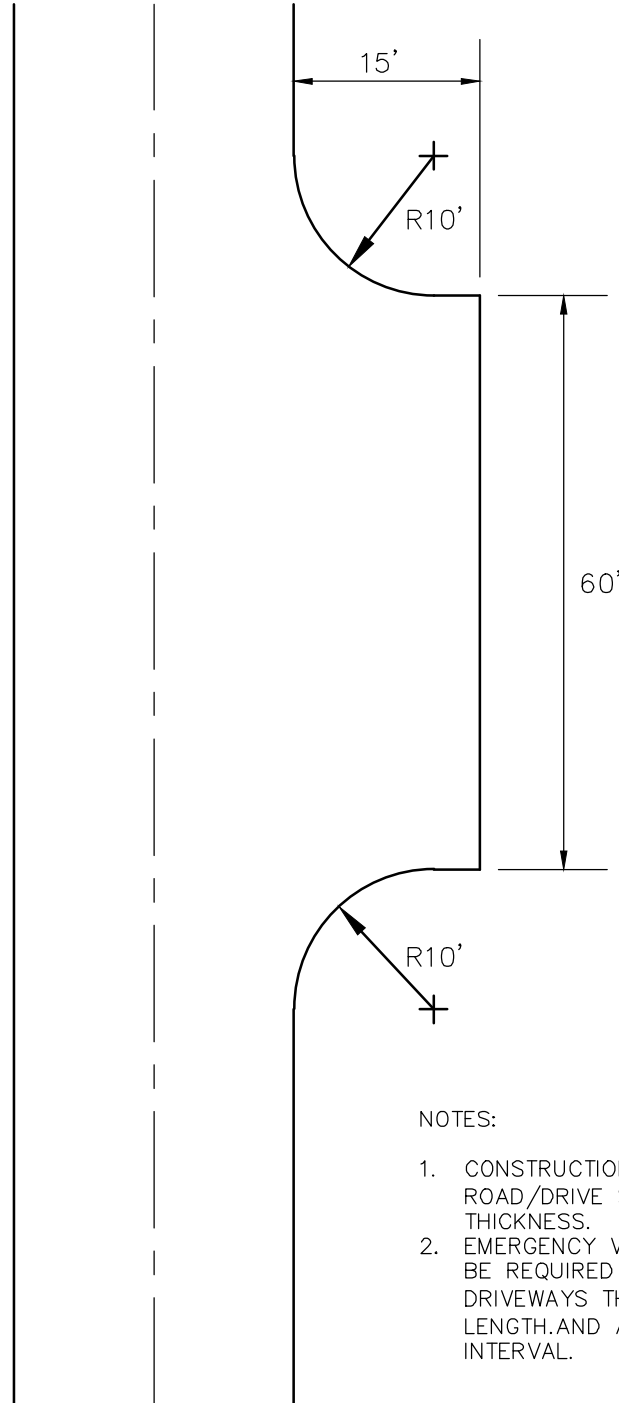
**STANDARD CUL-DE-SAC WITH GUTTER DETAIL**

(N.T.S.)



**TEMPORARY PUBLIC HAMMER HEAD TURN-AROUND**

(N.T.S.)



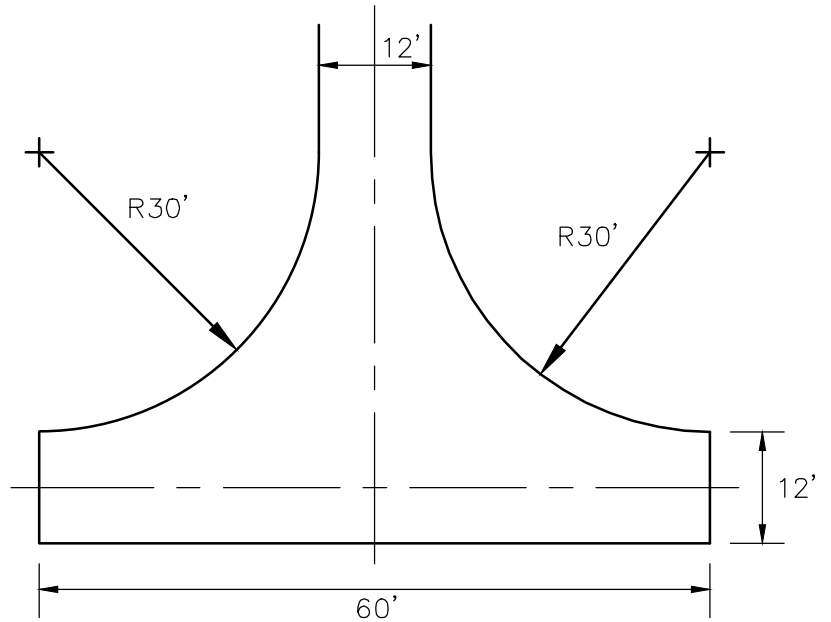
NOTES:

- 1. CONSTRUCTION OF PULL-OFFS TO MATCH ROAD/DRIVE SECTION RE: MATERIAL AND THICKNESS.
- 2. EMERGENCY VEHICLE PULL-OFFS SHALL BE REQUIRED ON PRIVATE ROADS OR DRIVEWAYS THAT EXCEED 500' IN LENGTH AND AT 500' MAXIMUM SPACING INTERVAL.

**PRIVATE ROAD/DRIVE**  
**EMERGENCY VEHICLE PULL-OFF**

(N.T.S.)

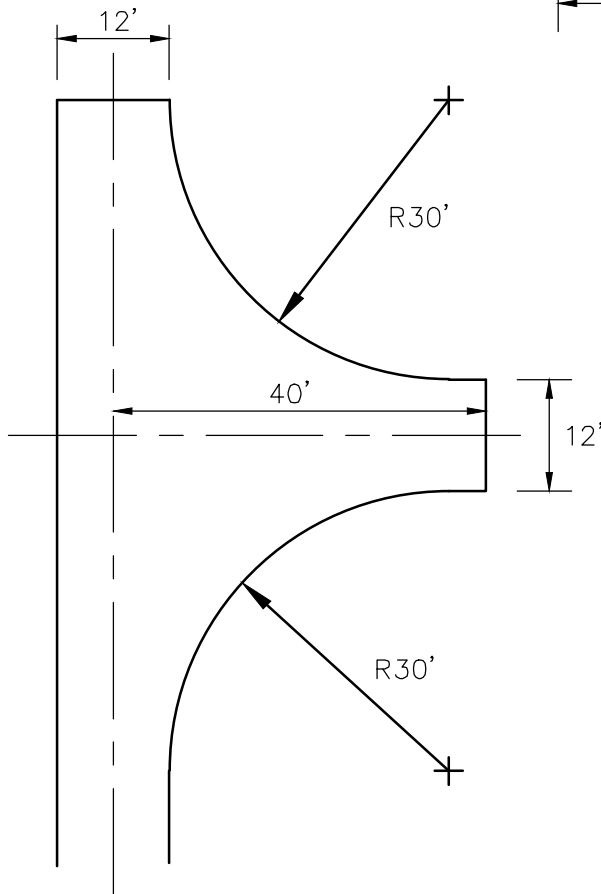
OPTION A



NOTES:

1. CONSTRUCTION OF TURN AROUND TO MATCH ROAD/DRIVE SECTION RE: MATERIAL AND THICKNESS.
2. EMERGENCY TURN AROUND SHALL BE REQUIRED ON PRIVATE ROADS OR DRIVEWAYS EXCEEDING 500'.

OPTION B

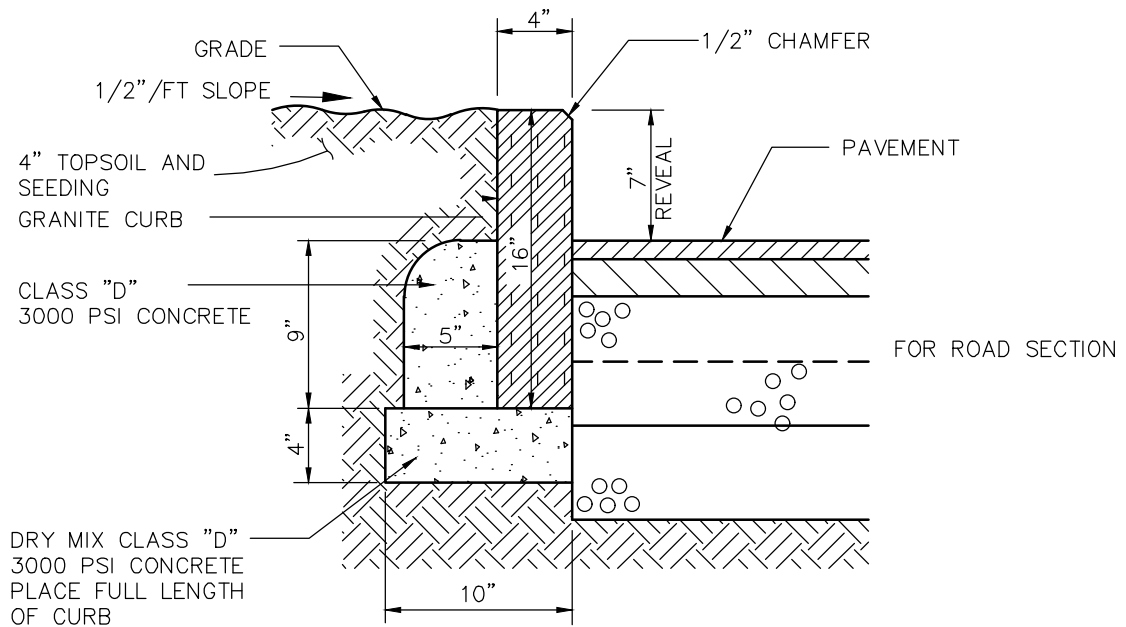


**PRIVATE ROAD/DRIVE**  
**EMERGENCY VEHICLE TURN AROUND**

(N.T.S.)

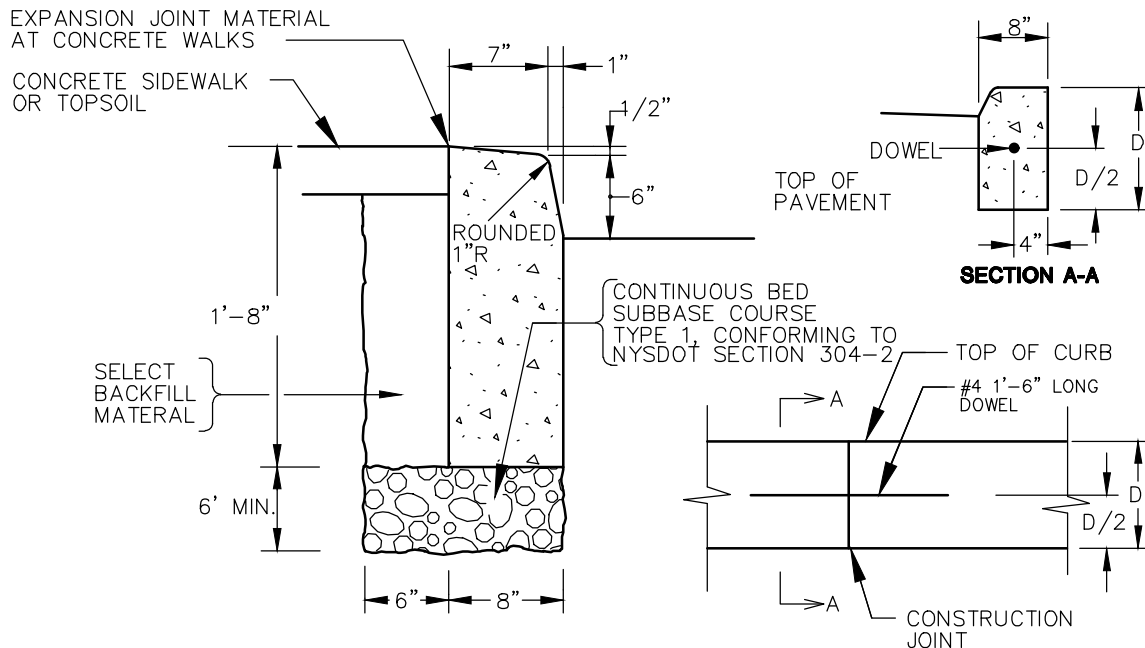






**GRANITE CURB DETAIL**

(N.T.S.)



NOTES:

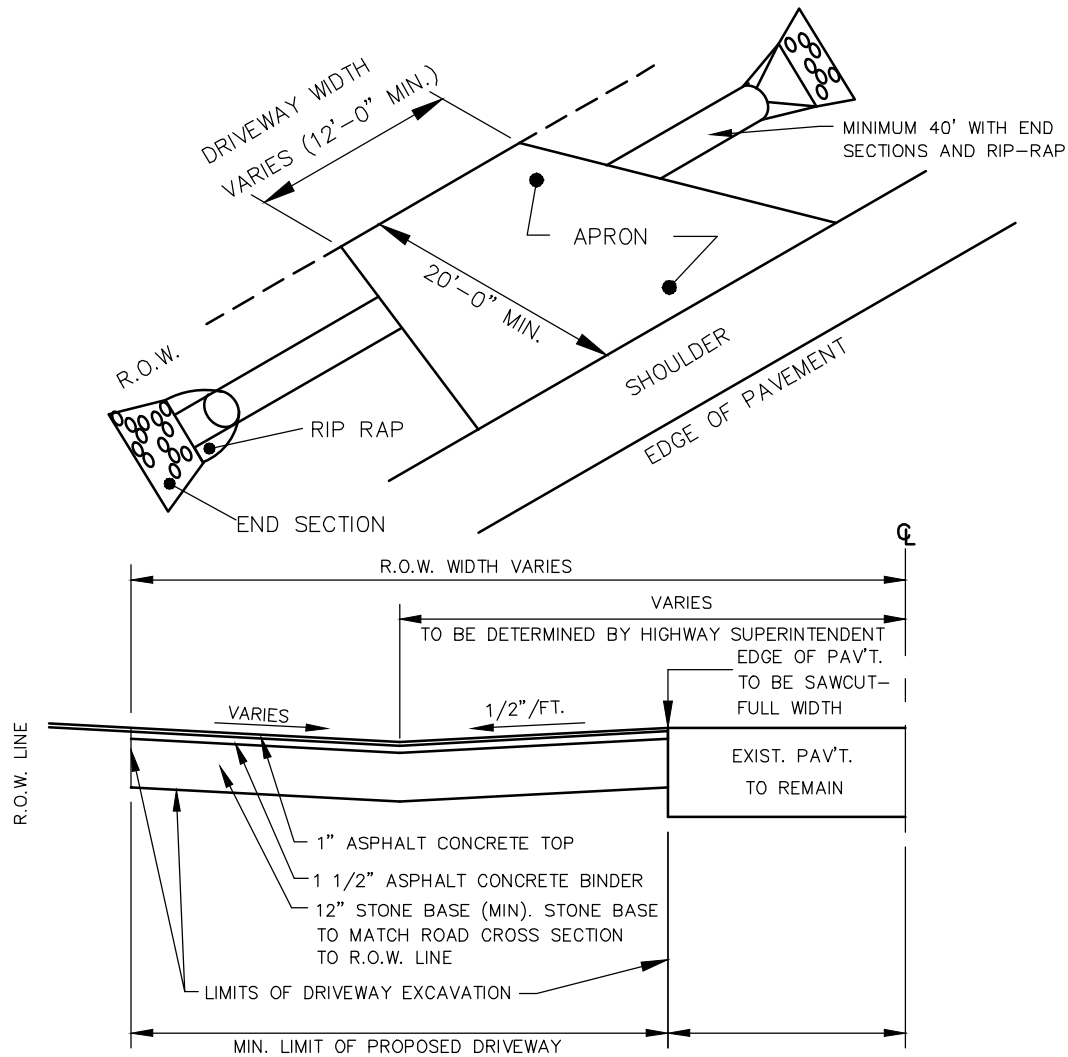
1. GRADED STONE BACKING SHALL BE PLACED ONLY WHERE SIDEWALK DOES NOT ABUT CURB
2. USE CLASS K CONCRETE FOR CONVENTIONALLY FORMED CURB, AND CLASS J CONCRETE FOR MACHINE FORMED CURB.

**ELEVATION AT CONSTRUCTION JOINT**

(N.T.S.)

**CONCRETE CURB DETAIL**

(N.T.S.)

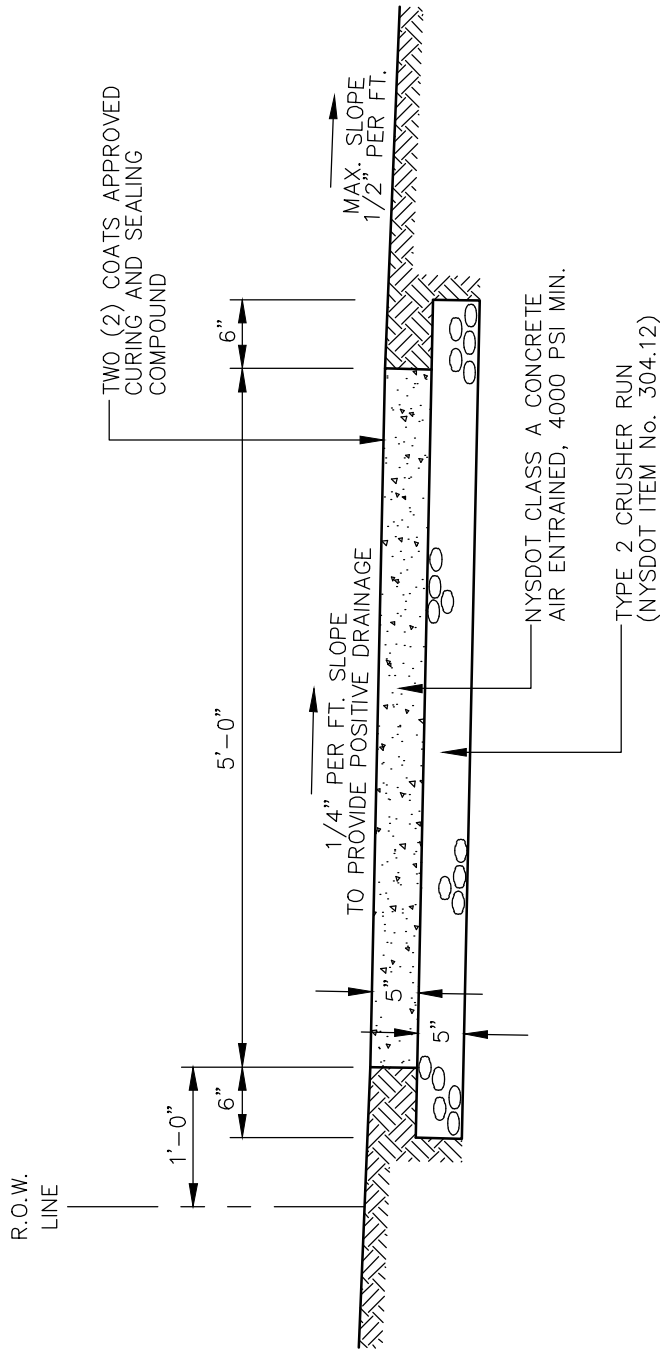


NOTES:

1. DRIVEWAYS FRONTING ON TOWN ROADS SHALL BE PAVED TO THE RIGHT-OF-WAY LINE UNLESS OTHERWISE INDICATED BY THE TOWN.
2. THE APPLICANT SHALL NOTIFY THE HIGHWAY SUPERINTENDENT AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK TO SCHEDULE A FIELD INSPECTION.
3. A MAXIMUM 3% LEVELING AREA SHOULD BE PROVIDED FOR THE FIRST 30 FEET FROM THE EDGE OF PAVEMENT
4. MAINTAIN EXISTING SHOULDER. TOPSOIL, FERTILIZE 7 SEED FROM EDGE OF EXISTING PAVEMENT OR SHOULDER TO PROPERTY LINE WHERE DISTURBED
5. PIPE TO BE SIZED BY DEVELOPER'S ENGINEER. PIPE TO BE BITUMINOUS COATED CORRUGATED METAL 16 GA. MIN. OR POLYVINYL SMOOTH FLOW WITH END SECTIONS
6. PERMITS TO BE OBTAINED FROM HIGHWAY SUPERINTENDENT (TOWN ROADS), MONROE COUNTY D.O.T. PERMIT OFFICE (COUNTY ROADS), AND NEW YORK STATE DEPARTMENT OF TRANSPORTATION PERMIT OFFICE (STATE ROADS) PRIOR TO CONSTRUCTION.
7. ONLY SPECIFIED ASPHALT PRODUCTS WILL BE ALLOWED TO BE USED ON ANY ROAD/DRIVEWAY WITHIN THE TOWN OF MENDON'S HIGHWAY RIGHT-OF-WAY (R.O.W.) RES# 98-395/6, NYS DOT OR MCDOT R.O.W.

**TYPICAL DRIVEWAY APRON DETAIL**

(N.T.S.)



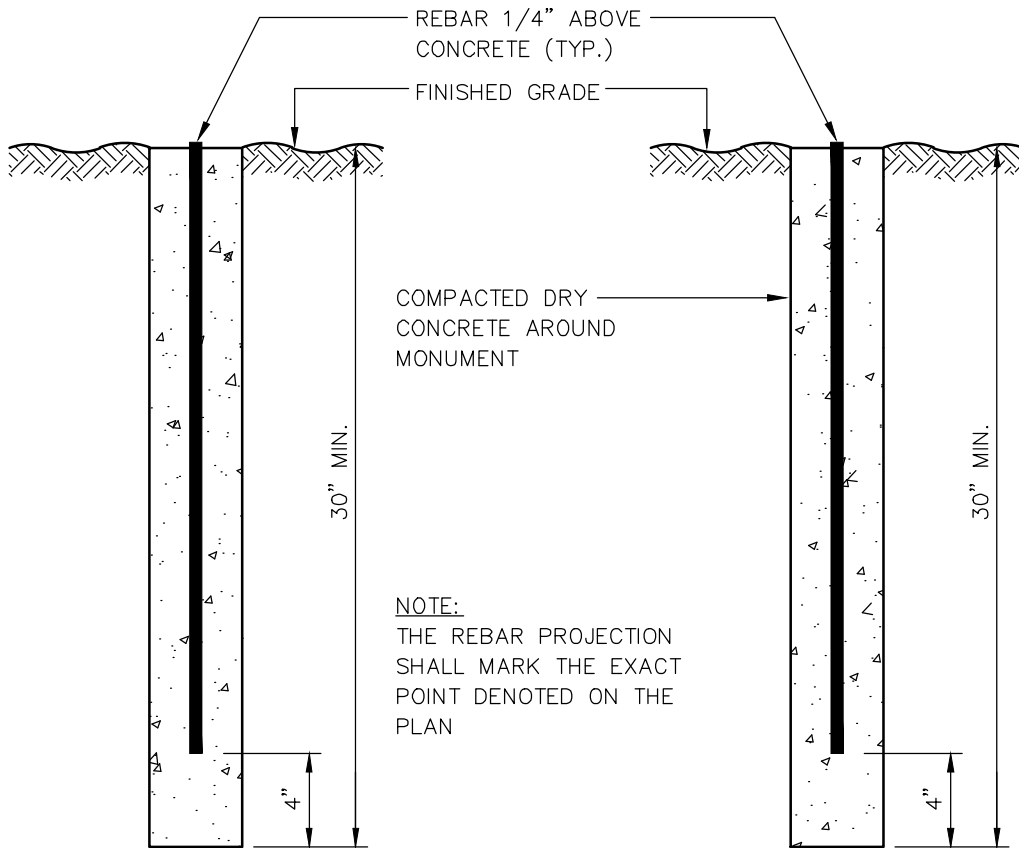
**NOTE:**  
CONCRETE SIDEWALKS THROUGH DRIVEWAYS SHALL BE INCREASED TO A 5" THICKNESS AND SHALL INCLUDE 6"X6" WIRE MESH (10 GAUGE) FOR REINFORCEMENT.

## SIDEWALK DETAIL

(N.T.S.)



PLAN

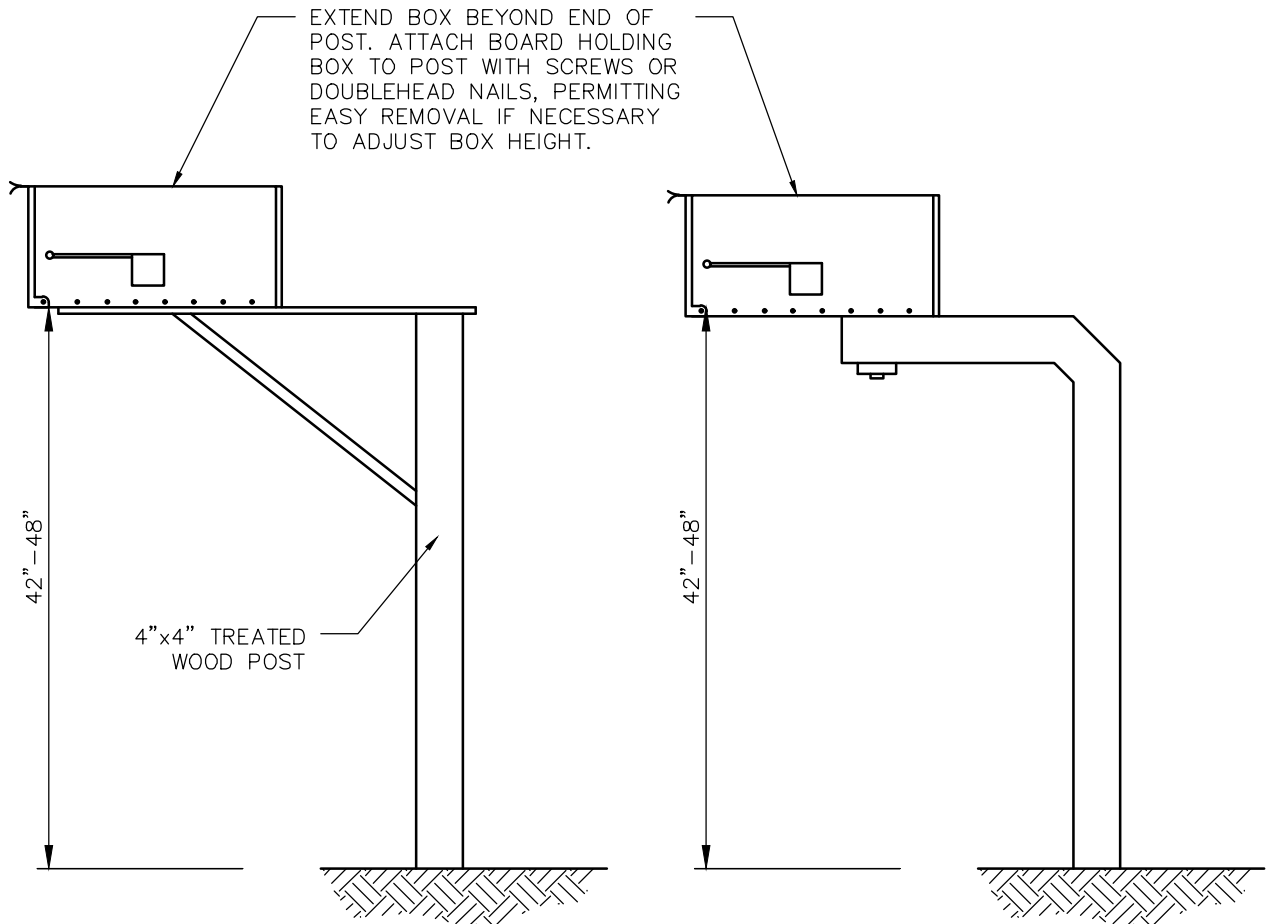


NOTE:  
THE REBAR PROJECTION SHALL MARK THE EXACT POINT DENOTED ON THE PLAN

SECTION

**MONUMENT**

(N.T.S.)



SUGGESTED INSTALLATION  
OF A SINGLE BOX

SUGGESTED INSTALLATION  
WHERE SNOW REMOVAL IS  
A PROBLEM

NOTES:

1. PLACE THE BOX SO THAT IT IS MINIMUM OF 2 FEET FROM EDGE OF PAVEMENT.
2. USE A MINIMUM OF A 4"x4" TREATED WOOD POST.
3. INSTALL THE BOX/POST UNIT SO THAT THERE IS A MINIMUM OF 42", AND MAXIMUM OF 48" CLEARANCE FROM THE GROUND.
4. IF YOU ARE INSTALLING A DECORATIVE MAILBOX, CONSIDER REPLACING IT DURING THE SNOW SEASON WITH A STANDARD MAILBOX.
5. PLASTIC/FIBERGLASS IS PRONE TO BECOMING BRITTLE IN COLD TEMPERATURES AND IS MORE SUSCEPTIBLE TO BREAKAGE.

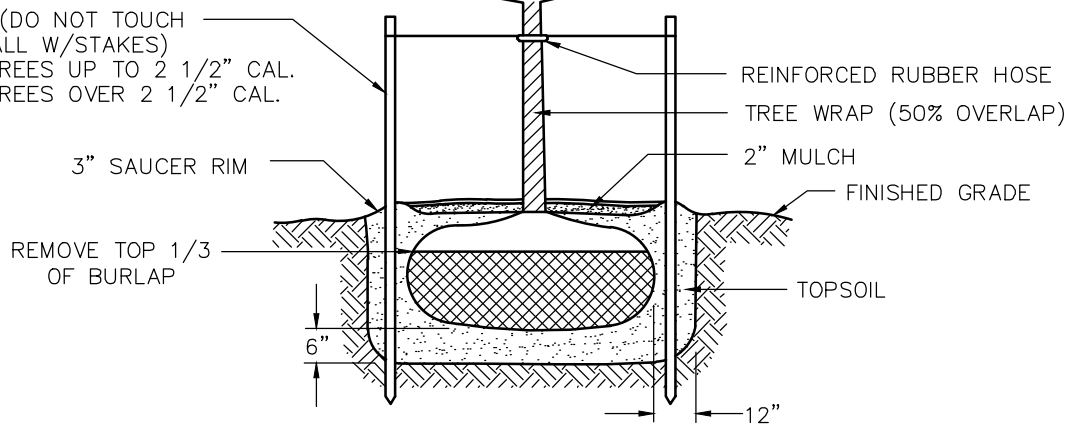
**MAILBOX LOCATION & INSTALLATION DETAIL**

(N.T.S.)

TRIM BRANCHES BY 1/3  
RETAINING NATURAL TREE  
SHAPE. NEVER CUT  
EVERGREEN LEADER.

BASE OF PLANT PIT SHALL  
BE SCARIFIED TO A DEPTH  
OF 12" MINIMUM.

STAKES (DO NOT TOUCH  
ROOT BALL W/STAKES)  
2 FOR TREES UP TO 2 1/2" CAL.  
3 FOR TREES OVER 2 1/2" CAL.

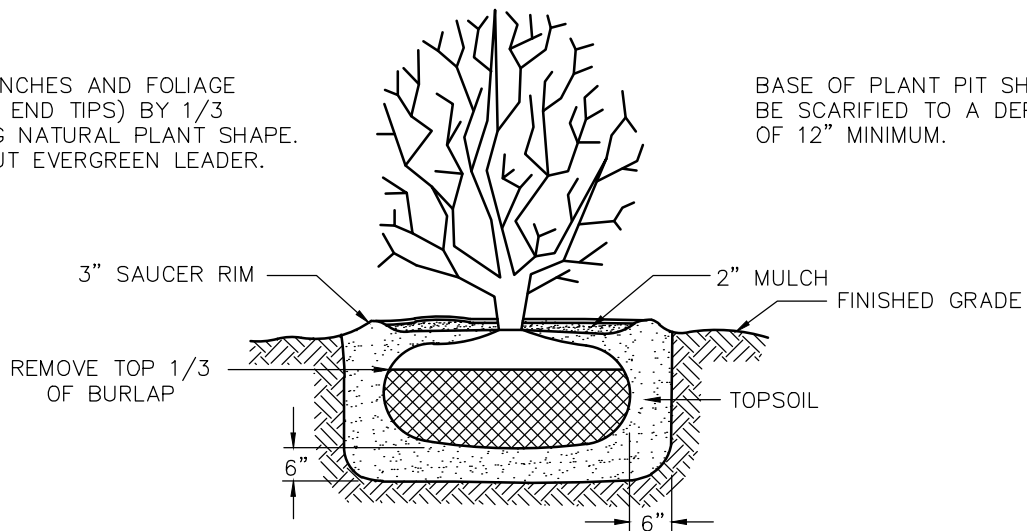


**TYPICAL TREE PLANTING DETAIL**

(N.T.S.)

THIN BRANCHES AND FOLIAGE  
(NOT ALL END TIPS) BY 1/3  
RETAINING NATURAL PLANT SHAPE.  
NEVER CUT EVERGREEN LEADER.

BASE OF PLANT PIT SHALL  
BE SCARIFIED TO A DEPTH  
OF 12" MINIMUM.



**TYPICAL SHRUB PLANTING DETAIL**

(N.T.S.)

TOWN OF MENDON FARM NOTE:

IT IS THE POLICY OF THE TOWN OF MENDON TO CONSERVE, PROTECT AND ENCOURAGE THE DEVELOPMENT AND IMPROVEMENT OF AGRICULTURAL LAND FOR THE PROTECTION OF FOOD, AND OTHER PRODUCTS AND ALSO FOR ITS NATURAL ECOLOGICAL VALUE. THIS NOTICE IS TO INFORM PROSPECTIVE GRANTEEES THAT THE PROPERTY DEPICTED ON THIS PLAT OR SITE PLAN IS ADJACENT TO UNIMPROVED LAND NOW BEING FARMED OR SUITABLE FOR FARMING, AND THAT FARMING ACTIVITIES MAY INCLUDE, BUT NOT BE LIMITED TO, ACTIVITIES THAT CAUSE NOISE, DUST AND ODORS.

## **FARM NOTE**

TOWN EROSION CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL METHODS ARE REQUIRED TO BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL PAVED SURFACES BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES.
3. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES, AT THE EXPENSE OF THE CONTRACTOR OR OWNER, TO PREVENT SILTATION OF DOWNSTREAM PROPERTIES.
4. IN THE EVENT THERE IS A FAILURE OF AN EROSION CONTROL DEVICE, THE CONTRACTOR AND OWNER ARE RESPONSIBLE TO RESTORE DOWNSTREAM AREAS AT THEIR EXPENSE.
5. TOPSOIL STOCKPILES SHALL BE LIMITED TO A MAXIMUM HEIGHT OF 15- FEET. (IF PROPOSED, SHOULD BE SHOWN ON THE PLAN.)

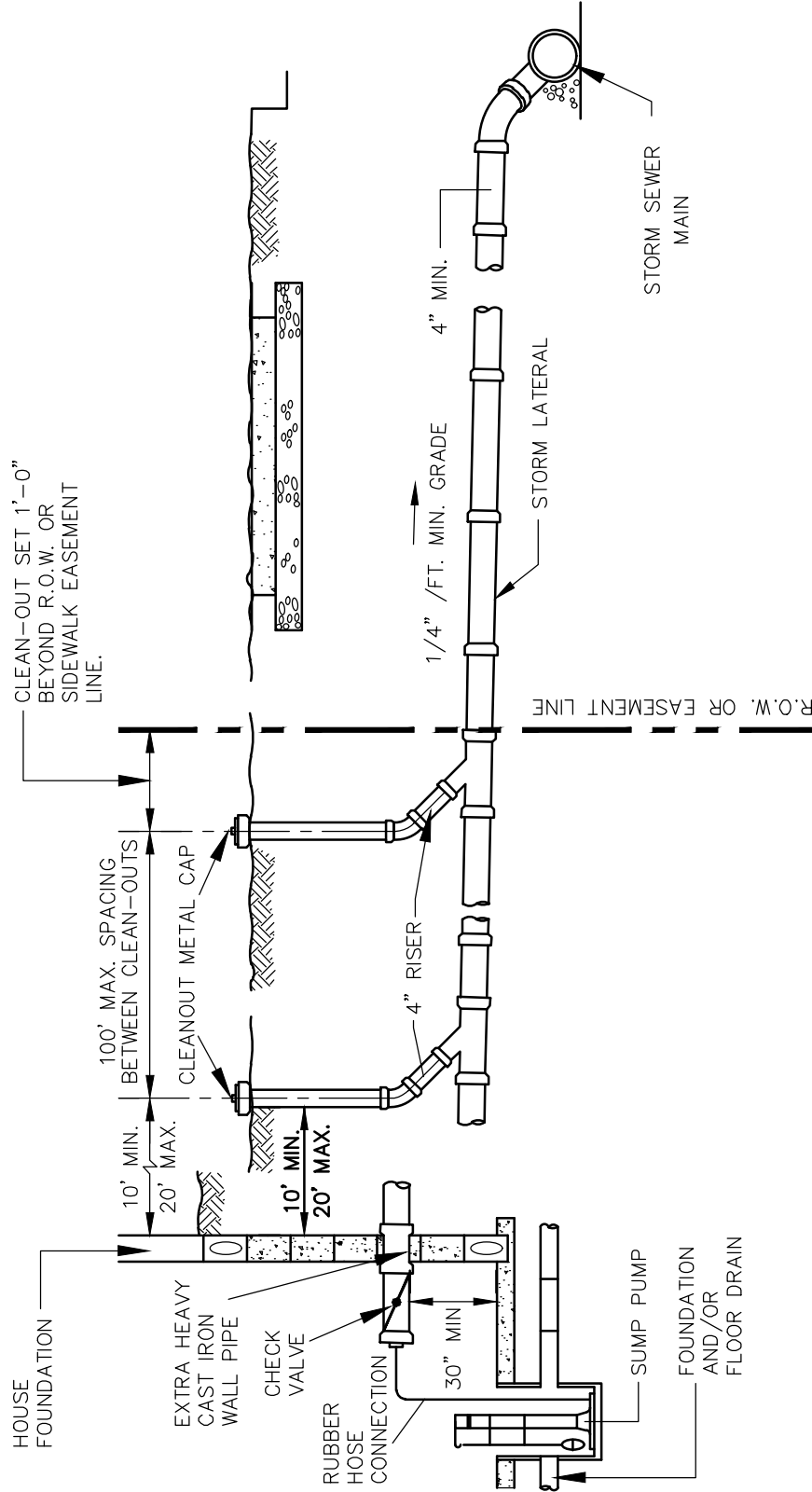
TOWN SUBDIVISION PLAT NOTE:

1. NOT AN APPROVED BUILDING LOT. NO SITE PREPARATION OR CONSTRUCTION SHALL COMMENCE ON A LOT UNTIL SITE PLAN APPROVAL HAS BEEN GIVEN BY THE PLANNING BOARD AND PERMITS HAVE BEEN ISSUED BY ALL GOVERNMENTAL AGENCIES INVOLVED.

## **TOWN NOTES**

NOTE:

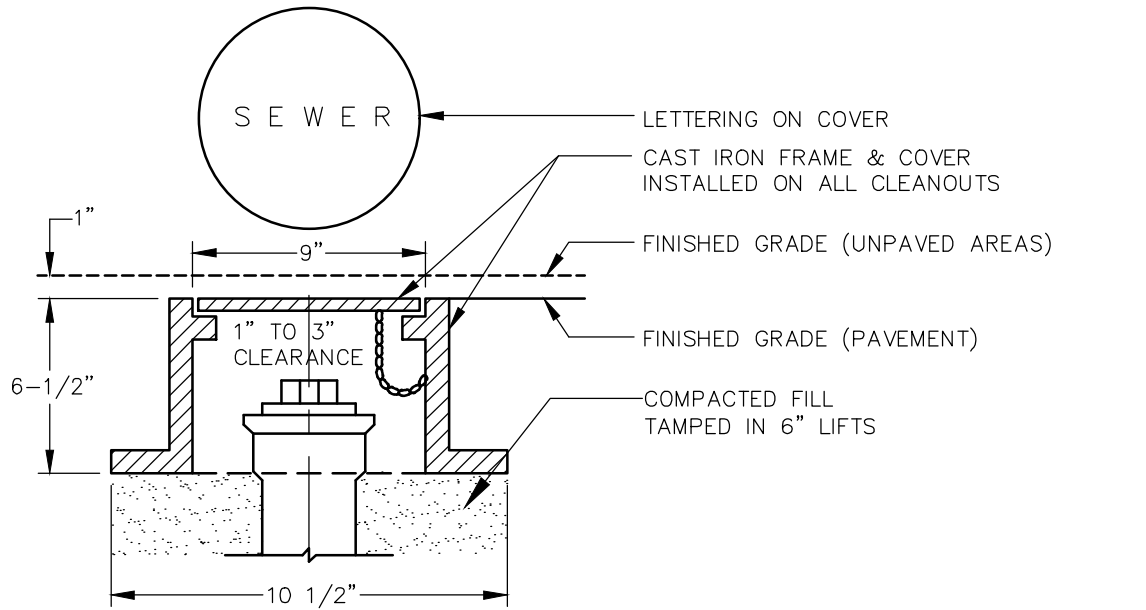
- 1.) MIN. 4" STORM SEWER LATERAL MATERIAL SHALL BE PVC SDR-21



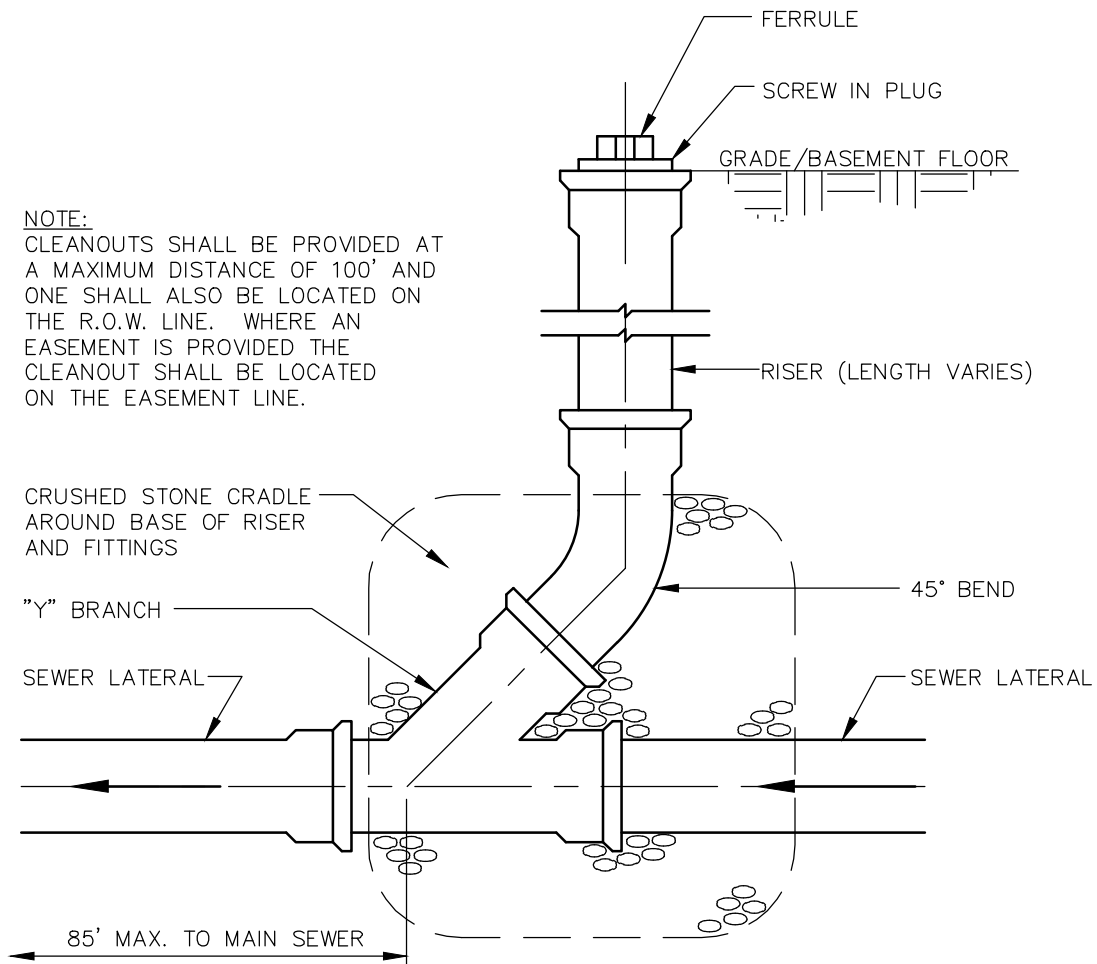
**TYPICAL STORM SEWER LATERAL**

(N.T.S.)



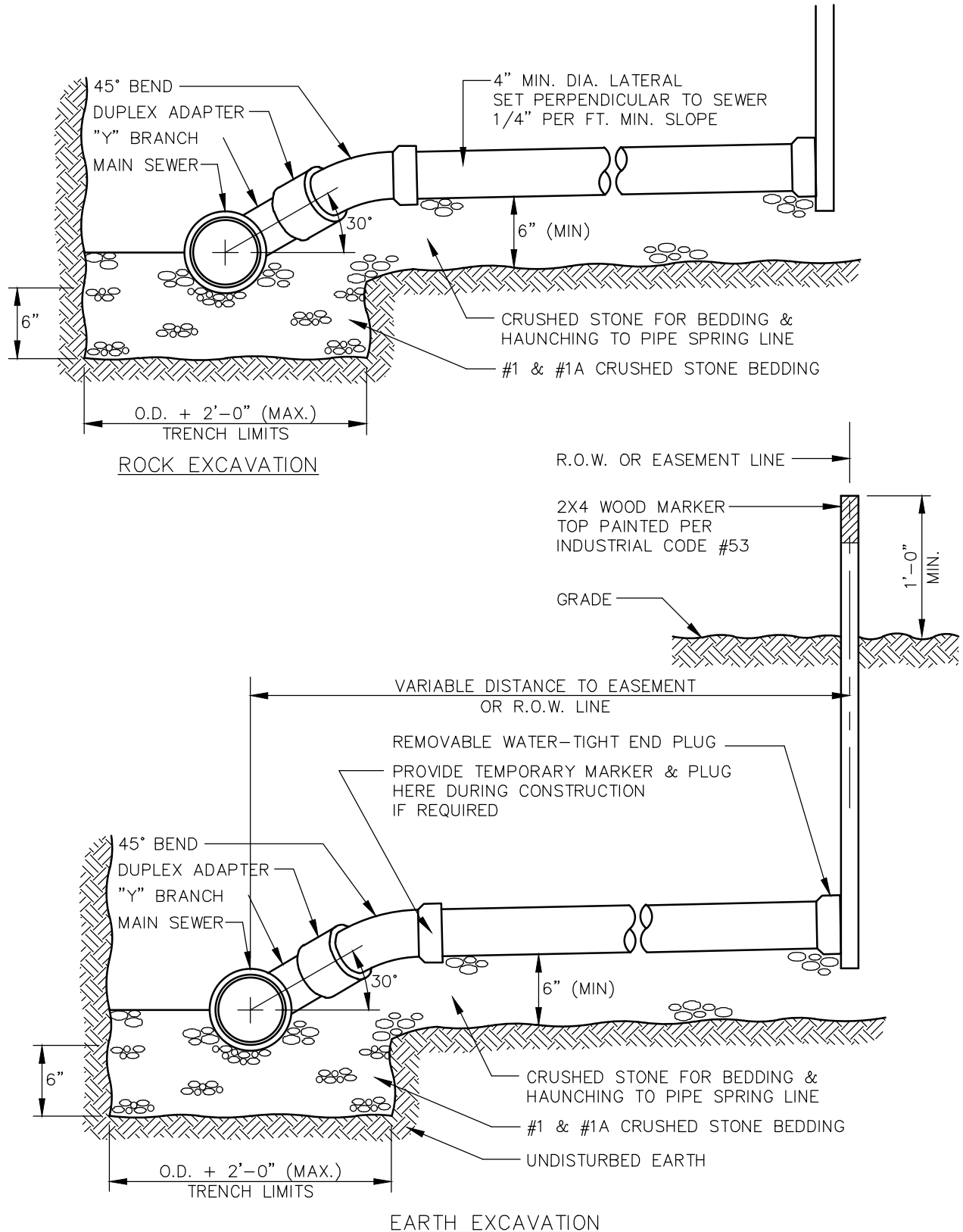


**NOTE:**  
CLEANOUTS SHALL BE PROVIDED AT A MAXIMUM DISTANCE OF 100' AND ONE SHALL ALSO BE LOCATED ON THE R.O.W. LINE. WHERE AN EASEMENT IS PROVIDED THE CLEANOUT SHALL BE LOCATED ON THE EASEMENT LINE.



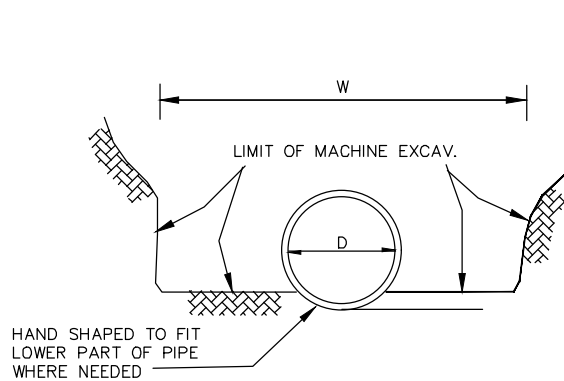
**CLEANOUT DETAIL**

(N.T.S.)

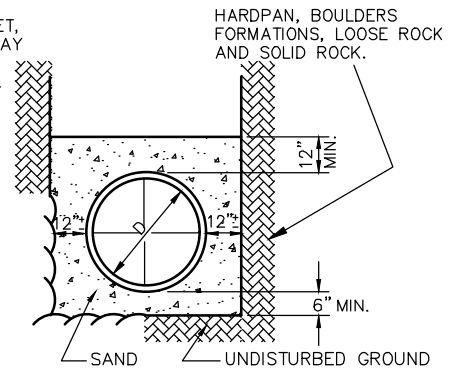


**LATERAL DETAIL**

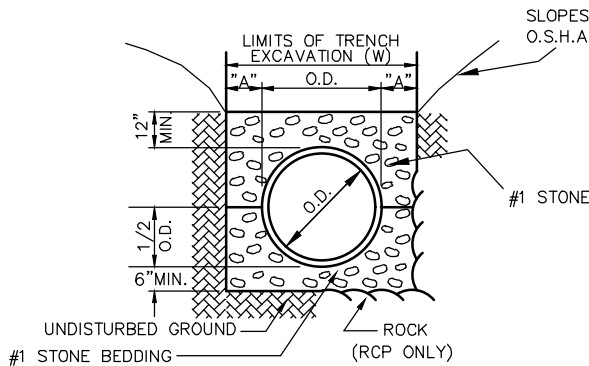
(N.T.S.)



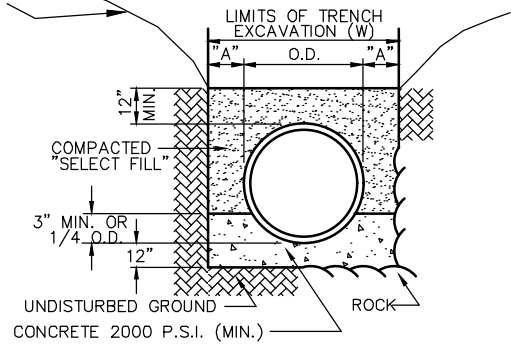
IF TRENCH CONDITIONS ARE WET, #1 AND #2 CRUSHED STONE MAY BE USED IN PLACE OF SAND, HOWEVER, THE SAME MATERIAL SHALL BE USED THROUGHOUT THE ENTIRE LENGTH OF PIPE BETWEEN MANHOLES.



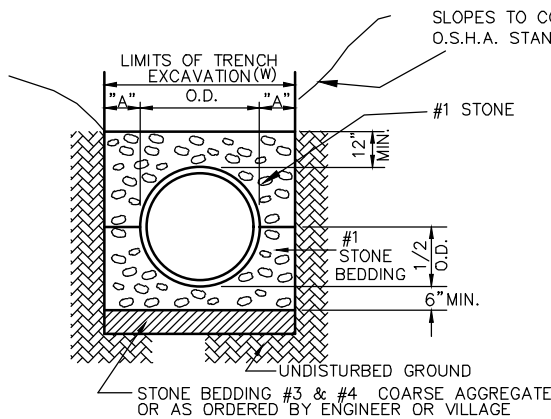
**SAND ENCASEMENT**



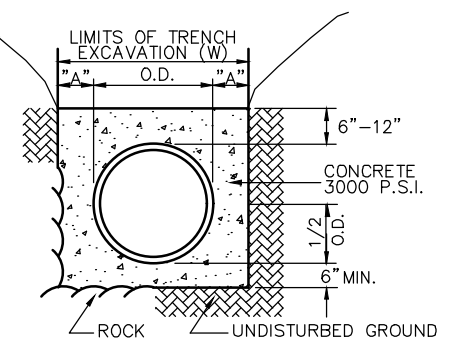
**CLASS B BEDDING**



**CONCRETE CRADLE CLASS "A"**



**SPECIAL BEDDING IN UNSTABLE MATERIAL**



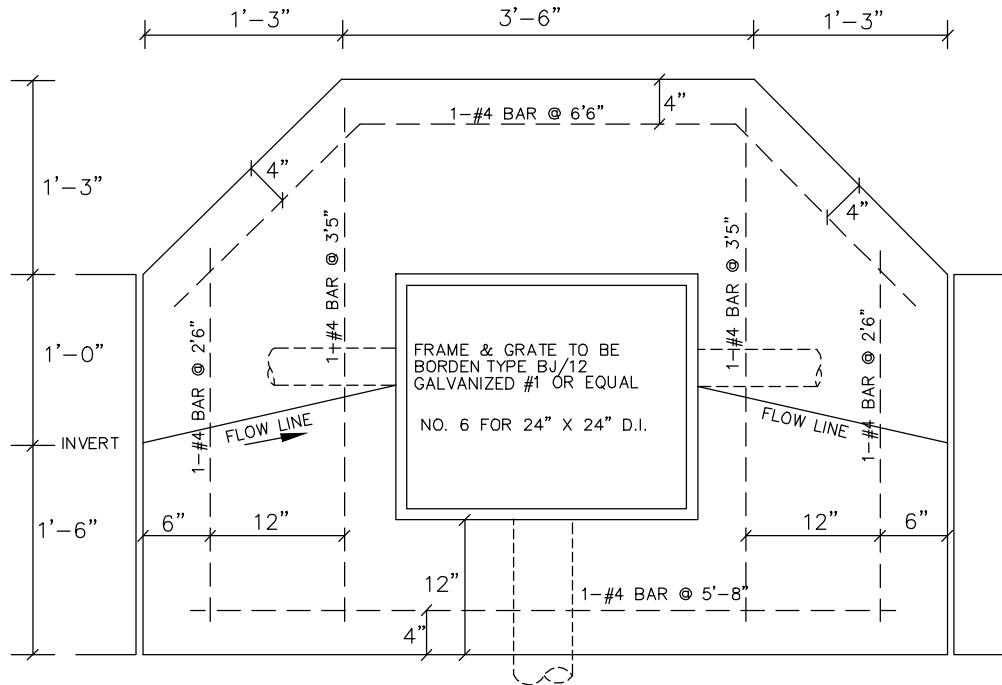
**CONCRETE ENCASEMENT**

"D" Inside Pipe DIAMETER	"W" Maximum Trench Width At Top Of Pipe	"A" Depth Of Hand Shaping Where Needed
8"	3'-0"	2"
10"	3'-0"	2"
12"	3'-0"	2"
14"	3'-0"	3"
16"	3'-3"	3"
18"	3'-6"	4"
20"	4'-0"	4"
24"	4'-6"	5"

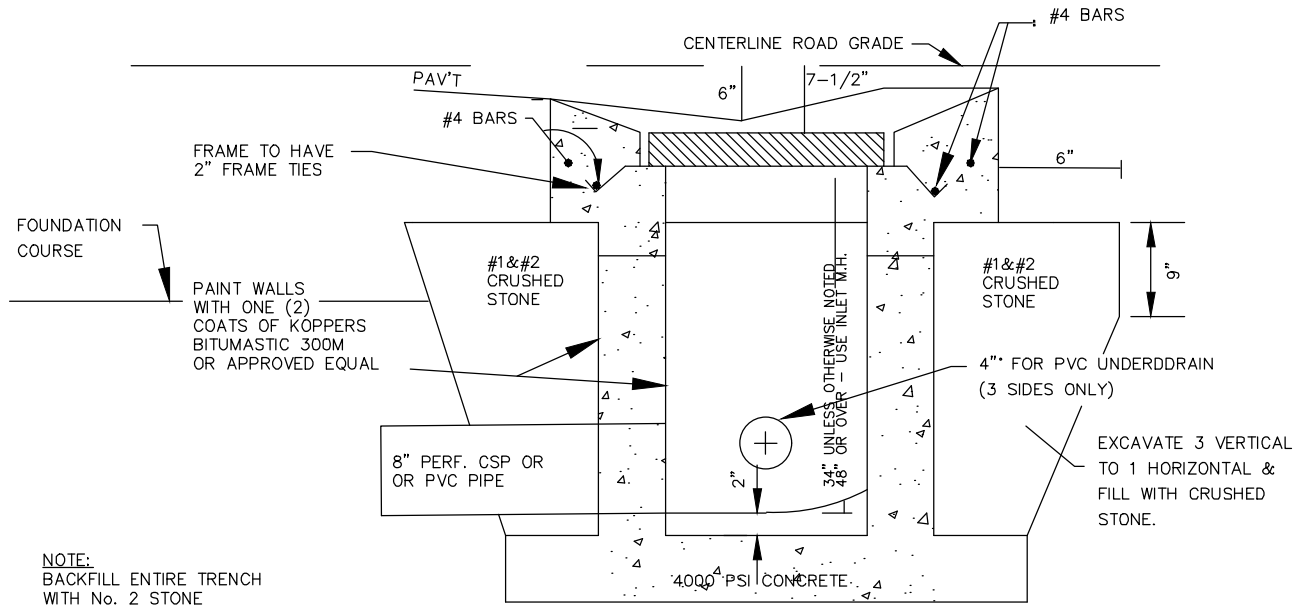
**TRENCH EXCAVATION DETAIL**

(N.T.S.)





**PLAN VIEW**

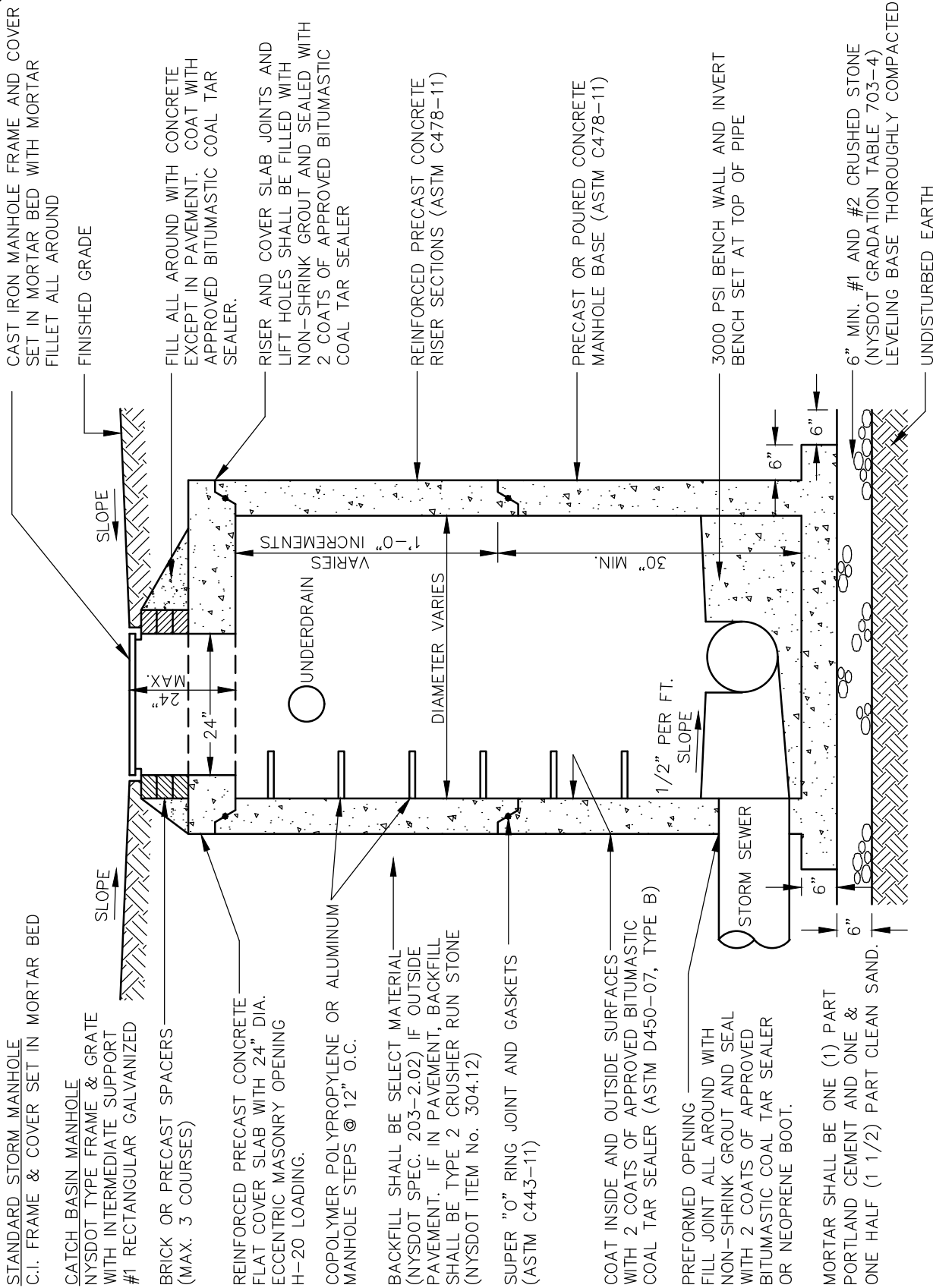


**NOTE:**  
BACKFILL ENTIRE TRENCH  
WITH No. 2 STONE

**SECTION VIEW**

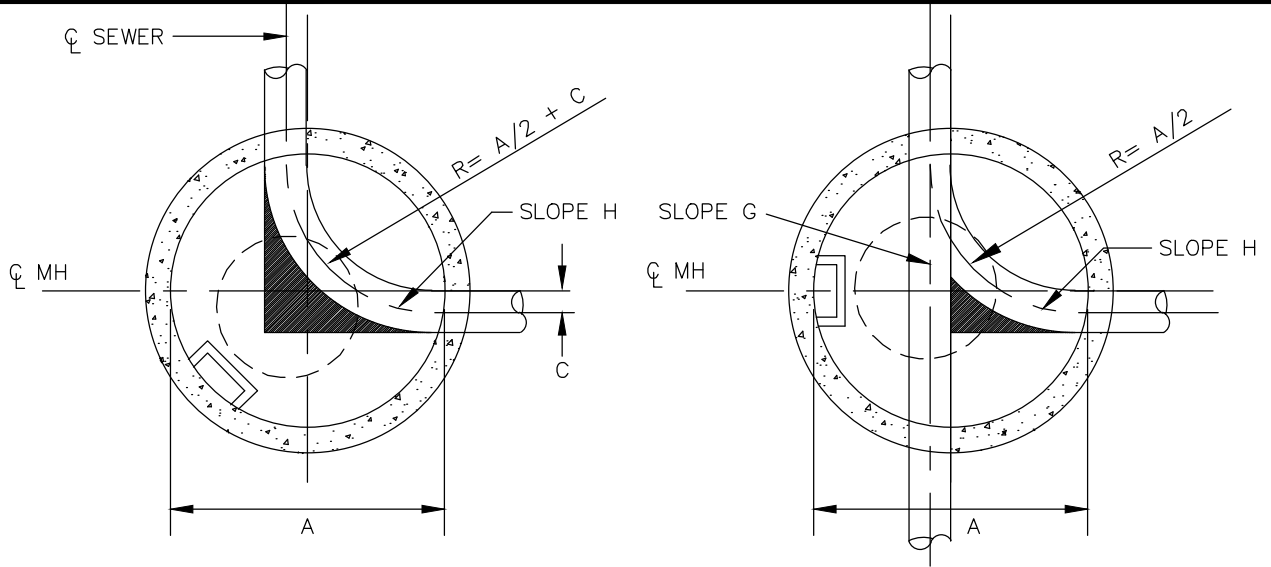
**STANDARD GUTTER INLET**

(N.T.S.)

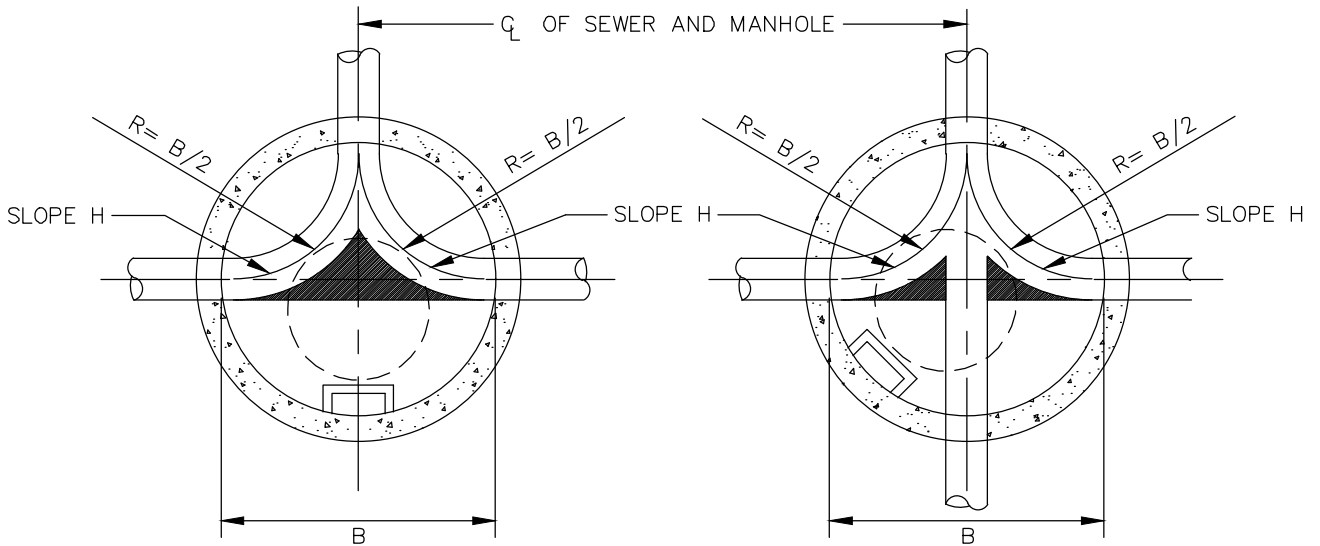


**STORM SEWER MANHOLE AND CATCH BASIN MANHOLE**

(N.T.S.)



WHEN A SMALLER SEWER JOINS A LARGER ONE, PLACE THE 0.8 DEPTH POINT OF BOTH SEWERS AT THE SAME ELEVATION.

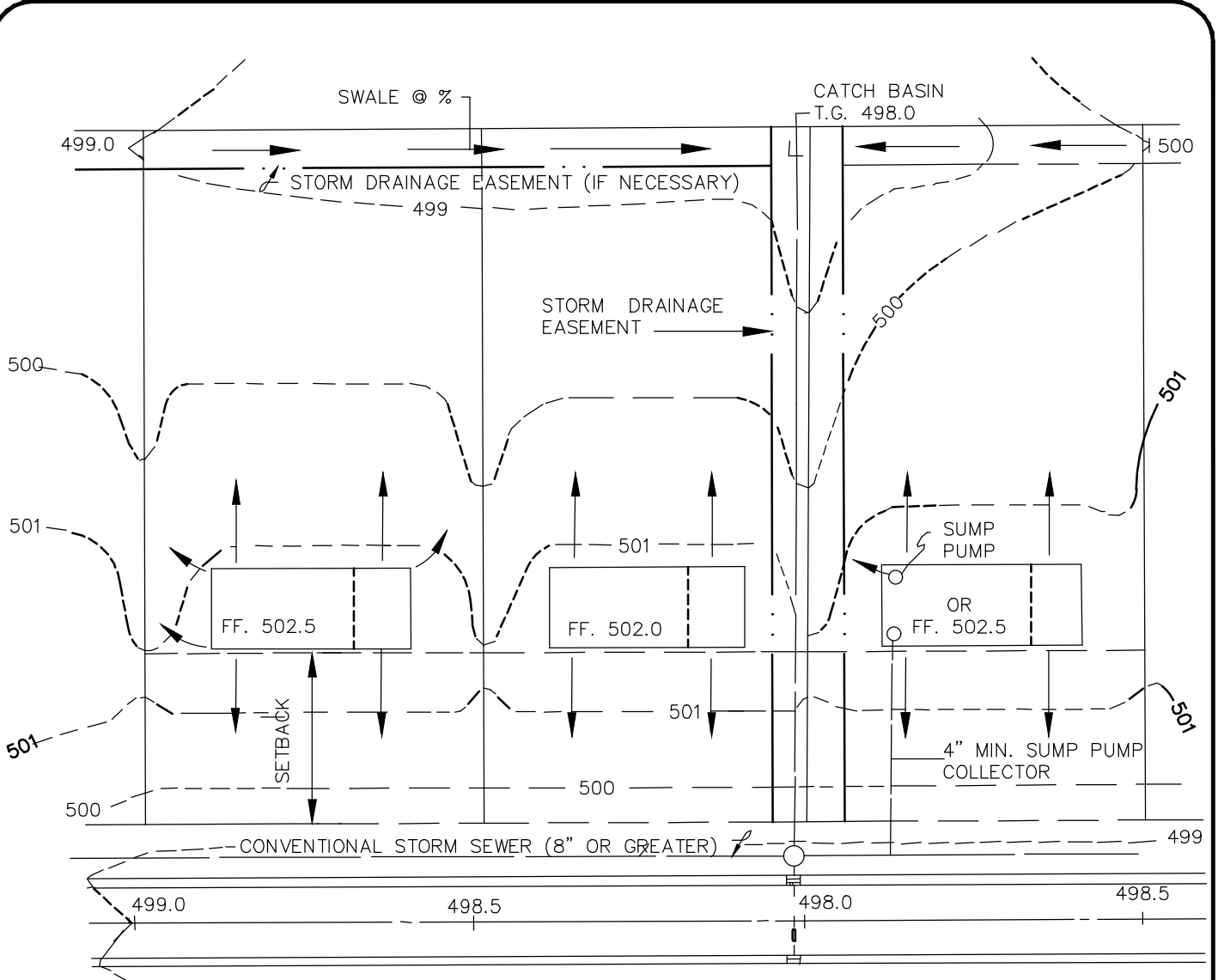


**NOTE:** DESIGN ENGINEER SHALL PROVIDE SPECIAL DESIGN DETAILS SHOWING MANHOLE SIZE, MATERIAL, INVERT, BENCHWALLS AND ANY OTHER PERTINENT FEATURES FOR VILLAGE APPROVAL. BENCH CUT DOWN TO  $\phi$  OF PIPE IN ALL SHADED AREAS.

MAX. PIPE DIA.	8"	10"	12"	14"	16"	18"	20"	24"	27"	30"	36"	42"	48"
A	4'-0"	4'-0"	4'-0"	5'-0"	5'-0"	5'-0"	5'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"
B	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"
C	4"	5"	6"	7"	8"	9"	10"	12"	13.5"	15"	18"	21"	24"
G	.05'	.05'	.05'	.04'	.02'	.02'	.02'	.02'	.02'	.02'	.02'	.02'	.02'
H	.10'	.10'	.10'	.07'	.05'	.05'	.05'	.05'	.05'	.05'	.05'	.05'	.05'

## STANDARD MANHOLE DIMENSIONS

(N.T.S.)



DETAIL OF GRADING PLAN

REQUIRED INFORMATION

- 1.) ORIGINAL GROUND CONTOURS
- 2.) SPOT ELEVATIONS OF PROPOSED GRADES AT KEY LOCATIONS
- 3.) ARROWS INDICATING DIRECTION OF FLOW
- 4.) MAIN FLOOR ELEVATION TO BE SHOWN ON DRAWINGS.

LEGEND

- 502 — ORIGINAL CONTOURS
- - 501 - - PROPOSED CONTOURS
- FLOW ARROWS
- 498.50 SPOT ELEVATIONS
- STORM SEWER & MANHOLE

**TYPICAL GRADING PLAN**

N.T.S.



Town of Mendon  
16 West Main Street  
Honeoye Falls, NY 14472-1199

Phone: 585-624-6060