

TOWN OF THOMPSON

Planning & Zoning Commission

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Minutes – PZC Subcommittee Meeting-Subdivision Regulations
Thursday, October 21, 2021 at 7:00 PM
Zoom Meeting

p. 1 of 27

Topic: PZC Subcommittee - Subdivision Regs
Time: Oct 21, 2021 07:00 PM Eastern Time (US and Canada)

Join Zoom Meeting
<https://us02web.zoom.us/j/85650426138?pwd=T3NwMFZwdXUzblFNbUd3Vm8wTjJoUT09>

Meeting ID: 856 5042 6138
Passcode: 524856

Topic: PZC Subcommittee - Subdivision Regs
Date: Oct 21, 2021 06:45 PM Eastern Time (US and Canada)

Meeting Recording:
https://us02web.zoom.us/rec/share/jz_HDs8ki_37YM9dRckjIagxP2Pffc00x_cn0P2-6Z0-70tFs8754xYyKkEvcaS6.Sdxy_GVcs9BjrUEn

Access Passcode: *cP%0h9#

1. Call to Order, Roll Call
John Lenky called the Subcommittee Meeting of the PZC to order at 7:11 PM and turned the meeting over to the Director of Planning and Development.
Joseph Parodi-Brown joined the meeting at 7:26 pm
Alvan Hill John Lenky Brian Santos
Absent: Missy Desrochers, Robert Werge Sr., Christopher Nelson, Charlene Langlois, Christine Chatelle, Randy Blackmer, John Rice, Michael Krogul, Dave Poplawski
Staff Present: Tyra Penn-Gesek, Planner; Cindy Dunne, ZEO; Ken Beausoleil, Selectman; Gloria Harvey, Recording Secretary

2. Review and Discussion of Subdivision Regulations

APPENDIX A - Road Design & Construction

SECTION 1 - Road Design Criteria

A. ROAD CLASSIFICATION

Commented [P1]: Have DPW Director weigh in on whether any changes need to be made to these criteria

1. Proposed roads shall be classified as defined in Article II of the Subdivision Regulations and based on the following criteria:

Average Daily Traffic (Vehicles Per Day)	Number of Lots Served
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Collector Street 500 +	50 +	Consensus seems to be that this is an unnecessary layer for our needs
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Residential Sub-collector Street	251-500	26-50
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Residential Access Street	101-250	11-25
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Residential Lane	1-100	1-10	-
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Commented [P2]: It is virtually impossible for a subdivision to be proposed in Thompson for streets at this level of use. It may be okay to leave this as a point of reference, but perhaps add a footnote indicating that the Town isn't interested in adding roads at this scale?

Commented [P3]: Repeat this information for Private roads, with the possible exception of the # of lots served?

B. PAVEMENT AND RIGHT-OF-WAY WIDTH

1. Road Width

The minimum pavement width of roads, as measured from face to face of curbs (or to the edge of pavement where curbs are not required) shall be as follows:

Collector Street	26 Feet
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Residential Sub-collector Street	26 Feet
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Residential Access Street	24 Feet
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Residential Lane	22 Feet
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Commented [p14]: Modern traffic calming theory would say that safety might be enhanced with the narrower width in all cases...if you have 50+ lots in a project traffic calming would be more important than if you only had 10 lots. It's also less future maintenance cost. (D. Held)

Response by DPW: Minimum 24 ft should be required on any town accepted street, regardless of calming measures

Follow up comment: allowing the narrower width for private roads (22 ft) is another one of the mechanisms to incentive developers to propose them.

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:

Collector Street	50 Feet
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Residential Sub-collector Street	50 Feet
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Residential Access Street	50 Feet
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Residential Lane	50 Feet
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Commented [P5]: Where standards in each of these categories is not being reduced for Private Roads, use the guidelines for residential lanes.

C. GRADIENT

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.

2. Minimum

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

3. Maximum

Maximum gradients at pavement centerline shall be as follows:

Collector Street 10%

Residential Sub-collector Street 10%

Residential Access Street 10%

Residential Lane 10%

Turnarounds 5%

Intersections - The maximum gradient shall be 3% for a distance of not less than 100 feet for arterial and collector streets and 50 feet for all other streets (as measured from the gutter line of the intersected road to any change in gradient).

D. STOPPING SIGHT DISTANCE

1. Minimum

The horizontal and vertical alignment of all roads shall be based on the following criteria:

Design Speed Stopping Sight Distance

(MPH) (Feet)

Collector Street 40 300

Residential Sub-collector Street 30 200

Residential Access Street 25 150

Residential Lane 20 125

2. Determination

Commented [p16]: I would recommend 12% maximum gradient (D. Held)

Commented [P7]: Per DPW: currently there are no streets or roads in town that require speeds over 35-40 mph. Speeds on collector road can vary based on design and placement.

Question: given that road width is one of the factors that contributes to travel speeds, how do we build in standards that act to reduce speeds overall?

Commented [p18]: I would not want a road in a 50 lot residential subdivision designed for 40 MPH. The actual speed of vehicles will be dictated by the geometric design of the road, not a speed limit sign and if it's designed for 40 MPH, they will routinely travel 45 MPH. That's excessive in a residential neighborhood setting whether there are sidewalks or not. Stopping sightlines are good, but the pavement widths and horizontal curves will have a huge effect on the speeds. (D. Held)

Sight distances shall be determined based on driver eye-height of 3.5 feet and height of object of 0.5 feet.

Commented [p19]: I don't believe this is consistent with ConnDOT or AASHTO criteria. (D. Held)

Note: need to check this

3. Vertical and Horizontal Curves

Where crest vertical curves and horizontal curves occur at the same location, sight distance shall be provided to assure that the horizontal curve is visible as drivers approach.

E. HORIZONTAL ALIGNMENT

1. Curve Tangent and Radius

For all roads, the minimum tangent length between horizontal curves, and the minimum radius of centerline curvature shall be as follows:

Radius (Feet)	Tangent (Feet)
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Collector Street	250	150
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Residential Sub-collector Street	200	100
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Residential Access Street	150	50
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Residential Lane	125	50
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2. Sight Distance

The horizontal alignment of the roadway shall be such as to meet the requirements for sight distance as specified in Appendix B, Section 1.D.1.

F. VERTICAL ALIGNMENT

1. Gradient Transition

Parabolic vertical curves for transition between roadway gradients shall be provided on all roads to insure adequate sight distances to provide a rate of change of gradient that assures safe vehicle operation and does not cause discomfort to vehicle occupants.

2. Curve Length

The required length of vertical curve shall be based upon criteria identified in Appendix B, Section 1.D., with the following requirements being the minimum acceptable K VALUES

(length of vertical curve (feet) per percent change in A, where A is equal to the algebraic difference in grades):

Type of Vertical Curve

Crest Sag

Collector Street 35 40

Residential Sub-collector Street 30 36

Residential Access Street 25 30

Residential Lane 20 20

3. Minimum Curve Length

Vertical curves shall have a minimum length of 100 feet.

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 Appendix B, Section F.2. and F.3.

G. INTERSECTIONS

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 be avoided, where possible, except at important and high-volume traffic intersections.
- c. Spacing at intersections, as measured between centerlines, shall be at least 200 feet for Residential Access Streets and Lanes, and at least 350 feet for Sub-collector Streets.
- d. 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.

e. The minimum radii of curb lines at intersections shall be as follows:

1. Residential Sub-collector Street - 35 Feet
2. Residential Access Street - 25 Feet

Commented [p110]: I would remove this. For roads at 1% where you have A=2, this will create a lot of puddles, poor drainage and roads falling apart. (D. Held)

Commented [p111]: I would remove redundant information. Most of this is stated elsewhere. (D. Held)

3. Residential Lane - 25 Feet

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

f. The visibility at intersections (intersection sight distance) shall be such as to allow a

stopped vehicle on the intersecting roadway, located 10 feet back from the gutter line, to see, and to be seen from a vehicle approaching from either direction (based on a height of eye and object of 3.5 feet) along the intersected roadway for the following distances: where the Public Works Director deems it necessary, he may require the subdivider to determine the actual 85th percentile speeds on the intersected road as a basis for determination of required sight distance. Intersection sight distances as noted above shall be required for all major commercial or industrial driveways. In addition, a subdivider should make every reasonable effort to provide the required Intersection Sight Distance (ISD) for driveways providing access to multiple residential lots. Sightline standards shall conform to the "Highway Design Manual" by the Connecticut Department of Transportation, as amended.

g. Sufficient clearing and regrading shall be accomplished to meet the sight distance visibility requirements of Subparagraph (f) of this subsection and no structures, fences, walls, hedges, rock, shrubs, trees, or other landscaping shall be permitted to obstruct such visibility.

h. Permanent sight line easements shall be provided on all private property as needed so as to maintain the sight line requirements established in this section. 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.

H. TURNAROUNDS

1. General

All cul-de-sac roads, permanent and temporary, shall be provided with a teardrop right-of-way at the terminating end with a consistent width equal to the required road design width.

2. Snow Storage Reserve Area

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,

Commented [P12]: More fodder for the never-ending debate on culs-des-sacs. Rich Benoit is very clear that he does not want these center islands, and also agrees that the time and effort it takes to plow snow in them is a problem for DPW. He told me that it takes his crew ½ hour to fully plow the bulb of a cul de sac, which is a highly inefficient use of time in a town with almost 100 miles of roads to service.

mailboxes, landscaping, and fences. This area may be relocated at the discretion of the Public Works Director.

3. Length

The maximum length of a cul-de-sac road shall be 1,000 feet. This length shall be measured from the centerline of the street to be intersected by the cul-de-sac to the midpoint of the turn-around.

I. SHOULDERS AND SLOPES

1. General

For all roads, a four (4) foot shoulder area extending from the back of the curb shall be excavated to a depth of at least six (6) inches, and then backfilled and final graded with not less than six (6) inches of topsoil, as hereinafter specified.

2. Grading of Shoulder Areas

The shoulder areas shall be graded so as to slope toward the centerline of the road where the road is in cut, and away from the centerline of the road where the road is in fill. In either case, the cross slope of the shoulders shall be one (1) inch per foot.

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 (2) feet horizontal to one (1) foot vertical. In rock cuts, slopes of one (1) foot horizontal to not more

than six (6) feet 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.

4. Special Conditions

The Public Works Director 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.

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.

6. Trees

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

J. PROTECTIVE BARRIERS

Protective barriers, consisting of guide railing 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 Director 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 necessarily 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 severe than an accident resulting from hitting an unshielded roadside obstacle, the Director of Public Works may approve the use of an object marker.

K. FENCING

A securely anchored PVC coated chain link fence shall be installed wherever necessary to minimize the risk of personal injury. In general, fencing may be required at the following locations as directed by the Director of Public Works:

1. Rock Cuts - along the top of slope where a rock cut exceeds five (5) feet in height.
2. Culvert Endwalls - at the top of any endwall that exceeds five (5) feet in height.

L. TRAFFIC CONTROL DEVICES

1. General

Traffic control devices, including signs, pavement markings, and object markers, 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.

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.

3. Pavement Markings

The location, type, color, width, and patterns of pavement markers 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.

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.

SECTION 2 - Road Construction Standards

A. CONSTRUCTION SURVEY PROCEDURE – Consensus to strike Section A

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 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.

2. Stations

Stations shall be established every fifty (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. A construction stake shall be placed at the right angles to each station, clear of construction and grading. This stake will show the station, the measured distance to centerline (offset) and on the face nearest

Commented [p113]: Why would the PZC want to dictate how a surveyor lays out a road for a contractor? This whole section should be removed. (D. Held)

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 Director of Public Works by the Applicant, or his designee who is to have charge of the construction layout, before construction begins.

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.

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 Director of Public Works. If such stakes or Bench Marks are disturbed, they shall be replaced immediately.

B. CLEARING AND GRUBBING

1. Staking of Clearing Limits

Prior to any site work, the limit of clearing shall be staked by the project surveyor and reviewed and approved by the Town.

2. Clearing

All trees, brush, boulders, structures, walls, fences, perishable matter and debris of whatever nature shall be removed from within the clearing limits, including areas necessary for cuts and fills, construction of storm drainage systems, and required sight lines, except that valuable shade trees may remain shoulder areas as provided in Section 2.B.4.

3. Grubbing

All roots and stumps within the clearing limits shall be grubbed and excavated. No stumps shall be buried on site within the road right-of-way and associated easement areas.

4. Trees

Valuable shade trees may be permitted by the Commission to remain in shoulder areas as provided for in Section 1.1.6., but not within three (3) feet of any curbline, if no substantial increase in the risk of injury or damage results by reason of its presence in the particular place where it stands. 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 to a clearance of fifteen (15) feet above the finished grade of the road.

5. 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. Excess topsoil may only be removed from the site in a lawful manner after all disturbed areas associated with roadway construction have been stabilized.

C. ROADWAY EXCAVATION, FORMATION OF EMBANKMENT, AND DISPOSAL
OF SURPLUS MATERIAL

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.

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.

3. Surplus Material

Surplus suitable material may be used to flatten fill slopes within the limits of the right-of-way and any slope easements if approved by the Public Works Director.

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.

D. PREPARATION OF SUBGRADE

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.02.01 and M.02.06 (Grading B). All construction methods shall conform to the requirements of the State Standard Specifications for "Subgrade".

E. ROLLED GRANULAR BASE

1. General

After the subgrade has been compacted, proof rolled, and approved by the Public Works Director, a rolled granular base shall be applied for the full required width of pavement plus one (1) foot beyond each curb line. 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.

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).

F. PROCESSED AGGREGATE BASE

1. General

After the rolled granular base has been placed, compacted, and tested, processed aggregate base shall be applied for the full required width of pavement plus one (1) foot beyond each curb line. The process aggregate base shall not be less than six (6) inches thick after compaction and shall have the cross slope shown on the Standard Detail Drawings.

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.

G. BITUMINOUS CONCRETE PAVEMENT

1. General

After the processed aggregate base has been brought to the required grade and cross slope, rolled, compacted, and tested, the roadway shall be surfaced with bituminous concrete Class I binder course for the full required width of pavement plus one (1) foot beyond each curbline to a compacted depth of not less than two (2) inches. After placement of bituminous concrete curbing on the binder course, a bituminous concrete Class II top or surface course not less than one and a half (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 three and a half (3-

Commented [P14]: Per DPW: Class 1&2 Marshal mixes are becoming obsolete. Can be substituted with equivalent super pave or other qualified HMA mix if approved by DPW director.

1/2) 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 Department of Public Works Director 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. ***Need to describe these variant conditions.***

2. Sequence of Paving

Completion of the subgrade and all drainage improvements shall occur prior to the issuance of any building permits of lots accessing on said subdivision street. Completion of the Class I binder course shall occur prior to the issuance of Certificates of Occupancy or any lots accessing in said subdivision street. The Class II bituminous surface cannot be installed until a substantial portion of the construction associated with lots accessing on said subdivision street has been completed.

3. 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).

4. 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 Appendix B, Section 2.G.1. shall be submitted to the Department of Public Works Director.

H. BITUMINOUS CONCRETE CURBING

1. General

Machine laid bituminous concrete curbing shall be placed on both sides of the pavement along the entire length of new and improved roads at the offset from the centerline of road shown on the Standard Detail Drawings. Bituminous concrete curbing shall not be required on roads approved with open drainage systems, or on existing Town where it is determined the Department of Public Works Director that the installation of enclosed storm drainage

Commented [P15]: Per DPW: minimum aggregate size for binder or wear course should be 1/2".

Larger aggregate may be necessary in certain soil conditions or expected load volume.

systems is not warranted. Irregular or damaged curbing shall be accepted, and the Department of Public Works Director shall require that improperly placed curbing be removed and replaced.

2. Materials and Methods

All materials and construction methods shall conform to the requirements of the State Standard Specifications for "Bituminous Concrete Lip Curbing". Curbing shall be placed on the road binder course at a height which will maintain a six (6) inch curb reveal after placement of the road surface course. Prior to the placement of any curbing, the surface of the pavement shall be cleaned of all loose and foreign material. The surface of the pavement, which shall be dry at the time the curbing is placed, shall be coated with an approved tack coat. All curbing shall conform to the shape shown in the Standard Detail Drawings. ***Per Cindy what type of catch basins will be required to match the curb type? Note: find some documentation of how catch basins and curbs are paired for reference. Brian Santos-storm drainage structure should be within a curbed area. Should not allow finish coating shall be permitted until all driveway entrances/aprons/curb cuts are completed.***

Commented [P16]: Per DPW: where curbing is to be installed, proper catch basins will be required to match curb type

I. GUIDE RAILS

1. General

Guide railing may be installed as required by the Commission. The type of guide rail to be utilized shall be as follows:

- a. Metal beam rail or three (3) cable guide rail with steel posts, in accordance with the State Standard Specifications, shall be required by the Commission.
- b. Steel backed timber guide rail, or equal may be required in areas of aesthetic or historical significance, or along designated scenic roads, as determined by the Commission.
- c. On low volume residential access streets or residential lanes, an alternative guide rail design may be approved by the Commission.

2. End Anchorage

Regardless of the type of guide rail to be used, all leading and trailing ends shall be secured with concrete end anchors. Blunt or flared ends shall not be permitted.

J. TRAFFIC CONTROL DEVICES

1. General

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

2. Materials and Methods - Signs

Street signs shall be extruded aluminum with materials conforming to the requirements of the State Standard Specification Sections M.18.09, M.18.10, M.18.11, and M.18.12. Construction methods shall conform to the requirements of the State Standard Specification for "sign Face- Extruded Aluminum". All other signs shall be sheet aluminum with materials conforming to the requirements of the State Standard Specification Sections M.18.09 and M.18.13.

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 fifteen (15) minute dry paint.

k. SIDEWALKS

1. Sidewalks of not less than four (4) feet in width, shall be constructed along one or both sides of the street, as determined by the Commission. The alignment of sidewalks, in relation to the roadway sideline, shall be as determined by the Commission. Sidewalks shall be located either within the public sidewalk easements and shall be designated with due attention to pedestrian safety, sufficient snow shelf, and preservation of street trees. Walks shall be pitched one-quarter (1/4) inch to the foot, from exterior line of right-of-way, to edge of road pavement, or to top of the curb, whichever is appropriate and constructed in accordance with the Town of Thompson Roadway Ordinance, the thickness of concrete shall be five (5") inches for all types of sidewalks. **Brian Santos-Put in body of regulations. Tyra will research for agreement with language in regulations**

2. 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 Americans with Disabilities Act Accessibility Guidelines.

3. Waiver: The Commission may waive the sidewalk installation, in whole or in part. In making this determination, it shall consider, among others, each of the following factors as furnished by the developer:

- a. Dwelling unit densities in the subdivision and per the Plan of Conservation and Development.
- b. Present and projected pedestrian traffic.

Commented [P17]: Per DPW: street name signs for town accepted streets to be 9" extruded aluminum. Double-sided green with white reflective letters.

Include galvanized u-channel post with breakaway required.

Rich and I also discussed private roads being a different color, to clearly differentiate them from public roads. We have already stipulated in earlier sections that they must also include the words "private way"

Commented [P18]: Amend this section consistent with any changes made within the body of the regs

Commented [p119]: I would avoid redundant information here and in the body and just put it in one place or the other. (D. Held)

- c. Present and projected traffic volumes
- d. Proximity of existing sidewalks.
- e. Safety, including sight lines, traffic speed, and topography.
- f. Classification of public streets.
- g. Location and frequency of school bus stops.
- h. Unusual topographic conditions making installation impractical.

APPENDIX B - Lighting Standards

Commented [P20]: Can we do better than this crappy looking chart?

Commented [p121]: Not only is it crappy...it's outdated. Any new lights would or should be LED fixtures. (D. Held)

Commented [P22]: DPW also points out that typical modern LED street lights should be the standard.

Rich further made a point of stating that the Town is not able to cover any additional maintenance needs for "vanity" or other non-traditional lighting. His reference case was some decorative lighting installed at 3 Rows which, although on a public street, can only be accessed through the 3 Rows property office.

NOTES:

1. Mounting height may vary plus or minus two and a half (2-1/2) feet. This recommendation is intended as a guideline only where specific installation heights have not been determined. In no case should the above be reason for pole changes, another suitable location on the pole is available and excessive glare will not result.
2. Maximum bracket size and type for PSNH is to be used in accordance with Rate Bulletin ML-1. Shorter brackets should be used where deemed adequate. Substitution of longer brackets should be made within the guidelines published in Applicable Rate Bulletin; the excess cost of any such bracket to be determined by comparison with the maximum bracket size and type as listed above.

3. Bracket Length = Setback + Overhang.

4. Brackets should be individually selected for each pole so that the luminaries, when installed, provide an aesthetic in-line appearance.

Commented [p123]: There's those luminaries again. (should be luminaires) (D. Held)

5. Use calculated bracket length or if not available. (See DTR 21.111 for list of available brackets).

6 For other sizes or styles of luminaries, as well as for staggered, or opposite installations, or in locations where poles are being installed specifically for street lighting, bracket lengths, mounting heights, and luminaire spacing should be calculated from photometric curves.

BRACKET SELECTION GUIDE FOR STANDARD LUMINARIES

ONE SIDE MOUNTING WITH 100 FEET TO 250 FEET SPACING

NORTHEAST UTILITIES DESIGN & APPLICATION STANDARD DTR 21.107

Commented [P24]: Obsolete, since Eversource is Thompson's provider now.

Note:

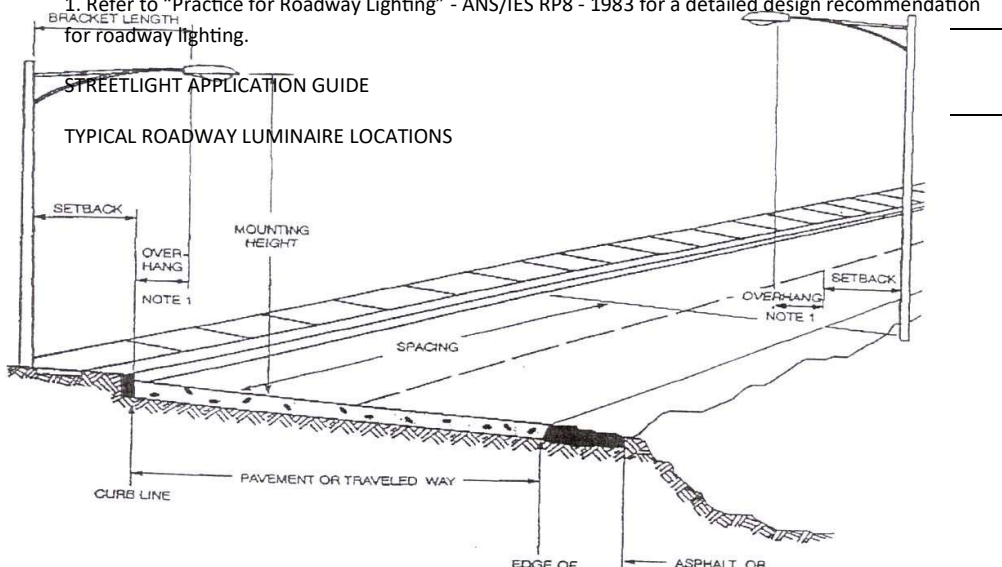
1. Refer to DTR 21.107 for required overhang.

STREETLIGHT MOUNTING AND LOCATION DEFINITIONS

NORTHEAST UTILITIES DESIGN & APPLICATION STANDARD DTR 21.021

Note:

1. Refer to "Practice for Roadway Lighting" - ANS/IES RP8 - 1983 for a detailed design recommendation for roadway lighting.



NORTHEAST UTILITIES DESIGN & APPLICATION STANDARD DTR 21.025

APPENDIX C - Additional Forms – ZEO will review

BOND AGREEMENT

For Construction and Installation of Public Improvements and Utilities in Subdivisions

Agreement made this _____ day of _____, 200__, by and between the Town of Thompson, hereinafter called the "Town", a municipal corporation having its territorial limits within the County of Windham and State of Connecticut, acting herein by its Planning and Zoning

Commission and _____ of the Town of _____, County of _____, State of

_____, owner and owners of record of property for which a final subdivision plan has been approved, and heirs, executors, administrators, successors and assigns of said owner or owners, hereinafter called the "Subdivider".

Witnesseth:

WHEREAS, the Town by vote taken on the _____ day of _____, 200__, by its Planning and Zoning Commission, has approved a subdivision known as _____, said vote reading as follows:

and

WHEREAS, the Subdivider desires to proceed with the construction and installation of public improvements and utilities in said subdivision in accordance with the specifications, ordinances, codes, regulations, and standards of the Town and as shown on the Final Subdivision Maps entitled:

and

WHEREAS, the utilities, may be shown on said map are to be installed and constructed by, on behalf of, or by separate agreement with, private utility companies or public agencies having jurisdiction over such public improvements, which shall be deemed to include, without limitation, all streets, sanitary

sewers, curbs, gutters, sidewalks, storm drainage, all erosion prevention measures, and all work on natural or relocated watercourses, whether within or without the boundaries of the subdivision, hereinafter, called the "improvements", as may be shown on said maps or otherwise required by the Thompson Subdivision Regulations and the conditions of any subdivision approval granted thereunder. Said improvements are to be installed and constructed by, on behalf of, or under contract with the Subdivider, and

WHEREAS, the estimated cost of constructing and installing improvements, said estimated costs having been approved by the First Selectman and the Town of Thompson Public Works Director, is

(\$ _____) Dollars, and the Subdivider has filed with the First Selectman _____ (\$ _____) Dollars as surety securing the Town the actual construction and installation of the improvements, which surety represents ninety-five (95%) percent of said estimated cost: and

WHEREAS, the Subdivider has deposited with the First Selectman _____
_____ (\$ _____) Dollars as a deposit against
which
the Town may draw to defray the costs of maintenance and repair of the improvements and the costs
of any necessary repairs to the improvements reasonably resulting from defects in workmanship
or
materials during the construction or maintenance period, which deposit represent five (5%) percent of said estimated costs. This agreement shall be reviewed on its anniversary and adjusted to secure an adequate surety amount. (The above-referenced bonding shall comply with all application provisions of the Thompson Subdivision Regulations.)

NOW, THEREFORE, be it agreed between the parties hereto, acting under the authority of the Subdivision Regulations of the Town of Thompson effective _____ 200__, and may therefore be amended as follows:

The Town Agrees:

1. To accept by appropriate resolution of the Town body having jurisdiction over those improvements which have been dedicated to the Town upon recommendation of the Commission and certification by the First Selectman and Public Works Director, that the Subdivider has fulfilled all the terms of this agreement and has completed the construction and installation of the improvements in accordance with the plans, specifications, ordinances, codes, regulations and standards of the Town.

2. To release, following said acceptance, any surety company bond, cash bond, or savings account assignment securing the Town the actual construction and installation of the improvements, and to return to the Subdivider any balance of said deposit, with an itemization of any charges thereto,
one year following said acceptance and upon conclusion of the maintenance period.

The Subdivider Agrees:

1. To construct and install the improvements at no expense to the Town in accordance with said Subdivision Regulations, said Final Subdivision Plan, as defined in said Regulations, Standard Specifications for the Design and Construction of Subdivision improvements, and as amended, applicable laws, regulations, standards, codes of ordinances of the Town and State of Connecticut, and any terms or conditions established by said Commission and herein contained.
2. To construct and install the improvements complete in every detail, in a good and proper manner, as directed by the First Selectman or his/her authorized agent, and in conformance with standard engineering and construction practices within one year from the date of approval of said subdivision by said Commission or within an earlier time as prescribed by said Commission, except as such completion date may be extended by said Commission.
3. The Subdivider agrees that he shall at all times indemnify and save harmless the Town and its respective officers, agents, and servants, on account of any and all claims, damages, losses, litigation, expenses, counsel fees, and compensation arising out of injuries (including death) sustained by, or materials during the construction or maintenance period, which deposit represent five (5%) percent of said estimated costs. This agreement shall be reviewed on its anniversary and adjusted to secure an adequate surety amount. (The above-referenced bonding shall comply with all application provisions of the Thompson Subdivision Regulations.)

NOW, THEREFORE, be it agreed between the parties hereto, acting under the authority of the Subdivision Regulations of the Town of Thompson effective _____ 200__, and may therefore be amended as follows:

The Town Agrees:

1. To accept by appropriate resolution of the Town body having jurisdiction over those improvements which have been dedicated to the Town upon recommendation of the Commission and certification by the First Selectman and Public Works Director, that the Subdivider has fulfilled all the terms of this agreement and has completed the construction and installation of the improvements in accordance with the plans, specifications, ordinances, codes, regulations and standards of the Town.

2. To release, following said acceptance, any surety company bond, cash bond, or savings account assignment securing the Town the actual construction and installation of the improvements, and to return to the Subdivider any balance of said deposit, with an itemization of any charges thereto, one year following said acceptance and upon conclusion of the maintenance period.

The Subdivider Agrees:

1. To construct and install the improvements at no expense to the Town in accordance with said Subdivision Regulations, said Final Subdivision Plan, as defined in said Regulations, Standard Specifications for the Design and Construction of Subdivision improvements, and as amended, applicable laws, regulations, standards, codes of ordinances of the Town and State of Connecticut, and any terms or conditions established by said Commission and herein contained.

2. To construct and install the improvements complete in every detail, in a good and proper manner, as directed by the First Selectman or his/her authorized agent, and in conformance with standard engineering and construction practices within one year from the date of approval of said subdivision by said Commission or within an earlier time as prescribed by said Commission, except as such completion date may be extended by said Commission.

3. The Subdivider agrees that he shall at all times indemnify and save harmless the Town and its respective officers, agents, and servants, on account of any and all claims, damages, losses, litigation, expenses, counsel fees, and compensation arising out of injuries (including death) sustained by, or

explosives, for collapse of buildings and damage to underground properties, and coverage by any law or municipal ordinance or regulation.

- c. Standard automobile liability and property damage insurance, including coverage for hired or borrowed vehicles.

- d. Workmen's Compensation and Employer's Liability Insurance, as provided by Connecticut law and custom.

5. To permit the Town to draw upon said deposit to defray the costs of maintenance and repair of the improvements or utilities prior to their acceptance by the Town, including but not limited to snow-plowing, cleaning of drainage facilities, and street sweeping and to defray the cost of any necessary repairs to the improvements or utilities reasonably resulting from defects in workmanship or materials during the maintenance period of one year following said acceptance, provided that the Town, except in cases of emergency, shall notify the Subdivider at least seventy-two (72) hours in advance of said repair and maintenance; and to deposit an additional sum with the First Selectman, such sum not to exceed the amount of the original deposit, if at any time the original deposit should prove insufficient to defray any such cost incurred by the Town. No principal or interest will be withdrawn from any surety or maintenance account before release

from this agreement by the Town. All principal and interest shall become property of the Town, upon default, for the purposes specified in this Agreement.

Additional or Special Clauses:

In Witness Whereof, the parties have hereunto set their hands and seals this _____ day of _____, 200__, at Thompson, Connecticut.

Signed and Sealed in the Presence of:

Town of Thompson

By: _____ First Selectman or His Designee

Title: _____

Subdivider

By: _____

Title: _____

NEW **Appendix D – Energy Conservation**

A. **Preference for Sustainable Energy Techniques**

Commented [CM25]:

Have you looked into existing standards and certifications for guidance on high performance building standards?

Energy CT might be an addition here:
<https://energizect.com/>

Have you reviewed Sustainable CT recommendations for green building as well?
<https://sustainablect.org/actions-certifications/actions/>

Energy code (blog about it here:
<https://neep.org/blog/energy-codes-green-economy>) and stretch code are both common models
(<http://www.pvpc.org/sites/default/files/files/PVPC-Green%20Building%20and%20the%20Stretch%20Code.pdf>)

The Commission encourages applicants to consider the inclusion of strategies for energy conservation and efficiency in the preparation of the final subdivision proposal. This appendix shall describe several techniques by which improved efficiency may be achieved. Many of these techniques, such as the use of passive solar site design, may not significantly increase the cost of the housing to the buyer. With tax credits, subsidies, and exemptions the overall benefits to homeownership may be financially enhanced.

B. Techniques

Techniques and methods described below are derived from a variety of sources including, but not limited to:

- U.S. Department of Energy www.energy.gov
- The Center for EcoTechnology <https://www.centerforecotecnology.org/>
- Sustainable Development Code <https://sustainablecitycode.org/>

The examples given are not intended to be either exhaustive or prescriptive; rather, they are intended to assist applicants in developing more sustainable and resilient subdivisions within the Town.

1. Passive Solar Design

As described by the U.S. Department of Energy (<https://www.energy.gov/energysaver/passive-solar-home-design>):

“Passive solar design takes advantage of a building’s site, climate, and materials to minimize energy use. A well-designed passive solar home first reduces heating and cooling loads through energy-efficiency strategies and then meets those reduced loads in whole or part with solar energy.”

Techniques or methods to incorporate passive solar design include the following:

- a. House orientation so that the structure is sited as close to the north line as possible and the structure’s orientation along east/west axis.
- b. Proper placement allows an increase of yard space for shading in warmer months with an increase of solar gain in colder months.
- c. Design of street and lot layout/orientation, so that the maximum number of buildable lots is sited on the south facing slopes.
- d. Landscaping shall include the location of any existing trees, new tree with their mature estimated height including canopy width. The proposed landscaping plan will facilitate the use of possible future solar collectors, certainly increase solar heat gain, and/or shade protection, as appropriate.

2. Inclusion of Renewable Energy

Developers may wish to incorporate renewable energy generation methods to serve the future occupants of the subdivision.

3. Energy Efficient Landscaping

Where landscaping is proposed as part of the subdivision plan, whether through the inclusion of street trees; the location and configuration of open space; or conceptual plans for individual lots within the subdivision, techniques exist to maximize energy conservation and efficiency. Such techniques include the following:

Commented [CM26]: Does this mean Passive House?

Commented [P27]: This is where I'm looking for the most current guidelines/incentives. What are the examples we are going to provide that are relevant to subdivision design? Do we describe including set asides for ground-mounted solar to serve a subdivision? What else?

B. Santos had shown some interest in tackling this topic.

- a. Dense windbreaks may be planted to protect house lots from winter winds, thereby reducing heating requirements.
- b. Trees shown in landscaping plans in proximity to south-facing walls or windows should be deciduous species only, to avoid shading during winter months but provide shade during summer.
- c. Open space intended as a common recreation area may show a landscape plan utilizing low-maintenance native species, with minimal areas of lawn grasses.

***NEW* Appendix E – Guidelines for Street Trees**

1. Street trees are required for subdivisions where sidewalks are also proposed. This appendix is intended to provide developers with guidelines for appropriate species to include in the subdivision plan. Consideration is given to mature height, ease of maintenance, and tap-root vs spreading root systems. Street trees have been shown in many studies to aid in reducing traffic speeds; improve absorption of precipitation; reduce CO₂ emissions; reduce heat island effect in densely populated areas; and improve property values.
2. The species shown on the following table are native to eastern North America. Benefits of landscaping with native species include general suitability and tolerance for local growing conditions; and higher food and shelter value for native and migratory insects, birds and mammals.
3. While non-native species are not strictly prohibited, the Town has a strong preference for the use of native species in any landscape plan for a subdivision. Species from the most current Connecticut Invasive Plant List, as compiled by the Connecticut Invasive Plant Council, are prohibited (<https://portal.ct.gov/-/media/CAES/Invasive-Aquatic-Plant-Program/PlantInformation/Invasive-Plant-List-2013.pdf?la=en>).
4. Information provided in the table below was adapted from the report “Right Tree, Right Place Standards,” a publication of the CT DEEP Forestry Division, State Vegetation Management Task Force: https://portal.ct.gov/-/media/DEEP/forestry/VMTF/Final_Report/PartFivecpdf.pdf

5. Trees with Short Mature Heights Connecticut

Common Name	Scientific name	Standard mature height	Maximum mature height	Notes
Common Serviceberry	Amelanchier arborea	<30 ft	55 ft	White flowers in late April; edible fruit in July
Allegheny Serviceberry	Amelanchier laevis	<30 ft	50 ft	White flowers in late April; edible fruit in July
American Hornbeam	Carpinus caroliniana	30+ ft	37 ft	Smooth gray bark
Eastern Redbud	Cercis Canadensis	25 ft	45 ft	Purple-pink spring flowers and heart-shaped leaves
Flowering Dogwood	Cornus florida	30 ft	47 ft	White flowers in mid-may

American Smoketree	Cotinus obovatus	30 ft	51 ft	
Sweetbay Magnolia	Magnolia virginiana	25 ft	28 ft	Fragrant flowers
Hophornbeam	Ostrya virginiana	30+ ft	67 ft	Rough bark
Sourwood	Oxydendrum arboretum	25 ft	87 ft	White flowers in July

6. Additional information on native trees may be found using the Plant Database hosted by the University of Connecticut College of Agriculture, Health and Natural Resources: <https://plantdatabase.uconn.edu/search.php>
7. The following illustration shows the appropriate traits to filter for species with suitable qualities for use as street trees:

UConn

UNIVERSITY OF CONNECTICUT

Q

A-Z

COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES

Plant Database

Search by Trait

List by Name

Name

Genus

i.e. - Homo or Acer

Species Name

i.e. - sapiens or rubrum

Common Name

i.e. - human or red maple

Family

Basic Traits

Plant Form & Size

Small Tree (15'-30' Tall)

Foliage Character

Deciduous

USDA Hardiness Zone

5

Native/Non-native

CT Native

Acer negundo

Boxelder, Ash-leaved Maple

Acer pensylvanicum

Striped Maple, Snake Bark Maple

Amelanchier arborea

Downy Serviceberry, Shadbush

Amelanchier canadensis

Shadblow Serviceberry, Thicket Serviceberry

Betula populifolia

Gray Birch, Old Field Birch

Carpinus caroliniana

American Hornbeam, Ironwood

Appendix F – Sample Letter to Abutters

Dear _____

You are receiving this letter because your property is within a 200 foot radius of the property known as _____ (Map/Block/Lot # or Street Address of Applicant Property).

Commented [P28]: Make sure this radius is consistent wherever possible. Janet noted some instances in which the radius is 500 ft.

The owners of Record, _____, are seeking a (Sub Division/Re-Subdivision) according to the provisions of the Thompson Subdivision Regulations.

They are proposing the following:

The Town of Thompson Planning and Zoning Commission Public Hearing on this application is on Monday, _____ (date) at 7 pm in the Merrill Seney Community Room located on the first floor of the Thompson Town Hall, 815 Riverside Drive, North Grosvenordale, CT 06255. Said application, # _____, is available for viewing in the Town of Thompson Planning and Development Office located on the first floor of the Thompson Town Hall, Call 860-923-9475 for an appointment.

All interested parties are encouraged to attend and be heard. Written communications will be received and read into the record.

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Signature of applicant:

_____ Date _____

3. Adjournment

Brian Santos moved and Joseph Parodi-Brown seconded the motion to adjourn. The motion carried unanimously. The meeting adjourned at 9:03 PM.

*Respectfully Submitted,
Gloria Harvey,
Recording Secretary*