



**B-07 – ROADWAY, DRIVEWAY, and FIRE LANE DESIGN**

**B-07.1 - Roadways**

General

- Main campus roads should have a cross section width of 48 feet and a speed limit of 30 MPH.
- Facility access roads should have a cross section width of 36 feet and a speed limit of 25 MPH.
- Service roads and driveways should have a cross section width of 24 feet and a speed limit of 20 MPH.

The following dimensional standards are recommended for all University-owned roadways and driveways:

Roadway Type	Lane Width	Parking	Bicycle-ped Facilities	Operating Speed Limit (MPH)
Main Campus Roads	11' (max); 10'-10.5' where no bus traffic	Parallel: 7'-8' wide Perpendicular: 8'-9' x 18'	Refer to UNC Bicycle Master Plan for facility type locations Bike lanes: 6' of pavement (min)  -8' sidewalks on both sides of street	25 MPH 20 MPH Posted
Facility Access Roads	10'-10.5' (max)	Parallel: 7'-8' wide Perpendicular: 8'-9' x 18'	Refer to UNC Bicycle Master Plan for facility type locations Bike lanes: 6' of pavement (min)	20 MPH 15 MPH Posted
Service Roads and Driveways	10'-10.5' (max)	Parallel: 7'-8' wide Perpendicular: 8'-9' x 18'	n/a	15 MPH 10 MPH



## B-07.2 - Driveways

### General

All driveways shall follow the design guidelines as set forth in the North Carolina Division of Highways (Engineering Guidelines) as found on the Web site: [www.doh.dot.state.nc.us](http://www.doh.dot.state.nc.us). However, due to the unique situations and circumstances on the UNC campus, it is expected that these guidelines may require modification from site to site based on the needs of the University and other safety considerations as determined by the UNC Department of Public Safety (Transportation Planner). All necessary driveway permits from the Town or DOT shall be the responsibility of the contractor. Also refer to: <http://www.townofchapelhill.org/index.aspx?page=463>

### Standards

All driveways shall follow the design guidelines as set forth in the North Carolina Division of Highways (Engineering Guidelines) as found on the Web site: [www.ncdot.gov/doh](http://www.ncdot.gov/doh). However, due to the unique situations and circumstances on the UNC campus, it is expected that these guidelines may require modification from site to site based on the needs of the University and other safety considerations as determined by the UNC Transportation & Parking (Transportation Planner). All necessary driveway permits from the Town or NCDOT shall be the responsibility of the contractor.

Also refer to: <http://www.townofchapelhill.org/town-hall/departments-services/public-works/engineering/permits>

Based on estimated vehicle trips, all campus driveways shall conform to the following standards except as modified in writing by the UNC Transportation Planner:

1. Traffic driveways shall be a minimum of 20' from curb to curb
2. The smallest practical actual curb radii should be chosen based on how the effective curb radius accommodates the design vehicle. An actual curb radius of 5 to 10 feet should be used wherever possible. An appropriate effective radius for urban streets with high volumes of pedestrians is 15 to 20 ft. For arterial streets with a substantial volume of turning buses and/or trucks, an appropriate effective curb radius is about 25 to 30 ft. Typically the maximum desired effective curb radius is 35 feet for large vehicles. Tighter turning radii are particularly important where streets intersect at a skew. Corners characterized by an acute angle may require a slightly larger radius to accommodate larger vehicles; corners with an obtuse angle should have the smallest feasible radius to prevent high-speed turns.
3. Concrete is preferred over asphalt for driveways and loading docks and areas that has frequent bus or heavy truck usage. Six inches minimum thickness of 6000-lb. reinforced concrete is required to accommodate heavy service and utility trucks. Sub-base compaction shall be at the DOT standard of 95%. Flowable fill may be used as filler when less adequate fill is not available. This standard compaction rate shall also apply to pavement patching and other roadway cuts.
4. Raised crosswalks or continuous sidewalks should be considered during the construction or reconstruction of streets or sidewalks:
  - a. at entrances to alleys.
  - b. on local streets, at the intersections of arterial or collector streets.



- c. in the vicinity of multi-modal transit stations or other key civic locations.
- d. in places where numerous pedestrians cross between two intersections.

Directional curb cuts and marked continental style crossings shall be provided at all other driveways. In all cases, sidewalk tapers and sidewalk curb cuts shall conform to all accessibility codes and standards.

- 5. Roadside or gutter drainage must be accounted for in driveway design. Drainage may not flow down into the driveway but must be retained on the roadway system to the nearest designed catch basin or out flow. Drainage inlets are preferred in grates.
- 6. Driveway intersection plans shall include the design and construction of the appropriate pavement markings and stencils, lane indicators, stop signs, yield signs, pedestrian crossing signs, pedestrian crossings, etc. as required by the UNC Transportation & Parking (Transportation Planner). The costs for such amenities shall be included in the project bid estimates and final construction contract documents.
- 7. All Town of Chapel Hill or Department of Transportation permits for driveways shall be the total responsibility of the contractor. Construction of driveways intersecting with public right-of-ways or other University roads and driving surfaces shall require a traffic control plan to assure the safety of other vehicles and pedestrians during the construction process.
- 8. Due to the high amount of pedestrian traffic, care should be taken to minimize the distance that drivers of waste handling vehicles (and others delivery and service vehicles) drive in reverse. Care should also be taken to avoid having service vehicles back across walkways or into Traffic.

#### Additional References

[http://www.pedbikesafe.org/PEDSAFE/countermeasures\\_detail.cfm?CM\\_NUM=28](http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=28)  
[http://www.ncchpp.ca/docs/2017\\_BuiltEnvBati\\_Trottoirs\\_En.pdf](http://www.ncchpp.ca/docs/2017_BuiltEnvBati_Trottoirs_En.pdf)



### **B-07.3 - FIRE LANES AND ACCESS ROADS**

#### General

Fire department access roads shall extend within 150 feet of all portions of the exterior walls of the first story of the building unless otherwise approved. Exceptions shall be made in accordance with Section 503.1.1 of the North Carolina Fire Prevention Code.

#### Standards

Installation of any gate or barricade placed in a fire lane or access road that reduces the size of the fire lane or access road below the minimums in II.B above must be approved by the University Fire Marshal.

Minimum horizontal clearance along a fire lane or access road shall be **twenty feet**.

Minimum vertical clearance along a fire lane or access road shall be **thirteen feet and six inches**.

Fire lanes and fire access roads must be able to support a minimum fire apparatus weight of **86,000 pounds**.

Dead-end fire lanes in excess of 150 feet shall be provided with an approved area for turning around fire apparatus. This turning area shall be no less than 55 feet.

#### Signs

Signs shall be provided for fire lanes along or with direct access from a public street. Signs shall not be provided for designated fire lanes along pedestrian paths, where the designated fire lane is protected by a barricade as described in section II.C.

Signs shall be at least 12" x 18" in size, with text reading "NO PARKING – FIRE LANE". These signs shall be placed at 50 foot intervals along the designated fire lane and at the designated turning area described in section II.F.

Pavement markings shall be provided at the access point of a designated fire lane or access road along a pedestrian path, where the designated fire lane is protected by a barricade as described in section II.C. Pavement markings will indicate "NO PARKING– FIRE LANE", allowing for the entry of fire apparatus from the public right-of-way.

***Fire lanes and access roads shall not be obstructed in any manner including the parking of vehicles. The minimum widths and clearances established in II shall be maintained at all times.***