

AN ORDINANCE
REGULATING THE ADDITION OF ANY NEW STREET
OR HIGHWAY TO THE HIGHWAY SYSTEM
OF THE TOWN OF LEDYARD

Be it Ordained by the Town Council of the Town of Ledyard:

PART I. – Introduction and Definitions

Section 1. Purpose

A. Purpose

The *Ordinance Regulating the Addition of Any New Street or Highway to the Highway System of the Town of Ledyard* has been developed to accompany the Town of Ledyard Subdivision Regulations.

All roadways, drainage Facilities, supporting appurtenances and related work shall be constructed in accordance with the Standards provided in this Ordinance.

B. Use

As applicable, these Standards are also to be used in conjunction with work within Town Right-of-Ways, for permitted driveway construction and for work required by site plans approved by the Ledyard Planning and Zoning Commission.

Section 2. References

A. References

The State of Connecticut, Department of Transportation’s “*Standard Specifications for Roads, Bridges and Incidental Construction*” Form 813, 1985 Issue, and any subsequent amendments for issues, shall be considered part of these Standards. Also, *Connecticut Guidelines for Soil Erosion and Sediment Control*, Connecticut Council of Sol and Water Conservation, as revised, shall also be considered part of these standard. Engineers and Contractors working on projects in the Town of Ledyard shall be expected to have a copy available for their reference.

Other references, as noted in each section of these Standards shall be utilized in design and construction of streets in Ledyard. The listing of these references is not intended to limit the use of other acceptable design and construction methods.

B. Design Standards

These Standards are intended to provide for the best possible design and construction of public improvements in terms of service, safety economy and ease of long-term maintenance. The Standards take into consideration the average conditions encountered within Ledyard. Special designs are expected to be prepared for projects where unusual or extreme conditions are encountered.

C. Alternative Designs

These Standards are not intended to limit the use of new and innovative design methods and products, provided that substantiating documentation is developed by an engineer licensed in the State of Connecticut and submitted for approval to the Public Works Director and Planning and Zoning Commission. In addition, alternate designs to those required under these regulations may be submitted to the Public

Works Director for approval provided that the existing regulations present a hardship or are otherwise not applicable. Any approved deviance from these regulations must be noted on the design plans for the particular project.

Section 2. Definitions

For the purpose of this ordinance, certain terms and words used herein shall be used, interpreted and defined as set forth in this section.

- a. Applicant – Any person, firm, corporation or partnership who shall apply to the Commission or Public Works Director for approval of a proposed public street as hereinafter defined, either for himself or as an agent for others.
- b. Application – A request for approval of a specific proposed public street or streets, including an application form as may be prescribed by the Director of Public Work, accompanied by all supporting information, documentation, reports, and the like which may be required by these Regulations.
- c. Commission – The Ledyard Planning and Zoning Commission.
- d. Cul-De-Sac Street – A local or minor local street open at one end only and with special provision for turning around as described in Part B of this ordinance.
- e. Design Drawings – Design plats found within the Appendix of this ordinance or the standard details from the Connecticut Department of Transportation, Bureau of Highways.
- f. Public Works Director – The Town of Ledyard Public Works Director or duly authorized agent.
- g. Disturbed Area – An area where the natural vegetative ground cover is destroyed, moved or removed.
- h. Drainage Easement – The right, at any time, to direct the flow of water, whether derived from surface or subsurface sources, across any property owned or proposed to be owned by another. Said right is defined to include direction of the flow of water by any method or means, including but not limited to, unrestricted sheet flows, direction by open ditch, swale or trench, or direction by enclosed conduits. Said right also included the right to enter upon the property and to maintain said direction of the flow of water in perpetuity
- i. Drainage Ordinance – Town of Ledyard Ordinance Regulating the Management of Stormwater Runoff.
- j. Easement – A right, established in deed or other legal means, of one party to use a designated portion of a second party's land for a specific limited purpose.
- k. Erosion – The detachment and movement of soil or rock fragments by water, wind, ice or gravity.
- l. Intersection Sight Distance - The unobstructed sight line, as measured 10 feet from the traveled way of the main roadway for driveways and 20 feet from the traveled way for intersecting streets, to an approaching vehicle. The sight line shall be measured at a height of 1.5 feet above the proposed grade of the intersecting street. The height of the approaching vehicle shall be assumed to be 4.25 feet above the pavement of the main roadway. The approaching vehicle shall be assumed to be in the middle of the main road.

- m. Lot – The unit or units into which land is divided with the intention of offering such units for sale, lease conveyance, or transfer; either as undeveloped or developed sites, regardless of how they are conveyed. Lot shall also mean parcel, site or any similar term.
- n. Maintenance Security – A certificate of deposit or a savings pass book, made out jointly in the name of the applicant and the Town of Ledyard, and furnished in entirety by the applicant, that guarantees all subdivision improvements against defective workmanship or materials for the period of one year.
- o. Monument – A permanent marker installed to designate the legal limits of a street right-of-way or other boundary of the Town owned land, as defined in Section 5-4 of the Town of Ledyard Subdivision Regulations.
- p. Pavement Width – The installed width of bituminous concrete surface course inclusive of the portion beneath any required curbing.
- q. Performance Security – A certificate of deposit or a savings pass book, made out jointly in the name of the applicant and the Town of Ledyard, and furnished in entirety by the applicant, to be used to complete said improvements as promised, as required, or as indicated in the application within the period specified by State law.
- r. Street – Any street, avenue, land or any right-of-way (a) dedicated and legally accepted for the purpose of public travel; (b) on subdivision duly filed or r recorded in the Office of the Town Clerk of the Town of Ledyard.
- s. Street Hierarchy – Shall include the following categories of streets, as determined by the Planning and Zoning Commission and maintained on a list prepared by the Commission. There are four accepted categories of roads with in the Town of Ledyard:
 - (1) Arterials
 - (2) Collectors
 - (3) Local
 - (4) Minor

Arterial Street – Any street or highway that accumulates traffic from collector and local roads and provides for increased travel speeds with minimum interference to through movement. An arterial street may have the following characteristics:

- Posted speed limit of up to 45 mph
- Continuity of serval miles
- Traffic signs used to control right-of-way major intersections
- Reverse frontage building lots
- ADT >2000 vpd

Collector Street – Any street or highway that accumulates traffic from local streets and brings all developed areas within reasonable distances of an arterial street. A collector street may have the following characteristics:

- Posted speed limit of 30 – 35 mph
- Not continuous for more than two miles
- Greater emphasis on traffic control devices such as stop signs
- Revers frontage building lots
- ADT between 500 and 2000 vpd
-

Local Street – Any street with a primary purpose to conduct traffic to and from dwelling units to other streets within the hierarchy. Usually, a local street bears no through traffic between two streets of higher classification. A local street may have the following characteristics:

- Posted speed limit of 25 – 30 mph
- Easy, safe access to adjoining residential units
- ADT <500 vpd

Minor Local Street – Any street that provides access to not more than eight (8) dwelling units; and shall have a maximum length of 450 feet. Usually, a minor local street is a dead-end street with on through-traffic and limited on-street parking. A minor local street may have the following characteristics:

- Posted speed limit of 20 mph or less
 - Have only one intersection
 - ADT <100 vpd
- t. Street Line – The limit or property lines of the street right-of-way. Where such line has not been established, it is deemed to be a line as described under Part B, Section 4.
- u. Standard Specifications and Details – The Connecticut Department of Transportation’s “*Standard Specifications for Roads, Bridges and Incidental Construction*” Form 813, 1985 and any subsequent amendments or issues, except where amended by this Ordinance or any other regulations of the Town of Ledyard.
- v. These Regulations – The *Ordinance Regulating the Addition of any New Street or Highway to the Highway System of the Town of Ledyard*; and includes amendments thereto.
- w. Traveled Width – The distance between curb faces.

PART II. – Application for Acceptance of Proposed Street as a Public Street

Section 1. Preliminary Concept Approval

Whenever any section of roadway is proposed, the applicant shall present to the Planning and Zoning Commission a preliminary map of the proposed roadway. Such submission shall include all roadways within a half mile radius and any potential future lengthening of the proposed roadway. Surrounding topography with five (5) foot contour intervals shall also be provided as part of the preliminary sketch. The Commission shall review the submittal and make their recommendations to the applicant.

Section 2. Preliminary Design Approval

- A. After preliminary concept approval has been received from the Planning and Zoning Commission, the applicant shall present to the Commission, three (3) stamped copies of plans and profiles prepared by a licensed Connecticut engineer, together with a topography map of the area and a written application for acceptance of such street. The plans shall conform to specifications stated in this Ordinance. Such plans shall include a description of drainage control measures as required in the Town Drainage Ordinance. The Commission shall refer the plans to the Public Works Director for review and comment.
- B. The Public Works Director shall discuss the preliminary design with the applicant or the applicants’ designated agents. Within thirty (30) working days from receipt of the preliminary design, the Public Works Director shall recommend approval; approval with modifications; or disapproval of the proposed street design. The Public Works Director shall forward one copy of the plan, signed and dated, and with comments to the Planning and Zoning Commission.

- C. The Planning and Zoning Commission may grant preliminary approval of the proposed street, taking into account comments of the Director of Public Works, the Director of Planning, and other agencies that have reviewed the plans. The Commission shall establish a performance security in an amount adequate to cover all costs and all aspects of construction, as required by this Ordinance.
- D. Performance security shall consist of a certificate of deposit or a savings pass book, made out jointly in the names of the applicant **and** the Town of Ledyard. A withdrawal slip payable to the Town of Ledyard shall be provided with any savings pass book. A joint account in both names shall be required. Other forms of collateral, including letters of credit, are unacceptable and shall not be received by the Town as performance security.
- E. The Applicant shall deposit the required performance security established by the Commission with the Town Treasurer prior to final filing of subdivision plans with the Town Clerk. No construction shall begin until the applicant has provided the Town Treasurer with the required performance security. Furthermore, no construction shall begin until plans submitted by the applicant have received written certification from the Planning and Zoning Commission Chairman, and have been filed with the Town Clerk in accordance with Town of Ledyard's Subdivision Regulations.

Section 3. Final Approval of Public Works Director

- A. Whenever any street or road section is completed, the applicant shall furnish the Public Works Director with a certificate from a licensed Connecticut engineer certifying that:
 - (1) The work has been completed according to the plan submitted and in accordance with all specifications herein stated; and
 - (2) The drainage system has been completed in accordance with the Town Drainage Ordinance.
 - (3) If public utilities have been installed, a letter from the respective utility company indicating that the utilities have been completed and accepted shall be submitted.
- B. A mylar "*as-built*" plan and profile of the road and storm drains shall be submitted, together with two (2) blue and white prints. The plans shall be at a scale of 1"=40'; with the profiles at 1"=4'. The plan view shall show all waterlines, valve boxes, water services and curb boxes, electrical system facilities, telephone system facilities, boundary monuments, front lot pins and other public improvements. The "*as-built*" are to be certified as accurate by a Registered Engineer and/or Land Surveyor.
- C. If the road meets approval and has met requirements set forth in this Ordinance, the Public Works Director shall forward a written recommendation of approval to the Planning and Zoning Commission.

Section 4. Final Approval by the Planning and Zoning Commission

- A. Upon recommendation of approval of the street by the Public Works Director, the applicant shall give the Planning and Zoning Commission a warranty deed conveying the street, related drainage easements, any applicable rights-of-ways, open space or other easements, to the Town of Ledyard. Deeds transferring property to the Town shall specify actual road dimensions and boundaries in feet to the nearest hundredth, and compass direction to the nearest second.

- B. If the Planning and Zoning Commission concurs with the recommendation of the Public Works Director, the Commission shall forward its own recommendation for approval, together with any warranty deeds and the written recommendation of the Public Works Director, to the Town Council. No deed shall be conveyed to the Town Clerk until the Town Council has taken action to accept the street as a public street.

Section 5. Release of Performance Security

- A. The Planning and Zoning Commission may, upon written notification to the Town Treasurer, and after the recommendation of both the Public Works Director and the Director of Planning, order the release of any performance security or maintenance security required by this Ordinance. The Planning and Zoning Commission shall not release any amount greater than that necessary to complete unfinished portions of the streets approved under this Ordinance.
- B. Upon failure of the applicant to complete street improvements in accordance with all specifications herein stated or as shown on approved plans, and after the maximum time for completion of such improvements afforded the applicant under State Law has passed, the Planning and Zoning Commission shall revoke necessary portions of the performance security so that the Town of Ledyard may complete the al the remaining improvements in compliance with this Ordinance.

Section 6. Town Council Acceptance

- A. After compliance with the provisions of Section 8-24 of the General Statutes, the Town Road Ordinance, and the Town Drainage Ordinance, as they may be amended, the Town Council may, pursuant to Section 12a-48 of the General Statutes, accept such street as a public street. Any entry of such acceptance shall be made in the records of the Town Clerk.
- B. Acceptance shall be effective upon filing of the warranty deed for the street and related easements with the Town Clerk.
- C. No Street shall be officially opened to the public until it has been accepted as a public street pursuant to this section and it has met the requirements of this Ordinance.

PART III. Liability Insurance

Section 1. Contractor Certificate of Insurance

No Work shall be started on the public improvements associated with an approved subdivision or street until the Contactor has filed with the Public Works Director a *Certificate of Insurance* with the limits of liability equal to; or exceeding the current required Town coverages cited in Section 3 below.

Section 2. Indemnification

Insurance Policies shall include the provision that the Contractor indemnifies and saves harmless the Town of Ledyard and its agents from all suits and actions of every name and description brought against said Town or any office of said Town, for or on account of any injuries or damages received or sustained by any person in consequence of, or resulting from any work performed by said Applicant, his servants or agents, or of, or from, any negligence in guarding such work or of, or from any acts of omission of said applicant, his servants or agents.

Section 3. Minimum Insurance Coverage

1. Workman's Compensation, as required by State Statute.
2. Public Liability, Bodily Injury Liability and Property Damage Liability as follows:
 - Injury or death of one person: \$1,000,000.00
 - Injury to more than one person in a single incident \$3,000,000.00
 - Property damage in one accident: \$300,000.00
 - Property damage in all accidents: \$500,000.00
3. Automobile and Truck (Vehicular) Public Liability, Bodily Injury Liability and Property Damage Liability as follows:
 - Injury or death of one person: \$1,000,000.00
 - Injury to more than one person in a single incident \$3,000,000.00
 - Property damage in one accident: \$300,000.00
 - Property damage in all accidents: \$500,000.00

PART IV. Clearing, Grubbing and Erosion Control

Section 1. Introduction

- A. No areas shall be cleared or grubbed until Subdivision Plans have been approved in accordance with the Ledyard Subdivision Regulations.
- B. All areas within the road right-of-way and slope rights' areas for excavation, embankments and fills, shall be cleared of trees, stumps, brush, rubbish and other objectionable material. Excepted will be desirable trees and stone walls as noted on the approved plans.
- C. Areas for installation drainage pipe, drainage structures, channels, fences, highway appurtenances and related work shall also be cleared.
- D. The following documents may be referred to when using this Section of these Standards:
 - (1) "State of Connecticut, Department of Transportation: Standard Specifications for Roads, Bridges and Incidental Construction; Form 813" 1985 and any subsequent amendments or issues.
 - (2) Town of Ledyard Subdivision Regulations.
 - (3) Erosion and Sediment Control Handbook U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut.
 - (4) Connecticut Guidelines for Soil Erosion and Sediment Control, The Connecticut Council of Soil and Water Conservation, January, 1985, or as amended.

Section 2. Method of Clearing

- A. Within the excavation areas for the road, shoulders, utility rights-of-ways and related areas, all trees shall be cut, and all stumps and roots removed.
- B. Within shoulder areas, side slopes and utility rights-of-ways, all trees, stumps and brush shall be cut and removed; all up-rooted and dead material shall be removed.

Section 3. Disposal of Material

- A. All trees, stumps and bushes shall be removed from the proposed right-of-way and disposed of in areas within the subdivision approved by the Planning and Zoning Commission. Chipped branches and brush may be disposed of on-site but not within right-of ways or easements.
- B. Approved disposal areas shall be shown on the Subdivision Plan

Section 4. Erosion and Sedimentation Control Measures

- A. Erosion shall be prevented by effectively controlling the formation of gullies in both cuts and fills. Early treatment means treating the cut slopes as the excavation progresses and treating the fill slopes as the embankment is being brought up to grade. Slope treatment varies but generally consist of seeding and mulching, diversion structures and hay bale check dams. Stone blankets and other special treatments may be required in glacial till soils.
- B. Prior to beginning work, an erosion and sedimentation control plan shall be approved by the Ledyard Planning and Zoning Commission. The methods described in the “*Connecticut Guidelines for Soil Erosion and Sediment Control*” and the Ledyard “*Subdivision Regulations*” shall be utilized.
- C. Timing of the installation the Sedimentation and Erosion Control measures shall follow the requirements as set forth in the approved “Sedimentation and Erosion Control Plan”. The applicant shall be wholly responsible for implementation and maintenance of sedimentation and erosion control measures for the life of the project.

PART V. Construction of Streets

Section 1. Introduction

No person, company or corporation, except the State of Connecticut or the Town of Ledyard, shall begin construction of any street within the Town of Ledyard until Part II and Part III of this Ordinance have been complied with.

Section 2. General Design Requirements

- A. Streets shall be designed and constructed in accordance with the Standards and procedures hereinafter specified. Higher Standards may be required due to special project or site features.
- B. The following documents shall be referred to when using this document:
 - (1). “*State of Connecticut, Department of Transportation; Standard Specifications for Roads, Bridges and Incidental Construction, Form 813*” and any subsequent amendments or issues.
 - (2). “*Geometric Design for Local Roads and Streets*” by the American Association of State Highway Official (AASHO).
 - (3). Town of Ledyard “*Subdivision Regulations*”
 - (4). Town of Ledyard “*Drainage Ordinance*”
 - (5). “*highway Encroachment Regulations*”; Connecticut Department of Transportation, Bureau of Highways, 1983, or as amended.

C. Street Width

The following minimum dimensions shall be required for the various hierarchical street categories.

- (a) “Right-of-Way” refers to the width of land to be deeded to the Town of Ledyard.
- (b) *Traveled Width*” refers to minimum distance between the interior edges of bituminous concrete lip curbing as required in this Ordinance.

<u>Designation</u>	<u>Right-of-Way</u>	<u>Travelled Width</u>
Arterial	60’	32’
Collector	50’	30’
Local Street	50’	28’
Minor Local Street	50’	22’

D. Cul-de-Sac Streets

Cul-de-sac Streets shall not exceed 1,000 feet in length, unless a waiver has been approved by the Planning and Zoning Commission. This waiver request must be made in writing by the applicant at the time of the subdivision application, and must include such information as the Commission finds necessary to make a fair determination of the request. Cul-de-sacs shall have a 60 foot minimum radius at the right-of-way line within residential zones, and a 7- foot minimum radius at the right-of-way line within commercial industrial or CIP zones. The layout of cul-de-sac turn arounds shall correspond with those found in Design Plate #6 of this Ordinance.

E. Minor Local Streets

Minor local streets shall provide access to not more than eight (8) residential units and shall have a maximum length of 450 feet. A minor local street shall have only one intersection, and with the exception of width, shall conform to design criteria and cross section for a “local street” as shown in Design Plate #1 of this Ordinance. No parking shall be allowed along the paved portion of the roadway, and “No Parking” signs shall be installed every 125 feet on both sides of the road. This street configuration may be used only when there is no plan or obvious possibility of extending the roadway beyond the maximum allowable length, and only when the Planning and Zoning Commission determines that the adjoining parcels will not become “landlocked” or otherwise inaccessible from Town streets or State highways.

In general, the layout of cul-de-sac turn arounds shall correspond with those found in Design Plate #6 of this Ordinance. Alternative turn arounds for minor local streets, other than those recommended for use in Design Plate #6, may be proposed by the applicant if the following performance requirements are met. The Planning and Zoning Commission shall have final approval for any alternative based on the following Standards:

- (1) A Design Bus (40 foot length); per AASHTO Guidelines, can safely turn around without leaving the pavement surface.
- (2) An adequate area for plowed snow storage is provided and approved by the Public Works Director.
- (3) Private driveway entrances will not be adversely affected by plowed snow.
- (4) The turnaround configuration is approved by the Town of Ledyard Fire Marshal.
- (5) The minimum twenty-two (22) foot pavement width is maintained on all portions of the turnaround unless waived by the Commission.
- (6) The highway right-of-way line falls no closer than 12 feet to the edge of the pavement.

F. Intersections

The following criteria shall be adhered to in the establishment of intersections:

- (1) Number of Streets – No more than two (2) streets shall intersect or meet at any one point to form a 4-way intersection. The center line of all streets entering the intersection shall pass through a signal point.
- (2) Spacing of Intersections – Intersections of commercial and industrial roads, local streets, and minor local streets shall be spaced a minimum of two hundred (200) feet apart measured from the points of intersection of the center lines. Intersections of arterial and collector streets shall be spaced a minimum of eight hundred (800) feet apart, measured from points of intersection of center lines.
- (3) Angle of Intersection – Wherever practical, all streets shall intersect at 90 degrees and no street shall intersect any other street at an angle less than 75 degrees or more than 105 degrees. A minimum straight distance of one hundred (100) feet shall be provided on all streets approaching an intersection with another street.
- (4) Radii of Intersecting Streets – The radii, at the right-of-way line of intersecting local streets, and local streets that intersect with arterial and collector streets, shall be a minimum of twenty-five (25) feet. All other intersections shall have a minimum radius of thirty (30) feet at the right-of-way line.

G. Horizontal and Vertical Design Controls

Minimum Criteria

<u>Design Element</u>	<u>Arterial Street</u>	<u>Collector Street</u>	<u>Local Street & Minor Local Street</u>
Design Speed	45 mph	35 mph	25mph
Maximum Gradient	8%	10%	10%
Minimum Gradient	1%	1%	1%
Stop Sight Distance	350 ft.	250 ft.	200 ft.
K Value for Vertical Curve	90	40	200 ft.
Min Center Line Radius Curve	800 ft.	300 ft.	150 ft
Min. Sight distance for Intersections	710 ft.	520 ft.	405ft.

- (1) Streets Shall be adjusted to the contour of the land but no grade shall exceed the limits set above without the prior written approval of the Director of Public Works.
- (2) The finished grade shall be at least three and one-half (3 ½) feet above the high water table. This may be accomplished by filling or through the installation of underdrains. All unsuitable soft materials must be removed from beneath the proposed street.
- (3) The profile of such new street shall have no abrupt change of grade.
- (4) Grades Approaching Intersections – Grades shall not exceed 2 percent for a distance of not less than seventyfive (75) feet from the center line of the intersection.
- (5) Tangent Distance Between Reverse Horizontal Curve – A minimum distance of 100 feet shall be provided on collector, local and minor local streets and two hundred (200) feet shall be provided on arterial streets.

H. Side Slopes

- (1) Slope Grading- Streets in cut of fill sections shall be provided with slopes not steeper than two (2) feet horizontal to one (1) foot vertical, unless other structural measures are provided to retain the slope. Steeper slopes may be permitted in rock cuts. At intersections, banks shall be cut back to maintain the minimum sight distance for intersections, as required by these Standards.

- (2) Guide Rails – In all areas where the side slopes are steeper than four (4) feet horizontal to one (1) foot vertical drop and slope down from the street and the height of fill exceeds four (4) feet, guide rails shall be installed. Guide rails shall be in accordance with these specifications.
- (3) Slope Rights – Where new streets abut private property, necessary slope rights must be obtained by the developer when in cut fill, and these slope rights shall be shown on the final layout and on the land records. The developer shall address the effects of fills and cuts on adjacent private property within the slope right area.

I. Street Cross Section

Streets shall be designed with a cross section as shown within the Design Plates of this Ordinance.

- (1) All requirements of these regulations are minimum requirements. Engineering design of subbase, base and surface courses shall be prepared using current accepted practices when field conditions warrant.
- (2) Upon recommendation of the Public Works Director, the Planning and Zoning Commission may waive the requirement for curbing on portions of proposed streets when it can be demonstrated that the elimination of curbing is part of an acceptable plan for controlling storm drainage

J. Drainage

- (1) All streets shall be constructed with drainage installation in accordance with the requirements of the Town Drainage Ordinance. The developer shall provide the Town with evidence that no drainage problems will arise on adjacent property due to cut or fill operations.

Section 3. Driveways

- A. Grade
The apron and drive shall have a grade and transition curve as shown on Design Plate #7 in the Appendix of this Ordinance.
- B. Apron
The drive apron shall be installed in accordance with Deign Plate #7 of these Regulations.
- C. Intersection Sight Line
The grading and clearing at a driveway entrance shall provide for a required stopping sight distance along the adjoining street of:

Street Design Speed (mph)	Sight Distance (feet)
20	200
25	250
30	300
35	350
40	400
45	450
50	500
55	550

Section 4. Developments Abutting or with Access to Existing Streets

When a proposed subdivision abuts or has access on existing Town streets, the following requirements shall be adhered to:

- A. When existing Right-of-Way widths, as established by old plates, filed deeds, or as established by utility pole and/or wall locations in field, exceed the minimum required for the street category, the Right-of-Way width shall not be reduced.

- B. Where there is no evidence of a Right-of-Way width, the width shall be established in accordance with the requirement for the category assigned to the street by the Planning and Zoning Commission as measured from the centerline of the roadway.
- C. When existing Right-of-Way widths, as previously established, do not meet the requirements for the category assigned to the street by the Planning and Zoning Commission, the applicant shall give the Town a Quit Claim Deed for the land between the newly established Right-of-Way line and the old line.
- D. When required by the Planning and Zoning Commission, the existing street shall be reconstructed, to the extent necessary to provide safe conditions including the necessary width and intersections sight lines; reconstruction shall be in conformance to the requirements of these specifications.
- E. When required by the Planning and Zoning Commission, developments with proposed access(es) on Town streets will require a traffic study to be completed addressing the impact on the existing roadways(s).

Section 5. Construction Methods

A. Construction Survey

- (1) The centerline of the road shall be located in the center of the right-of-way and shall be run in the field and suitable construction ties established to all control points. Stations shall be established at least at 50-foot intervals and at all points of curvature and points of tangency.
- (2) Construction offset stakes shall be placed at each station and clear of all construction. The construction stake shall be marked with the station, offset to the centerline and cut or fill to profile grade.
- (3) Permanent Bench Marks shall be established throughout the length of the project at a minimum of one thousand (1,000) foot intervals. This information shall be noted on the construction plans. The datum for bench marks shall be based on NGVD 1929.

B. Excavation

- (1) All excavation shall be made in conformity with the requirements of the plans, cross sections, or as directed by the Public Works Director.
- (2) When tying into existing roads, the “*Call Before You Dig*” service shall be notified at least 48 hours in advance such that existing utility locations can be marked.
- (3) When ledge rock is encountered, this material shall be removed to a depth such that a minimum of twelve (12) inch subbase can be placed. Alternative methods to blasting shall be considered for removing rock when necessary.
- (4) Blasting – If blasting is permitted in rock excavation, all necessary State and Town permits shall be secured. OSHA Regulations shall be complied. Copies of Certificates of Insurance shall be provided upon request of the Public Works Director, in order to demonstrate adequate coverage as outlined in Part III of this Ordinance. Sufficient warning shall be given to all persons in the vicinity of the work before blasting. No blasting shall be done on Sunday. On weekdays blasting shall not be undertaken between the hours of 6:00 p.m. and 7:00 a.m.
- (5) Topsoil – When encountered, topsoil shall be excavated within the pavement limits. Topsoil shall be stockpiled for finish grading on roadside area and lots.

C. Embankments and Slopes

- (1) Embankments shall be constructed of earth, rock or a mixture of earth and rock. Stumps, trees, sod, or other biodegradable matter shall not be incorporated in embankments.
- (2) The depth of each layer shall not exceed twelve (12) inches before compaction.
- (3) Frozen material shall not be used. No embankment layer shall be deposited on surfaces of snow or ice, nor shall it be placed on frozen or unstable surfaces.
- (4) No stone over seven (7) inches in its greatest dimension shall be placed within a minimum of twelve (12) inches below the elevation of the subgrade.
- (5) When embankments are to be constructed on slopes steeper than 1 vertical to 3 horizontal, the slope on which the embankment is to be placed shall be plowed deeply or cut into steps (terracing) before the filling is begun.
- (6) The embankment shall be crowned or pitched to provide drainage at the close of each day's operation.
- (7) In areas of standing water, embankments for road bed construction shall be constructed of rock or free-draining material, or a mixture of both to an elevation of three (3) feet above the free water surface.
- (8) During construction of road beds in fill, if the fill material consists predominately of rock fragments of such size that material cannot be placed in horizontal layers of the thickness specified above, such material may be placed in the embankments in horizontal layers not exceeding 3 feet in thickness. Large stones shall not be placed in nests, but shall be distributed over the area; and the interstices shall be filled with spalls, finer fragments, or earth to form a solid compact mass. No rockfill shall be placed within 2 feet of the top of the embankment.
- (9) The dry density after compaction shall not be less than 95 percent of the dry density for the soil when tested in accordance with AASHTO T180; Method D, except that the mold used in the test shall be 6/11 inches high.
- (10) Slopes shall have a uniform surface as shown on the plans. All slopes, except those in rock or ledge formations, shall be topsoil and seeded in accordance with these specifications. This work shall be done as soon as practicable in order to prevent erosion.

D. Placement of Gravel Fill

- (1) Description: Gravel fill shall be used to replace unstable material in slopes, in shoulders and elsewhere as ordered by the Public Works Director.
- (2) Construction Methods – When gravel fill is used to replace unstable material, it shall be deposited in layers not over 6 inches in depth, with each layer thoroughly compacted before the addition of other layers.

E. Subgrade

- (1) Description – The area of the roadbed upon which the pavement structure is placed shall be known as the subgrade. After all grading for the roadbed has been substantially completed and all drains and other underground utilities laid, the subgrade shall be brought to lines, grades, and cross-sections shown on the plans.
- (2) Unsuitable Material Replacement – All poor subgrade material as determined by the Public Works Director shall be removed to a depth of three (3) feet below the finished grade, and all loose rock and boulders over seven (7) inches in size shall be removed to a depth of not less than one (1) foot below subgrade. Removed material shall be replaced with compacted gravel fill placed in lifts not to exceed six (6) inches in thickness.

- (3) The subgrade shall be properly compacted prior to the placement of the roadway subbase material.
- (4) Stabilization Fabric – Synthetic filter material may be utilized to stabilize the subgrade provided that a detailed design is submitted to and approved by the Public Works Director.

F. Subbase

- (1) Description – The subbase shall consist of bank run gravel or crushed gravel, placed in accordance with the typical section of the designation the street being constructed. The installed depth shall be increased in areas of poor subgrade material and/or seasonally high water table.
- (2) Construction Methods – Proper preparation of the foundation for the subbase, placing the subbase, and compaction of the subbase shall be in accordance with Article 2.12.03. Vibratory rollers or compactors are required for compaction unless a waiver is granted by the Public Works Director.

G. Processed Aggregate Base

- (1) Description – The base shall consist of one course of processed aggregate constructed on the prepared subbases placed in accordance with the typical section for the designation of the street being constructed.
- (2) Construction Methods – Preparation of the foundation for the base, placing the base and compaction of the base shall be in general accordance with Article 3.04.03. Portions of Article 3.04.03 dealing with placing _____ “top course” shall be disregarded. The use of vibratory rollers or compactors are required for compaction.

H. Two-Course Bituminous Concrete Pavement

- (1) Description – The paved surface shall be constructed of two courses of bituminous concrete. The first course of paving is hereinafter referred to as the “*Binder Course*”. The second course of paving which shall be placed on the Binder Course, is hereinafter referred to as the “*Surface Course*”.
- (2) Thickness – The depth of the courses shall be as shown on the Street Cross Section. Attention is called to the Minimum Placement Temperatures shown in Appendix “B” of this Ordinance.
- (3) Where new pavement joins existing pavements, the existing pavement shall be cleanly cut and the new pavement shall be tapered to create a smooth transition.
- (4) The vertical contact surfaces of existing pavements, catch basins, and other structure in the pavement shall be painted thoroughly with a thick uniform coating of bitumen tack coat just before the new paving mixture is placed against them.
- (5) Construction Methods – The methods employed in constructing the binder and surface courses shall conform to the requirements of Article 4.06.03.
- (6) Cut-off Date for Paving – No Bituminous Concrete materials shall be placed between November 15 and April 15, unless special permission is obtained from the Public Works Director.

I. Bituminous Concrete Lip Curbing

- (1) Description – Bituminous Concrete Lip Curbing shall consist of machine laid bituminous concrete, constructed on the pavement to the dimensions and details shown on Design Plates #1 to #7 in the Appendix of this Ordinance.
- (2) Construction Methods – The area adjacent to and immediately behind the curb shall be backfilled, loaned and seeded.

J. Utilities

- (1) Where underground utilities will service parcels of land adjoining the proposed street, the applicant shall ensure that an adequate number of conduits, as specified by the power company, water company, telephone company and cable-TV company shall be provided. All utility conduits shall extend to the street rights-of-ways line. Conduits shall be to the diameter specified and placed at locations designed by each utility.
- (2) Installation of utility conduits shall occur prior to the placement of bituminous concrete binder and surface courses and the processed aggregate base (see Design Plates #1 to #3 in the Appendix of this Ordinance).
- (3) All manhole covers, water grate covers, etc., shall be adjusted to ½ inch below the required finished pavement surface. Disturbed areas adjacent to and immediately behind the concrete lip curbing shall be backfilled, loamed and seeded.

K. Catch Basin

- (1) Catch basins shall be of the type shown on plans and shall be constructed in locations as shown on approved plans.
- (2) Catch basins shall have a two (2) foot deep sump.
- (3) Catch basin grate tops shall be adjusted so they are ½ inch below the required finished pavement surface.

L. Rip Rap

- (1) Riprap material shall consist of sound, tough, durable and angular rock, free from decomposed stones or other defects impairing its durability.
- (2) Broken concrete or rounded stones are not acceptable.

M. Other Items in the Right-of-Way

No other items, except as required for allowed in these Standards, are allowed in the street right-of-way. Mailboxes, within the right-of-way shall meet Postal Service location requirements and utility facilities shall meet all required State and Local Standards.

PART VI. Street Appurtenances

Section 1. Introduction

- A. Street appurtenances such as guide railings, signs, monuments pins, winter sand boxes, painted pavement markings, and related work shall be specified in the Town of Ledyard Subdivision Regulations, these Standards or by the Public Works Director to assure the safe operations of the completed street.
- B. The following documents are required as references in using this section of these Standards:
 - (1) “*State of Connecticut, Department of Transportation: Standard Specifications for Roads, Bridges and Incidental Construction*” Form 813, 1985 and any subsequent amendments or issues.
 - (2) “*Manual on Uniform Traffic Control Devices for Streets and Highways*” by the U.S. Department of Transportation, Federal Highway Administration.
 - (3) Town of Ledyard “*Subdivision Regulations*”.

Section 2 Street Name Signs

- A. Location – Street name signs shall be furnished and erected at all intersections resulting from the construction of new streets. In the case of four-way intersections, signs shall be placed on at least two diagonal corners. The signs shall be oriented with the bear names of the intersecting streets. Locations of signs shall be designated on the subdivision plan.
- B. Materials – Street name signs shall consist of cast concrete markers, to be furnished by the applicant. The base of these markers will be installed three feet below the finished grade of the street. The applicant may request the Department of Public Works to install required street sign(s) and shall reimburse the Town for the cost for such signs.

Section 3. Regulatory and Warning Signs

- A. Location – Regulatory and Warning signs shall be furnished and erected in accordance with the “*Manual on Uniform Traffic Control Devices for Streets and Highways*”. Exact type, number and location of signs shall be approved by the Public Works Director; the sign locations shall be designed on final subdivision plan.
- B. Materials – The following materials shall be utilized for various Guide Railing Systems:
 - (1) Three-Cable Guide Railing and Anchorage.
 - (2) Metal Beam Rail and Anchorage.

Section 5. Painted Pavement Markings

- A. Painted pavement markings and painted pavement stop bars, of the type and color specified, shall be furnished and installed at locations indicated on the subdivision plans and in conformity with these Standards and as directed by the Public Works Director.
- B. Painted pavement stop bars includes paint installed with a hand striping machine.
- C. Materials – Paint used for pavement markings shall conform to the material requirements of Form 813, Sections M.07.21 and M.07.30 for hot applied pavement marking paint and glass beads.

PART VII. Top Soiling and Seeding

Section 1. Introduction

- A. All disturbed areas outside the pavement, within and outside the road right-of-way, shall be restored in accordance with these Standards.
- B. Temporary and Permanent erosion control seeding shall be completed, as required, prior to final landscape seeding.
- C. The following documents are required or suggested as references in using this section of these Standards:
 - (1) “*State of Connecticut, Department of Transportation: Standard Specifications for Roads, Bridges and Incidental Construction, Form 813*” and subsequent amendments or issues.
 - (2) *Erosion and Sediment Control Handbook* U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut

- (3) *Connecticut Guidelines for Soil Erosion and Sediment Control*, The Connecticut Council of Soil and Water Conservation, January, 1985
- (4) *“Recommended Standard Specifications for Planting Trees, Shrubs and Bines and Fine Grading and Seeding Lawns”*, The Connecticut Landscape Contractors Association.

Section 2. Materials for Top soiling, Grading and Seeding

- A. Topsoil – Topsoil shall be a friable loam, typical of cultivated topsoils of the locality, containing at least 2% of decay organic matter (humus). It shall be taken from a well-drained arable site. It shall be reasonable free of subsoil, stones, earth clumps, sticks, roots or other objectional extraneous matter or debris. It shall contain no toxic materials.
- B. Lime – Ground limestone, 95% of which shall pass 100 mesh screen.
- C. Fertilizer
 - (1) Fertilizer shall be a commercial grade 10-10-10 fertilizer.
 - (2) Delivery slips showing the weigh, analysis, and name of manufacturer shall be provided to the Public Works Director.

- D. Seed Mix
 - (1) Grass seed shall be fresh, clean, new crop seed composed of the following varieties mixed in the proportions by weight shown and testing the minimum percentages for purity and germination:

General Roadside Use

<u>Kind of Seed</u>	<u>Approximate % by Weight</u>
Perennial Rye	20%
Kentucky Blue	20%
K 31 Fescue	25%
Creeping Red Fescue	30%
Alsike Clover	5%

Meadow Grass

<u>Kind of Seed</u>	<u>Approximate % by Weight</u>
Perennial Rye	20%
Kentucky Blue	10%
K 31 Fescue	70%

- (2) Purity and Germination – Bags must contain dealer’s guaranteed statement of composition of mixture and percentages of purity and germination. Seed shall be delivered in unopened bags with label attached.
- (3) Modifications to these mixes may be made upon approval of the Public Works Director.
- E. Placing Topsoil
 - (1) Topsoil shall be spread and shaped to the lines and grades shown on the plans, or as directed by the Public Works Director. The minimum compacted depth shall be four (4) inches.
 - (2) Placement of topsoil shall be performed only with it can be followed within a reasonable time by the seeding operation. Temporary cover shall be used to prevent erosion prior to final seeding.
- F. Fertilizing, Liming, Seeding and Mulching
 - (1) The normal seasonal dates for seeding shall be:
 - Spring Seeding- April 1 to June 1
 - Fall Seeding – august 15 to September 15

- Out-of-season seeding shall be carried out for erosion protection measures as necessary.

(2) Material shall be applied in accordance with the following schedule:

Material	Pounds per 1,000 sq. ft
Lime	100
Fertilizer	15
Seed	5

The rates shall be varied to account for unusual soil conditions or for special seed mixtures.

(3) Mulch, Straw, Wood Fiber, or Hay (weed free and in unrooted condition) to be applied 1½ to 2 tons per acre. Securing of mulch shall be the applicant’s responsibility. Wood fiber mulch may be used in place of hay or straw at eh rate of 1.400 pounds per acre applied hydraulically at the same time as the seed and fertilizer.

Section 3. Maintenance, Inspection and Guarantee of Seeded Areas

- A. All grass areas shall be maintained by watering and reseeded, as necessary. Reseeding shall begin in any areas that do not show a satisfactory stand of grass with thirty (30) days.
- B. Inspection – The Public Works Director shall inspect the grass areas upon request of the applicant. The request shall be received two (2) days before anticipated date of inspection. Acceptance of seeded areas may be granted, provided that grass has successfully taken root, and no bare areas or erosion gullies are observed.
- C. Guarantee – All seeded areas shall be guaranteed for one year following the date of acceptance. Any disturbed area shall be reseed and re-inspected.

PART VIII. Sidewalks and Trails

Section 1. Introduction

- A. Sidewalks shall be installed when and where directed by the Planning and Zoning Commission.. The location shall be shown on the approved plans.
- B. Sidewalks shall be a minimum of five (5) feet in width and shall be located within the street right-of-way with the edge abutting the property line. Location may be varied to preserve designated trees, stone walls, or other desirable features. The Planning and Zoning Commission may require an increased width where deemed appropriate.
- C. Sidewalks shall be concrete.
- D. Sidewalks shall include ramps and curb cuts for handicapped.
- E. The following documents are required as references in using this section:
 - (1) “*State of Connecticut, department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 813*” 1985, and any subsequent amendments or issues.
 - (2) “*State Building Code*”, section on handicapped access.

Section 2. Concrete Sidewalks

- A. Description – Concrete sidewalks shall conform to the requirements of Design Plate #5 in the Appendix of this Ordinance. The sidewalk shall be laid out with an inclination sloping toward the gutter of one-fourth (¼) inch per foot.
- B. Materials
- (1) Concrete shall conform to Class “C” concrete.
 - (2) Gravel for the base shall conform to gravel base, Grading “C”.
- C. Construction Methods
- (1) Pre-molded asphalt expansion joints shall be spaced every fifteen (15) feet, with suitable weakened tooled joints located five (5) feet on center, formed with a jointing tool.
 - (2) The concrete shall contain not more than 7% and a minimum of 4% entrained air at the time the concrete is deposited in the forms. The maximum allowable slump shall be four (4) inches.
 - (3) The surface of the concrete shall be finished with a wood float or by other approved means. The outside edges of the slab and all joints shall be edged with a ¼ inch radius edging tool. The final surface shall be broomed to provide better footing.
 - (4) The finished concrete sidewalks shall be protected with an application of a penetrating water proofing agent approved by the Public Works Director. The water proofing agent shall be applied per the manufacturer’s instructions and shall not cause the concrete surfaces to become more slippery under wet conditions than untreated wet surface conditions.

Section 3. Hiking Trails

- A. Hiking trails shall be located within the street right-of-way or elsewhere within a subdivision, as required by the Planning and Zoning Commission. The located of such trails shall conform to the *Town’s Plan of Conservation and Development (POCD)*.
- B. When required by the Planning and Zoning Commission, trails shall be constructed with a six (6) inch gravel base and a fine crusher run stone surface or other approved material. Trail width shall be determined by the Planning and Zoning Commission. The trail shall be cleared of trees, brush and shall be grubbed, as appropriate.
- C. When not located within a street right-of way, easements to pass and repass shall be provided for all trails within subdivisions .Easements shall be a minimum of fifteen (15) feet in width, and shall be located in areas where topography or wetlands do not prevent pedestrian use.

PART IX. Effective Date

Section 1. Severability

If any provision of this Ordinance shall be held invalid by a court having competent jurisdiction, such invalidity shall not affect any of the other provisions of this Ordinance that can be given effect without the invalid provision and for this purpose the provisions of this Ordinance are hereby declared severable.

Section 2. Effective Date- December 14, 1988.

Renumbered by the Ledyard Town Council on: September 25, 2019

Linda C. Davis, Chairman

Fred B. Allyn, III. Mayor

Patricia A. Riley, Town Clerk

Revisions: *Ordinance #1 “Ordinance Regulating the Addition of Any New Street or Highway to the Highway System”* Adopted at Town Meeting August 24, 1958; Amended and Adopted at Town Meeting on June 20, 1961; Amended and Adopted at Town Meeting October 4, 1971; Amended and Adopted by Town Council June 13, 1973. *Ordinance #45 “An Ordinance Amending an Ordinance Regulating the Addition of Any New Street or Highway to the Highway System of the Town of Ledyard”* Adopted on November 12, 1981; Amended and Adopted: December 14, 1988.

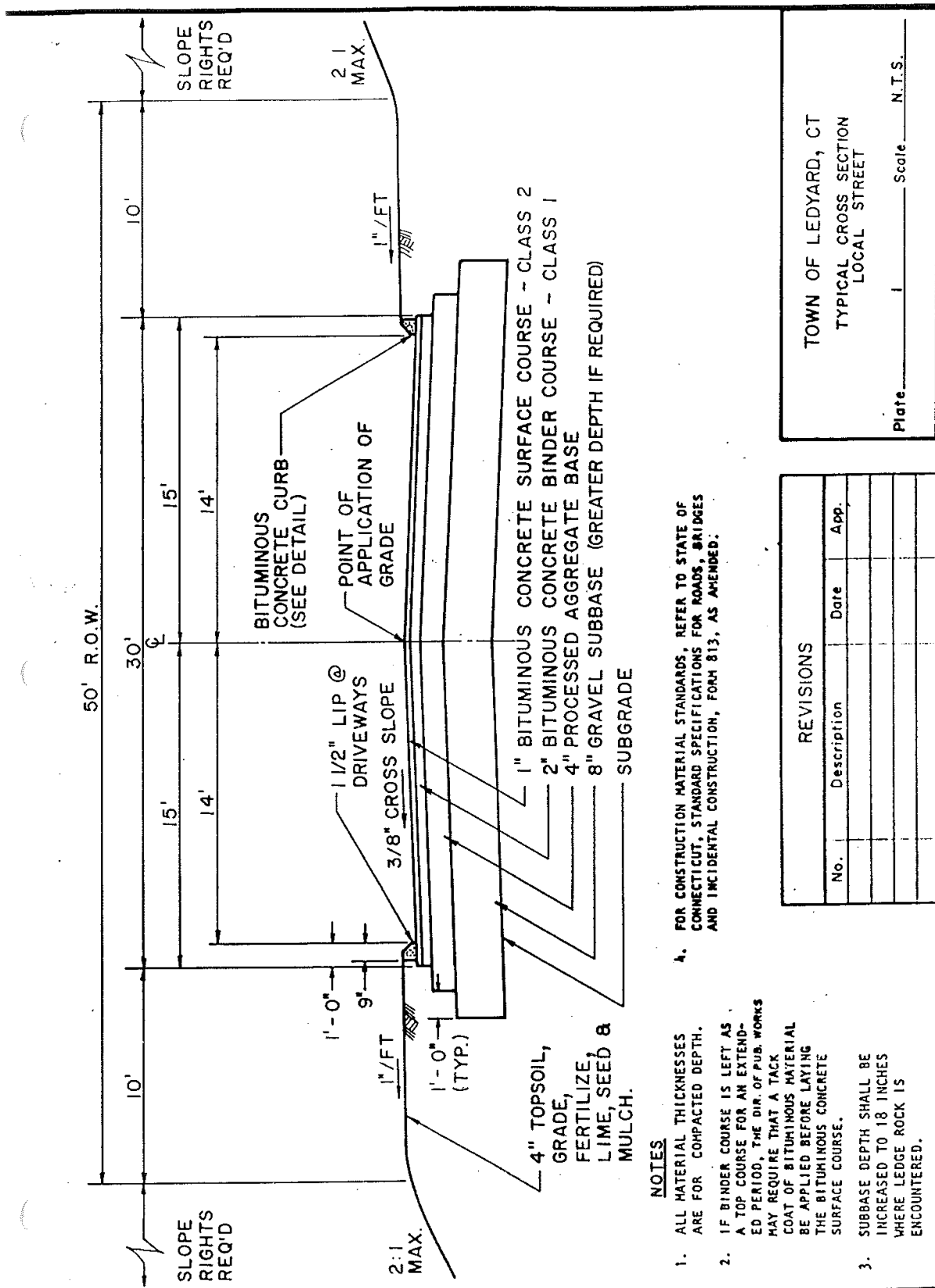
History: The Twenty-fourth Town Council (2017- 2019) Ordinance Update Initiative: Renumbered Ordinance #45 *“An Ordinance Amending an Ordinance Regulating the Addition of Any New Street or Highway to the Highway System of the Town of Ledyard”* to Ordinance # 300-025.

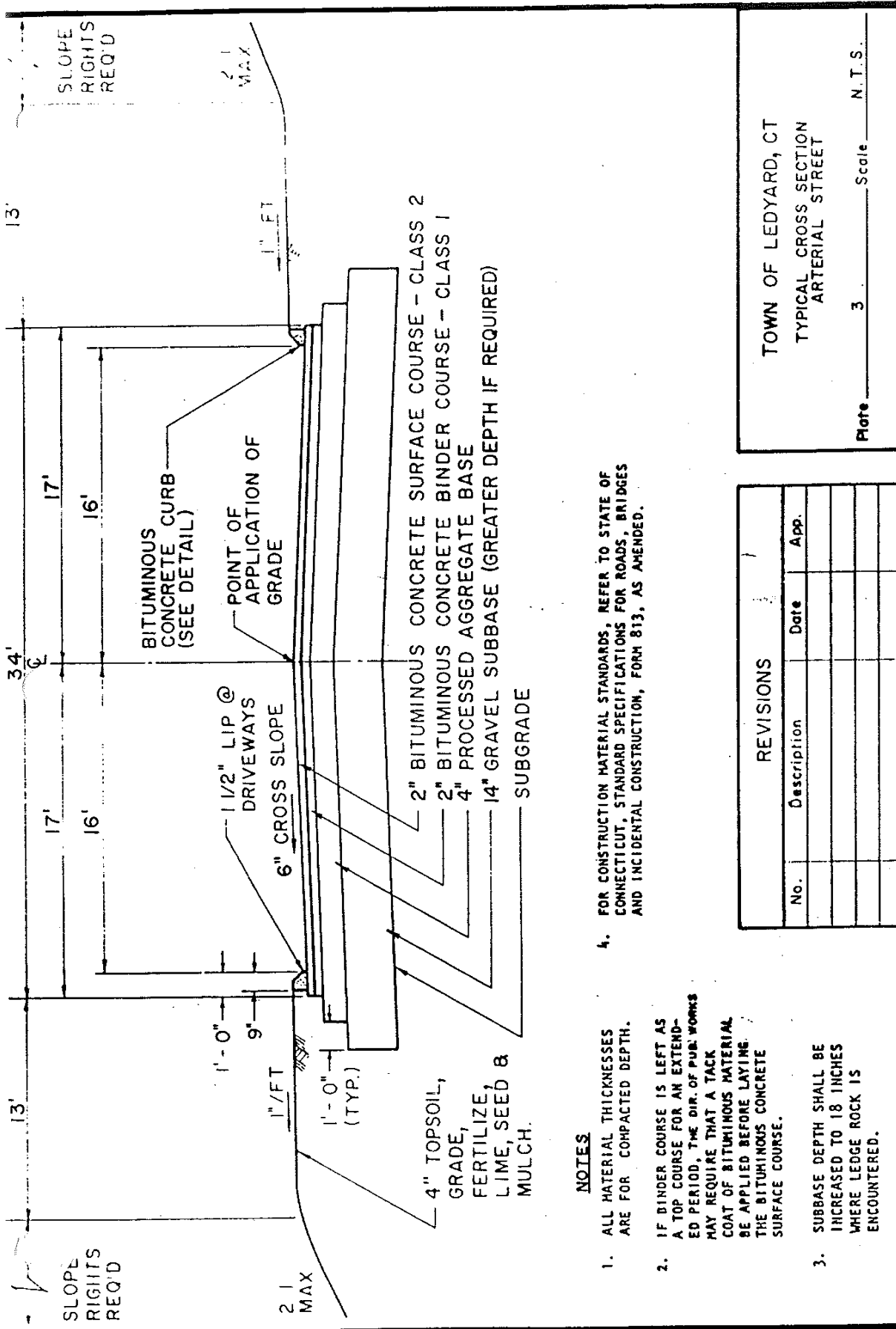
2019: Title – Removed *“An Ordinance Amending”* Per Town Attorney not required. Throughout the document *“and Zoning”* was added to reflect the combined *Planning and Zoning Commission*. The Ordinance was formatted to be consistent with Town Ordinance Format. No substantive changes were made to the ordinance.

An Ordinance Regulating
the Addition of Any New Street or Highway to the Highway System

Appendix A

Design Plates





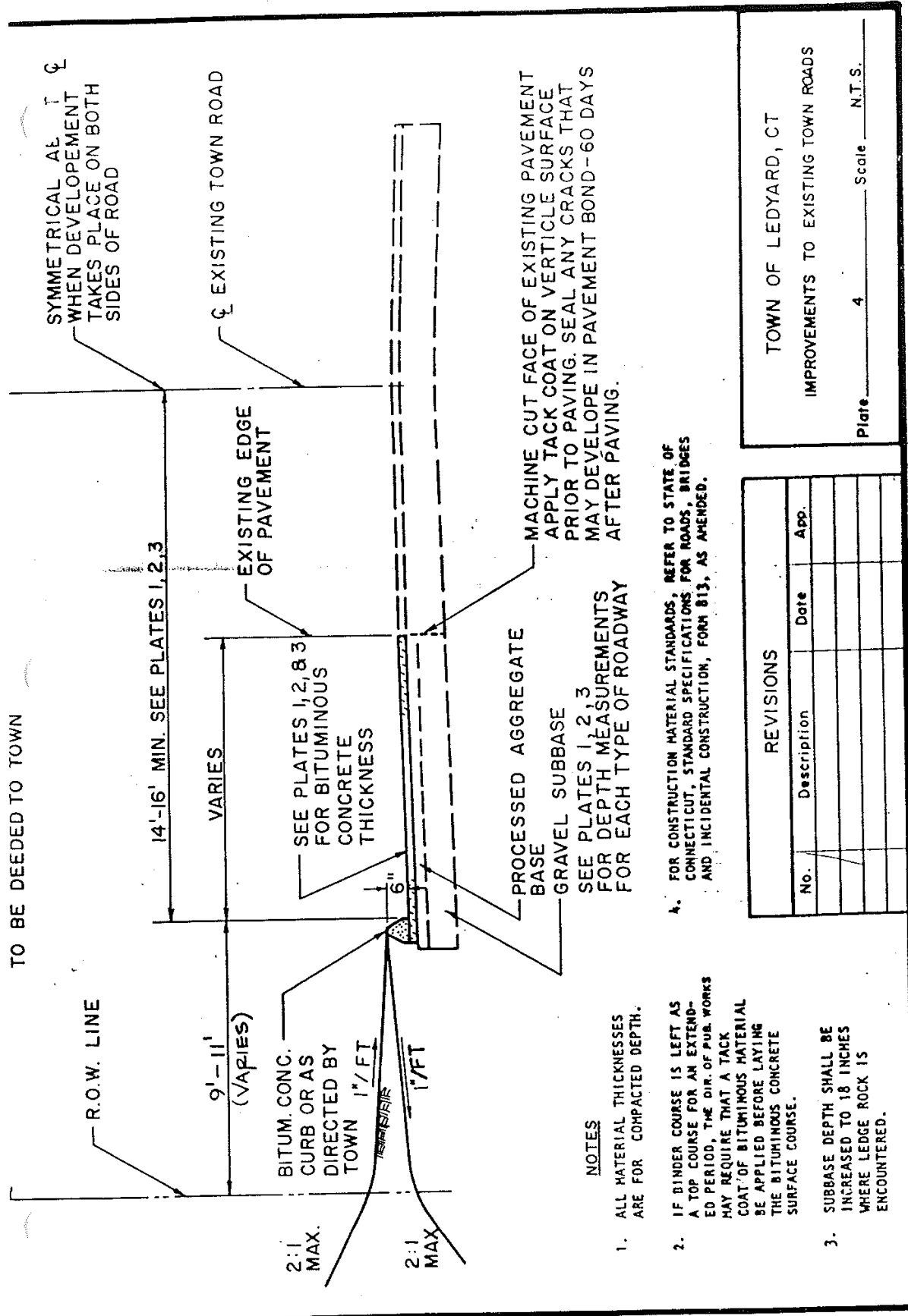
NOTES

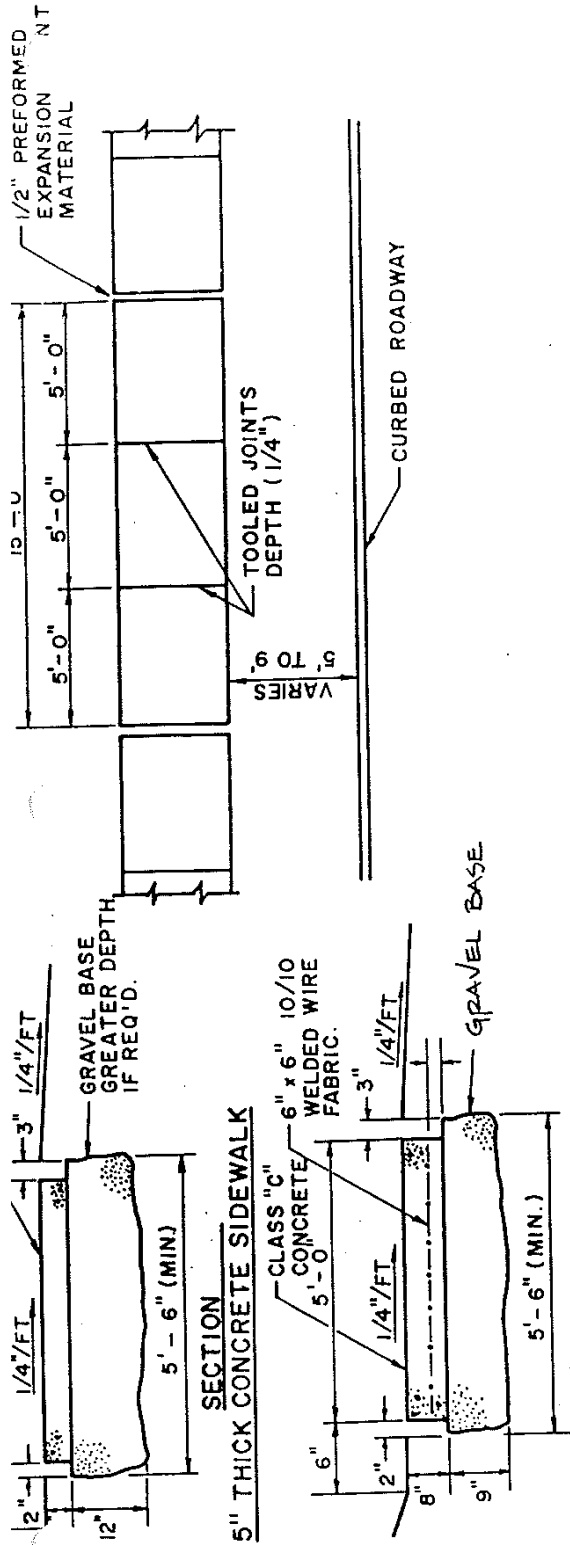
1. ALL MATERIAL THICKNESSES ARE FOR COMPACTED DEPTH.
2. IF BINDER COURSE IS LEFT AS A TOP COURSE FOR AN EXTENDED PERIOD, THE DIR. OF PUB. WORKS MAY REQUIRE THAT A TACK COAT OF BITUMINOUS MATERIAL BE APPLIED BEFORE LAYING THE BITUMINOUS CONCRETE SURFACE COURSE.
3. SUBBASE DEPTH SHALL BE INCREASED TO 18 INCHES WHERE LEDGE ROCK IS ENCOUNTERED.
4. FOR CONSTRUCTION MATERIAL STANDARDS, REFER TO STATE OF CONNECTICUT, STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 813, AS AMENDED.

REVISIONS		
No.	Description	Date

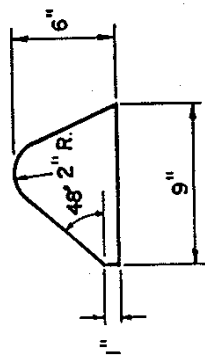
TOWN OF LEDYARD, CT
 TYPICAL CROSS SECTION
 ARTERIAL STREET

Plate 3 Scale N.T.S.

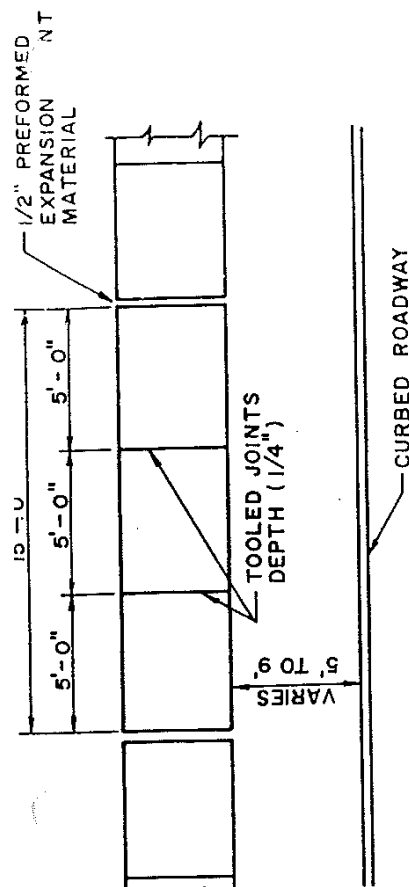




SECTION
8" THICK CONCRETE SIDEWALK



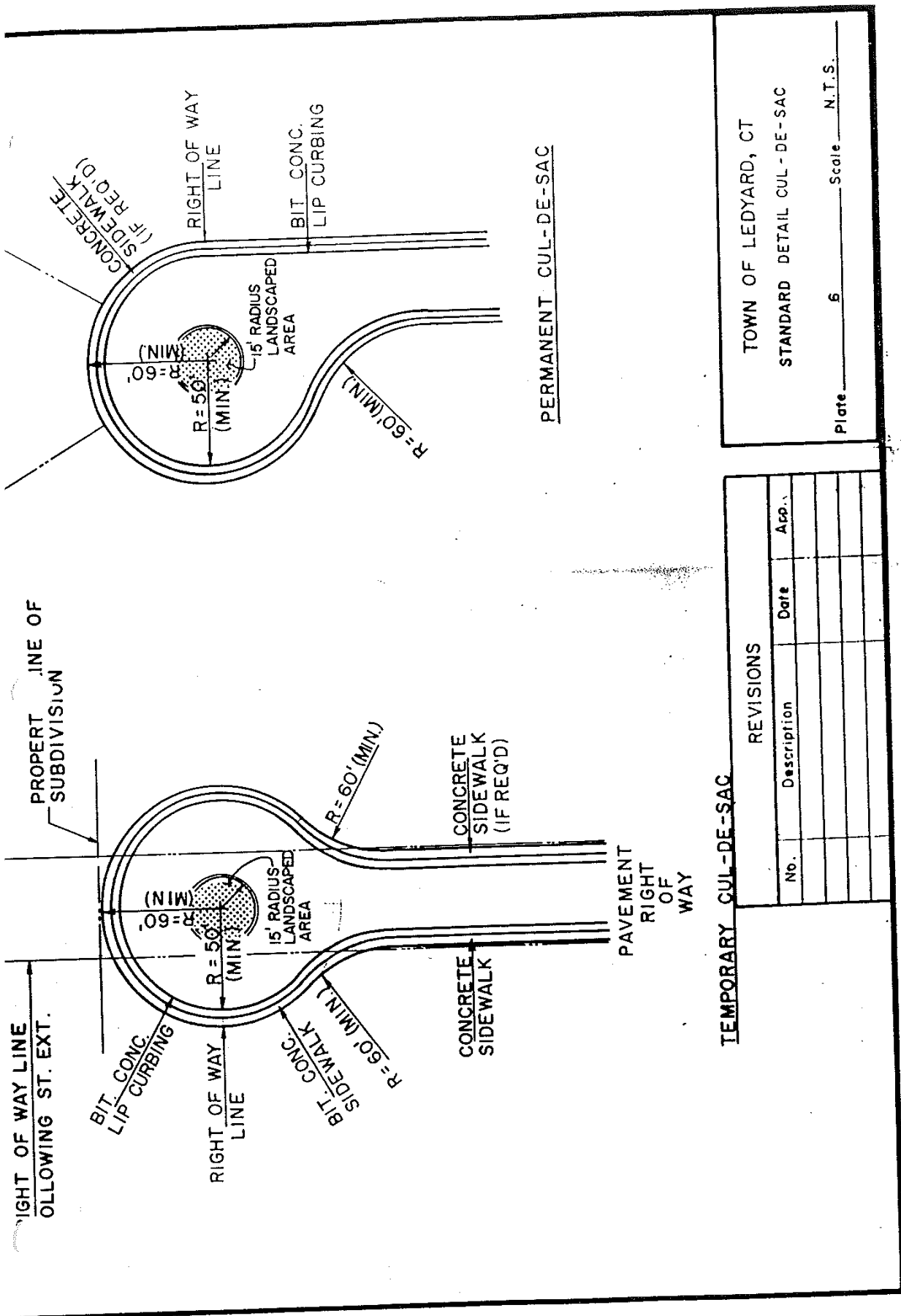
BITUMINOUS CONCRETE
LIP CURBING
(MACHINE FORMED)



CURBED ROADWAY

REVISIONS			
No.	Description	Date	App.

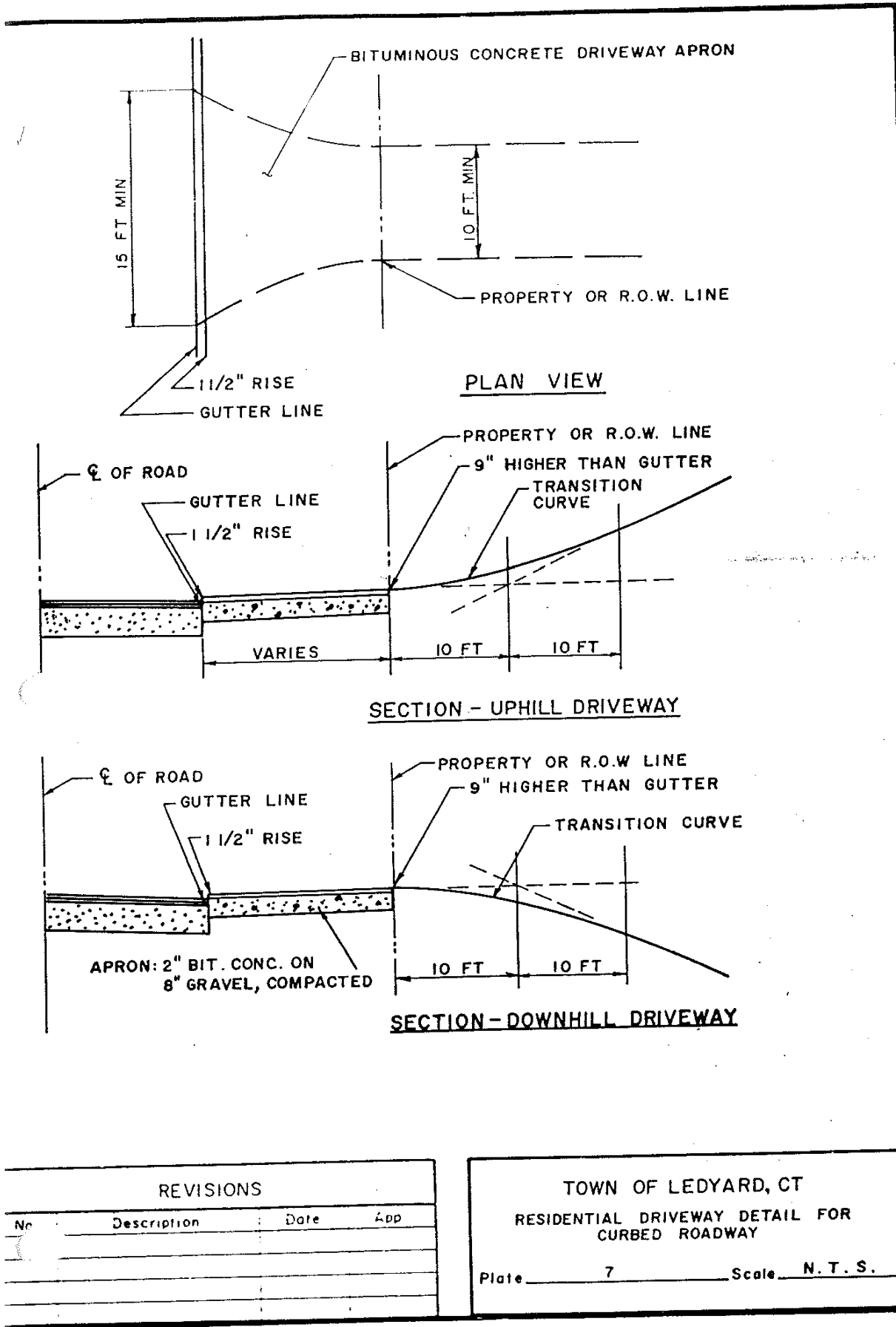
TOWN OF LEDYARD, CT
TYPICAL SIDEWALK AND CURBING
DETAIL
Plate 5 Scale N.T.S.



TOWN OF LEDYARD, CT
 STANDARD DETAIL CUL-DE-SAC
 Plate 6 Scale N.T.S.

TEMPORARY CUL-DE-SAC

REVISIONS			
No.	Description	Date	App.



An Ordinance Amending an Ordinance Regulating
the Addition of Any New Street or Highway to the Highway System

Appendix B

Recommended Minimum Placement Temperature for Bituminous Concrete Hot Mix

Base ¹ Temp. °F	Mat Thickness, in. (cm)						Rolling time, min.
	½ (1)	¾ (2)	1 (2.5)	1½ (4)	2 (5)	3 (7.5) ²	
20-32	—	—	—	—	—	—	285 ³
+32-40	—	—	—	305	295	280	280
+40-50	—	—	310	300	285	275	275
+50-60	—	310	300	295	280	270	270
+60-70	310	300	290	285	275	265	265
+70-80	300	290	285	280	270	265	260
+80-90	290	280	275	270	265	260	260
+90	280	275	270	265	260	260	255
Rolling time, min.	4	6	8	12	15	15	15

¹ Base on which mix is placed. [$^{\circ}\text{C} = 0.555 (^{\circ}\text{F} - 32)$]

² and greater

³ Increase by 15 degrees when placement is on base or subbase containing frozen moisture.

REVISIONS		
No.	Description	Date

TOWN OF LEDYARD, CT
MINIMUM PAVEMENT PLACEMENT TEMPERATURES
Plate APPENDIX B Scale _____