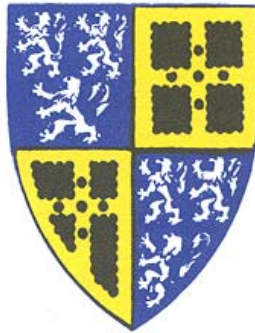


TOWN OF OLD SAYBROOK, CONNECTICUT



**REGULATIONS FOR PUBLIC
IMPROVEMENTS**

OLD SAYBROOK PLANNING COMMISSION
TOWN OF OLD SAYBROOK
302 MAIN STREET
OLD SAYBROOK, CONNECTICUT 06475

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REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 10 - PREAMBLE

10A - AUTHORITY AND PURPOSE

For the purpose of promoting the public health, safety and welfare, to assure protection of the public against the dangers of unsafe roads, to assure protection of the use, value and enjoyment of premises adjoining roads and to assure the protection of the Town against costs and expenses in the repair and maintenance of roads after acceptance which are avoidable through careful planning, appropriate design and competent construction, these Regulations are and have been adopted pursuant to Sections 8-25 and 13a-71 of the Connecticut General Statutes.

10B - SEPARABILITY

If a court of competent jurisdiction finds any provision of these Regulations to be invalid or ineffective in whole or in part, the effect of such decision shall be limited to the particular provision which is expressly held to be invalid or ineffective and all other provisions of these Regulations shall continue to be separately and fully effective.

10C - APPLICABILITY

To the extent that these regulations conflict with the provisions of the Old Saybrook Subdivision Regulations, these regulations shall apply, unless a waiver or waivers have been granted by the Commission pursuant to the Subdivision Regulations.

If a court of competent jurisdiction finds the application of any provision of these Regulations to any use, land or improvement to be invalid or ineffective in whole or in part, the effect of such decision shall be limited to the person, property or situation immediately involved in the controversy and the application of any such provision to other persons, property or situations shall not be affected.

10D - EFFECTIVE DATE

The effective date of these regulations shall be December 16, 2010.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 20 - DEFINITIONS

20A - DEFINITIONS

20A.1 General

For the purpose of these regulations, the terms and words listed below shall have the following meanings assigned to them.

ADA Standards for Accessible Design - Appendix A to Part 36 entitled "ADA Accessibility Guidelines for Buildings and Facilities" as published in the Federal Register Vol. 56, No. 144, Friday, July 26, 1991, including any revisions.

Applicant - Any person, partnership, or corporation who shall make an application for approval under the provisions of these regulations either for himself or as an agent for others.

Commission - The Old Saybrook Planning Commission or its designated agent.

Connecticut Department of Transportation Standard Sheets - The most current detail drawings, including all revisions thereto, as issued by the Connecticut Department of Transportation.

Connecticut Guidelines for Soil Erosion and Sediment Control - The most current document entitled "Connecticut Guidelines for Soil Erosion and Sediment Control", including all corrections thereto, as published by the Connecticut Council on Soil and Water Conservation.

Connecticut Stormwater Quality Manual - The most current document entitled "2004 Connecticut Stormwater Quality Manual", including all corrections thereto, as published by the Connecticut Department of Environmental Protection.

Criteria - The Road Design (Section 70), Drainage Design (Section 90), Soil Erosion and Sediment Control (Section 110), and Final Grading, Stabilization and Landscaping (Section 120) criteria specified in these regulations.

Cul-De-Sac - A dead end road with a turnaround.

Dead End Road - A proposed road, or any extension of an existing road, or any combination or pattern of roads or extension thereof, having only one outlet to a through state or town road.

Dead End Road, Temporary - A dead end road with a temporary turnaround and designed and intended for extension on the same parcel or adjacent parcels.

Dead End Road, Permanent - A dead end road with a permanent turnaround and designed and intended to permanently terminate at the turnaround, rather than for future expansions.

Department of Public Works - The Old Saybrook Department of Public Works.

Developer - The applicant, or any heir, successor, or assign of the applicant, who shall perform the public improvements within the scope of these regulations.

Director of Public Works - The Old Saybrook Director of Public Works or his/her designated agent.

Driveway - A private vehicular accessway serving no more than three lots that has not been accepted as a public road by the Town or approved as a private road by the Commission.

Feeder/Collector Road - Streets used or intended primarily for access to and from individual business or industrial lots, parcels, or areas and roads of considerable existing or potential continuity on which traffic passing abutting lots is dominant and needing two way traffic flow at all times.

Local Road - Streets used or intended primarily for access to and from individual residential lots or parcels.

Manual of Uniform Traffic Control Devices - The most current document entitled "Manual on Uniform Traffic Control Devices for Streets and Highways", as published by the U.S. Department of Transportation Federal Highway Administration.

Private Property - Property owned by persons, partnerships or corporations other than the Town of Old Saybrook.

Private Road - A road permitted in accordance with the Old Saybrook Subdivision Regulations that is subject to a restriction specifying that the road shall be privately maintained, and is not offered to, accepted or maintained by the Town of Old Saybrook.

Private Travel or Private Use (of Roads) - Any vehicular use of a road that is not defined as public travel or public use.

Public Road - Any road lawfully accepted by the Town or the State of Connecticut for public vehicular travel.

Public Travel, or Public Use (of Roads) - The vehicular use of (1) any public road or (2) any public road approved by the Commission.

Right-of-Way, Road - A strip of land conveyed in fee simple and intended for, or dedicated and accepted for, the purpose of vehicular traffic, which includes use for the roadway, sidewalks, drainage facilities, shoulders and other improvements.

Right-of-Way, Drainage - An easement in favor of the Town for a Town road, or the entity that will own and maintain a private road; such easement being for the purpose of stormwater management structures and measures.

Road/Roadway - All surfaces, either paved or unpaved, constructed, designated and used to carry or guide vehicular traffic, between different lots or parcels within or outside of Town. The term does not include driveways or parking lots.

Standards - The Road Construction (Section 80), Drainage Construction (Section 100) and Design & Construction of Driveways (Section 130) standards specified in these Regulations.

Standard Detail Drawings - The Standard Detail Drawings appended to the Old Saybrook Road Regulations as figures, as may be amended from time to time, the contents of which shall be considered as criteria and standards.

State - The State of Connecticut.

State Department of Transportation - The State of Connecticut Department of Transportation.

State Standard Specifications - The most current document entitled "Standard Specifications for Road, Bridges and Incidental Construction", and all additions, revisions, and supplements thereto, as published by the Connecticut Department of Transportation at the time of the work or installation of improvements.

State Statutes - The most current document entitled "General Statutes of Connecticut", including all volumes and revisions thereto.

Street - Same as Road/Roadway.

Stormwater - Excess precipitation, after accounting for all losses, which becomes surface runoff.

Through Traffic - When used in reference to a particular street or category of streets, "through traffic" means traffic that is using the street only to gain access to another street.

Town - The Town of Old Saybrook.

Town Attorney - The attorney or law firm retained by the Old Saybrook Board of Selectman to represent the Town of Old Saybrook.

Town Engineer - The engineer or engineering firm appointed by the Old Saybrook Board of Selectman to represent the Town of Old Saybrook.

Town Planner - The Old Saybrook Town Planner or his/her authorized agent.

Town Road - Any public road lawfully accepted by the Town for public vehicular travel.

Towns Construction Inspector - A person assigned by the Town Engineer or Director of Public Works to provide periodic observations of the construction of public improvements.

Turnaround - The paved area at the terminus of a cul-de-sac road designed and intended to allow vehicles to safely reverse direction.

Watercourse/Wetlands - Areas designated and defined as "Watercourses" and "Inland Wetlands" by the Old Saybrook Inland Wetlands and Watercourses Commission, pursuant to its Regulations, as the same may be amended from time to time.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 30 - GENERAL PROHIBITIONS

30A - USE OF LAND AS A PUBLIC ROAD

No person shall open any public road for vehicular public travel without the approval of the Commission and acceptance of the road as a public highway by the Town Meeting. The Commission's approval of a road shall not prevent any other legal requirement for creating or establishing a public road, including the requirement in the Town Charter for formal acceptance by the Town Meeting, upon the recommendation of the Board of Selectmen.

30B - USE OF UNAPPROVED PRIVATE ROADS

A private road that has not been approved by the Commission may not be used for public travel. Such a road may be used for private travel, provided a conspicuous sign is posted, facing the public road, and clearly stating in bold letters that the private road is a private way and is not open for public vehicular travel.

30C - CONSTRUCTION OF A PUBLIC ROAD

No person shall commence construction of any road which is then intended to be opened, at any future time, to public travel unless approval of the location, layout, design and construction plans therefore have been approved by the Commission.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 40 - DESIGN APPROVAL PROCESS

40A - PROCEDURE

40A.1 Design Approval Required for Public Use of Roads

The Commission may not approve the proposed establishment, construction, reconstruction or use of any road for public travel unless an application for such approval is submitted to the Commission and the Commission grants such approval in accordance with these regulations.

40A.2 Roads Located Within an Area Proposed for Subdivision

If an application for subdivision or resubdivision involves the establishment, construction, reconstruction or use of a road or roads within or adjoining the area to be subdivided, and such road or roads are proposed to be used for public vehicular travel, the application for subdivision shall also be deemed to be an application for design approval of the road or roads, and no separate application for design approval shall be required. However, all supporting documentation and materials required by these regulations must be submitted in order for the Commission to consider or to grant design approval for the road or roads.

40A.3 Roads Not Located Within an Area Proposed for Subdivision

If a proposal to establish, construct or use a road or roads for public vehicular travel is not made in connection with an application for subdivision or resubdivision, an application for design approval of the road or roads must be submitted to the Commission, together with all supporting documentation and materials required by these regulations.

40A.4 Staff Review Prior to Application

All prospective applicants for design approval of a road or roads for public travel are encouraged to meet with the Town Planner prior to submission of a formal application. The Town Planner shall coordinate the review of all the materials submitted by the prospective applicant with other Town staff, officials and consultants, and may set up informal meetings among the prospective applicant and others.

40A.5 Procedure for Decisions on Formal Applications

(A) Applications Made as Part of a Subdivision Application

When a request for design approval is made as part of a subdivision application, the Commission shall follow the same procedures in making its decision on the design approval application as it does in deciding upon the subdivision application. The Commission may approve, modify and approve, or deny design approval. A decision to deny a subdivision application shall also be deemed to be a decision to deny design approval.

(B) Applications for a Private or Public Road Not Made As Part of a Subdivision Application

All applications for a private or public road not made as part of a subdivision application will be reviewed pursuant to the Old Saybrook Zoning Regulations.

(C) Referral to Planning Commission Under Conn. Gen. Stats. Section 8-24

The approval of an application for a public road in accordance with this regulation shall constitute a recommendation for acceptance thereof in accordance with Conn. Gen. Stats. Section 8-24 and no further referral shall be required at the time of acceptance.

40B - SUPPORTING INFORMATION

40B.1 General

In addition to any information required to be submitted in the subdivision regulations, an application for design approval to construct, reconstruct or complete construction of a road intended to be opened to the public, shall include the supporting information required in this section.

40B.2 Maps, Drawings and Plans

All information pertaining to topographic maps and delineation of road rights-of-way and property boundaries required under this Section shall be shown on plans, maps or drawings which are prepared by and certified by a registered land surveyor to the A-2 standard of accuracy as defined in the Regulations of State Agencies adopted pursuant to Conn. Gen. Stats. Section 20-00b, or as the same may be amended from time to time. All information pertaining to design of roads and drainage systems and appurtenant facilities required under this Section shall be shown on plans, maps or drawings which are prepared by and certified by a registered professional engineer. All information shown in construction drawings shall be based on accurate field survey data referenced to The North American Vertical Datum 1988 (NAVD 1988) and the Connecticut Coordinate Grid System (NAD 83). Aerial survey data, based on accurate ground control surveys, may be utilized provided it is supplemented by field surveys at locations where elevations and dimensions are critical.

40B.3 General Plan

The general plan shall be a map or maps, drawn to a scale of 1" = 100' or less to the inch, showing the following:

- (A) The proposed road layout.
- (B) Existing topography, including the identification of slopes $\geq 20\%$.
- (C) Ledge outcrops, stone walls, rare/specimen trees and trees greater than 8 inches in diameter within any existing road right-of-way.

- (D) Wetlands, watercourses and all proposed alterations thereof, flood hazard zones, floodways, stream channel encroachment lines, existing bridges, culverts and storm drainage systems.
- (E) National Resource Conservation Service soil types and boundaries.
- (F) All existing buildings and structures, properly identified, located upon, and within two hundred (200) feet outside of each boundary line of the land to which the application relates.
- (G) All existing roads, driveways and other vehicular access ways entering upon, or which will enter upon, the road to be laid out and constructed.
- (H) All existing parking facilities, playgrounds, recreational facilities, and open space areas, access to which may be obtained from such proposed road.
- (I) The location of all structures and improvements, including subsurface utilities and improvements proposed in connection with the construction of such road.
- (J) All areas to be conveyed to the Town for open space, drainage, etc.
- (K) Numbered survey control points, wetland flags and test pits.

40B.4 Plan & Profile Drawings

Plan & Profile drawings shall be prepared on a 24" x 36" sheet size with scales of 1" = 40' horizontal and 1" = 4' vertical, showing the following:

- (A) The location and dimensions of existing and proposed street rights-of-way, edges of pavement, curbs, sidewalks, piping, catch basins, manholes, endwalls, bridges, utilities and utility easements, drainage easements, open channels, monuments, tops and toes of all slopes, all data required for accurate layout of roadway center lines and rights-of-way, including stationing, bearings, tangent lengths, arc lengths, radii and central angles of all curves; location of property lines intersecting the street right-of-way lines and the names of owners of such adjacent property; typical cross-sections of each street, showing proposed dimensions, materials of construction, and locations of drainage piping and other underground facilities and utilities; location and description of survey bench mark; and, street signs and traffic control signs.
- (B) Profiles of existing ground surface on the center line and at each right-of-way line shall be based on an accurate field survey.
- (C) Profile of the proposed center line, showing proposed grades, vertical curve data and stations at grade changes, intersections, high points and low points.
- (D) Profiles of all existing and proposed drainage facilities, bridges and other proposed improvements showing locations, sizes, grades and invert elevations.

40B.5 Detail Drawings

For proposed improvements that cannot be readily shown on the Plan & Profile drawings, or that are not included in the Standard Detail Drawings in Appendix A, additional drawings shall be submitted showing in further detail all information required for construction. Detail drawings shall be prepared at appropriate scales, and shall substantially conform in both form and manner to the Standard Detail Drawings in Appendix A. In addition to any necessary detail drawings, the following statement shall be included on all construction drawings; "All construction shall conform to the criteria and standards included in the 'Regulations for Public Improvements'".

40B.6 Drainage Report

A drainage report, conforming with the design criteria in Section 90 of these Regulations, shall be submitted which includes the basis of design, detailed design computations, and a drainage analysis map for sizing all proposed storm drainage facilities; the analysis of any required existing off-site facilities; and, for any proposed stormwater runoff control measures. Detailed design computations shall include the design criteria, parameters and methods used in selecting the location, configuration, type and size of all proposed drainage facilities. Such computations shall include tabulated summaries of pertinent design computations. Wherever feasible, such tabulations shall follow the most current format utilized by the Connecticut Department of Transportation, the Federal Highway Administration, the Natural Resource Conservation Service or such format as may be adopted and amended from time to time by the Town.

40B.7 Soils Report

A soils report shall be submitted showing the type, nature and extent of the various soils existing within the proposed road right-of-way and in the area where the roadway slopes extend beyond the proposed road right-of-way. All soils types shall be identified on the basis of test pits, which shall also indicate seasonal high ground water and bedrock depths. Such report shall also include a description of the means and methods proposed to be utilized to overcome any potential soils problems.

40B.8 Earthwork Analysis

An earthwork analysis shall be submitted which quantifies the volumes of cut and fill required to construct the proposed road and associated public improvements.

40B.9 Soil Erosion and Sediment Control Plan

A detailed plan for soil erosion and sediment control, conforming with the requirements of Section 110 in these Regulations, shall be submitted. The plan shall include all measures to be taken to control erosion and sedimentation resulting from proposed road and drainage facility construction. All such measures shall be consistent with the requirements and standards outlined in the "Connecticut Guidelines for Soil Erosion and Sediment Control". When a project is of a size that requires a "General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities", it shall be the

applicant's responsibility to file the required registration form with the Connecticut Department of Environmental Protection and to provide copies to the Town.

40B.10 Landscape Plan

A landscape plan shall be submitted for any median strips or other proposed landscaped areas to be located within the right-of-way lines of a road. All proposed landscaping shall be consistent with the criteria included in Section 120 of these Regulations.

40B.11 Water Distribution System Report

If a public water distribution system is proposed, written evidence shall be provided from the Connecticut Water Company or other water company serving the development stating that they have agreed to provide water service, including the identification of any system improvements that may be required to accommodate such service.

40B.12 Traffic Report

If, in the opinion of the Commission, there is concern regarding the ability of the existing roadway network to accommodate prospective traffic in a safe and efficient manner, they may require the submission of a traffic report which shall evaluate and identify any required measures to address such concerns. Traffic reports shall be prepared by a Registered Professional Engineer with a specialization in Traffic Engineering.

40B.13 Connecticut Department of Transportation Approval

Where any road, drainage facility or other associated work is proposed to join with a state highway, or is to be located within a state highway right-of-way, the applicant shall obtain a letter from the Connecticut Department of Transportation which shall approve of such work. Such letter may be conditional upon prior approval of the project by the Commission, and/or submission of a permit application to the Connecticut Department of Transportation.

40C - SUPPLEMENTAL INFORMATION

40C.1 General

Whenever the staff or Commission shall deem it reasonably necessary or appropriate to request additional information for consideration of an application, it may require the applicant to submit, at or prior to the hearing, any other information in such form as it may prescribe. Furthermore, whenever the Commission shall deem required information unnecessary for the consideration of an application, it may, upon request of the applicant, waive in writing the requirement of any information specified in Section 40B above.

40C.2 Layout

Within one week of submission of an application and supporting information, or such longer period of time as the Commission may authorize, the approximate location of all drainage outlets, and the proposed road centerline at maximum intervals of 100 feet, shall be flagged

in the field. The requirement for field flagging shall not permit the applicant to initiate any type of site clearing. If such flagging is not completed as requested, the Commission may deem that there is insufficient information on which to make a decision and deny the application.

40D - ALTERNATE STANDARDS

40D.1 General

The Planning Commission may approve alternate design and construction standards when a) such standards are prepared by a professional engineer licensed as such by the State of Connecticut, and b) the Board determines that such standards will be in accordance with the purpose and intent of these regulations as stated in Section 70A.1.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 50 - CONSTRUCTION INSPECTION PROCESS

50A - PROCEDURE

50A.1 General

Any project for which design approval has been granted by the Old Saybrook Planning Commission to construct, reconstruct or complete construction of a road intended to be used for public travel or public use shall require periodic inspections to be conducted by the Town of Old Saybrook to monitor compliance with the approved drawings and plans, the requirements outlined in these regulations, and good construction practices. However, it is the applicant's sole responsibility to ensure that all construction shall conform to such requirements.

50A.2 Preconstruction Meeting

Prior to the start of any construction, it is the applicant's responsibility to schedule a preconstruction meeting with the Town, as well as representatives from all applicable utility companies where relocations or extensions are required. No such meeting shall, however, be scheduled until such time as the inspection fee has been paid, and the Erosion and Sediment Control Bond and the Restoration Bond or Performance Bond are posted as required in Sections 50A.4, 50A.5, 50A.6 and 50A.7 of these regulations. Scheduling of the preconstruction meeting shall be made with the Town Engineer, who shall be responsible for notification of the Public Works Department and other appropriate Town Staff. The applicant shall be responsible for ensuring that the contractor and Construction Coordinator are in attendance. The general purpose of the preconstruction meeting is to introduce all parties, identify the Town's Construction Inspector and Contractor's Construction Coordinator, exchange telephone numbers, review the construction schedule, and discuss any additional requirements or concerns specific to the proposed project.

50A.3 Construction Coordinator

In respect of all matters pertaining to inspection hereunder, the applicant shall designate one Construction Coordinator who shall be fully authorized to communicate with the Town. Such designation shall be made in writing which shall state such individual's mailing address, and telephone/cell phone and fax numbers, and shall be delivered to the Director of Public Works prior to commencement of any work. All notices, orders or other communications delivered to or served upon such individual shall be deemed to have been delivered or served upon the applicant. All notices or other communications received from him shall be deemed to have been received from the applicant.

50A.4 Inspection Fees

Prior to the start of any activity, the applicant shall pay an inspection fee to the Town, as specified in the Town of Old Saybrook Code of Ordinances.

50A.5 Erosion and Sediment Control Bond

Prior to the start of any activity, the applicant shall post a separate cash or savings account bond with the Town for sediment and erosion control and site stabilization measures in accordance with the procedures established in the Old Saybrook Subdivision Regulations.

50A.6 Restoration Bond

Prior to the start of any activity for which conditional approval is granted, the applicant shall post a separate cash or savings account bond with the Town for site restoration in accordance with the procedures established in the Old Saybrook Subdivision Regulations. This bond shall be in addition to the Erosion and Sediment Control Bond required in Section 50A.5 above.

50A.7 Performance Bond

Prior to the start of any activity, the applicant shall post a performance bond with the Town in accordance with the procedures established in the Old Saybrook Subdivision Regulations. This bond shall be in addition to the Erosion and Sediment Control Bond required in Section 50A.5 above.

50A.8 Bond Reductions

During the course of construction, periodic reductions in the amount of the Performance Bond may be requested by the applicant, and considered by the Commission, to reflect the cost of remaining improvements. Any such bond reductions shall be subject to review by the Town Engineer and Director of Public Works, as well as the limitations specified in Section 50E.5 of these Regulations. In no event shall a Performance Bond be reduced to an amount less than ten percent (10%) of the total value of all required improvements prior to acceptance of the road.

50B - REQUIRED INSPECTIONS

50B.1 General

Scheduled inspections may be conducted by the Town at key construction stages specified in Section 50B.3 in order to provide a reasonable level of confidence that a road, which is to be used for public travel, as well as any associated improvements, has been constructed in general conformance with the approved drawings and plans; the requirements outlined in these regulations; and, good construction practice. At the discretion of the Town, the Construction Coordinator may be notified of additional inspections that may be required. It is the Construction Coordinator's sole responsibility to schedule and coordinate all required inspections with the Town's Construction Inspector. The applicant shall provide a minimum advance notification of twenty-four (24) hours for all inspections, which shall only be made during the Public Works Department normal working hours. Unannounced spot inspections may also be made by the Town at any time.

50B.2 Right-of-Entry

Filing an application under this regulation shall constitute the property owners consent for all Town Staff, and the Commission's duly authorized agents, to enter upon the premises and to inspect, or cause to be inspected, construction work authorized by Design Approval hereunder at any time with or without notice during, before or after regular business hours.

50B.3 Scheduled Inspections and Surveys

The following inspections shall be required and no further work shall be performed until each inspection shall have been made and the Construction Coordinator has been notified by the Town's Construction Inspector that further work may proceed:

- (A) The approved limits of clearing, conservation easements, public access, open space areas, and inland wetland and watercourses shall be flagged prior to the start of any work.
- (B) After cutting of trees and brush, and the installation of sediment and erosion control measures, but prior to any stumping and/or grading.
- (C) After stumping and stripping of topsoil and organic material from earth cut and fill areas, but prior to rough earth cuts or the placement of any fill material.
- (D) After rough earth cuts and fills and the formation of the road subgrade.
- (E) After the installation of sewage collection system improvements, but prior to backfilling.
- (F) After the installation of water distribution system improvements, but prior to backfilling.
- (G) After the installation of storm drainage pipe and catch basins, but prior to backfilling.
- (H) After the installation of underdrains, but prior to backfilling.
- (I) After formation of the finished road subgrade, following the construction of all underground utilities located within the roadway (water distribution, sewage collection, storm drainage, underdrains, gas, etc.) and prior to the placement of any rolled granular base materials. In addition, proof rolling of the road subgrade shall be observed by the Town Construction Inspector.
- (J) Provide an interim As-built survey, after formation of finished road subgrade, showing the edges of road, centerline profile and catchbasin locations with invert and top of grate elevations.
- (K) After the placement of rolled granular base. In addition, the applicant may be required to perform in place density tests at this time based on site specific conditions.

- (L) After the placement and fine grading of processed aggregate base. In addition, the applicant shall perform in place density tests at this time at a maximum interval of 100 feet and/or at locations designated by the Town.
- (M) Prior to the placement of bituminous concrete paving, the applicant shall be responsible for the excavation of shallow test holes for the purpose of confirming that the actual compacted depth of rolled granular base and processed aggregate base materials conform to Town Standards. Test holes will be required at a maximum interval of 100 feet and/or at locations designated by the Town. In addition, proof rolling of the road base shall be observed by the Town's Construction Inspector.
- (N) During the placement of bituminous concrete paving. A copy of all weight slips for bituminous concrete material delivered to the site shall be provided to the Town.
- (O) After placement of mountable extruded concrete curbs, but prior to any backfilling of curbs.
- (P) After placement of the granular sidewalk base.
- (Q) During the placement of Portland Cement Concrete Sidewalks. A copy of all batch plant tickets for Portland Cement Concrete delivered to the site shall be provided to the Town.
- (R) After backfilling of curbs and final grading of shoulder areas.
- (S) After restoration of all disturbed areas, placement of road monuments, traffic control/street name signs and street trees.

50B.4 Construction Materials

The applicant shall be required to submit material certifications, samples and/or certified laboratory reports to the Town documenting the conformance of certain construction materials with the specifications included in these regulations. The applicant shall not be permitted to place, or to have delivered to the project site, any materials for which approvals have not been granted by the Town. Any approvals granted by the Town on the basis of certified laboratory reports shall be conditional upon the tested sample being representative of all such materials utilized for construction. The Town shall reserve the right at any time during the course of construction, for whatever reason, to have additional materials testing conducted. Should the results of such testing find that the materials do not conform to specifications, then such materials shall be removed and replaced with conforming materials at the applicant's expense. The applicant shall be required to reimburse the Town for the cost of any such testing only if the results prove that the materials tested do not conform to required specifications.

Material certifications, samples and/or certified laboratory reports shall be submitted for the following materials:

- (A) Storm Drainage Pipe, Catch Basin, and other Storm Drainage Structures

- (1) Material certification from manufacturer and/or supplier for conformance with State Standard Specifications Section M.08.01 and M.08.02.
- (B) Bedding Material for High Density Polyethylene Pipe
- (1) Representative sample collected in accordance with AASHTO T2.
 - (2) Certified laboratory report of sieve analysis for conformance with State Standard Specifications Section M.08.01-21 performed in accordance with AASHTO T11.
- (C) Rolled Granular Base
- (1) Representative sample collected in accordance with AASHTO T2.
 - (2) Certified laboratory report of sieve analysis for conformance with State Standard Specifications Section M.02.06 Grading A performed in accordance with AASHTO T11.
 - (3) Certified laboratory report of in place density tests at locations as may be required by the Town's Construction Inspector. The dry density after compaction shall not be less than 95 percent of the dry density for the material when tested in accordance with AASHTO T180, Method D. Corrections for particles retained on the 3/4 inch sieve shall be made in accordance with AASHTO T224.
- (D) Process Aggregate Base
- (1) Representative sample collected in accordance with AASHTO T2.
 - (2) Certified laboratory report of sieve analysis for conformance with State Standard Specifications Section M.05.01 performed in accordance with AASHTO T11.
 - (3) Certified laboratory report of in place density tests at intervals and/or locations as specified in Section 50B.3(L). The dry density after compaction shall not be less than 95 percent of the dry density for the material when tested in accordance with AASHTO T180, Method D. Corrections for particles retained on the 3/4 inch sieve shall be made in accordance with AASHTO T224.
- (E) Bituminous Concrete
- (1) Name and location of asphalt plant proposed for use and certification that the plant has been inspected and approved by the Connecticut Department of Transportation, Division of Materials Testing for the specified materials. Such approval shall be current and effective throughout the period when the bituminous concrete materials are manufactured.
 - (2) Material Certifications from the manufacturer and/or supplier for conformance with the State Standard Specifications Section M.04.01 and M.04.03.

(F) Portland Cement Concrete

- (1) Certified laboratory reports for slump, air content, and temperature for conformance with the State Standard Specifications Section M.03.01 and Section 6.01.03. Tests shall be performed for every seventy-five cubic yards of single concrete class poured each day a class is poured, unless required otherwise by the Town's Construction Inspector. Slump tests shall be performed in accordance with AASHTO T119. Air content shall be determined in accordance with AASHTO T152 (Pressure Method).

50C - FAILURE TO PROPERLY EXECUTE REQUIRED IMPROVEMENTS

50C.1 General

Failure to follow the procedures set forth in these Road Regulations may result in a rejection of that portion of the work completed without required submissions and inspections, which may result in delays and added costs to the applicant in demonstrating compliance with applicable regulations and standards. Failure to construct road, drainage and other public improvements in accordance with approved construction plans, Town Regulations and Standards, and good construction practice, may result in the Town's refusal to accept any such improvements. If the applicant fails to execute the approved or required improvements in accordance with these regulations or the terms of the permit or approval, and such failure causes unreasonable sedimentation, erosion, pollution or other nuisance conditions, the Town or the Commission may take whatever actions it deems necessary or appropriate to correct and/or abate the nuisance conditions. In such circumstances, the Commission may recommend that the Town not accept such improvements, unless and until the applicant reimburses the Town for all costs and expenses of such correction and abatement.

50D - CHANGES DURING CONSTRUCTION

50D.1 Modifications

If at any time during the construction of the required improvements, unforeseen field conditions make it necessary or preferable to modify the location or design of such required improvements, the Construction Coordinator shall notify the Town's Construction Inspector in writing, who shall determine whether the change is minor in nature or whether the Commission itself must act on the proposed change. If the change is minor, the Town Construction Inspector, following consultation with the Director of Public Works, shall either approve or disapprove the applicant's request. If it is determined that the change is not minor, the applicant shall submit an application for a modification of the Commission's approval. Such application shall meet all the informational requirements required by the Commission.

50D.2 Additional Work

If during the course of construction of any new road, or any other improvements required by the Commission in connection with the approval of a subdivision, it appears that additional

work is required owing to unforeseen conditions such as, but not limited to springs, old drains, wet conditions, side hill drainage from cuts, bedrock, or other conditions which were not apparent at the time of the approval by the Commission, the Town, acting by its Town Engineer, may require such additional work to be done, and the Commission may require an increase in the amount of the Performance Bond.

50E - MAINTENANCE OF UNACCEPTED ROADS

50E.1 General

Prior to acceptance of a completed road by the Town of Old Saybrook, where a performance bond has been posted to ensure construction of all required improvements, there may be instances where certificates of occupancy have been issued for individual dwellings that front on and derive access from the unaccepted road. In order to protect public health, safety and welfare, and to provide safe access to any such dwellings, it shall be the developer's sole responsibility to provide normal maintenance, including but not limited to snow and ice removal. Such maintenance shall be provided by the developer, at his cost, during the entire course of construction until the road is accepted by the Town of Old Saybrook.

50E.2 Preparation for Winter

Whenever a roadway has only been paved with the bituminous concrete Class I binder course, and the bituminous concrete Class II top course will not be placed until after the winter season, the developer shall place bituminous concrete wedges adjacent to all structures protruding above the surface of the bituminous concrete Class I binder course including but not limited to catch basin tops, manhole frames and valve boxes, so as to assure proper drainage and to provide safe conditions for snow plows. Any damage done to structures protruding above the surface of the bituminous concrete Class I binder course shall require their removal and replacement with new structures prior to the placement of the bituminous concrete Class II top course.

50E.3 Snow and Ice Removal

In the event that a developer fails to plow or sand a road within four (4) hours following cessation of a snowfall, or when icing conditions or ice build up occurs, the Old Saybrook Public Works Department shall have the right to plow or sand the road in question or arrange for a private contractor to do so. Any plowing or sanding that is necessary to be completed, or arranged for, by the Town of Old Saybrook shall neither be considered an assumption of responsibility nor shall it in any way relieve the developer of his continued responsibility to provide such maintenance.

50E.4 Normal Maintenance

In the event that a developer fails to maintain a road or make necessary repairs within seven (7) days of receiving notice from the Old Saybrook Public Works Department that maintenance or repairs are necessary, the Old Saybrook Public Works Department may make whatever repairs are necessary, or arrange for a private contractor to do so. Any

maintenance or repairs necessary to be completed or arranged for by the Town of Old Saybrook shall neither be considered an assumption of responsibility nor shall it in any way relieve the developer of his continued responsibility to provide such maintenance.

50E.5 Reimbursement of Town Expenses

Whenever the Old Saybrook Public Works Director provides or arranges for maintenance of unaccepted roads, the developer shall be responsible for promptly reimbursing the Town for all costs. During any such time when the developer has outstanding bills owed to the Town, the Town shall neither consider any requests for a reduction in, or release of, any bonds held, nor shall it consider any request for acceptance of the road. In the event that any bills owed by the developer become past due for a period of more than forty-five (45) days, then the Town shall have the right to deduct such past due amounts from any bonds, cash or otherwise, held by the Town of Old Saybrook.

Whenever funds are deducted from a bond, the developer shall, upon written notice from the Old Saybrook Board of Selectmen, replenish the bond to the original amount required. In the event that the bond is not replenished, the Town shall neither consider any requests for a reduction in, or release of, any bonds held, nor shall it consider any request for acceptance of the road. In addition, the town acting by and through its Board of Selectmen may seek relief at law or equity in any court having jurisdiction. By signing any application under this regulation, the developer shall have agreed to the payment of attorney's fees and costs in the event that legal action is required to enforce the provision of this regulation.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 60 - TOWN ACCEPTANCE OF A COMPLETED ROAD

60A - PROCEDURE

60A.1 General

Whenever a completed road is intended to be offered for acceptance by the Town, a written request for acceptance, including supporting and supplemental information required in this section, shall be submitted to the Board of Selectmen, who shall forward such information to the Director of Public Works, Town Engineer and Town Attorney for review. The Board of Selectmen shall notify the person(s) making the request of any comments requiring revisions to the supporting and supplemental information and any outstanding maintenance bills due to the Town. Upon receipt and confirmation that all required revisions have been made, and outstanding bills paid, the Board of Selectmen shall schedule a Town meeting for a vote on acceptance of the road. The procedure for formal acceptance shall be as required by state law and the Charter of the Town.

60A.2 Who May Request Acceptance

A written request for acceptance of a completed road may be made by any person who is:

- (A) The owner, or all the joint owners, of the land underlying the proposed road.
- (B) The purchaser, or all the purchasers, under a written contract to purchase the land underlying the proposed road, provided that written consent of the owner, or all joint owners, of the land accompanies the written request.

60B - SUPPORTING AND SUPPLEMENTAL INFORMATION

60B.1 General

A written request for Town acceptance of a completed road shall include six (6) copies of all required supporting information and supplemental information as may be requested.

60B.2 Supporting Information

Supporting information shall include the following items:

- (A) A written description by metes and bounds or courses and distances, of all land and additional easements as necessary to be conveyed to the Town.
- (B) Fixed line mylars of Record Plan-Profile Drawings, prepared at the scale and, showing the information specified in Section 40 on an "As-Built" basis. All record drawings shall be prepared by a Land Surveyor licensed in the State of Connecticut.

- (C) Fixed line mylars of Record Detail Drawings, where any previously approved details have been modified, showing all information on an "As-Built" basis.
- (D) A copy of a completed Work Permit or letter, issued by the State Department of Transportation, confirming the satisfactory completion of all work conducted within a State Highway Right-of-Way.
- (E) Completed copies of all conveyances or other legal instruments, properly executed in form and manner suitable for recording in the Town Land Records, effectively transferring or creating the rights in each instance required under Sections 70I.5 and 90A.8.
- (F) A Warranty Deed properly executed by the owner or owners of the land to which the written request relates, in form and manner suitable for recording, effectively conveying good and marketable title to said land to the Town, together with a Certificate of Title from an attorney admitted to practice in Connecticut certifying that said owner or owners hold good and marketable title to said land at the date of such written request free and clear of all title defects and encumbrances. The Commission may accept Owner's Title Insurance in an amount determined by the Town Attorney in lieu of a Certificate of Title. By delivery of such deed, said owner or owners shall be deemed to authorize delivery to and recording thereof by the Town upon acceptance of such road by the Town.
- (G) A Certificate of Accurate Monument Location prepared by a Land Surveyor licensed in the State of Connecticut.

60B.3 Supplemental Information

Whenever the Board of Selectmen shall deem it reasonably necessary or appropriate to a proper disposition of any written request for acceptance of a completed road, it may require submission of any other information in such form as it may prescribe. Until such supplemental information has been received by the Board of Selectmen, it shall decline to make any recommendation regarding acceptance.

60C - ACCEPTANCE

60C.1 Conformance

Prior to considering acceptance of a road, the Board of Selectmen shall determine whether or not the road and all associated improvements, including but not limited to detention basins, water storage tanks and any required off site improvements, conform to the approved location, layout, design and construction plans and to the criteria and standards hereinafter specified or prescribed for such road and all associated improvements in or pursuant to these Regulations.

60C.2 Release of Performance Bond

The obligation of the Performance Bond prescribed in Section 50A.7 shall not expire, be released or otherwise terminate with respect to any road and associated improvements prior to determination by the Board of Selectmen that all required supporting and supplemental information specified in Section 60B above is satisfactory; that the road and all associated improvements meet the conformance requirements outlined in Section 60C.1 above; and, the Maintenance Bond is posted.

60C.3 Maintenance Bond

Prior to the acceptance of any road by Town Meeting, the applicant shall post with the Town a Maintenance Bond or bonds, in an amount and with surety and conditions satisfactory to the Town indemnifying the Town for a one year period against costs and expenses of labor and materials necessary or appropriate to correct or replace improper or defective materials or faulty workmanship, including any damage to any property of the Town resulting therefrom, or to complete construction in conformity with the standards, criteria and specifications prescribed in these Regulations. Such Maintenance Bond shall be in an amount equal to not less than ten percent (10%) of the total value of the Performance Bond specified in Section 50A.7 of these Regulations for all required improvements, or as otherwise approved by the Board of Selectmen. The Maintenance Bond shall be delivered to the Board of Selectmen, who shall deliver the Maintenance Bond to the Old Saybrook Town Treasurer for review and safe keeping.

60C.4 Recording of Documents

The owner shall provide all supporting information set forth in Section 60B.2, including the required Maintenance Bond, prior to acceptance of the completed road by Town Meeting. Final acceptance of a completed road shall not be deemed effective until all required documents have been filed on the Town Land Records.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 70 - ROAD CRITERIA

70A - GENERAL

70A.1 Preservation of Existing Resources

All significant existing natural, human-made, or scenic resources shall be preserved and protected to the greatest extent possible. Such resources include, but are not limited to: stone walls, steep slopes with a gradient greater than 25%, ledge outcroppings, specimen trees and stands of trees including rare and unusual flora and fauna, endangered species, species of special concern, watercourses, ponds, wetlands, scenic vistas, ridge lines and any other significant geological features such as eskers, kames or kettles.

70B - PAVEMENT AND RIGHT-OF-WAY WIDTH

70B.1 Road Width

The minimum pavement width of roads, as measured from edge of pavement to edge of pavement, or face to face of curbs, shall be as follows:

- | | |
|--------------------------------|---------|
| (A) Private Road
(Figure 3) | 16 feet |
|--------------------------------|---------|

In all residential zoning districts

- | | |
|------------------------------|---------|
| (B) Local Road
(Figure 1) | 24 feet |
|------------------------------|---------|

In all residential zoning districts

- | | |
|---|---------|
| (C) Feeder/Collector Road
(Figure 2) | 30 feet |
|---|---------|

In all business and industrial zoning districts, and roads of considerable existing or potential continuity on which traffic passing lots is dominant and needing two way traffic flow at all time.

70B.2 Right of Way

For every road, the right-of-way lines on each side of the road shall be parallel or shall be concentric arcs and all intersections of right-of-way lines shall be rounded by a curve having a radius equal to the required curb line radius, but not less than 25 feet. Minimum right-of-way widths shall be as follows:

(A) Private Road (Figure 3)	30 Feet
(B) Local Road (Figure 1)	50 Feet
(C) Feeder/Collector Road (Figure 2)	60 Feet

70C - GRADIENT

70C.1 General

Roads shall be designed so as to avoid excessive cuts and fills and to avoid a combination of steep grades and sharp curves.

70C.2 Minimum

The minimum gradient on any road shall be 1%, except turnarounds which shall be 1.35%.

70C.3 Maximum

The Maximum gradient on any road shall be as follows:

(A) Private Residential Road	10%
(B) Local Road	8%
(C) Feeder/Collector Road	8%
(D) Turnarounds	3%

The maximum permitted gradient for the entire required turnaround diameter.

(E) Intersections	4%
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For a minimum tangent distance of not less than 50 feet as measured from the gutter line of the intersected road to any change in gradient.

70D - STOPPING SIGHT DISTANCE

70D.1 Minimum

The horizontal and vertical alignment of all roads shall be based on a 30 MPH design speed, and provide for a minimum stopping sight distance of 200 feet.

70D.2 Determination

Sight distances shall be determined on the basis of height of eye-height of object, headlight beam and horizontal location of eye, and object design criteria currently used by the State of Connecticut Department of Transportation.

70E - HORIZONTAL ALIGNMENT

70E.1 Curve Tangent and Radius

For all roads, the minimum tangent length between horizontal curves shall be 100 feet and the minimum radius of centerline curvature shall be 200 feet.

70E.2 Sight Distance

The horizontal alignment of the roads shall be such as to meet the requirements for sight distance specified in Section 70D.

70F - VERTICAL ALIGNMENT

70F.1 Gradient Transition

Parabolic vertical curves for transition between roadway gradients shall be provided on all roads to insure adequate sight distances in accordance with the minimum requirements specified in Section 70D and to provide a rate of change of gradient that assures safe vehicle operation and does not cause discomfort to vehicle occupants.

70F.2 Curve Length

The required length of vertical curve shall be based upon criteria identified in Section 70D, with the following requirements being the minimum acceptable:

<u>Type of Vertical Curve</u>	<u>Minimum Length, Ft.</u>
Crest	19 times the algebraic difference in grade, in percent.
Sag	37 times the algebraic difference in grade, in percent.

70F.3 Minimum Curve Length

Vertical curves shall have a minimum length of 100 feet.

70F.4 Maximum Curve Length at Low Points

Where a sag vertical curve results in a low point, the maximum length of vertical curve shall be equal to the minimum length of vertical curve, based on the criteria identified in Section 70F.2 and 70F.3.

70G - INTERSECTIONS

70G.1 General

The following standards shall apply to all intersections:

- (A) No more than two roads shall intersect at any one location.
- (B) Cross (four-cornered) intersections shall require approval by the Director of Public Works.
- (C) Spacing of intersections, as measured between centerlines, shall be at least 200 feet.
- (D) Driveways shall not be located any closer than 75 feet from an intersection.
- (E) Wherever possible, roads shall intersect at a 90 degree angle, or as close thereto as is practical. In no event however, shall an intersection be allowed where the angle of intersection is less than 75 degrees within 100 feet of the intersection.
- (F) The minimum radii of curb lines at intersections shall be as follows:

Private Residential Road	25 feet
Local Road	25 feet
Business/Industrial Road	35 feet

The Commission may require greater radii where the angle of intersection is less than 90 degrees.

- (G) The visibility at intersections (intersection sight distance) shall be such as to allow a stopped vehicle on the intersecting roadway, located ten (10) feet back from the travel lane, to see, and to be seen, from a vehicle approaching from either direction along the town road, based on a height of eye and object of 3.5 feet, and the 85th percentile speed. When the 85th percentile speed has not been documented, it shall be as determined by the Director of Public Works. Required sight distances in each direction are as follows:

<u>85th Percentile Speed (mph)</u>	<u>Intersection Sight Distance (ft)</u>
15	115
20	155
25	195
30	230
35	285
40	365
45	455
50	565
55	690
60	835

- (H) Sufficient clearing and regrading shall be accomplished to meet the sight distance visibility requirements of Subparagraph (G) of this subsection and no structures, fences, walls, hedges, boulders, rocks, bushes, shrubs, trees or other landscaping shall be permitted to obstruct such visibility.
- (I) Permanent sight line easements shall be provided on all private property so as to maintain the sight line requirements established in this subsection. In addition, no objects of any kind, that are located on private property outside the limits of a permanent sight line easement, shall be permitted to extend or protrude within the plane of such easement. In the case of trees, all foliage shall be trimmed up to a minimum height of six feet as measured from the top of curb or edge of pavement adjacent to the nearest road.

70H - DEAD END ROADS

70H.1 General

All dead end roads, permanent and temporary, shall be provided with a circular right-of-way and pavement at the terminating end, except for a Private Residential Road which may utilize a hammerhead type turnaround. The required radii of the circular right-of-way and pavement shall be as follows:

<u>Element</u>	<u>Radius, feet</u>
Right-of-Way, Road	60 feet
Outside Edge of Pavement	50 feet

70H.2 Layout

The layout of turnarounds shall be in accordance with the most current Standard Detail Drawings (Figures 6, 7 and 8).

70H.3 Snow Storage Reserve Area

Unless otherwise approved, an open unrestricted area shall be reserved at the end of all turnarounds for the storage of snow. Such area shall be located at the end of the turnaround between the curb and the right of way line for a distance of 25 feet on each side of the extended road center line. This area, which shall be delineated on the Record Subdivision Map, shall be free from all obstructions including, but not limited to, driveways, mailboxes, landscaping and fences.

70H.4 Length

The maximum length of a dead end road shall be as specified in the Old Saybrook Subdivision Regulations and shall be measured from the gutter line of the intersected road to the center of the turnaround.

70I - SHOULDERS AND SLOPES

70I.1 General

For all roads, a shoulder area 12 feet in width in back of the curbing shall be excavated to a depth of at least 6 inches, and then backfilled and final graded with not less than 6 inches of topsoil, as hereinafter specified.

70I.2 Grading of Shoulder Areas

Where curbs are required, the shoulder areas shall be graded so as to slope toward the top of curb at a cross slope of 3/8 inch per foot unless otherwise approved by the Director of Public Works due to special conditions encountered during construction. Where no curbs are proposed, the shoulder areas shall be graded so as to slope away from the gutter line of the road at a cross slope of one inch per foot. The requirement for curbing shall be determined by the Town Engineer based on gutter line grade, peak discharge rate, runoff velocity and erosiveness of existing soils, permeability of existing soil, depth to ledge, seasonal high groundwater table, and other factors in accordance with good engineering practice and the goals of low-impact design.

70I.3 Grading Beyond Shoulder Areas

Areas outside of the shoulders shall be graded up or down to existing grades, at a slope not to exceed two feet horizontal to one foot vertical. In rock cuts, slopes of one foot horizontal to not more than four foot vertical shall be allowed, but care shall be taken to insure that all exposed rock is stable and free from faults, cracks or other infirmities which might lead to collapse or flaking.

70I.4 Special Conditions

The Director of Public Works may require additional measures to be taken to maintain the stability of slopes, and to control groundwater seepage, under prevailing soil conditions encountered during construction. These measures may include, but not necessarily be limited to, a decrease in the amount of slope, stabilization blankets or grids, stone slope protection, plantings, wedge drains, underdrains, terracing, drainage swales or retaining structures. In cases where the exposed face of a cut slope consists of decomposed, flaking, highly fractured or unstable rock, slopes shall be flattened so as to protect public safety and minimize future maintenance.

70I.5 Limits

No cut or fill slopes shall extend beyond the limits of the right-of-way onto private property unless appropriate slope rights are acquired which provide a perpetual right, running with the land in favor of the owner of the road, to enter upon said private property for purposes of constructing, maintaining and repairing such slopes. In the absence of such slope rights, appropriate retaining structures shall be constructed to prevent encroachment on adjoining private property.

70I.6 Trees

If, in the opinion of the Commission, a slight modification of the shoulder or slope would result in the saving a valuable shade tree, the Commission may in its discretion allow such variation.

70J - CURBING

70J.1 General

Where curbs are required by the Town Engineer, they shall be constructed along the edge of street pavement in accordance with the dimensions and details shown in the most current Standard Detail Drawings (Figure 5), unless otherwise approved by the Director of Public Works.

70K - UTILITIES

70K.1 General

For new road construction, all utilities within the right-of-way of a road shall be located underground and installed as shown in the most current Standard Detail Drawings for underground utility assignments (Figure 4). Individual services shall be extended to the right-of-way line prior to the placement of any pavement. Installation of utilities within existing road right-of-ways shall be as approved by the Director of Public Works. To the extent possible, separation distances shall be maximized from existing municipal utilities.

70L - PROTECTIVE BARRIERS

70L.1 Guide Rails

Guide rails shall be installed wherever necessary to minimize the risk of personal injury or property damage resulting from vehicle departure from the right-of way. In general, guide rails shall be installed at the following locations:

- (A) Embankments - Such protective barriers shall be required on any roadway section constructed on an embankment which places the roadway surface five (5) feet or more above the existing ground surface at the toe of the embankment slope. This requirement may be waived by the Department of Public Works where the embankment slopes are not steeper than four (4) feet horizontal to one (1) foot vertical.
- (B) Culvert Endwalls - Such protective barriers may be required at culvert endwalls, depending on the height of the endwall and its proximity to the edge of the road.
- (C) Roadside Obstacles - Such protective barriers may be required to shield natural or man-made fixed object hazards including, but not limited to, trees, rock outcrops, ditches, retaining walls, bridge abutments and permanent bodies of water.

Where marginal situations occur with respect to the placement or omission of a guide rail, or where it is determined that a vehicle striking a guide rail could potentially be more severely damaged than an accident resulting from hitting an unshielded roadside obstacle, the Director of Public Works may approve the use of an object marker in accordance with Section 70P.4.

70L.2 Fencing

A securely anchored PVC coated chain link fence four (4) feet in height, shall be installed wherever necessary to minimize the risk of personal injury.

In general, fencing shall be installed at the following locations:

- (A) Rock Cuts - such protective barriers shall be required along the top of slope where a rock cut exceeds eight (8) feet in height.
- (B) Culvert Endwalls - Such protective barriers shall be required at the top of any endwall that exceeds eight (8) feet in height.

70M - ROAD LIGHTING

70M.1 Places

Road lighting shall be provided if required by the Commission at any location where illumination in darkness is necessary to minimize the risk of accident involving vehicles or pedestrians or to assure safe and convenient vehicle and pedestrian passage. In general, the placement of lighting should be limited to intersections and when required at turnarounds.

70M.2 Nature

Lighting poles and luminaries shall conform to the most current utility company standards and shall be of a colonial type design with full cut-off luminaires and fiberglass poles, unless otherwise approved by the Commission. They shall be so located as to safeguard against discomfort glare and disability glare and avoid adverse effects from illumination upon the use, enjoyment and value of adjacent property.

70N - MONUMENTS

70N.1 General

All new roads shall be accurately monumented to allow the ready determination of points along all rights-of-way lines. Monuments shall be placed at all points of tangency and points of curvature and elsewhere as required to permit seeing from one monument on a line to another on the same line.

70O - ROAD NAMES AND SIGNS

70O.1 General

Road and other location names shall be approved by the Commission, and be so distinctive as to preclude possible confusion with other existing roads and locations within the Town. Road name signs shall be installed at all intersections. Such signs shall be erected in such places as to assure clear legibility by vehicle operators and shall conform to the most current edition of the Manual of Uniform Traffic Control Devices.

70P - TRAFFIC CONTROL DEVICES

70P.1 General

Traffic control devices, including signs, pavement markings, object markers, and other regulatory devices, shall be provided in such places as may be necessary to minimize the risk of accident involving vehicles or pedestrians and to assure safe and convenient vehicle and pedestrian passage.

70P.2 Signs

The design and placement of regulatory, warning and guide signs (Stop, Speed Limit, No Outlet, etc.) shall conform to the most current edition of the Manual of Uniform Traffic Control Devices.

70P.3 Pavement Markings

The location, type, color, width and patterns of pavement markings and object markers, shall conform to the most current edition of the Manual of Uniform Traffic Control Devices. In general, pavement markings shall include stop lines and crosswalks. Longitudinal pavement markings (center lines), to delineate the separation of traffic flows in opposing directions, shall only be required on business/industrial roads or other roads as required by the Director of Public Works.

70P.4 Object Markers

The design and placement of Type 2 Object Markers shall conform to the most current edition of the Manual of Uniform Traffic Control Devices.

70Q - SIDEWALKS AND PEDESTRIAN EASEMENTS

70Q.1 General

The Commission may require the installation of sidewalks along roads and in pedestrian easements. In general, the installation of sidewalks shall be consistent with the document entitled "Sidewalk Plan: Municipal Improvements, Programs & Standards for Sidewalks and Other Pedestrian Resources", prepared by the Commission in 2006 and shall also be installed as specified in the Old Saybrook Zoning Regulations. In addition, they should be installed in projects adjacent to local streets within 1.5 miles of a school, library or recreational facility; in the vicinity of public or quasi-public buildings, playgrounds, shopping areas, transit stops or high density residential areas; and, at other locations when deemed necessary by the Commission where the expected or probable volume of pedestrian traffic makes sidewalks necessary or appropriate in the interest of public safety and convenience.

70Q.2 Location and Dimensions

Sidewalks shall be a minimum of five feet in width and shall be located within the street right-of-way line, as shown on the Standard Detail Drawings. Sidewalks shall be carried across all driveway crossings with driveway grades adjusted to maintain a uniform sidewalk height above the edge of roadway pavement.

70Q.3 Handicap Ramps

Curb cuts shall be provided at all pedestrian cross walks to provide access for the safe and convenient movement of physically handicapped persons. Such curb cuts shall conform to the most current State Statutes and the ADA Standards for Accessible Design as published in the code of Federal Regulations.

70Q.4 Pedestrian Easements

In areas where the proposed road system does not conform to a convenient pattern of pedestrian circulation, particularly in the vicinity of parks, schools, playgrounds or other public or semi-public places, the Commission may require the establishment of easements for pedestrian ways, which will be a minimum of ten feet (10') in width. The surfacing, grade, and other specifications for such pedestrian easements shall take into consideration the topography, anticipated volume of use, erosion control, access for disabled persons, and the character of the area in the Town of Old Saybrook.

70Q.5 Bikeways and Multi-Use Trails

The Commission may require bikeways or multi-use trails to be constructed when deemed necessary for public safety or when such bikeways will contribute to a coherent integrated system of bikeways or trails providing an alternative means of transportation for the Town. A bikeway may be either a separate trail or path for the exclusive use of bicycles or a portion of the roadway which has been designated for preferential or exclusive use of bicycles, separated from the roadway by a paint stripe or curb or other similar device. The surfacing, grade, and other specifications for such bikeways and multi-use trails shall take into consideration the topography, anticipated volume of use, erosion control, access for disabled persons, and the character of the area in the Town of Old Saybrook.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 80 - ROAD CONSTRUCTION STANDARDS

80A - CONSTRUCTION SURVEY PROCEDURE

80A.1 General

The centerline of the traveled portion of the road shall be placed in the center of the right-of-way, and shall be located in the field by a State licensed land surveyor. Suitable construction ties shall be established at all control points, which shall be protected during construction so that the centerline may be re-established at any time.

80A.2 Stations

Stations shall be established every 50 feet and at all radius points (P.C. and P.T.'s). The beginning of this line shall be located in the gutterline of the intersected street and shall be designated as Station 10+0. A construction stake shall be placed at right angles to each station, clear of construction and grading. This stake will show the station on the side facing toward Station 10+0 the measured distance to centerline (offset) on the side facing away from Station 10+0 and on the face nearest to center line the cut or fill which will establish the center line grade. A grade list showing the Stations, stake elevations, offset from centerline grade, cuts and fills shall be provided to the Towns Construction Inspector by the Applicant, or his designee who is to have charge of the construction layout, before construction begins.

80A.3 Bench Marks

A permanent Bench Mark shall be established at the beginning and end of each road and at intervals not exceeding 500 feet along the length of the road. These Bench Marks shall be referenced to the same datum shown and identified on the construction drawings for the road. Sketches showing at least three ties to each Bench Mark, the Bench Mark elevation and a description of each Bench Mark shall be provided to the Towns Construction Inspector.

80A.4 Protection of Stakes and Bench Marks

Grade stakes and permanent Bench Marks shall be protected and preserved until the road construction has been approved by the Towns Construction Inspector. If such stakes or Bench Marks are disturbed, they shall be replaced immediately.

80B - CLEARING AND GRUBBING

80B.1 Clearing

All trees, brush, boulders, structures, walls, fences, perishable matter and debris of whatever nature shall be cleared from the full width of proposed limits of cuts and fills, including

areas necessary for construction of storm drainage systems, and required sight lines, except that valuable shade trees may remain in shoulder areas as provided for in Section 80B.3.

80B.2 Grubbing

All roots and stumps within the clearing limits specified in Section 80B.1 above shall be grubbed and excavated. All stumps shall be chopped or disposed of off site in a lawful manner. No stumps shall be buried on site.

80B.3 Trees

Valuable shade trees shall remain whenever possible in shoulder areas as provided for in Section 70I.6, but not within three (3) feet of any curbline, provided that a written opinion is submitted from a qualified arborist stating that the long term health of the tree will not be adversely impacted by proposed construction or proximity to proposed road improvements. Any such tree shall be effectively protected and preserved so as to insure that it will suffer no damage during construction operations. All tree branches overhanging the roadway pavement or shoulder areas shall be trimmed by a qualified arborist to a clearance of sixteen feet above the finished grade of the road.

80B.4 Topsoil

Topsoil shall be stripped from all surfaces of the roadway section which will be disturbed by cut or fill operations. Topsoil so stripped shall be stockpiled on the site of the work and shall be reserved for roadway landscaping.

80C - ROADWAY EXCAVATION, FORMATION OF EMBANKMENT AND DISPOSAL OF SURPLUS MATERIAL

80C.1 General

The excavation, filling, compaction, and the disposal of all surplus or unsuitable materials required to construct the roadbed, subgrade, shoulders, slopes and other associated improvements shall be accomplished in accordance with all applicable requirements of the State Standard Specifications for "Roadway Excavation, Formation of Embankment and Disposal of Surplus Material" except as modified herein.

80C.2 Unsuitable Material

All unsuitable material, including material removed during clearing and grubbing and preparation of subgrade, shall be removed from within the limits of the right-of-way and disposed of in a lawful manner.

80C.3 Surplus Material

When approved by the Director of Public Works, surplus suitable material should be used to flatten fill slopes within the limits of the right-of-way and any slope easements so as to

preclude the need for guide rails. Surplus suitable materials that cannot be so utilized shall be disposed of in a lawful manner.

80C.4 Blasting

Blasting shall be performed only by licensed competent personnel and shall be done in accordance with all applicable State and Federal laws, local ordinances, rules and regulations pertaining thereto, and only after obtaining all necessary permits.

80D - PREPARATION OF SUBGRADE

80D.1 General

All topsoil, peat, other organic matter and all soft and yielding material shall be stripped and removed to their full depth, and boulders and ledge rock removed to a depth of at least twelve (12) inches below finished subgrade. The surface shall then be backfilled up to subgrade elevation with bank or crushed gravel conforming to the requirements of the State Standard Specification Sections M.02.1 and M.02.06 (Grading B). All construction methods shall conform to the requirements of the State Standard Specifications for "Subgrade".

80E - ROLLED GRANULAR BASE

80E.1 General

After the subgrade has been compacted, proof rolled and approved by the Towns Construction Inspector, a rolled granular base shall be applied for the full required width of pavement plus 15 inches beyond the gutter line wherever curbs are to be placed and 24 inches beyond the edge of pavement where there will be no curbing. The rolled granular base shall not be less than eight (8) inches thick after compaction and shall have the cross-slope shown on the Standard Detail Drawings (Figures 1, 2 and 3).

80E.2 Materials and Methods

Construction methods shall conform to the requirements of the State Standard Specifications for "Rolled Granular Base", and materials shall conform to the requirements of the State Standard Specification Sections M.02.03 and M.02.06 (Grading A).

80F - PROCESSED AGGREGATE BASE

80F.1 General

After the rolled granular base has been placed and compacted, processed aggregate base shall be applied for the full required width of pavement plus 15 inches beyond the gutter line wherever curbs are to be placed and 24 inches beyond the edge of pavement where there will be no curbing. The process aggregate base shall not be less than four (4) inches

thick after compaction and shall have the cross slope shown on the Standard Detail Drawings (Figures 1, 2 and 3).

80F.2 Materials and Methods

Construction methods shall conform to the requirements of the State Standard Specifications for "Processed Aggregate Base", and materials shall conform to the requirements of the State Standard Specification Section M.05.01.

80G - BITUMINOUS CONCRETE PAVEMENT

80G.1 General

After the processed aggregate base has been brought to the required grade and cross slope, rolled, and compacted, the roadway shall be surfaced with bituminous concrete Class I binder course for the full required width of pavement plus 18 inches beyond each curb line to a compacted depth of not less than 2 1/2 inches. After placement of bituminous concrete curbing on the binder course, a bituminous concrete Class II top or surface course not less than 1 1/2 inches thick after compaction shall be placed. The total compacted depth of Class I binder course and Class II top or surface course shall not be less than 4 inches. Prior to the pavement of the Class II surface course, the surface of the binder course shall be broomed clean and a tack coat applied. No paving shall be permitted between October 31 and April 1 unless the Public Works Department specifically permits an exception due to unusually mild weather conditions. No paving shall be permitted on any day where the base temperature is less than 35 degrees Fahrenheit or when weather conditions of fog or rain prevail or when the pavement surface shows any signs of moisture. Pavement shall be placed so that each course shall have the cross-slope shown on the Standard Detail Drawings (Figures 1, 2 and 3).

80G.2 Materials and Methods

All materials and construction methods shall conform to the requirements of the State Standard Specifications for "Bituminous Concrete" except as modified herein. "Bituminous Concrete" shall conform to the requirements of the State Standard Specifications Sections M.04.01 and M.04.03 (Class I for the binder course and Class II for the top or surface course).

80G.3 Source

All bituminous concrete pavement material shall be obtained from a plant certified by the State Department of Transportation for provision of such materials for use in State highway construction. Original signed copies of certification by the supplier that each load of bituminous concrete pavement materials incorporated in the work conforms to the requirements specified in Section 80.G.1 shall be submitted to the Towns Construction Inspector.

80.H - EXTRUDED CONCRETE CURB

80H.1 General

Where required, mountable extruded concrete curbing shall be placed at the offset from centerline of road shown on the Standard Detail Drawings. Extruded concrete curbing shall not be required on existing Town roads where it is determined by the Director of Public Works that the installation of enclosed storm drainage systems is not warranted. Wavy or damaged curbing shall not be accepted, and the Towns Construction Inspector shall require that improperly placed curbing be removed and replaced.

80H.2 Materials and Methods

All extruded concrete curb shall be placed by using an extrusion machine, provided that the finished curb is true to line and the concrete is dense and of the required surface texture. The concrete shall be designed to include 75% State approved concrete sand and 25% 3/8" rock. The concrete shall contain a minimum of 620 pounds of cement (6.5 sacks) per cubic yard, yielding a concrete that will exceed 4,000 P.S.I. in 28 days. In addition, the concrete shall contain a minimum of one pound of fiber reinforcement per cubic yard. The concrete shall be produced according to ASTM C94 Ready Mixed Concrete or ASTM C685 Concrete Produced by Volumetric Continuous Mixing. The grading limits shall be further modified, if necessary, to produce concrete that, after extrusion, has well defined web marks of water on the surface and is free of surface pits larger than 3/16" diameter. The concrete shall be of such consistency that, after extrusion, it will maintain the shape of the curb section without support or slumping. It shall contain the maximum amount of water that will permit this result. Curbing shall be placed on the bituminous concrete binder course at a height which will maintain a 5-1/2 inch curb reveal after placement of the bituminous concrete surface course (Figure 5). In advance of placing the curbs on the pavement, the surface of the pavement shall be thoroughly cleaned and the adhesive shall be applied. The pavement shall be cleaned, if necessary, by abrading and/or high pressure water washing, so as to assure removal of all dust, loose material and and/or oil. The extruded curb shall be bonded to the existing pavement by using an approved concrete to asphalt adhesive or a two-component epoxy, designed to bond fresh concrete to existing pavement. The manufacture's instructions must be followed. The top of the finished curb shall be true to line. The curb shall follow the contour of the pavement, and shall be free of humps and sags. Control joints shall be cut, as soon as possible, through one-third of the cross section of the fresh concrete. The joint shall be tooled and finished to a neat and uniform appearance. The control joint shall be installed at nine foot intervals and more often on radii, so as to minimize shrinkage cracking. The finished curb shall be coated with a curing compound, designed to seal the surface and form a water proofing membrane to retard the loss of water from the fresh concrete. The manufacture's instructions must be followed.

80I - GUIDE RAIL

80I.1 General

Guide railing shall be installed as shown in the Connecticut Department of Transportation Standard Sheets. The type of guide rail to be utilized shall be as follows:

- (A) Type R-B 350 Metal Beam Rail (weathering steel) shall be used on all roadways.
- (B) Steel backed timber guide rail may be permitted in areas of aesthetic or historical significance as determined by the Commission.

Under no circumstances shall ornamental wood rails be permitted within a Town road right-of-way.

80I.2 End Anchorage

All leading and trailing ends of guide rail shall be secured with concrete end anchors. Unless otherwise approved by the Director of Public Works, blunt or flared ends shall not be permitted.

80I.3 Materials and Methods

For R-B 350 Metal Beam Rail, construction methods shall conform to the requirements of the State Standard Specifications for "Metal Beam Rail" (weathering steel), and materials shall conform to the requirements of the State Standard Specifications Section M.10.02 for Steel Posts, Welded-Soil Plates, Brackets, Back-Up Rails, Channel Rubrails, Rail Elements and Terminal Sections. Posts, rail elements and terminal sections shall utilize weathering steel. Materials used for metal beam rail delineators shall conform to the requirements of the State Standard Specifications Sections M.18.09-02 for Bright Wide Angle Retroflective Sheeting and M.18.13 for Sign Face Sheet Aluminum. For end anchorages, construction methods shall conform to the requirements of the State Standard Specifications for "Metal Beam Rail Anchorages", and materials shall conform to the State Standard Specifications Section M.10.02-7 for End Anchorages, and M.03.01-12 for Non-Shrink, Non-Staining Grout.

80J - FENCING

80J.1 General

Fencing shall be a minimum of four (4) feet in height and shall be installed as shown in the Standard Detail Drawings (Figure 15).

80J.2 Materials and Methods

Steel fabric, posts, and all hardware shall be coated with a black colored polyvinyl chloride, with all materials conforming to the requirements of the State Standard Specifications Section M.10.05. All construction methods shall conform to the requirements of the State Standard Specifications for "Chain Link Fence" with the exception that top tension wires shall be provided in lieu of top rails.

80K - MONUMENTS

80K.1 General

Monuments shall be of reinforced concrete, not less than four (4) inches square at the top and not less than three (3) feet long, shall have a cross mark indented in the top to indicate the exact point of reference, and shall be set so as to project not more than two (2) inches above finished grade. Under no circumstances shall monuments be buried beneath the ground surface or covered with landscape or other materials such that they are not visible. Monuments shall conform with the dimensions and details shown in the most current Standard Detail Drawings (Figure 23).

80K.2 Exposed Ledge Areas

In exposed ledge areas, a brass plug 1/2 inch in diameter and three (3) inches long shall be installed in the ledge and cemented in place with Portland cement mortar.

80L - Traffic Control Devices

80L.1 General

The design and placement of signs, pavement markings, and object markers shall conform to the most current edition of the Manual of Uniform Traffic Control Devices.

80L.2 Materials and Methods - Signs

Construction methods for street signs shall conform to the requirements of the State Standard Specifications for "Sign Face-Extruded Aluminum (Type III Reflective Sheeting)", with all other signs conforming to the requirements for "Sign Face - Sheet Aluminum". Materials for street signs shall conform to the State Standard Specifications Sections M.18.09 and M.18.10 for Type III Reflective Sheeting. Street signs shall have a 6-inch white legend on green background as shown in the Standard Detail Drawings (Figure 24). Materials for all other signs shall conform to the State Standard Specifications Sections M.18.09.01 for Type III Reflective Sheeting and M.18.13 for Sign Face Sheet Aluminum. Materials for metal sign posts and sign mounting bolts shall conform to the requirements of the State Standard Specification Sections M.18.14 and M.18.15 respectively. Posts shall be U-channel with a weight of two (2) pounds per foot, and painted green.

80L.3 Materials and Methods - Pavement Markings

Construction methods shall conform to the requirements of the State Standard Specifications for "Painted Pavement Markings", and materials shall conform to the requirements of the State Standard Specification Section M.07.20 for 15-minute dry paint.

80L.4 Materials and Methods - Object Markers

Construction methods shall conform to the requirements of the State Standard Specifications for "Object Marker". Materials shall conform to the Requirements of the State Standard Specification Sections 18.13 for Sheet Aluminum, 18.09 for Reflective Sheeting, 18.14 for Metal Sign Posts, and 18.15 for Sign Mounting Bolts. Posts shall be galvanized U-Channel with a weight of two (2) pounds per foot and painted green.

80M - SIDEWALKS

80M.1 General

Sidewalks shall be constructed as shown on the Standard Detail Drawings (Figures 16, 17, 18 and 19), using 4000 PSI Portland Cement Concrete, with an air entraining admixture. Sidewalks shall be a minimum of 59-3/4 inches in width and five (5) inches thick, and shall be constructed on a granular fill base having a minimum compacted thickness of eight (8) inches as shown in the Standard Detail Drawings. At all driveway crossings, the concrete thickness shall be increased to eight (8) inches, and a welded wire fabric reinforcement provided. Brick or stenciled and colored concrete shall be provided in the town center, at pedestrian nodes and at other locations as determined by the Commission. All patterns, pattern layouts and colors shall be as approved by the Commission.

Where brick sidewalks are required, they shall be set on a concrete base conforming to the same dimensions and standards required for construction of concrete sidewalks except that steel edge restraints shall be attached to the concrete as specified by the manufacturer. In addition, two one half inch diameter weep holes set one foot in from each edge shall be provided through the concrete at a two foot longitudinal spacing for the entire length of the walk. A non-woven filter fabric shall be laid on top of the entire concrete surface with a one inch depth stone dust leveling course, complying with ASTM D448 for size No. 10, placed on top. Heavy vehicular paving brick, conforming to ASTM C1272, shall be carefully placed hand tight on the stone dust leveling course in straight courses, maintaining accurate alignment and uniform top surface. Bricks with chips, cracks, voids, discolorations or other visible defects shall not be used. Pallets of brick shall be mixed as they are placed to produce a uniform blend of colors and textures. All bricks shall be cut with a masonry saw to provide clean, sharp unchipped edges. Joints shall be filled with stone dust by sweeping over the surface until all joints are filled.

80M.2 Materials and Methods

All materials and construction methods shall conform to the requirements of the State Standard Specifications for "Concrete Sidewalks", except as follows:

Materials:

1. Portland Cement Concrete shall conform to the requirements of the State Standard Specifications Section M.03.01 Class "F".

2. Granular fill shall conform to the requirements of the State Standard Specifications Section M.02.06 Grading C.
3. Welded wire fabric reinforcement shall conform to the requirements of the State Standard Specifications Section M.06.01 WWF6x6-W2.9xW2.9.
4. Steel reinforcing bars and dowel bars shall conform to the requirements of the State Standard Specifications Section M.06.01 Bar Designation No. 4.
5. Preformed expansion joint filler shall be one quarter inch in thickness and conform to the requirements of AASHTO 213.
6. Colored concrete stencil pattern shall be "Running Bond Brick" by DCI (25067 Hawthorne Road, Webb City Missouri).
7. Colored concrete hardener shall be "Mexican Tile" by Coloration Systems, Inc. (15829 Chief Court, Fort Meyers, Florida). Accent color hardener shall be "Deep Charcoal" by Butterfield Color (625 West Illinois Avenue, Aurora, Illinois).
8. Concrete sealers and curing compounds shall be Chem Tec 1 by Chemtek International (77771 Woodside Avenue, Suite 100, Cincinnati, Ohio), and Clear Guard Cure and Seal 2.92 VOC by Butterfield Color (625 West Illinois Avenue, Aurora, Illinois).
9. Detectable warning strip tiles shall be color-fast, UV stable, homogeneous glass and carbon reinforced composite material, colored throughout. The surface geometry shall comply with ADA Regulations and shall consist of raised truncated domes with a nominal diameter of 0.9-inches, a nominal height of 0.2-inches, and a center to center minimal spacing of 2.35-inches. The color of the tile shall comply with the current version of the Standard Color Tolerance Charts issued by the Federal Highway Administration. Composite products relying on paint coatings or "UV coatings" for color stability are not acceptable.

Methods for Finishing Stenciled and Colored Sidewalks:

1. Forms shall be square to keep patterns aligned. Form width shall be 59-3/4 inches to allow full bricks in the stencil pattern.
2. Concrete shall have a maximum slump of 4-inches to reduce excess bleed water.
3. After consolidating and screeding, bull float concrete to gradients indicated. Use a straight edge to level and test surface in longitudinal direction to required grade. Finish edges to provide a smooth dense surface with 1/8 inch radius.
4. Place stencils in overlapping pattern. Adjust the stencil up or down on the repeat for proper alignment. Allow for waste and order ample amount of stencil for the project. Use a stencil roller to adhere stencil to the concrete. Do not use a bull float which will bury the stencil too deep.

5. Cast Mexican Tile color hardener evenly over the slab at the rate of 50 lbs. per 100 square feet. Bull float the first coat of color into the concrete. A second application of the Mexican Tile color hardener shall be made using the manufacturer's recommended amount to achieve surface abrasion resistance, wear resistance, and to reach the true color. After the second application of color hardener, cast accent spots using Deep Charcoal color hardener. Trowel in the color with a bull float and a mag trowel and edger, leaving the concrete with no trowel marks. Do not use a steel trowel. The last coloration step shall be casting a light pit coat of Deep Charcoal color hardener over the walkway, followed by Mexican Tile color hardener.
6. Once the concrete has lost its ability to adhere to the back of the stencil, the stencil shall be removed.
7. Saw cut joints at locations shown on the Standard Detail Drawings within 24 hours.
8. Once the concrete has been cleaned to desired color and allowed to dry completely, apply one coat of Chem Tec 1 in accordance with the manufacturer's instructions.
9. After the Chem Tec 1 has dried completely two coats of Butterfield Color Clear Guard Cure and Clear Guard Cure and Seal 2.92 VOC shall be applied in accordance with the manufacturer's instruction.

Methods for Installing Detectable Warning Strip Tiles:

1. Detectable warning strip tiles shall be solidly set in the wet concrete. Beware that an overly wet mix may cause tiles to float. Concrete shall be poured and finished to line and grade, true and smooth to the required dimensions, prior to the placement of the tiles. Tiles shall be tamped and vibrated into the fresh concrete to ensure that the field level (base of truncated dome) of the tile is flush to the adjacent walking surface. Tolerance for elevation difference between the field and adjacent surface is 1/16". Following the tile placement, tile elevation should be checked to the adjacent surface with a straight edge. Elevations shall be as shown on the plans. Any adjustment must be made prior to setting of the concrete. During and after tile installation and concrete curing, no walking or other external forces will be permitted on the tiles. Protect the area from traffic while concrete cures. Clean any excess concrete or other material from the exposed face of the tile prior to curing of those materials. Conform to manufacturer's installation recommendations.

80M.3 Handicap Ramps - General

Handicap ramps shall be constructed to the dimensions shown on the Standard Detail Drawings (Figures 20 and 21), modified as required to conform with the most current State Statutes and ADA Standards for Accessible Design as published in the Code of Federal Regulations; shall be located as shown on the Approved Design Drawings; and shall be constructed of 4000 PSI Portland Cement Concrete, with an air entraining admixture. Handicap Ramps shall be five (5) inches thick, and shall be constructed on a granular fill base having a minimum compacted thickness of eight (8) inches. Detectable warnings

consisting of truncated cones that visually contrast with adjoining surfaces shall be provided for the full width and depth of ramps.

80M.4 Handicap Ramps - Materials and Methods

All materials and construction methods shall conform to the requirements of the State Standard Specifications for "Concrete Ramps". "Granular Fill" shall conform to the requirements of the State Standard Specifications Sections M.02.01 and M.02.06 (Grading C). Portland Cement Concrete shall conform to the requirements of the State Standard Specifications Section M.03.01 (Class "F"). Welded wire fabric reinforcement shall be WWF 6x6 - W2.9xW2.9.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 90 - DRAINAGE DESIGN CRITERIA

90A - DESIGN CRITERIA

90A.1 General

Proposed drainage facilities shall be designed to accommodate surface runoff from proposed land development as well as the entire upstream drainage area and to protect wetlands, watercourses and water bodies from the adverse impacts of post construction stormwater runoff. It is the policy of the Town of Old Saybrook to minimize the use of drainage structures and piping, to the extent that is reasonably possible, by using appropriate low impact development techniques.

90A.2 Analysis

Computations, conforming to the requirements outlined in this section, shall be submitted for sizing all proposed storm drainage facilities as well as the analysis of any existing off-site facilities required by the Commission. In addition, computations shall be submitted for both pre-development and post-development conditions for the 2, 10, 25, 50 and 100-year frequency 24-hour duration Type III storm events at each location from which storm water discharges will exit the property under development.

90A.3 Potential Overload

Where the proposed land development, including roadway and drainage facility construction, is likely to cause an increase in the rate of stormwater runoff such as to hydraulically overload or cause damage to existing downstream drainage structures, facilities, or watercourses, and/or cause flooding which would likely result in physical damage of land and improvements adjacent thereto, adequate stormwater runoff control measures shall be designed and constructed to prevent or alleviate such harmful effects.

90A.4 Stormwater Runoff Control

Where stormwater runoff control measures are required by the Commission, they may include, but not be necessarily limited to, retention and/or detention with controlled release of increased flows, increasing the hydraulic capacity of downstream drainage facilities, erosion protection measures, stormwater treatment or any combination of the above.

90A.5 Stormwater Quality

Best Management Practices shall be used to enhance the removal of both particulate and soluble pollutants during storm events so as to improve the quality of stormwater runoff discharged to receiving waters both during and after construction. In this regard, the information and recommendations included in the Connecticut Stormwater Quality Manual should be used as a guide.

90A.6 Stormwater Detention

When stormwater detention facilities are required, they shall be sized such that the peak discharge after development shall not exceed the peak discharge prior to development for each of the storm frequencies identified in Section 90A.2. Design and construction of surface stormwater detention facilities shall conform to the requirements for "Detention Basin" as outlined in the "Connecticut Guidelines for Soil Erosion and Sediment Control", with the exception that basin side slopes shall not exceed 4H:1V, and the maximum basin depth (as measured from the bottom of basin to the top of berm) shall not exceed six feet. In addition, detention basins shall be located no closer than one hundred fifty feet from an existing or proposed residential dwelling, or active recreation area. To the maximum extent possible, detention basins shall be designed as extended detention ponds or wet ponds, or used in conjunction with other stormwater treatment practices to provide water quality benefits; shall be irregular in shape and landscaped with native non-invasive species so as to enhance the appearance of the surrounding environment; shall be screened; and, shall be designed to minimize future maintenance. All detention basins shall be readily accessible for maintenance purposes via an improved access drive. In addition, unless specifically waived by the Commission, fencing (refer to Section 80J) shall be required around the perimeter of all detention basins. In granting any requests for a waiver of this requirement, the Commission shall consider the proximity of the basin to adjacent residential dwellings; future population density in the general vicinity; and, the size and depth of the proposed basin.

Detention basins shall be located on land to be conveyed to a Homeowners' Association, which shall be established by the applicant and whose members shall be jointly and severally liable for costs associated with the maintenance of such detention basins(s) and the appurtenant system. When applicable, a permanent right to drain surface or subsurface drainage systems from any existing or future town lands or roadways shall be granted to the Town of Old Saybrook. However, it shall be the Homeowners' Association's sole responsibility to maintain and repair all detention basins and appurtenant structures. Such obligation shall be established within a Declaration of Covenants and Restrictions which shall be submitted for review by the Town, and when approved, filed on the Old Saybrook Land Records. Such document shall provide the right, but shall not in any way obligate, the Town of Old Saybrook to enter upon the property to make inspections and to make emergency repairs, should the Homeowners' Association, after proper notice from the Town, fail to execute their responsibilities. This document must also include all of the Town's other "Standard Provisions and Requirements for Maintenance and Repair of Detention Basins".

90A.7 Discharge

Unless otherwise approved by the Commission, the discharge of all stormwater shall be into established watercourses, wetlands, or Town/State Highway drains having adequate capacity to accommodate such discharges.

90A.8 Drainage Easements and Rights to Discharge

Where the discharge of stormwater shall be onto or through private property, perpetual drainage easements and discharge rights, in favor of the owner of the road, shall be secured

by the applicant. Where drainage easements are required, they shall have a minimum width of thirty (30) feet. For open drainage channels, flared end sections/headwalls, and other outlet protection measures, they shall extend a minimum of fifteen (15) feet beyond the outside edge of such measures. Where open drainage channels are used along roads, and the horizontal extent of the design flow plus freeboard specified in Section 90A.13 extends beyond the road right-of-way line, then an additional drainage easement shall be provided beyond the edge of the road right-of-way line.

90A.9 Diversion

The diversion of stormwater runoff from one watershed or watercourse to another shall normally be avoided. Where it is necessary to create such a diversion, special provisions shall be made to minimize the potential damages which may occur as a result of such diversion.

90A.10 Existing Wetlands and Watercourses

All activities that are regulated by the Wetlands Commission shall be accomplished in such a way as to minimize the effects which would be adverse to the regimen of such watercourse. Adequate provisions shall also be made to prevent or minimize scour or erosion in the adjacent upstream and downstream reaches of the watercourse.

90A.11 Capacity Within Roadway

Storm drainage systems within the roadway, exclusive of culverts and bridges carrying flows under the road, shall be designed to safely accommodate flows resulting from storms of the maximum intensity which can be expected to occur on an average of once in ten (10) years (10-year storm) without being surcharged.

90A.12 Capacity Under Roadways

Culverts crossing under roadways shall be designed to accommodate the following flows:

(A) Minor Structures

These shall include pipe, box culverts or bridges providing for the drainage of adjacent lands less than one square mile in area in which there is no established watercourse. These structures shall be designed to pass a 25-year frequency discharge without flooding or damaging the highway or adjacent property.

(B) Small Structures

These shall include pipe, box culverts or bridges providing for the drainage of adjacent lands less than one square mile in area in which there is an established watercourse. These structures shall be designed to pass a 50-year frequency discharge with one foot of freeboard, and without flooding or damaging adjacent property. The effects of a discharge equal to the 100-year frequency storm shall be checked. Where such effects are likely to cause damage to persons or property, structures shall be designed to alleviate these problems.

(C) Large Structures

These shall include pipe, box culverts or bridges for the drainage of adjacent lands one square mile or larger in area. These structures shall be designed to pass a 100-year frequency discharge with a minimum one foot under clearance, relative to the low chord of the upstream face of the structure, and shall not create a backwater which will flood or endanger property or roads upstream.

90A.13 Capacity Within Open Drainage Channels

New open channels and existing open channels into which a new or expanded storm drainage system is proposed to discharge shall be designed to accommodate flows resulting from storms of the maximum intensity which can be expected to occur on an average of once in twenty five years with a minimum freeboard of six inches.

90A.14 Municipal Improvements

The requirements specified in Section 90 are not intended in any way to preclude the Old Saybrook Public Works Department from making storm drainage improvements on existing public roadways. Such improvements, including, but not limited to the conversion of road side ditches to piped drainage systems, the extension, repair, or replacement of existing storm drainage systems, and the installation of new storm drainage systems, shall be permitted provided that a determination is made by the Director of Public Works that such improvements will not result in significant adverse impacts.

90B - COMPUTATION OF STORMWATER FLOWS

90B.1 General

Stormwater flows for sizing storm drainage systems within and under the roadway as defined in Sections 90A.11, 90A.12 and 90A.13, may be computed by use of the Rational Method or by use of the methods described in the most current edition of the U.S. Soil Conservation Service Technical Release No. 20, or Technical Release No. 55. The use of the Rational Method shall not be used for computing flows from drainage areas in excess of 200 acres, or for computing flows from 100-year frequency storms. Stormwater flows used for sizing stormwater detention facilities, as well as small and large structures as defined in Section 90A.12, shall be computed using methods described in the most current edition of the U.S. Soil Conservation Service Technical Release No. 20 or Technical Release No. 55.

Regardless of the method that is utilized, all computations shall include a Drainage Analysis Map which clearly delineates the drainage area and flow path used for determining the time of concentration to each proposed drainage facility and each existing downstream drainage structure that may become hydraulically overloaded or damaged. The drainage analysis map shall show existing topography of the drainage areas (based on the best available existing mapping), existing and proposed roads, watercourses, wetlands, flood hazard zones, existing and proposed vegetation (woods, fields, lawns, etc), existing and proposed drainage facilities and structures, and the proposed area of development. When U.S. Soil

Conservation Service methods are used, the drainage analysis map should also show soil types as shown on the most currently available soils maps as prepared by the Natural Resource Conservation Service.

90B.2 Rational Method Computations

Where the Rational Method formula is used, computations shall conform with the following guidelines:

(A) Runoff Coefficients

Where the Rational Method formula is used, the following runoff coefficients ("C" values) shall be the minimum values utilized for each type of surface, and a composite "C" value computed for each tributary drainage area. In any case, a composite "C" value of less than 0.30 shall not be used for single family residential developments.

<u>Type of Surface</u>	<u>Runoff Coefficient "C" (1)</u> (10-year Storm)
Pavement, roofs and impervious surfaces	0.90
Embankment Slopes (cuts and fills)	0.40
Lawns:	
Flat Slope (2% or less)	0.17
Average Slope (2% to 7%)	0.22
Steep Slope (7% or greater)	0.35
Cultivated Fields	0.45
Pasture	0.30
Meadows (moist, level grassland)	0.10
Forested Areas	0.20

For 25-year storm increase runoff coefficients by 20%, for 50-year storm increase by 35%, and for 100-year storm increase by 55% (except for pavement, roofs and impervious surfaces).

(B) Time of Concentration

Time of concentration (t) shall be determined by the Technical Release No. 55 Method.

(C) Rainfall Intensities

Rainfall intensities (i) shall be determined using the frequency/intensity/duration curves for Hartford, Connecticut. The minimum allowable time of concentration shall be five minutes.

90C - MINIMUM PIPE SIZES

90C.1 Surface Drainage

All pipe carrying surface drainage or a combination of surface drainage and subsurface drainage (groundwater) shall have a minimum internal diameter of fifteen (15) inches.

90C.2 Subsurface Drainage

All subsurface drainage pipe used exclusively for intercepting groundwater shall have a minimum internal diameter of six (6) inches.

90D - CATCH BASINS

90D.1 General

When catch basins are deemed to be necessary, they shall be provided such that surface water will not travel along the roadway curbline without interception for more than 350 feet on roads with grades up to and including 5% and not more than 250 feet on roads with grades up to and including 10%. Catch basins shall also be installed at all low points, roadway intersections and at the lower end of all cul-de-sacs. Catch basins located within the paved roadway shall have Type "C" heads and provided with sumps that are at least two feet deep.

90D.2 Off Road Locations

Where it is necessary to provide catch basins in off-road locations outside of the limits of pavement, they shall have Type "C-G" heads and provided with two foot deep sumps.

90D.3 Inlet Capacity

Where additional inlet capacity is necessary, the installation of double Type II catch basins, or more closely spaced catch basins shall be required.

90E - MANHOLES

90E.1 General

In general, a manhole is less preferable to a catch basin and should only be provided where the use of a catch basin is not feasible.

90E.2 Places

Manholes shall be provided at each change of drainage pipe slope or horizontal alignment, at all pipe junctions and otherwise at intervals of approximately 350 feet on long lengths of pipe where catch basins are not used.

90F - FLARED END SECTIONS/HEADWALLS

90F.1 General

The inlets and outlets of all exposed drainage conduits shall be protected with flared end sections except where hydraulic, or other considerations necessitate the use of a headwall. When headwalls are provided, they shall be of reinforced concrete construction. Wingwalls shall be provided when required to contain and protect the adjacent earthen slopes and/or direct the flow of water entering or leaving the conduit. Outlet protection shall be provided in accordance with the standards outlined in the "Connecticut Guidelines for Soil Erosion and Sediment Control".

90G - OPEN DRAINAGE CHANNELS

90G.1 General

In general, the use of open channels are encouraged to convey storm water discharges to an acceptable outlet. Where open channel flow is proposed, the channel shall be properly designed to safely carry the design flow as specified in Section 90A13 and shown in the Standard Detail Drawings (Figure 9). Grass drainage channels used along roads shall be in the general form of a trapezoid or parabola having a bottom width of at least three feet with side slopes no steeper than four feet horizontal to one foot vertical, so that they can be graded to provide a gradual transition into adjacent lawn areas, and can be easily mowed. The channel shall be seeded and protected with turf reinforcement mats or sod. Rip rap drainage channels shall be in the shape of a trapezoid having a bottom width of at least two feet and side slopes no steeper than two feet horizontal to one foot vertical as shown in the Standard Detail Drawings (Figure 10). Whenever open drainage channels are located along roads, individual driveway culverts and paved driveway aprons shall be constructed concurrently with the construction of such channels.

90G.2 Stabilization of Open Channels

Special attention shall be given to the stabilization of open channels in the immediate vicinity of pipe inlets and outlets, bridges, at bends and curves and at other critical locations as required to prevent scouring, erosion and/or siltation of watercourses and culverts, and undermining of drainage structures.

90G.3 Criteria

Hydraulic design of open channels and design of bed and bank stabilization shall be done in accordance with the applicable criteria of the most current edition of the Federal Highway Administration publication entitled "Design of Roadside Drainage Channels".

90H - UNDERDRAINS

90H.1 General

The installation of subsurface drainage systems or underdrains will be required beneath the edge of pavement of a proposed street wherever the ground water is known to be less than three (3) feet below the proposed finished grade of the street. Underdrains shall also be installed where localized seeps or springs are observed within the proposed street lines during construction, or where otherwise required by the Director of Public Works.

90I - CONNECTION OF PRIVATE DRAINS

90I.1 General

Unless otherwise approved by the Director of Public Works, private storm drains, footing drains, curtain drains, underdrains, basement drains, yard drains or area drains of any kind shall not be permitted to discharge upgradient of or into a town road or road proposed to be dedicated to the Town at a future date. Any such private drains shall be connected to storm drainage structures, but no such connection shall be permitted without first obtaining the approval of the Director of Public Works. When such a connection is not possible or practical, they may be connected directly to an existing or proposed storm drain if approved by the Director of Public Works. Where direct connections are made, they shall utilize appropriate fittings, and be preceded by an access extended to grade. Such access shall be located within a town road right-of-way or easement, and shall have a minimum diameter of twelve inches, or as otherwise deemed necessary to provide direct observation and to facilitate sampling. All access structures shall be provided with a secure top to preclude accidental entry. The following notation shall be placed on all design drawings where the connection of private drains are proposed; "Private drains are the sole responsibility of the owner and the Town of Old Saybrook shall assume no responsibility for any maintenance, replacement and/or repair. The owner of the drain shall hold the Town of Old Saybrook harmless for any damage or injuries resulting from such connection".

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 100 - DRAINAGE CONSTRUCTION STANDARDS

100A - PIPE

100A.1 General

All pipe used for storm drainage shall be either Class IV Reinforced Concrete Pipe (RCP) or High Density Corrugated Polyethylene Smooth Interior Pipe (CPEP).

100A.2 Minimum Cover

The minimum cover over all storm drainage pipe located within the right-of-way shall be two (2) feet. Where conflicts with other subsurface facilities occur, and with approval of the Director of Public Works, pipe may have as little as 18 inches of cover, but in such cases extra strength Class V RCP shall be used with a crushed stone bedding extending to a minimum depth of four (4) feet below finished grade.

100A.3 Slotted or Perforated Storm Drains

Where water is encountered in the pipe trenches, or where underdrains are required under Section 90H, storm drains shall either be slotted RCP or Perforated High Density Corrugated Polyethylene Smooth Interior Pipe.

100A.4 Additional Underdrains

Where additional underdrains are deemed necessary in locations not requiring other storm drainage, Perforated High Density Corrugated Polyethylene Smooth Interior Pipe with a minimum internal diameter of six (6) inches shall be used. Wherever the terminal end of an underdrain is not connected to a catch basin or manhole, a cleanout to grade shall be provided. Underdrains shall be installed as shown in the Standard Detail Drawings (Figure 11).

100A.5 Materials and Methods

Except as noted herein, construction methods shall conform to the State Standard Specifications for "Culverts" and "Underdrain and Outlets". Where High Density Corrugated Polyethylene Smooth Interior Pipe is used for storm drains, it shall be installed in a Type II installation as shown in the Standard Detail Drawings (Figure 13), regardless of the internal pipe diameter, with bedding material conforming to the State Standard Specifications Section M.08.01-21. Where reinforced concrete pipe is used for storm drains, it shall be installed in a Type II installation, as shown in the Standard Detail Drawings (Figure 12), with backfill material conforming to the State Standard Specifications Section M.02.06 - Grading A. For underdrains, pipe shall be installed with holes in a downward position. Aggregate used for backfilling around underdrains and slotted or perforated pipe shall conform to the State Standard Specifications Section M.08.03 - 1 (No. 8 Crushed Stone). Sand shall not be permitted as backfill around underdrains. Geotextile fabric,

conforming to the State Standard Specification Section M.08.01 - 26, shall be wrapped around the aggregate as shown in the Standard Detail Drawings (Figure 14).

Reinforced concrete pipe shall conform to the State Standard Specifications Section M.08.01 - 6, or Section M.08.0 - 10 for Slotted Reinforced Concrete Pipe. Material used for sealing joints in concrete pipe shall conform to the State Standard Specifications for Cold-Applied Bituminous Sealer (Section M.08.01-18), or Pre-formed Plastic Gaskets (Section M.08.09.19). High Density Corrugated Polyethylene Smooth Interior Pipe shall conform to the AASHTO Standard Specifications M 294 Type S, or M 294 Type SP/M 252 Type SP for Perforated High Density Corrugated Polyethylene Smooth Interior Pipe.

100B - CATCH BASINS AND MANHOLES

100B.1 General

Catch basins and manholes shall either be precast reinforced concrete or masonry concrete units constructed in accordance with the Connecticut Department of Transportation Standard Sheets.

100B.2 Materials and Methods

Except as noted herein, construction methods shall conform to the requirements of the State Standard Specifications for "Catch Basins, Manholes and Drop Inlets", and materials shall conform to the requirements of the State Standard Specifications Section M.08.02. Materials used for mortar shall conform to the State Standard Specifications Section M.11.04. All pipe penetrations shall be bricked and mortared inside and outside of all catch basin and manhole structures. All catch basin frames and grates shall be 507K - Type A, constructed of painted steel. Manhole frames and covers shall be heavy traffic duty, constructed of cast iron. Frames shall have a twenty-four (24) inch internal opening. Covers shall be marked "STORM". Where required by the Director of Public Works, covers shall be bolted.

100C - FLARED END SECTIONS/HEADWALLS

100C.1 General

Flared end sections and headwalls shall be constructed in accordance with the Connecticut Department of Transportation Standard Sheets.

100C.2 Materials and Methods

All materials and construction methods shall conform to the State Standard Specifications for "Culvert Ends" and "Retaining Walls, Endwalls and Steps". When high density corrugated polyethylene smooth interior pipe is used, and culvert ends are specified, they shall be metal culvert ends. High density polyethylene culvert ends shall not be permitted.

100D - RIPRAP

100D.1 General

Stone for this work shall be of the size, and placed to the limits and depth, specified on the Drawings.

100D.2 Materials and Methods

Construction methods shall conform to the requirements of the State Standard Specifications for "Riprap" and materials shall conform to the requirements of the State Standard Specification Section M.12.02. Where geotextile fabric is specified underneath riprap, it shall conform to the requirements of the State Standard Specification Section M.08.01 - 26.

100E - STABILIZATION OF OPEN CHANNELS

100E.1 General

Open channels shall be stabilized with riprap, sod, or seed protected with turf reinforcement mats. When conditions are such that lining of the open channel with rip rap is necessary to prevent erosion, the size of the rip rap shall be no less than "intermediate", and the thickness shall be no less than eighteen inches. The method of stabilization shall be as specified on the Drawings.

100E.2 Materials and Methods

For stabilization with rip rap, all work shall conform to the requirements specified in Section 100D above. For stabilization with sod or seed protected with turf reinforcement mats, all materials and methods shall conform to the State Standard Specifications for "Sodding" and "Turf Establishment" respectively.

100F - SPECIAL STRUCTURES

100F.1 General

Special structures, including but not limited to bridges, box culverts, retaining walls and stormwater treatment units shall be designed and constructed in accordance with the most current applicable standards of the Connecticut Department of Transportation, or as otherwise directed by the Director of Public Works. Plans and specifications prepared and sealed by a licensed professional engineer registered in the State of Connecticut who is competent in the field of structural engineering shall be submitted for all special structures. In the case of bridges, such plans and specifications shall be accompanied by a written statement from the design engineer certifying that the bridge has been designed to withstand AASHTO HS20 Live Loads, and that any waterway opening conforms to the Standards established in Section 90A.12 of these Regulations. Upon completion of construction of any special structure, the licensed professional engineer shall be required to provide a written

statement to the Director of Public Works that the special structure was constructed in substantial conformance with the approved design drawings and specifications.

100F.2 Private Drain Access Structure

Where private drain access structures are required prior to a direct connection to a storm drain, they shall be fabricated from high density corrugated polyethylene pipe and fittings conforming to AASHTO Standard Specification Sections M 294 Type S and M 252 Type S. The fabrication of the access structures shall conform to the Standard Detail Drawings (Figure 25), and shall include as a minimum a standard 12"x12"x12" tee with reducers and couplings as required at each end of the horizontal run, and a 12-inch inside diameter vertical riser pipe extending to grade. A snap on end cap shall be securely fastened at the end of the vertical riser pipe, and shall be set flush with the proposed finish grade elevation.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 110 - SOIL EROSION AND SEDIMENT CONTROL CRITERIA

110A - SOIL EROSION AND SEDIMENT CONTROL PLANS & PERMITS

110A.1 General

No construction shall be undertaken unless an erosion and sediment control plan, which explains and illustrates the measures which will be taken to control erosion and sediment transport, is submitted to and approved by the Town of Old Saybrook. Plans shall be prepared in accordance with the requirements and standards outlined in the most current edition of the "Connecticut Guidelines for Soil Erosion and Sediment Control".

110A.2 Stormwater General Permits

When a project requires a Connecticut Department of Environmental Protection "General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities", copies of the registration form and Stormwater Pollution Control Plan submitted to the State shall also be submitted to the Town of Old Saybrook prior to the start of any activity.

110B - CONSTRUCTION & MAINTENANCE PROCEDURES

110B.1 General

The practices and measures included in the approved erosion and sediment control plan shall be implemented during the entire construction period and maintained until adequate permanent vegetation is established. Erosion control measures shall be supplemented as field conditions require, or as directed by the Town of Old Saybrook.

110B.2 Contact Person

Prior to the start of any roadway construction, the name, address and day/night telephone numbers of the person designated by the owner to be responsible for the implementation of erosion and sediment control practices and measures shall be provided to the Director of Public Works.

110B.3 Final Site Clean-up

Following the permanent stabilization of all disturbed areas, all remaining temporary erosion control measures that are not bio-degradable, as well as all accumulated sediments, shall be removed from the site and disposed of in a lawful manner. In addition all accumulated sediments remaining in permanent facilities such as plunge pools, drainage channels, detention areas and catch basins, shall be removed and disposed of in a lawful

manner. The removal of temporary erosion control measures and accumulated sediments shall be conducted in a manner so as not to disturb existing permanent vegetation. All exposed areas remaining after the removal of erosion control measures shall be immediately seeded and mulched.

REGULATIONS FOR PUBLIC IMPROVEMENTS

SECTION 120 - FINAL GRADING, STABILIZATION AND LANDSCAPING CRITERIA

120A - FINAL GRADING AND STABILIZATION

120A.1 General

Except as otherwise specified herein, all areas disturbed by the construction of roads, drainage facilities and associated improvements that are not paved or occupied by structures shall be properly graded to smooth uniform slopes that maintain the general shape of existing landforms, covered with topsoil to a minimum depth after settlement of six (6) inches, and limed, fertilized, seeded and mulched with straw hay.

120A.2 Materials and Methods

Construction methods shall conform to the requirements of the State Standard Specifications for "Topsoil", "Turf Establishment", and "Liming". Materials shall conform to the State Standard Specification Sections M.13.01-1 for Topsoil, M.13.03 for Fertilizer, M.13.04 for Seed, M.13.05-2 for Mulch, and M.13.02 for Lime.

120B - LANDSCAPING

120B.1 General

All plantings shall be such as to minimize any requirement for mowing, weeding, or other forms of maintenance by the Town of Old Saybrook.

120B.2 Street Tree Locations

Street trees, when required by the Commission, shall be planted on private property five feet outside of the limits of the road right-of-way, sight line easements, storm drainage easements or other easements. They shall be planted on both sides of the street at approximate intervals of fifty feet, subject to minor adjustments based on locations of driveways and underground utilities. Specific criteria regarding the proximity of street trees to overhead and underground utility lines shall be as follows:

- (A) Tall trees, including all species that may reach heights of 50 feet or more at maturity shall be located a minimum horizontal distance of 50 feet from any overhead utility line.
- (B) Medium trees, including all species that may reach heights ranging from 30 to 50 feet at maturity shall be located a minimum horizontal distance of 30 feet from any overhead utility line.

- (C) Small trees, including all species that reach maximum heights of 30 feet or less at maturity, may be located under or near overhead utility lines.
- (D) No street tree shall be located closer than 20 feet from any underground utility line.
- (E) The Connecticut Guidelines for Erosion and Sediment Control should be consulted to determine if a specific site will support the growth of the proposed mixture of street trees.
- (F) A ten foot wide temporary easement in favor of both the applicant and the Town of Old Saybrook shall be provided parallel with and directly adjacent to the outside of the road right-of-way line for the planting of street trees. This temporary easement shall automatically expire on the date when the Town of Old Saybrook releases the maintenance bond for public improvements.

120B.3 Street Tree Species

When selecting street trees, a mixture of predominately native species shall be provided so as to protect the community forest from disease, insect and environmental blight. In this regard, the goal of the Town of Old Saybrook is to have a mixture of street trees such that at least 80% of the total number of trees includes native species, which are designated by an asterix (*) in the list below. Furthermore, no one species should comprise more than ten (10) percent of the total. In general, projects requiring plantings of fifty (50) or more street trees shall have a variety of species such that no one species comprises more than ten (10) percent of the total project plantings. For projects requiring less than fifty (50) street trees, no one species shall comprise more than twenty (20) percent of the total project plantings. No tree, or its cultivars, cited in the list entitled "The Non-native Invasive & Potentially Invasive Vascular Plants in Connecticut" as amended, shall be selected for planting. Unless otherwise approved by the Commission, street trees shall have a minimum caliper of 2" DBH and shall be one of the following species:

(A) Tall Trees

*Paper Birch (*Betula papyrifera*)

White Fir (*Abies concolor*)

*Pin Oak (*Quercus palustris*)

Japanese Zelkova (*Zelkova serrata*)

*Red Maple (*Acer rubrum*)

*Red Oak (*Quercus rubra borealis*)

*White Oak (*Quercus alba*)

*Black Gum or Tupelo (*Nyssa sylvatica*)

*American Sweetgum (*Liquidambar styraciflua*)

*Green Ash (*Fraxinus pennsylvanica*)

(B) Medium Trees

European Hornbeam (*Carpinus betulus*)

Katsura Tree (*Cercidiphyllum japonicum*)

*American Holly (*Ilex opaca*)

(C) Small Trees

Indian Magic Crabapple (*Malus 'Indian Magic'*)

Japanese Crabapple (*Malus floribunda*)

*Flowering Dogwood (*Cornus florida*)

Kousa Dogwood (*Cornus kousa*)

Fringe Trees (*Chlonanthus virginicus*)

*Crimson Cloud Hawthorn (*Crataegus laevigata 'Crimson Cloud'*)

*Winterking Hawthorn (*Crataegus viridis 'Winterking'*)

*American Hornbeam (*Carpinus caroliniana*)

Saucer Magnolia (*Magnolia X soulangiana*)

Japanese Maple (*Acer palmatum*)

*Eastern Redbud (*Cercis canadensis*)

*Serviceberry (*Amelanchier X grandiflora*)

Sourwood (*Oxydendrum arboreum*)

*Nannyberry (*Viburnum lentago*)

Prior to planting street trees, the proposed location of trees to be planted shall be approved by the Tree Warden. Construction methods shall conform to the requirements of the State Standard Specifications for "Furnishing, Planting, and Mulching Trees, Shrubs, Vines and

Ground Cover Plants". Materials shall conform to the State Standard Specification Section M.13.07 for Plant Materials. Where existing healthy native trees meeting the requirements set forth herein can be protected and saved, they may be used in lieu of new plantings provided that they are approved by the Tree Warden, and are properly pruned by a qualified arborist to remove all branches which are dead or which would obstruct required sight lines.

120B.4 Ornamental Landscape Features

Ornamental landscape features including, but not limited to boulders, grouping of rocks, statues, signs, exterior lighting (except required street lights), walls, basketball hoops and other obstructions, shall be prohibited within the road right-of-way, medians, center islands, sight line easements, storm drainage easements or other easements.

120B.5 Medians and Center Islands

Medians and center islands, when permitted by the Commission, shall be planted with low-growing plants and shrubs that will not exceed a fully mature height in excess of two and one half feet as measured from the adjacent roadway gutterline. Surface areas that remain unplanted shall be covered with wood or stone chips underlaid by a landscape fabric barrier designed to retard the growth of weeds, so as to effectively minimize any requirements for mowing, weeding, or other forms of maintenance. Construction methods for new plantings shall conform to the requirements of the State Standard Specifications for "Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants". Materials shall conform to the State Standard Specification Section M.13.07 for Plant Materials. The Town of Old Saybrook shall neither accept any responsibility, nor costs, associated with the maintenance of median and center island areas. Where medians and center islands are proposed, and approved by the Commission, a legal mechanism shall be established for perpetual maintenance. Such mechanism shall require the approval of the Commission, the Director of Public Works, the Tree Warden and the Town Attorney.

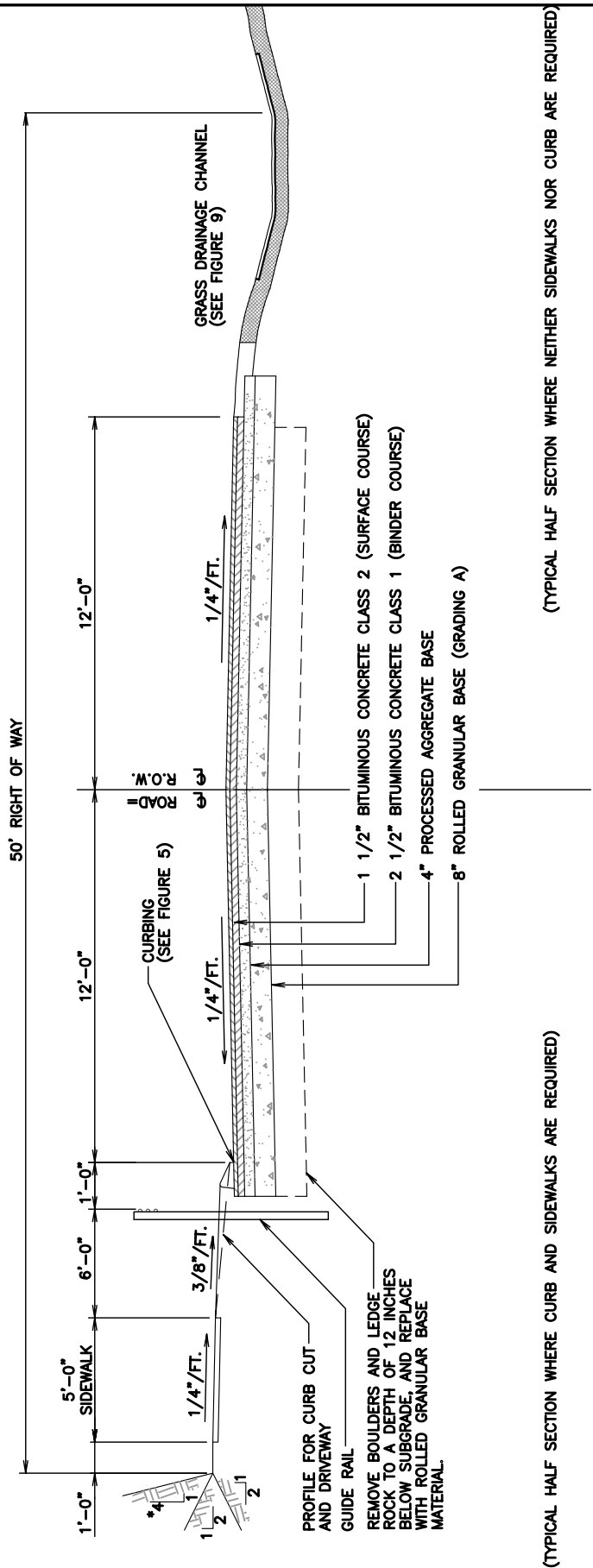
120C - MAINTENANCE OF STABILIZED AND LANDSCAPED AREAS

120C.1 General

All areas stabilized by vegetation, and all landscaped areas, shall be properly maintained by the person or firm constructing the road, drainage facilities and associated improvements until permanent growth of such plantings has been firmly and effectively established for a period of two years after planting, with all subsequent maintenance becoming the responsibility of the property owner having frontage along the road. Maintenance shall include watering, mowing, pruning, fertilizing, cultivating and all else required to maintain the planted areas in a vigorous and healthy condition. All grassed areas showing root growth failure, deterioration, bare or thin spots and eroded areas shall be replanted and all dead, dying or diseased shrubs, plants and trees shall be replaced so as to meet the requirements specified herein.

Appendix A

Standard Detail Drawings



* MAXIMUM SLOPE PERMITTED IN ROCK CUTS ONLY.

STANDARD DETAIL DRAWING
TYPICAL ROAD SECTION
LOCAL ROAD

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

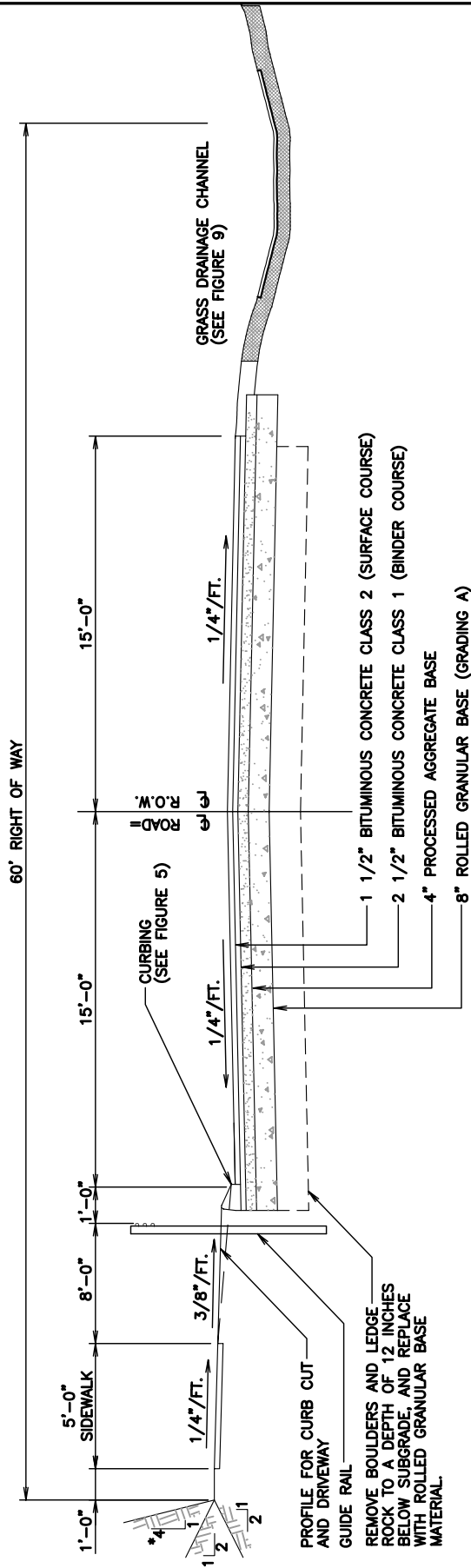
REVISIONS:

SCALE: NONE

STANDARD DETAIL DRAWING
TYPICAL ROAD SECTION
FEEDER/COLLECTOR ROAD

REVISIONS:

SCALE: NONE



TYPICAL HALF SECTION WHERE CURB AND SIDEWALKS ARE REQUIRED

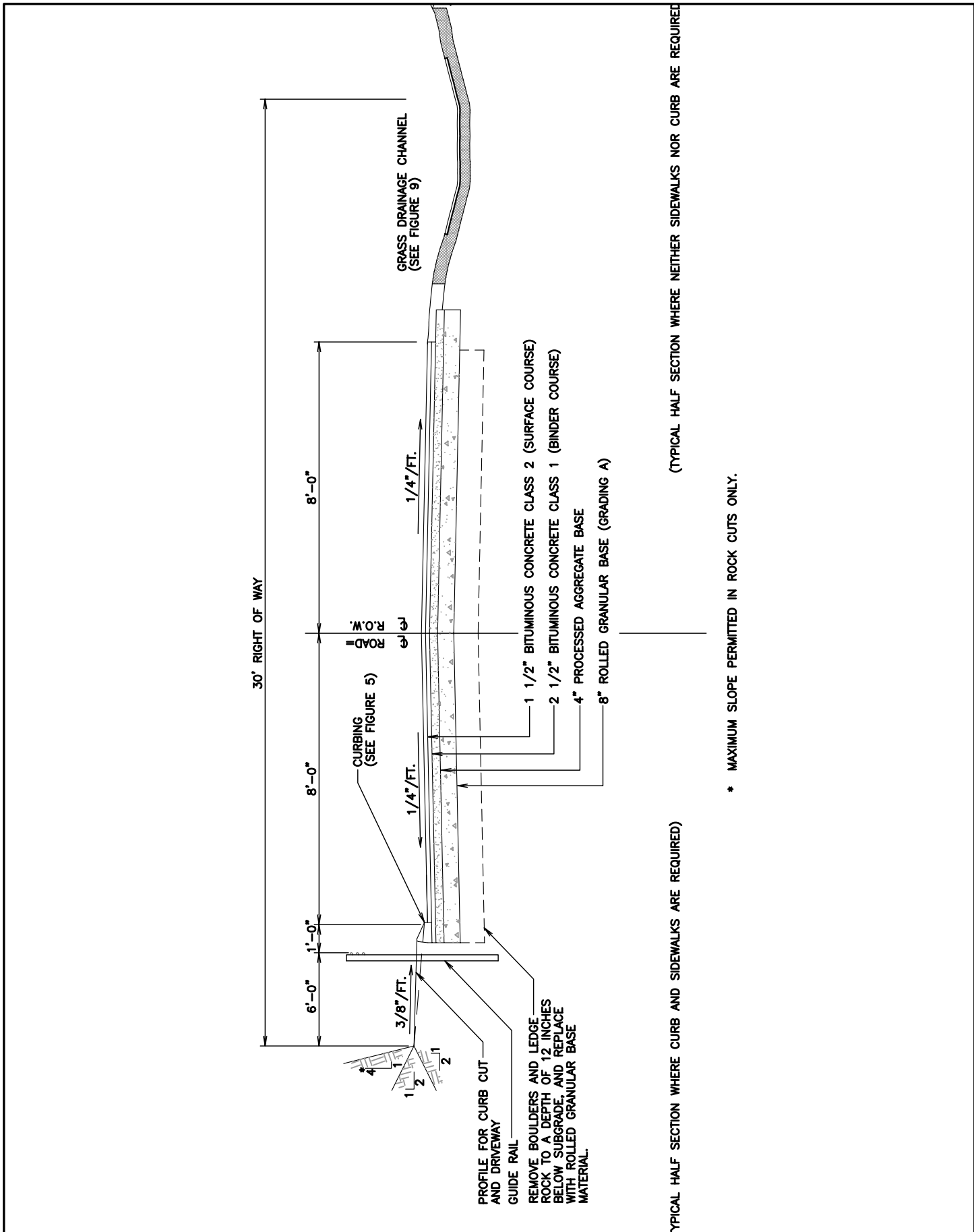
(TYPICAL HALF SECTION WHERE NEITHER SIDEWALKS NOR CURB ARE REQUIRED)

* MAXIMUM SLOPE PERMITTED IN ROCK CUTS ONLY.

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

FIGURE 2



* MAXIMUM SLOPE PERMITTED IN ROCK CUTS ONLY.

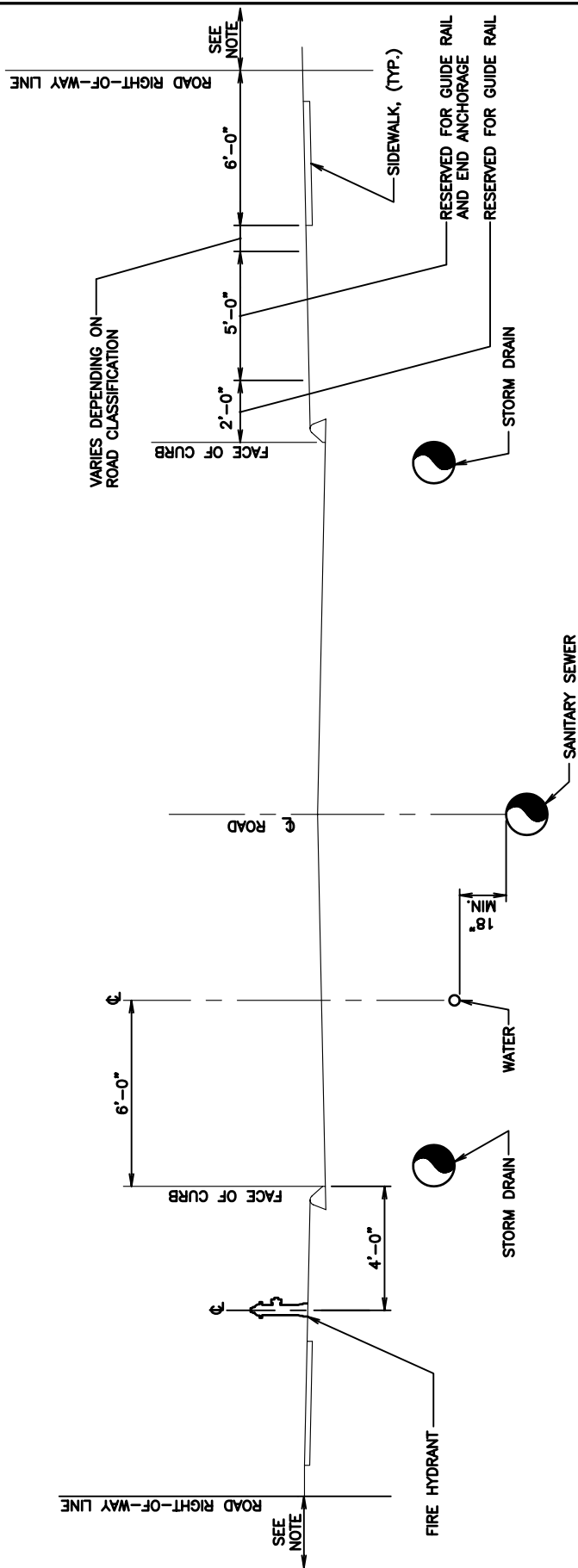
STANDARD DETAIL DRAWING
TYPICAL ROAD SECTION
PRIVATE ROAD

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

REVISIONS:

SCALE: NONE



NOTE:
 UNDERGROUND POWER, TELEPHONE, CABLE T.V., AND ELECTRICAL TRANSFORMERS SHALL BE LOCATED OUTSIDE OF THE ROAD RIGHT-OF-WAY WITHIN A UTILITY COMPANY EASEMENT.

STANDARD DETAIL DRAWING
UNDERGROUND UTILITY ASSIGNMENTS

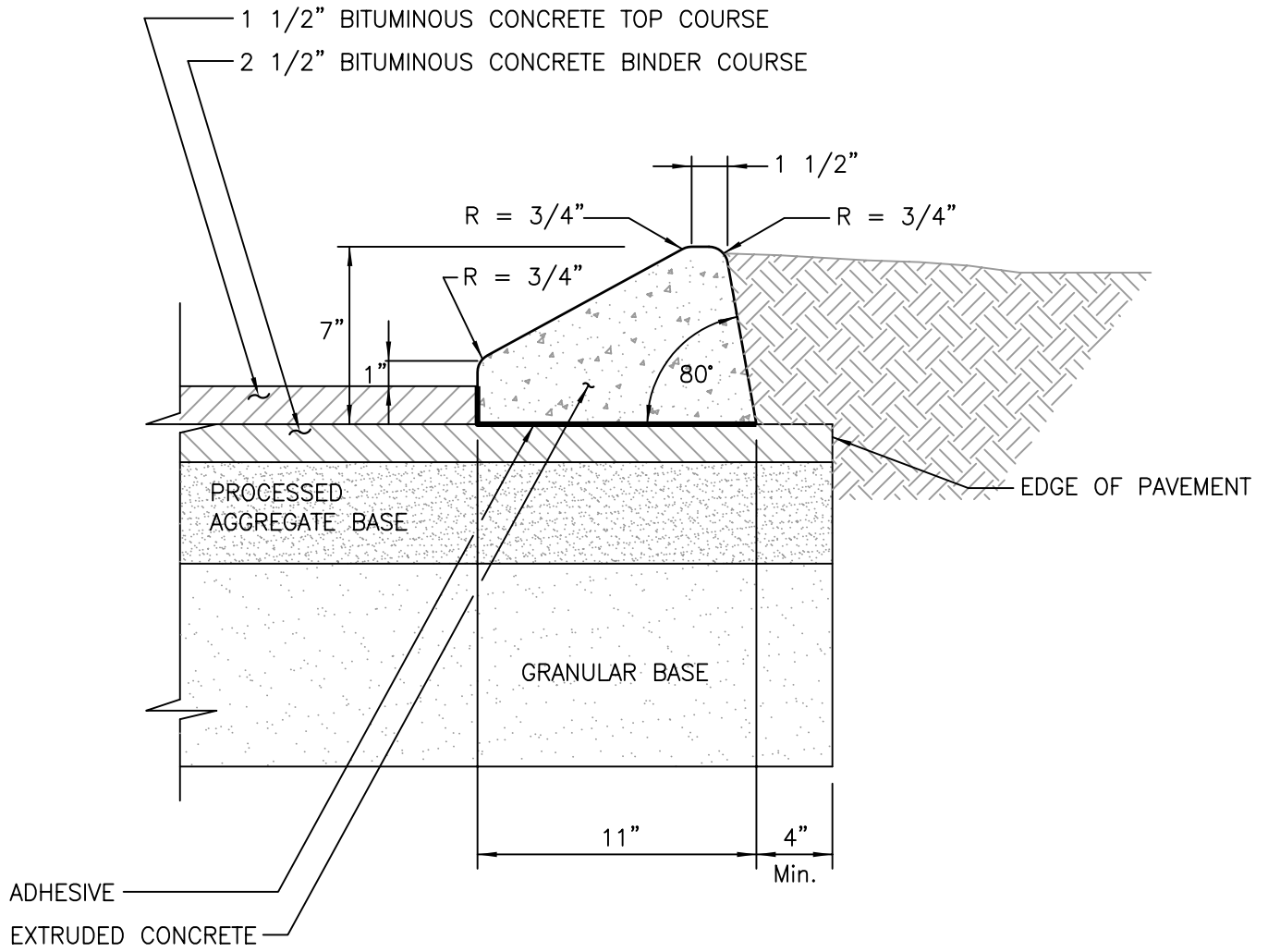
SCALE: NONE

**REGULATIONS FOR
 PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

FIGURE 4

REVISIONS:



STANDARD DETAIL DRAWING

MOUNTABLE EXTRUDED CONCRETE CURB

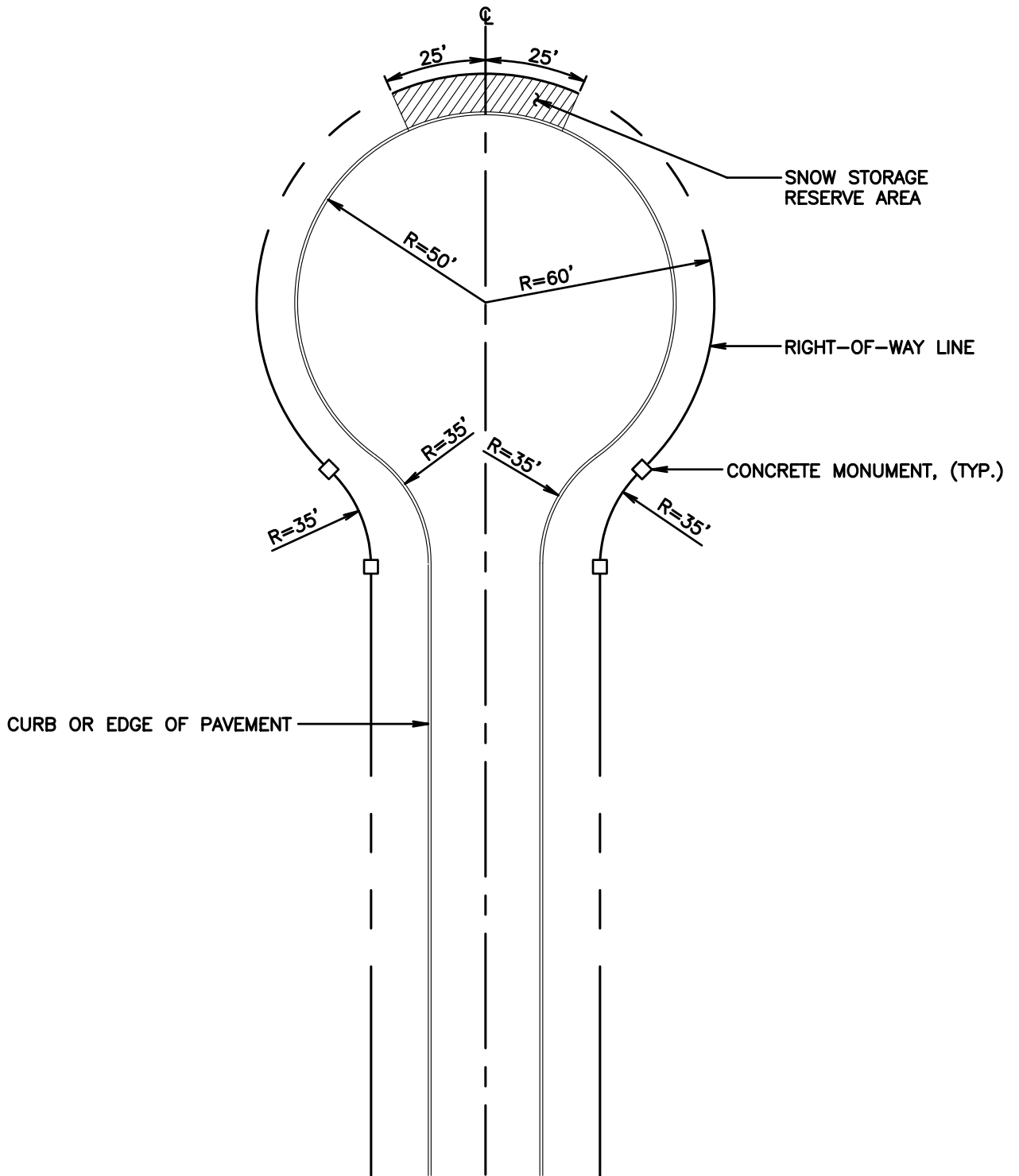
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

REVISIONS:

FIGURE 5



STANDARD DETAIL DRAWING

CUL-DE-SAC
(CIRCULAR)

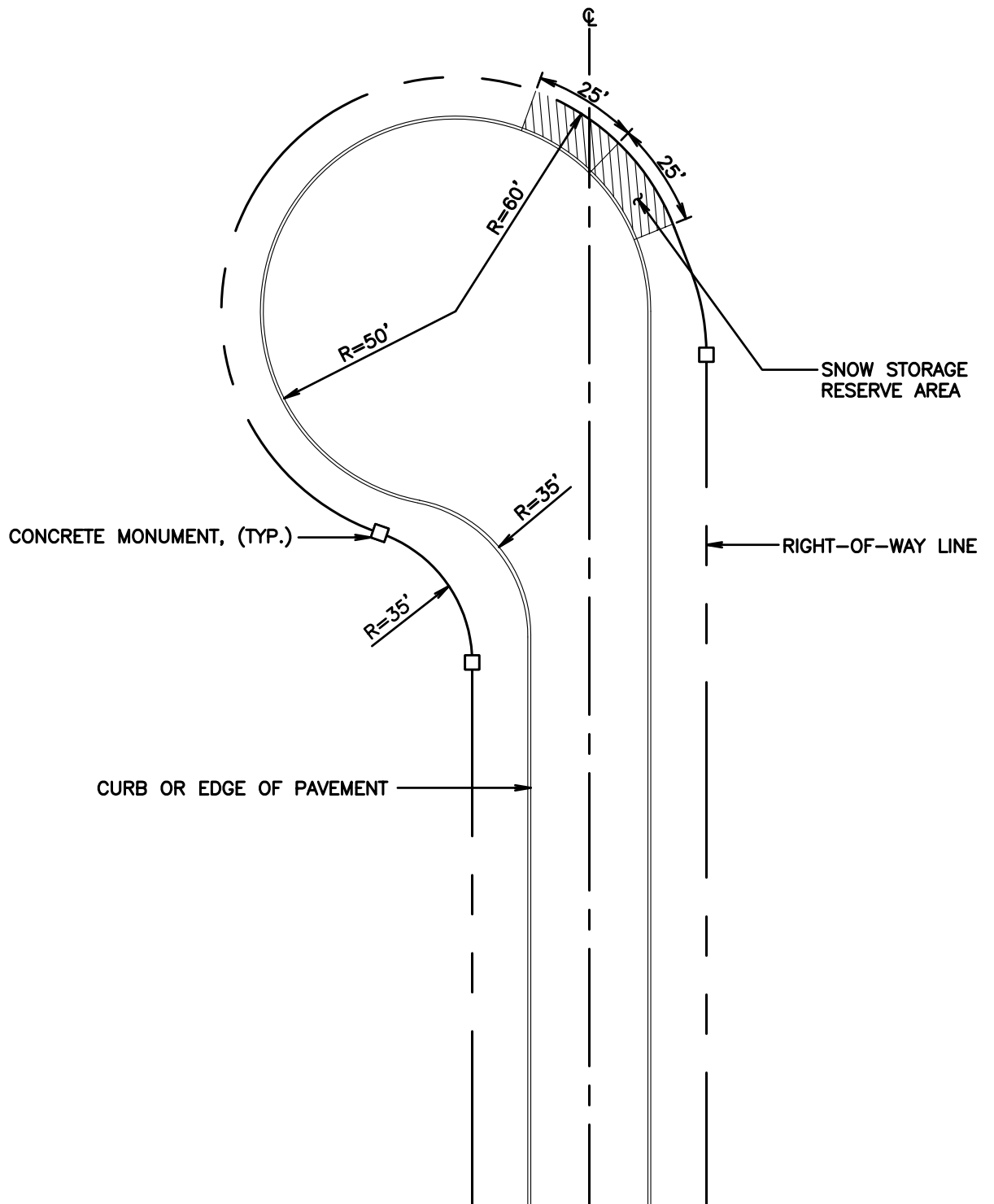
SCALE: 1"=40'

REGULATIONS FOR
PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

REVISIONS:

FIGURE 6



STANDARD DETAIL DRAWING

CUL-DE-SAC

(OFFSET)

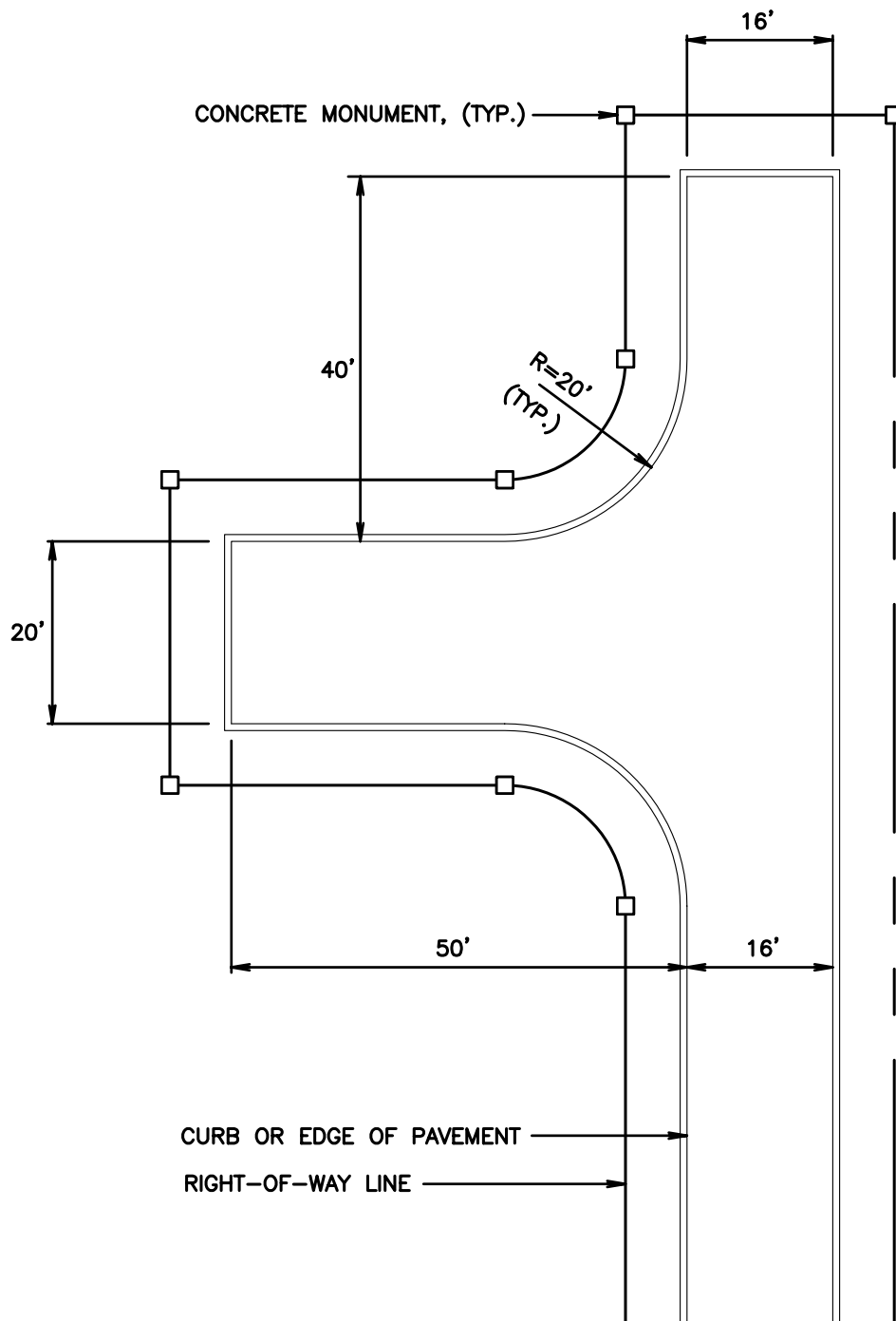
SCALE: 1"=40'

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

REVISIONS:

FIGURE 7



STANDARD DETAIL DRAWING
HAMMER HEAD TURNAROUND
PRIVATE ROAD

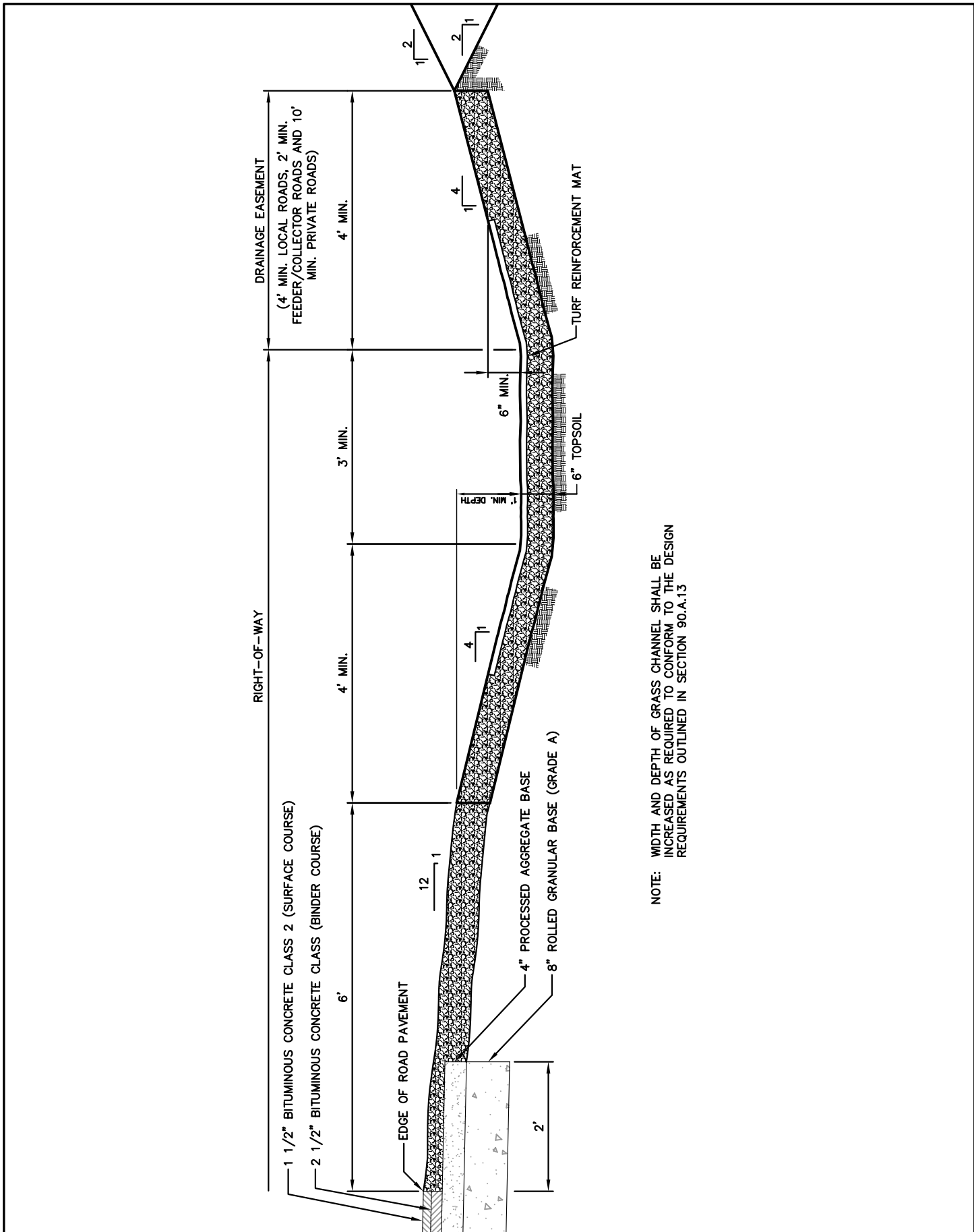
SCALE: 1"=20'

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

REVISIONS:

FIGURE 8



NOTE: WIDTH AND DEPTH OF GRASS CHANNEL SHALL BE INCREASED AS REQUIRED TO CONFORM TO THE DESIGN REQUIREMENTS OUTLINED IN SECTION 90.A.13

STANDARD DETAIL DRAWING
**GRASS DRAINAGE CHANNEL
 ALONG ROAD**

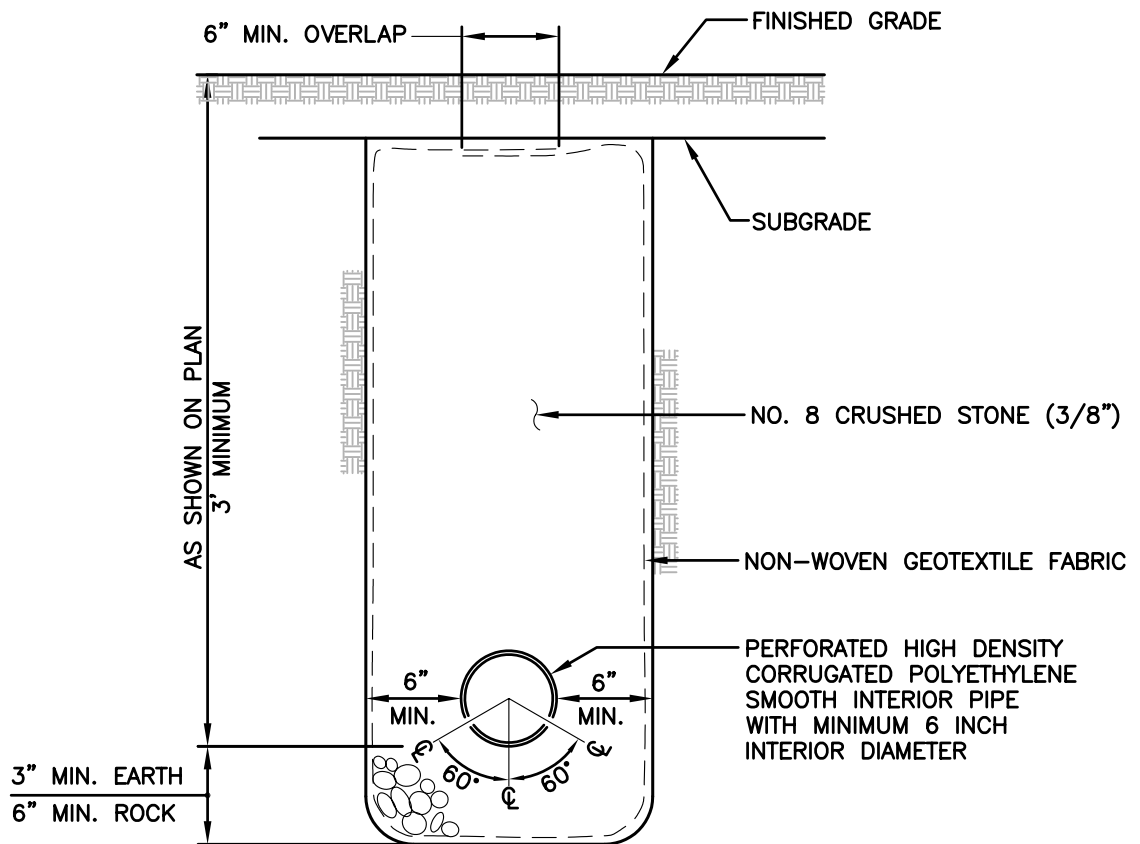
**REGULATIONS FOR
 PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

FIGURE 9

REVISIONS:

SCALE: NONE



NOTES:

1. CONTRACTOR SHALL PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING OR OTHER METHODS TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO THE EXCAVATION AND DAMAGING THE WORK OR ADJACENT STRUCTURES AND UTILITIES.
2. GRADED STONE FILTERS WITHOUT GEOTEXTILE FABRIC MAY BE USED WITH APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.

STANDARD DETAIL DRAWING

UNDERDRAIN

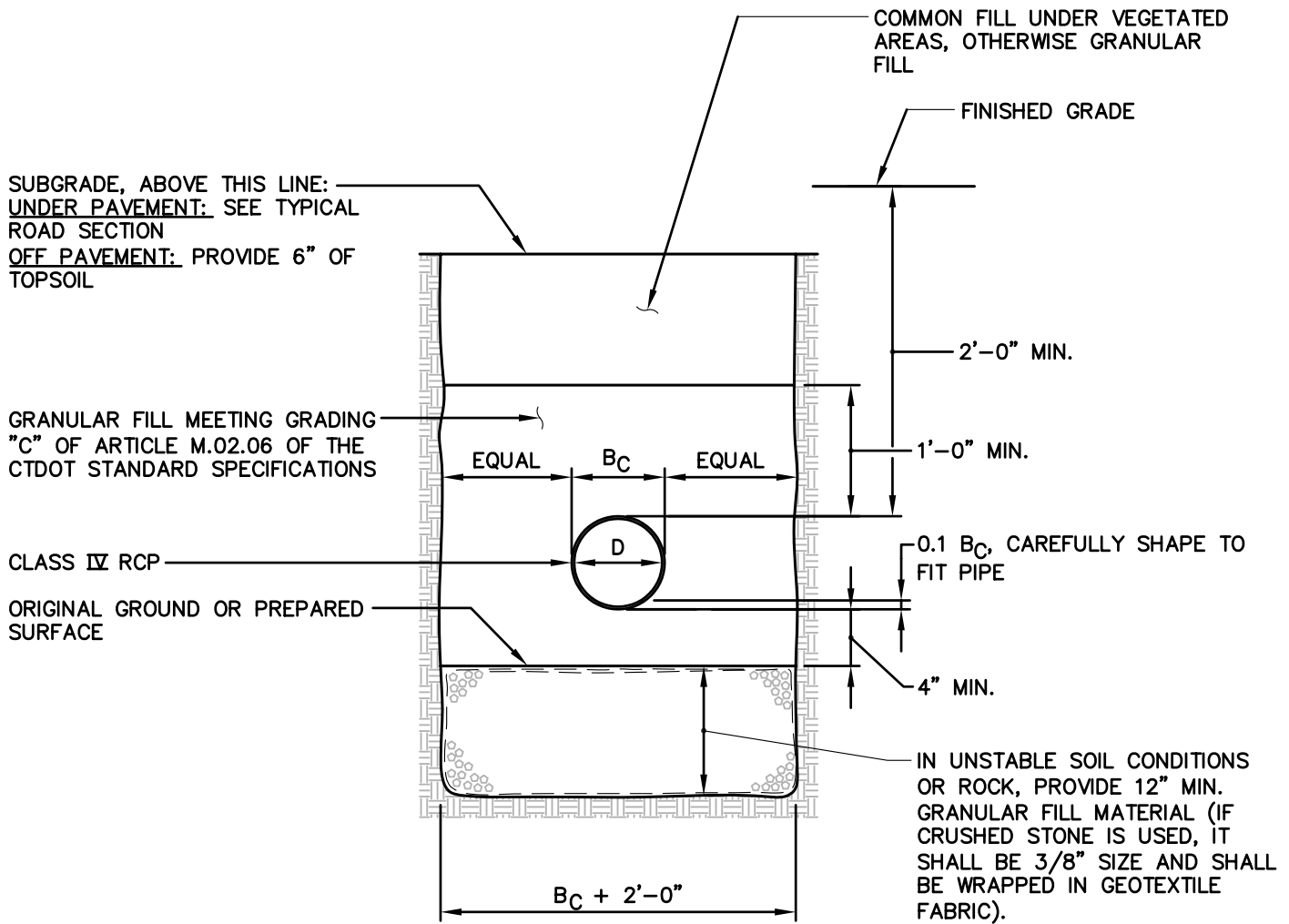
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: FEBRUARY, 2010

REVISIONS:

FIGURE 11



NOTES:

1. CONTRACTOR SHALL PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING OR OTHER METHODS TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO THE EXCAVATION AND DAMAGING THE WORK OR ADJACENT STRUCTURES AND UTILITIES.

STANDARD DETAIL DRAWING
STORM TRENCH SECTION
REINFORCED CONCRETE PIPE

SCALE: NONE

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

FIGURE 12

REVISIONS:

GEOTEXTILE FABRIC PLACED ON TOP WHEN CRUSHED STONE IS USED FOR BACKFILL

COMMON FILL UNDER VEGETATED AREAS, OTHERWISE GRANULAR FILL

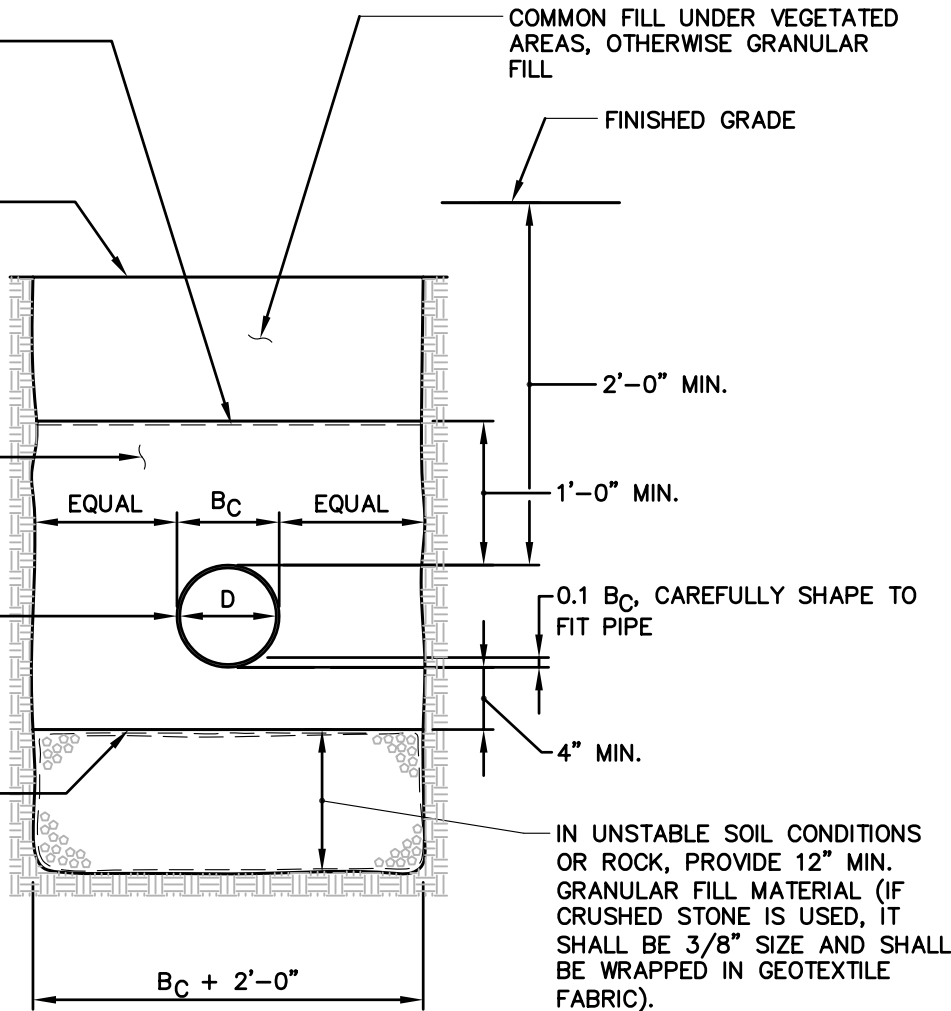
SUBGRADE, ABOVE THIS LINE:
UNDER PAVEMENT: SEE TYPICAL ROAD SECTION
OFF PAVEMENT: PROVIDE 6" OF TOPSOIL

FINISHED GRADE

NO. 8 CRUSHED STONE (3/8") OR MEDIUM PROCESSED AGGREGATE (3/4" MINUS)

HIGH DENSITY CORRUGATED POLYETHYLENE SMOOTH INTERIOR PIPE

ORIGINAL GROUND OR PREPARED SURFACE



0.1 B_C, CAREFULLY SHAPE TO FIT PIPE

4" MIN.

IN UNSTABLE SOIL CONDITIONS OR ROCK, PROVIDE 12" MIN. GRANULAR FILL MATERIAL (IF CRUSHED STONE IS USED, IT SHALL BE 3/8" SIZE AND SHALL BE WRAPPED IN GEOTEXTILE FABRIC).

NOTES:

1. CONTRACTOR SHALL PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING OR OTHER METHODS TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO THE EXCAVATION AND DAMAGING THE WORK OR ADJACENT STRUCTURES AND UTILITIES.

STANDARD DETAIL DRAWING
STORM TRENCH SECTION
HIGH DENSITY CORRUGATED POLYETHYLENE
SMOOTH INTERIOR PIPE (CPEP)

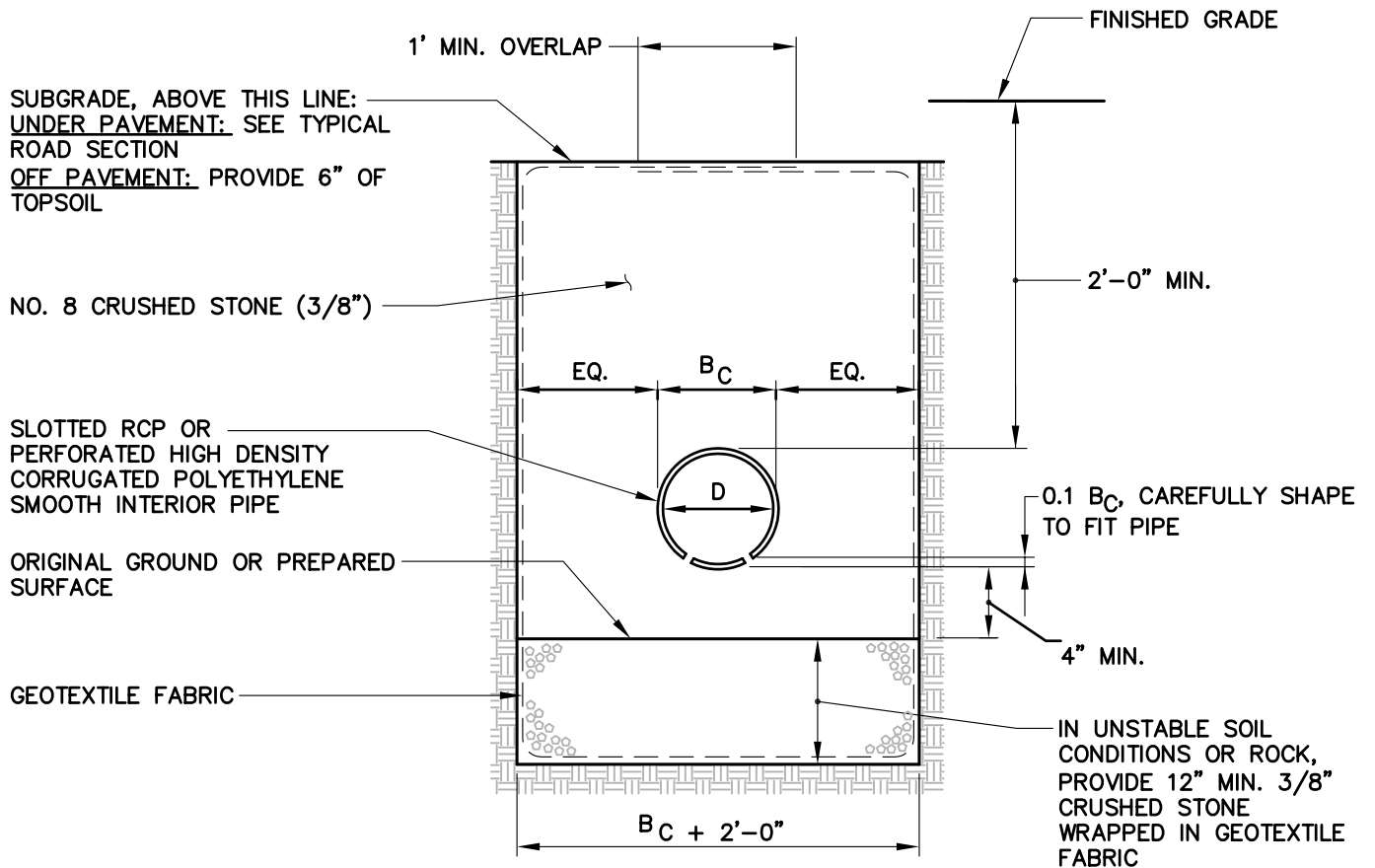
REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

FIGURE 13

REVISIONS:

SCALE: NONE



NOTES:

1. CONTRACTOR SHALL PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING OR OTHER METHODS TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO THE EXCAVATION AND DAMAGING THE WORK OR ADJACENT STRUCTURES AND UTILITIES.

STANDARD DETAIL DRAWING
STORM TRENCH SECTION
SLOTTED PERFORATED STORM DRAIN

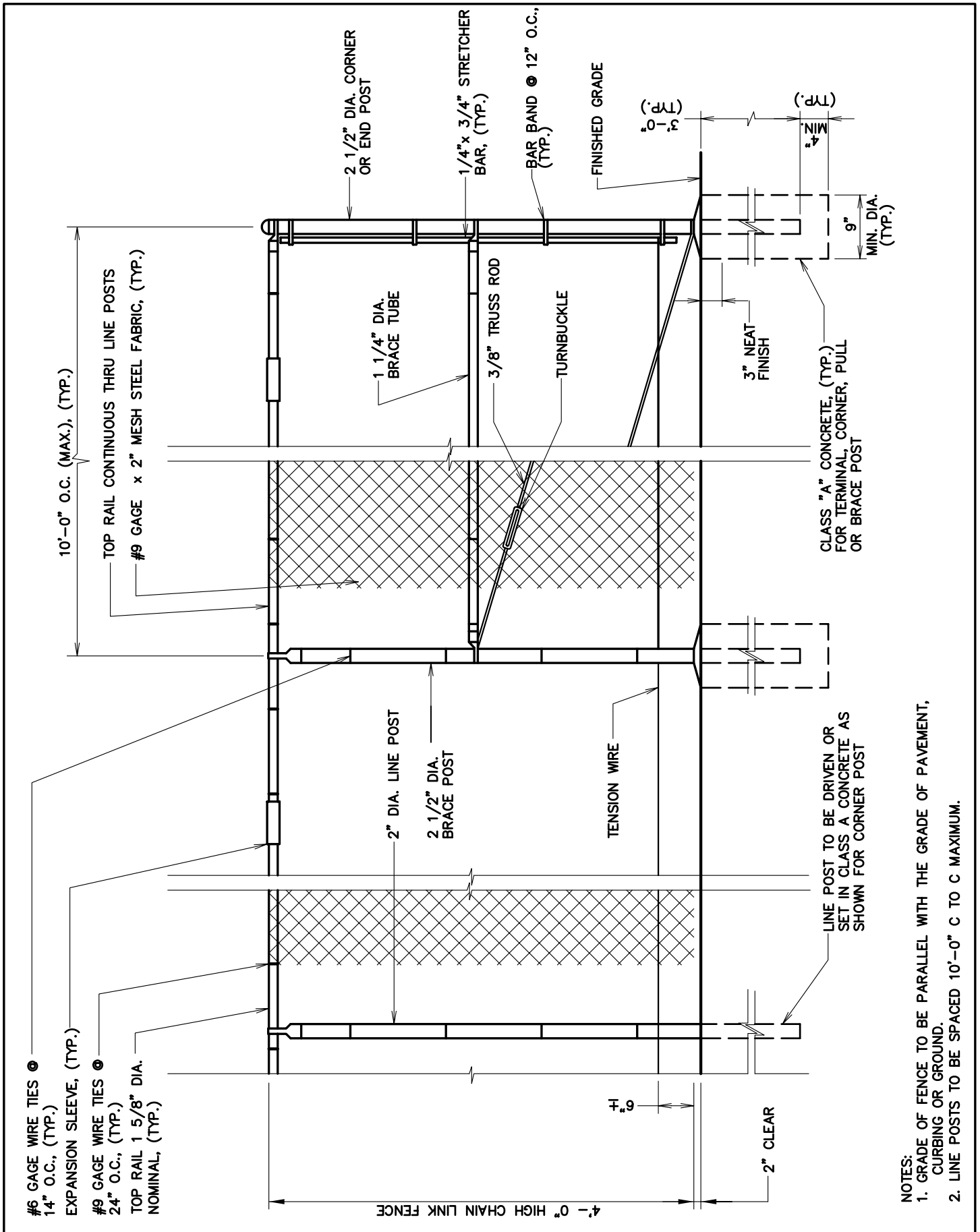
SCALE: NONE

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

FIGURE 14

REVISIONS:



- NOTES:
- GRADE OF FENCE TO BE PARALLEL WITH THE GRADE OF PAVEMENT, CURBING OR GROUND.
 - LINE POSTS TO BE SPACED 10'-0" C TO C MAXIMUM.

STANDARD DETAIL DRAWING
CHAIN LINK FENCE

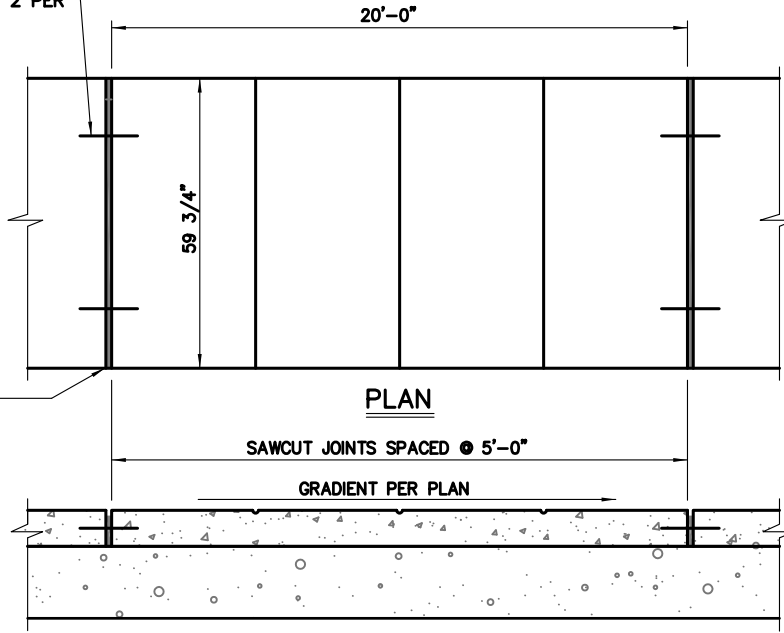
SCALE: NONE

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: FEBRUARY, 2010

REVISIONS:

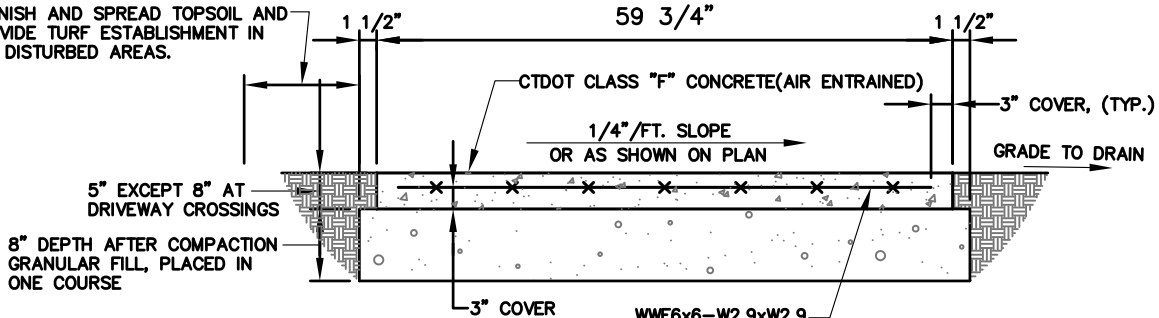
1/2" X 2'-0" LG. SMOOTH STEEL DOWEL BAR, COATED TO PREVENT BOND, 2 PER EXPANSION JOINT



1/4" PREFORMED EXPANSION JOINT FILLER, AASHTO M213 AT 1/4" BELOW GRADE, (TYP.)

LONGITUDINAL SECTION

FURNISH AND SPREAD TOPSOIL AND PROVIDE TURF ESTABLISHMENT IN ALL DISTURBED AREAS.



CROSS SECTION

NOTES:

1. SEE STENCILING DETAILS, FIGURE 18.
2. WHERE DIRECTED BY THE DIRECTOR OF PUBLIC WORKS, PROVIDE 4 - #4 REINFORCING BARS BY 20 FEET LONG IN SIDEWALK WITH ADJACENT TREES.
3. AT CONSTRUCTION JOINTS, PROVIDE PLASTIC INSERTS (SPEED DOWEL) TO ACCEPT #4 REINFORCING BAR. REINFORCING BAR SHALL BE 2'-0" LONG. PROVIDE TWO BARS PER JOINT.

STANDARD DETAIL DRAWING
CONCRETE SIDEWALK

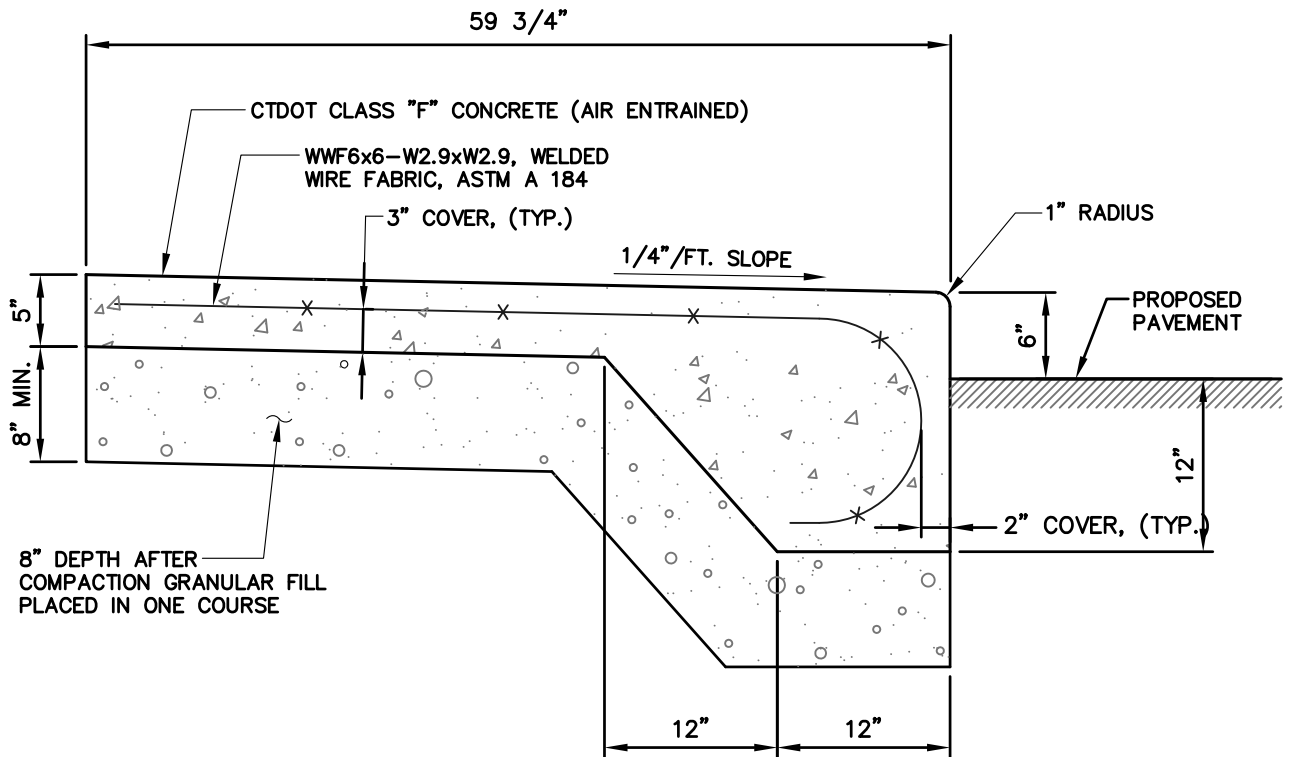
SCALE: NONE

REGULATIONS FOR PUBLIC IMPROVEMENTS

DATE: AUGUST, 2011

REVISIONS:

FIGURE 16



CROSS SECTION

NOTES:

1. SEE STENCILING DETAILS, FIGURE 18.

STANDARD DETAIL DRAWING
CONCRETE SIDEWALK WITH INTEGRAL CURB

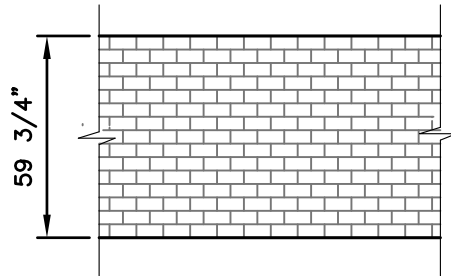
SCALE: NONE

**REGULATIONS FOR
 PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 17

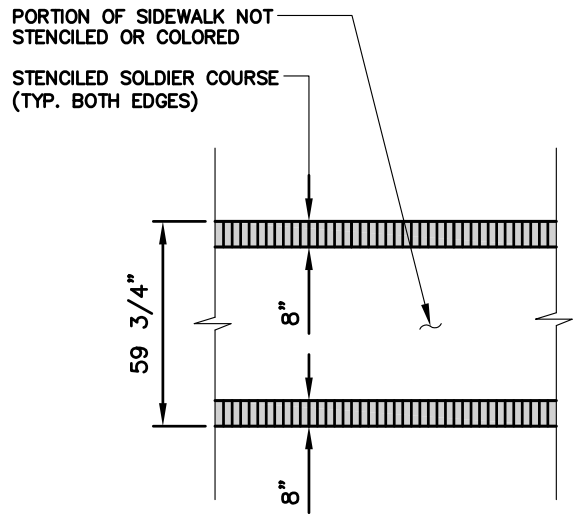


SIDEWALK STENCILED AND COLORED WITH
RUNNING COURSE BRICK PATTERN FULL WIDTH

N.T.S.

NOTES:

1. PATTERN TO FOLLOW CURVATURE OF SIDEWALK
2. APPLIES TO BOTH "TYPICAL CLASS 'F' CONCRETE SIDEWALK" AND "CLASS 'F' CONCRETE SIDEWALK WITH INTEGRAL CURB".
3. THE FORMS SHALL BE SET 59 3/4" APART TO ALLOW FOR FULL BRICKS IN THE STENCIL PATTERN.



SIDEWALK STENCILED AND COLORED
WITH 8" SOLDIER COURSE ALONG EDGE

N.T.S.

NOTES:

1. PATTERN TO FOLLOW CURVATURE OF SIDEWALK
2. APPLIES TO BOTH "TYPICAL CLASS 'F' CONCRETE SIDEWALK" AND "CLASS 'F' CONCRETE SIDEWALK WITH INTEGRAL CURB".

STANDARD DETAIL DRAWING

STENCILED AND COLORED CONCRETE SIDEWALK

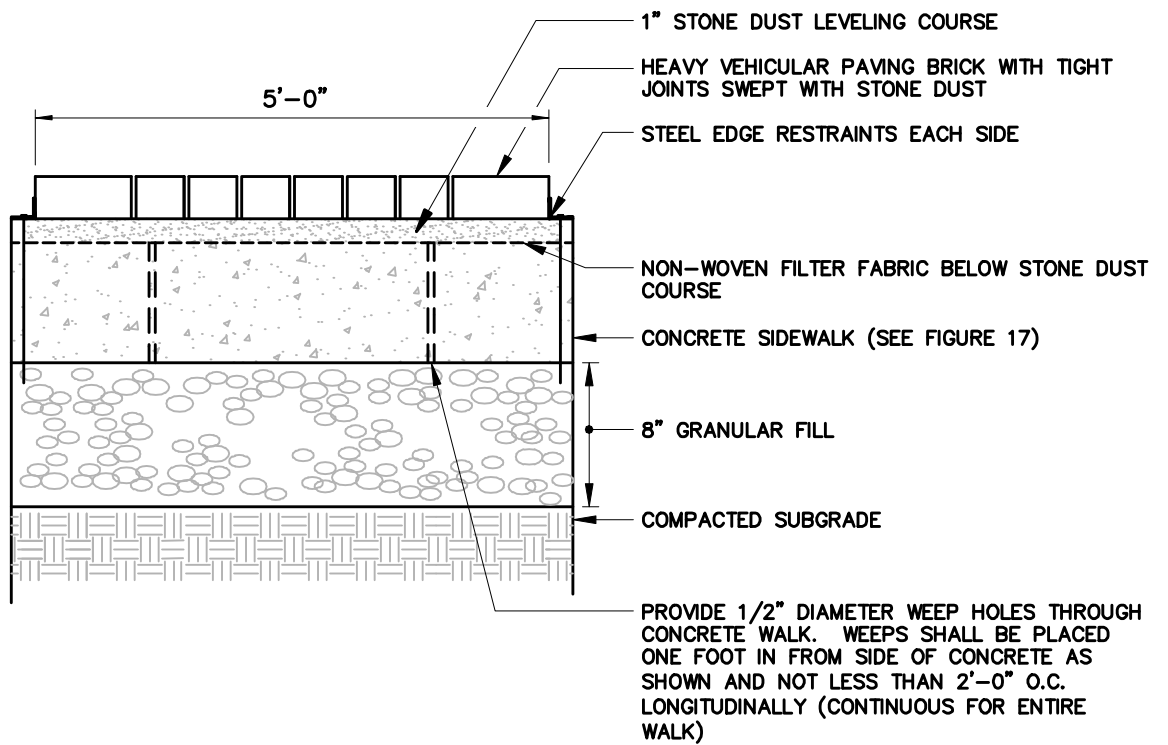
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 18



STANDARD DETAIL DRAWING

BRICK SIDEWALK

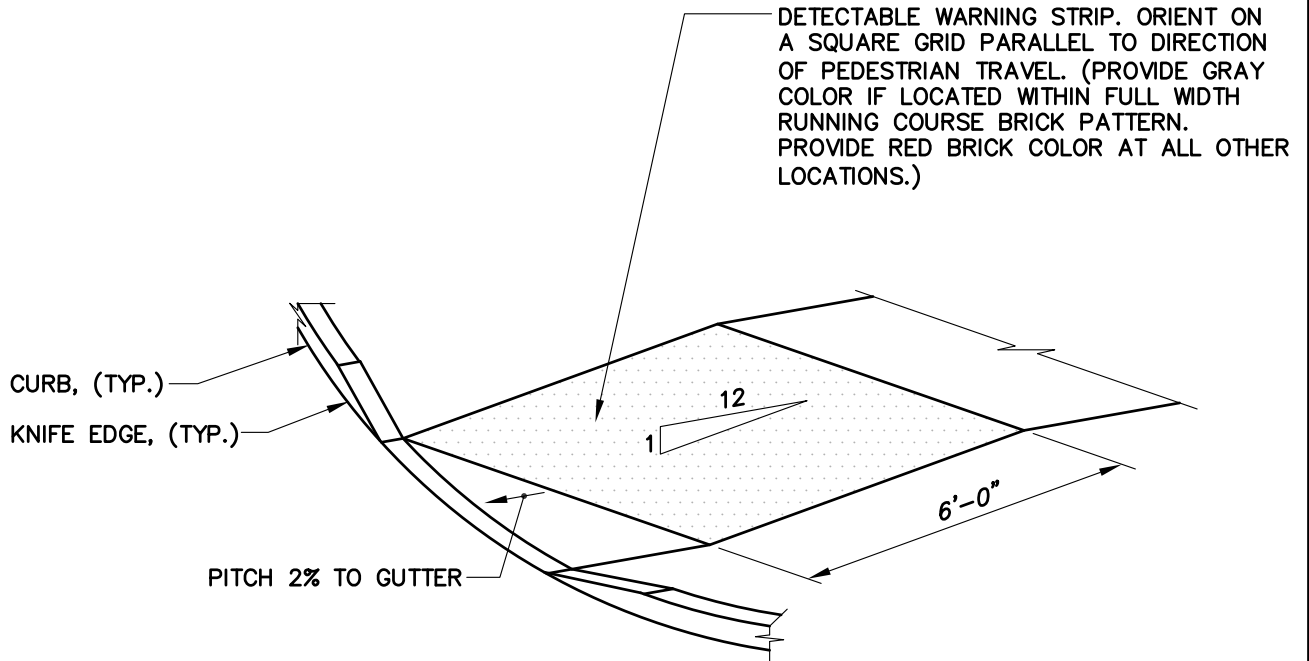
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 19



NOTES:

1. ORIENTATION OF RAMP SHALL BE AS SHOWN ON PLAN.

STANDARD DETAIL DRAWING

CURB RAMP-TYPE I

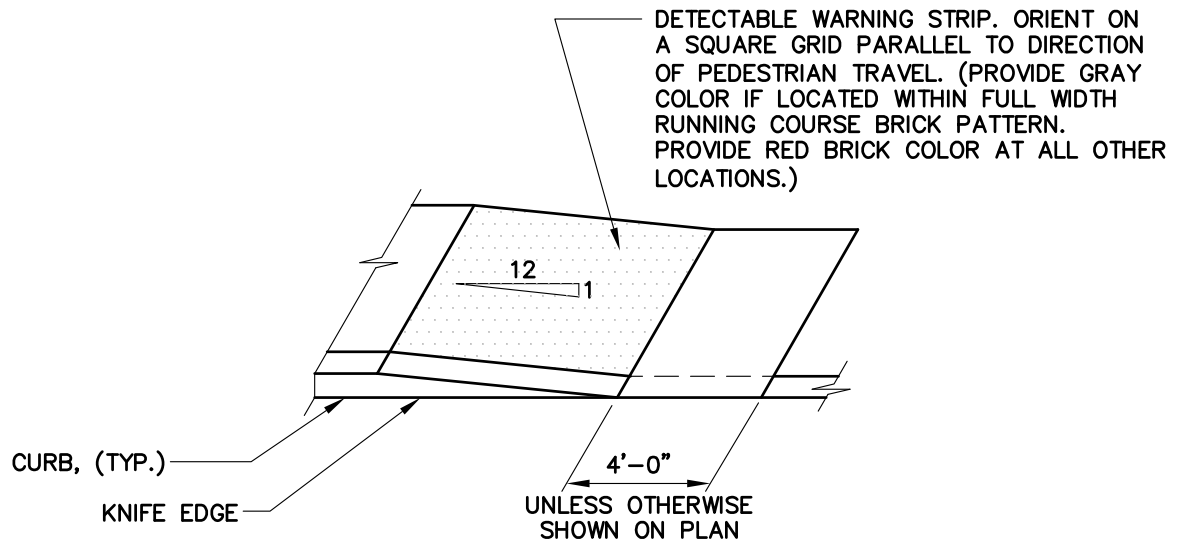
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

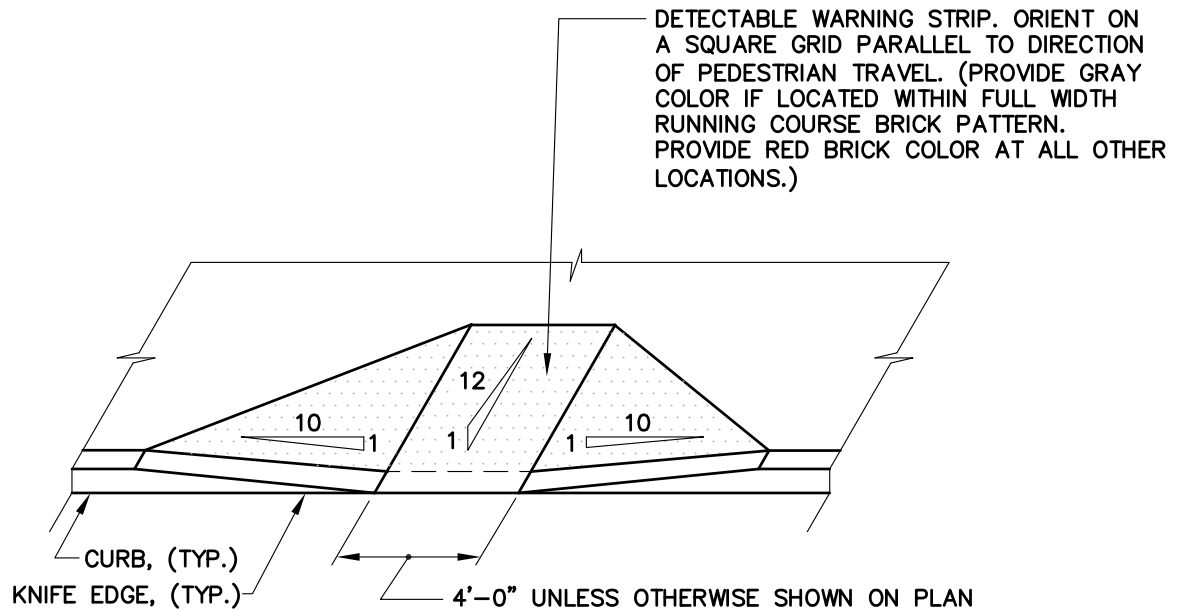
FIGURE 20



TYPE II

NOTES:

1. ORIENTATION OF RAMP SHALL BE AS SHOWN ON PLAN.



TYPE III

STANDARD DETAIL DRAWING
CURB RAMP-TYPE II & III

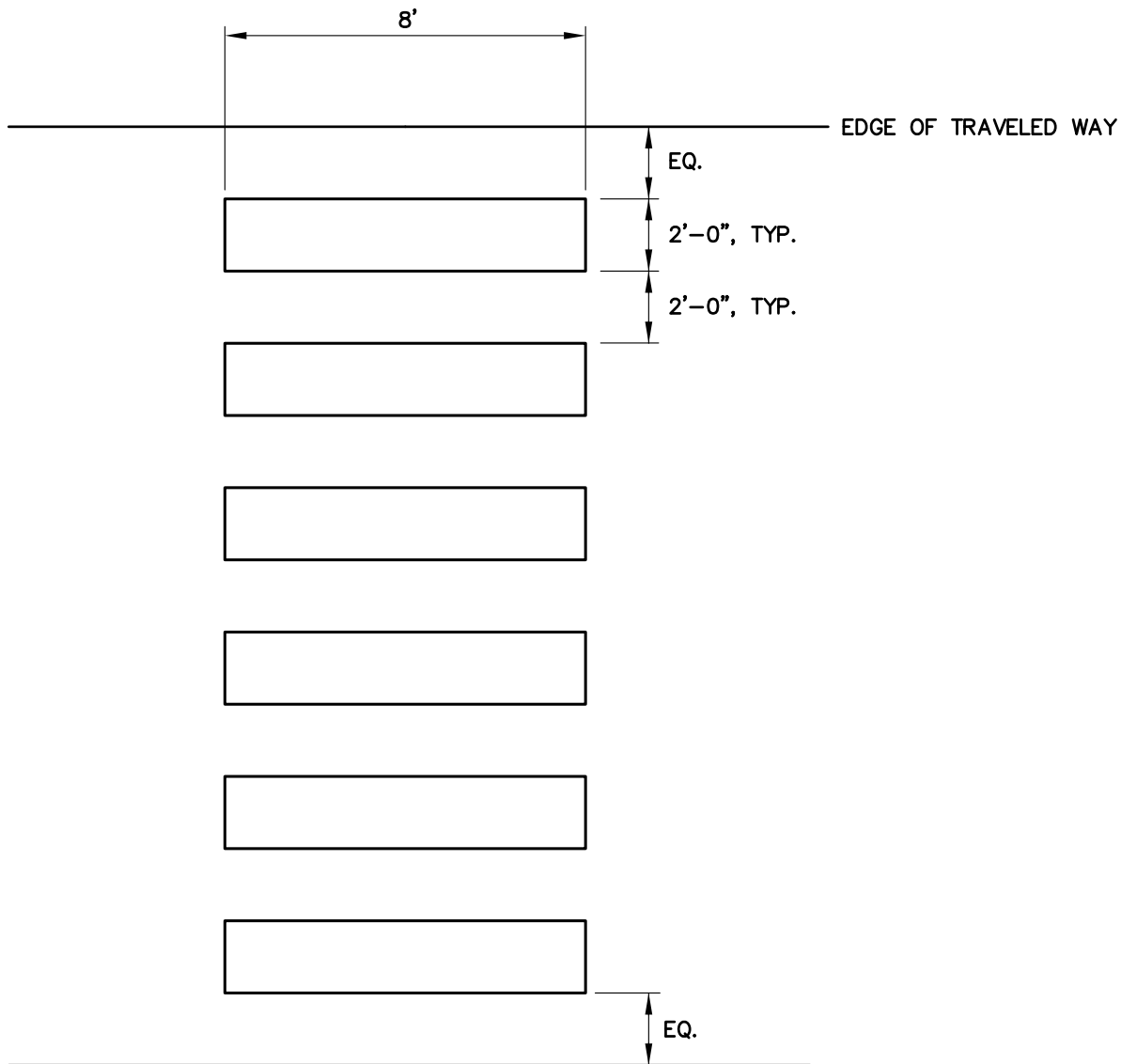
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 21



PLAN

NOTE:

ALL CROSSWALK PAVEMENT MARKINGS SHALL BE WHITE, TYPE I EPOXY RESIN.

STANDARD DETAIL DRAWING

CROSSWALK

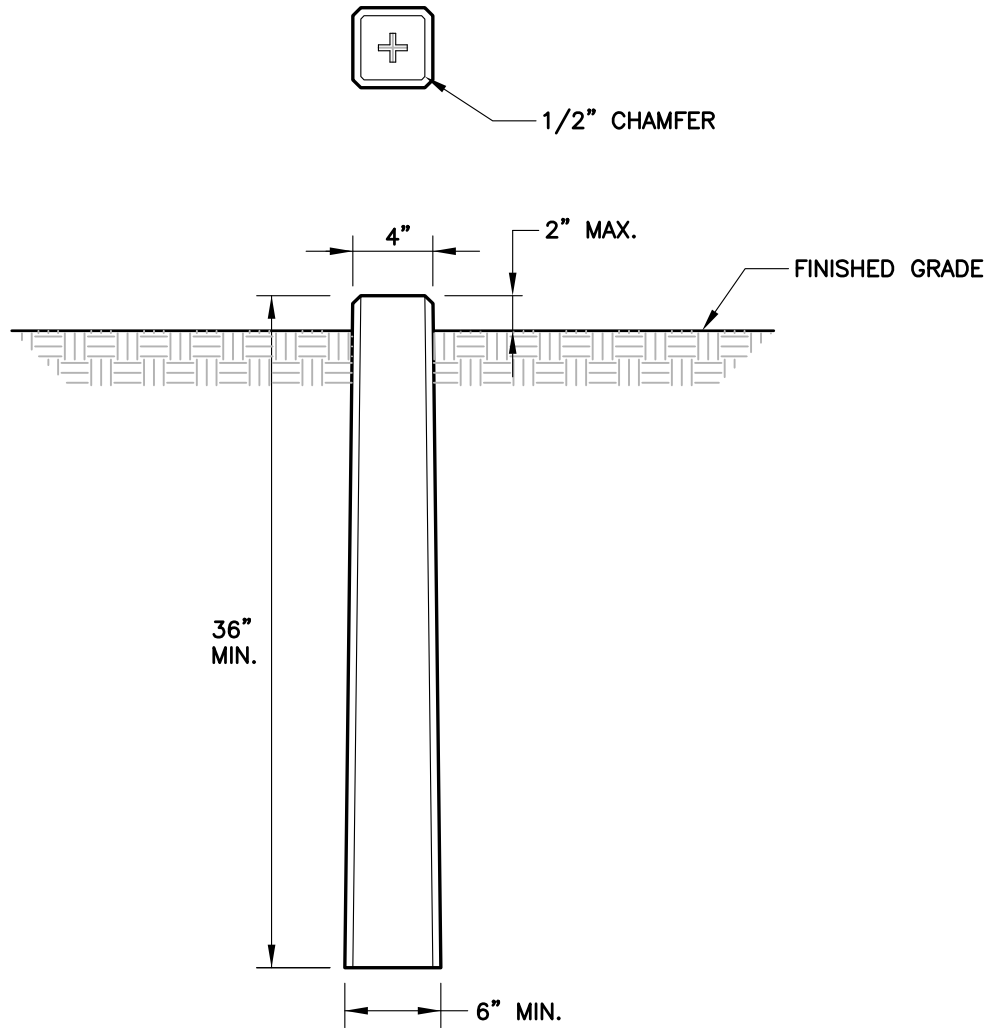
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 22



NOTE: UNDER NO CIRCUMSTANCES SHALL MONUMENTS BE BURIED BENEATH THE GROUND SURFACE OR COVERED WITH LANDSCAPE OR OTHER MATERIALS SUCH THAT THEY ARE NOT VISIBLE.

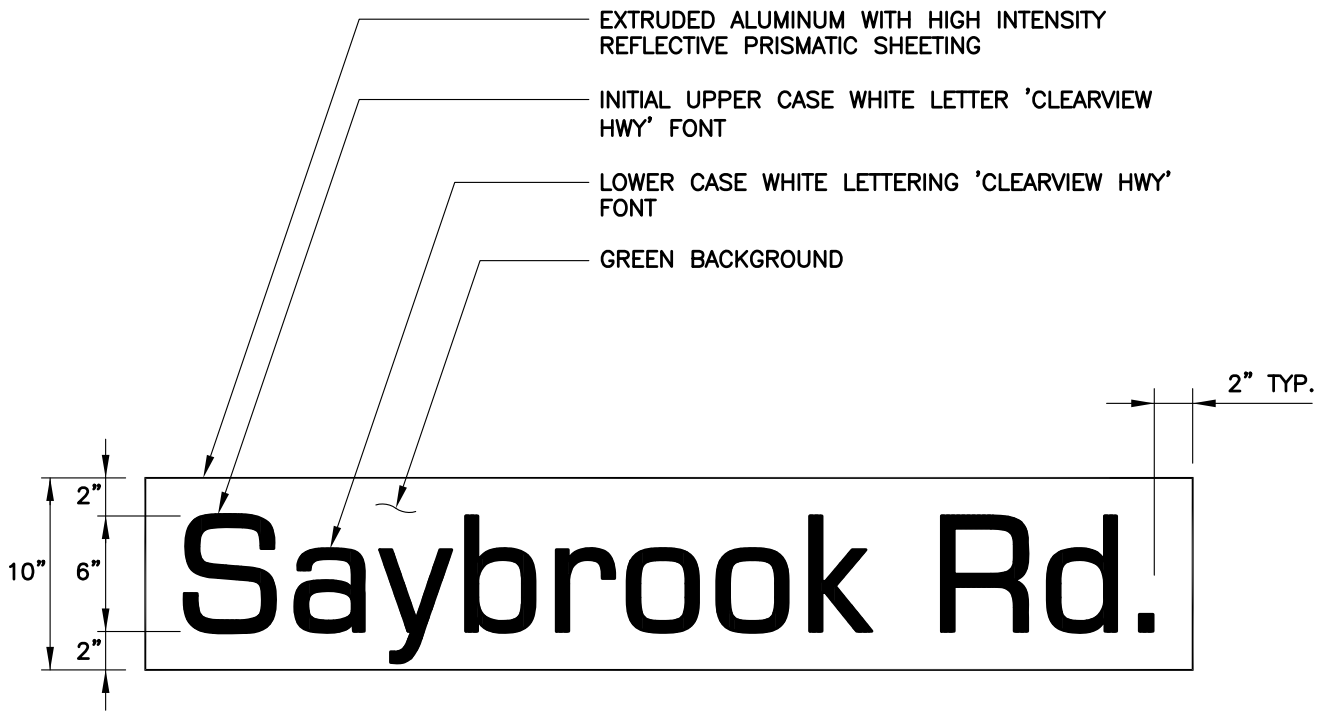
STANDARD DETAIL DRAWING
CONCRETE MONUMENT
 SCALE: NONE

**REGULATIONS FOR
 PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 23



NOTE:

THE FONT USED IN THIS DETAIL IS NOT 'CLEARVIEW HWY' FONT.

STANDARD DETAIL DRAWING

ROAD NAME SIGN

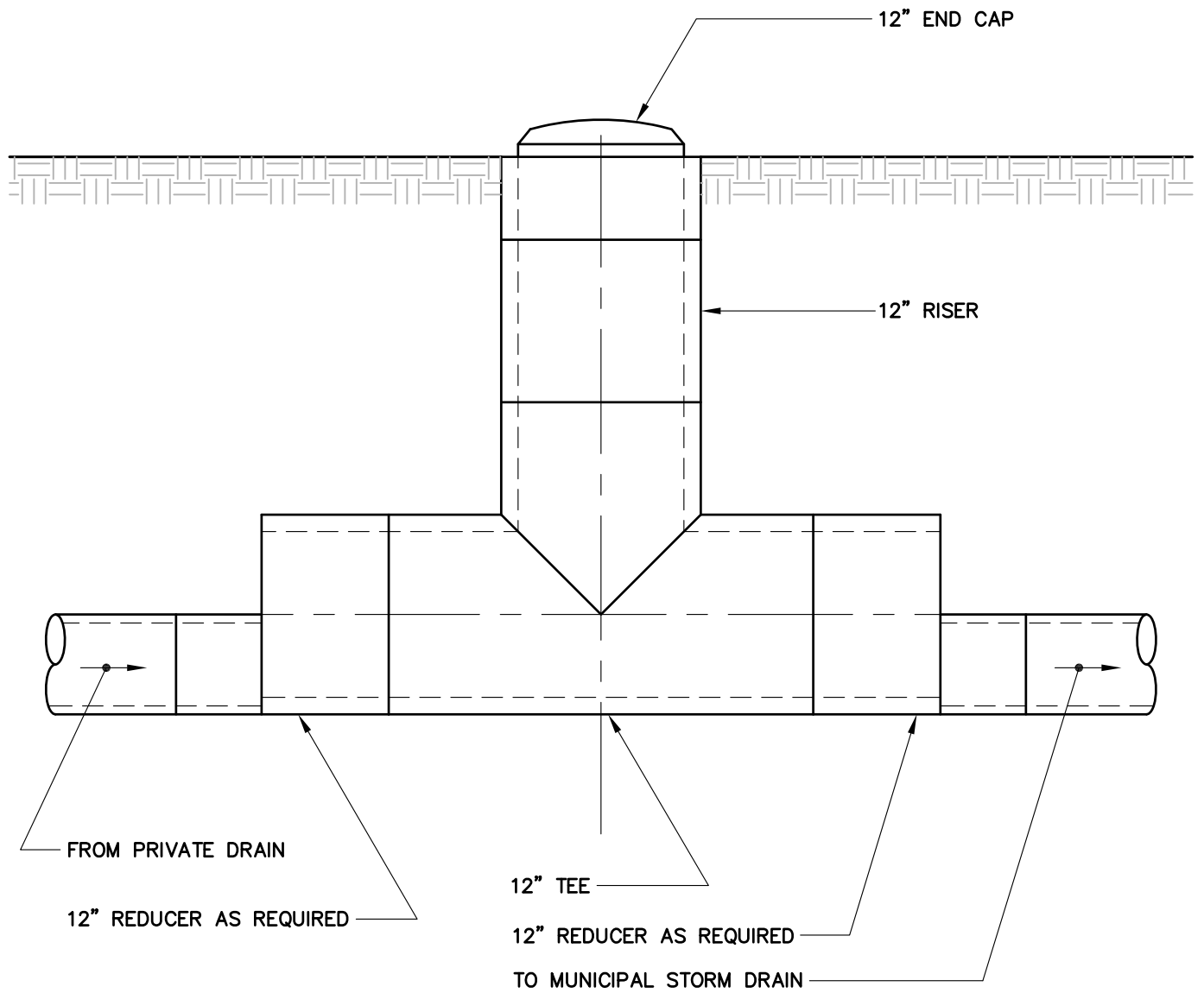
SCALE: NONE

**REGULATIONS FOR
PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 24



STANDARD DETAIL DRAWING
PRIVATE DRAIN ACCESS STRUCTURE

SCALE: NONE

**REGULATIONS FOR
 PUBLIC IMPROVEMENTS**

DATE: AUGUST, 2011

REVISIONS:

FIGURE 25