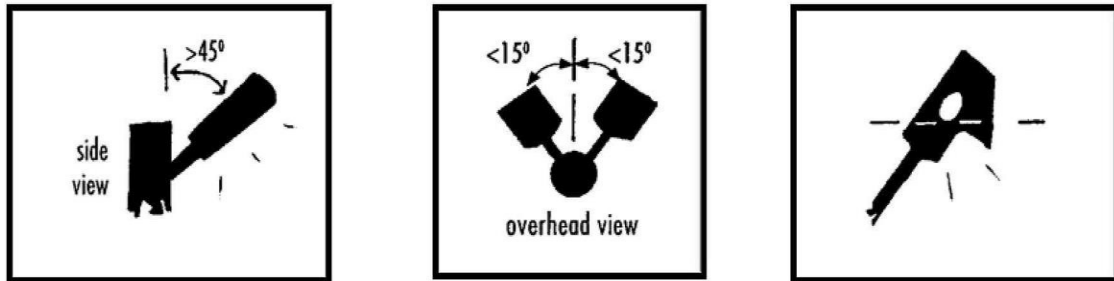


## 7.6. Outdoor lighting standards.

- A. **Applicability.** The standards of this section shall not apply to:
1. Individual residential lighting that is not part of a site plan or subdivision plan.
  2. Lighting associated with temporary uses that have been permitted.
  3. Seasonal lighting that is part of customary holiday decorations and annual civic events.
  4. Lighting associated with sign illumination as set forth in Article 8.
  5. Municipal lighting installed for the benefit of public health, safety, and welfare.
- B. **Lighting plan.** Any proposed development requiring a site plan or subdivision plan shall include, as part of site plan or subdivision plan submission, a detailed exterior lighting plan. This plan shall include:
1. Specifications for the lighting fixtures such as: type of unit (cutoff, non-cutoff, glare shields, etc.), lamps (wattage, etc.), electrical load requirements, utility company involved, method of wiring, routing/location of lines, location of lights, and mounting heights.
  2. An iso-footcandle plan that shows typical foot-candle contours or a point photometric grid that indicates foot-candle levels measured at grade across the site. Other information such as: maximum, average, and minimum site foot-candles, uniformity ratio (average/minimum), and depreciation factors should also be included.
- C. **Final acceptance.** Before certificates of occupancy are released, the owner/builder must supply the Town with a final letter of certification from the lighting engineer, lighting manufacturer, or authorized lighting contractor verifying that all site lighting is installed according to Town standards, the approved plans, and any applicable conditions.
- D. **Street lighting.**
1. **Street lighting required.** All streets and sidewalks shall be sufficiently illuminated to ensure the security of the street right-of-way and safety of persons using such areas. To comply with this provision, the applicant shall coordinate with the utility company and the Town to see that all necessary facilities for the eventual installation of street lights are put in place.
  2. **Town responsibility.** The Town shall be responsible for requesting the utility company to install street lights. Such lights shall be consistent with the Town's standard street light package with regard to fixture type, intensity, pole type, length, and spacing.
  3. **Developer responsibility.** The developer shall be responsible for the placement and operation of necessary lighting in common areas not dedicated to public use. The developer shall also be responsible for the placement and operation of any streets lights placed in the public right-of-way that are not consistent with the Town's standard lighting package. Such lights shall be approved by the Town Engineer.
- E. **Site lighting design requirements.** All lighting fixtures designed or placed so as to illuminate any portion of a site shall meet the following requirements:
1. **Fixture (luminaire).** The light source shall be completely concealed within an opaque housing and shall not be visible from any street right-of-way. Floodlights may be used in the rear of non-residential buildings that are not adjacent to residential uses or residentially zoned properties and are not visible from public or private roadways if there are not measurable impacts to neighboring properties. If floodlights are permitted, in addition to meeting the locational restrictions noted above, they shall be installed such that the fixture shall be aimed down at least 45 degrees from

vertical. Flood lights and display lights shall be positioned such that any such fixture with a side-to-side horizontal aiming tolerance not to exceed 15 degrees from perpendicular to the right-of-way. Glare shields must be added to reduce glare.



2. **Light source (lamp).** Only incandescent, LED, fluorescent, metal halide, or induction lighting may be used. High pressure sodium lighting may be used if approved by the permit issuing authority. The same type must be used for the same or similar types of lighting on any one site throughout any master-Planned Development.
3. **Mounting.** Fixtures shall be mounted in such a manner that the cone of light directly under the fixture does not cross any property line of the site.
  - a. All outdoor lighting fixtures shall be located a minimum of ten feet from a property or right-of-way line, and should be kept out of and at least two feet away from any required perimeter or streetscape buffer, and tree save area. If forward throw fixtures are used the minimum setback distance may be reduced to a minimum of five feet from a property or right-of-way line.
  - b. Lighting for outdoor display areas, such as auto dealerships, must be located inside the illuminated area or no more than ten feet away from the outside edge of the illuminated area so that the amount of direct glare and the visual field of view does not present a safety hazard to the passing motorist.
4. **Mounting heights.** Outdoor lighting fixtures shall be designed, located and mounted at heights no greater than:
  - a. Thirty feet above grade for non-cutoff lights; and
  - b. Thirty-seven feet above grade for cutoff lights.
  - c. Mounting height is measured from the finished grade or surface and includes the total height of the fixture, pole, and any base or other supporting structure required to mount the lights.
  - d. All wall packs must be full cut-off.
5. **Architectural/site compatibility.** Lighting fixtures shall be of a design and size compatible with the principal building of a development and adjacent areas, and shall be designed to be an integral part of the entire development site.
6. **Illumination levels.** All site lighting shall be designed so that the level of illumination as measured in foot-candles (fc) at any one point meets the standards in the table below. The minimum light level for all illuminated areas shall be no less than 0.2 foot-candles maintained. Average level is a not to exceed value calculated using only the area of the site intended to receive illumination. It is recognized that the site lighting of some land uses may need to be evaluated on a case by case basis, therefore the BOA, via Variance, may allow deviations from these standards if it concludes that the objectives underlying these standards can be met without strict adherence to them, provided there are no excessive measurable impacts to adjoining properties that result and it finds that

such deviations are more likely to satisfy the standards listed below.

**Note: Tables to follow on next page.**

Level of Activity	Horizontal Illumination (maintained f.c.)		
	Maximum	Average	Uniformity Ratio(average/minimum)
<b>HIGH:</b> Major athletic, cultural and civic facilities Regional retail Retail with drive-thru	9.0	3 to 5	4 to 1
<b>MEDIUM:</b> Cultural, civic and recreational facilities Residential complex Commercial, general	6.0	2 to 4	4 to 1
<b>LOW:</b> Neighborhood retail Industrial facilities Educational facilities Churches	5.0	1.5 to 3	4 to 1
Location	Horizontal Illumination (average)	Uniformity Ratio (initial foot-candles)	
Active entrances and vital locations (security)	5.0	4 to 1	
Inactive entrances	1.0	4 to 1	
Private sidewalks (residential)	0.3	4 to 1	
Private sidewalks (nonresidential)	0.8	6 to 1	
Vehicular use area (service areas, approach ways, private access roads, etc.)	1.0	4 to 1	
Storage yards (active)	5.0	6 to 1	
Storage yards (inactive)	1.0	6 to 1	
Loading docks and platforms	15.0	2 to 1	
Vehicle sales and display	20.0	2 to 1	
Recreational areas (fields, playgrounds, courts)	20.0	4 to 1	

**F. Lighting required for specific uses.**

- Roads, driveways, sidewalks and parking lots. All roads, driveways, sidewalks and parking lots shall be sufficiently illuminated to ensure the security of property and safety of persons using such areas and facilities. Where such roads, driveways, sidewalks or parking lots fall on private property, the responsibility for lighting such areas shall fall upon the developer.
- Entrances and exits in nonresidential and multifamily projects. All

entrances and exits in buildings used for nonresidential purposes and open to the general public, along with all entrances and exits in multifamily residential buildings containing more than four units, shall be adequately lighted to ensure the safety of persons and the security of the building.

3. Canopy area lighting. All development that incorporates a canopy area over fuel sales, automated bank machines, or similar installations shall use a recessed lens cover that is flush with the bottom surface of the canopy that provides a cutoff or shielded light distribution. Areas under a vehicular canopy shall have an average of 12 foot-candles as measured at ground level at the inside of the outside edge of the canopy.

#### **G. Roof lighting.**

**Commentary: Many businesses use tasteful roof lighting not only to increase the visibility of their establishments, but to add visual structure to the nighttime sky of the Town. This section is intended to prevent gaudy, harsh, glaring, loudly contrasting and otherwise distasteful roof lighting within the Garner planning jurisdiction.**

1. Application.
  - a. An application for a permit authorizing a project including the use of roof lighting shall include a roof lighting plan containing sufficient information to determine whether the roof lighting, if installed as proposed, will meet the standards and intent of this section.
  - b. Whenever a roof lighting plan is submitted pursuant to this section, it may be referred to the Planning Commission to obtain the Commission's recommendation on the compliance of the plan with this section.
2. Roof lighting standards.
  - a. All bulbs or tubing shall be encased so that the bulb is not naked and that direct glare is prevented.
  - b. Complete outlining of the roof is not permitted.
  - c. Lights shall not run along the highest peak of a roof line, except that perimeter lighting around the top of a flat roof is allowed.
  - d. Roof lighting that qualifies as a sign under this UDO is prohibited.

#### **H. Excessive illumination.**

1. Lighting within any lot that unnecessarily illuminates and substantially interferes with the use or enjoyment of any other lot is prohibited. Lighting unnecessarily illuminates another lot if it clearly exceeds the requirements of this section, or if the standard could reasonably be achieved in a manner that would not substantially interfere with the use or enjoyment of neighboring properties.
2. Lighting shall not be oriented so as to direct glare or excessive illumination onto streets in a manner that may distract or interfere with the vision of drivers on such streets.
3. Illumination using bare illuminated tubing or strings of lights that completely outline or define property lines, sales areas, roofs, doors, windows or similar areas in a manner that is not primarily for safety purposes is prohibited.

#### **I. Special requirements in the Timber Drive Overlay District.**

1. A site lighting plan must be provided as part of any development plan submittal for property within the overlay district and shall contain the following information:
  - a. Lighting plan shall be superimposed on the site plan with the location of all poles and fixtures and reference for the height of

- each fixture, including a specification detail; and
- b. The distribution and intensity levels of illumination for each fixture producing a contour diagram of the light intensity delineated in foot-candle measurements must be indicated.
2. The following are lighting standards for new development within the Timber Drive Overlay District.

<b>Standard</b>	
<b>Type of fixture</b>	High Pressure Sodium, LED, or alternative authorized by the permit-issuing authority with cut-off (no glare on streets or outside boundaries of the lot is permissible)
<b>Height</b>	Maximum of 37 feet
<b>Foot-candle</b>	Not to exceed 250 watts (incandescent light equivalent) at perimeter of lot; average foot-candle on interior lot areas not to exceed an average of three foot-candles

3. The BOA, via Variance, may approve deviations from these presumptive standards if it concludes that objectives underlying these standards can be met without strict adherence to them, provided there are no excessive measurable impacts to adjoining properties and it finds that such deviations are more likely to satisfy the above noted standards.

**J. Special requirements in the U.S. 70/401 Thoroughfare Overlay.**

1. A site lighting plan must be provided as part of any development plan submittal for property within the overlay district. Such plan and shall meet the following information.
  - a. A lighting plan shall be superimposed on the site plan with the location of all poles and fixtures and reference for the height of each fixture, including a specification detail.
  - b. The distribution and intensity levels of illumination for each fixture producing a point-by-point foot-candle plan at intervals no greater than 20 feet.
  - c. The plan should include average foot-candles maintained and the average to minimum ratio.
2. The following lighting standards for new development shall apply within the U.S. 70/401 Thoroughfare Overlay District.

<b>Standard</b>	
<b>Type of fixture</b>	Cut-off Control Fixtures Recommended; Semi-cutoff Fixtures may be considered if appropriate
<b>Height</b>	Maximum of 37 feet
<b>Foot-candle</b>	Average maintained foot-candle not to exceed an average of 5 foot-candles; average to minimum ratio 4:1 to maintain uniformity; spill over adjacent property not to exceed .2 foot-candles

3. The permitting authority may approve deviations from these presumptive standards if it concludes that the objectives underlying these standards can be met without strict adherence to them, and that there are no excessive measurable impacts to adjoining properties, and it finds that such deviations are more likely to satisfy the above noted standards.

**7.7. Access standards.**

- A. **On N.C. DOT streets (both sides).** From right-of-way line of street, along right-of-way of driveway or street to a point ten feet from the intersection of the right-of-way; from same point, along right-of-way 70 feet; with remaining side connecting these two points. These sight triangles shall be kept clear of any such visual obstructions between two and one-half feet and ten feet in height.
- B. **On all streets.** From right-of-way line of street, along centerline of driveway or street to a point ten feet from the intersection of the centerline and the back of curb; from same point, along the center of travel lane a distance of ten times the posted speed limit; with remaining side connecting these two points. These sight triangles shall be kept clear of any such visual obstructions between two and one-half feet and ten feet in height.

