

City of Concord

Technical Standards Manual

Article III

Driveways



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CONCORD TECHNICAL STANDARDS MANUAL

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1.0 Purpose

The safety and efficiency of streets are impacted by the amount and type of interference experienced by the vehicles traveling on it. The purpose of this Article is to minimize interference with traffic flow and accidents and promote the best overall utilization of the street by controlling vehicles entering, leaving, and crossing the street at intersections and driveways. The City recognizes the right of abutting property owners to access their property from the street; however, the rights of other users of the street to travel with relative safety and freedom from interference must also be considered. These standards have been established:

- 1.1. To provide maximum safety and protection to the public through the regulation of vehicles entering and exiting public streets, and
- 1.2. To provide uniform standards for the design, location, operation, and construction of driveways throughout the City, and
- 1.3. To provide owners of abutting property with the maximum service feasible, consistent with the safe and efficient use of City streets.

2.0 Applicability

- 2.1. This article includes the standards for all access points and driveways planned to connect to a publicly-maintained street within the corporate limits and extraterritorial jurisdiction of the City of Concord.
- 2.2. These provisions apply to that portion of the private driveway from the point where it connects to the edge of the public right-of-way.
- 2.3. Standards for private driveways on private property are included in Article 10 of the Development Ordinance.
- 2.4. Existing driveway approaches may not be relocated, altered, or reconstructed without a permit approving the relocation, alteration, or reconstruction; such driveway approaches are subject to the provisions of this article.
- 2.5. Changes in property use, property ownership or traffic volumes that will affect existing driveway approaches are subject to the provisions of this article.

3.0 Driveway Permits

- 3.1. A driveway permit must be received prior to the creation of any access point subject to this article.
- 3.2. The application process and requirements for issuance of this permit are provided in Article 6.
- 3.3. The North Carolina Department of Transportation (NCDOT) is required to review all connections to state system streets. This includes both driveway and street connections, with the exception of single-family residential drives, which are exempt from state review requirements.
- 3.4. State system streets are those streets within the city for which the state retains the ultimate responsibility. The more restrictive driveway standards (NCDOT or City of Concord) apply.
- 3.5. Driveway permits on state system streets, within the municipal limits of Concord, must be submitted to the City for the initial review.
- 3.6. Upon the City's approval, the site plans and NCDOT driveway permit forms will be forwarded to NCDOT for their approval.
- 3.7. The maximum number of driveways allowed for any parcel prior to the subdivision of property is three.

Location of Driveway(s):	CITY OF CONCORD STREET AND DRIVEWAY ACCESS PERMIT	STAFF USE ONLY:
Property Street Address _____		Permit Number _____
Driveway #1: Exact Distance _____	N S E W	Street File _____
From the Intersection of _____	and	Approval Date _____
Driveway #2: Exact Distance _____	N S E W	
From the Intersection of _____	and	
Driveway #3: Exact Distance _____	N S E W	
From the Intersection of _____	and	
	heading toward _____	
	heading toward _____	
	heading toward _____	

Property Use: Commercial Industrial Residential/ Subdivision Other
Current Property Zoning: _____
Overlay District (if applicable): _____
Type of Existing Street Infrastructure: Curb & Gutter Shoulder Section Existing Surface: Concrete Asphalt

Access Agreement

I, the undersigned property owner and/or agent, request access and permission to construct driveway(s) or street(s) on public right-of-way at the above location.
 I agree to construct and maintain driveway(s) or street entrance(s) in absolute conformance with the City of Concord "Standard for Access to Public Streets" as adopted by the City of Concord City Council.
 I agree that no sign or objects will be placed on or over the public right-of-way.
 I agree that the driveway(s) or street(s) will be constructed as shown on the sketch on (the reverse side) (the attached plans).
 I agree that the driveway(s) or street(s) as used in this agreement include any approach tapers, storage lanes or speed change lanes as deemed necessary.
 I agree that in any future improvements to the roadway become necessary, the portion of driveway(s) or street(s) located on public right-of-way will be considered the property of the City of Concord, and will not be entitled to reimbursement or have any claim for present expenditures for driveway or street construction.
 I agree that this permit becomes void if construction of driveway(s) or street(s) is not constructed within the time specified by the City of Concord "Standard for Access to Public Streets".
 If a commercial access permit is applied for, I agree to pay a \$50 inspection fee. Make Check payable to the City of Concord. The inspection fee will be reimbursed if application is denied.
 I agree to construct and maintain the driveway(s) or street(s) in a safe manner so as to not interfere with or endanger the public travel.
 I agree I am responsible for all utility locations, signing, and maintaining the work area from vehicular or pedestrian hazards until the work is repaired and complete by either the grantee or by the City of Concord. The appropriate signage and barricades shall be used according to the latest version of the Manual on Uniform Traffic Control Devices (MUTCD) and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the City of Concord Department of Transportation.
 The owner and/or agents, upon submission of this application, hereby indemnifies and holds harmless the City of Concord, its officers and agents from any and all liability resulting from all work performed pursuant to this permit by the owner or contractor on the public right-of-way.
 I agree the costs of making any improvements or other related costs such as sidewalk replacement, curb repair / replacement, sidewalk and street cleaning, etc., as a result of the above-described work will be paid by the grantee.
 I agree that the City of Concord will assume no responsibility for any damages that may be caused to such facility, within the highway right-of-way, in carrying out its construction.
I AGREE TO NOTIFY THE CITY OF CONCORD ENGINEERING DEPARTMENT PRIOR TO WORK BEGINNING AND UPON COMPLETION.
THIS PERMIT SHALL BE CONSIDERED OFFICIAL AND MUST BE KEPT AT THE WORK LOCATION AND BE AVAILABE FOR INSPECTION BY CITY OFFICIALS.
IF APPROVED, THIS PERMIT WILL BE GRANTED TO THE PROPERTY OWNER. ANY CHANGE IN PROPERTY OWNERSHIP WILL REQUIRE A NEW OR REVISED DRIVEWAY ACCESS PERMIT. RESULTS MAY INCLUDE CHANGES TO OR CLOSURES OF EXISTING DRIVEWAYS.

	Driveway Width	Radius/Flare	Pipe Size*	Pipe Length*	Pipe Type*
1					
2					
3					
Applicant to contact City of Concord Environmental Services to determine driveway pipe size, material, etc. at (704) 920-5372. (if necessary).					

<p style="text-align:center;">Property Owner</p> <p>Name: _____</p> <p>Signature: _____</p> <p>Address: _____</p> <p style="text-align:right;">Phone #: _____</p>	<p style="text-align:center;">Witness</p> <p>Name: _____</p> <p>Signature: _____</p> <p>Address: _____</p> <p style="text-align:right;">Phone #: _____</p>
<p style="text-align:center;">Applicant (if different than owner)</p> <p>Name: _____</p> <p>Signature: _____</p> <p>Address: _____</p> <p style="text-align:right;">Phone #: _____</p>	<p style="text-align:center;">Witness</p> <p>Name: _____</p> <p>Signature: _____</p> <p>Address: _____</p> <p style="text-align:right;">Phone #: _____</p>

NOTE: Submit Four Copies of Application with Original Signatures to the City of Concord Development Services Dept

Approvals By City

Approved By:

Transportation

Signature Title Date

Engineering

Signature Title Date

Processed By:

Signature Title Date

Comments:

Sketch Plan (If no plans are attached, use this sheet. If plans are attached, please only include sheets that show driveway(s) and/or street(s))

Please attach Proposed Plans or sketch driveway(s) or streets(s) below.

Drawing must show:

- o Location of driveways; both proposed and all adjacent existing driveways
- o Details of Work, including pipes
- o Existing buildings, walls, etc.
- o Proposed building, walls, etc.
- o Roadway features (including %grades and required roadway improvements if applicable)

Indicate North



NOTE: Submit Four Copies of Application with Original Signatures to the City of Concord Development Services Dept

4.0 Driveway Approach Standards

4.1. Widths.

- a. All driveway approach widths are measured at the street right-of-way line and the width of any driveway shall not increase within the right-of-way except at properly designated radii and curb returns.
- b. The width from the edge of pavement perpendicularly to the edge of pavement must be greater than the minimum widths and smaller than the maximum widths provided below:

Table 4-1: Minimum and Maximum Access Widths.

Driveway Types	Driveway Width (feet)		Flare/Radius (feet)	
	Minimum	Maximum	Minimum	Maximum
Residential Single Family	12	20	1	3
Residential Multi-Family	24	36	5	10
Commercial/Industrial Two-Way	24	36	10	30
Commercial/Industrial One-Way	15	20	10	30
Private Street Entrance	24	48	10	30*
Street Type Driveway	24	36	10	30

* Radius only.

Ramp type driveway approaches may use either a standard drop curb opening or curb radius from the street curb to the inside sidewalk line. If a curb radius is used, the top elevation of the curb radius must be held level with the elevation of the street curb, and the driveway approach must be raised to meet the elevation of the curblines at the inside sidewalk line.

4.2. **Location.** The driveway approach must be installed to the right-of-way line or at least ten feet from the edge of the street and/or back-of-curb.

4.3. Materials.

a. Types.

1. *Portland Cement Concrete.* All driveway approaches must be Portland cement concrete (3000 psi min.) apron sections (“ramp” type), unless specifically listed in the asphaltic concrete section.

2. *Asphaltic Concrete.* Asphalt paving is not allowed on any driveway apron connecting to a public street with granite curbing or concrete curb and gutter. Asphalt may be allowed if the pavement design is approved by the Director of Transportation and only for the following situations:

- (a) Street type driveway entrances, which may be required for public or

5.0 Driveway Separation

private developments that have parking spaces for two hundred (200) or more vehicles;

- (b) Driveways connecting to unpaved public streets;
- (c) Driveways connecting to stone surface public streets; or
- (d) Driveways connecting to public streets constructed of asphalt ribbon pavement.

5.0 Driveway Separation

5.1 **Minimum Driveway Separation.** Driveways must be spaced as outlined Table 5-1, provided all other requirements of this article are met. Single-family and duplex developments on individual lots of record are exempt from the spacing standards; however, driveways associated with these uses cannot be located within sight triangles and driveways for corner lots should be located as far as possible from the intersection.

Table 5-1: Minimum Driveway Separations

Functional Classification	Separation between Driveways ¹	Separation between Driveway and Public Street ²
Major Thoroughfare	400 feet	250 feet
Minor Thoroughfare	400 feet	250 feet
Major Collector	120 feet	120 feet
Minor Collector	50 feet	60 feet
Local Street	40 feet	60 feet

¹ Distance is measured from closest edge to closest edge.

² Distance is measured from closest edge of the driveway the closest parallel edge of the street right-of-way.

5.2 **Non-Residential Stem Lengths.** The stem length shall be measured from the perpendicular travel lane to the first point of conflict, such as parking areas or intersections. Minimum stem lengths are listed in Table 5-2.

Table 5-2: Minimum Stem Lengths.

Functional Classification	Minimum Stem Length (feet)
Major Thoroughfare	150 feet
Minor Thoroughfare	100 feet
Major Collector	75 feet
Minor Collector	75 feet
Local Street	50 feet

6.0 Median and Island Standards for Driveways

- 6.1. **Applicability.** Medians and islands may only be allowed in street-type driveways. Medians and islands are not permitted for ramp-type driveways.
- 6.2. **Location.** Raised medians and islands must be constructed on private property outside of the public right-of-way, unless required as an approved access management device.
- 6.3. **Size.**
1. The minimum width of the island (excluding the nose) as measured nearest the public right-of-way must be four (4) feet or six (6) feet for a planted median.
 2. The minimum length must be fifty (50) feet.
 3. For street type driveways with a median or island, the combined width of pavement of the separated driveway segments shall not exceed forty-eight (48) feet.
 4. High volume street-type driveways with medians will be reviewed and approved on a case by case basis.

7.0 Alignment and Grades

- 7.1. **Side Clearance.** All driveway approaches must have a minimum side clearance as specified in Table 7-1. Additional side clearance may be needed to accommodate required turn lanes, deceleration lanes and/or tapers.

Table 7-1: Minimum Side Clearance.

Land Use	Minimum Side Clearance
Single-Family Residential Uses	5 feet
All Other Uses	10 feet

- 7.2. **Corner Clearance.** All driveway approaches must have a minimum clearance of sixty (60) feet from the edge of parallel public rights-of-way (street intersections) to the nearest edge of the driveway approach, as measured along the edge of the perpendicular public right-of-way. This requirement is not applicable to a residential subdivision with a lot width less than 85’.

7.0 Alignment and Grades

- 7.3. **Corner Lots.** Driveways associated with corner lots should be located on the street with the lower street functional classification (i.e., the lowest traffic volume).
- 7.4. **Sidewalk Crossings.** Driveway approaches must cross the sidewalk area at the existing or proposed sidewalk grade. The sidewalk must be constructed separately from the driveway apron.
- 7.5. **Angle.** The driveway angle (the angle between the driveway centerline and the curbline) must be ninety (90) degrees, unless engineering considerations dictate otherwise, as approved by the Director of Transportation.
- 7.6. **Directional Restrictions.**
- a. Where special pedestrian or vehicular hazards may be encountered, driveway approaches may be restricted to one-way operation.
 - b. Such driveways shall be clearly signed and marked as one-way driveways using pavement arrows and directional signs.
 - c. Failure to erect and maintain such signs or the failure to use these driveways in accordance with the signing and marking shall be considered a violation of this article.
- 7.7. **Near Traffic and Utility Structures.**
- a. No driveway approach shall be permitted to encompass any municipal facility, including but not limited to:
 - 1. traffic signal standards,
 - 2. catch basins,
 - 3. fire hydrants, crosswalks,
 - 4. loading zones, utility poles,
 - 5. fire alarm supports,
 - 6. meter boxes, and
 - 7. sewer cleanouts.
 - b. The driveway approach must be located a minimum of 3 feet from any such facility.
- 7.8. **Shared Access Points.** Landowners of adjacent property, may, by written mutual agreement, construct a joint driveway to service both properties provided that all other requirements of this article are met with the exception of the side clearance restriction.

8.0 Turn Lanes

Dedication and construction of turn lanes may be needed to serve one or more entrances into a development. Turn lanes must be provided for conditional uses, special uses, driveway permits, or subdivision approvals for developments adjacent to two-lane public streets with average daily traffic (ADT) exceeding four thousand (4000) vehicles per day, or four-lane or larger public streets with ADT exceeding ten thousand (8,000) vehicles per day, if any one of the following conditions are also present:

- 8.1. Fifty (50) or more off-street parking spaces are required;
- 8.2. More than (100) trips during the peak hours of 7:00 a.m. and 9:00 a.m., 11:00 a.m. and 1:00 p.m., and 4:00 p.m. and 6:00 p.m. are generated. Data shall be based on the Institute of Transportation Engineers Manual titled "Trip Generation" and based upon the highest land use permitted by the zoning classification considering any restrictions imposed by any conditional use permit, special use permit, or other legally enforceable restriction;
- 8.3. More than twenty-five (25) truck (more than 13,000 G.V.W.) trips per day through a single driveway are expected;
- 8.4. Special safety or traffic conditions exist due to limited sight distance and/or posted speeds in excess of thirty-five (35) miles per hour along the adjacent public street; or
- 8.5. At least fifty (50) attached or detached residential dwelling units are served by the access point.

9.0 One-Way Access Point Standards

9.1. Signage.

a. *Location.*

1. At a minimum, one double-faced sign must be located on private property at least ten feet from the back of the curb to the right of each driveway approach.
2. Additional signs may be placed on the opposite side of the approach.
3. The sign should not be blocked from view by vegetation or other obstacles.

b. *Size.*

1. The area of the sign cannot be less than three square feet or more than six square feet.
2. Business logos may be used but shall not exceed one-third of the sign area.

c. *Content.* Only the words "Enter" and "Exit" or "In" and "Out" with the appropriate arrow shall be used.

d. *Lettering Standards.*

10.0 Roadside Drainage

1. Uppercase letters must be at least six inches tall; however, eight-inch letters are preferred;
 2. Lowercase letters must be at least four inches tall; however, six-inch letters are preferred;
 3. The first letter of each word must be uppercase; and
 4. Letters must be black or white on a reflectorized or illuminated background of contrasting color.
- e. Arrow Standards.**
1. Arrow dimensions must be at least six inches long with a shaft width of at least two inches.
 2. The head of the arrow must be at least twice as wide as the shaft.
 3. Arrows must be comprised of thermoplastic material.
- f. Pavement Arrows.**
1. *Location.* A sufficient number of pavement arrows designating the appropriate direction of traffic must be installed in the driveway approach and driveway so that they are clearly visible to oncoming traffic.
 2. *Size.* Pavement arrows must be a minimum of eight feet in length and shall conform in size and proportion to the standards set forth in the Manual on Uniform Traffic Control Devices.

10.0 Roadside Drainage

A well-functioning roadside drainage system is important to maintaining the structural integrity of the street and providing a safe driving surface during storm events.

- 10.1. **Drainage System.** Roadside drainage is accomplished using ditches, driveway pipes, curb and gutter, or some combination of both systems.
- 10.2. **Modifications** to existing drainage systems must be evaluated and approved by the City prior to construction, and are reviewed and permitted as a part of the site plan or subdivision construction plan approval process.
- 10.3. **Piping Existing Ditches**
- a.** The design and cost for piping existing roadside ditches is the responsibility of the property owner unless it is included as part of a neighborhood capital improvement project funded by the City of Concord.
 - b.** Piping ditches will only be allowed if the following criteria are achieved:
 1. The hydraulic capacity of the existing ditch system will not be reduced or diminished.
 2. The culvert pipe shall be of size adequate to carry the anticipated flow in the

- ditch as determined by the City of Concord and shall not be smaller than 15-inches inside diameter.
3. The flow from and to adjacent properties will not be inhibited.
 4. All pipe materials and installation meet City of Concord and NCDOT standards. No pipe with broken joints or other defects is allowed.
 5. A swale must be maintained over the pipe to prohibit sheet flow of water from the property onto the road surface, and adequate inlet grates are included in the design and installation. In no case shall the construction cause water to flow across the pavement, or to pond on the shoulders or in the ditch, or result in erosion within the right-of-way.
 6. A minimum cover of 8-inches must be maintained over the top of the pipe. If vehicular traffic will cross the pipe, a minimum cover of 24-inches must be maintained, or Class IV reinforced concrete pipe must be utilized.
 7. Pipe installation must be inspected by the City prior to back-filling the pipe and inlet boxes.
 8. All grates and frames shall meet NCDOT standards for traffic bearing, and must be pre-approved by the City of Concord.
 9. Drainage collected by ditches, gutters, or pipes on private property shall not be discharged into the road drainage system unless expressly approved by the City of Concord. The applicant may be required to submit a drainage study to the City justifying the drainage system proposed and the pipe or sewer sizes to be used. Natural drainage laws and practices must be observed.

10.4. Pipe Construction Options

- a. All commercial or industrial sites are responsible for the design, construction and cost associated with all drainage improvements in accordance with these regulations.
- b. All residents have two options for construction of the ditch pipe, once a permit has been issued:
 1. The City will contract with a licensed contractor following payment of all estimated costs associated with the project to the City by the owner. The project will then be completed based upon the Contractor's schedule.
 2. The resident will hire a licensed contractor who will complete the project according to the submitted plans. The contractor will be responsible to schedule inspection by the City prior to placing any backfill into the excavation, so that all pipe joints, bedding, and inlet construction can be inspected.
- c. Failure to obtain the proper permit and/or inspection may result in the pipe being removed at the owner's expense.

10.5. Acceptable Piping Materials

11.0 Inspections

- a. All pipe located within the street right-of-way must be reinforced concrete pipe or high density polyethylene plastic pipe, double-walled corrugated pipe with a smooth interior, meeting ASHTO M294 Type S (smooth interior – corrugated exterior) that has been approved by the NCDOT for use in secondary and subdivision road systems.
- b. No corrugated metal pipe is allowed.
- c. Approved HDPE pipe includes the following, but documentation on other manufactures will be reviewed for consideration:
 1. Advanced Drainage System (ADS) N-12 HDPE pipe
 2. Hancor Hi-Q HDPE pipe

10.6. Acceptable Grates and Frames

- a. All grates and frames must be cast iron and must meet City of Concord and NCDOT standards.
- b. Each casting shall be permanently imprinted with the image of a fish and the following statement: “Dump No Waste! Drains to Streams.”

11.0 Inspections

Once the permit is duly issued, the supervisor on the driveway construction site shall keep the permit available for on-the-job inspection by authorized personnel of the city.

The applicant shall request an inspection by the Director of Transportation 24 hours in advance of any concrete pouring. The Director of Transportation or his authorized representative shall have the authority to require the immediate stoppage of work not performed under the requirements of this article.

In the event of failure to comply with the provisions of this article or the term of the permit or in the case of faulty workmanship or materials, the city may remove the non-complying driveway at the property owner’s expense.

12.0 Street and Utility Repairs

- 12.1. Operations requiring the cutting and removal of roadway and sidewalk surfaces or operations interfering with the normal flow of vehicular or pedestrian traffic shall be subject to the guidelines set forth in Part VI of the Manual of Uniform Traffic Control Devices.
- 12.2. Prior to cutting of the street, sidewalk or curb and gutter, a street cut permit is required to be obtained from the Director of Transportation or their designee. No street cut permits will be issued for streets that have been resurfaced within the last two years, unless there is an emergency situation or other physical constraints and approved by the Director of Transportation.
- 12.3. Cost of replacing the asphalt, concrete or other materials and other related costs such as street cleaning, sidewalk cleaning, etc. as a result of the above described work will be

paid by the permit holder.

- 12.4. A copy of the permit must be kept at the job location.
- 12.5. Street cuts and sidewalks should be completely repaired in an expedient manner.
 - a. Cuts must be filled with stable material (asphalt, concrete or approved equal) to within 1 ½ inches of finished grade within 3 days of initial work.
 - b. Finished roadway surfaces, sidewalks and curbs must be restored within 30 days of initial work.
- 12.6. If circumstances justify, the Director of Transportation may grant an extension of these time requirements.

13.0 Use and Protection of Property

13.1. Rights-or-Way.

- a. Rights-of-way of streets may not be used for private or commercial purposes without an encroachment approved by City Council.
- b. The area to which the driveway provides access shall be sufficiently large to store any vehicles using the driveway completely off the right-of-way and must be of sufficient size to allow the necessary function to be carried out completely on private property.

13.2. Raised Curbing.

- a. Except for driveway approaches to residences, a six (6) inch raised curb shall be constructed a minimum distance of three (3) feet behind the street right-of-way line in the vicinity of:
 1. street corners,
 2. sidewalk safety zones,
 3. entrance driveways and other points.
- b. Construction of curbing should be completed in such a manner as to:
 1. prevent vehicles from crossing sidewalks other than by means of a driveway as herein prescribed,
 2. prevent vehicular overhang on the right-of-way and
 3. provide for proper drainage and control of water on private property.

13.3. Parking areas and loading areas.

- a. Parking and loading areas shall be constructed, marked, signed, and properly curbed so that all movements to park and un-park, and load and unload will take place back of or within property lines.

14.0 Protecting the public from injury

- b. In the central business area, the Director of Transportation is hereby granted the authority to waive requirements set forth in this subsection after all engineering investigation and provided the following conditions are present:
 - 1. The area is within the parking exempt area of the city;
 - 2. The waiver requested arises from peculiar physical conditions not ordinarily existing in other areas of the city;
 - 3. Due to the nature or operation of the business on the applicant's property the requirements of the above causes unnecessary hardship;
 - 4. The waiver requested is not against the public interest, safety, convenience, and general welfare; and
 - 5. The granting of the waiver will not adversely affect the rights of adjacent property owners.
- 13.4. Except as may be provided for under the Concord City Code, Part II, Chapter 58, Traffic and Vehicles, no part of the right-of-way or the area between the curb or edge of pavement and the property line shall be used to place private signs, fences, wall post lights, or any other item. All such items shall be placed on private property in such a manner as not to interfere with vehicular or pedestrian traffic or visibility.

14.0 Protecting the public from injury

- 14.1. Whenever any person or firm shall do or undertake any of the items set forth in this article it shall be the duty of such person(s) to protect from harm and damage all persons or vehicles which may be using any street, sidewalk, right-of-way or other public area where such work is in progress.
- 14.2. All persons or firms shall erect and maintain suitable barricades, signs, lights, flares and other appropriate warning devices at the proper locations where such work is in progress in accordance with the current policy and regulations for street construction and maintenance operations within the City of Concord, as established by the Director of Streets and Traffic Engineering and in accordance with the Manual on Uniform Traffic Control Devices.
- 14.3. Permits for driveway construction can only be issued to persons who are properly licensed and bonded to work within the street or highway right-of-way.
- 14.4. The city's intent is to further increase safety and decrease congestion along specified major thoroughfares. In order to accomplish these objectives, certain goals have been identified. These goals are:
 - a. To prohibit driveways within a certain distance of intersecting streets unless alternate access is not available,
 - b. To decrease the number of driveways along major thoroughfares, and
 - c. To increase the distance between adjacent driveways along major thoroughfares.

15.0 Standard Details

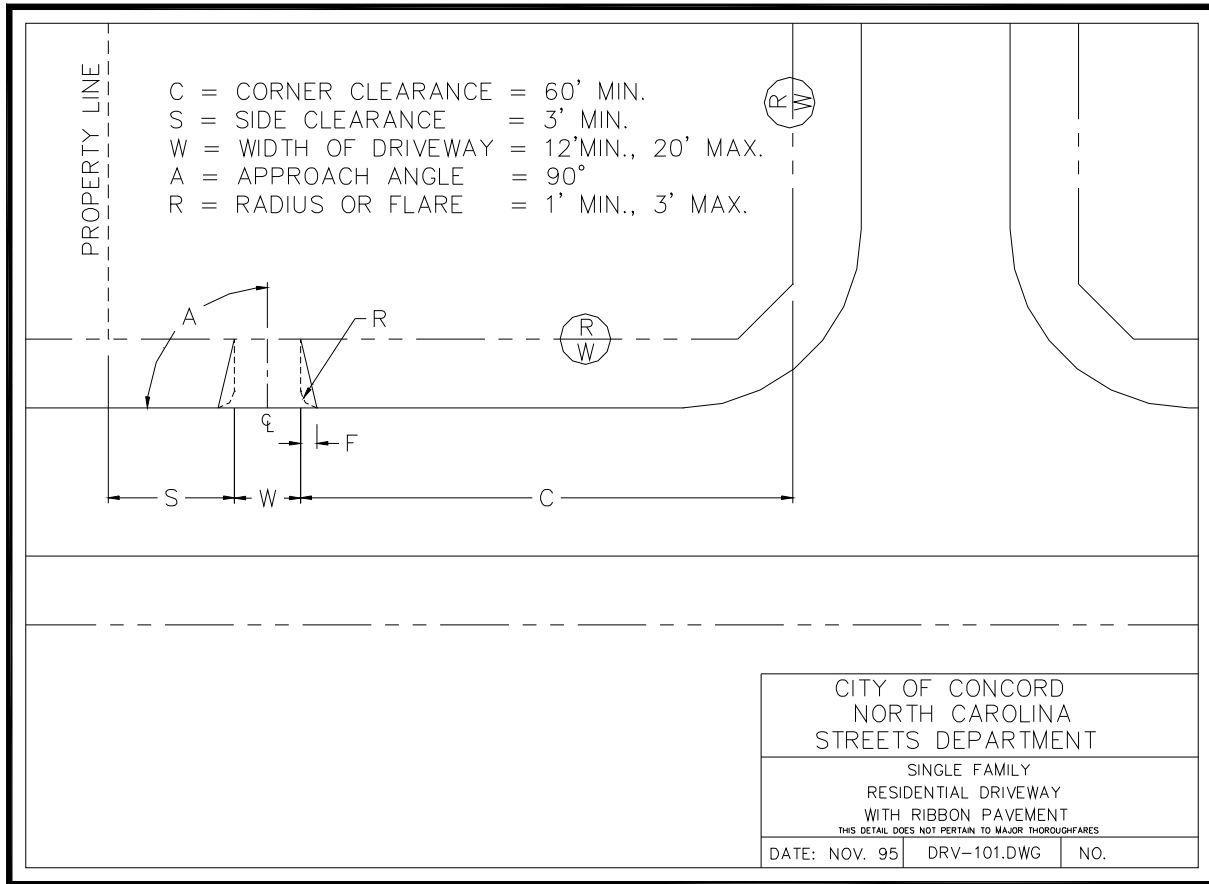


Figure III-1: Single-Family Residential Driveway with Ribbon Pavement.

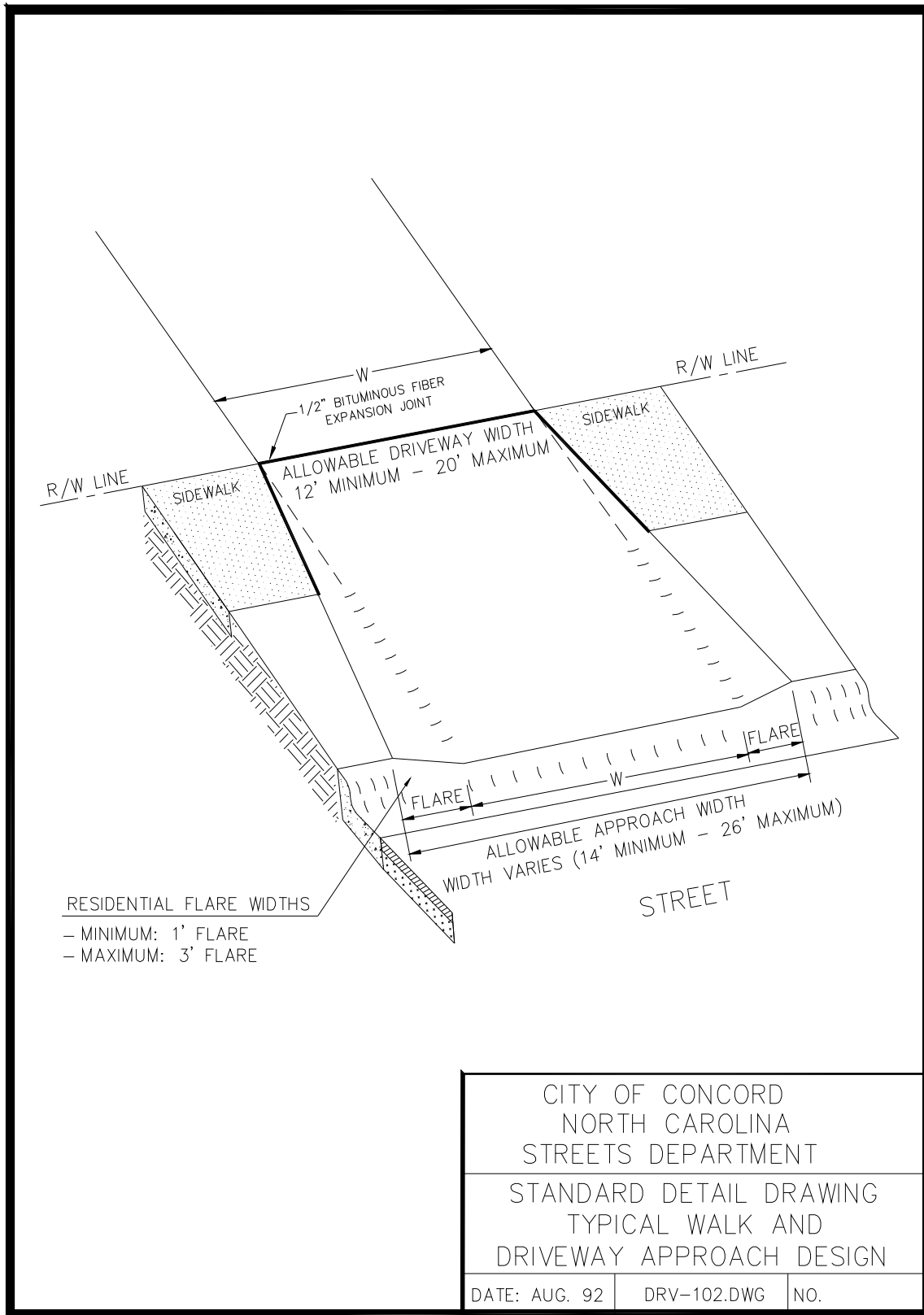


Figure III-2: Typical Driveway Approach with Sidewalk Crossing.

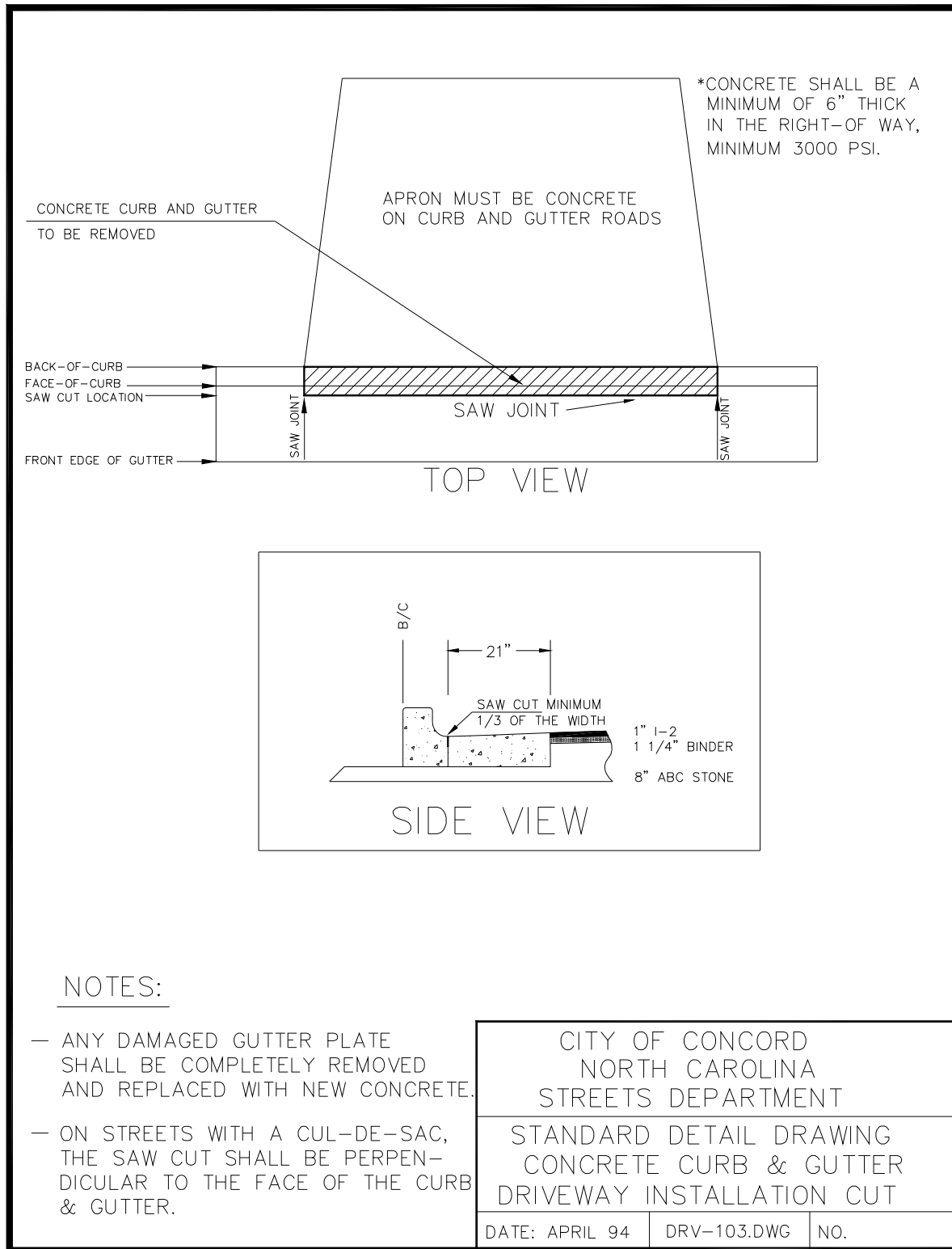


Figure III-3: Concrete Curb and Gutter Driveway Cut.

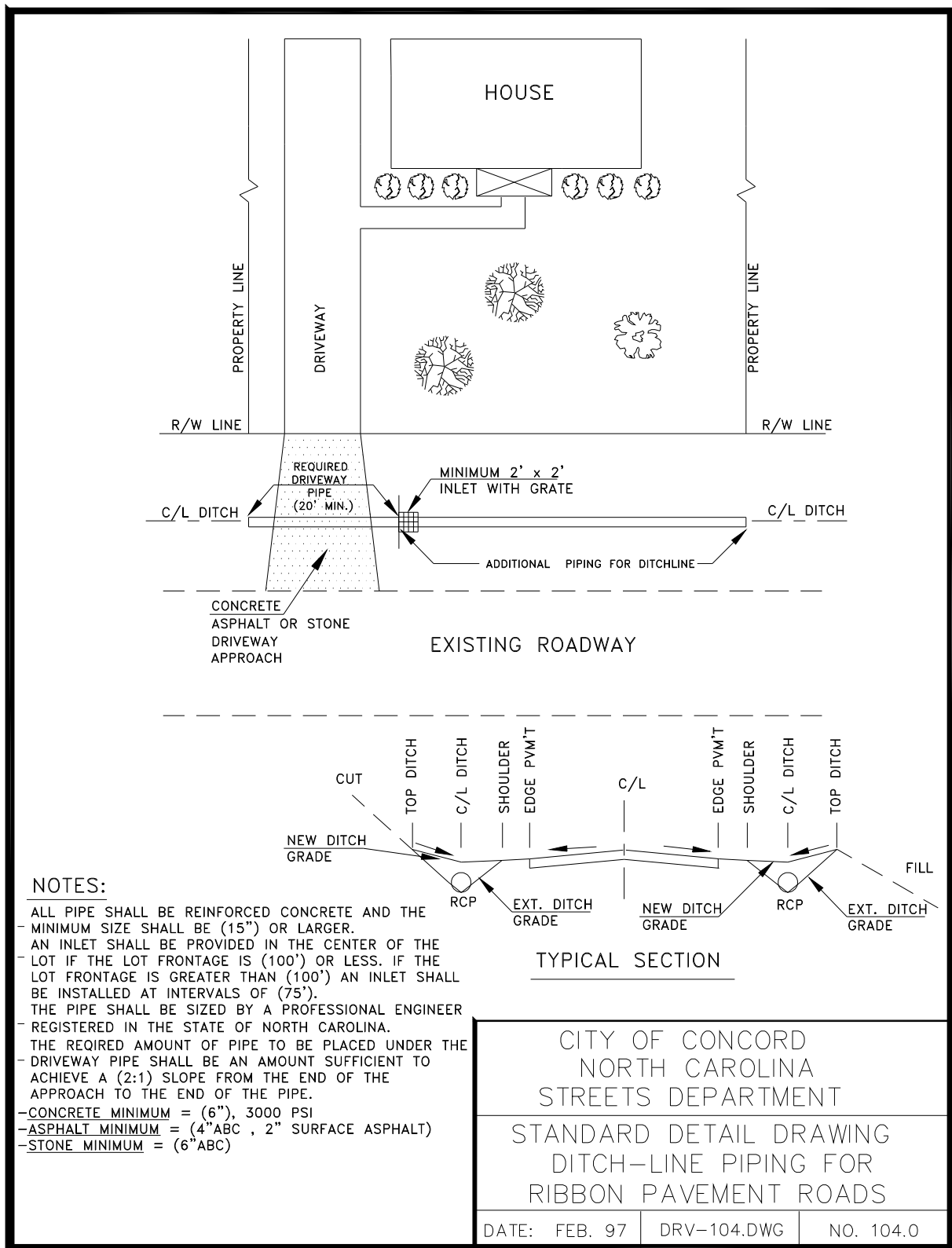


Figure III-4: Ditch Piping for Ribbon Pavement Streets.

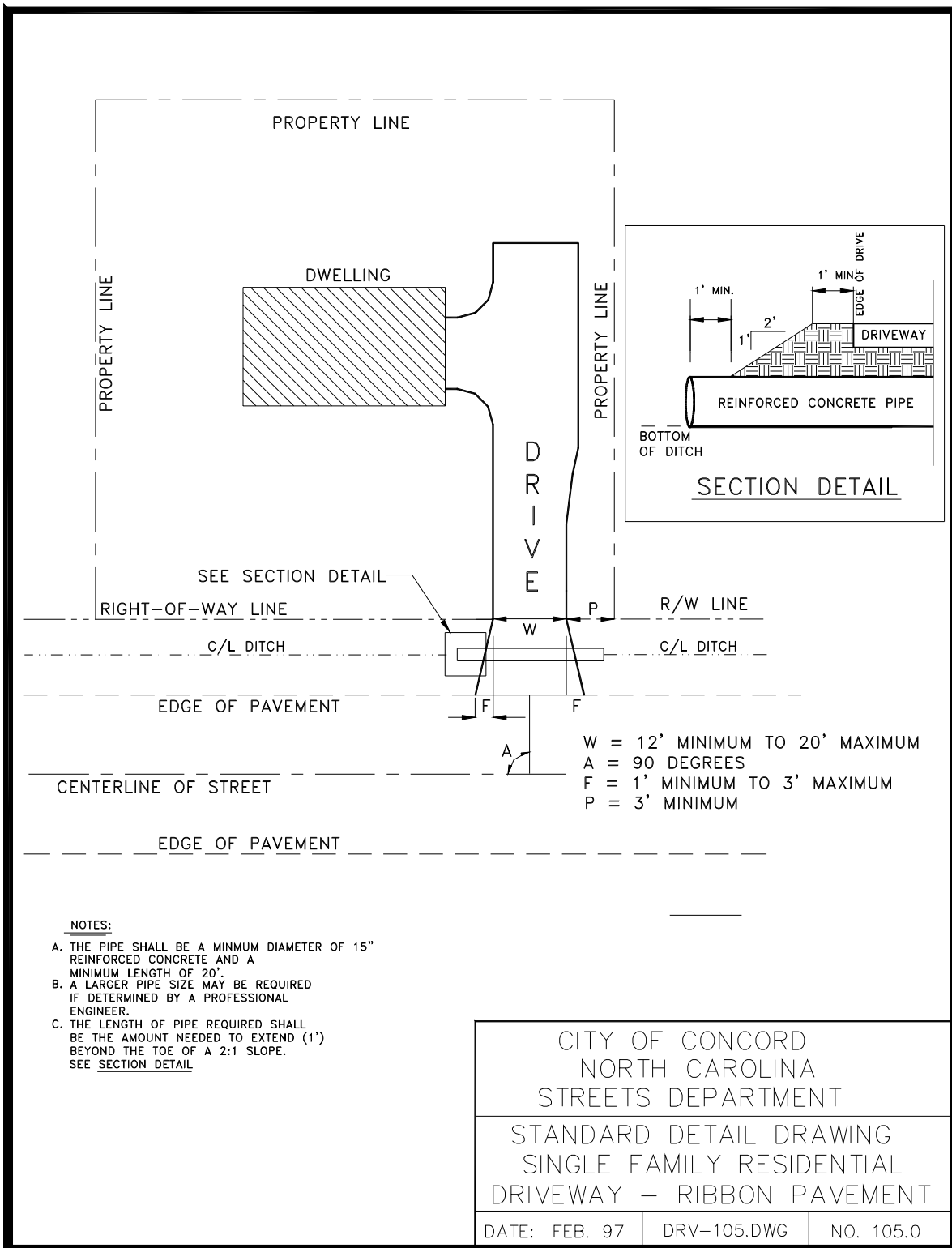


Figure III-5: Single-Family Residential Driveway with Ribbon Pavement Street.

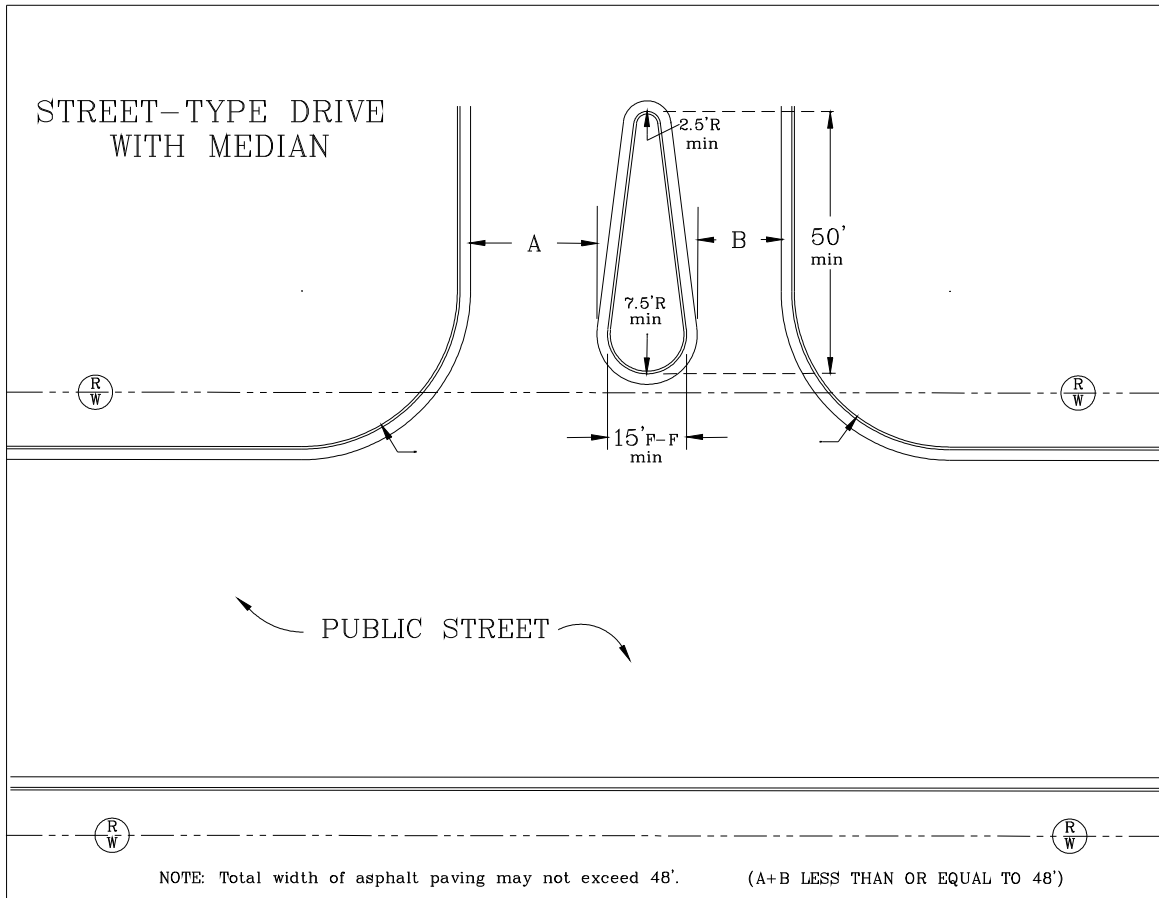


Figure III-6: Typical Driveway with an Island.

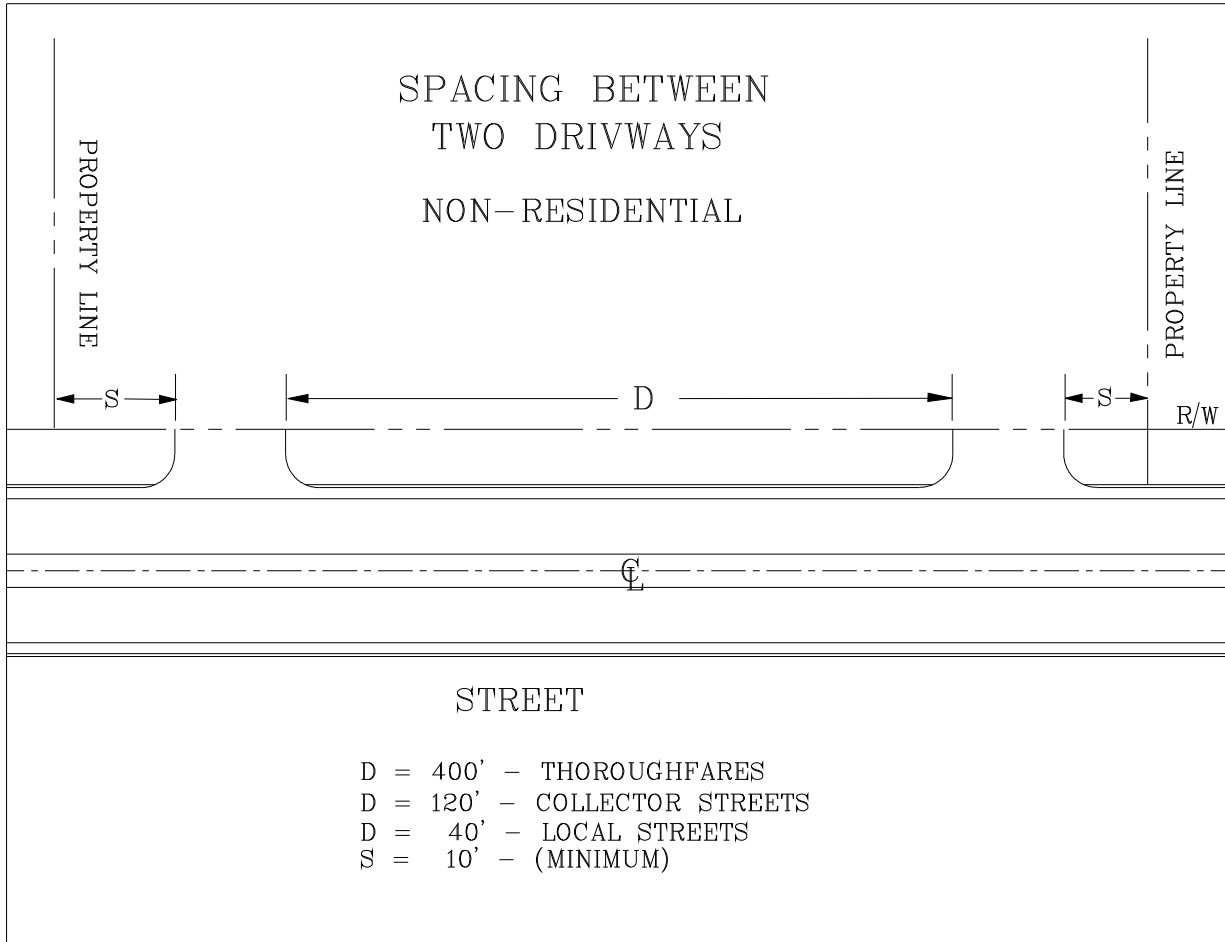
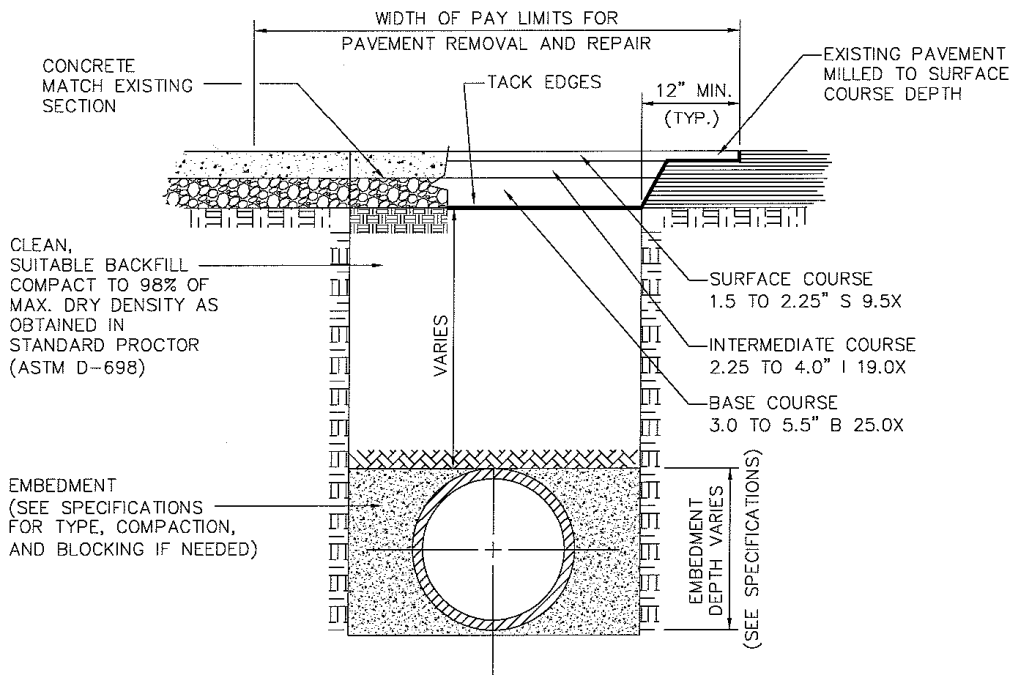
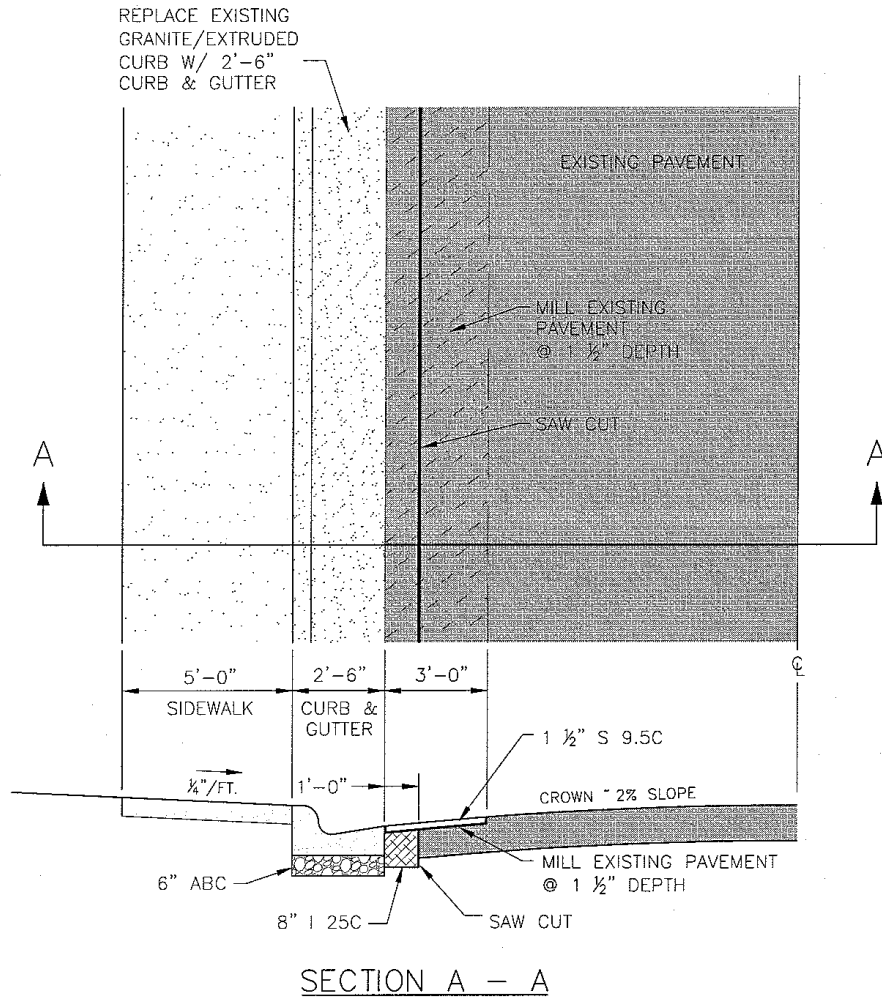


Figure III-7: Non-Residential Driveway Spacing.



1. NEW PAVEMENT SHALL HAVE SECTION THICKNESS DESIGNED TO NCDOT SUPERPAVE STANDARDS AS PROVIDED BY ENGINEER OR MATCH EXISTING CONSTRUCTION, WHICH EVER IS GREATER OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.
2. TRENCH IS TO BE BACKFILLED IN COMPACTED 6" LAYERS BEFORE PAVEMENT REPAIRS ARE MADE.
3. REFER TO EARTHWORK SPECIFICATIONS FOR EMBEDMENT AND FILL REQUIREMENTS.
4. THIS DETAIL SHOWS ASPHALT PAVEMENT REPLACEMENT. THE WIDTH OF PAY LIMITS SHALL APPLY TO STONE AND CONCRETE PAVEMENT AS WELL.

UTILITY CUT REPLACEMENT DETAIL
SCALE: NONE



1. NEW PAVEMENT SHALL HAVE SECTION THICKNESS DESIGNED TO NCDOT SUPERPAVE STANDARDS AS PROVIDED BY ENGINEER OR MATCH EXISTING CONSTRUCTION, WHICH EVER IS GREATER OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.

CURB & GUTTER REMOVAL / REPLACEMENT DETAIL

SCALE: NONE

16.0 Non-Residential and Multi-family Development

16.1 Parking Aisle and Space Dimensions

Minimum dimensions of standard parking spaces (other than compact car spaces and handicap spaces) and maneuvering area shall be as set forth in 10.3-1 below.

(a) Handicapped Spaces

Handicapped parking spaces shall be a minimum of 13 feet by 18 feet for a single non-van space (8 feet in width in addition to a 5 foot access aisle); a minimum of 16 feet by 18 feet for a single van space (eight feet in width in addition to an eight foot access aisle); or 24 feet by 18 feet for a double van space, or a non-van and van double space (eight feet in width for each space with an eight foot access aisle between spaces). Parking spaces for handicapped or disabled persons shall comply with the N.C. Accessibility Code (do we have this to insert).

(b) Compact Car Spaces

This section shall apply only to parking facilities providing 100 spaces or more. Not more than 20 percent of the off-street parking spaces required by this Section shall be designed as compact car parking spaces. Each compact car parking space shall be a minimum of eight feet wide and 16 feet long. Compact car parking spaces shall be clearly marked or posted for "Compact Cars Only." All other provisions of this Article relating to off-street parking requirements shall be met.

Parking Area Dimensional Standards

For standard-size vehicles

A	B	C	D	E	F	G
45°	9.0'	18.0'	12.0' ONE-WAY	8.0'	51.0'	2.0' / 4.0'
60°	9.0'	18.0'	18.0' ONE-WAY	8.0'	58.0'	2.0' / 4.0'
90°	9.0'	18.0'	24.0' TWO-WAY	8.0'	60.0'	2.0' / 4.0'

For compact-size vehicles (see Sect. 8.3.2.2)

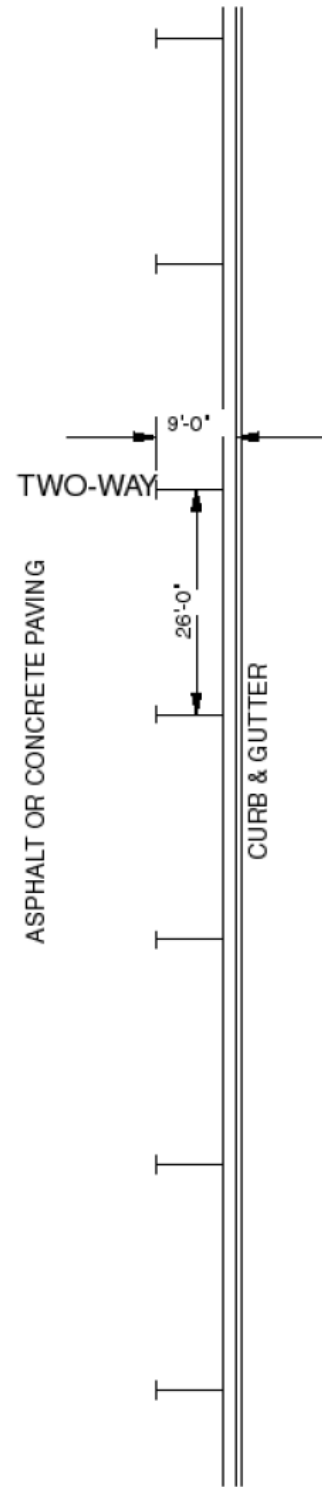
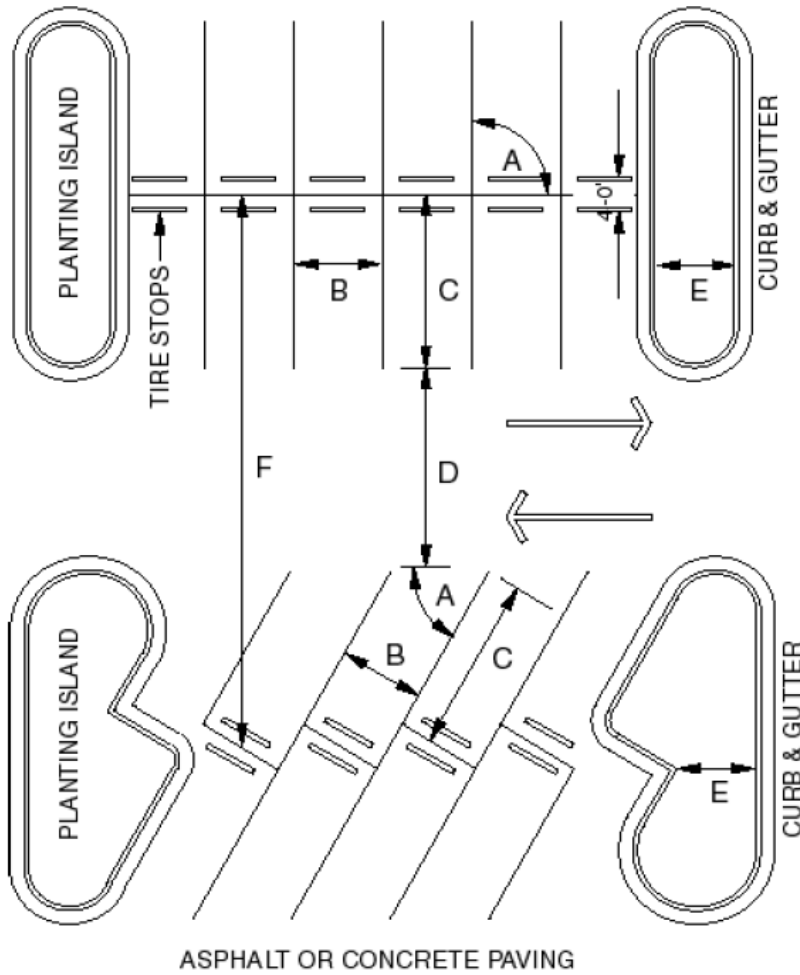
A	B	C	D	E	F	G
45°	8.0'	16.0'	N/A	8.0'	N/A	1.5' / 3.0'
60°	8.0'	16.0'	N/A	8.0'	N/A	1.5' / 3.0'
90°	8.0'	16.0'	N/A	8.0'	N/A	1.5' / 3.0'

Note: Parallel parking spaces shall be 9' by 26' with a 20' two-way access, or a 12' one-way access.

Key (also see Figure 10.1-1):

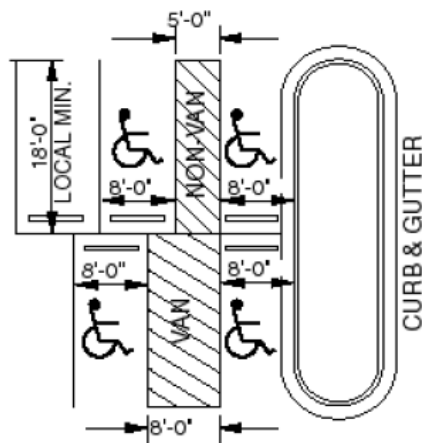
- A. Parking Angle
- B. Stall Width
- C. Stall Depth
- D. Aisle Width
- E. Planting Island Width (minimum width shown, refer to Article 7 for minimum area)
- F. Parking Bay Width
- G. Bumper Overhang (front / rear)

Standard Parking Dimensions



Handicapped Parking Dimensions

See North Carolina
Accessibility Code



16.2 Overhang Protection

Wheel or bumper guards or curbing shall be provided, located and arranged so that no part of any parked vehicle will extend beyond the boundaries of the parking space and into a pedestrian crossing area.

Except where a wall is constructed, a minimum six inch high vertical concrete curb (or individual bumper guard) shall be constructed or installed so that no part of a vehicle extends beyond the property line.

16.3 Striping Required

Off-street parking areas, as required by this Ordinance, shall be striped in accordance with the dimensions as set forth in this § 10.3.

16.4 Sight Triangles

Sight Triangles for intersections of driveways and public streets shall be regulated in accordance with Article 10 and the City's Technical Standards Manual.