NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

Driveway Application Process and Site Plan Requirements

ALL APPLICATIONS SHALL BE ACCOMPANIED BY COMPLETE AND DETAILED SITE PLANS THAT ADHERE TO THE POLICIES LISTED IN THE *POLICY ON STREET AND DRIVEWAY ACCESS TO NORTH CAROLINA HIGHWAYS* AND THIS DOCUMENT. FAILURE TO ADHERE TO THESE POLICIES WILL RESULT IN THE RETURN OF THE APPLICATION TO THE APPLICANT FOR REVISION.

******THE NCDOT WILL NOT BEGIN THE REVIEW PROCESS ON INCOMPLETE APPLICATIONS******

Electronic Pre-Submittals

In an effort to save time and resources, we are happy to provide an initial assessment of a driveway permit submittal's plans via email to identify any major issues up front. This initial assessment can be followed up with a submittal of one digital copy of the plans along with all other required documents. Rezoning comments are considered tentative and are subject to change once full package is reviewed.

All Permit applications shall be submitted through the online portal
https://connect.ncdot.gov/site/Permits/Pages/default.aspx
See the last pages for further instruction.

Online resources:

- NCDOT Policy on Street and Driveway Access to North Carolina Highways: *https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Policy%20on%20Street%20an d%20Driveway%20Access.pdf*
- NCDOT Subdivision Roads Minimum Construction Standards: *https://connect.ncdot.gov/resources/Asset-Management/StateMaintOpsDocs/Subdivision%20Manual%20January%202010%20Revised%20December%202020.pdf*
- NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way: *https://connect.ncdot.gov/municipalities/Utilities/Pages/UtilitiesManuals.aspx*
- Electronic Forms Database: *https://connect.ncdot.gov/Pages/default.aspx*

Engineering Studies:

The applicant may be required by the District Engineer to submit studies based on, but not limited to, the parameters outlined herein. If study requirements of the local government agency are more restrictive than the NCDOT requirements, then local government requirements will govern. However, this does not imply that the NCDOT is obligated to approve entrance designs that are too constrictive to allow smooth and safe traffic flow. All studies including, but not limited to, Traffic Impact Analyses (TIA), traffic signal studies, soft digs, and drainage studies, must be prepared under the direct charge of and sealed by a North Carolina licensed Professional Engineer.

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Section 1: Required Documents

Please note that these are the minimum requirements of all driveway permit applications. All required documentation shall be submitted through the online portal as PDF files, with the exception of the Performance and Indemnity Bond and the $50 Inspection Fee(s), these should be mailed or delivered to: 7605 District Drive Charlotte, NC 28213.*If a Traffic Impact Analysis and/or roadway improvements are deemed necessary as a condition of the permit, there may be additional submittal materials required.*

1.1 Required documents to accompany all Initial Driveway Application Submittals

☐ ☐ ☐ ☐ ☐ ☐ **1.1.1-** Cover Letter - Include contact information for applicants and engineers, including email addresses, mailing address, and phone number. Include the parcel number(s), description of all phases of the development and future land uses to be served by the permit, and a description of the adjoining land owned or controlled by the applicant.

☐ ☐ ☐ ☐ ☐ ☐ **1.1.2-** NCDOT Street and Driveway Access Permit Application (form downloadable)

☐ ☐ ☐ ☐ ☐ ☐ **1.1.3-** $50.00 Inspection Fee Per Access Point - Submit to District Office or pay via the Permit Portal once plans are tentatively approved

☐ ☐ ☐ ☐ ☐ ☐ **1.1.4-** NPDES Stormwater Permit Compliance Certification (form downloadable)

☐ ☐ ☐ ☐ ☐ ☐ **1.1.5-** Verification of Compliance with Environmental Regulations (form downloadable)

☐ ☐ ☐ ☐ ☐ ☐ **1.1.6-** Site Plans - include 'Master Plan' of the tract even if only a small portion is being developed

☐ ☐ ☐ ☐ ☐ ☐ **1.1.7-** Design Plan Requirements if roadway improvements are required (see Section 6)

☐ ☐ ☐ ☐ ☐ ☐ **1.1.8-** Soft dig report (required unless otherwise stated)

1.2 Required documents to accompany all Driveway Applications PRIOR TO FINAL Approval

☐ ☐ ☐ ☐ ☐ ☐ **1.2.1-** Performance and Indemnity Bond Information/Forms - Amount of the cost of the work within NCDOT R/W shall be as follows; 100% of engineers estimate + 5% Mobilization + 10% engineer fee + 20% NCDOT contingency

☐ ☐ ☐ ☐ ☐ ☐ **1.2.2-** Hold Harmless Letter (if inside the limits of a Let STIP)

Section 2: General Site Plan Requirements

NCDOT Permit Number shall be on cover sheet

All site plan packages shall include and show, at a minimum, the items listed belowPage numbers reference the NCDOT Policy on Street and Driveway Access to North Carolina Highways

☐ ☐ ☐ ☐ ☐ ☐ **2.1-** Drawn to a scale and the scale shall be shown

☐ ☐ ☐ ☐ ☐ ☐ **2.2-** North arrow, vicinity map, date of plan, and date of most-recent revision

☐ ☐ ☐ ☐ ☐ ☐ **2.3-** Contact information of applicant and engineer

☐ ☐ ☐ ☐ ☐ ☐ **2.4-** Show R/W lines, highway control of access, property lines

☐ ☐ ☐ ☐ ☐ ☐ **2.5-** All existing utilities and easements

☐ ☐ ☐ ☐ ☐ ☐ **2.6-** R/W width and distance from the centerline of roadway

☐ ☐ ☐ ☐ ☐ ☐ **2.7-** Existing posted speed limit(s) and design speed limit(s)

☐ ☐ ☐ ☐ ☐ ☐ **2.8-** Show all property lines, intersections, signals, railroads within 500'

☐ ☐ ☐ ☐ ☐ ☐ **2.9-** Show sidewalks, crosswalks, greenways, curb ramps, bus stops, etc.

☐ ☐ ☐ ☐ ☐ ☐ **2.10-** Include plan sheet showing full site build-out and land use

☐ ☐ ☐ ☐ ☐ ☐ **2.11-** Include Right-of-Way plan sheet

☐ ☐ ☐ ☐ ☐ ☐ **2.12-** Buildings shown with 'gross leasable area'

☐ ☐ ☐ ☐ ☐ ☐ **2.13-** Width of property frontage

☐ ☐ ☐ ☐ ☐ ☐ **2.14-** Distance from R/W to buildings and gasoline service islands

☐ ☐ ☐ ☐ ☐ ☐ **2.15-** Distance from R/W to existing/proposed Edge of Pavement

☐ ☐ ☐ ☐ ☐ ☐ **2.16-** All streams, bridges, retaining walls, signs, fixed objects

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Section 3: Driveway Plan Requirements

All driveway plans shall include and show, at a minimum, the items listed below|

☐ ☐ ☐ ☐ ☐ ☐ **3.1-** Provide comprehensive survey within the existing R/W on both sides of the road for 500' in all directions
☐ ☐ ☐ ☐ ☐ ☐ **3.2-** Provide hydraulic survey data to the nearest storm water inlet/outlet including ditch lines and storm water pipes
☐ ☐ ☐ ☐ ☐ ☐ **3.3-** Lane configurations and widths of all existing and proposed driveways, roadways, and adjacent roadways
☐ ☐ ☐ ☐ ☐ ☐ **3.4-** Driveway widths: Residential/subdivision (2-way: 20'-36', 1-way: 12'-24', with island: 14' ingress, 18' egress)
☐ ☐ ☐ ☐ ☐ ☐ **3.5-** Driveway Profile - maintain a minimum 2% fall from edge of travel way for required shoulder width
☐ ☐ ☐ ☐ ☐ ☐ **3.6-** All existing and/or proposed driveway radii: Street Type Driveway connection – 20' Min., 50' Max.
☐ ☐ ☐ ☐ ☐ ☐ **3.7-** No curbing in NCDOT R/W along shoulder sections except as part of a driveway island
☐ ☐ ☐ ☐ ☐ ☐ **3.8-** Driveway angles of approach (90° preferred, 75°-90° required for 2-way, 45°-90° allowed for right-in/right-out)
☐ ☐ ☐ ☐ ☐ ☐ **3.9-** Driveway Pavement Cross Section (Asphalt: see Detail AA below // Concrete: 6" concrete 3600 psi min)
☐ ☐ ☐ ☐ ☐ ☐ **3.10-** Driveway Offset: Minimum 20'
☐ ☐ ☐ ☐ ☐ ☐ **3.11-** Corner Clearance: Minimum 50', Desirable 100'
☐ ☐ ☐ ☐ ☐ ☐ **3.12-** Minimum 10'x70' sight triangles at driveways
☐ ☐ ☐ ☐ ☐ ☐ **3.13-** Sight Distance: 10X Design Speed both directions
☐ ☐ ☐ ☐ ☐ ☐ **3.14-** Align driveways with opposing driveways or provide correct offset
☐ ☐ ☐ ☐ ☐ ☐ **3.15-** Distance between driveways requested (if applicable)
☐ ☐ ☐ ☐ ☐ ☐ **3.16-** Minimum internal storage areas with specified queues
☐ ☐ ☐ ☐ ☐ ☐ **3.17-** Minimum protected driveway stem(s) provided
☐ ☐ ☐ ☐ ☐ ☐ **3.18-** Indicate any gated entrances (100' minimum setback from R/W)
☐ ☐ ☐ ☐ ☐ ☐ **3.19-** Fire entrance needs gate and knox box outside NCDOT R/W

Section 4: Drainage Requirements

All drainage features on NCDOT Right-of-Way shall adhere to, at a minimum, the items listed below|

☐ ☐ ☐ ☐ ☐ ☐ **4.1-** Pipe Cover Minimums: Driveway Pipe Min. Size = 15", Cross Pipe Min. Size = 18"
☐ ☐ ☐ ☐ ☐ ☐ **4.2-** Pipe End Treatment per Chapter 6 of the Drainage User Manual & Roadway Design Manual
☐ ☐ ☐ ☐ ☐ ☐ **4.3-** All proposed drainage must be within existing R/W or additional R/W/easement required
☐ ☐ ☐ ☐ ☐ ☐ **4.4-** Show all pipe sizes, types, and invert elevations of existing/proposed pipes and drainage structures
☐ ☐ ☐ ☐ ☐ ☐ **4.5-** Provide spot elevations along the frontage of driveway
☐ ☐ ☐ ☐ ☐ ☐ **4.6-** Provide grades and spot elevations for existing and proposed ditches
☐ ☐ ☐ ☐ ☐ ☐ **4.7-** Show drainage accommodation along property frontage
☐ ☐ ☐ ☐ ☐ ☐ **4.8-** Provide Hydro Plans & Calculations

Section 5: Internal Circulation Requirements

All internal circulation details shall adhere to, at a minimum, the items listed below

☐ ☐ ☐ ☐ ☐ ☐ **5.1-** Interior driveway channelization stems: Minimum 100' Internal Protected Stem from ROW or at the discretion of the District Engineer or TIA recommendation
☐ ☐ ☐ ☐ ☐ ☐ **5.2-** Traffic flow pattern
☐ ☐ ☐ ☐ ☐ ☐ **5.3-** Traffic control devices
☐ ☐ ☐ ☐ ☐ ☐ **5.4-** Pavement Markings

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Section 6: Roadway Plan Requirements

If off-site improvements are required, roadway plans shall show, at a minimum, the items below

☐ ☐ ☐ ☐ ☐ ☐ **6.1-** Stationing must be shown on all plan sheets
☐ ☐ ☐ ☐ ☐ ☐ **6.2-** Cross-sections required every 50' (max 6 per page), special cases every 25'
☐ ☐ ☐ ☐ ☐ ☐ **6.3-** Cross-sections must include pavement structure, cross slopes, shoulders, lane widths, utilities, ditches, elevations
☐ ☐ ☐ ☐ ☐ ☐ **6.4-** Full width typical sections must match adjacent roadway *see cross section detail below*
☐ ☐ ☐ ☐ ☐ ☐ **6.5-** Minimum Asphalt Typical Section defined for primary & secondary routes without C&G
☐ ☐ ☐ ☐ ☐ ☐ **6.6-** Pavement overlay required if modification of markings/lanes necessary
☐ ☐ ☐ ☐ ☐ ☐ **6.7-** Shoulder Widths: 6' min
☐ ☐ ☐ ☐ ☐ ☐ **6.8-** Ditch Slopes: min 3:1 or flatter
☐ ☐ ☐ ☐ ☐ ☐ **6.9-** Indicate existing roadway grade
☐ ☐ ☐ ☐ ☐ ☐ **6.10-** Design appropriate taper lengths and deceleration lengths
☐ ☐ ☐ ☐ ☐ ☐ **6.11-** All turn lanes to be designed per Driveway Manual & Standard Drawings
☐ ☐ ☐ ☐ ☐ ☐ **6.12-** Pavement marking and signing plans required
☐ ☐ ☐ ☐ ☐ ☐ **6.13-** Traffic control plans required; detailed phasing plans may be needed
☐ ☐ ☐ ☐ ☐ ☐ **6.14-** New/revised signal plans must be reviewed and approved
☐ ☐ ☐ ☐ ☐ ☐ **6.15-** Traffic Signal Agreement must be completed
☐ ☐ ☐ ☐ ☐ ☐ **6.16-** Sight profiles for all access points with clearance requirements
☐ ☐ ☐ ☐ ☐ ☐ **6.17-** Utility plan showing relocations; no manholes in wheel path
☐ ☐ ☐ ☐ ☐ ☐ **6.18-** Striping plan with labeled tapers
☐ ☐ ☐ ☐ ☐ ☐ **6.19-** Include note on patching/leveling before resurfacing, 25' mill transitions
☐ ☐ ☐ ☐ ☐ ☐ **6.20-** 10'X70' sight triangles at all access points
☐ ☐ ☐ ☐ ☐ ☐ **6.21-** Turning movements plan sheet, appropriate vehicle templates
☐ ☐ ☐ ☐ ☐ ☐ **6.22-** Provide landscape plan for review
☐ ☐ ☐ ☐ ☐ ☐ **6.23-** Plantings in NCDOT ROW require SEPARATE approved planting permit
☐ ☐ ☐ ☐ ☐ ☐ **6.24-** Include all required NCDOT details for ramps, C&G, construction entrances, drainage structures

Section 7: Internal Subdivision Roads

If internal Streets are to be NCDOT Maintained, roadway plans shall show, at a minimum, the items below

☐ ☐ ☐ ☐ ☐ ☐ **7.1-** Cluster mailbox units require encroachment agreement; must be breakaway and labeled
☐ ☐ ☐ ☐ ☐ ☐ **7.2-** Centerline radius labeled NCDOT per subdivision standards
☐ ☐ ☐ ☐ ☐ ☐ **7.3-** Pavement Section for Subdivision Roads: 3" S9.5C, 4" I19.0C, 6" ABC
☐ ☐ ☐ ☐ ☐ ☐ **7.4-** All C&G/Valley gutter placed on 6" ABC, extend 12" beyond curb with 1:1 slope
☐ ☐ ☐ ☐ ☐ ☐ **7.5-** Right of way widths labeled
☐ ☐ ☐ ☐ ☐ ☐ **7.6-** 10'X70' sight triangles labeled at all intersections
☐ ☐ ☐ ☐ ☐ ☐ **7.7-** Minimum 30' turning radii for internal intersections
☐ ☐ ☐ ☐ ☐ ☐ **7.8-** All roads must be 2% crown (provide cross section)
☐ ☐ ☐ ☐ ☐ ☐ **7.9-** Maximum grade for internal roads is 12%
☐ ☐ ☐ ☐ ☐ ☐ **7.10-** Cul-de-sac per NCDOT subdivision standards manual
☐ ☐ ☐ ☐ ☐ ☐ **7.11-** Rate of Vertical Curvature NCDOT per subdivision standards manual
☐ ☐ ☐ ☐ ☐ ☐ **7.12-** Plantings require approved planting permit
☐ ☐ ☐ ☐ ☐ ☐ **7.13-** Provide landscape plan for review

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North Carolina Department of Transportation (NCDOT) Plat Criteria

The NCDOT reviews, approves and sign plats as part of private development for right-of-dedication and future street additions that may be added to the state maintenance system. In order to provide consistent reviews and approvals, NCDOT has set forth minimum plat criteria that must be included with each submittal, in addition to normal surveying profession required items, for the review and approval by NCDOT.

Each plat should include the items listed below.

☐ ☐ ☐ ☐ ☐ ☐ **A**. Land to be designated as right-of-way is to be shaded, cross-hatched, diagonally striped or otherwise distinguished on the plat. All encroachments connected with the project will be shown and designated as to their purpose, i.e., utility, storm water, sidewalk, tree save, etc.

☐ ☐ ☐ ☐ ☐ ☐ **B.** Such land is to be clearly marked: "Dedicated as Public Right-of-Way". We insist on the term 'public' rather than NCDOT because a road may be turned over to a city or town in the future and this terminology would enable a seamless transaction.

☐ ☐ ☐ ☐ ☐ ☐ **C.** Show the area of this land being dedicated in SF and Acres.

☐ ☐ ☐ ☐ ☐ ☐ **D.** If road's original R/W is already owned by the state, indicate the deed book and page whereby this is recorded. Include a state construction project number if applicable.

☐ ☐ ☐ ☐ ☐ ☐ **E**. If this is a maintenance R/W, the surrounding property deeds will probably indicate the parcel boundary extends into the roadway. In this case the dedication will be from that line to the proposed new R/W line.

☐ ☐ ☐ ☐ ☐ ☐ **F**. Show the SR, NC, US or Interstate Highway number for roads in addition to their names.

☐ ☐ ☐ ☐ ☐ ☐ **G.** Dimension the R/W or otherwise provide a means of determining its width and boundary. For roads that may later be petitioned for NCDOT take-over, we need 10'x70' sight triangles and no alignment curve can be less than 100' in radius.

☐ ☐ ☐ ☐ ☐ ☐ **H.** Dimension the proposed right-of-way from the centerline of the road to the parcel line.

☐ ☐ ☐ ☐ ☐ ☐ **I.** Indicate the existing edge of pavement.

☐ ☐ ☐ ☐ ☐ ☐ **J**. Indicate on the end of the main roads drawn where they will lead such as another state road, US route, geographic reference, etc.

☐ ☐ ☐ ☐ ☐ ☐ **K.** Show any tie-ins to NCGS, USGS or other monuments or benchmarks.

☐ ☐ ☐ ☐ ☐ ☐ **L.** We need a sketch depicting where this is located in the county. Show North Arrow, too.

☐ ☐ ☐ ☐ ☐ ☐ **M**. If additional R/W is being obtained from other property owners, either deed references or each of their signatures acknowledging this agreement must be present.

☐ ☐ ☐ ☐ ☐ ☐ **N**. All NCDOT improvements need to be constructed prior to plat being signed.

☐ ☐ ☐ ☐ ☐ ☐ **O.** NCDOT will allow sidewalks by encroachment and will not accept responsibility for maintenance. Maintenance responsibility of sidewalks shall be noted on the Plat. All sidewalks shall meet requirements of the "Americans with Disabilities Act".

☐ ☐ ☐ ☐ ☐ ☐ **P.** If the internal streets are not being annexed to the municipality and are located within ETJ, the following note must be added on the plat: "All sidewalk is to be maintained by the HOA."

☐ ☐ ☐ ☐ ☐ ☐ **Q.** Please add the Access permit number to the plat title block.

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North Carolina Department of Transportation (NCDOT) Plat Criteria

We have a specific statement to sign for R/W dedication. It should read as follows:

DIVISION OF HIGHWAYS DISTRICT ENGINEER CERTIFICATE

I HEREBY CERTIFY THAT THE RIGHT OF WAY DEDICATION ALONG THE EXISTING STATE MAINTAINED ROADWAY(S) SHOWN ON THIS PLAT IS APPROVED AND ACCEPTED AS PUBLIC RIGHT OF WAY BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS.

DISTRICT ENGINEER _____

DATE _____

ONLY NORTH CAROLINA DEPARTMENT OF TRANSPORTATION APPROVED STRUCTURES ARE TO BE CONSTRUCTED ON PUBLIC RIGHT OF WAY

We have a specific statement to sign for subdivision plats in the ETJ that will be requested to be added to the state system in the future. It should read as follows:

NCDOT CONSTRUCTION STANDARDS CERTIFICATION

I HEREBY CERTIFY THAT THE STREETS ON THIS PLAT DESIGNED AS PUBLIC ARE OR WILL BE IN ACCORDANCE WITH THE MINIMUM RIGHT OF WAY AND CONSTRUCTION STANDARDS ESTABLISHED BY THE BOARD OF TRANSPORTATION FOR ACCEPTANCE ON THE STATE HIGHWAY SYSTEM.

DISTRICT ENGINEER _____

DATE _____

ONLY NORTH CAROLINA DEPARTMENT OF TRANSPORTATION APPROVED STRUCTURES ARE TO BE CONSTRUCTED ON PUBLIC RIGHT OF WAY

For recombination plats where there is no change in Right of Way, the statement should read as follows:

NCDOT CONSTRUCTION STANDARDS CERTIFICATE

I HEREBY CERTIFY THAT THE RIGHT OF WAY DEPICTED ALONG THE EXISTING STATE MAINTAINED ROADWAY(S) SHOWN ON THIS PLAT IS SHOWN FOR DOCUMENTATION PURPOSES ONLY

DISTRICT ENGINEER_____
DATE_____

ONLY NORTH CAROLINA DEPARTMENT OF TRANSPORTATION APPROVED STRUCTURES ARE TO BE CONSTRUCTED ON PUBLIC RIGHT OF WAY

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NCDOT Cross-section Guidelines

Cross-sections are required for any proposed thoroughfare and/or existing road improvements/widening at 50-foot maximum station intervals (25-foot intervals will be required where longitudinal street slope is 1% or less and curb/gutter is required, and for curb/gutter sections that are less than 200 feet in length), with a scale of 1" = 5' in both vertical and horizontal dimensions. Cross-sections at this scale need to be included in all submittals for the full length of the proposed thoroughfare and/or existing road improvements/widening, with a 50' station before and after the construction limits. These cross-sections should match the same design elements that can be found in North Carolina Department of Transportation (NCDOT) standards and Mecklenburg County Land Development Standards (MCLDS) or Charlotte Land Development Standards Manual (CLDSM), including, but not limited to:

☐ ☐ ☐ ☐ ☐ ☐ **A.** Label the road name on the cross-sections.

☐ ☐ ☐ ☐ ☐ ☐ **B.** Label the proposed and existing cross-slopes. Cross-slopes of the proposed widening need to be in the range of ¼ to 3/8 inch per foot (2% to 3%) for normal crown, (tangent and curves that do not require superelevation) road sections and match existing slopes when in a super elevated curve sections if possible, however there may be cases the super elevation will require some cross slope adjustment, based on A Policy on Geometric Design of Highways and Streets, AASHTO.

☐ ☐ ☐ ☐ ☐ ☐ **C**. Label the ditch slopes on the cross-sections with a 3:1 (max.) front slope and a 2:1 (max.) back slope.

☐ ☐ ☐ ☐ ☐ ☐ **D**. Label the shoulder width and its cross-slope. Normal crown roadway sections need to have a ¼ inch per foot cross slope on the shoulder. A maximum rollover from the pavement to shoulder is 6% for superelevated sections.

☐ ☐ ☐ ☐ ☐ ☐ **E**. Label the sidewalk cross-slope. A minimum of ¼ inch per foot directed toward the road.

☐ ☐ ☐ ☐ ☐ ☐ **F.** Label the planting strip width and its cross-slope.

☐ ☐ ☐ ☐ ☐ ☐ **G.** Label the slope from the back of sidewalk to the right-of-way limits. Note: When handrails are required, a 2-foot minimum bench needs to be provided on the backside of the sidewalk.

☐ ☐ ☐ ☐ ☐ ☐ **H**. If curb and gutter is installed, paving under the gutter pan needs to be shown on the cross-sections for all applicable typical sections and roadway classifications.

☐ ☐ ☐ ☐ ☐ ☐ **I.** Label all existing and proposed drainage structures/utilities as relocated, protected, replaced, or installed. Dimension all utilities from the top of the utility to the top of subgrade.

☐ ☐ ☐ ☐ ☐ ☐ **J.** An additional cross-section is needed for the centerline of each cross-over pipe and needs to include the appropriate stationing and elevation.

☐ ☐ ☐ ☐ ☐ ☐ **K.** The existing right-of-way must be labeled as maintenance right-of-way or recorded right-of-way. In addition, label new right-of-way as proposed, dedicated, or reserved, along with any necessary temporary construction easements or permanent easements for storm drainage, sidewalk, etc.

☐ ☐ ☐ ☐ ☐ ☐ **L.** Provide spot elevations for the centerline and edge of pavement, both existing and proposed.

☐ ☐ ☐ ☐ ☐ ☐ **M.** Label and dimension the lane widths of the existing pavement and proposed widening.

☐ ☐ ☐ ☐ ☐ ☐ **N**. The overlay for the entire width of the street being widened and/or improved on all NCDOT maintained streets and where applicable on city-maintained streets needs to be shown.

☐ ☐ ☐ ☐ ☐ ☐ **O.** An additional cross-section is needed at each proposed and impacted driveway entrance accessing a public street.

☐ ☐ ☐ ☐ ☐ ☐ **P.** Label elevation centerline of ditch bottom when using shoulder section roadways.

☐ ☐ ☐ ☐ ☐ ☐ **Q.** Label invert elevations of proposed storm drain pipes that show up in x-sections. Label and dimension the vertical clearance of the proposed storm drain pipes, dimensioning from the top of the pipe to the top of subgrade

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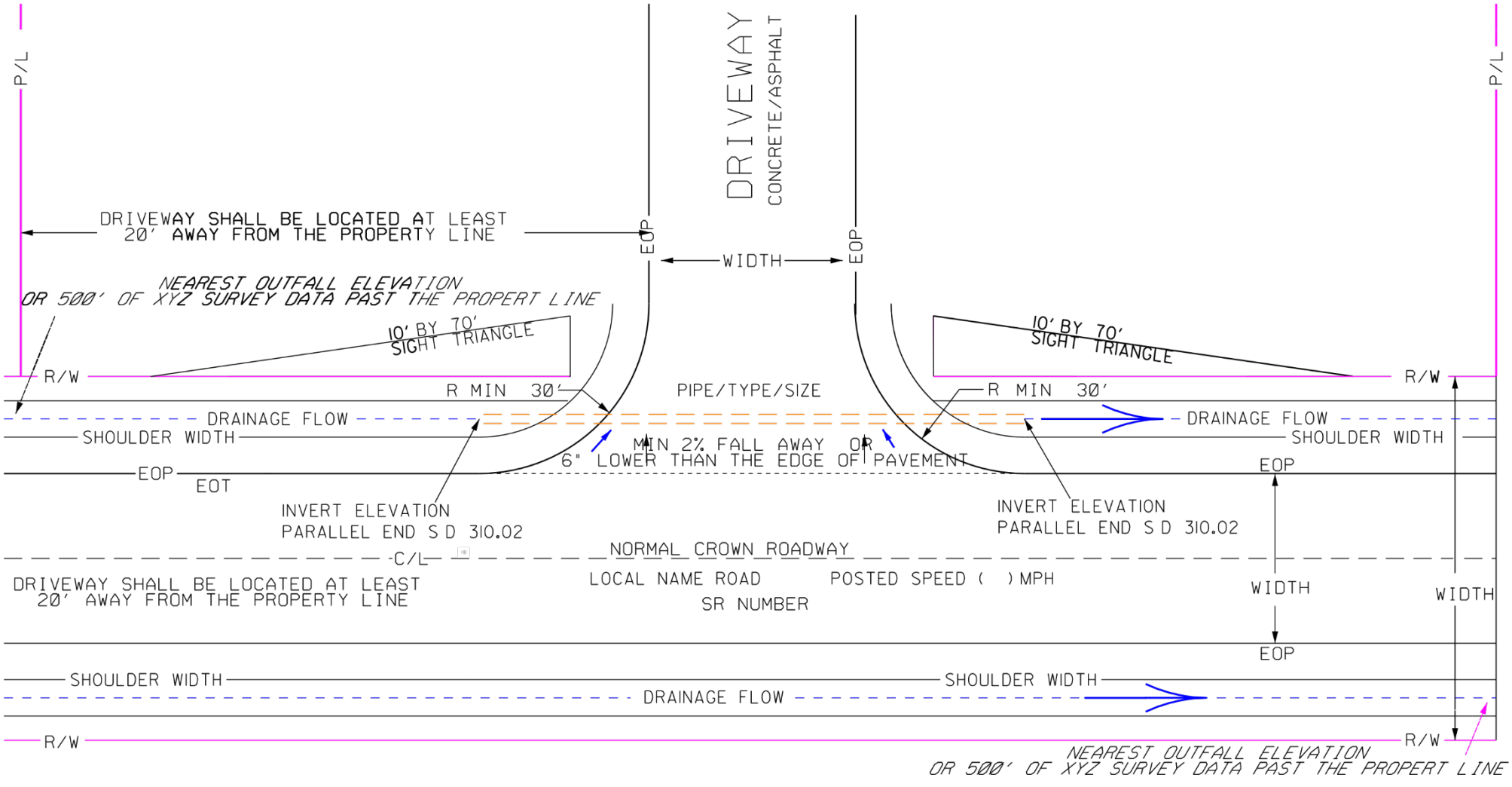
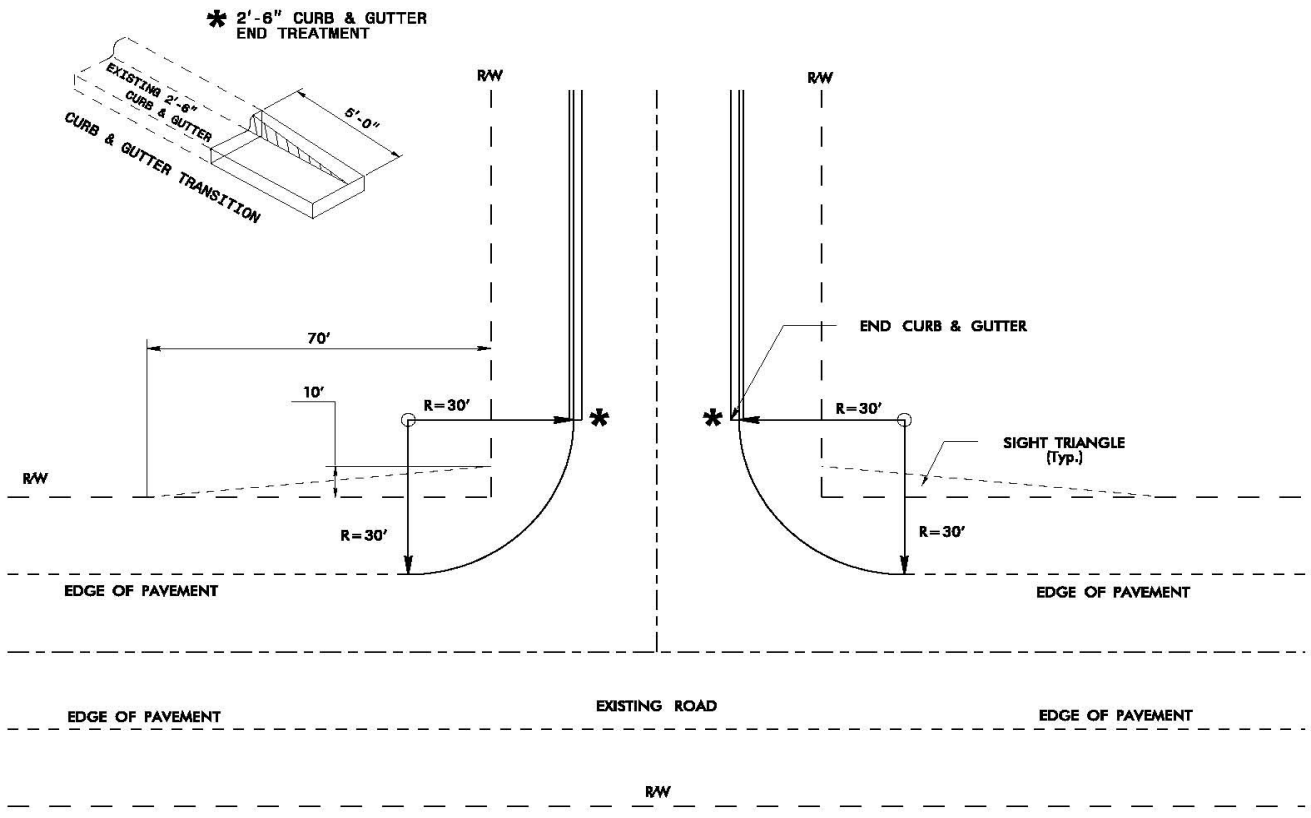


Revision Notes

(to be used by NCDOT)

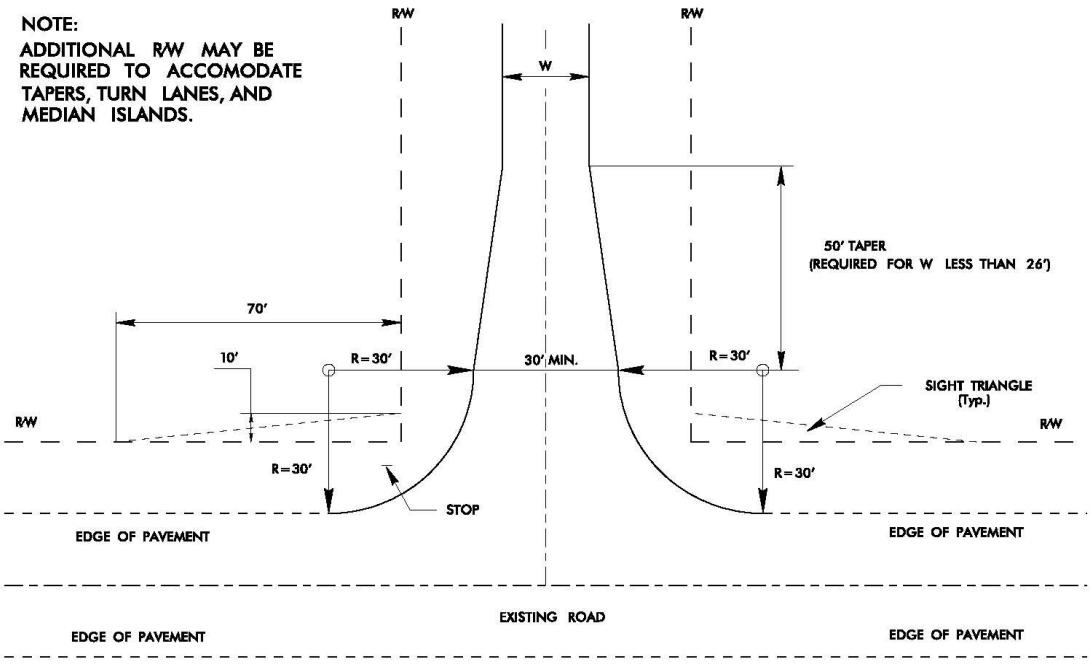


NOTE: Drainage easements may be required to accomodate drainage beyond the right–of–way.

FIGURE 3

RECOMMENDED ROAD CONNECTION TO STATE MAINTAINED SYSTEM

NEW RESIDENTIAL LOCAL ROAD OR RESIDENTIAL COLLECTOR ROAD WITH CURB & GUTTER AND EXISTING STATE MAINTAINED ROAD WITH SHOULDER SECTION



NOTE: Drainage easements may be required to accomodate drainage beyond the right–of–way.

FIGURE 4

RECOMMENDED ROAD CONNECTION

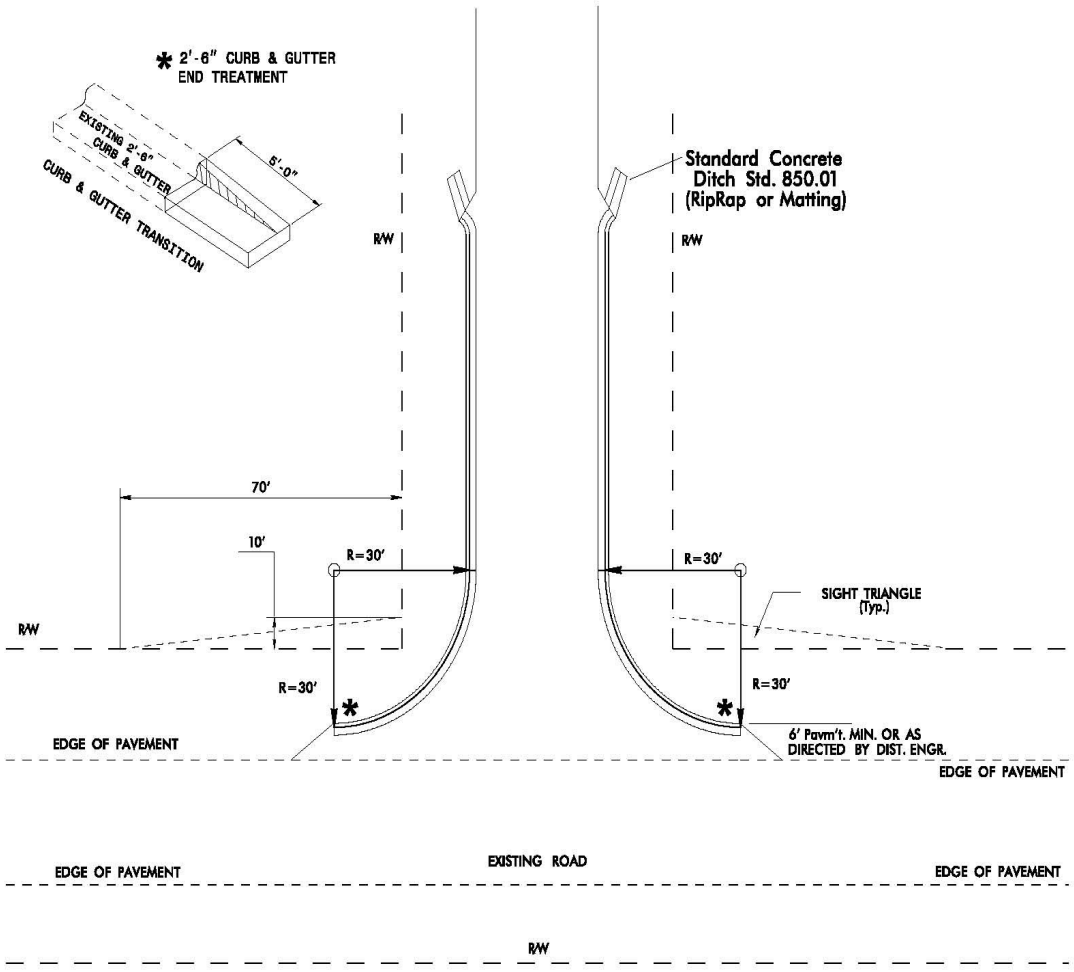
WITHOUT CURB & GUTTER

NEW RESIDENTIAL LOCAL ROAD OR RESIDENTIAL

COLLECTOR ROAD AND EXISTING STATE MAINTAINED

ROAD

STOP CONDITION



NOTE: Drainage easements may be required to accomodate drainage beyond the right-of-way.

RECOMMENDED ROAD CONNECTION
WITH CURB AND GUTTER

* SEE ISLAND DETAIL IF AN INTERIOR ISLAND IS TO BE INSTALLED

FIGURE 5

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

PLANTING WITHIN NCDOT EXISTING/PROPOSED RIGHT OF WAY

1.) In order to plant any vegetation, including any trees, shrubs, or underbrush, within existing or proposed NCDOT right of way, an approved NCDOT Planting Permit is required. This permit is issued by the NCDOT Roadside Environmental Unit.

2.) The approved NCDOT driveway permit does not cover any planting within state right of way. A NCDOT Planting Permit is a separate permitting process and will need to be applied for and obtained prior to any planting with the NCDOT right of way.

3.) A copy of the approved NCDOT Planting Permit must be provided prior to issuance of any CO's. bond release, and/or street acceptance.

4.) No tree shall be planted on a slope greater than 3:1.

5.) Area of intersection sight distance to be kept clear. Trees to be planted minimum of 2'-00" behind the the line of sight line and/or R/W line, being measured from face of trunk.

WEDGING DETAIL FOR RESURFACING

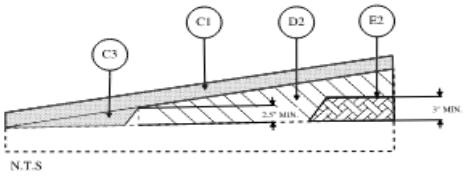
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS/SY
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS/SY IN EACH OF TWO LAYERS
C3	PROP. VARIOUS DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS/SY PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS/SY
D2	PROP. VARIOUS DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS/SY PER 1" DEPTH. TO BE PLACE IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS/SY IN EACH OF TWO LAYERS
E2	PROP. VARIOUS DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS/SY PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER

NOTES

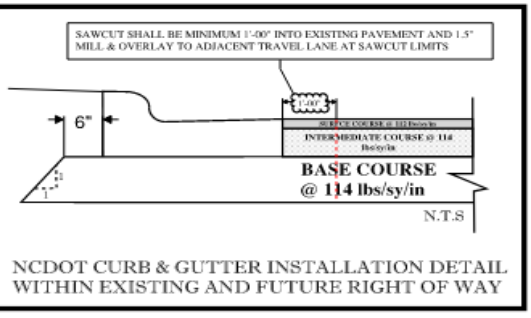
1.) PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

2.) WEDGING MAY BE REQUIRED TO ADJUST CROSS SLOPES IN ORDER TO OBTAIN POSITIVE DRAINAGE.

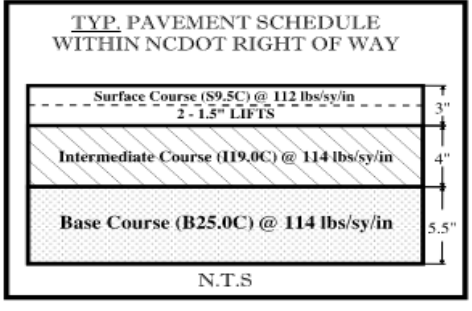
3.) PATCHING AND LEVELING MAY BE REQUIRED PRIOR TO RESURFACING THE ROADWAY.



Detail AA

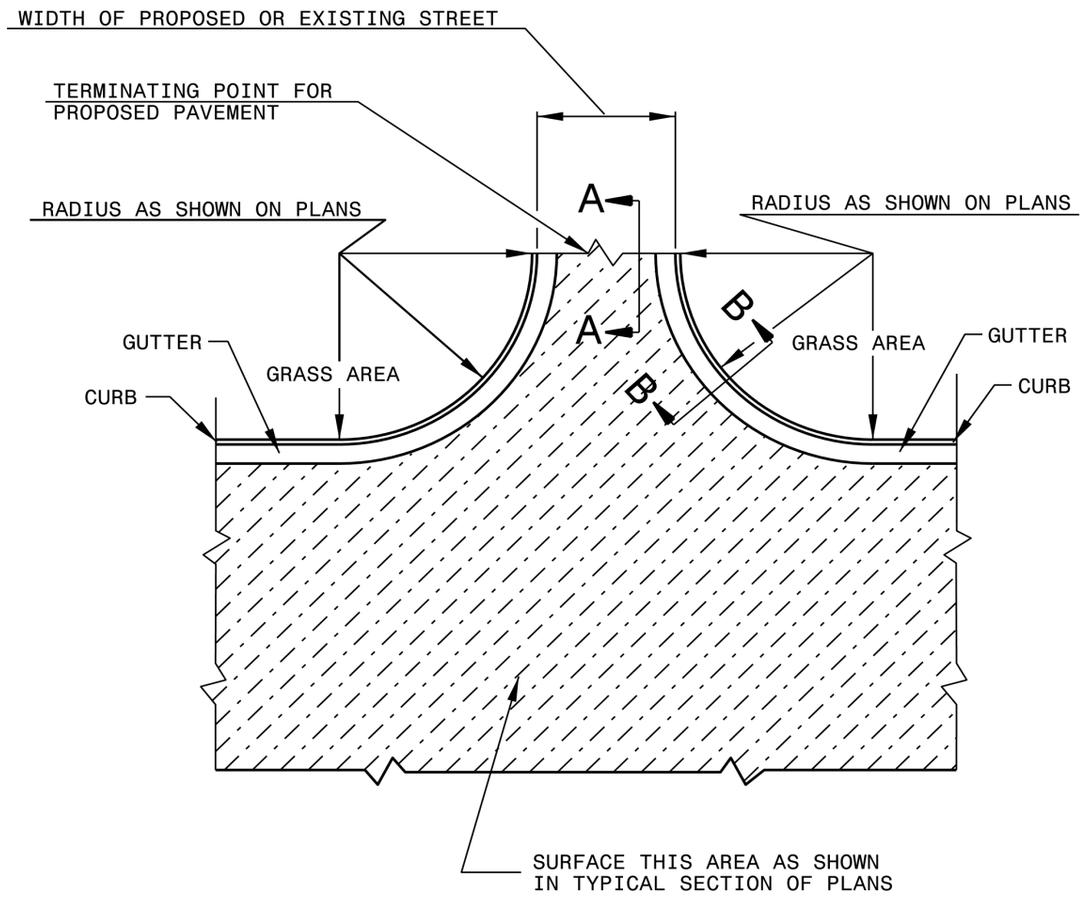


NCDOT CURB & GUTTER INSTALLATION DETAIL WITHIN EXISTING AND FUTURE RIGHT OF WAY



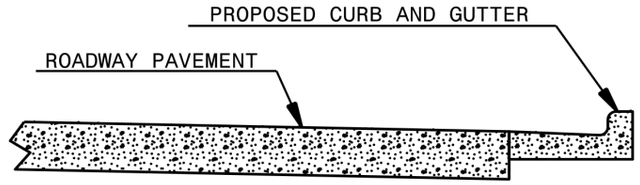
NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

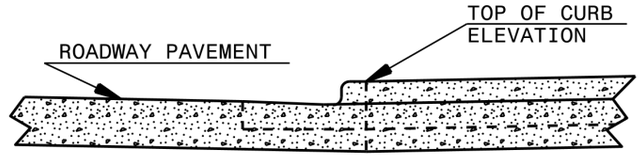


PARTIAL PLAN OF PAVED STREET TURNOUT

USE ON PROPOSED AND EXISTING STREET INTERSECTIONS OR MAJOR TYPE COMMERICAL ENTRANCES



SECTION B-B



SECTION A-A

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR

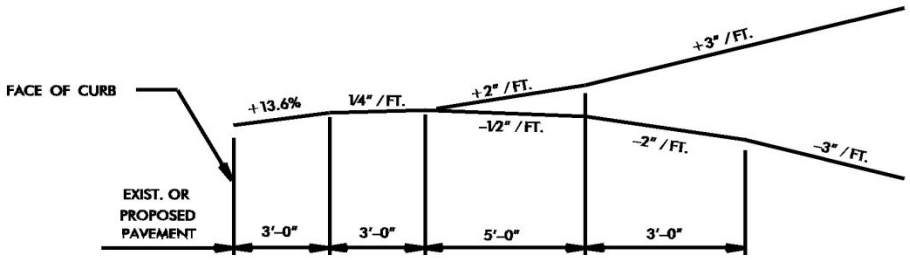
STREET TURNOUT

SHEET 1 OF 1

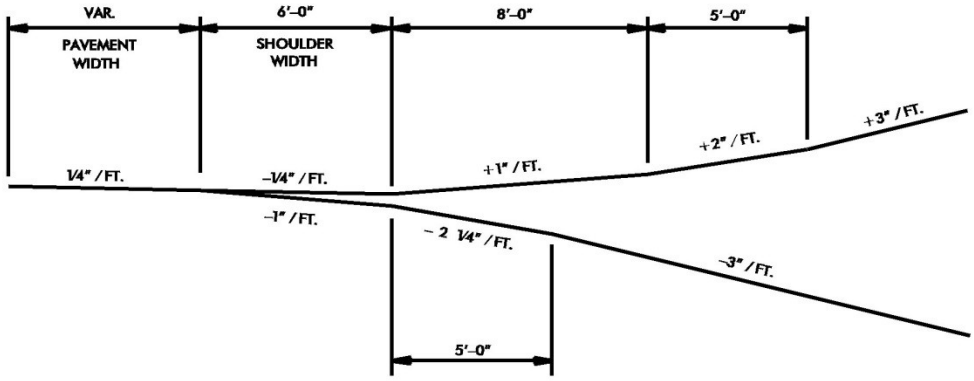
848.04

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.



A. CURB & GUTTER SECTION



B. SHOULDER SECTION

FIGURE 6

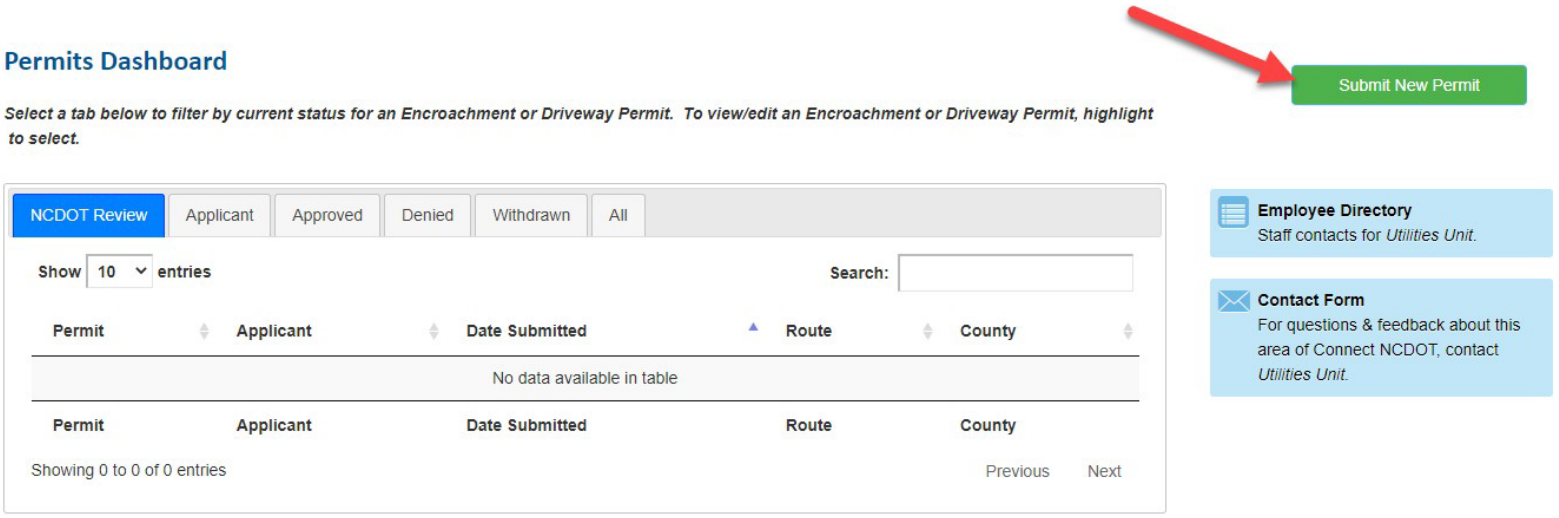
DRIVEWAY TURNOUT GRADES

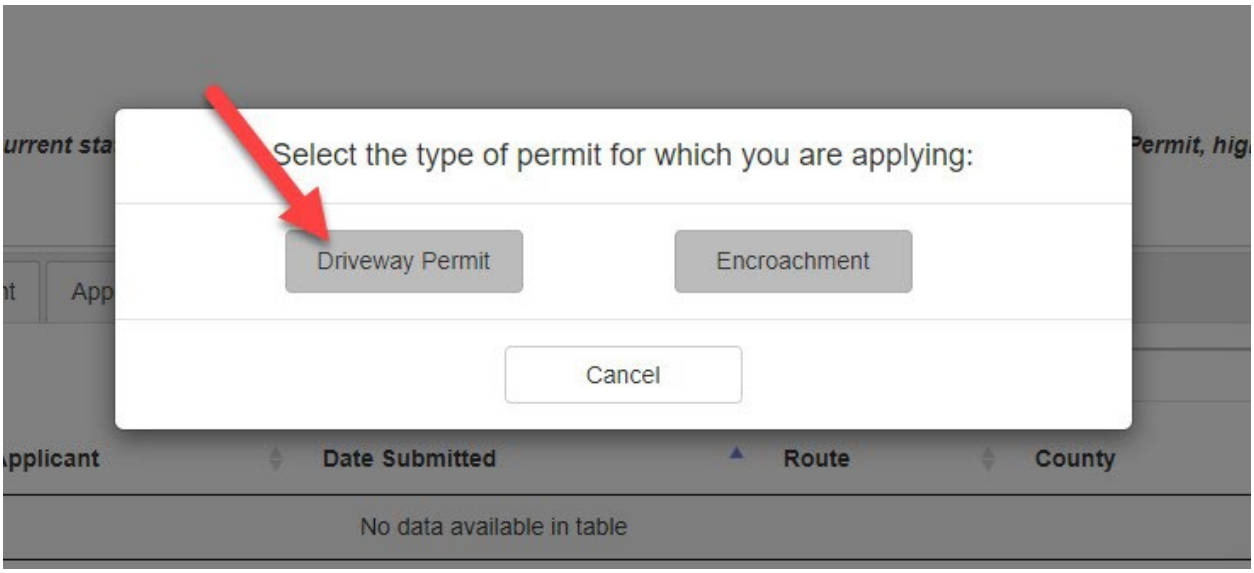
NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

Submitting Your Driveway Permit Through The Portal

Go to: https://connect.ncdot.gov/site/Permits/Pages/default.aspx





For more help see link below:

NCDOT Driveway Permit User Guide

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

Bond Submittal Information And Forms

(Option 1) Official check or Bank check

- *Checks must be either an official check or bank check, made payable to "**North Carolina Department of Transportation**".*
- *Note: Bonds in the form of personal check, company check or cash will not be accepted.*
- *Please include the address and phone number of the remitter.*

(Option 2) Corporate Surety Bond or Continuing Indemnity Bond

- *Please make sure all signatures are on form, including an "Attested by" signature.*
- *Please make sure raised seals are on all forms.*
- *The bond number must be on the top corner, or under "Amount of Bond", or below "Date of Bond". Please do not put the number on the "Principal" or "Surety" Lines.*
- *Please include the address and phone number of the remitter*

When filling out the Performance and Indemnity Bond Form, please make sure to select the correct form:

- ***Property Owner**: Form 16*
- ***Contractor preforming work for the Property Owner**: Form 16A*

Driveway Bond Requirements – See page 10

Encroachment Bond Requirements – Bond forms are listed at the bottom of the webpage.

APPLICATION IDENTIFICATION		N.C. DEPARTMENT OF TRANSPORTATION STREET AND DRIVEWAY ACCESS PERMIT APPLICATION
Driveway Permit No.	Date of Application	
County:		
Development Name:		

LOCATION OF PROPERTY:

Route/Road:

Exact Distance ☐ Miles ☐ Feet N ☐ S ☐ E ☐ W

From the Intersection of Route No. _____ and Route No. _____ Toward _____

Property Will Be Used For: ☐ Residential /Subdivision ☐ Commercial ☐ Educational Facilities ☐ TND ☐ Emergency Services ☐ Other

Property: ☐ is ☐ is not within _____ City Zoning Area.

AGREEMENT

- I, the undersigned property owner, 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 current "Policy on Street and Driveway Access to North Carolina Highways" as adopted by the North Carolina Department of Transportation.
- I agree that no signs or objects will be placed on or over the public right-of-way other than those approved by NCDOT.
- I agree that the driveway(s) or street(s) will be constructed as shown on the attached plans.
- I agree that that 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 if 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 North Carolina Department of Transportation, and I 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 completed within the time specified by the "Policy on Street and Driveway Access to North Carolina Highways".
- I agree to pay a $50 construction inspection fee. Make checks payable to NCDOT. This 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 not to interfere with or endanger the public travel.
- I agree to provide during and following construction proper signs, signal lights, flaggers and other warning devices for the protection of traffic in conformance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the District Engineer.
- I agree to indemnify and save harmless the North Carolina Department of Transportation from all damages and claims for damage that may arise by reason of this construction.
- I agree that the North Carolina Department of Transportation will assume no responsibility for any damages that may be caused to such facilities, within the highway right-of-way limits, in carrying out its construction.
- I agree to provide a Performance and Indemnity Bond in the amount specified by the Division of Highways for any construction proposed on the State Highway system.
- The granting of this permit is subject to the regulatory powers of the NC Department of Transportation as provided by law and as set forth in the N.C. Policy on Driveways and shall not be construed as a contract access point.
- I agree that the entire cost of constructing and maintaining an approved private street or driveway access connection and conditions of this permit will be borne by the property owner, the applicant, and their grantees, successors, and assignees.
- **I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PROPOSED WORK BEGINS AND WHEN IT IS COMPLETED.**

SIGNATURES OF APPLICANT

PROPERTY OWNER (APPLICANT)		WITNESS	
COMPANY		NAME	
SIGNATURE	X	SIGNATURE	X
ADDRESS		ADDRESS	
	Phone No.		

AUTHORIZED AGENT		WITNESS	
COMPANY		NAME	
SIGNATURE	X	SIGNATURE	X
ADDRESS		ADDRESS	
	Phone No.		

APPROVALS

APPLICATION RECEIVED BY DISTRICT ENGINEER

X _____

SIGNATURE **DATE**

APPLICATION APPROVED BY LOCAL GOVERNMENTAL AUTHORITY (when required)

X _____

SIGNATURE **TITLE** **DATE**

APPLICATION APPROVED BY NCDOT

X _____

SIGNATURE **TITLE** **DATE**

INSPECTION BY NCDOT

X _____

SIGNATURE **TITLE** **DATE**

COMMENTS:

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

National Pollutant Discharge Elimination System (NPDES)
Stormwater Permit Compliance Certification

I , _____ , a duly authorized representative of _____ , an industrial/commercial/residential facility requesting attachment to a North Carolina Department of Transportation (NCDOT) highway drainage system at _____address, in _____County, do hereby certify the following:

Check appropriate box and circle type of facility

☐ The Industrial / Commercial / Residential facility does not require an NPDES stormwater permit.

☐ The Industrial / Commercial / Residential facility does require an NPDES stormwater permit. The permit has been obtained and a Stormwater Pollution Prevention Plan (SPPP) is in place. Appropriate structural stormwater best management practices (BMPs) are designed and will be in place as required by the North Carolina Department of Environment and Natural Resources (NCDENR) and/or the local governing agency. All structural stormwater BMPs are located outside of NCDOT right-of-way.

I understand if the NCDOT determines the facility is not in compliance with NPDES stormwater requirements, the Department will report the noncompliance to the NCDENR Division of Energy, Mineral and Land Resources. I also understand that falsification of this certification may result in penalty of law against the facility and me as prescribed in the North Carolina General Statutes.

Signature: _____

Date: _____

Note: If the applicant has a question as to whether an NPDES stormwater permit is required, he or she may contact the NCDENR Division of Energy, Mineral and Land Resources in Raleigh at (919) 707-9200 (ask for Stormwater and General Permits Unit).

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

VERIFICATION OF COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

(Check Appropriate Box)

Permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers are not required for this project. However, all applicable federal and state regulations have been followed.

The required permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers have been obtained for this project. Copies of permits and Completion Certificates are attached.

All applicable NPDES Stormwater Permit requirements have been met for this project. (The applicant should contact the N.C. Division of Water Quality in Raleigh to determine if a stormwater permit is required.)

The project is in compliance with all applicable sedimentation and erosion control laws and regulations.

Project Name: _____

Township: _____ County: _____ Project

Engineer: _____ Phone No.: _____

Project Contact: _____

Applicant's Name: _____ P.E. SEAL

Date Submitted: _____

Form VCER-1
June 1, 2006

NCDOT | Division 10 | District 2

Permit Number: Click or tap here to enter text. Project Name: Click or tap here to enter text. Date: Click or tap to enter a date.

NCDOT PIPE MATERIAL SELECTION GUIDE

FILL TABLES

RCP (REINFORCED CONCRETE) AASHTO M170 [1]

CLASS II		CLASS III		CLASS IV		CLASS V	
MIN.[4]	MAX.	MIN.[4]	MAX.	MIN.[4]	MAX.	MIN.[4]	MAX.
2.0′	10.0′	2.0′	20.0′	1.0′	30.0′	1.0′	40.0′

(FOR FILLS >40′ & <80′ USE LRFD DIRECT DESIGN METHOD. NOTE: DIRECT DESIGN METHOD RCP PIPES MUST HAVE A MINIMUM DIAMETER OF 36″.)

WHEN FILL HEIGHTS (NOT INCLUDING THE PAVEMENT STRUCTURE AND CURB) FOR RCP RUNNING PARALLEL TO AND UNDER CURB AND GUTTER, EXPRESSWAY GUTTER, SHOULDER BERM GUTTER AND ADJACENT TO MEDIAN BARRIER ARE 1′ OR LESS, SPECIFY CLASS IV RCP.

WHEN THE FILL HEIGHTS (FROM TOP OF PIPE TO SUBGRADE) FOR RCP RUNNING UNDER/ACROSS THE PAVEMENT ARE 1′ OR LESS, SPECIFY CLASS V RCP.

SPECIFY A SINGLE CLASS OF RCP IN A SINGLE RUN OF PIPE.

CSP (CORRUGATED STEEL) AASHTO M36 2 2/3 X 1/2 CORRUGATION [2][3]

SIZE	MIN.[4]	MAXIMUM (Ga)	16	14	12	10	8
12″	1.0′		204′	256′			
15″	1.0′		162′	204′			
18″	1.0′		135′	169′	239′		
24″	1.0′		100′	126′	178′		
30″	1.0′		79′	100′	142′		
36″	1.0′		65′	83′	117′	152′	
42″	1.0′		55′	70′	100′	130′	160′
48″	1.0′		48′	61′	87′	113′	139′
54″	1.0′			54′	77′	100′	123′
60″	1.0′				69′	90′	111′
66″	1.0′					81′	100′
72″	1.0′					74′	91′
78″	1.0′						81′
84″	1.0′						69′

CAAP (CORRUGATED ALUMINUM) AASHTO M196 2 2/3 x 1/2 CORRUGATION [3]

SIZE	MIN.[4]	MAXIMUM (Ga)	16	14	12	10	8
12″	1.0′	123′	155′	218′	281′	344′	
15″	1.0′	98′	123′	174′	224′	275′	
18″	1.0′	81′	102′	144′	187′	228′	
24″	1.0′	60′	76′	108′	139′	171′	
30″	1.0′		60′	85′	111′	136′	
36″	1.0′		50′	71′	92′	113′	
42″	1.0′			60′	78′	96′	
48″	1.0′			52′	68′	84′	
54″	1.0′			46′	50′	74′	
60″	1.0′				50′	62′	
66″	1.0′					51′	
72″	1.0′					41′	

HDPE AASHTO M294

SIZE	MIN.[4]	MAX.
12″	2.0′	20′
15″	2.0′	20′
18″	2.0′	20′
24″	2.0′	20′
30″	2.0′	17′
36″	2.0′	17′
42″	2.0′	17′
48″	2.0′	17′
54″	2.0′	17′
60″	2.0′	17′

PP ASTM F2881, ASTM F2764, OR AASHTO M330 [7]

SIZE	MIN.[4]	MAX.
12″	1.0′	20′
15″	1.0′	20′
18″	1.0′	20′
24″	1.0′	20′
30″	1.0′	20′
36″	1.0′	20′
42″	1.0′	20′
48″	1.0′	20′
54″	NA	NA
60″	1.0′	20′

PVC–ASTM F949 AASHTO M304

SIZE	MIN.[4]	MAX.
12″	2.0′	30′
15″	2.0′	30′
18″	2.0′	30′
24″	2.0′	30′
30″	2.0′	30′
36″	2.0′	30′

NOTES

1– RCP IS NOT ALLOWED FOR GRADES >10%
2– FOR COUNTIES LISTED IN ARTICLE 310-0 OF THE STANDARD SPECIFICATIONS CSP IS NOT ALLOWED. IN OTHER COUNTIES CSP REQUIRES AN ACCEPTABLE COATING IN ACCORDANCE WITH 1032-4.
3– FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL AND MANUFACTURERS SPECIFICATION.
4– MINIMUM FILL HEIGHT IS MEASURED FROM TOP OF PIPE TO SUBGRADE.
5– WHERE SITE CONDITIONS ALLOW: INCREASE PIPE DIAMETER OF OPEN END CROSS PIPES AND SECTIONS OF STORM SEWER SYSTEMS ACTING AS OPEN END CROSS PIPES, A MINIMUM OF ONE SIZE FOR FUTURE REHABILITATION. THIS IS IN ADDITION TO UPSIZING TO COMPENSATE FOR BURYING INVERTS FOR WILDLIFE PASSAGE.
6– FOR PIPE RUNS WITH GREATER THAN 12′ VERTICAL DROP TO DOWNSTREAM STRUCTURE, PROVIDE A MEANS TO REDUCE RISK OF UNINTENDED ENTRY INTO UPSTREAM END OF PIPE.
7– FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. JUSTIFY FILL HEIGHT OR DESIGN DEVIATIONS WITH STRUCTURAL DESIGN BASED ON AASHTO LRFD BRIDGE DESIGN OR ASTM STANDARDS. SUBMIT DESIGN SEALED BY AN NC PE FOR REVIEW & APPROVAL BY NCDOT.

INSTALLATION OF ALL PIPE TYPES IS SUBJECT TO THE INSTALLATION METHODS FOUND IN THE STANDARD DRAWINGS, STANDARD SPECIFICATIONS, HYDRAULICS GUIDELINES, AND CONTRACT DOCUMENTS; ACCOUNTING FOR SITE CONDITIONS SUCH AS SOIL PROPERTIES.

ALL PIPES TYPES ARE SUBJECT TO THE MAXIMUM AND MINIMUM FILL HEIGHT REQUIREMENTS AS FOUND IN CHAPTER 5 OF THE ROADWAY DESIGN MANUAL. THE APPROPRIATE CLASS OF PIPE FOR RCP AND GAUGE THICKNESS FOR CSP/CAAP SHOULD BE SELECTED BASED ON FILL HEIGHT.

SITE SPECIFIC CONDITIONS MAY LIMIT A PARTICULAR MATERIAL BEYOND WHAT IS IDENTIFIED IN THE TABLE. THESE CONDITIONS INCLUDE, BUT ARE NOT LIMITED TO, ABRASION, ENVIRONMENTAL, SOIL RESISTIVITY AND PH, HIGH GROUND WATER AND SPECIAL LOADING CONDITIONS. THE HYDRAULIC DESIGN ENGINEER WILL DETERMINE IF ADDITIONAL RESTRICTIONS ARE NECESSARY.

		RCP	CSP	CAAP	HDPE	PP	PVC–ASTM F949 AASHTO M304
OPEN END CROSS PIPES	INTERSTATE[5]	CAN BE USED	USE ONLY IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY IF PIPE SLOPE IS GREATER THAN 10%	DO NOT USE	DO NOT USE	DO NOT USE
	PRIMARY[5]	CAN BE USED	CAN BE USED	CAN BE USED	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST
	SECONDARY	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
STORM DRAIN SYSTEMS	INTERSTATE	CAN BE USED	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	DO NOT USE	DO NOT USE	DO NOT USE
	PRIMARY	CAN BE USED	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST
	SECONDARY	CAN BE USED	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY AT SYSTEM INLETS & SYSTEM OUTLET IF PIPE SLOPE IS GREATER THAN 10%	CAN BE USED	CAN BE USED	CAN BE USED
TRANSVERSE MEDIAN PIPES	INTERSTATE	CAN BE USED	USE ONLY IF PIPE SLOPE IS GREATER THAN 10%	USE ONLY IF PIPE SLOPE IS GREATER THAN 10%	DO NOT USE	DO NOT USE	DO NOT USE
	PRIMARY	CAN BE USED	CAN BE USED	CAN BE USED	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST	USE ONLY IF TRAFFIC <15000 ADT & <200 DUALS & <100 TTST
	SECONDARY	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
SLOPE DRAINS[6]	INTERSTATE	DO NOT USE	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
	PRIMARY	DO NOT USE	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
	SECONDARY	DO NOT USE	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
SIDE DRAINS	INTERSTATE	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
	PRIMARY	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED
	SECONDARY	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED	CAN BE USED

DEFINITIONS

SIDE DRAINS– STORM DRAIN PIPES RUNNING PARALLEL TO THE ROADWAY TO INCLUDE PIPES IN THE MEDIANS, OUTSIDE DITCHES, DRIVEWAYS AND UNDER SHOULDER BERM GUTTER ALONG OUTSIDE SHOULDERS GREATER THAN 4′ WIDE. MAY OR MAY NOT BE OPEN ENDED. 1′ MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

STORM DRAIN SYSTEMS– LATERAL DRAIN PIPE UNDER CURB AND GUTTER, EXPRESSWAY GUTTER AND SHOULDER BERM GUTTER (WITH SHOULDERS 4′ WIDE OR LESS) THAT CONNECT DRAINAGE STRUCTURES AND IS NOT OPEN ENDED. ALSO INCLUDES CROSS DRAIN CONNECTING TWO OR MORE SYSTEMS OR SYSTEM OUTLETS. ONLY PIPE WITH SMOOTH WALL INSIDE WALLS WILL BE ALLOWED FOR STORM DRAIN SYSTEMS.

TRANSVERSE MEDIAN PIPES– SHALLOW CROSS DRAIN PIPE THAT COLLECTS DRAINAGE IN A MEDIAN DITCH OR CURB SECTION AND DEPOSITS IT OUTSIDE DITCHES OR NATURAL DRAINAGE CHANNELS. MAY OR MAY NOT BE OPEN ENDED.

ALTERNATE PIPE– PIPE IN WHICH MATERIAL IS UNSPECIFIED ON THE DRAINAGE SUMMARY SHEET AND DRAINAGE PLANS.

HDPE– HIGH DENSITY POLYETHYLENE

PP– POLYPROPYLENE

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