

*Standards, Specifications, Rules
and Regulations*



Torrington, Connecticut

**CITY OF TORRINGTON
STANDARDS, SPECIFICATIONS, RULES AND REGULATIONS**

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SECTION 1

INFRASTRUCTURE DESIGN REQUIREMENTS

Sec. 1-1. MINIMUM STANDARDS

Infrastructure improvements shall adhere to and be guided by the standards hereinafter set forth and the City of Torrington's City Standard Details. Such standards shall be considered to be minimum standards for all subdivisions and Zoning Permit applications on existing and new streets and may be revised by the City Engineer only when in his or her opinion specific circumstances surrounding a zoning permit application, subdivision, or condition of the land in such subdivision, indicate that such modification will properly carry out the purpose and intent of these requirements.

Sec. 1-2. SPECIFICATIONS FOR REQUIRED IMPROVEMENTS

All required improvements shall be constructed or installed in accordance with good engineering design and practice in accordance with City of Torrington Standards, Specifications, Rules and Regulations, which may be obtained from the City Engineer.

Sec. 1-3. LOT LAYOUT, DRAINAGE AND DRIVEWAYS

- A.** Lot layout will result in the permanent division of land. It is in the public interest that the lot layout shall be functional, economical and aesthetically pleasing. Lots shall be laid out in relation to the topography and graded sufficiently to provide adequate drainage for the purpose intended without the diversion of water onto other lots or onto property adjoining the subdivision. Excessive grading and disturbance of natural cover will not be permitted. Steep driveways shall be avoided. The configuration of the lots shall provide lots that are functional for land uses intended. The subdivider shall demonstrate on each lot that there is a feasible location for a safe and convenient access for a driveway from a paved public street and shall meet Driveway Standards Requirements.
- B.** The minimum lot size for each lot shall be in conformity with the City of Torrington Zoning Regulations.
- C.** Where a subdivision abuts an existing street the City Engineer may require the subdivider to dedicate additional right-of-way and improve the existing street to meet current City of Torrington Standards.

Sec. 1-4. STREETS

A. Monuments

- 1.** Permanent survey monuments in conformance with the City of Torrington Concrete Monument Detail shall be installed in the ground a minimum of three (3) feet. Such monuments shall be installed in the right-of-way limits of new and existing streets where there is a change in direction and at all points of curvature and tangents or angular change in direction. Required monument locations include intersection radii returns. This requirement shall apply to the right-of-way limits on both sides of the new street.

2. On each permanent monument as described above, there shall be a plug, a brass plate, or a pin to serve as the point of reference.
3. Iron rods not less than one-half (1/2) inch in diameter and at least twenty-four (24) inches long shall be placed at all lot corners or angle points not covered by the permanent monument described in subparagraph (1) above.
4. The monumentation required for a subdivision fronting on an existing street will be monuments at the point of intersection of the perimeter of the subdivision with the right-of-way line of the existing street.

B. Cul-de-sac/Dead End Street

1. A cul-de-sac street shall not exceed twelve hundred (1200) feet in length unless a waiver is granted from the Planning & Zoning Commission. No street shall be extended or constructed or subdivision allowed that will result in the creation of more than 20 lots with only one means of ingress and egress at any point within the street network.
2. A turnaround shall be provided with a paved radius of fifty (50) feet and a right of way of sixty (60) feet in accordance with City of Torrington Permanent Cul-de-sac detail at the end of all cul-de-sacs. Upon recommendation of the City Engineer, a “T” or “Hammerhead” turnaround may be approved instead of a cul-de-sac where the turnaround’s entire perimeter abutts only one lot.

C. Temporary Dead End Street

A temporary dead end street used in a phased development shall be designed not to exceed twelve hundred (1200) feet in length. Any temporary dead end street at its terminus shall have a turnaround with a minimum radius of 50 feet. Easements shall be provided at the temporary turnaround per the City Standard Details.

D. Rural Dead End Streets

Some Street Design Standards including reduction of street pavement width, elimination of curbs, and reduction of storm sewer pipe infrastructure may be waived or reduced if it is in the best interests of the community to preserve its rural character. Modification may be approved by the City Engineer if the following conditions are met:

1. All lots within the subdivision shall be three (3) acres or larger.
2. Road grades shall not exceed five (5) percent.
3. The curbing requirements may be waived by the City Engineer where the proposed front yard setback exceeds one hundred (100) feet at least four (4) on-site parking spaces are provided excluding garage spaces. Vegetated covered drainage swales shall be provided on both sides of the road and a minimum thirty (30) foot wide natural undisturbed buffer shall separate the swale area from any building lawn area.
4. Driveways shall extend from the edge of road to the building to accommodate on-site parking. An on-site turnaround area shall be provided located near the building.

5. The applicant voluntarily places restrictive covenants on the land records indicating that the proposed lots served by the rural dead end street will never be re-subdivided.
6. Where curbing is not required, a 2' wide and 24" deep gravel shoulder shall be furnished on each side of the paved section for safety reasons and to prevent pavement unraveling.
7. The road pavement width shall be a minimum of twenty (20) feet. The road width at the intersection of another street shall be twenty-eight (28) feet and shall symmetrically taper down to twenty (20) feet over the first one hundred (100) feet of the new road measured from the intersection.

E. Layout

1. **Arrangement:** The arrangement of streets in the subdivision shall provide for the continuation of streets of adjoining subdivisions and for proper projection of streets into adjoining properties which are not yet subdivided, in order to make possible necessary fire protection, movement of traffic and construction or extension, presently or later required, of needed utilities and public services such as sewers, water and drainage facilities. Where topographic or other conditions make such continuance undesirable or impracticable, the above conditions may be modified.
2. **Topography:** Streets must be logically related to the topography so as to produce usable lots, reasonable grades and safe intersections in appropriate relation to the proposed use of the land to be served by such streets. Adequate provisions shall be made to control the drainage of each lot by an adequate storm water system, subject to approval of the City Engineer.
3. **Horizontal and Vertical Alignment:** Roadway geometry shall be designed using the table below. For changes in grade exceeding one (1) percent, a vertical curve shall be provided. Street grades shall be at least one and one half (1 ½) percent to provide satisfactory drainage. The maximum allowable roadway grade shall be designed using the table below. In no case shall a grade greater than five (5) percent be allowed at or within fifty (50) feet of any intersection.

The City Engineer may require safety features as deemed necessary, such as guide-rails and extended shoulders. Cul-de-sac turnarounds where located on an upward grade shall not have more than a five (5) percent grade and three (3) percent grade where located on the downward grade in any direction nor less than 1 ½.

Street Classification	Design Speed (MPH)	Design K Values		Minimum Centerline Horizontal Curve (Feet)	Intersection Radii (Feet)	Pavement Width (Feet)	Maximum Grade
		Crest	Sag				
Rural Dead End	25	12	26	150	25	20	5%
Local	25	12	26	150	25	28	10%*
Minor Collector	30	19	37	300	25 Residential 40 Commercial	28	10%
Major Collector	35	29	49	560	40	30	8%

* One tangent section not to exceed one hundred feet in length may be at 12% maximum grade if approved by the City Engineer.

4. **Guide Rails:** Guide rails shall be used where side slope are greater than four (4) horizontal to one (1) vertical or where roadside hazards are located within roadside clear zone. Whenever possible, flatter side slopes are preferred in lieu of guide rails. City Engineer may require flatter slopes in lieu of guide rail based on existing conditions.
5. **Intersections:** Street intersections shall be at right angles. Where a street intersects another street that intersection shall be at least 150 feet distant from the next street intersection. Minimum sight distance shall be provided per the sight distance criteria given in the Driveway Standards section. The right-of-way radii at intersections shall be a minimum of twenty (20) feet or larger in special cases if required by the City Engineer.
6. **Tangents:** A tangent of at least one hundred (100) feet in length shall be introduced between reverse curves on all proposed streets.
7. **Street Names:** Proposed street names shall be submitted to the City Engineer early in the planning approval process. Each street shall be identified by a name shown on the drawings. Proposed streets which are in alignment with existing and named streets shall bear the names of the existing streets. In no case shall the names for a proposed street duplicate existing street names irrespective of the suffix, be it street, avenue, boulevard, driveway, place, court, etc. The use of a street name that is a homonym, sounds like or may otherwise be confused with an existing street name is prohibited. Street names shall be based on historic or geographic significance to the extent possible. Street names may not be greater than 14-characters, including spaces and suffix. Suffix must come from the following list:

<u>Suffix Name</u>	<u>Abbreviated As</u>	<u>Suffix Name</u>	<u>Abbreviated As</u>
Avenue	Ave	Pass	Pass
Bend	Bnd	Place	Pl
Boulevard	Bld	Point	Pt
Circle	Cir	Ridge	Rdg
Court	Ct	Road	Rd
Cove	Cv	Square	Sq
Drive	Dr	Street	St
Grove	Grv	Terrace	Ter
Highway	Hwy	Trace	Trce
Hill	Hl	Trail	Trl
Lane	Ln	View	Vw
Loop	Loop	Walk	Walk
Parkway	Pkwy	Way	Way

The Board of Councilmen shall approve all new street names for proposed public streets and private common driveways.

Upon receipt of a formal written street name request, staff will evaluate the request the City Engineer shall make a recommendation to the City Council to adopt a name. **NO VERBAL APPROVAL WILL BE GIVEN.**

8. **Lot Number and Address:** All lots shall be numbered for identification planning purposes. New buildings shall be assigned an address number by the City Engineer upon issuance of a Right of Way permit for a driveway opening.

F. Concrete Sidewalks

Sidewalks per City Standard details shall be required, unless a waiver is granted from the Planning & Zoning Commission, on one side of all proposed streets as follows:

1. Where required, sidewalks shall be located on the north or east side of the street.
2. New sidewalks per City Standard Details may be required or existing sidewalks replaced or extended as a condition of any zoning permit.

G. Curbs

1. Curbing shall be required for the purposes of drainage, safety, and delineation and protection of pavement edge. Curbing shall be granite per City Standard Details.
2. Curbing shall be designed to provide ramps for bicycles and/or wheelchairs as required by A.D.A. law.

Sec. 1-5. STREET LIGHTING

Street lights shall be installed by the subdivider at his expense per the City Standard Details. A plan showing proposed street light pole locations shall be approved by the City's Street Light Committee and City Council. Street lights shall be functioning prior to issuance of any Certificate of Occupancy. The subdivider shall notify City when street lights are complete and ready for activation. City will then contact utility company and schedule activation. Street light installations shall be scheduled early to provide adequate lead time for activation.

Sec. 1-6. STREET SIGNS

All public street signs and posts shall be provided and installed by the City at the expense of the subdivider. Sign and posts for private common driveways shall be installed by the subdivider at his expense in accordance with City Standard Details. Payment for public street signs shall be made prior to any issuance of Certificate of Occupancy.

Sec. 1-7. UTILITIES

All utilities shall be located in new streets as shown in the City Standard Details.

A. Water

1. In any subdivision requiring on-lot water source, the subdivider shall demonstrate and gain Torrington Area Health District approval that each lot can be served by an on-lot water source in sufficient quality and quantity.
2. The existing public water system shall be extended so as to provide the necessary quantity of water, at acceptable pressure, for fire protection.

B. Sewage

The subdivider/applicant shall provide adequate provisions for sewage disposal.

1. The subdivider/applicant will be required to connect to the city's public sewer system if the property is located within the Sewer Service Area.. Refer to the Water Pollution Control Authority (WPCA) map titled "Sewer Service Area City of Torrington Sewerage System". The subdivider shall follow the Torrington WPCA rules and regulations latest revision.
2. Property outside the sewer service area to be served by an on-lot subsurface sewage disposal system shall meet the requirements of the Torrington Area Health District.

C. Electric, Telephone, Cable TV

Electric, telephone and cable TV distribution systems shall be underground, including services and streetlights. The subdivider shall coordinate subdivision design with the utility companies to ensure adequate and suitable area for underground installations.

Sec. 1-8. STORM DRAINAGE

A. Removal of Spring and Surface Water

The subdivider/applicant shall be required to carry away by pipe or open ditch any spring or surface water that may be either existing to or as a result of the subdivision.

B. Drainage Structure to Accommodate The Construction Development

Culverts or other drainage facilities shall, in each case, be large enough to accommodate potential runoff from the entire subdivision/development. The City Engineer shall approve the design and size of facilities based on determined runoff under conditions of total potential development. The subdivider's/applicant's engineer shall provide such information as the City Engineer deems necessary to the determination of the adequacy of the facilities.

C. Responsibility for Drainage Downstream

The subdivider's/applicant's engineer shall provide such information as the City Engineer deems necessary to determine the effect of the subdivision/development on the existing downstream drainage facilities outside of the area of the subdivision/development. Downstream drainage improvements may be required where the City Engineer anticipates that the additional runoff incident to the development of the subdivision/development will overload an existing downstream drainage facility so that there may be damage to private property or cause a public health or safety problem or an increase in the expenditure of public funds

D. Other Provisions

1. *Location of catch basins:* All streets shall be properly drained; catch basins shall be located at such points to intercept water so that no surface flow shall drain over three hundred (300) feet along the street. Catch basins shall be spaced so that the gutter spread in the street for the ten (10) year design flow shall not exceed eight (8) feet. Catch basins shall be constructed on both sides of the street opposite each other except as necessary to meet alignment requirements of the street. No surface water shall drain through an intersection. Catch basins are required at each end of intersection radii unless approved otherwise by the City Engineer.
2. *Minimum size and grade of pipe:* The minimum size of pipe shall be fifteen (15) inches inside diameter; the minimum grade of pipe shall be five-tenths of one (.5) percent. Maximum velocity shall be ten (10) F.P.S. Multi-barrel culverts shall be avoided. The subdivider/developer shall televise installed storm pipes just prior to paving operations and shall make any repairs as instructed by the City Engineer.

3. *Special catch basin location and foundation drain connections:* In special grade or high runoff situations, the City Engineer may require special setting of basins or multiple basins or may require additional storm drainage. Catch basins and subdrains may need to be added during construction pending ground conditions per the City Engineer's directions. The storm drainage system shall be located to allow each property owner direct access to a storm drainage system without crossing under the road. Additional basins may be required at locations other than the conventional locations such as high points in roads to allow foundation drain connections. The street storm drainage system shall be designed to accommodate connection of all building foundation drains. Exceptions may be made where the topography allows foundation drains to daylight and discharge into a permanent natural area given the discharge point is at a sufficient distance to be determined by the City Engineer from abutting properties and that there are no potential erosion control and environmental concerns.
4. *Minimum cover:* There shall be at least three (3) feet of cover over storm pipes and for culverts over fifteen (15) inches in diameter the City Engineer may specify additional depth of cover.
5. *Pipe material:* Pipe material shall be reinforced concrete pipe class IV or high density polyethylene pipe. All culverts that cross the street shall be reinforced concrete pipe. Open roadside drainage ditches shall not exceed a five (5) percent grade and shall be less if soil conditions dictate. The City Engineer may require the ditch or other open channels to be armored with stone or other stabilization material. All culverts shall be reinforced concrete pipe class IV with flared end sections which shall not extend above the final grade. Natural drainage courses should be extended across a road and not diverted to roadside drainage ditches. Road culverts shall inlet & discharge at the street line. Lots shall be arranged to provide adequate buffer space between the proposed development and the discharge to maintain open channel flow. The City Engineer shall deem the width of the buffer area upon review of the terrain. The City responsibility for maintenance of the culverts shall end at the right-of-way line.

E. Rainfall Design Frequency

The following are the design frequencies to be used for the different storm water facilities:

Cross Drainage	100 Year Storm
Storm Drainage Laterals - Closed System	25 Year Storm
Catch Basin Inlets	10 Year Storm
Grassed Swales	25 Year Storm with maximum velocity of 2.5 feet/second

Sec. 1-9. EXCAVATION AND GRADING

A. General

All excavating and filling required for construction and improvements shall be as specified herein. The entire area of work shall be brought to the required lines and grades by excavation or filling. Excavation material, if suitable, may be used in making embankments and in filling low areas. A minimum of four (4) inches of topsoil shall be provided to cover over all disturbed areas. All streets shall be graded from property line to property line to approved grade and cross section. Roadway cross sections shall be as shown on City Standard Details.

B. Suitable Materials Required

No stumps, wood, roots, sod or other fibrous materials shall be placed in any embankment. In those locations where the alignment crosses swamp or marsh land, or other similar soil that is incapable of supporting the proposed roads, such inadequate soil shall be entirely removed and replaced with an approved adequate material. The materials so removed shall not be placed in embankment, but may be used in flattening embankment slopes or for filling low spots outside the road section. The City Engineer may require the subdivider to submit evidence of borings and/or other soil investigations to determine the depth composition and stability of the subgrade within the road section.

C. Embankments

Embankments shall be formed of suitable and acceptable excavated materials and brought to the required lines and grades. The materials for embankment shall be placed in successive horizontal layers not exceeding six (6) inches in depth extending across the entire fill area. They shall be spread by a bulldozer or other acceptable method, and shall be thoroughly compacted. Successive layers shall not be placed until the layer under construction has been thoroughly compacted. Where embankments are made of rock, the rock shall be so deposited that all voids are filled with earth and in such a way that the compaction specified above may be secured.

D. Subgrade

Upon completion of filling and excavating, the subgrade shall be formed to the required grade and contour, and the entire surface again rolled as specified above. High spots shall be removed and low spots filled with the acceptable material and the process of leveling and rolling continued until no further depression results. Soft spots shall be removed and replaced with crushed stone, gravel or as specified by the City Engineer. These areas shall be drained as directed by the City Engineer.

E. Side Slopes

Side slopes in embankment and on roadside drainage ditches shall be as shown on the City Standard Details. Side slopes shall not be graded so as to extend beyond the limits of the road right-of-way onto land not part of the subdivision unless a suitable slope easement has been properly established and granted by the affected property owner.

Sec. 1-10. SITE PRESERVATION

A. Natural Cover

Residential developments shall be subdivided and improved in reasonable conformity to existing topography in order to minimize grading, cut and fill, and to retain, insofar as possible, the natural contours, limit storm water runoff, and conserve the natural cover and soil. Land areas with topography exceeding twenty (20) percent slopes shall remain undisturbed in its natural state. No topsoil, sand or gravel shall be removed from a residential subdivision for any other purpose than to meet construction needs for that particular subdivision or to meet any requirements of these Regulations.

B. Erosion and Sediment Control

The smallest practical area of land should be exposed at any one time during development. When land is exposed during development, the exposure should be kept to the shortest practical period of time. Land should not be left exposed during the winter months. Where necessary, temporary vegetation and/or mulching and structural measures may be required by the Zoning Enforcement Officer to protect areas exposed during the development. Sediment basins (debris basins, de-silting basins, settling basins, or silt traps) shall be installed and maintained during development to remove sediment from runoff water and from land undergoing development. The 2002 Connecticut Department of Environmental Protection guidelines shall be followed as amended.

C. Other Requirements

Where possible, natural drainage-ways may be utilized and left open to remove excess surface water; the permanent final vegetation and structures should be installed as soon as practical in the subdivision. If the City Engineer determines that excessive damage may result from open channel flow, armored or closed drainage systems will be required.

Sec. 1-11. FIRE PROTECTION

In the event that a subdivision is not serviced by public water mains, then the following standards shall apply in order to provide minimum requirements for water supply for firefighting, and a reasonable degree of protection to life and property.

- A.** There shall be located in the subdivision a water storage facility capable of delivering required fire flows as determined by using the ISO formula for required fire flow. Such storage and delivery systems will meet the requirements of NFPA #22, Water Tanks for Private Fire Protection, and NFPA #24, Private Fire Service Mains And Their Appurtenances. In no case shall storage capacity be less than 10,000 gallons of usable water. The water storage facility shall be under joint ownership of the lots it serves. The owners of lots for which the water storage facility was installed for shall equally share in the maintenance costs of the water storage facility. The water storage facility shall never be accepted or maintained by the City of Torrington. Applicants shall provide the Commission with copies of proposed deeds or covenants that shall identify water storage facility ownership and maintenance responsibilities. The Commission shall be assured that the ownership, responsibility for maintenance, improvements and liability associated with the water storage facility shall remain private. The deed or covenant shall be submitted for review and acceptance of the City’s Corporation Counsel. The approved deed or covenant shall be filed in the City Clerk’s office along with the final subdivision map.
- B.** If proper improvements to be constructed are to be sprinklered, either by Building Code requirements or applicant’s choice, water storage capacity shall be determined by NFPA #13, Installation of Sprinkler Systems (for commercial and/or multifamily), or NFPA #13D, Installation of Sprinkler Systems in One and Two-Family Dwellings. In the event that the proposed project does not fit within either national code, then the Fire Department shall determine what is required to meet the intent of these two codes.
- C.** The supply of water for firefighting purposes shall be located and maintained so as to be accessible year-round to Fire Department apparatus. Such supply shall be within a 1,000 feet hose lay of all structures for residential development and within 500 feet hose lay of all structures for commercial and industrial development. The public water line may need to be extended as determined by the Fire Department Chief.
- D.** The Fire Department shall provide additional review comments as to compliance with these standards.

Nothing contained herein shall relieve the subdivider of complying with applicable provisions of the Building Code.

Sec. 1-12. PEDESTRIAN WALKS AND BICYCLE PATHS

Where necessary, in the judgment of the Planning & Zoning Commission, rights of way for pedestrian and/or bicycle travel and access may be required between subdivisions or its parts or between a subdivision and public property. These pedestrian walks and/or bicycle paths shall be built in conformity with applicable standards of the City.

Sec. 1-13. DEVELOPEMNT OF ACTIVE RECREATION

On land to be used as active recreation open space, undesirable growth and debris shall be removed. Wooded and brook areas shall be left natural. Active recreation open spaces shall be cleared and graded properly to dispose of surface water, and shall be seeded with lawn grass. There shall be no depositing, dumping, or storage of waste, or other natural or man-made material, supplies or equipment, on any subdivision land designated as open space. No work, or removal, or filling shall be done, nor shall the existing natural characteristics of open space land be altered from the original condition, until a subdivision plan shall have been approved.

Sec. 1-14. PARKS AND PLAYGROUNDS

Areas set aside for parks and playgrounds to be dedicated or to be reserved for the common use of all property owners in the subdivision whether or not required by the Planning & Zoning Commission shall be of reasonable size, shape, character and location for the intended use. See Section 1.13 for clearing and preparation of the site.

Sec. 1-15. STORMWATER MANAGEMENT

A. Policy

1. Maintain, where feasible, the natural environment of City streams and drainage systems by the control of pollutants from storm runoff from entering the systems and through reduction of flow quantities resulting from new development and, where feasible, restore the floodplain to its natural functional purpose.
2. Encourage innovative design solutions to control the quality of storm runoff from development sites during and after construction. Natural landscape solutions such as minimization of impervious surfaces, undisturbed buffers, and filter strips are preferred over structural solutions such as detention ponds.
3. Encourage the construction of joint detention ponds serving several properties.
4. Areas adjacent to the Naugatuck River may not require storm water detention. It must be shown that the existing drainage system to the river has sufficient capacity to carry any additional runoff generated from the proposed development.
5. The 2004 Connecticut Stormwater Quality Manual as amended, provides guidance in the preparation of a stormwater management plan.

B. Storm Water Management Report Required

1. A Storm Water Management Report prepared by a State of Connecticut Licensed Professional Engineer shall be provided for every project. The purpose of this report shall be to formulate a plan to manage storm water runoff so that storm water runoff hazards are not created and existing runoff-related problems are not exacerbated, either upstream or downstream from or within the boundaries of the property being developed. The report, if applicable, shall include hydraulic analysis and detention pond hydraulics, pipe and open channel hydraulics, culvert hydraulics and water quality best management practices.

2. The Storm Water Management Report shall identify the locations and quantities of storm water runoff entering and exiting the site for both pre- and post-developed conditions. Analysis of the off-site properties shall anticipate future development in addition to addressing existing conditions.

All culverts, pipe systems, and open channel flow systems shall be sized based on all on-site upstream areas being developed in accordance with the development plans and the off-site upstream areas being fully developed in accordance with the land use for the associated planning zone with no detention. Upstream detention may be included when determining flows, provided the engineer calculates the reduced flows by routing the developed flows through any storm water facility included in the analysis rather than assuming the reduction will occur. The engineer shall show that detention facilities used in the analysis will remain, be properly maintained and the storage volume and outlet structure is based on current as-built conditions.

Detention facilities shall be designed using pre-development flows based on existing conditions for all upstream areas. Post-development flows, except the 100-year flow, shall be based on on-site upstream areas being developed per the development plans and existing conditions for off-site upstream areas.

The 100-year flow shall be based on on-site upstream areas being developed per the development plans and the off-site upstream areas being developed per the land use for the associated planning zone with no detention. Upstream detention may be included if it meets the conditions as described for culverts and pipe systems. Existing conditions shall be defined as the conditions of the site at the time of application for a land disturbance permit. The existing condition includes on-site lakes and ponds. Pre-development flows shall be determined by routing the pre-development flows through these storm water facilities.

The report shall contain drainage area delineation maps and other exhibits at satisfactory scale and sufficient in quantity and scope to define the boundaries of the site, and off-site areas, relative to water courses, intermittent and perennial, drainage divides, drainage structures, and other pertinent features.

3. For the purposes of these regulations, the words “downstream” and “analysis” shall have the following meanings. The analysis of downstream conditions in the report shall address each and every point or area along the project site’s boundaries at which runoff will exit the property. The analysis shall focus on the portion of the drainage way “immediately” downstream from the project. This area shall extend downstream from the project to a point in the drainage basin where the project area is ten (10) percent of the total basin area.
 - a. The report shall examine the conditions downstream from the project to a point where the project area is ten (10) percent of the total drainage basin.
 - (i) The analysis shall include all culverts, obstructions, existing and potential erosion problems, elevations of existing improvements, existing drainage complaints and any other existing modifications to natural conditions. The downstream water courses and receiving conveyance shall be analyzed to ensure that the channel velocities do not exceed values recommended for the existing natural channel lining.
 - (ii) If there are any problems identified downstream that are a result of the development, then the developer shall eliminate the conditions causing the problem.

- b. Hydrographs shall be analyzed at least at two points. One study point shall be at the downstream property line where the watercourse crosses the project site's downstream property line. The second study point shall be downstream of the project at the point where the project area is ten (10) percent of the total drainage basin.
 - (i) The study will compare pre-developed hydrographs with post-developed hydrographs for the 2, 5, 10, 25, 50 and 100-year flood frequencies; and,
 - (ii) Comparison of peak flows shall include the timing of hydrographs; and,
 - (iii) Hydrographs shall be based on a 24 hour storm.
4. The following criteria shall be evaluated by the applicant's engineer preparing the Storm Water Management Report and in determining whether or not detention should be required for any portion of any site:
 - a. Existing land uses downstream;
 - b. Anticipated future land uses downstream;
 - c. Magnitude of increase in peak flows due to development;
 - d. Presence of existing drainage problems;
 - e. Capacity of existing and anticipated drainage systems;
 - f. Creation of concentrated flows where none had occurred previously;
 - g. Availability of feasible locations for detention facilities;
 - h. Existing flows generated off-site which pass through the project site; and,
 - i. The nature of the receiving watercourse.
 5. When a proposed development uses an existing storm water management facility, the City Engineer may require a new record survey, drawing, new storm water management report and certification showing that the facility meets the current City storm water management requirements.

C. Storm Water Detention Required

1. Whenever a Storm Water Management Report indicates that an adverse impact from storm water runoff is expected to result from the development of a property, that project shall be provided with storm water detention facilities. The meaning of "adverse impact" shall apply when pre-development flows did not cause difficulties and post-development flows do. Difficulties shall include but not be limited to situations where 25-year velocities exceed the non-erosive velocity of the stream or drainage channel, habitable structures are shown to be subject to increased depth of flooding for any frequency up to and including the regulatory flood, and storm water facilities that can not carry the design storm in accordance with these regulations.
2. The City Engineer may elect to waive the storm water detention facilities requirement if the applicant's engineer certifies and provides certified documentation supporting the conclusion to the City Engineer that at least one of the following is true and correct as applicable:
 - a. The non-detained, post-development runoff shall not produce concentrated flows and shall leave the project site as sheet flow, and shall not have an adverse impact upon downstream properties.
 - b. The effect of detention concentrates flows where sheet flow had occurred under pre-developed conditions. The impact of increased sheet flows upon downstream properties would be less adverse than that which would result from the concentrated flows from a detention facility even if energy dissipation devices such as level spreaders were employed.

- c. The undetained flow will pass through downstream properties, in drainage easements obtained by the developer, to an existing detention facility which has been designed to manage the upstream property's runoff or to the point in the downstream analysis which shows that detention is not required.
 - d. Where the site runoff will flow directly into the Naugatuck River without crossing off-site properties. Water quality treatment shall be provided onsite.
3. Should the applicant's engineer conclude that storm water detention may not be necessary because of anticipated compliance with section 1-15.C.2, rigid compliance with all of the following criteria is mandatory:
- a. A storm water management report shall always be required whether or not storm water detention is required.
 - b. If the applicant proposes to show that the detention requirement may be eliminated for all or a portion of a project, then a pre-submittal conference with the City Engineer's staff is required prior to preparation and submittal of construction plans for the project. The consultant shall be prepared to discuss the downstream analysis findings. If the existing downstream conditions are overburdened by the pre-developed flows, then detention shall be required unless the developer elects to eliminate the downstream overburdened conditions at his or her expense when the development occurs and if there are any existing drainage complaints downstream, then detention shall be required unless the developer elects to minimize the conditions causing the complaint at his or her expense when the development occurs.

D. Detention Design Criteria – General

- 1. All storm water detention facilities shall be designed to detain the first ½" of runoff from all roads and parking areas in the area draining to the detention pond. In addition, these facilities shall control the peak flow rates associated with storms having 2-year, 5-year, 10-year, and 25-year return frequencies so that flows from the developed site do not exceed those associated with pre-development conditions at the project boundary nor increase the peak flows downstream from the project to the point in the drainage basin where the project area is ten (10) percent of the total basin. Where adverse impacts, as defined in section 1-15.C.1, occur during the 50 and 100-year storms, the 50 and 100-year storms shall also be regulated.
- 2. A variety of methods of achieving storm water management goals shall be acceptable in providing detention facilities. The type of facility provided shall be based on the following criteria:
 - a. The type of development which the detention facility is being provided;
 - b. The type of development which the detention facility is intended to protect;
 - c. Volume of storm water to be stored;
 - d. Origin and magnitude of the flows to be managed;
 - e. Topographic opportunities and limitations;
 - f. Safety considerations;
 - g. Maintenance requirements;
 - h. Aesthetic considerations;
 - i. Likelihood of facility operation interfering with access to public or private facilities;
 - j. Proximity of facility to property lines, utilities, buffers, etc.; and,
 - k. Similar site-specific constraints.

3. Detention facilities shall be in a normally dry basin.
4. Reservoir routing methods shall be used for all detention facility design. The size of the orifice to detain the 1-year storm for the facility shall be computed using the following orifice equation with a 24 hour draw down time from the elevation of the total channel protection volume (CPV) and an orifice coefficient of 0.60. The minimum elevation of the 2-year control shall be at the maximum routed pool elevation of the 1-year storm and not pool elevation of the total 1-year storm volume.

h = head measured in feet from the elevation needed to store the total 1-year runoff volume (CPV) to the centroid of the orifice;

Q_a = average CPV outflow rate in cfs;

$Q_a = CPV / (3600 \times 24)$;

A = required orifice area in square feet;

$A = Q_a / (0.6 \times (64.4 \times h / 2)^{0.5})$.

6. The design of every detention facility of any type shall consider the effects both of inflows in excess of those the facility is designed to accommodate and of malfunctioning of the primary outlet system. A safe path for overflow condition flows shall be provided. An emergency spillway type overflow shall be located in existing cut areas and not in fill embankments.
7. Weirs shaped like a “V” (“V” notch weirs) shall be used where practical, considering structural or hydrological concerns.
8. The basin perimeter may not be a wall of any type.

E. Detention Facility Location Criteria

1. Detention facilities may be constructed within open space or recreation areas if the following criteria are met:
 - a. Ownership of the area will be held by a Property Owner’s Association, Homeowners Association, or other acceptable third party such as Heritage Land Trust. Funding for the perpetual maintenance of the detention facility shall be provided by the developer to the entity assuming future maintenance responsibilities. The initial amount of funds shall be approved by the City Engineer.
 - b. Detention facilities within recreation areas will be approved only if the design of the area includes recreation amenities such as ball fields, tennis courts, grassed open areas or other similar improvements. The intent is to provide recreation facilities with detention as a secondary feature. The detention features shall not interfere with the intended used of the recreation amenity, (i.e., a large swale shall not traverse a ball field, etc.).
2. If a residential subdivision is provided with an on-site detention facility not located within a recreation area as specified above, a mandatory property owners’ association shall be established for its ownership and maintenance. The facility shall be located on land within the development and owned by the property owners association. The lot shall have a minimum of thirty (30) feet of public road frontage and a minimum lot width of thirty (30) feet. If the project is provided with an off-site detention facility, a mandatory property owners’ association shall be established for its maintenance. The association bylaws shall be recorded concurrently with the recording of a final subdivision map. The association bylaws shall include the following provisions:

- a. Automatic (mandatory) membership of all purchasers of lots therein and their successors; and,
- b. Conditions and timing of transferring control of the association from the developer to the lot owners shall be specified which shall not exceed four (4) years from the date of recording of the subdivision map; and
- c. Responsibility for maintenance, insurance and taxes; and
- d. Sharing of the costs of maintenance among the lot owners with shares defined by the association bylaws; and
- e. Authority to place liens on the real property of members who fail to pay their dues or assessments; and
- f. Prohibition on the dissolution of the association without the approval of the City Council.

F. Detention Facility Easement Requirements

1. Access Easement

- a. The access easement shall be cleared, grubbed and graded so that it can be utilized by rubber-tired construction vehicles.
- b. The drive width shall be twelve (12) feet.
- c. The drive shall be gravel or paved.
- d. The maximum slope shall be ten (10) percent.
- e. A drive to the bottom of the detention pond shall be provided when the facility is over ten (10) feet deep from the bench elevation or the facility is wider than fifty (50) feet as measured from bench to bench.

G. Detention Facility Maintenance

- 1. The detention storage capacity or function of any detention basin, pond or other impoundment, whether natural or man-made, shall not be removed or diminished without the express approval of the City Engineer.
- 2. It shall be the responsibility of the mandatory property owner's association or property owner in the case of non-residential project to maintain the operational characteristics of any facility constructed on their property for storm water detention and to keep the access drive free of obstructions, and to maintain the facility free of obstruction, silt or debris.

H. Detention Facility Construction Standards

- 1. Storm water detention facilities shall be constructed in accordance with plans reviewed and approved by the Engineering Department, and shall be in place and inspected prior to the initiation of other improvements.
- 2. The side slope in graded areas shall be 3H:1V or flatter. The normal ponding surface elevation shall be defined as the elevation when the volume contained in the facility equals the runoff from a 1.2" rainfall event. When the depth to the normal ponding surface is greater than four (4) feet and the side slope is steeper than 4H:1V, a bench shall be provided. The bench shall be at least ten (10) feet in width and is recommended to be fifteen (15) feet in width. The slope of the bench shall be 10H:1V. The bench shall be located so that the normal ponding surface elevation is between the top and bottom edge of the bench.
- 3. The bottom of the pond shall be graded for positive drainage.

I. Detention Facility Certification and Record Drawings

1. When a new facility is constructed in a development, a certified record survey of each detention facility shall be prepared by a land surveyor currently registered in the State of Connecticut. A certified detailed record drawing of the facility shall be prepared based upon this survey. The project engineer shall submit the following certification prior to any issuance of Certificate of Occupancy unless waived by the City Engineer.

I, _____, a registered Professional Engineer in the State of Connecticut, hereby certify with my signature and seal, that the existing detention facility (facilities) for the project known as _____, for owner/developer _____, lying in the City of Torrington, Litchfield County, Connecticut has been constructed in conformance with the permitted plans and specifications, that the actual stage-storage relationships will not produce discharge rates greater than those stated in the accepted hydrology report for the respective storm events, and that the pond functions as designed. I further certify that downstream, off-site property(ies) are not receiving discharges at erosive velocities or at velocities greater than the pre-developed rates, whichever is less or receiving concentrated flow in other than defined drainage ditches or creeks.

The survey shall be performed after substantial completion and stabilization of the project has occurred. The record drawing and addendum to the Storm Water Management Report shall be submitted to the City.

SECTION 2

RIGHT OF WAY PERMIT REQUIREMENTS

Sec. 2-1. REQUIRED

No person or utility shall make any excavation, modify, or fill any excavation excluding previously permitted locations in any City Right of Way without first obtaining a permit to do so from the City except as otherwise provided in these City Construction Standards, Specifications, Rules & Regulations. Any excavation within the City's streets, sidewalks, or other public right of way shall only be permitted in accordance with these City Construction Standards, Specifications, Rules & Regulations. The granting of such a permit shall cover all required activities to conform to these City Construction Standards, Specifications, Rules & Regulations.

In addition, a Right of Way Permit shall be obtained when any type of construction activity requiring that associated vehicles/equipment, either mobile or stationary, be located or operated within the right of way in order to perform work on the abutting property.

Permits are not required for utility pole and mailbox installation.

A copy of the Right of Way permit **MUST BE KEPT AT THE WORK SITE** and be made available upon the request of any City representative.

Sec. 2-2. APPLICATION

A "CITY OF TORRINGTON RIGHT OF WAY PERMIT" shall be obtained upon application with the City of Torrington at the Engineering Department. The Permittee is required to provide all of the information included on the "CITY OF TORRINGTON RIGHT OF WAY PERMIT" application form. In order to obtain a permit, the applicant must be current on all its financial obligations to the City. In certain cases more than one proposed excavation or encroachment may be included in one permit application if approval is given by the City Engineer.

Sec. 2-3. DESCRIPTION OF PROPOSED WORK

Describe on the permit application the proposed excavation. Indicate the size, type and purpose of pipes, poles, voltage and phase of electrical line, number of cables or strands, etc. Mention hydrants, services, protective and supporting equipment and associated appurtenances or any other proposed utility not listed above.

Permittee shall avoid meandering lines in all cases. Every effort should be made to insure that the proposed longitudinal installation is parallel to the existing or proposed street within the pre-assigned location shown on City of Torrington Typical Utility Location Standard Detail. In the case where an existing utility is to be replaced in an existing street right of way, the new utility line may need to be located outside their respective pre-assigned location if another utility already occupies said zone. Permittee shall request written permission from City Engineer to deviate from Typical Utility Location Standard Detail. In the event of a clearance problem the City Engineer reserves the right to require an upgrade of materials proposed to construct the underground system. In the case where the City reconstructs existing streets and a utility is required to be relocated or upgraded, new service laterals to abutting properties must be installed prior to resurfacing of street per written order of City Engineer. Deeper construction and/or the adjustment of existing utility lines may be necessary to meet this requirement. Between the longitudinal utility and the

existing street right of way line, service branches or laterals shall be installed normal to the right of way line without angles or offsets. Where possible, sanitary sewer service branches or laterals shall be designed to have a minimum of five (5) feet horizontal clearance from other utility laterals within the right of way limits except where adjacent to water lines where building and health codes apply.

Sec. 2-4. LOCATION OF PROPOSED WORK

A vicinity location map is required at a scale of 1"=1000". The map may be a photocopy of a portion of an accurate area map such as the City's street map or sketch traced from such a map.

The City Engineer may require a specific location plan. The plan shall show the location of the principal units of the installation and other existing adjacent utility lines and structures. Offset distances from the edge of pavement or curb shall be given. Offsets shall be to the centerline of underground installations. Edge of Right of Way lines, and other pertinent right of way features shall be indicated. Where doubt exists as to the accuracy or completeness of the existing utility facilities, test pits shall be dug to accurately locate these facilities. The City will accept no responsibility for any costs or liabilities incurred due to improper locating of existing underground facilities; or from the utility installation under the permit.

It is required that all drawings, including necessary details, be shown to scale. Drawings not to scale are unacceptable. The scale of plans, sections, profiles, and details shall be shown on the drawings. The scale shall be no smaller than 1" = 40', although it preferably should be 1" = 20'.

A separate location plan shall be submitted for each proposed installation. No more than two (2) highways should be shown on one sheet.

The proposed installation shall be coordinated with any City project to insure that the proposed installation(s) will not hinder future expansion of other utilities and/or City projects.

Sec. 2-5. ABOVE GROUND FACILITIES

Utility poles, fire hydrants or any fixed objects must be installed with a minimum clearance of (2) feet from the face of the established curb line. Typically, the four (4) foot area behind the established curb line is reserved for utility poles, fire hydrants, and street signs. Maintain a five (5) foot minimum clearance from driveways or vehicle access areas. When utility poles, fire hydrants, or any fixed objects are installed in a sidewalk, the sidewalk shall be replaced with concrete to the nearest construction joint. Installation must be installed in accordance to the American Disabilities Act (ADA).

Any proposed chamber, vault, or manhole to be installed in a street and which will have a dimension larger than seven (7) feet in either direction, shall be lowered so that the top surface of such chamber, vault, or manhole is a minimum of six (6) feet below the surface of the street paving. Access to underground chambers which, because of size, must be lowered as specified above, shall be by means of a manhole stack no greater than sixty (60) inches outside diameter. Since oversized structures are considered special cases, approvals of such structures are granted only on a case-by-case basis. Preferred locations shall be within easements on private property. Oversized structures to be located in the right of way shall have a complete set of calculations certified by a professional engineer registered in the State of Connecticut showing such structure is designed to support a 20,800 pound concentrated wheel load or a pair of 20,800 pound wheel loads spaced six (6) feet apart, plus an applicable vertical and lateral pressure.

Sec. 2-6. PROTECTIVE MEASURES AND ROUTING OF TRAFFIC

A. Safe crossings

If any excavation is made across any public street, alley or sidewalk, adequate crossings shall be maintained for vehicles and for pedestrians. The Permittee shall take appropriate measures to minimize inconvenience to the occupants of the adjoining property and to the general public.

The contractor is responsible for implementing a plan to maintain safe vehicle and pedestrian passage in accordance with the most recent applicable "Americans with Disabilities Act" (ADA) regulations and in accordance with the most recent edition of the "Manual on Uniform Traffic Control Devices" (MUTCD). It is the responsibility of the "Applicant" to contact the Traffic Division of the City of Torrington Police Department at 860-489-2018 to implement a Traffic Control and Safety Provisions Plan. The permit shall not be valid until the Traffic Division has been contacted. Any conditions required by the Traffic Division shall become inclusive of this permit.

B. Barriers and warning devices

It shall be the duty of every Permittee cutting or making an excavation in or upon any public place, to place and maintain barriers and warning devices necessary for the safety of the general public. Traffic control near all excavations affecting vehicular, pedestrian and other traffic shall be subject to final review and approval of the Torrington Police Departments Traffic Control Officer. Barriers, warning signs, lights, etc., shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices" (MUTCD). Warning signs shall be placed in advance of the construction operation to alert traffic within a public street, and cones or other approved devices shall be placed to safely channel traffic.

C. Closing of streets

When traffic conditions permit, the City Engineer, with the approval of the Torrington Police Department's Traffic Control Officer, may by written approval (or by verbal approval in the case of emergency), permit the closing of streets and alleys to all traffic for a period of time prescribed by him or her, if in his or her opinion it is necessary. The Permittee shall give notification to **ALL EMERGENCY SERVICE DEPARTMENTS** (Fire, Police, Ambulance Departments and School Bus Managers).

D. Temporary Construction Walkway

A temporary covered walkway may be required as part of the right of way permit if work is in a high pedestrian zone and work involves lifting, removal or storage of construction materials overhead. Protecting the public is of paramount importance.

E. Maintenance of Traffic

If, in the opinion of the City Engineer or upon notification from the Torrington Police Department's Traffic Control Officer, proper provisions and maintenance of traffic or traffic controls are not provided by the Permittee, the City Engineer will provide appropriate provisions to maintain safe traffic controls, and the cost of such services will be deducted from the security deposit which may be due the Permittee. The City may require a plan(s) indicating the method of traffic control anticipated at the installation site (i.e. number of lanes to be physically blocked by the operation, location and methods of trench bridging when required, and the locations and types of warning devices to be used, detour routing, etc.). In any case where a traffic control drawing is required, this drawing shall be provided to the City Engineer at least 48 hours prior to the start of work.

Sec. 2-7. ANNUAL WORK PROGRAM TO BE SUBMITTED BY UTILITIES

Each year on or before March 31st, each utility shall submit to the City Engineer its planned work program for the ensuing year, which shall not include emergencies and normal house service lines. Thereafter, the City shall have the right to deny permit applications for excavations not contained within each utility's respective planned work program, except for emergencies and house service lines.

Sec. 2-8. DURATION

Excavation work must be started no later than thirty (30) days from the date of issue of the Right of Way permit. If work does not begin within thirty (30) days of the issuance of the permit, the permit will expire and become null and void unless a written request is submitted and approved by the City Engineer stating the reasons for delay prior to the expiration of the permit. The permit will expire upon the City's final approval of permanent restoration work.

Sec. 2-9. HOLD HARMLESS

The Permittee shall hold harmless the City of Torrington and its duly authorized agents and employees against any action for personal injury or property damage sustained by reason of the exercise of a Right of Way Permit.

Sec. 2-10. STREET SHOULDER/CITY EASMENTS

The street shoulder, defined as the area between the edge of pavement and the right of way line/street line is reserved for utility lines, utility poles, hydrants, mailboxes, street signs and traffic control devices. Encroachment into the shoulder area with other fixed items such as, but not limited to; retaining walls, landscape walls, fences, trees, garbage dumpsters, satellite dishes, basketball hoops or other recreational devices, shrubs, landscape gardens, large stones or other obstacles is prohibited and subject to fine under the City's Right of Way Ordinance. The intent is to maintain the street shoulder free of obstacles for easy access to underground utility lines, to increase vehicle sight line distances, and to provide an area to deposit snow.

Sec. 2-11. CONSTRUCTION DUMPSTER/CONTAINER REQUIREMENTS

A permit and \$1,000.00 security deposit will be required for dumpsters/containers placed and operated on a City street right of way. A dumpster/container shall not be placed on the City roadway pavement. All dumpsters placed on City street right of way (roadway shoulder) shall be properly identified in the upper right hand corner of each side with the company name, phone number and container number. When placing a dumpster on a sidewalk, a minimum three (3) foot wide section of sidewalk, measured from edge of road pavement, shall be left clear for pedestrian use. Only under special circumstances will a permit be granted allowing the dumpster to be placed on the City roadway pavement. In such a special case it shall be approved by the City Engineer and noted above. Dumpsters/containers placed within the City street right of way shall have the ends facing traffic applied with alternating orange and white six (6) inch reflective stripes at a downward angle. A copy of the permit must be posted with the dumpster on the site at all times. The applicant must maintain insurance coverage from the date of issuance of the permit to the date of final dumpster removal including any post repair work to the City right of way property. The applicant agrees to pay any subsequent charges, which may become due as a result of damages created by

dumpster. The permit is valid for ten (10) days. The applicant is subject to arrest for violations of the permit.

Sec. 2-12 FACILITY MAINTENANCE REQUIREMENTS

Each utility facility owner is required to maintain all systems such that they not only function properly, but also that pedestrian or vehicular traffic is not adversely affected by malfunctions or failures of such systems. For example, quick response is expected to any notice received about a piece of street hardware that, in the opinion of the City Engineer requires maintenance or adjustment. If the Facility Owner does not respond within the time period specified on the notice, the City may take necessary action to protect the general public and charge the costs to the facility owner.

SECTION 3

DRIVEWAY STANDARDS

Sec. 3-1. PURPOSE

This section provides for the review of any point of access onto a City Right of Way for compliance with sound construction and design practices to insure that traffic safety, drainage and public improvements are not adversely affected.

Sec. 3-2. PERMIT REQUIRED

- A.** No driveway connecting to a City Street or City Right of Way shall be constructed, altered, relocated or reconstructed prior to the issuance of a "Right of Way Permit" by the City of Torrington Engineering Department. No Building Permit will be issued until such time as the applicant secures a "Right of Way Permit".
- B.** Application for such permit shall be made on forms furnished by the City of Torrington Engineering Department and shall be accompanied by an accurate scale drawing showing the location and dimensions of the proposed driveway in relation to the surrounding property lines; the existing street lines for one-hundred fifty (150) feet on each side of the driveway; the proposed dimensions and existing and proposed grades of the driveway from the gutter/edge of pavement line to the right of way line; the drainage and/or culvert installation (if required); and any easements that may have bearing upon the size and placement of the driveway. The City shall not be liable for errors and omissions, and the results thereof, contained in the application. Omission of the pertinent information shall be grounds for the revocation of a permit or the denial of a permit application.
- C.** Approval of an application for a permit shall be subject to the following conditions;
 - 1.** That the applicant is the owner of the property or that the applicant is the Contractor of said owner;
 - 2.** That any driveway approach is for the bona fide purpose of securing access to the property and not for the purpose of parking or servicing vehicles on the City right of way.
- D.** Any construction carried out by the Permittee of the property not in accordance with City Standards, will be cause for the City to correct any defects at the expense of the Permittee.
- E.** The Owner is responsible for future maintenance of the entrance within the limits of the right of way and shall maintain the entrance in accordance with the approved permit.
- F.** Certificates of Occupancy will not be issued until an inspection has been performed of said driveway for compliance with plans and City Standard Details.

Sec. 3-3. GENERAL CONDITIONS

A. Sight Distance Criteria

- 1.** All entrances shall be so located such that vehicles approaching or using the entrance will be able to obtain adequate sight distance in both directions along the public right of way or to maneuver safely and without interference with traffic.

2. Measurements to determine sight distance shall be made from the proposed entrance at a point ten (10') feet from the edge of pavement line with the height of eye three and one-half (3 ½) feet above the finished pavement. The sight distance shall be computed from this point measuring along the roadway to a point where an approaching height of object three and one half (3 ½) feet is first seen at the centerline of the travel lane in both directions. The line of sight at any location must remain in the proposed dedicated right of way.
3. Driveway placement shall be such that an exiting vehicle has an unobstructed intersection sight distance (ISD) according to the following schedule:

Highway Speed Limit (MPH)	Minimum Sight Distance (ISD) (In feet)
25	280
30	335
35	390
40	445
45	500
50	555
55	610

These minimum distances are for passenger vehicles. Additional sight distance shall be required by the City Engineer where truck traffic is the predominate user.

B. Private Common Driveways

1. **Naming** - The following procedures and regulations are established for the naming of private common driveways.
 - a. A private common driveway shall be required to be named and addressed if there are three or more principal buildings or lots that are not part of a single tract of land, which are accessed from such private common driveway.
 - b. Prior to issuance of a Certificate of Occupancy for any lot on the Private Common Driveway, the subdivider shall install a Private Driveway/Street Sign conforming to City Standard Details and the Manual on Uniform Traffic Control Devices (MUTCD). Such signs shall be located nearest to the intersection streetlight, if one exists, and where it is most visible from the intersecting street. Overhead hanging branches shall be cut to improve sign visibility. Signs shall be permanently listed at each intersection of such private common driveways and any adjoining City of Torrington or State right of way. Maintenance of such signs shall be the responsibility of the owners of the real property situated along such private common driveways.
 - c. See other sections herein for building address numbering and certificate of occupancy requirements.
2. The design of common driveway shall provide safe access for emergency/fire services and the ownership and responsibility for maintenance of the common drive will remain private.
3. The common driveway shall be centered in a common access area that is a minimum of 50 feet in width at all points and has at least 50 feet of frontage on an accepted public street.
4. Only estate lots are allowed on a common driveway.

5. Lots fronting on a common driveway shall have their driveways on the common drive within their frontage on the common drive, but shall be at least 10 feet from adjoining property lines. Only lots with frontage on the common drive shall have access to the common drive.
6. The common drive shall not serve more than five lots.
7. Driveways off of the common drive shall be contained entirely on the lot that they serve.
8. The maximum grade of the common drive shall not exceed 10%. One Tangent section not to exceed one hundred feet in length may be at 12% maximum grade if approved by the City Engineer.
9. If the grade at any point on a Common driveway exceeds 6%, the entire driveway shall be paved. The paving section shall be designed by a Professional Engineer. All non-paved driveways shall have a minimum ten (10) foot long paved apron.
10. Curbing and drainage storm pipe system may be required to ensure the safe management and disposal of storm water.
11. The total length of the common driveway and connecting spurs shall not exceed 1,200 feet in length measured from the public street to the dwelling unit.
12. The minimum width of the common driveway pavement surface shall be 18 feet.
13. The minimum centerline radius of the common driveway shall be 150 feet.
14. In addition to the subdivision requirements, a plan and profile sheet of the common driveway shall be submitted containing the following minimum information:
 - a. Complete horizontal and vertical geometry on the centerline of the common driveway.
 - b. Typical common driveway sections showing pavement thickness, cross slope, dimensions, swales, curbs, shoulders, etc.
 - c. All other improvements and utilities, including but not limited to existing and proposed storm drains, sanitary sewers, catch basins, manholes, watercourses, culverts, sidewalks, curbs, gutters, bridges, water lines and natural gas lines.
 - d. Plan and profile drawings shall be at a horizontal scale of not less than 1 inch equals 40 feet and at a vertical scale of 1 inch equals 4 feet.
 - e. Plans shall be sealed by a Professional Engineer.
15. A turnaround with a 35 foot radius shall be provided at the end of the common driveway. The maximum grade of the turnaround shall be 5%
16. The common driveway shall be under joint ownership of the lots it serves. The owners of lots on the common driveway shall equally share in the maintenance costs of the driveway. The common driveway shall never be accepted or maintained by the City of Torrington. Applicants shall provide the Commission with copies of proposed deeds or covenants that shall identify common driveway ownership and maintenance responsibilities. The Commission shall be assured that the ownership, responsibility for maintenance, improvements and liability associated with the common driveway shall remain private. The deed or covenant shall be submitted for review and acceptance of the City's Corporation Counsel. The approved deed or covenant shall be filed in the City Clerk's office along with the final subdivision map.

C. Geometry

1. Driveways shall enter roads at right angles when possible and in no case shall the angle be less than seventy-five (75) degrees. Driveway access on cul-de-sacs is subject to the approval of the City Engineer and shall not be located within the reserve areas noted on the City Standard Details.
2. The desired minimum distance from the driveway to the gutter line of an intersecting street shall be fifty (50) feet or as required by the City Engineer. Not more than one driveway shall be constructed on the same premises unless approved by the City Engineer. No driveway shall be established closer than ten (10) feet to a property sideline except in the case of a common shared driveway voluntarily established by the two owners on the common property lines.
3. No driveway shall have a grade exceeding twelve (12) percent slope along its length. See City Standard Details for grade requirements where it intersects with street.
4. All residential driveways other than common driveways shall be a minimum of twelve (12) feet across, but not more than twenty (20) feet, where intersecting with any public way. All commercial and industrial use driveways shall have a minimum width of twelve (12) feet for one way travel and twenty-two (22) feet for two way travel, but not more than fifteen (15) feet for one way and thirty (30) feet for two way travel. The City Engineer may require a turn around area within the property to eliminate vehicles backing into the street.
5. Minimum overhead clearance to be fourteen (14) feet above driveway grade at all points.
6. Whenever possible, proposed driveways along one side of the street shall coincide with existing or proposed driveways on the opposite side of the street.

D. State of Connecticut Highways

All driveways entering State Highways must conform to the current specifications as set forth by the State of Connecticut, Department of Transportation, and must be approved by the Connecticut Department of Transportation.

E. Drainage

1. Existing roadside drainage in gutter or ditch lines shall not be altered or impeded by the applicant. The applicant must provide at his/her expense suitable and approved drainage structures at all entrances and will be responsible for the maintenance of such.
2. No driveway shall be constructed so as to discharge water into any roadway or gutter line of any roadway. Grading on the right of way shoulder shall be provided so that all surface water on the areas adjacent to the road shall be carried away from the roadway. Driveways entering City rights of way may require a culvert or more extensive drainage structures, depending on the runoff conditions. The size, type and dimensions of culverts and drainage structures along the property frontage will be subject to review and approval of the City Engineer prior to the issuance of the permit. Any culverts or drainage structures shall be maintained by the property owner served by driveway.

F. Construction

1. The Permittee is responsible for all construction and restoration of disturbed areas.
2. All construction is to conform to the most recent specifications titled "CITY STANDARD DETAILS" provided by the City of Torrington Engineering Department and if not covered under City Standard Details then the State of Connecticut Department of Transportation, Standard Specifications, Form 816 (or latest edition).
3. All driveways shall have a bituminous or concrete driveway apron extending at least ten (10) feet from the edge of road pavement. Stone, brick or concrete pavers shall not be used in any apron within the City Right of Way.
4. Every reasonable precaution shall be exercised by the Permittee throughout the construction of the driveway to prevent, control, and abate siltation, sedimentation and pollution of all waters, underground water systems and inland wetlands.

G. Curb and Sidewalk

1. When sidewalks or curbs exist at the proposed driveway entrance the Permittee shall remove and replace such materials at the Permittee's expense. Any granite curb to be removed by the Permittee will remain the property of the City of Torrington. Granite curb shall be made available to the City. Upon notification the City will pick up granite curb if in sufficient quantity.
2. Where curb exists, twelve (12) inch long curb transitions shall be provided, in accordance with the City Standard Details, at each side of a new entrance.
3. Where sidewalk is removed to accommodate a new entrance, a new concrete apron is to be provided in accordance with City Standard Details.

H. Interparcel Access

1. Interparcel access shall be provided in commercial development upon determination by the City Engineer and Planning and Zoning Commission that such access is in the best interest of the public health, safety, or welfare. An access easement agreement approved by the City Engineer shall be filed in the land records. In the case where the abutting property owner refuses to cooperate in such a cross access driveway agreement, the applicant shall construct the driveway(s) and provide access easements to the neighboring property line. The neighboring property owner will be required to complete the access connection at a later date if an application for the neighboring property is submitted in the future.

I. Penalties and Enforcement

1. Driveways not constructed in accordance with the City Standard Details shall be in violation of the City's right of way ordinance and shall be subject to fines as defined in the ordinance.

SECTION 4

STREET EXCAVATIONS - REQUIREMENTS

Sec. 4-1. RESPONSIBILITY

Any person or utility having first obtained a right of way permit shall be fully responsible for restoring streets, street shoulders and their appurtenances (e.g. granite curb, under-drain, filter fabric, sewer and drainage structures, etc.) in complete compliance with the City's Standard Details. Any damage to private property shall be repaired/replaced at the Permittee's expense.

Sec. 4-2. EXCAVATION REQUIREMENTS

A. OSHA Compliance

All work must be conducted in strict accordance with the latest regulations of Occupational Safety and Health Administration (OSHA) for excavations. The Permittee is responsible for ensuring OSHA compliance, and his responsibility includes supervising and monitoring work site conditions for OSHA compliance. Shoring of trenches shall be done per OSHA requirements.

B. Standards and Specifications

All excavations shall be performed in accordance with the City Standard Details and CDOT Standard Specifications, Form 816, or in a manner as prescribed by the City Engineer for circumstances not covered by the above referenced materials.

C. Stockpiling of Materials

All material excavated from trenches and piled adjacent to the trench or in any street shall be piled and maintained in such manner as not to endanger those working in the trench, pedestrians or users of the streets, and so that as little inconvenience as possible is caused to those using streets and adjoining property. Where the confines of the area being excavated are too narrow to permit the piling of excavated material beside the trench, the Permittee shall haul the excavated material offsite. If any portion of the excavated material is allowed to be used as backfill, it shall be stockpiled separately from all other materials.

D. Cutting of Pavement

The Permittee shall make every effort to keep the amount of pavement damage to a minimum. Pavement shall be saw cut in a rectangular shape to insure a proper repair. Any pavement damage created by Permittee's excavation shall be repaired by the Permittee. Pavement edges shall be trimmed to a vertical face and neatly aligned with the centerline of the trench.

E. Extension of Trench Repair

Where the edge of the open trench is within two (2) feet of the curbed gutter line or the longitudinal joint of the roadway, or within two (2) feet of the unpaved shoulder line, the pavement shall be removed to the back of the curb or to the longitudinal joint or the edge of the shoulder and replaced. Where any part of the opening is within two (2) feet of the paved portion of a roadway having an earth berm without curb and gutter, the berm disturbed area will be restored. The Permittee shall be required to repair pavement adjoining trench area where cut results in small floating sections of the existing pavement that may be unstable, in which case, the Permittee shall remove the unstable portion and the area shall be treated as part of the excavation.

F. Multiple Street Openings

When two or more street openings are made for utility services for abutting properties by the same Permittee, the Permittee shall neatly cut and remove the area of pavement between these adjacent openings and shall repair the entire area as one trench. Where additional excavations are made for the same client or utility by the same Permittee which are adjacent to previous excavations still under a guarantee period, the Permittee shall neatly cut and remove the area of pavement between these adjacent openings including the previous paved trenches and shall repair the entire area as one trench patch.

G. Longitudinal Trench Openings

Longitudinal trench openings in existing pavement are prohibited unless Permittee receives written permission of City Engineer. Refer to the City Standard Details for complete construction details for these openings.

The City Engineer may not require milling on longitudinal cuts less than twenty-five (25) feet.

Sec. 4-3. RESTORATION REQUIREMENTS

A. Dewatering

Whenever water is found standing in the excavation area, the water shall be removed by pump or other means before backfilling operations can commence. Discharge flow shall be filtered by some means before discharging into storm sewer system.

B. Maintenance of Temporary Pavement Patch

The Permittee shall be responsible for the proper placement and maintenance of the temporary and permanent pavement and shall keep the pavement level with the surface of the surrounding existing pavement and in proper repair and condition, until the end of the guarantee period in accordance with Paragraph 16 (Warranty of Work) in Article III of the City Code..

C. Restoration

Any pavement markings, symbols or legends disturbed by the Permittee shall be replaced by the Permittee. In accordance with CDOT Standard Specifications, Form 816, Sections 12.09 and 12.10, entitled "Painted Pavement Markings" and "Epoxy Resin Pavement Markings, Symbols and Legends", the Permittee shall install the pavement markings on the final course of bituminous concrete by the end of the workweek. The paint to be used shall meet the minimum specifications of Connecticut 1952 D - 3-minute fast dry waterborne.

Any street signs disturbed by the Permittee shall be replaced by the Permittee. The placement and requirements of these signs shall be in accordance with the MUTCD (Manual on Uniform Traffic Control Devices, current edition).

Any traffic signal loops damaged by the Permittee shall be repaired by the City. Costs of repairs shall be invoiced to Permittee. It shall be the responsibility of the Permittee to perform the necessary restoration beyond the limits of the pavement which shall include, but not be limited to; restoration of lawns, shrubs, gardens, curbing, sidewalks, under-drains, separation of geotextile fabrics, fences, walls, etc. Upon completion of the permanent repairs outside the limits of the pavement, the Permittee shall notify the City Engineer in writing that the permanent repairs or replacement has been completed, setting forth the date of completion. The Permittee shall, and has the duty and responsibility to, maintain the replacement area outside of the pavement for a period of eighteen (18) months after completion. Permanent restorations shall not be allowed to commence until at least six (6) months has passed since the installation of approved temporary hot-mixed asphalt unless approved in writing by the City Engineer.

Sec. 4-4. MATERIAL SPECIFICATION

A. Compacted Granular Backfill

All excavations shall be backfilled with a granular backfill consisting of broken or crushed stone, gravel or reclaimed miscellaneous aggregate or a mixture thereof as noted below. Reclaimed miscellaneous aggregate shall contain no more than fifteen (15) percent by mass of recycled bituminous concrete conforming to the Grading 'B' requirements of Section M.02 in the CDOT Standard Specifications, Form 816 as amended.

B. Controlled Low Strength Material (CLSM)

Controlled Low Strength Material (CLSM) is a self consolidating, rigid setting material to be used in backfill, fills, structural fills and elsewhere as indicated on the plans, or as directed by the City Engineer. The flow and set time characteristics of CLSM shall be designed to meet the specific job conditions. All CLSM material covered by this specification shall be designed to be hand excavatable at any time after placement. It shall be composed of a mixture of Portland cement, aggregate and water with the option of using fly ash, air-entraining agents, and other approved admixtures.

All materials utilized in the CLSM mix design and the composition of the CLSM shall be in accordance with the requirements set forth in Article M.03.01-General Composition of Concrete Mixes, as well as the applicable sections of ACI 229R. The CLSM mix design shall utilize a nominal maximum size of No. 8 aggregate as specified in M.01.01. CLSM mixes that are designed with high-entrained air shall have a minimum of 25%-entrained air when tested in accordance with AASHTO T152. The Permittee shall submit each proposed mix design, with all supporting data, to the City Engineer for review and approval at least two weeks prior to its use.

C. Sub-base Material

Pavement structure sub-base material shall be in accordance with CDOT Standard Specifications, Form 816, Section 2.12 and Section M.02.02 and M.02.06 (Grading B).

D. Base Material

Pavement structure base material shall be in accordance with CDOT Standard Specifications, Form 816, Section 3.04 and Section M.05.01-1, M.05.01-2 and M.05.01-3.

E. Temporary Pavement

Temporary pavement shall meet the specifications detailed in the City Standard Details and CDOT Standard Specifications, Form 816, Section 4.06 and Section M.04.

F. Permanent Pavement

Permanent pavement shall meet the specifications detailed in the City Standard Details and CDOT Standard Specifications, Form 816, Section 4.06 and Section M.04.

G. Concrete and Reinforcement Fabric

Portland Cement Concrete shall meet the specifications detailed in the City Standard Details and CDOT Standard Specifications, Form 816, Section 4.01 and Section M.03 and M.06.01. Concrete not achieving the satisfactory 28 day compressive strength break shall be removed from the job and redone. Welded Steel Wire Fabric shall be six inch by six inch (6" x 6") mesh with No. 10 wire and shall conform to the requirements of ASTM A 184 (AASHTO designation M55), Welded Steel Wire Fabric for Concrete Reinforcement. Substitution of welded wire fabric with FIBERMESH fibers (100% virgin polypropylene, collated, fibrillated fibers) at a rate of 1.5 lb. per cubic yard of

concrete will be allowed for non-structural reinforcement. Installation shall be per manufacturer's recommendations.

H. Mortar Material

Mortar shall conform to CDOT Standard Specification, Form 816, Section M.11.04 "Mortar".

I. Underdrain Materials

Underdrain shall be six (6) inch diameter SDR 35 or approved equal with perforations laid downwards. Refer to the City Standard Details for complete installation requirements. Coiled pipes shall not be used. Filter fabric for underdrain shall be equal to Mirafi 140 by Fiber Industries.

J. Topsoil

Topsoil shall meet the requirements detailed in the CDOT Standard Specification, Form 816 Section 9.44 "Topsoil" and M.13.01-1. Topsoil shall have a finished depth of four (4) inches (minimum).

K. Grass Seed and Mulch

Seeding shall meet the requirements detailed in the CDOT Standard Specification, Form 816, Section 9.50 "Turf Establishment" and M.13.

Sec. 4-5. WINTER EXCAVATIONS

A. Winter Cold Patch

If work is approved in emergency cases in the winter period when hot mix asphalt is not available, the following specifications shall apply:

Winter Patching Material shall be placed in one lift of three (3) inches compacted thickness. The cold mix material shall be Class 5 material in accordance with Section M.04, "Bituminous Concrete Materials" of the CDOT Standard Specifications, Form 816. This material must then be removed within thirty (30) days of the opening of local hot-mixed asphalt plants and replaced in accordance with the City Standard Details for temporary trench repairs. The applicable guarantee period will begin when the hot-mixed asphalt repair is completed. No pavement shall be allowed of frozen materials unless it is expressly understood that complete trench reconstruction will be completed by the Permittee during the following spring. In this case, the guarantee period begins after the spring reconstruction by the Permittee.

B. Winter Backfill Requirements

If the trench area is saturated, the following backfill method shall apply:

1. Filter fabric equal to Mirafi 140 by fiber industries shall be placed to form a lining for the crushed stone backfill to be wrapped in, leaving extra material to completely cover the stone when placed.
2. Crushed stone (size 1/2" to 3/4") must be placed to the height of saturation and completely wrapped in filter fabric.
3. Backfill requirements shall be dependent on vertical trench area absent of saturation. Gravel aggregate shall be free from large or frozen lumps and spread in layers not exceeding six (6) inches in loose depth and compacted to no less than ninety-five (95) percent of the maximum dry density of the material as determined by AASHTO T-180 Method D or as directed by the Engineer, up to the sub-base of the temporary pavement. No subsequent layer shall be placed until the specified compaction is obtained for the previous layer.

Sec. 4-6. REPAIR OF EXISTING GEOFABRIC AND UNDERDRAINS

A. Geofabric Material

1. If an excavation cuts through an area that has been constructed with geofabrics, the following restoration procedures shall be strictly adhered to:
 - a. Use a fabric replacement piece that has similar properties as that of the cut fabric. The most important property is that of the 095 Sieve Test or that property of the fabric, which has an opening, mesh size which allows five (5) percent of glass beads to pass through when sieved (ASTM D4751-87).
 - b. Over-cut the trench walls by a minimum of six (6) inches in the area of the fabric replacement being careful not to disturb the existing six (6) inch width of fabric exposed. Place a minimum of a six (6) inches overlap of new fabric. Do not allow soil migration in this seam area. Increase the seam width if the sub-grade is very soft. If soft sub-grade and trench lie directly beneath a wheel path, increase the seam width to twelve (12) inches.
 - c. Sew or staple the seams in accordance with manufacturer recommendation. If sewn, use colored thread, do not sew near the edge, double sew at 10 - 15 stitches per inch, and use thread material that closely matches fabric properties. If stapled or pinned, pin on two (2) feet centers; use 6"x 1" wide staples which can be applied by foot activated guns.
 - d. Caution must be exercised when placing and compacting the first twelve (12) inches of material so as not to puncture the fabric.

B. Underdrain

1. If an excavation cuts through an existing underdrain system, it shall be repaired by the Permittee in accordance with the City Standard Details.
2. The City Engineer shall have the right to require a Permittee to install underdrain within any excavation zone if conditions warrant.

Sec. 4-7. METHODS OF CONSTRUCTION

A. Workmanship

1. The Permittee is required to furnish all materials and will be responsible for the job to be done in an orderly, timely, quality controlled manner, and will be required to utilize quality workmanship and construction techniques conducted in accordance with industry standards for the successful completion of the utility work, backfilling, appurtenant restorations and temporary pavement repair.
2. The Permittee shall keep a competent foreman and sufficient competent employees to carry on the work with all proper speed and in accordance with the requirements of law and other public authorities and to the reasonable satisfaction of the City Engineer.
3. The Permittee shall conduct the work in such a manner as not to unreasonably interfere with other work being done by the City, by contract or otherwise. If deemed necessary by the City Engineer, the work done under these specifications shall conform to the progress of said other work. The Permittee shall cooperate with the contractors or employees who may be doing work for the City, and with public service corporations affected by the work in arranging for storage places, temporary support for structures, repairs, etc.

4. All repairs must be maintained by the Permittee until the end of the guarantee period.

B. Compacted Granular Backfill

After all excavation has been completed, compacted backfill requirements shall be in accordance with Section M.02 of the CDOT Standard Specifications, Form 816 (latest edition). The backfill material shall be deposited, spread and leveled in layers not to exceed six (6) inches in depth. All voids along the sides of the trench, behind sheeting, under bracing or other objects, shall be completely filled, using such fine materials, hand labor and materials as may be necessary. The entire area of each layer shall be compacted by means of mechanical rammers or vibrators or pneumatic tampers. Each layer shall tamped and compacted before the next layer is placed. All backfill materials shall be compacted to a minimum of ninety-five (95) percent of the maximum dry density as determined by AASHTO T-180 Method D or as directed by the Engineer. Each layer of compacted granular fill shall be compacted at optimum moisture content. No subsequent layer shall be placed until the specified compaction is obtained for the previous layer.

At the Engineer's discretion, the Contractor may compact the backfill by means of a Ho-PAC. There must be at least thirty-six (36) inches of material above the stone bedding prior to beginning the Ho-PAC operation. The Engineer shall also have the right to approve or disapprove the compaction equipment to be used and also the height of backfill to be compacted in one lift. When a Ho-PAC is utilized, trench backfill shall be compacted in lifts not to exceed two (2) feet.

C. Placement of Controlled Low Strength Material (CLSM)

CLSM shall only be placed when the ambient temperature is at least 30° F and rising. CLSM material shall be deposited within 2 hours of initial mixing.

CLSM material may be placed by chutes, conveyors, buckets or pumps depending upon the application and accessibility of the site. Should voids or cavities remain after the placement of the CLSM, the permittee shall modify the placement method or flow characteristics of the CLSM. Voids or cavities, which have not been properly filled, shall be corrected as directed by the City Engineer and at the Permittee's expense.

D. Placement of Gravel Aggregate Sub-base

1. The aggregate pavement structure sub-base shall be spread and compacted in layers not exceeding six (6) inches after final compaction. The crushed aggregate shall be compacted to not less than ninety-five (95) percent of the maximum dry density of the material as determined by AASHTO T-180 Method D or as directed by the Engineer.

E. Placement of Gravel Aggregate Base

1. The aggregate pavement structure base shall be compacted to not less than ninety-five (95) percent of the maximum dry density of the base material as determined by AASHTO T-180 Method D or as directed by the Engineer to the depth required by the City Standard Details.

F. Temporary Asphalt Pavement

1. All temporary pavement shall be installed according to these specifications which includes a three and one-half (3½) inch (minimum) thickness of Class 1 hot-mixed asphalt placed in two lifts, with the bottom layer being two (2) inch compacted lift and the top layer being a one and one-half (1½) inch compacted lift. All materials, placement, compaction and workmanship shall be in accordance with the applicable provisions of Section 4.06 of the CDOT Standard Specifications, Form 816.

2. Each layer of hot-mixed asphalt is to be compacted separately meeting the requirement of ninety-two (92) percent minimum compaction of standard laboratory maximum theoretical density for the specific material.
3. Mechanical compactors will be permitted for repairs less than ten (10) square yards; repairs exceeding ten (10) square yards shall be rolled with an appropriately sized, power driven, steel-wheeled roller to obtain specification density.
4. Hot-mixed asphalt materials shall be laid upon an approved clean, dry, compacted surface, spread and struck off to the established grade and elevation giving regard to the loss in depth between loose and compacted mixtures. Immediately after the bituminous mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted.
5. The placing temperature of the hot-mixed asphalt mixture shall be between 350°F and 240°F. The compaction rolling shall be completed before the mixture cools below 175°F. This can be checked using a thermometer suitable for this type of work.

G. Permanent Pavement Restoration

1. All materials, placement, compaction and workmanship shall be in accordance with this ordinance.
2. Temporary paving material shall be saw cut and neatly removed, or milled, as needed to comply with all provisions of this ordinance.
3. Pavement structure base and sub-base should be checked for compliance with ninety-five (95) percent compaction requirement, if the Permittee elects or is required to remove the entire temporary paving material. If compaction is found to be less than ninety-five (95) percent, trench must be re-compacted to meet specifications before paving will be allowed.
4. The surrounding pavement shall be sawcut and removed at a minimum of nine (9) inches beyond the original excavation cut, and to the full depth of the existing material.
5. The permanent pavement materials and depths shall conform to the specifications found in the City Standard Details, which vary for different street classifications, or match the existing depths, whichever is greater.
6. Each layer of hot-mixed asphalt is to be compacted separately meeting the requirement of ninety-two (92) percent minimum compaction of standard laboratory maximum theoretical density for the specific material.
7. Mechanical compactors will be permitted for repairs less than ten (10) square yards; repairs exceeding ten (10) square yards shall be rolled with an appropriately sized, power driven, steel-wheeled roller to obtain specification density.
8. Hot-mixed asphalt materials shall be laid upon an approved clean, dry, compacted surface, spread and struck off to the established grade and elevation giving regard to the loss in depth between loose and compacted mixtures. Immediately after the bituminous mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted.

9. The placing temperature of the hot-mixed asphalt mixture shall be between 350°F and 240°F. All compaction rolling shall be completed before the mixture cools below 175°F. This can be checked using a thermometer suitable for this type of work.

H. Tack Coat

1. All vertical surfaces joints between the pavement repair and the existing pavement are to be sealed, with an approved asphaltic emulsion (tack coat), by swabbing or brushing a minimum three (3) inch width paint-like application prior to pavement installation.
2. All milled surfaces shall be tack coated and any new hot mixed asphalt surfaces that have been subjected to dust, dirt and debris shall be tack coated.

I. Depth of Substructures

1. No person or utility shall, without written permission from the City Engineer, install any substructure, except manholes, valve casings, and catch basins at a vertical distance less than:
 - a. Twenty-four (24) inches below the established flow line of the nearest gutter. If the flow line is not established, then the depth shall be at a minimum of twenty-four (24) inches below the surface of the nearest outermost edge of the traveled portion of the street.
 - b. The minimum depth of any substructure shall be twenty-four (24) inches below the established gutter grade when the substructure parallels the street.
 - c. The minimum depth of any substructure shall be twenty-four (24) inches below the established sidewalk or curb when such substructure is at a right angle to the street.
 - d. The minimum depth of any substructure on any other public place shall be twenty-four (24) inches below the surface; provided, however, that the City Engineer may permit a lesser depth in special cases.
 - e. Nothing in this section shall impose a duty upon the Permittee to maintain the specifications as required herein upon subsequent changes of grade in the surface unless the grade in the substructure interferes with the maintenance of or travel on a public street.
 - f. Refer to the City Standard Details for typical cross-section and depth requirements for substructures in City streets.

J. Turf Establishment

When an opening has been made in a grass area, the Permittee will be required to hydro-seed or sod the area as the preferred methods, or provide topsoil, seed, fertilizer, lime, mulch; or other material as directed by the City Engineer, depending on the topography of the surrounding area. Prior to placing topsoil, all areas to be seeded shall be free of rock and other foreign material three (3) inches or greater in any dimension and shall be in satisfactory shape and finish necessary for the proper restoration of the disturbed area. The topsoil shall be uniformly spread to a minimum depth of four (4") inches. The seed shall be thoroughly mixed and then evenly sown over the prepared area. The work and materials for this turf establishment shall be in accordance with Sections 9.5 and M.13 of the CDOT Standard Specifications, Form 816. Immediately after sowing, the area shall be raked, dragged or otherwise treated to cover the seed to a depth of approximately one-fourth (1/4) inch. The operation of seed sowing shall not be performed if the ground is frozen or muddy, or when the soil or weather conditions would prevent the proper soil preparation and subsequent operations as specified. The Permittee is responsible to maintain all seeded and mulched areas until final acceptance by City.

SECTION 5

COMPLETION OF REQUIRED SUBDIVISION IMPROVEMENTS AND BONDING

Sec. 5-1. IMPROVEMENTS

A. Completion of Improvements

The subdivider shall be required to complete, in accordance with these Regulations, all the streets and other improvements as depicted on the approved plans. "As-built" plans, in a format acceptable to the City Engineer, shall be delivered by the subdivider to the City showing all improvements to be transferred or conveyed to the City. "As-built" plans shall include the following:

1. An "as-built" plan drawn to scale of either 40 feet to 1 inch or 20 feet to 1 inch and be on one or more sheets not exceeding 24 inches by 36 inches in size. "As-Built" plans shall be submitted to the City in ink on Mylar and also in digital format (Auto-CAD 14-DWG format). The seal of a Connecticut licensed Land Surveyor and certification that the plans reflect an "as-built" condition. Said plan shall show:
 - a. North arrow;
 - b. All horizontal street alignment data, including any curve data, center line stationing, magnetic bearings of center line tangents, plus any additional data necessary to physically locate said street in the field. Show the relationship of the completed road to the right of way lines;
 - c. Right-of-way and pavements width(s);
 - d. Front and side lot lines and lot numbers of abutting properties together with lengths of front lot lines;
 - e. Location of existing buildings;
 - f. Location of street line monuments and property pins; refer to Section 1-4, Paragraph A.
 - g. Location of natural drainage courses plus all existing storm drainage systems, including any laterals installed for connection to building foundation and/or floor drains;
 - h. Location of all underground and overhead utilities, including sanitary sewer and building laterals, electrical, telephone, cable TV, gas, water mains, services and hydrants, and poles or street lights;
 - i. Distances shall be shown to all sewer wye locations from the downstream manhole;
 - j. Location of sidewalks, edges of pavement and driveways;
 - k. Easements showing necessary metes and bounds for location in the field including the volume and page of the filed document and map reference number from the Torrington Land records;
 - l. Name of street and subdivision, if any, in which it is located;
 - m. Other special items that may be unique to the project.
2. A profile of said street drawn to the same horizontal scale as the plan and a vertical scale of 4 feet to 1 inch. The profile may be incorporated on the plan sheets. Said profile shall show:

- a. "As-built" profile of the sidelines and center line;
- b. Finished grade elevations at least every fifty (50) feet, except at least every twenty-five (25) feet in vertical curves. Finish grade elevations at least every ten (10) feet at low and high points for a distance of fifty (50) feet in both directions;
- c. Center line stationing;
- d. Street grades, in terms of percent, and all vertical curve data;
- e. All buildings abutting said street with sill elevations;
- f. Profiles of all storm drain systems, including pipe sizes and materials, pipe slope and the location and inverts of all catch basins and manholes, show top elevations;
- g. Existing ground lines prior to construction along the right-of-way lines and center line.

B. Cost of Improvements

All required improvements shall be made by the subdivider at the subdividers expense, without cost or reimbursement by the City.

Sec. 5-2. INSPECTION OF IMPROVEMENTS, PROCEDURE AND FEES

The City shall provide for inspection of required subdivision improvements during construction and insure their satisfactory completion. The subdivider shall pay to the City an inspection fee up to five (5) percent of the estimated cost of the construction as determined by the City Engineer. No grading/building permits shall be issued until all fees are paid. If the City Engineer finds at any time throughout construction, maintenance period or warranty period that any of the required improvements have not been constructed in accordance with the City's standards and specifications, the subdivider shall be responsible for completing, replacing or repairing the improvements.

Sec. 5-3. ACCEPTANCE OF DEDICATION OFFERS

- A. Acceptance of formal offers of dedication of streets, public areas, easements and parks shall be by action of the Mayor or City Council where applicable.
- B. The request for City Acceptance for any improvements shall only be submitted to the City Council between April 1 and October 31 inclusive. Such written request shall include the recommendation of the City Engineer and City Planner. Before Street Acceptance, there must be a marketable Warranty Deed conveying all rights of way, easements, parks, etc. to the City of Torrington. The Grantor thereof must also furnish the City an acceptable Certificate of Title signed by a practicing attorney of the State of Connecticut. Prior to City acceptance, the City Engineer may require the subdivider to submit as a minimum, a Phase I Environmental Report(s) prepared by a Connecticut licensed environmental consultant certifying that property to be deeded or dedicated to City is free of environmental problems or hazards.

Sec. 5-4. Subdivision Bond Agreement

The terms and conditions of the cash and security bond requirements are as specified in the City of Torrington’s **SUBDIVISION BOND AGREEMENT** form as follows:

**SUBDIVISION BOND AGREEMENT
Terms and Conditions of
Cash and Security Bonds**

Bond # _____

KNOW ALL MEN BY THESE PRESENTS, THAT WE _____
(name of subdivider)
of the Town/City of _____, of the County of _____,

of the State of _____ as Principal and _____
(name of insurance company)
_____ of the Town/City of _____ and State of _____,

as Surety and licensed to do business in Connecticut, are jointly and severally bound unto the
City of Torrington (City), Torrington Connecticut as Obligee, and in the sum of _____

_____ and 00/100 Dollars
(written amount of total subdivision bond required)

(\$ _____) for which payment well and truly to be made, we jointly and severally bind
ourselves, our heirs, executors, administrators, successors and assigns, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the work covered under this Bond shall include and be in conformance with all City of Torrington Planning and Zoning Commission approvals and conditions and in accordance with City of Torrington Standards, Specifications, Rules and Regulations. Improvements shall be completed as shown on City of Torrington approved plans and subsequent City approved revisions referencing a certain subdivision titled _____.
(name of subdivision) In accordance with State of

Connecticut General Statute § 8-26(c) all work in connection with this subdivision shall be completed within five (5) years from City of Torrington Planning and Zoning Commission approval date or any subsequent Planning and Zoning Commission approved extension. The subdivision approval date was _____.

WHEREAS, the total Subdivision Bond amount referenced herein is the sum of this Security Bond and a Cash Bond portion. The Security Bond and shall comply with all statutory requirements and shall be satisfactory to the City’s Corporation Counsel. The remaining Cash Bond portion shall be at least twenty (20) percent of the total amount of the Subdivision Bond and shall be in the form of a certified check. The Cash Bond portion amount is _____
(written amount of cash portion of bond required)
_____ (\$ _____).

WHEREAS, this Subdivision bond shall also serve as a maintenance bond and warranty bond.

NOW THEREFORE, in consideration of the foregoing hereinafter set forth and contained, the parties shall perform and fulfill all the undertakings, covenants, terms, conditions and agreements specified for said subdivision improvements as follows:

1. Cash Bond

1.1 Administration of Cash Bonds

Whenever the City has to take action to have such maintenance or repair work done during the maintenance or warranty periods, the cost thereof together with a ten (10) percent administration charge shall be deducted from the cash portion of the bond to reimburse the City for expenses incurred. Whenever funds are deducted from the cash portion of the bond, the Principal shall, upon written notice from the City, replenish said cash portion of the bond to the original Cash Bond amount. No further Certificate of Occupancies or Building Permits will be issued for any structure until such time the Cash Bond amount is replenished in full.

1.2 Maintenance

1.2.1 Maintenance Period

The maintenance period is defined as the period of time from the date of issuance of the first certificate of occupancy for a building to the date when public improvements are accepted by the Torrington City Council.

1.2.2 Required Maintenance

During the maintenance period, the Principal at his own expense shall be required to maintain all improvements in the subdivision including utilities, sanitary and storm sewers systems and provide for snow removal and sanding until acceptance of the proposed public improvements by the Torrington City Council. Maintenance shall include street sweeping as needed or directed by a representative of the City.

1.2.3 Failure to Provide Adequate Maintenance

If the Principal fails to provide timely response to maintenance needs, then the City shall have the right to hire a private contractor and enter the premises to perform the maintenance in question so that emergency vehicles have safe and expedient access to the subdivision inhabitants. Any work performed by City or City contractors shall not mean that the City has accepted the public improvements or accepted any future maintenance or liability for the public improvements.

1.3 Warranty

1.3.1 Warranty Period

The warranty period is defined as the 18 month period plus any extension of time required for infrastructure repairs which period begins on the date of formal acceptance of all proposed public subdivision improvements by the Torrington City Council.

1.3.2 Repairs and Maintenance During Warranty Period

In the event that any part of the new public improvements fail or become unserviceable or defective the City may give the Principal notice to make repairs or replacements. If within ten (10) days after the Principal has received written notice from the City of Torrington requesting repairs or replacements and the Principal has not taken action to make the repairs or replacements, the City may make the repairs or replacements of such failure or defect. In the event that health and safety becomes an issue, the City may have the emergency repairs made to protect the public. Any work performed by City or City contractors during the warranty period shall not mean that the City has accepted future maintenance or liability for the failed, unserviceable or defective improvement.

2. Security Bond

2.1 Default Provisions

If the Principal fails to construct and install the required improvements as specified, and obtain approval from the appropriate City department on all required improvements prior to the expiration date, then Principal shall be considered to be in default. In the event the Principal is in default for any reason, the City shall have the following remedies:

- a. All remaining unsold lots shall be merged as one. Planning & Zoning Commission shall by certified mail provide notice to the Principal that the subdivision has expired and that notice shall be recorded in the City of Torrington City Clerk's office under the name of the Principal as Grantor and Grantee.
- b. The City of Torrington Planning & Zoning Commission may after (10) days written notice to the Principal of failure to complete the improvements covered under this Bond, call upon Surety to complete the required improvements to the satisfaction of the City of Torrington.
- c. The City shall have the right to use the Cash Bond and Security Bond given by the Principal to pay for the expense of constructing and installing required improvements plus an administration fee of ten (10%) percent. This agreement gives the City or its contractors the right to enter upon the parcels of said subdivision and make necessary improvements in the event the Principal is in default. If the Security Bond is inadequate, the Principal shall pay any cost in excess of the amount available from the Security Bond furnished by the Principal. The City shall make written demand upon the Principal for payment. The City shall be entitled to reasonable attorneys' fees and costs for the collection of any unpaid amounts due from the Principal to the City. A lien on the property may be filed in the land records if payment is not made to the City.
- d. In the event the City seeks injunctive relief, the Principal agrees that the City will not have to post any bond as a condition, notwithstanding the provisions of law or any court rule.

3. Inspections and Release of Bonds

3.1 Inspection for Formal Acceptance at the End of the Maintenance Period

The Principal must request a City inspection for consideration of formal acceptance by the Torrington City Council. Following City inspection, a list of deficiencies will be prepared and the Principal shall be required to remedy or complete the deficiencies on such list prior to acceptance. After formal acceptance of such public improvements, the Security Bond portion of the Subdivision bond can be released upon request.

3.2 Inspection for Final Approval at the End of the Warranty Period

The Principal must request a City inspection for consideration of completion at the end of the 18 month warranty period. Following City inspection, a list of deficiencies will be prepared. After repairs have been made by the Principal, a follow-up final inspection must be requested. The warranty period will expire upon the satisfactory completion of any final inspection repairs and final written approval by the City. Upon final approval the balance of the Cash Bond will be returned to the Principal.

3.3 Subdivision Development Conducted in Phases

If the subdivision development was approved by Planning and Zoning in phases, maintenance and warranty periods shall be established for each phase. Upon satisfying the requirements set forth in paragraph 3.1 and completing an approved Subdivision phase, the City may allow the security portion of the Subdivision Bond to be applied to the next phase of the Subdivision upon receipt of a bond rider from a Surety acceptable to the City's Corporation Counsel. The entire cash portion of the Subdivision Bond for the initial phase and any subsequent phases will be retained by the City until the requirements of paragraph 3.2

are met. An additional cash bond deposit will be required for subsequent phases of development if a new phase is started before the end of the Warranty Period for preceding phase for which a cash bond was posted.

4. Liability for Subdivision Improvements Prior to Acceptance

The Principal assumes all liability for the street and all Subdivision improvements and waives all liability in favor of the City and City contractors for any damages sustained by the Principal.

4.1 Maintenance Obligation

The Principal agrees that the proposed City Street shall be maintained free of construction materials, equipment, dumpsters and any other temporary construction related items.

4.2 Required Signage

A warning sign stating “PRIVATE DRIVE - PASS AT YOUR OWN RISK” shall be posted at the entrance to the new streets. The sign shall remain until the private drive is finally accepted by the City.

5. Issuance of Certificates of Occupancy

5.1 Building Permits

Building permits may be issued for the first fifty (50) percent of the subdivision’s lots without improvements accepted by the Torrington City Council given that prior to the issuance of the permits the extent of street improvements shall be adequate for vehicular access by the prospective occupant, City inspectors and by emergency and public safety vehicles. No building permits shall be issued for the remaining fifty (50) percent of lots in the subdivision until all improvements required by the City’s Planning & Zoning Commission have been fully completed and accepted by the City.

5.2 Required Improvements Prior to Issuance of Certificate of Occupancy

No temporary or final certificate of occupancy for any building in the subdivision shall be issued prior to the completion of the required improvements which include but are not limited to: installed and functioning underground utilities, storm water facilities, pavement section including the application of the first coarse of bituminous road pavement from the entrance of the subdivision to beyond the frontage of the new building(s) to an approved cul-de-sac or another existing public street and completed driveway aprons at approved locations and grades (a separate \$1,000 cash bond may be accepted by the City for driveway apron construction due to winter conditions or some other special circumstance).

5.3. Cessation of Issuance of Certificates of Occupancy

No further Certificate of Occupancies or Building Permits will be issued to the Principal or any other buyers of the property for any structure should the following events occur:

- a. Principal is not fulfilling his obligations under this agreement.
- b. The cash portion of the bond has been depleted by the City for necessary maintenance or repairs and the amount has not replenished by the Principal as required.

6. Other conditions

6.1 Transferability of Interest and Full Disclosure

The Principal agrees that it will not sell, transfer or convey vacant lots to any other developer or builder without full disclosure to the buyer of the terms of this subdivision bond. If another party purchases the entire interest in this subdivision, the purchaser must execute an agreement with the City with the same terms of this subdivision bond agreement and upon execution of that bond, this subdivision bond will be released to the original Principal and Security Company.

6.2 Cancellation of Bond

This Subdivision Bond Agreement will bond the obligors to the City of Torrington until consent to the cancellation is given in writing by the City Engineer or his authorized personnel.

6.3 Hold Harmless

Principal shall hold harmless and indemnify the City of Torrington from damages and costs that the City of Torrington may suffer, be liable for, or be compelled to pay, or in fact does pay, for any injuries or damages which may be caused by any action, inaction or work being carried on either by the said Principal, his servants, agents or employees, or by reason of negligence or violation of any law on the part of said Principal, his servants, agents or employees, and further, indemnify said City of Torrington for any expenses that said City of Torrington may suffer, be liable for, or be compelled to pay, or in fact does pay.

IN WITNESS WHEREOF, the Principal and Surety have caused these presents to be signed and their seals hereunto this _____ day of _____, _____.

Witness

Principal/Subdivider Signature

Witness

Printed Name of Principal/Subdivider

Witness

Subdivision Property Owner Signature

Witness

Printed Name of Subdivision Property Owner

Witness

Insurance Co Representative Signature

Witness

Printed Name of Ins. Co Representative

Sec. 5-5. Other Requirements

In addition to the terms and conditions stated in Section 5-4 above in the SUBDIVISION BOND AGREEMENT the following shall also apply:

- A.** The extent of street improvements shall be adequate for vehicular access by the prospective occupant and by police, fire equipment and ambulance prior to the issuance of a zoning permit. The street shall be maintained free of construction materials, equipment, dumpsters, and any other temporary construction related items.

- B.** No Certificate of Occupancy shall be issued until building numbers have been installed. The building number shall be attached to the exterior of the building in a conspicuous place directly over or on the main entrance door. The numbers shall be not less than five

(5) inches in height and of a conspicuous color which contrasts from the surrounding building color. In the case where the building entrance and number can not be seen from the street, a duplicate number shall be mounted on an addressing post installed at the intersection of the building driveway and street. In cases of common driveways, duplicate building numbers signs shall be installed on separate posts for each building at the point of divergence of driveways. For all commercial, office, industrial or multi-family residential developments that contain multiple addresses, the range of addresses shall be readily identifiable from the edge of the street. Any freestanding identification signs associated with the property shall include the building numbers. In the special case where a building fronts two or more streets, the address shall be assigned to the street in which the driveway intersects. The City Engineer shall assign building numbers based on a formulated procedure. Post and signs shall be to City Standard Details. Each property owner shall keep all address numbers in good repair and shall not allow such numbers to be obscured as viewed from the roadway/driveway.

- C.** No Certificate of Occupancy shall be issued until a driveway has been completed to the standards specified under Driveway Standards. In cases where the driveway apron can not be installed because the asphalt plants are closed, a cash bond acceptable to the City Engineer may be submitted until such time weather conditions allow completion of the driveway apron.
- D.** No Certificate of Occupancy shall be issued until lot pins and monuments are set and certified by the project surveyor unless otherwise directed by the City Engineer. Certification shall be done no earlier than one week prior to transfer of property or issuance of Certificate of Occupancy.
- E.** No Certificate of Occupancy shall be issued until street signs are installed as required and described herein.
- F.** No Certificate of Occupancy shall be issued until a mail box is installed as per the City Standard Details.