



# City Council Agenda

Thursday, May 12, 2022

6:00 PM

35 Cabarrus Avenue, W, Concord NC 28025

Cell phones are to be turned off or placed on vibrate during the meeting. Please exit the Council Chambers before using your cell phone.

The agenda is prepared and distributed on Friday preceding the meeting to Council and news media. A work session is then held on the Tuesday preceding the regular meeting at 4:00 pm.

**I. Call to Order**

**II. Pledge of Allegiance and Moment of Silent Prayer**

**III. Approval of Minutes**

March 22, April 12, and April 14, 2022.

**IV. Presentations**

**1. Presentation of a Proclamation recognizing May 15 - 21, 2022 as National Public Works Week. (Work Session)** National Public Works Week (NPWW) is a celebration of the tens of thousands of women and men in North America who provide, administer, and maintain the infrastructure collectively known as public works. Instituted as a public education campaign by the American Public Works Association in 1960, NPWW calls attention to the importance of public works in community life and to enhance the prestige of those who serve the public good every day with their dedication. NPWW is observed during the third full week of May.

**2. Recognition of the Jay M. Robinson High School Men's Basketball team for winning the 2A Championship.**

**3. Presentation of the 2022 Jo Atwater Continuous Core Values Award.** The Jo Atwater Continuous Core Values Award is the highest award presented to a City of Concord co-worker. Jo Atwater's life was synonymous with heartfelt service to others in our community and the highest dedication to our organizational core values. Jo worked for the City from 1994 until her passing in 2004. During this time, she became a respected friend and inspirational teammate to all coworkers. This award continues Jo's vibrant spirit and valued legacy by annually recognizing one coworker that best embodies our organizational core values and commitment to serving others in the community.

**V. Unfinished Business**

**VI. New Business**

**A. Informational Items**

**B. Departmental Reports**

**C. Recognition of persons requesting to be heard**

**D. Public Hearings**

**1. Conduct a public hearing pursuant to NC General Statutes Sec. 158-7.1 and consider offering a contract for a three year / 85% tax based Economic Development Incentive Grant to Westwinds Center, LLC and NASCAR Media Group, LLC to locate at 7550 West Winds Blvd. NW, Concord, NC.** Under the North Carolina General Statutes, City Council may offer incentives to stimulate private sector expansion of new facilities. NASCAR is considering relocating the NASCAR Productions operations from uptown Charlotte to a new technology center. The proposed facility would be adjacent to the existing NASCAR Research and Development Center in Concord's West Winds Business Park and provide a mix of office and broadcast television and video production space. The new facility would be approximately 58,000 SF. NASCAR's proposed investment represents a total \$28,500,000.00 investment in real and personal property. The project expects to bring

125 full time jobs to Cabarrus County from Mecklenburg County with an average wages of \$77,000.00. The total value of the City's three year grant is estimated to equal \$340,986.00 dependent on the actual investment. The City of Concord would still collect a 3-year net revenue of \$60,174.00 after the incentive payments. See attached grant analysis for additional details.

**Recommendation:** Motion to offer a contract for a three year / 85% tax based Economic Development Incentive Grant to Westwinds Center, LLC and NASCAR Media Group, LLC to locate at 7550 West Winds Blvd. NW, Concord, NC.

- 2. Conduct a public hearing to consider adopting an ordinance amending Articles 7 (Section 7.7.4.E), Article 10 (Section 10.3) and Article 14 (Definitions) of the Concord Development Ordinance (CDO) relative to townhouse (townhome) development requirements.** For the past two years, staff has been amending the CDO based on the recommendations of the 2030 Land Use Plan. One of the major final changes to the CDO is addressing townhome, or single-family attached developments, which pose different service challenges than traditional single-family attached developments. The Planning Technical Committee (which includes Council and Planning Commission members) has guided staff in development of these regulations. The townhome issue was discussed by PTT at two meetings, and it was their consensus that new townhome developments should be required to be rear-load (served by an alley or parking area in the rear). An amendment to mandate rear-load for new townhomes was originally proposed but was never reviewed by Council based upon a concern that the proposal was not compliant with the statutes. Staff reviewed this concern with Legal, and it was determined that the language in the statutes does prohibit the rear-load mandate. Staff proceeded to develop an amendment to allow front-load units in a manner which will address service concerns. The previously drafted rear-load design requirements are proposed to be retained for the instances in which rear-loads are developed. Prior to consideration of the item by Planning Commission, staff provided notice to approximately 300 recipients of the proposed changes via email and no comments were received. The proposed change has also been posted on the City website offering chances to make comment prior to the Council hearing. The Planning Commission unanimously voted to adopt this change at their April meeting.

**Recommendation:** Motion to adopt an ordinance amending Article 7 (Section 7.7.4.E), Article 10 (Section 10.3) and Article 14 regarding townhouse (townhome) developments.

- 3. Conduct a public hearing to consider adopting an ordinance amending Article 8, Table 8.1.8 (Use Table) of the Concord Development Ordinance (CDO) to address warehousing/distribution of less than 75,000 square feet and to permit water treatment plants in the Office-Institutional (O-I), Light Commercial (C-1) and Light Industrial (I-1) zoning districts** At the April City Council meeting, the Council amended the sewer allocation policy to allow speculative industrial uses of less than 75,000 square feet to request allocation up to 7,500 gallons per day. This 75,000 sf threshold does not traditionally support large scale distribution. This amendment allows warehouse/distribution less than 75,000 square feet in Light Industrial (I-1) with specific standards (PS), as shown in F in the attached document, but a special use permit would not be required. For warehouse/distribution greater than 75,000 of floor area, a special use permit and compliance with the standards (SS) would still be required. Buildings less than 75,000 sf are usually occupied by small to medium size companies that provide jobs as well as support to larger industries. Additionally, the City is planning an expansion of the Hillgrove Water Treatment plant at 55 Palaside Drive NE. The plant is zoned O-I Office Institutional. While researching the acquisition of an adjacent parcel on Arbor Street (which is zoned C-1 Neighborhood Business), it was discovered that such facilities are not permissible in either district (nor in I-1). The 1980's Zoning Ordinance, under which the plant was

developed, allowed the use in these zoning districts. This corrective change would allow the plant expansions to occur in a conforming manner.

**Recommendation:** Motion to adopt an ordinance amending Article 8, Table 8.1.8 (Use Table) of the Concord Development Ordinance (CDO) to address warehousing/distribution of less than 75,000 square feet and to permit water treatment plants in the Office-Institutional (O-I), Light Commercial (C-1) and Light Industrial (I-1) zoning districts.

- 4. Conduct a public hearing to consider adopting an ordinance amending Articles 2 and 3 (Streets and Pedestrian Paths and Driveways) of the Technical Standards Manual (TSM).** Over the past year, the Transportation and Engineering staffs have been working on amending the Technical Standards Manual (TSM) regarding streets/pedestrian paths and driveways. The TSM is a subset of the Concord Development Ordinance (CDO) and amendments require a public hearing. These proposed revisions predominately involve codifying existing practice and modernizing outdated requirements but there are some changes. Additionally, much of the revision involves removing the technical details from the text, and placing them in a separate manual for ease of use. Prior to consideration of the item by Planning Commission, staff provided notice to approximately 300 recipients of the proposed changes via email and no comments were received. The proposed change has also been posted on the City website offering chances to make comment prior to the Council hearing. The Planning Commission unanimously voted to adopt this change at their April meeting, but requested that the staff work on a set of criteria for consideration of the use of "hammerhead" cul-de-sacs, and to bring that back as an amendment in the near future. (note that the complete strike-through document is included in the attached staff report package sent to Planning Commission).

**Recommendation:** Motion to adopt an ordinance amending Article 2 (Streets and Pedestrian Paths) and Article 2 (Driveways) of the Technical Standards Manual (TSM).

#### **E. Presentations of Petitions and Requests**

- 1. Consider authorizing the City Manager to send a letter of support to the North Carolina Department of Transportation (NCDOT) to abandon a public right-of-way.** The property owner, HGSREI LLC, has petitioned the North Carolina Department of Transportation (NCDOT) to abandon a section of right-of-way of Stowe Ln (SR 2839). The property owner has worked with Fire Department staff on details to maintain emergency access to the property. Other City departments found no issue with the abandonment of the State's right-of-way within the limits of the City of Concord.

**Recommendation:** Motion to adopt a resolution consenting to the release of a public right of way by the North Carolina Department of Transportation with the requirement that a public utility easement is retained.

- 2. Consider awarding a contract with Carolina Siteworks Inc. of China Grove, N. Carolina for construction of the Old Charlotte Sidewalk Extension project.** The proposed contract is for the construction of the extension of the sidewalk along the southern side of Old Charlotte Road SW from Warren C Coleman Blvd (HWY 601) to Office Dr. to provide safe pedestrian access along Old Charlotte to the Hartsell Recreation Center. Bids were originally due March 22, 2022 but there was only one bid submitted. Therefore, the bid was rejected without opening and re-advertised. Two bids from interested contractors for the work were received by the Transportation Department on April 5, 2022 with Carolina Siteworks Inc. submitting the certified low quote in the amount of \$546,490.30 and utilizing Alternate A29 in place of item 18. Funding for this project is proposed to come from Community Development Block Grant (CDBG) funds in the amount of \$60,000 and Transportation Project Fund in the amount of \$486,490.30, which is covered by available Pedestrian Improvement Program (PIP) funds.

**Recommendation:** Motion to award the base bid and authorize the City manager to negotiate and execute a contract with Carolina Siteworks Inc. of China Grove N. Carolina for construction of the Old Charlotte Sidewalk Extension project.

- 3. Consider awarding the total bid for the City of Concord's annual street preservation program to Blythe Construction Inc. and approve the attached budget ordinance to appropriate funds from reserve funds.** One of Council's continuing goals is to improve the service levels and delivery of the City's annual street preservation program. Powell Bill receipts and General Fund revenues are being used to fund this work by contracted forces. Formal bids for this work were opened on April 18, 2022 with Blythe Construction Inc. submitting the lowest total bid in the amount of \$3,259,781.37. Work such as patching, leveling, milling, resurfacing, re-striping, re-marking, and re-installation of permanent raised pavement markings work on just under 22 lane miles of designated streets and 5,000 Tons of patching on other City infrastructure will be performed. Contract Final Completion date is 180 days from the Notice to Proceed.

**Recommendation:** Motion to award the total bid and authorize the City manager to negotiate and execute a contract with to Blythe Construction Inc. in the amount of \$3,259,781.37 for the City of Concord's annual streets preservation program and approve the attached budget ordinance to appropriate funds from reserve funds.

- 4. Consider recognizing the Hunton Forest Home Owners Association into the City's Partnership for Stronger Neighborhoods program.** Hunton Forest is a relatively new community to Concord. Located off Poplar Tent Rd near International Drive and the Zemosa Acres Farm, the neighborhood is a charming family-friendly community. There is a total of 299 households with multiple style type homes built by Taylor Morrison and Ryan Builders. Hunton Forest houses a diverse community of residents a range of race, age, ethnic backgrounds, and family sizes. Officers for the Association are: President Joseph Marino; Vice President Arnold Woodruff; Treasurer Christopher Simms; and Secretary Takeida Carter. The Association hosts monthly meetings in Fire Station 7 and hold officer elections each February. They have submitted all the required documentation for recognition. By approving their inclusion in the program, the City would have a total of 73 recognized neighborhoods in the Partnership for Stronger Neighborhoods since the program's foundation in 2000.

**Recommendation:** Motion to approve the acceptance of Hunton Forest as a recognized neighborhood in the Partnership for Stronger Neighborhoods Program.

- 5. Receive an update on the design progress of the J.E. "Jim" Ramseur Park, consider adopting revisions to the park master plan, and authorize the City Manager to negotiate and execute a contract amendment with Woolpert, North Carolina PLLC to complete design development and construction documents for Phase 1 (Park only).** The property at 1252 Cox Mill Road in Concord, which totals approximately 28.6 acres and is adjacent to Cox Mill Elementary School, was purchased by the City in 2020 to serve as the site of Concord's first Community Park in the Northwest. Parks and Recreation selected the firm Woolpert, located out of South Charlotte, through the RFQ process for design of the park. The master plan was originally adopted by Council in August of 2021. This is the fourth amendment to Woolpert's original contract and is intended to advance detailed design for phase 1 only (park) through Design Development and Construction Documents. In addition, this amendment will include a TIA for phases 1 and 2, additional architectural services for pavilion and restroom buildings, and shelters, and allowances to complete geotechnical investigations, wetland delineations, and to progress the design through the permitting and plan review phase. The following items have been completed to date: 1) Original master plan and community engagement, 2) Surveying, due diligence on pedestrian bridge crossing, and jurisdictional determination for environmental permitting requirements, 3) Building programming and building renderings for the

future Recreation Center, 4) Schematic design plans for all phases of the park, 5) alignment and cost options for sewer access to the property, and 6) detailed construction cost estimates for the next 5-10 years with additional inflation considerations. This work is critical to continue the design process once the master plan has been revised, and will accelerate the design and development of the park, with the goal of having the project shovel ready by late Spring/early Summer of 2023.

**Recommendation:** Receive the update and consider making a motion to adopt the revised Master Plan conceptual map for J.E. "Jim" Ramseur Park, and to authorize the City Manager to negotiate and execute a contract amendment with Woolpert, North Carolina, PLLC in the amount of \$1,189,062 for Design Development, Construction Documents, Plan Review and Permitting, Traffic Impact Analysis, additional cost estimation services, and geotechnical and other environmental site investigations and allowances.

- 6. Consider authorizing the City Manager to negotiate and execute a contract with Kimley Horn for design services for Clarke Creek Greenway in the Cox Mill area in the amount of \$141,100.** Clarke Creek Greenway, also known as the Cox Mill Loop, is a high priority greenway project for the City of Concord as identified by the Open Space Connectivity Analysis and Parks and Recreation's goal of having 30 miles of developed greenway citywide by the year 2030. It is proposed to extend from Schrader Street NW in the Winding Walk Neighborhood to Cox Mill Road, and will also feature connections to Highland Creek, Allen Mills, the Planned J.E. "Jim" Ramseur Park, Cox Mill Elementary School, Odell Recreation Fields, Christenbury, and Granary Oaks neighborhoods. Overall, this greenway will be over four (4) miles in length and provide tremendous pedestrian connectivity within this area. The City has selected Kimley Horn through an RFQ process as one of our on-call design firms for Greenway and Connectivity projects. The greenway will feature a 10-foot path that may include asphalt trail, boardwalk, and natural surface in some areas. It will most likely be developed in phases depending on funding and acquisition. Partial funding may come through a Congestion Mitigation and Air Quality (CMAQ) grant recently applied to NCDOT through the Cabarrus-Rowan MPO. This initial scope will include survey and mapping to create the initial alignment for the greenway to continue discussions with the neighborhoods. It will also include project management and coordination with TELICS and surveyors that are working on easement boundaries, and pre-planning and due diligence work for future phases of the design. Future addendums to the contract may include Design Development Plans, Construction Drawings, Geotechnical Investigations, FEMA Floodplain permitting and Wetland Delineation, Utility Coordination, and bidding and construction administration.

**Recommendation:** Motion to authorize the City Manager to negotiate and execute a contract with Kimley Horn in the amount of \$141,100 for professional design services for Clarke Creek Greenway.

- 7. Consider authorizing the City Manager to negotiate and execute a contract with The Dodd Studio LLC for full design services for Dorton Park in the amount of \$468,128.** City Council adopted the new master plan for the renovation and redevelopment of Dorton Park on September 10, 2020. The existing park, located at 5790 Poplar Tent Road, is approximately 30 acres. Parks and Recreation has selected the firm The Dodd Studio, located out of Fort Mill, SC, through an RFQ process for professional design services for the park. The Dodd Studio was also the consultant that completed the Master Plan for Dorton Park and guided the public input process. The design phase will include Design Development Plans, Construction Documents at 50%, 90% and 100% level, Geotechnical site work and investigations, architectural services for existing and proposed buildings on the property, and stream restoration and stabilization services for Afton Run Branch. Dorton Park is a proposed GO Bond funded project and will also include a segment of Coddle Creek Greenway.

**Recommendation:** Motion to authorize the City Manager to negotiate and execute a contract with The Dodd Studio in the amount of \$468,128 for Full Design services for Dorton Park.

- 8. Consider authorizing the City Manager to negotiate and execute a contract with Cole Jenest & Stone, Bolten & Menk, Inc. for full design services for Hartsell Park Complex in the amount of \$532,155.** City Council adopted the new master plan for the renovation and redevelopment of Hartsell Park Complex on December 9, 2021. The existing park, with parking areas on Swink Street, Old Charlotte Road, and Sunderland Road, is approximately 22.5 acres and includes the Hartsell Recreation Center, Hartsell Ballfield Complex, and Hartsell neighborhood park. Parks and Recreation has selected the firm Cole Jenest & Stone, Bolten & Menk, Inc., located out of Charlotte, NC, through an RFQ process for professional design services for the park. The original master plan was completed by Viz Design and staff guided the public input process. This design phase will include Schematic Design, Design Development Plans, Construction Documents at 50%, 95%, and 100% level, Geotechnical site work and investigations, architectural services for existing and proposed buildings on the property, cost estimation services, and allowances for surveying and additional mapping. Full turn-key development of Hartsell Park is a proposed GO Bond funded project presented to Council, with a proposed construction budget of approximately \$6.8M.

**Recommendation:** Motion to authorize the City Manager to negotiate and execute a contract with Cole Jenest & Stone, Bolten & Menk, Inc. in the amount of \$532,155 for Full Design services for Hartsell Park

- 9. Consider authorizing the City Manager to negotiate and execute a contract with Blythe Brothers Asphalt Co. LLC in the amount of \$361,311 for the General Aviation Parking Lot improvements at the Concord-Padgett Regional Airport.** Bids were due on April 20, 2022 and only 1 bid was received. The bid was rejected and re-advertised per North Carolina General Statutes. One bid was received and opened on May 2, 2022. Blythe Brothers Asphalt Co. LLC submitted the low responsive base bid in the amount of \$361,311. Talbert, Bright and Ellington reviewed the bids and concurred all bid requirements of the specifications were met. This project will be 100% funded by the North Carolina Department of Transportation Division of Aviation Commercial Service Airport Improvement Program.

**Recommendation:** Motion to accept the bid and authorize the City Manager to negotiate and execute a contract with Blythe Brothers Asphalt Co. LLC in the amount of \$361,311 for the General Aviation Parking Lot project at the Concord-Padgett Regional Airport and approve the budget amendment.

- 10. Consider awarding a bid in the amount of \$1,324,965.00 to Service Electric Company for construction of Substation T at 2700 Concord Parkway South.** Substation T Site-work/grading is now complete. Bid specifications for construction of the concrete foundations and all above ground facilities were developed and a formal bid process was held on April 20, 2022. Six construction firms submitted bids, which were evaluated by Staff for adherence to specifications. The lowest bidder, at \$1,324,965.00, was Service Electric Company. Service Electric Company was deemed to be a responsive and responsible bidder. Upon a Notice to Proceed letter, Service Electric Company will have 210 days to perform the work. Substation T remains on schedule for commissioning in March 2023.

**Recommendation:** Make a motion to award a bid for \$1,324,965.00 to Service Electric Company for construction of Substation T at 2700 Concord Parkway South.

- 11. Introduce the Bond Order Authorizing the Issuance of \$60,000,000 General Obligation Parks and Recreation Bonds of the City of Concord, North Carolina.** The City Council has determined that it is necessary to pay the capital costs of providing parks and recreation facilities. An application has been filed with the

Secretary of the Local Government Commission of North Carolina requesting Commission approval of the General Obligation Parks and Recreation Bonds as required by the Local Government Bond Act, and the City Clerk has notified the City Council that the application has been accepted for submission to the Local Government Commission. The next step in the process is to introduce the bond order.

**Recommendation:** Motion to Introduce the Bond Order Authorizing the Issuance of \$60,000,000 General Obligation Parks and Recreation Bonds of the City of Concord, North Carolina.

- 12. Consider adopting a resolution setting a public hearing on a General Obligation Bond Order and related matters.** As part of the GO Bond referendum process, the City Council must hold a public hearing. The attached resolution sets the public hearing date of June 9th. A notice of the bond order will be published with a notice of the public hearing in the newspaper on or before June 3rd.

**Recommendation:** Motion to adopt a resolution setting a public hearing on a General Obligation Bond Order and related matters.

- 13. Consider adopting a resolution authorizing the sale of multiple parcels to WeBuild Concord, Inc for the purpose of development of affordable housing.** In 1977, the then City Board of Aldermen designated the Board as a housing authority pursuant to Chapter 157 of the North Carolina General Statutes. Acting as a housing authority, the City Council has the ability to sell property to WeBuild for a public use such as affordable housing. WeBuild (“buyer”) has offered to purchase 77 Cabarrus Avenue SW; 338 Lincoln Street SW; 11 Powder Street NW, 13 Powder Street NW, 23 Powder Street NW, 26 Powder Street NW, 30 Powder Street NW, 34 Powder Street NW, 69 Powder Street NW, 94 Chestnut Street SW, 327 Howerton Avenue NW, Fenix Drive SW Lot 30, and Swink Street SW Lot 20, for \$588,321.00 for the purpose of developing affordable housing. All City departments have confirmed that the properties are not needed for City use. The properties will all be conveyed with deed restrictions and covenants to assure that they are used exclusively for affordable housing, that they are held in a land trust by WeBuild and that the properties will revert to the City in the event these covenants are breached. The proposed resolution directs the City Manager, City Clerk and City Attorney to take all necessary steps and to execute the necessary documents to affect the conveyance of the property in accordance with North Carolina General Statutes §157-9.

**Recommendation:** Motion to adopt a resolution authorizing the sale of multiple parcels to WeBuild Concord, Inc for the purpose of development of affordable housing and directing the City Manager, City Clerk and City Attorney to take all necessary steps and to execute the necessary documents in order to affect the conveyance of the property.

- 14. Consider adopting a resolution authorizing the sale of part of 250 International Drive NW and the grant of an egress easement to the City of Concord Alcohol Beverage Control Board.** The City acquired this property on October 31, 2000. The Fire Department has confirmed that the property is not needed for the use of Fire Station number 7. The City received an Offer to Purchase the Property from City of Concord Alcohol Beverage Control Board (“Buyer”) for \$71,316.00. The buyer wishes to use the property to construct a driveway access for the neighboring lot located at 230 International Drive NW. The tax value of the property is \$71,316. The buyer is also requesting an egress easement across a portion of 250 International Drive NW as shown on the attached survey. The buyer will contribute thirty percent (30%) of all future maintenance costs for the existing driveway located in the easement area. The proposed Resolution directs the City Manager, City Clerk and City Attorney to take all necessary steps and to execute the necessary documents to affect the conveyance of the property and easement in accordance with this resolution pursuant to North Carolina General Statutes §160A-273 and -274.

**Recommendation:** Motion to adopt a resolution authorizing the sale of part of 250 International Drive NW and the grant of an egress easement to the City of Concord Alcohol Beverage Control Board and directing the City Manager, City Clerk and City Attorney to take all necessary steps and to execute the necessary documents in order to affect the conveyance of the property and easement.

- 15. Consider authorizing the City Manager to negotiate and execute a contract with Bionomic Services, Inc. for the Coddle Creek Water Treatment Plant Lagoons Sludge Removal.** As water is treated to produce safe drinking water, waste is also generated and stored in lagoons. These lagoons fill up with waste that has to be removed and taken to the landfill. This contract is for the removal of the waste from the lagoons and delivering the waste to the landfill. The project was bid under the informal bidding process, and 2 bids were received. The lowest responsible bidder was Bionomic Services, Inc. in the amount of \$314,404.20.

**Recommendation:** Motion authorizing the City Manager to negotiate and execute a contract with Bionomic Services, Inc. in the amount of \$314,404.20 for the Coddle Creek Water Treatment Plant Lagoons Sludge Removal.

- 16. Consider authorizing the City Manager to negotiate and enter into an agreement with Republic Services, Inc, for the disposal of the Coddle Creek Water Treatment Plant Lagoons Sludge.** For the second year, Republic Services, Inc. is keeping the cost of disposal of the lagoon sludge from the Coddle Creek Water Treatment Plant the same at \$80 per ton. It is estimated, approximately 3,350 tons will be removed at a cost of \$268,000.

**Recommendation:** Motion to authorize the City Manager to negotiate and enter into an agreement with Republic Services, Inc. for the disposal of the Coddle Creek Water Treatment Plant Lagoons Sludge at \$80.00 per ton to a maximum of 3,350 tons.

- 17. Consider approving a modification to the Interlocal Agreement with Cabarrus County administering the Central Area Plan.** The City entered into an Interlocal Agreement with Cabarrus County administering the Central Area Plan. Under the Agreement, the City agreed not to extend utilities into certain areas east of the then existing City limits except under certain limited circumstances. Humberto Perez has requested an exception to the Agreement in order to obtain water service for a proposed single-family home at 3535 Katrina Avenue (PIN 5641-70-7417) .

**Recommendation:** Motion to approve a modification of the Interlocal Agreement regarding the Central Area Plan to allow the provision of water to 3535 Katrina Avenue.

## **VII. Consent Agenda**

- A. Consider adopting a resolution authorizing the conveyance of street and sidewalk easements requested by the City of Kannapolis.** The City acquired 103.44 acres located in Cabarrus and Rowan counties and commonly known as the Lake Fisher property. The City of Kannapolis formerly obtained an easement from Concord for the development and maintenance of Stadium Drive to serve a baseball stadium facility. The baseball stadium has now been replaced by facility at another location, and the City of Kannapolis wishes to redevelop the property located at the end of Stadium Drive. The redevelopment will necessitate certain changes to Stadium Drive and those changes require the new easement requested here. The proposed resolution directs the City Manager, City Clerk and City Attorney to take all necessary steps to convey the easements to the City of Kannapolis pursuant to N.C.G.S. §160A-273 and §160A-274.

**Recommendation:** Motion to adopt a resolution authorizing conveyance of street and sidewalk easements requested by the City of Kannapolis, and directing the City Manager, City Clerk and City Attorney to take all necessary steps to convey the easements.



- B. Consider adopting a resolution designating the City Manager, or his appointee, to act as Deputy City Clerk in the absence of the City Clerk.** During times the City Clerk may be out of the office for an extended period of time a Deputy City Clerk should be designated to sign documents and administer the City seal. This resolution give the City Manager, or his appointee, authority to act as Deputy City Clerk in the Clerk's absence.

**Recommendation:** Motion to adopt a resolution designating the City Manager, or his appointee, to act as Deputy City Clerk in the absence of the City Clerk.

- C. Consider approving the Rider Transit Title VI Program Plan Update.** Rider Transit is required by FTA to update our Title VI Civil Rights Program Plan every three years. This update contains new socio-economic survey data from our passengers, the addition of the City of Concord DEI Coordinator to the Title VI complaint process, and reference information to the Voiance language translation services program that was established since the last update in 2019. This plan update was approved by the Concord Kannapolis Transit Commission at their April 29, 2022 meeting.

**Recommendation:** Motion to approve the updated Rider Transit Title VI Program Plan.

- D. Consider authorizing the Concord Police Department to apply for the competitive 2022 Office of Community Oriented Policing Services (COPS) Hiring Program grant.** The Concord Police Department is requesting to apply for the competitive 2022 COPS Hiring Program grant. The department is seeking up to 8 patrol officers. The anticipated start date of the grant, if awarded, is October 1, 2022, which implementation can be delayed until July 1, 2023. The grant lasts three years with a 25% local match for salary and fringe benefits. If the grant is received for all 8 positions, the total salary and benefits amount for the three years would be approximately \$1,785,481. Of this, the grant will reimburse 75% up to \$1,000,000. The City would be responsible for 25% plus any amount over \$1,000,000, which totals \$785,481 over the 36 month period.

**Recommendation:** Motion to authorize the Concord Police Department to apply for the competitive 2022 Office of Community Oriented Policing Services (COPS) Hiring Program grant.

- E. Consider accepting an Offer of Dedication of an access easement and approval of the maintenance agreement.** In accordance with the CDO Article 4, the following access easements and maintenance agreements are now ready for approval: Rowan-Cabarrus Young Men's Christian Association, (PIN 5601-20-0578) 5325 Langford Ave and 5350 Vining St; M/I Homes of Charlotte, LLC (PIN 4681-82-0317) 345 Odell School Road; M/I Homes of Charlotte, LLC (PIN 5610-65-7205) 2850 Rock Hill Church Road. Access easements and SCM maintenance agreements are being offered by the owners.

**Recommendation:** Motion to approve the maintenance agreements and accept the offers of dedication on the following properties: Rowan-Cabarrus Young Men's Christian Association, M/I Homes of Charlotte, LLC and M/I Homes of Charlotte, LLC.

- F. Consider accepting an offer of infrastructure at Sealand Offices.** In accordance with CDO Article 5, improvements have been constructed in accordance with the City's regulations and specifications. The following are being offered for acceptance: 895 LF of 8-inch water line, 10 valves, 3 Fire Hydrants.

**Recommendation:** Motion to accept the offer of infrastructure acceptance in the following subdivisions and sites, Sealand Offices.

- G. Consider adopting a budget appropriating a previously approved \$1,500 donation to Run Cabarrus.** A \$1,500 donation to Run Cabarrus to assist with youth athletic programs was previously approved in November, 2021. A budget ordinance is needed to appropriate the donation.

**Recommendation:** Motion to adopt a budget ordinance appropriating a previously approved \$2,500 donation to Run Cabarrus.

- H. **Consider approving a \$2,500 donation from the Mayor's Golf Tournament Fund to The Officer Jason Shuping Memorial Public Safety Endowed Scholarship for Basic Law Enforcement Training (BLET) Students at Rowan-Cabarrus Community College and to adopt a budget ordinance.** This scholarship, created by Haley Shuping, wife of Officer Shuping, will be used to honor Officer Shuping's legacy by encouraging BLET students to pursue their goal of becoming a law enforcement officer in the community by making the program more financially accessible.

**Recommendation:** Motion to approve a \$2,500 donation from the Mayor's Golf Tournament Fund to The Officer Jason Shuping Memorial Public Safety Endowed Scholarship for Basic Law Enforcement Training (BLET) Students at Rowan-Cabarrus Community College and to adopt a budget ordinance appropriating the donation.

- I. **Consider adopting an ordinance to amend the FY2021/2022 Budget for the Airport Operations to appropriate \$2,603,028 from the Airport Rescue Grant Funding received from the FAA.** The American Rescue Plan Act of 2021 (H.R. 1319, Public Law 117-2), was signed into law by the President on March 11, 2021, and included \$8 billion in funds to be awarded as economic assistance to eligible U.S. airports to prevent, prepare for, and respond to the coronavirus disease 2019 (COVID-19) pandemic. Concord-Padgett Regional Airport received funding in the amount of \$2,603,028 as economic relief. Funds will be used for purposes directly related to the airport, which can include reimbursement of operational and maintenance expenses or debt service payments.

**Recommendation:** Motion to adopt an ordinance to amend the FY2021/2022 Budget for the Airport Operations to appropriate Airport Rescue Grant Funding received.

- J. **Consider adopting ordinances to amend the General Fund operating budget and the General Capital Reserves Fund to complete the year end transfer for future projects listed in the City's Capital Improvement Plan.** Per the City's adopted financial policies, the City Manager has authority to recommend a yearly transfer to the General Capital Reserve fund for future projects listed in the City's Capital Improvement Plan. After careful analysis of our current situation, the City Manager is recommending \$3,000,000 be transferred to the General Capital Reserve Fund. This amount represents surplus earnings from fiscal year ending June 30, 2021.

**Recommendation:** Motion to adopt amendments to the general fund operating budget ordinance and the general capital reserves fund ordinance to complete the year end transfer for future projects listed in the City's Capital Improvement Plan.

- K. **Consider adopting an American Rescue Plan Fund grant project budget amendment and a General Fund Capital Project fund project budget amendment.** At the April regular council meeting, Council approved transferring \$8,000,000 of American Rescue Plan funds to the Fleet Services Building project. The attached budget ordinances appropriate the funding for this additional project.

**Recommendation:** Motion to adopt an American Rescue Plan Fund grant project budget amendment and a General Fund Capital Project fund project budget amendment.

- L. **Consider adopting an ordinance to amend the FY2021/2022 Budget Ordinance for the General Fund to appropriate insurance reimbursements received.** The City of Concord received insurance reimbursements to cover repairs and replacement of damaged vehicles, buildings and property. The attached budget amendment will appropriate these funds to the respective impacted departments.

**Recommendation:** Motion to adopt an ordinance to amend the FY2021/2022 Budget Ordinance for the General Fund to appropriate insurance reimbursements received.

**M. Consider adopting an ordinance to amend the HOME American Rescue Plan fund.** The US Department of Housing and Urban Development has awarded Concord \$4,772,338 as part of the American Rescue Plan under the HOME program. This ordinance is to establish the budget for this new fund.

**Recommendation:** Motion to adopt an ordinance to amend the HOME American Rescue Plan budget to actual projections.

**N. Receive quarterly report on water and wastewater extension permits issued by the Engineering Department in the first quarter of 2022.** In accordance with City Code Chapter 62, attached is a report outlining the water and wastewater extension permits that were issued between January 1, 2022 and March 31, 2022.

**Recommendation:** Motion to receive the first quarter water and wastewater extension report for 2022.

**O. Consider acceptance of the Tax Office reports for the month of March 2022.** The Tax Collector is responsible for periodic reporting of revenue collections for the Tax Collection Office.

**Recommendation:** Motion to accept the Tax Office collection reports for the month of March 2022.

**P. Consider approval of Tax Releases/Refunds from the Tax Collection Office for the month of March 2022.** G.S. 105-381 allows for the refund and/or release of tax liability due to various reasons by the governing body. A listing of various refund/release requests is presented for your approval, primarily due to overpayments, situs errors and/or valuation changes.

**Recommendation:** Motion to approve the Tax releases/refunds for the month of March 2022.

**Q. Receive monthly report on status of investments as of March 31, 2022.** A resolution adopted by the governing body on 12/9/1991 directs the Finance Director to report on the status of investments each month.

**Recommendation:** Motion to accept the monthly report on investments.

**VIII. Matters not on the agenda**

- **Transportation Advisory Committee (TAC)**
- **Metropolitan Transit Commission (MTC)**
- **Centralina Regional Council**
- **Concord/Kannapolis Transit Commission**
- **Water Sewer Authority of Cabarrus County (WSACC)**
- **Public Art Advisory Committee**
- **WeBuild Concord**
- **Barber Scotia Community Task Force Committee**
- **Concord United Committee**

**IX. General comments by Council of non-business nature**

**X. Closed Session (if needed)**

**XI. Adjournment**

\*IN ACCORDANCE WITH ADA REGULATIONS, PLEASE NOTE THAT ANYONE WHO NEEDS AN ACCOMMODATION TO PARTICIPATE IN THE MEETING SHOULD NOTIFY THE CITY CLERK AT (704) 920-5205 AT LEAST FORTY-EIGHT HOURS PRIOR TO THE MEETING.



## Project - Westwinds Productions Facility

Company's Legal Name: Westwinds Center, LLC and NASCAR Media Group LLC  
(NMG will have some personal property in the project)

### Company Representative:

Name and Title: Kelly Dispennette, Managing Director, Real Estate  
Address: One Daytona Blvd, Daytona Beach, FL 32114  
Phone: 386-681-6865  
Email: [kdispennette@nascar.com](mailto:kdispennette@nascar.com)  
Website: [www.nascar.com](http://www.nascar.com)

State of Incorporation: Westwinds Center, LLC is a Florida LLC

Nature of Business: Television and Video production

Current Operations in Cabarrus County (y/n): NASCAR Research and Development is based in Concord on the adjacent parcel; this project would move our Productions Team and operation from NASCAR Plaza (uptown office) to Concord.

### Proposed New or Additional Cabarrus Facility:

Address/Location: 7550 West Winds Blvd. NW, Concord NC 28027  
(Parcel 4680 71 1123 0000)  
Square Feet: 58,000  
Lease or Purchase: (general lease terms) Owned

### Project Summary:

NASCAR is considering relocating the NASCAR Productions operations from uptown Charlotte to a new technology center. The new facility would be adjacent to the existing NASCAR R&D

Center in the West Winds Business Park. The new facility would be a mix of office and broadcast production space.

Investment – Total Investment: \$28.5 Million

Real Property: \$25 Million

Personal Property: \$3.5 Million

Timing of Investment (provide breakdown of investment for each year): Construction 2022-2023

When will project be in operation?: December 2023

New Job Creation Full Time: Bringing 125 jobs to Cabarrus from Mecklenburg

Average Wages: \$77,000

Benefits Offered (y/n): Yes



**Cabarrus County Economic Development Grant Analysis**

		Year 1	Year 2	Year 3
Total Assessed Value (Real)		\$25,000,000	\$25,000,000	\$25,000,000
Total Assessed Value (Personal)		\$3,150,000	\$2,870,000	\$2,555,000
	\$3,500,000.00	\$3,150,000	\$2,870,000	\$2,555,000
County taxes at .74		\$208,310	\$206,238	\$203,907
Grant @ 85 %		\$177,064	\$175,302	\$173,321
Net Taxes to County		\$31,247	\$30,936	\$30,586
			<b>Taxes</b>	<b>\$ 618,455</b>
			<b>Grant</b>	<b>\$ 525,687</b>
			<b>Net Taxes to County</b>	<b>\$ 92,768</b>

**City of Concord Economic Development Grant Analysis**

		Year 1	Year 2	Year 3
Total Assessed Value (Real)		\$25,000,000	\$25,000,000	\$25,000,000
Total Assessed Value (Personal)		\$3,150,000	\$2,870,000	\$2,555,000
	\$3,500,000.00	\$3,150,000	\$2,870,000	\$2,555,000
City taxes at .48		\$135,120	\$133,776	\$132,264
Grant @ 85 %		\$114,852	\$113,710	\$112,424
Net Taxes to City		\$20,268	\$20,066	\$19,840
			<b>Taxes</b>	<b>\$ 401,160</b>
			<b>Grant</b>	<b>\$ 340,986</b>
			<b>Net Taxes to City</b>	<b>\$ 60,174</b>
			<b>GRANT TOTAL</b>	<b>\$ 866,673</b>

*This document is for calculation purposes only. The numbers computed here are estimated based on general assumptions provided by the client, the Cabarrus County Tax office and the North Carolina Dept of Revenue. Actual grants may vary  
 Note: Grants Subject to governmental body approval.*

**DATE:** April 19, 2022  
**CASE:** TA-12-21 Text Amendment (Article 7 - Townhomes)  
**PREPARED BY:** Kevin Ashley, AICP –Deputy Planning Director

**BACKGROUND**

As the Commission is aware, the staff has been in the process of revising the Concord Development Ordinance (CDO) to respond to the recommendations contained in the 2030 Land Use Plan. We have been incrementally working on the revisions with the assistance of Tindale Oliver and Michael Lauer Planning.

One of the remaining items is the revision to the townhome requirements. As we have discussed previously, townhome developments (single family attached) pose challenges that are not present with single family detached developments. These challenges include, but are not limited to utility provision (water, sewer, etc.), garbage collection, parking and maneuvering and landscaping.

This item has been in process for quite a while, and has been recently revised to allow an option for front-load units based upon a concern with statutory compliance.

The item has been posted for comment and notice of the amendment was sent to nearly 300 persons via email. The amendment has been posted on the City's webpage for comment. As of the date of this report, no comments have been received.

The Executive Summary (which was posted online) and the proposed ordinance is attached.

The City's staff will provide a thorough presentation of the recent changes to ensure that the Commission understands the changes.

At the consensus of the Commission, the item can be referred to City Council for public consideration at the May meeting.

**DATE:** March 22, 2022

**CASE:** Executive Summary for Townhome/Townhouse  
Development Regulations

**PREPARED BY:** Kevin Ashley, AICP –Deputy Planning Director

### **BACKGROUND**

This memorandum is intended to serve as a summary to describe the proposed revisions to Article 7 (Base Zoning Districts) as they relate to minimum standards for townhome development. (Note that the NC Building Code designates them as “townhouses”.) The CDO defines a townhome (or townhouse) as “A single-family dwelling unit constructed in a series, group or row of attached units separated by property lines and with a yard on at least two sides. (Source: North Carolina State Building Code, Vol. 1, § 201.2 and Vol. VII, § 202).

The nature of townhome development, coupled with our zoning regulations, pose several challenges related to administration. These include:

- Closely spaced prominent driveways which lead to safety concerns on front load units;
- Lack of front yards and landscaping;
- Difficulty in provision of public services such as trash and garbage collection;
- Smaller lot sizes which, which coupled with driveway location, lead to utility conflicts; and
- Inability to provide enough space for healthy street trees due to the above factors.

In terms of development styles, townhomes are typically either developed as “front-load” or “rear-load” units. Front-load units have their driveways and/or garages from a major street at the front of the homes whereas rear-load units take access off of an alley or a common parking area.

The City initially proposed an ordinance amendment to require all townhomes to be served by a rear alley. After further examination it was determined that the North Carolina General Statutes’ prohibition of the regulation of the location of garage doors would preclude this requirement.



The staff has examined a way to alleviate the above issues related to front-load units. The proposed amendment retains the majority of the previously proposed design language that applies to alley loaded units and proposes new standards for front-load units.

The amendment changes Section 10.3.1 to clarify that minimum driveway coverage requirements are also applicable to front load townhouse units. The existing 30% maximum coverage for front yard driveways is proposed to be increased to 40% and the amendment specifies that all minimum technical standards must be met (such as driveway spacing, utility separation and street trees). Townhouse units that utilize a 20 -foot wide driveway (two car widths) are allowed to exceed the 40% requirement if all other technical standards as discussed above, are met. Note that the increase from 30% to 40% is also applicable for single family detached units, and not just townhomes.

Section 7.7.4 is proposed to be amended to add a section for front-load townhomes that refers to the revised Section 10.3.1. This section reiterates that all technical standards must be met and refers to the Technical Standards Manual (TSM) for specifics.

The previously developed design requirements for rear load units are proposed to remain when those units are developed.

## **SUMMARY**

Main features of the proposed revisions to Section 7.7.4 include:

- All attached homes are required to front on a public or private street, or an open space such as a town square
- Two off-street parking spaces are required per unit and may be provided within a garage. In lieu of providing parking on the individual parcel, part or all of the required parking may be provided on-street or within a common parking area. Additional parking (for visitors) is required at the rate of one space per two units and may also be provided on-street or within a common parking area. Visitor parking is not required for front-load units with the wider two-car driveways.
- Alleys are to be constructed to a minimum width of twelve (12) feet for one-way traffic and sixteen (16) feet for two-way traffic.
- Minimum setbacks for rear-load units are ten (10) feet from all streets. Setbacks from the alley to the garage are also a minimum of ten (10) feet. Groups of structures are proposed to be a minimum of fifteen (15) feet apart.
- Rear-load units are required to provide off-street parking along one side of the main street. Curb extensions are required on the street to provide adequate room for street trees.
- Duplex and triplex projects, which have shared driveways and are on existing lots of record, as of the date of adoption of the ordinance, are exempt from these requirements.

These changes are intended to provide clear guidance relative to new townhome development and to ultimately achieve safer and more efficient design. The changes are also intended to help the City achieve safe and simpler provision of public services/utilities and to provide for the establishment of a desirable street tree canopy.

### 10.3. PARKING AND LOADING

#### 10.3.1. General Standards

##### A. Applicability

The provisions of this Section shall apply to any application for Zoning Clearance or Site Plan approval, except for developments in the CC district:

- ~~1. Detached single-family dwellings or duplex developments on individual lots of record (except that single-family units and duplexes shall maintain an improved area large enough to accommodate two off-street parking spaces not to exceed 30 percent of the area of the front yard); or~~
- ~~2. All developments in the CC district.~~

##### B. Front Yard Parking Standards

###### 1. Applicability

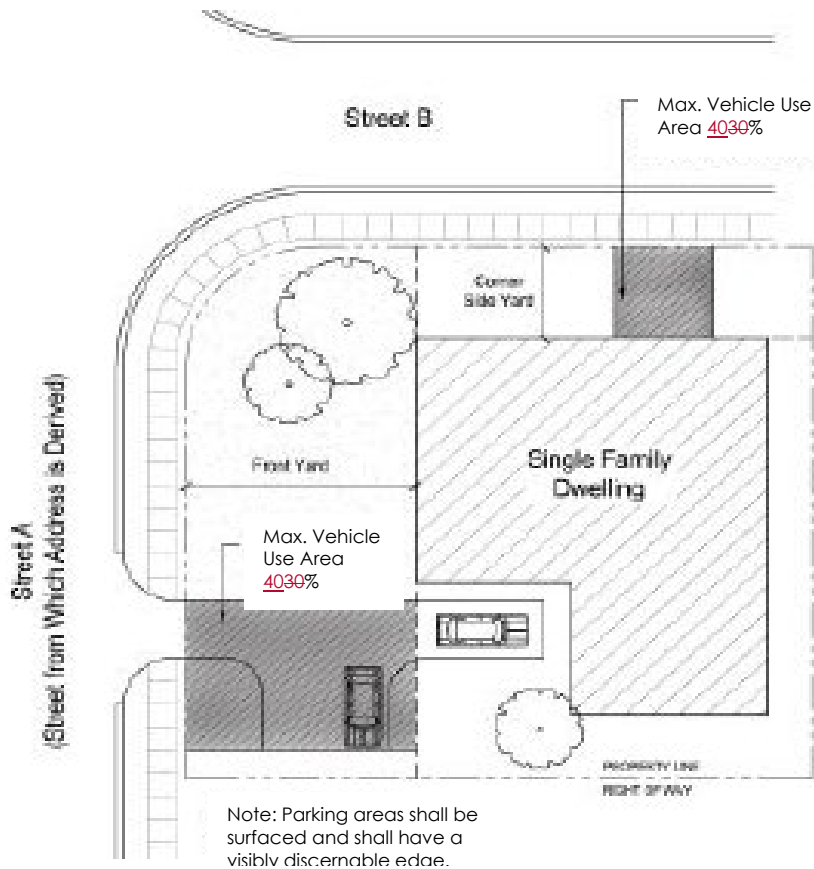
Parking is permitted in the front yards of any single family (detached or attached), duplex, triplex or quadplex dwellings in any zoning district other than agricultural.

###### 2. General

No person shall park or store any motor vehicle, boat, trailer or recreation vehicle in the front yards (between the street and a line drawn parallel to the street from the point of the dwelling that is closest to the street) other than completely upon an improved driveway or improved parking pad.

###### 3. Coverage of Improved Area

Improved parking and drive areas shall ~~be limited in size to 18 feet by 18 feet and shall~~ not exceed ~~430%~~ of the structure's front yard, except that front-load townhouse units with 20-foot wide driveways may exceed 40% maximum provided that all other development regulations in this Ordinance and the infrastructure requirements of the Technical Standards Manual (TSM) are met. (See Section 7.7.4.E). Access to the improved front yard area shall be limited to properly approved curb cuts or other approved access points. Improved parking and drive areas shall be maintained in a safe and sanitary condition, and shall not contribute to soil erosion or tree damage. Proposed improved parking area shall be installed so as to avoid creating standing water conditions, diverting runoff onto neighboring property owners, or adversely impacting stormwater water quality.



**4. Surfacing**

Improved parking or vehicular use areas shall be surfaced with asphalt, concrete, brick or other suitable pavers. Gravel or crushed stone may be used if the gravel is at least two (2) inches deep throughout the vehicular use area, and the vehicular use area has a visible and definable edge made of landscape timbers, metal edging, vegetation such as low shrubs or decorative grasses, or similar technique to distinguish the vehicular use area from the front or corner side yard area.

**5. Exceptions**

- a. Parking in the front yard may be allowed for a special event or circumstance but will require a permit issued by the Chief of Police for such event or circumstance. Permitted events will be limited to two per year per residence.

- b. The prohibitions shall not apply to emergency and public service vehicles whose operators are performing services for which they are responsible, nor do these prohibitions apply to vehicles belonging to persons under contract with the City to perform a public service. However, this exception shall apply only when an emergency situation requires that such vehicles park in the prohibited area.

## E. Special Standards for Townhouses

**Purpose:** The City of Concord recognizes that the physical characteristics of townhouse developments pose a distinct set of service challenges as compared to traditional detached single-family developments. The following standards are intended to provide for 1) the safe movement of vehicles and pedestrians; 2) an adequate amount of resident and visitor parking; 3) the safe provision of public utilities and services; 4) the provision of green space; and 5) the creation of a functional, healthy and sustainable permanent shade tree canopy.

Townhouses may have vehicular access on a principal street (front-load) or on an alley (rear-load).

### 1. Requirements for front-load townhouses.

- a. Townhouse driveways are prohibited on streets that are functionally classified as collectors or higher.
- b. All new townhouse developments with driveways on public or private streets shall meet the minimum provisions of Section 10.3.1, as well as all other minimum infrastructure requirements of the Technical Standards Manual (TSM), including but not limited to driveway spacing, utility location, and street tree planting.
- c. Two off-street parking spaces shall be required per unit, and may be provided within a garage.
- d. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units with driveways less than 20 feet in width, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof). Visitor parking shall not be required for townhouses with 20 foot-wide driveways.

### 2. Requirements for rear-load townhouses.

- a. All townhouse units shall front on a public or a private street or on an improved open space such as a town square, park or a green and shall be served by a rear alley or common parking area. Alleys

shall be at least twelve (12) feet in paved width to accommodate one-way traffic and at least sixteen (16) feet in paved width to accommodate two-way traffic. Individual driveways for dwelling units are permissible only on alleys. Parking within the pavement of the alley shall be prohibited.

- b. Per Section 10.2.5 all private streets shall be constructed to public street standard with the exception of alleys. Construction details for alleys are included in Article 2 of the Technical Standards Manual (TSM).
- c. Alleys shall be designed with a minimum turning radius of thirty (30) feet where they intersect streets and shall be constructed in such a manner as to allow service vehicles to complete turns within the boundary of the alley. Alleys shall be designed in such a manner as to be interconnected to allow through traffic and to avoid dead ends.
- d. Side yards are not required for interior townhouses, but a minimum street setback of ten (10) feet shall be provided along front and corner yards, and building separation requirements of fifteen (15) feet shall be maintained for all groups of townhouse units. Where lot lines are not established or where units are condominiumized, the building setback shall be measured from the back of sidewalk.
- e. Driveways from the rear alley shall be no closer than three (3) feet from the interior side property line. Where interior lot lines are not established or where units are condominiumized, six (6) feet is required between driveways;
- f. Two off-street parking spaces shall be required per unit, and may be provided within a garage. In lieu of providing the required parking spaces on the individual parcel, either a portion of, or all of the required spaces may be provided on-street or within a common off-street parking area.
- g. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof).
- h. Fences and/or walls on the site shall be constructed in such a manner as to allow unobstructed access to all utility meters and easements.
- i. On street parking shall be provided along at least one side of the public or private street. On the side(s) of the street where parking occurs, the planting strip for street trees may be eliminated, but the sidewalk shall still be required. In lieu of the eliminated planting strip, foundation plantings comprised of woody shrubs with a mature height of no more than four (4) feet

shall be installed at a four (4) foot spacing along the building foundation.

- j. On the side of the street where no parking is proposed, street trees shall be planted in accordance with Section 11.7.4. In order to provide a traffic calming measure and to ensure a street tree canopy, curbs shall be extended out in the areas of required building separation between groups of structures to create “bump-outs \*” for the planting of street trees. Street trees shall be installed in bump outs at the end of parallel parking spaces.
- k. The minimum setback from the alley (for the garage) is ten (10) feet measured from the exterior building wall of the structure to the edge of pavement. No minimum side setbacks are required for detached garage structures.
- l. All gas, electric service meter points and fiberoptic services shall be located in the rear. City owned water meters or sewer cleanouts shall not be installed within the limits of the townhouse driveway.
- m. Adequate space shall be provided along the alley for safely storing garbage and recycling receptacles without interfering with the maneuvering area within the alley.

\*Bump-out: A curb extension on residential or low volume streets that create an effect to calm traffic and to slow traffic speeds considerably.

**10.3. PARKING AND LOADING**

**10.3.1. General Standards**

**A. Applicability**

The provisions of this Section shall apply to any application for Zoning Clearance or Site Plan approval, except for **developments in the CC district**

**B. Front Yard Parking Standards**

**1. Applicability**

Parking is permitted in the front yards of any single family **(detached or attached)**, duplex, triplex or quadplex dwellings in any zoning district other than agricultural.

**2. General**

No person shall park or store any motor vehicle, boat, trailer or recreation vehicle in the front yards (between the street and a line drawn parallel to the street from the point of the dwelling that is closest to the street) other than completely upon an improved driveway or improved parking pad.

**3. Coverage of Improved Area**

Improved parking and drive areas shall not exceed **40%** of the structure's front yard, **except that front-load townhouse units with 20-foot wide driveways may exceed 40% maximum provided that all other development regulations in this Ordinance and the infrastructure requirements of the Technical Standards Manual (TSM) are met. (See Section 7.7.4.E).** Access to the improved front yard area shall be limited to properly approved curb cuts or other approved access points. Improved parking and drive areas shall be maintained in a safe and sanitary condition, and shall not contribute to soil erosion or tree damage. Proposed improved parking area shall be installed so as to avoid creating standing water conditions, diverting runoff onto neighboring property owners, or adversely impacting stormwater water quality.





**4. Surfacing**

Improved parking or vehicular use areas shall be surfaced with asphalt, concrete, brick or other suitable pavers. Gravel or crushed stone may be used if the gravel is at least two (2) inches deep throughout the vehicular use area, and the vehicular use area has a visible and definable edge made of landscape timbers, metal edging, vegetation such as low shrubs or decorative grasses, or similar technique to distinguish the vehicular use area from the front or corner side yard area.

**5. Exceptions**

a. Parking in the front yard may be allowed for a special event or circumstance but will require a permit issued by the Chief of Police for such event or circumstance. Permitted events will be limited to two per year per residence.

b. The prohibitions shall not apply to emergency and public service vehicles whose operators are performing services for which they are responsible, nor do these prohibitions apply to vehicles belonging to persons under contract with the City to perform a public service. However, this exception shall apply only when an emergency situation requires that such vehicles park in the prohibited area.

## E. Special Standards for a Townhouse

~~Side yards are not required for interior townhouses, but street and rear yards shall be provided, and building separation requirements shall be maintained for all townhouse structures.~~

~~1. The maximum number of units allowed in a single building is eight (8).~~

~~2. Front loaded townhomes are prohibited on streets which are classified (or proposed to be classified) as collector or higher. Front loaded townhomes are defined as units which provide a vehicular access point to a street, on the same side as the front façade.~~

Purpose: The City of Concord recognizes that the physical characteristics of townhouse developments pose a distinct set of service challenges as compared to traditional detached single-family developments. The following standards are intended to provide for 1) the safe movement of vehicles and pedestrians; 2) an adequate amount of resident and visitor parking; 3) the safe provision of public utilities and services; 4) the provision of green space; and 5) the creation of a functional, healthy and sustainable permanent shade tree canopy.

Townhouses may have vehicular access on a principal street (front-load) or on an alley (rear-load).

### 1. Requirements for front-load townhouses.

a. Townhouse driveways are prohibited on streets that are functionally classified as collectors or higher.

b. All new townhouse developments with driveways on public or private streets shall meet the minimum provisions of Section 10.3.1, as well as all other minimum infrastructure requirements of the Technical Standards Manual (TSM), including but not limited to driveway spacing, utility location, and street tree planting.

c. Two off-street parking spaces shall be required per unit, and may be provided within a garage.

d. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units with driveways less than 20 feet in width, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof). Visitor parking shall not be required for townhouses with 20 foot-wide driveways.

## 2. Requirements for rear-load townhouses.

- a. All townhouse units shall front on a public or a private street or on an improved open space such as a town square, park or a green and shall be served by a rear alley or common parking area. Alleys shall be at least twelve (12) feet in paved width to accommodate one-way traffic and at least sixteen (16) feet in paved width to accommodate two-way traffic. Individual driveways for dwelling units are permissible only on alleys. Parking within the pavement of the alley shall be prohibited.
- b. Per Section 10.2.5 all private streets shall be constructed to public street standard with the exception of alleys. Construction details for alleys are included in Article 2 of the Technical Standards Manual (TSM).
- c. Alleys shall be designed with a minimum turning radius of thirty (30) feet where they intersect streets and shall be constructed in such a manner as to allow service vehicles to complete turns within the boundary of the alley. Alleys shall be designed in such a manner as to be interconnected to allow through traffic and to avoid dead ends.
- d. Side yards are not required for interior townhouses, but a minimum street setback of ten (10) feet shall be provided along front and corner yards, and building separation requirements of fifteen (15) feet shall be maintained for all groups of townhouse units. Where lot lines are not established or where units are condominiumized, the building setback shall be measured from the back of sidewalk.
- e. Driveways from the rear alley shall be no closer than three (3) feet from the interior side property line. Where interior lot lines are not established or where units are condominiumized, six (6) feet is required between driveways;
- f. Two off-street parking spaces shall be required per unit, and may be provided within a garage. In lieu of providing the required parking spaces on the individual parcel, either a portion of, or all of the required spaces may be provided on-street or within a common off-street parking area.
- g. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof).
- h. Fences and/or walls on the site shall be constructed in such a manner as to allow unobstructed access to all utility meters and easements.
- i. On street parking shall be provided along at least one side of the public or private street. On the side(s) of the street where parking occurs, the planting strip for street trees may be

eliminated, but the sidewalk shall still be required. In lieu of the eliminated planting strip, foundation plantings comprised of woody shrubs with a mature height of no more than four (4) feet shall be installed at a four (4) foot spacing along the building foundation.

- j. On the side of the street where no parking is proposed, street trees shall be planted in accordance with Section 11.7.4. In order to provide a traffic calming measure and to ensure a street tree canopy, curbs shall be extended out in the areas of required building separation between groups of structures to create “bump-outs \*” for the planting of street trees. Street trees shall be installed in bump outs at the end of parallel parking spaces.
- k. The minimum setback from the alley (for the garage) is ten (10) feet measured from the exterior building wall of the structure to the edge of pavement. No minimum side setbacks are required for detached garage structures.
- l. All gas, electric service meter points and fiberoptic services shall be located in the rear. City owned water meters or sewer cleanouts shall not be installed within the limits of the townhouse driveway.
- m. Adequate space shall be provided along the alley for safely storing garbage and recycling receptacles without interfering with the maneuvering area within the alley.

\*Bump-out: A curb extension on residential or low volume streets that create an effect to calm traffic and to slow traffic speeds considerably.

AN ORDINANCE AMENDING THE ZONING ORDINANCE  
OF THE CITY OF CONCORD, NORTH CAROLINA

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by the North Carolina General Statute §160A-364 enacted an Official Zoning Ordinance for the City of Concord, North Carolina and the Area of Extraterritorial Jurisdiction on July 28, 1977; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute §§160D-601 through 160D-605, 160D-701 through 160D-706, 160D-801 through 160D-808 and 160D-901 through 160D-951, may from time to time as necessary amend, supplement, change, modify or repeal certain of its zoning regulations and restrictions and zone boundaries; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute 160D-601 through 160D-605, 160D-701 through 160D-706, 160D-801 through 160D-808 and 160D-901 through 160D-951 does hereby recognize a need to amend the text of certain articles of the City of Concord Development Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord, North Carolina:

**SECTION 1:** That the following section of Concord Development Ordinance (CDO) Article 10 "Development and Design Standards", Section 10.3 "Parking and Loading", Section 10.3.1 "General Standards", Subsection A "Applicability", and Subsection B "Front Yard Parking Standards" Subsections 1-3 be deleted in their entirety.

**SECTION 2:** That the following section of Concord Development Ordinance (CDO) Article 10 "Development and Design Standards", Section 10.3 "Parking and Loading", Section 10.3.1 "General Standards", Subsection A "Applicability", and Subsection B "Front Yard Parking Standards" Subsections 1-3 be rewritten as follows:

10.3. PARKING AND LOADING

10.3.1. General Standards

A. Applicability

The provisions of this Section shall apply to any application for Zoning Clearance or Site Plan approval, except for developments in the CC district

B. Front Yard Parking Standards

1. Applicability

Parking is permitted in the front yards of any single family (detached or attached), duplex, triplex or quadplex dwellings in any zoning district other than agricultural.

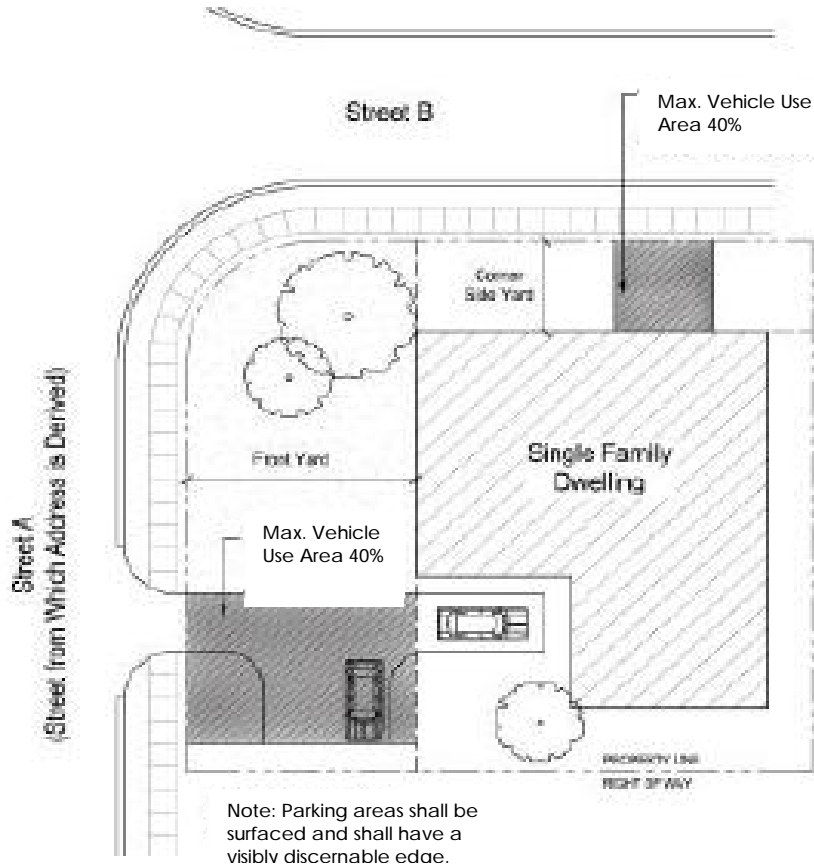
2. General

No person shall park or store any motor vehicle, boat, trailer or recreation vehicle in the front yards (between the street and a line drawn parallel to the street from the point of the dwelling that is closest to the street) other than completely upon an improved driveway or improved parking pad.

3. Coverage of Improved Area

Improved parking and drive areas shall not exceed 40% of the structure's front yard, except that front-load townhouse units with 20-foot wide driveways may exceed 40% maximum provided that all other development regulations in this Ordinance and the infrastructure requirements of the Technical Standards Manual (TSM) are met. (See Section 7.7.4.E). Access to the improved front yard area shall be limited to properly approved curb cuts or other

approved access points. Improved parking and drive areas shall be maintained in a safe and sanitary condition, and shall not contribute to soil erosion or tree damage. Proposed improved parking area shall be installed so as to avoid creating standing water conditions, diverting runoff onto neighboring property owners, or adversely impacting stormwater water quality.



**SECTION 3:** That the following section of Concord Development Ordinance (CDO) Article 7 "Base Zoning Districts", Section 7.7.4 "Site Elements", Section 7.7.4.E "Special Standards for a Townhouse" be deleted in its entirety.

**SECTION 4:** That the following section of Concord Development Ordinance (CDO) Article 7 "Base Zoning Districts", Section 7.7.4 "Site Elements", Section 7.7.4.E "Special Standards for a Townhouse" be rewritten as follows:

**E. Special Standards for Townhouses**

**Purpose:** The City of Concord recognizes that the physical characteristics of townhouse developments pose a distinct set of service challenges as compared to traditional detached single-family developments. The following standards are intended to provide for 1) the safe movement of vehicles and pedestrians; 2) an adequate amount of resident and visitor parking; 3) the safe provision of public utilities and services; 4) the provision of green space; and 5) the creation of a functional, healthy and sustainable permanent shade tree canopy.

Townhouses may have vehicular access on a principal street (front-load) or on an alley (rear-load).

1. Requirements for front-load townhouses.
  - a. Townhouse driveways are prohibited on streets that are functionally classified as collectors or higher.
  - b. All new townhouse developments with driveways on public or private streets shall meet the minimum provisions of Section 10.3.1, as well as all other minimum infrastructure requirements of the Technical Standards Manual (TSM), including but not limited to driveway spacing, utility location, and street tree planting.
  - c. Two off-street parking spaces shall be required per unit, and may be provided within a garage.
  - d. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units with driveways less than 20 feet in width, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof). Visitor parking shall not be required for townhouses with 20 foot-wide driveways.
  
2. Requirements for rear-load townhouses.
  - a. All townhouse units shall front on a public or a private street or on an improved open space such as a town square, park or a green and shall be served by a rear alley or common parking area. Alleys shall be at least twelve (12) feet in paved width to accommodate one-way traffic and at least sixteen (16) feet in paved width to accommodate two-way traffic. Individual driveways for dwelling units are permissible only on alleys. Parking within the pavement of the alley shall be prohibited.
  - b. Per Section 10.2.5 all private streets shall be constructed to public street standard with the exception of alleys. Construction details for alleys are included in Article 2 of the Technical Standards Manual (TSM).
  - c. Alleys shall be designed with a minimum turning radius of thirty (30) feet where they intersect streets and shall be constructed in such a manner as to allow service vehicles to complete turns within the boundary of the alley. Alleys shall be designed in such a manner as to be interconnected to allow through traffic and to avoid dead ends.
  - d. Side yards are not required for interior townhouses, but a minimum street setback of ten (10) feet shall be provided along front and corner yards, and building separation requirements of fifteen (15) feet shall be maintained for all groups of townhouse units. Where lot lines are not established or where units are condominiumized, the building setback shall be measured from the back of sidewalk.
  - e. Driveways from the rear alley shall be no closer than three (3) feet from the interior side property line. Where interior lot lines are not established or where units are condominiumized, six (6) feet is required between driveways;
  - f. Two off-street parking spaces shall be required per unit, and may be provided within a garage. In lieu of providing the required parking spaces on the individual parcel, either

a portion of, or all of the required spaces may be provided on-street or within a common off-street parking area.

- g. In addition to the required parking spaces for each unit, parking to accommodate visitors shall be provided at a rate of one space for each two units, and may be provided either as on-street spaces or within a common off-street parking area (or a combination thereof).
- h. Fences and/or walls on the site shall be constructed in such a manner as to allow unobstructed access to all utility meters and easements.
- i. On street parking shall be provided along at least one side of the public or private street. On the side(s) of the street where parking occurs, the planting strip for street trees may be eliminated, but the sidewalk shall still be required. In lieu of the eliminated planting strip, foundation plantings comprised of woody shrubs with a mature height of no more than four (4) feet shall be installed at a four (4) foot spacing along the building foundation.
- j. On the side of the street where no parking is proposed, street trees shall be planted in accordance with Section 11.7.4. In order to provide a traffic calming measure and to ensure a street tree canopy, curbs shall be extended out in the areas of required building separation between groups of structures to create "bump-outs \*" for the planting of street trees. Street trees shall be installed in bump outs at the end of parallel parking spaces.
- k. The minimum setback from the alley (for the garage) is ten (10) feet measured from the exterior building wall of the structure to the edge of pavement. No minimum side setbacks are required for detached garage structures.
- l. All gas, electric service meter points and fiberoptic services shall be located in the rear. City owned water meters or sewer cleanouts shall not be installed within the limits of the townhouse driveway.
- m. Adequate space shall be provided along the alley for safely storing garbage and recycling receptacles without interfering with the maneuvering area within the alley.

**SECTION 5:** That the following section of Concord Development Ordinance (CDO) Article 14 "Definitions", be amended to include the following:

**BUMP-OUT:** A curb extension on residential or low volume streets that create an effect to calm traffic and to slow traffic speeds considerably.

Adopted in this May 12, 2022.

CITY COUNCIL  
CITY OF CONCORD



NORTH CAROLINA

ATTEST:

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William C. Dusch, Mayor

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Kim Deason, City Clerk

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VaLerie Kolczynski, City Attorney

**DATE:** April 19, 2022  
**CASE:** TA-05-22 Text Amendment (8.1.8 Use Table)  
**PREPARED BY:** Kevin Ashley, AICP –Deputy Planning Director

**BACKGROUND**

Staff is proposing two minor revisions to the permitted use table in the Concord Development Ordinance (8.1.8). These changes are summarized below.

1. **Distribution and Warehouse Uses in Light Industrial (I-1):** City Council, after working with Cabarrus County Economic Development and based on concerns expressed by industrial developers, recently changed the sewer allocation policy to allow speculative industrial uses of less than 75,000 square feet to request allocation if they use less than 7,500 gallons per day. This 75,000 sf threshold does not traditionally support large scale distribution.

This amendment allows warehouse/distribution less than 75,000 square feet in Light Industrial (I-1) with specific standards (PS) as shown in F. below, but a special use permit would not be required. For warehouse/distribution greater than 75,000 of floor area, a special use permit and compliance with the standards (SS) would still be required.

Buildings less than 75,000 sf are usually occupied by small to medium size companies that provide jobs as well as support to larger industries.

Warehouse and Freight Movement	Electronic Shopping, Mail Order House												P	P	
	Moving and Storage Facility												P	P	
	Product Distribution Center												SS		8.3.Z.F
	Rail Transportation and Support Facilities												P		
	Product Distribution Center, Warehousing and Storage (Non-farm related products) greater than 75,000 square feet in floor area													SS	8.3.Z.F
	Product Distribution Center, Warehousing and Storage (Non-farm related products) less than 75,000 square feet in floor area													PS	8.3.Z.F
	Truck Terminal and Support Facilities														SS

**F. PRODUCT DISTRIBUTION CENTER, WAREHOUSING AND STORAGE, NON-FARM RELATED PRODUCTS**

The facility shall be located on an arterial or thoroughfare. The use may be considered within an industrial park if the street accesses an arterial or thoroughfare and the street is constructed to accommodate projected truck traffic, and the street does not serve passenger vehicle traffic other than employees or customers of the development in which the proposed facility is located.

The use “electronic shopping, mail order house” is proposed to be removed from the use table as a matter of eliminating confusion.

- 2. **Water Treatment Plants in O-I, C-1 and I-1:** The City has been planning an expansion of the Hillgrove Water Treatment plant at 55 Palaside Drive NE for several years. The plant is zoned O-I Office Institutional. While researching the acquisition of an adjacent parcel on Arbor Street (which is zoned C-1 Neighborhood Business) it was discovered that such facilities are not permissible in either district (nor in I-1).

A review of the previous zoning ordinance (prior to 2000) indicates that Hillgrove and similar facilities were permitted under the broad category of “public utility substations” in the O-I and B-2 (predecessor to C-1) zoning districts. It appears that when the current version of the CDO was adopted in the early 2000s, “water treatment plants” and other utilities were separated from the “public utility substation” category and omitted from the use chart in O-I, C-1 and I-1. O-I and C-1 zoning permits a natural gas distribution facility, so it appears reasonable to allow the use in O-I and C-1 (as well as I-1). This corrective change would make the treatment plant a conforming use and would allow the plant expansion to occur in a conforming manner.

The proposed change is illustrated in the chart below.

USE CATEGORY	SPECIFIC USE	AG	RESIDENTIAL						COMMERCIAL					IND		Standards
		AG	RE	RL	RM-1	RM-2	RV	RC	O-1	B-1	CC	C-1	C-2	I-1	I-2	
Passenger Terminals	Air transportation and related support facilities	S											P	P	P	
	Bus Charter Service, including passenger terminal													P	P	
	Limousine/Chauffeur Service/Taxi Company/Taxi Stand										SS	SS	PS			8.3.4.D
	Public Transportation System	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Places of Worship	Religious Institution/House of Worship, more than 350 seats	SS	SS	SS	SS	SS	SS	SS	PS	SS	SS	PS	P			8.3.4.E
	Religious Institution/House of Worship, up to 350 seats	SS	SS	SS	SS	SS	SS	SS	P	P	P	P	P			8.3.4.E
Utilities	All utilities, except as listed below	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Electric Generating Facility	S												S	P	
	Natural Gas Distribution Facility	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Pipeline, Petroleum and Natural or Manufactured Gases	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Sewage Treatment Facility, Private as permitted by NCDENR	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Water Treatment Facility	P							P			P	P	P	P	

The amendment is in approval form and at the Commission’s concurrence, it may be referred to Council for public hearing.

Warehouse and Freight Movement	Electronic Shopping, Mail Order House														P	P	
	Moving and Storage Facility														P	P	
	Product Distribution Center														SS		8.3.7.F
	Rail Transportation and Support Facilities														P		
	Product Distribution Center, Warehousing and Storage (Non-farm related products) greater than 75,000 square feet in floor area														SS		8.3.7.F
	Product Distribution Center, Warehousing and Storage (Non-farm related products) less than 75,000 square feet in floor area														PS		8.3.7.F
	Truck Terminal and Support Facilities															SS	8.3.7.G

USE CATEGORY	SPECIFIC USE	AG	RESIDENTIAL						COMMERCIAL					IND		Standards
		AG	RE	RL	RM-1	RM-2	RV	RC	O-1	B-1	CC	C-1	C-2	I-1	I-2	
Passenger Terminals	Air transportation and related support facilities	S											P	P	P	
	Bus Charter Service, including passenger terminal													P	P	
	Limousine/Chauffeur Service/Taxi Company/Taxi Stand										SS	SS	PS			8.3.4.D
	Public Transportation System	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Places of Worship	Religious Institution/House of Worship, more than 350 seats	SS	SS	SS	SS	SS	SS	SS	PS	SS	SS	PS	P			8.3.4.E
	Religious Institution/House of Worship, up to 350 seats	SS	SS	SS	SS	SS	SS	SS	P	P	P	P	P			8.3.4.E
Utilities	All utilities, except as listed below	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Electric Generating Facility	S												S	P	
	Natural Gas Distribution Facility	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Pipeline, Petroleum and Natural or Manufactured Gases	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Sewage Treatment Facility, Private as permitted by NCDENR	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Water Treatment Facility	P							P			P	P	P	P	

**AN ORDINANCE AMENDING THE ZONING ORDINANCE  
OF THE CITY OF CONCORD, NORTH CAROLINA**

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by the North Carolina General Statute §160A-364 enacted an Official Zoning Ordinance for the City of Concord, North Carolina and the Area of Extraterritorial Jurisdiction on July 28, 1977; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute §§160D-6-1 through §§160D-6-5, 160D-7-1 through 160D-7-6 , 160D-8-1 through 160D-8-8 and 160D-9-1 through 160D-9-51 may from time to time as necessary amend, supplement, change, modify or repeal certain of its zoning regulations and restrictions and zone boundaries; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute §§160D-6-1 through §§160D-6-5, 160D-7-1 through 160D-7-6 , 160D-8-1 through 160D-8-8 and 160D-9-1 through 160D-9-51 does hereby recognize a need to amend the text of certain articles of the City of Concord zoning Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord, North Carolina:

**SECTION 1:** That the following section of Concord Development Ordinance (CDO) Article 8 "Use Regulations" Section 8.1.8 "Use Table", "Industrial Uses - Warehouse and Freight Movement" be amended to the following:

USE CATEGORY	SPECIFIC USE	AG	RESIDENTIAL						COMMERCIAL					IND		Standards
		AG	RE	RL	RM-1	RM-2	RV	RC	O-1	B-1	CC	C-1	C-2	I-1	I-2	

	Moving and Storage Facility														P	P	
	Rail Transportation and Support Facilities														P		
	Product Distribution Center, Warehousing and Storage, (Non-farm related products), greater than 75,000 square feet in floor area														SS		8.3.7.F
	Product Distribution Center, Warehousing and Storage, (Non-farm related products), less than 75,000 square feet in floor area														PS		8.3.7.F
	Truck Terminal and Support Facilities															SS	8.3.7.G

**SECTION 2:** That the following section of Concord Development Ordinance (CDO) Article 8 "Use Regulations" Section 8.1.8 "Use Table", "Utilities - Water Treatment Facilities" be amended to the following:

USE CATEGORY	SPECIFIC USE	AG	RESIDENTIAL						COMMERCIAL					IND		Standards	
		AG	RE	RL	RM-1	RM-2	RV	RC	O-1	B-1	CC	C-1	C-2	I-1	I-2		
Utilities	All utilities, except as listed below	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Electric Generating Facility	S													S	P	
	Natural Gas Distribution Facility	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Pipeline, Petroleum and Natural or Manufactured Gases	S	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Sewage Treatment Facility, Private as permitted by NCDENR	S	S	S	S	S	S	S	S	S	S	S	S	S	P	P	
	Water Treatment Facility	P							P				P	P	P	P	
	Solar Farm	S															

**SECTION 3:** That all remaining Articles and Sections of this Ordinance be renumbered to include the newly created Articles and Sections.

**SECTION 4:** That this Ordinance be effective immediately upon adoption.

Adopted in this May 12<sup>th</sup>, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

ATTEST:

\_\_\_\_\_  
William C. Dusch, Mayor

\_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

**DATE:** April 19, 2022

**CASE:** TA-03-22 Text Amendment (Articles 2 and 3 of the TSM)

**PREPARED BY:** Kevin Ashley, AICP –Deputy Planning Director

**BACKGROUND**

As the Commission will recall the Technical Standards Manual (TSM) is part of the Concord Development Ordinance (CDO) which contains engineering specifications and technical requirements which are more complex than traditional land use regulations. The TSM includes technical requirements for transportation (including the recently adopted section for traffic impact analysis) , stormwater, water, wastewater, electric and landscaping.

The City’s Transportation and Engineering Departments have been working to revise Article 2 (Streets and Pedestrian Paths) and Article 3 (Driveways) to clarify procedures and to reflect accepted engineering practice. Some new requirements have been added to the articles, but the changes are generally clarifications. The changes are detailed in the executive summary that is included in the staff report materials. Also included is a redline which has deleted language shown as a strike-through and new language as a highlight.

Devin Huston, Deputy Transportation Director will be attending and can answer any specific questions. Staff will conduct a thorough presentation of all of the changes.

The amendment is in approval form and at the Commission’s concurrence, it may be referred to Council for public hearing.





**DATE:** April 6, 2022

**CASE:** Executive Summary for Technical Standards Manual (TSM)  
Articles 2 and 3

**PREPARED BY:** Devin Huston, Deputy Transportation Director

**BACKGROUND**

This memorandum is intended to serve as a general summary to describe the proposed revisions to the Concord Technical Standards Manual (TSM) which are supplementary to the Concord Development Ordinance (CDO). The reader should consult the proposed Ordinance and the proposed strike-through Articles II and III of the TSM (and related appendices) for more specific details.

Article II of the TSM sets forth minimum requirements for Streets and Pedestrian Paths and Article III addresses Driveways. These changes are a culmination of revisions that have been drafted based upon historical administration of requirements and developer feedback.

Revisions to the TSM generally involve clarifications of existing practice and not new requirements, but there are some changes and those are noted below. Revisions are based upon accepted engineering practice and design standards. Additionally, all technical standard drawings are proposed to be removed from the individual articles and moved to a Manual of Standard details.

**ARTICLE II STREETS AND PEDESTRIAN PATHS**

Functional classifications: The amendment clarifies the way proposed streets are classified. In the current version, typical Average Daily Traffic (ADT) thresholds were given as a predominant factor. Historically, layout and location have also been used as determinants regardless of the ADT, in accordance with accepted professional practice. While ADT will still potentially play a role in a proposed street classification, this change removes those ADT thresholds to help avoid confusion.

Rolling terrain: Under the proposed change, the documentation required for staff to consider a request to permit design of streets under the rolling terrain standards in lieu of the default level terrain standards is defined. The current regulations require a request to be made, but do not specify the procedure and submission requirements for consideration. This change is necessary now as the relative scarcity of land means that steeper slopes are being proposed for development.

Design speeds: This change eliminates a specified engineering design speed for freeways/expressways and reduces the design speed from 40 to 30 mph for local streets.

Right-of-way widths: Adjustments are proposed to modernize minimum r/w widths to coincide with current minimum utility and infrastructure requirements. These adjustments include some right-of-way increases and some reductions, which are a result of narrower minimum travel lanes in street cross-sections.

Construction materials: Language is proposed to specify subgrade and shoulder requirements for new streets, and to clarify inspection procedures. This section also serves to detail the developer's responsibilities in new construction of streets.

Cul-de-sacs: New language has been added to prohibit hammer head turnarounds.

Sight triangles: This section is rewritten to clarify the differences in the classifications of sight triangles. The requirements are not new and this change is proposed for clarity.

Street acceptance: A new section relative to accepting new public streets is proposed to replace the current section 15.0. This section sets forth minimum criteria for acceptance and specifies the procedures for both newly constructed streets and existing private streets that are proposed for dedication and acceptance for maintenance.

Cluster mailbox requirements: Per Postal Service policy, new neighborhoods are required to provide numerous mailboxes in common areas as opposed to one mailbox on each individual lot. The City has been administering the cluster mailbox requirements for several years since their adoption by USPS, and this section merely codifies those requirements.

Intersection Site Distance: These requirements in Section 7.6 are based upon accepted engineering practice on highway design (AASHTO) and have historically been utilized by staff.

Roundabout review language: The CDO allows the use of roundabouts or traffic circles as traffic calming measures and this section states that their review is on a case-by-case basis, which has historically been the policy for these features.

Traffic Island size: This section has been slightly revised to clarify the depth of the island relative to stem length (distance from the intersection) and to state that any island within an NCDOT right-of-way requires their approval. These items are reflections of current policy, which have been in effect for some time.

Sidewalk language: This proposed revision clarifies when sidewalks are required in the subdivision and development process. The change also specifies the location within the street section and details the easement process in the event

that the sidewalk cannot be placed within the right-of-way. This section clarifies administration of the sidewalk requirements as they have been historically interpreted.

Curb inlet language – Language added to clarify Roll-over frame and grate inlets are not permitted. These have historically not been allowed for use in drainage designs.

### **ARTICLE III DRIVEWAYS**

Applicability: Section 2.0 of the TSM specifies that all access points and driveways that connect to a public street are subject to the provisions of Article III. This section is proposed to be amended to clarify that land that is internal to an existing neighborhood may be subject to Article III if the development is considered a neighborhood expansion. The determination is made on a case-by-case basis and is intended to prohibit the circumvention of the driveway permit requirements and associated street improvements.

Driveway Permits and NCDOT Coordination: Section 3.0 has been substantially expanded to clarify the applicability of the permit process particularly as it relates to coordination with NCDOT and connections to State maintained streets and roads. These revisions merely restate the historical administration of the driveway permit process, simplify the language, and do not introduce any new regulations.

Driveway Standards: Section 4.0 has been amended to reduce the minimum width of a single family attached (townhome) driveway from 12 feet to 10 feet. This change is proposed in coordination with the CDO changes for townhomes, which are underway.

Driveway Separation: Section 5.0 has been rewritten to clarify how driveway separation, particularly stem length, is calculated. Stem length is the distance from the street right-of-way or private street to the first point of conflict. Stem lengths are intended to provide enough distance for vehicles to safely exit the intersecting street without abruptly encountering an obstacle minimizing traffic backups and potential collisions on the street. Appropriate driveway separation provides a driver with an obstacle free line of sight to identify oncoming vehicles, pedestrians, and bicyclists while exiting their driveway. This section includes minor changes to the driveway separation requirements on local streets (based on land use) to provide slightly more distance for nonresidential and multifamily and less distance for single family. The minimum stem lengths have been amended to reduce the requirements on major thoroughfares and minor collectors, which are important in order to foster redevelopment and infill.

### **STANDARD DETAILS**

Standard details in Article II and III are proposed to be replaced with new drawings that reflect the proposed changes, and moved to a Manual of Standard Details for quick reference by designers.

## **SUMMARY**

In summary, the proposed TSM changes will serve to modernize both Article II and III, ensuring that they are compliant with historical administration, are consistent with the provisions of the CDO and reflect accepted engineering and design practice.

# City of Concord

## Technical Standards Manual

### Article II

### Streets & Pedestrian Paths



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**Article II**

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~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

## 1.0 Purpose

The purpose of this Article is to protect the safety of the traveling public in the City and to create a quality street network that will not require pre-mature maintenance. All public streets inside the municipal limits of the City must be constructed in conformance with City standards and specifications. If any conflicts arise between a City and North Carolina State Highway Commission standard, the more restrictive standard will apply.

- 1.1. The Director of Transportation, in consultation with other City departments and state agencies, may allow modifications to the design criteria. Modifications to the design criteria:
  - a. Must be based on sound engineering principles and practices,
  - b. Must not create an unsafe or hazardous situation,
  - c. Must be equivalent to the efficiency, functionality, durability, structural integrity, and long-term maintenance of the minimum criteria in this Article.
  - d. Classifications must be in conformance with the current City of Concord Transportation Plan.
- 1.2. The Director of Transportation is authorized to require studies or other pertinent information to help support or justify the modification.

## 2.0 Basic Design Considerations

Streets must be designed to accommodate the volume and type of traffic they are intended to serve and the geometry of the landscape on which they will be located.

A selection of standard details is provided in the City of Concord Manual of Standard Details to be used in conjunction with this Article. In the event of a conflict between the standard details and the provisions of this Article, the strictest standard will apply

~~2.1. **Traffic Volumes.** The Average Daily Traffic (ADT) volume is a measurement of the users' demand for a street. ADT is defined as the total volume during a given time period (in whole days), greater than 1 day and less than 1 year, divided by the number of days in that time period. The current ADT volume for a street can be readily determined when continuous traffic counts are available. When only periodic counts are taken, the ADT volume can be estimated by adjusting the periodic counts according to such factors as the season, month, or day of the week. If the ADT of a street is unknown, traffic count studies may be required to determine the design volume.~~

2.2. **Traffic Volumes.** The Average Daily Traffic (ADT) volume is a measurement of the users' demand for a street. ADT is defined as the total volume during a given time period (in whole days), greater than 1 day and less than 1 year, divided by the number of days in that time period. The current ADT volume for a street can be readily determined when continuous traffic counts are available. When only periodic counts are taken, the ADT volume can be estimated by adjusting the periodic counts according to such factors as the

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~~season, month, or day of the week. If the ADT of a street is unknown, traffic count studies may be required to determine the design volume.~~

~~2.1.2.3. **Functional Classifications.** Individual streets do not serve travel independently of one another. Most vehicular travel involves movement through a network of streets. Therefore, the functional classification of a street must be determined before design criteria can be established for any proposed improvement. Functional classifications are based on the nature of the services streets are intended to provide, combined with the proposed layout and location of new streets. Known or estimated Average Daily Traffic (ADT) may be used to determine whether a street needs a higher classification than that based solely on function, and the average daily traffic (ADT) typically served. Table 2-1 identifies some general characteristics of each street classification along with the ADT volume thresholds for classification of new streets. To verify the functional classification of existing streets in the City’s transportation service area, please refer to the City’s Transportation Plan. For the purposes of the City’s ordinances and these technical standards, the highest classification for the same street between that of the City or the NCDOT shall be used to determine the appropriate standards which apply. *Functional classifications for proposed streets must be approved by the Director of Transportation prior to the final design of roadway layouts and preliminary plats.*~~

~~2.2. **Functional Classifications.** Individual streets do not serve travel independently of one another. Most vehicular travel involves movement through a network of streets. Therefore, the functional classification of a street must be determined before design criteria can be established for any proposed improvement. Functional classifications are based on the nature of the services streets are intended to provide and the minimum average daily traffic (ADT) typically served. Table 2-1 identifies each area street classification. To verify the functional classification of existing streets in City’s transportation service area, please refer to the City’s Transportation Plan. *Functional classifications for proposed streets must be approved by the Director of Transportation prior to the design of roadway layouts and preliminary plats.*~~

**Table 2-1: Functional Classifications.**

<b>Classification</b>	<b>Function</b>
Freeway or Expressway	Serves substantial statewide or interstate travel and exists solely to serve vehicular traffic; does not serve pedestrian and bicycle traffic
Major Thoroughfare <b>(Includes Boulevard)</b>	Provides for expeditious movement of high volumes of traffic within and through urban areas

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Minor Thoroughfare	Collects traffic from local streets and collectors and carries it to the major thoroughfare system; supplements the major thoroughfare system by facilitating minor thru traffic movements; and sometimes serves adjacent property
Major Collector	Serves intra-county travel corridors and traffic generators and provides access to the thoroughfare system
Minor Collector	Provides service to small local communities and traffic generators and provides access to the major collector system
Local Street	Provides access to adjacent property over relatively short distances
Alley	Provides access to adjacent property, typically to the rear of the structures located on the property served, and usually serves as a route for utilities, garbage collection, and garage access in residential areas

~~\*Classification of Minor Collectors and lower will be based on the proposed street network layouts.~~

**2.3.2.4. Service Classifications.** Major collectors, minor collectors, local streets, and alleys may also be categorized as residential or non-residential.

*Residential Streets.* Residential streets serve residential property. In general, 50% or more of the properties fronting a residential street are zoned for residential purposes.

~~a. *Non-Residential Streets.* When less than 50% of the street frontage is adjacent to residential property, the street is considered a non-residential street.~~

**2.4.2.5. Terrain Classifications.** Two terrain classifications are applicable to the Concord area. These classifications affect street design criteria. All streets should be designed in accordance with the level terrain classification unless the necessary supporting data is presented and approved by the Director of Transportation for each street section designed using rolling terrain classification. The term “slope” in this subsection includes the rise and fall of the existing topography measured both parallel and perpendicular to the centerline of the proposed street.

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- a. *Level.* Slopes in a level terrain range from 0% to 8%. In level terrain, horizontal and vertical street sight distances are generally long or can be designed to be so without construction difficulties ~~or major expense.~~
- b. *Rolling.* Slopes in a rolling terrain range from 8.1% to 15%. Natural slopes consistently rise above and fall below the street grade line, and occasional steep slopes offer some restriction to normal highway horizontal and vertical alignment.

Rolling Terrain Classification Request

1. Memo with reasoning for request that indicates the section of the proposed classification by the range of stations for each street included in the request.
2. Plan view showing the horizontal alignment with appropriate stationing, existing topography, and other pertinent plan view elements.
3. Profile view showing existing and proposed vertical alignment with the grades appropriately labeled and stationing corresponding with the plan view.

~~b. —~~

**2.5.2.6. Design Speeds.** Designers should use the highest design speed that is practical to attain the best possible degree of safety, mobility, and efficiency. The design speed of a city street should be ~~a minimum of~~ five (5) miles per hour (mph) above the anticipated posted speed. Geometric design features should be consistent with the selected design speed. ~~Minimum d~~Design speeds for each functional classification are provided in Table 2-2.

**Table 2-2: ~~Minimum~~ Design Speeds.**

Classification	Minimum Design Speed (mph)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	<del>70*</del>	<del>*65</del>
Major Thoroughfare	60	55
Minor Thoroughfare	50	45
Major Collector	50	50
Minor Collector	40	40
Local Street	<del>40</del> <u>30</u>	<del>40</del> <u>30</u>
Alley	20	15

\*Reference NCDOT Guidelines

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### 3.0 Cross-Section Standards

#### 3.1 Widths.

- a. *Rights-of-Way*. Right-of-way widths are based on the street ~~type~~classification. Rights-of-way must be at least as wide as the minimum widths provided in ~~Table 3-1~~the table below. Rights-of-way must be platted and dedicated in the location and at the width shown on the approved plans.

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**Table 3-1: Minimum Right-of-Way Widths.**

Classification		Minimum Right-of-Way Width (feet)
Major Thoroughfare	All	100-120
Minor Thoroughfare	All	80-100
	<del>Residential</del>	<del>6065</del>
<del>Minor</del> Collector	Non-Residential	8071
	Residential	60656063
Local Street	All	50
Alley*	All	20
Cul-de-Sac	Non-Residential	80 67.570-foot radius
	Residential	60 60-foot radius

\*Alleys may be either R/W or Access Easement. Alleys will not be accepted by the City of Concord for maintenance.

- b. *Pavement.* Pavement widths are based on the street classifications and locations. Fire, or other City codes may dictate different widths, the minimum width that satisfies all standards will apply. The width from the edge of pavement perpendicularly to the edge of pavement must be asat least as wide as the minimum widths provided in Table 3-2 below:

**Table 3-2: Minimum Pavement Widths.**

Classification		Minimum Pavement Width (feet)
Major Thoroughfare	All	24 for each of two divided sections
Minor Thoroughfare	All	24 for each of two divided sections or 36' non-divided
	<del>Residential</del>	<del>3424</del>
<del>Minor</del> Collector	Non-Residential	3630
	Residential with On-Street Parallel Parking	34
	Residential without On-Street Parking	2422
Local Street	All	2420
Alley	All	16
Cul-de-Sac	Non-Residential	4648-foot radius
	Residential	38.5-foot radius



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3.2. **Materials.** All work and materials shall conform to the latest edition of the NCDOT Standard Specifications for Roads and Structures unless otherwise specified. The following material standards and thicknesses represent the minimum acceptable standards of the City. Pavement designs must consider existing soil types and geotechnical conditions. The Engineering Department will review pavement designs. Failure to meet the following requirements may result in the delay or prevention of street acceptance by the City of Concord or NCDOT.

3.2. All applicable compaction, soils, concrete, or other required tests will be performed at no cost to the City and by an inspector sufficiently certified to perform such tests. Results from all applicable tests, all pavement and concrete mix designs, and all other material specifications shall be provided to the City inspector. The developer shall maintain their own records of all tests and inspections throughout the construction period. These records shall, at a minimum and as applicable, include information such as dates inspections are requested and performed, inspector's name, results of inspections, re-inspections, dates and results of tests, and other applicable information as may be necessary.

a. **Subgrade.** Shape the roadway to conform to the lines, grades and typical sections shown on the plans. Strip all existing vegetation from the ground surface wherever shaping of the roadway is to be done. Use all suitable surplus material in the construction of the roadway or stockpile for use in shoulder construction. Dispose of surplus material in excess of that needed for roadway or shoulder construction as waste. Remove all unsuitable material, boulders and all vegetative matter and replace with suitable material. Obtain suitable material, when not available from the shaping or fine grading operation, from roadway excavation or borrow sources.

1. Preparation of Subgrade. Shape the subgrade to the lines, grades and typical sections shown on the plans.
2. Compaction of Subgrade. Compact all material to a depth of 8 inches below the finished surface of the subgrade to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by NCDOT. These modified testing procedures can be found in the NCDOT Conventional Density Operator's Manual. Provide private lab soil compaction reports to the inspector for random subgrade tests every 200 LF, 3 minimum per street, and 2 per cul-de-sac, or as directed by the inspector. Proof Rolls may be required in addition to density tests as directed by the City inspector.
3. New densities may be required if it has been more than 7 days since the densities were performed or there has been a rain event greater than ½".
4. Contractor should perform a self-proofroll and repair deficiencies before calling for an inspection.

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5. Subgrade should be neat, clean, trimmed, and rolled down.
6. After all above items have been completed, then a subgrade proofroll can be scheduled and performed with the inspector.
7. Base Course must be placed within 7 days or before any ½" or greater rain event or another proofroll may be required.

**a.b. Base Course.** Prior to the placement of the base course the subgrade shall be sufficiently compacted, inspected and accepted by the City inspector. The material for the base course of the street must be crusher-run stone with aggregates ranging from one and one-half (1½) inch diameter particles to dust and must meet the standards of the NCDOT's latest edition NC DOT of Standard Specifications for Roads and Structures. The City inspector shall be given a (24) ~~twenty-four hour~~ twenty-four-hour notification to inspect the base course prior to the application of the intermediate course. All deficiency repairs are to be monitored by a City inspector and accepted prior to application of the intermediate course.

1. The material should consist of tough durable aggregate, containing sufficient fines to ensure a well-bonded and uniform base after compaction.
2. The aggregate must be free from an excess of flat, elongated, soft disintegrated pieces, and should not contain clay, silt, vegetative, or other objectionable matter.
3. The mixing and shaping of the base course material must be performed with a power-driven motor grader, equipped with a blade not less than ten (10) feet long, and equal to or equivalent to a full-size full-size motor grader with 125 horsepower or greater.
- 3.4. All edges and manholes are to be trimmed to the proper depth. Remove any loose stone. All manhole covers shall be adjusted to final pavement grade and slope.
5. The base shall be compacted to 100% of the maximum density obtainable with the Modified Proctor Test (AASHTO-T180) by rolling with ring or temping roller or and with pneumatic tired roller with a minimum weight of ten tons. When completed, the base course must be smooth, hard, dense, unyielding and well bonded. The procedures for the Modified AASHTO-T180 test can be found in the NCDOT Conventional Density Operator's Manual. Provide private lab stone base compaction reports to the inspector.
6. New densities may be required if it has been more than 7 days since the densities were performed or there has been a rain event greater than ½".
7. Contractor shall perform a self-proofroll and repair deficiencies before calling for an inspection.
8. After all above items have been completed then a proofroll can be scheduled and

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~~performed with the inspector.~~

~~9. Intermediate Course must be placed within 7 days or before any ½” or greater rain event or another proofroll may be required.~~

~~4.c.Prime Coat. If application of the intermediate course is not completed within seven (7) days following stone base approval, a prime coat shall be applied. The material for the prime coat must be consistent with NCDOT Standard Specifications for Roads and Structures.~~

~~d. Intermediate Course. The material for the binder/intermediate course of the street must be consistent with NC-DOT’s Superpave Manual Standard Specifications for Roads and Structures. Asphalt plants providing the material for the binder/intermediate course must be certified by NC-DOT. The City inspector shall be given a (24) twenty-four hour/twenty-four-hour notification to inspect the intermediate course prior to the application of the first lift of the surface course. All deficiency repairs are to be monitored by a City inspector and accepted prior to application of the first lift of the surface course.~~

~~1. Compaction must meet NCDOT requirements. The contractor shall perform quality control on asphalt by performing random density tests every 200 LF, 3 minimum per street, and 2 in each cul-de-sac, or as directed by inspector. Superpave mixes are to be compacted 90.0% of the maximum specific gravity. Provide results to inspector the following day.~~

~~b.—~~

~~e. Surface Course. The material for the surface course of the street must be consistent with NC-DOT’s Superpave Manual Standard Specifications for Roads and Structures. Asphalt plants providing the material for the surface course must be certified by NC DOT. The City inspector shall be given a (72) seventy-two hour/seventy-two-hour notification to inspect the initial surface course lift prior to the application of the final lift. All deficiency repairs are to be monitored by a City inspector and accepted prior to the application of the final lift of asphalt surface course.~~

~~1. The surface lift should be installed in 2 separate lifts a minimum of 1” thick for Local Streets, and 1.5” thick for higher classifications. The first lift should be applied directly/immediately following the application, inspection, and acceptance of the intermediate course, and the second lift is to be installed after all other requirements for City acceptance have been met. All known base failures shall be repaired prior to the application of the final lift of asphalt surface course.~~

~~2. Compaction must meet NCDOT requirements. The contractor shall perform quality control on asphalt by performing random density tests every 200 LF, 3 minimum~~

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per street, and 2 in each cul-de-sac, or as directed by inspector. Superpave mixes are to be compacted 90.0% of the maximum specific gravity. Provide results to inspector the following day.

**Table 3-3: Base, Intermediate, and Surface Courses**

Classification		Base Course	Intermediate Course	Surface Course
Major Thoroughfare	All	*	*	*
Minor Thoroughfare	All	*	*	*
Major Collector	Non-Residential	*	*	*
	Residential	10" CABC or 5" B-25.0C	2.25" I-19.0C	3.0" S 9.5B
Minor Collector	Non-Residential	*	*	*
	Residential	10" CABC or 5" B-25.0C	2.25" I-19.0C	3.0" S 9.5B
Local Street	Non-Residential	*	*	*
	Residential	8" CABC or 4" B-25.0C	2.25" I-19.0C	2.5" S 9.5B
Alley	All	8"CABC		1.5" S 9.5B

\* Pavement sections must be designed on a case by case basis with the residential specifications being the minimum requirements.

f. **Tack Coat.** The material for tack coats must be consistent with NCDOT Standard Specifications for Roads and Structures. Asphalt plants providing the material for tack coats must be certified by NC-DOT.

e. **Tack coats** must be applied between each layer of asphalt to be placed.

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~~Table 3-3: Base, Intermediate, and Surface Courses.~~

Classification		Base Course	Intermediate Course	Surface Course
Major Thoroughfare	All	*	*	*
Minor Thoroughfare	All	*	*	*
Major Collector	Non-Residential	*	*	*
	Residential	10" CABC or 5" B-25.0X	2.25" I-19.0X	23.0" SF 9.5X
Minor Collector	Non-Residential	*	*	*
	Residential	10" CABC or 5" B-25.0X	2.25" I-19.0X	23.0" SF 9.5X
Local Street	Non-Residential	*	*	*
	Residential	8" CABC or 4" B-25.0X	2.25" I-19.0X	12.5" SF 9.5X
Alley	All	8" CABC		1.5" SF 9.5X

\* Pavement cross sections must be designed on a case-by-case basis.

d.g. Street Shoulder. Fill embankments must be formed of suitable materials placed in successive layers of not more than six (6) inches in depth for the full width of the cross section, including the width of the slope area. All materials for fill embankments must be consistent with NCDOT Standard Specifications for Roads and Structures.

1. No stumps, trees, brush, rubbish or other unsuitable materials or substances shall be placed in the embankments within any right-of-way or easement.
2. Each successive six-inch layer shall be thoroughly compacted by a sheepfoot tamping roller, ten-ton, three-wheel power roller, pneumatic-tired roller or other method approved by the Director of Engineering. Embankments over and around all pipes and culverts shall be of select material, placed and thoroughly tamped and compacted as directed by the Director of Engineering or their/his/her representative. Any soft spots or pumping areas must be removed and replaced in the manner stated above until satisfactory compaction is achieved.

**h. Concrete.** ALL concrete used for streets, curb and gutter, sidewalks and drainage structures multi-use paths, etc. shall have a minimum compressive strength of 3600 PSI at 28 days. This requirement shall be provided regardless of any lesser compressive strength specified in the NCDOT Standard Specifications for Roads and Structures.

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along a \_\_\_\_\_  
~~street, other than a thoroughfare, provided a separate pull-off area is provided~~  
and \_\_\_\_\_  
~~all of the following are met:~~

The contractor shall prepare concrete test cylinders in accordance with section 1000 of the NCDOT Standard Specifications for Roads and Structures at the direction of the project inspector. All equipment and cylinder molds shall be furnished by the contractor. It shall be the responsibility of the contractor to protect the cylinders until such time as they are transported for testing. Testing for projects shall be performed by an independent testing lab sufficiently certified to perform such tests, at no cost to the City. The contractor shall provide equipment and perform tests on concrete for a maximum slump and air content as defined in Section 1000 of the NCDOT Standard Specifications for Roads and Structures. These tests shall be performed at a frequency established by the inspector. Materials failing to meet the specifications shall be removed by the contractor.

1. All concrete shall be cured with 100% Resin Base, white pigmented curing compound which meets ASTM Specifications C-309, Type 1, applied at a uniform rate of one (1) gallon to 400 square feet within 24 hours of placement of concrete.

i. *Backfill.* All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and the material shall have no tendency to flow or behave in a plastic manner under the tamping blows or proof rolling.

1. Materials deemed by the inspector as unsuitable for backfill purposes shall be removed and replaced with select backfill material.

j. Concrete or asphalt shall not be placed until the air temperature measured at the location of the paving operation is at 35 degrees F and rising by 10:00 a.m. Concrete or paving operations should be suspended when the air temperature is 40 degrees F and descending. The contractor shall protect freshly placed concrete or asphalt in accordance with Sections 420 (Concrete Structures), 600 (Asphalt Bases And Pavements), and 700 (Concrete Pavements And Shoulders) of the NCDOT Standard Specifications for Roads and Structures when the air temperature is at or below 35 degrees F and the concrete has not obtained an age of 72 hours.

~~3. Any soft spots or pumping areas must be removed and replaced in the manner stated above until satisfactory compaction is achieved.~~

~~0 e.CBU units or combination of 32 or less mail receptacles may be located~~  
along a ~~street, other than a thoroughfare, provided a separate pull-off area is provided~~  
and ~~all of the following are met:~~

## 4.0 Cul-de-Sac Design Standards

### 4.0

4.1. ~~Where a turn-around is required on a public or private street, a properly dimensioned cul-de-sac should be provided. "Hammer-head" designs will not be permitted.~~

4.1.4.2. **Design Standard Exceptions.** Cul-de-sacs are subject to the same design guidelines as those given for the ~~appropriate local street~~ ~~et~~ classification, with the exception of the following design standards that are specific to cul-de-sacs.

a. *Service Limits.* A cul-de-sac can serve no more than twenty (20) residential units.

—*Lengths.* Cul-de-sacs must not exceed the lengths provided in Table 4-~~12~~. Length is measured from the center of the terminus to the centerline of the closest intersecting street providing access to the cul-de-sac.

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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

<b>Zoning District</b>	<b>Maximum Length (feet)</b>
<b>AG</b>	<b>1,000</b>
<b>B-1</b>	<b>500</b>
<b>C-1</b>	<b>500</b>
<b>C-2</b>	<b>500</b>
<b>CC</b>	<b>300</b>
<b>CD</b>	<b>1,500</b>
<b>I-1</b>	<b>1,500</b>
<b>I-2</b>	<b>1,500</b>
<b>O-1</b>	<b>500</b>
<b>PUD</b>	<b>500</b>
<b>RC</b>	<b>300</b>
<b>RE/RL</b>	<b>1,000</b>
<b>RE</b>	<b>1,000</b>
<b>RM-1</b>	<b>800</b>
<b>RM-2</b>	<b>800</b>
<b>RU</b>	<b>300</b>
<b>RV</b>	<b>600</b>

<b>Zoning District</b>	<b>Maximum Length (feet)</b>
<b>AG</b>	<b>1,000</b>
<b>B-1</b>	<b>500</b>
<b>C-1</b>	<b>500</b>
<b>C-2</b>	<b>500</b>
<b>CC</b>	<b>300</b>
<b>CD</b>	<b>1,500</b>
<b>I-1</b>	<b>1,500</b>
<b>I-2</b>	<b>1,500</b>
<b>O-1</b>	<b>500</b>
<b>PUD</b>	<b>500</b>
<b>RC</b>	<b>300</b>
<b>RE</b>	<b>1,000</b>



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~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

<del>RL</del>	<del>1,000</del>
<del>RM-1</del>	<del>800</del>
<del>RM-2</del>	<del>800</del>
<del>RU</del>	<del>300</del>
<del>RV</del>	<del>800/600</del>

- b. Connectivity Provisions.** If the cul-de-sac is located along a corridor included in the City of Concord’s Transportation Plan or if the cul-de-sac is located along a corridor that will serve as a future thru street in accordance with a recorded subdivision plat or site plan, preliminary and final engineering plans must show a stub (extension of the street right-of-way) from the terminus of the cul-de-sac to the edge of the area being developed. **Prior to final plat** ~~T~~the stub must be duly signed in the field as to the potential for future extension.
- c. Termini.** The terminus of the cul-de-sac must be designed to allow vehicles to turn around and exit to the adjoining street.
1. *Radii.* The radius for the terminus (bulb or turnaround) must not be less than forty (40) feet to the face of curb as shown on the detail drawings.
  2. *Islands.* An island may be **located proposed or required** in the center of the terminus of the cul-de-sac. Islands- **will be reviewed on a case-by-case-basis** ~~must meet the design standards provided in Section 7.6.~~

~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

## 5.0 Slope Standards

5.1. **Longitudinal Grade.** Longitudinal grades may range between one percent (1.0%) and twelve percent (12%). Table 5-1 identifies the maximum longitudinal grade for each functional classification.

Table 5-1: Maximum Longitudinal Grades.

Classification	Conditions (Terrain or Proximity to Intersection)	Maximum Grade
Freeway or Expressway		*
Major Thoroughfare		*
Minor Thoroughfare		*
Major Collector	Level Terrain	6%
	Rolling Terrain	9%
	Intersection in $\leq$ 100 feet	3%
Minor Collector	Level Terrain	6%
	Rolling Terrain	9%
	Intersection in $\leq$ 100 feet	5%
Local Street	Level Terrain	9%
	Rolling Terrain	12%
	Intersection in $\leq$ 100 feet	5%
Alley	Level Terrain	9%
	Rolling Terrain	12%
	Intersection in $\leq$ 100 feet	5%

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

### 5.2. Transverse Grade.

- a. *Street Surface.* Transverse grades on the street surface must have a one-fourth ( $\frac{1}{4}$ ) inch rise to one (1) foot run slope. Superelevation rates, minimum runoff lengths, and methods of distribution should be designed in accordance with AASHTO guidelines.

~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

**Table 5-2: Maximum Superelevation Transverse Slope for Minimum Centerline Radius.**

Classification	Maximum Superelevation Transverse Slope (feet/foot)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	*	*
Major Thoroughfare	*	*
Minor Thoroughfare	*	*
Major Collector	0.04	0.04
Minor Collector	0.04	0.04
Local Street	normal crown	normal crown
Alley	N/A	N/A

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

**b. Street Shoulder.**

1. *Minimum width.* The minimum shoulder width shall be 6 feet wide measured from the edge of pavement. The transverse grade for street shoulders shall be ¼" per foot.  
 — *Fill/Cut Slopes.* The maximum transverse grade for ~~fill street shoulders slopes~~ is a one (1) foot rise to ~~threetwo (23)~~ foot run ~~slope.~~, ~~and one (1) foot rise to two (2) foot run for cut slopes.~~

## 6.0 Curve Standards

- 6.1. **Horizontal Centerline Curve Radius.** Table 6-1 provides the minimum horizontal centerline curve radii for each functional classification.

**Table 6-1: Minimum Horizontal Centerline Curve Radii.**

Classification	Minimum Horizontal Centerline Curve Radii (feet)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	*	*
Major Thoroughfare	*	*
Minor Thoroughfare	*	*
Major Collector	310	230
Minor Collector	310	230
Local Street	230	150
Alley	90	90

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

0 e.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:

6.2. **Tangent Between Reverse Curves.** Table 6-2 provides the minimum tangent between reverse curves for each functional classification.

**Table 6-2: Minimum Tangent Between Reverse Curves.**

Classification	Minimum Tangent Between Reverse Curves (feet)
Freeway or Expressway	*
Major Thoroughfare	*
Minor Thoroughfare	*
Major Collector	200
Minor Collector	200
Local Street	100
Alley	0

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

6.3. **Vertical Centerline Curves.** Table 6-3 provides the minimum Rates of Vertical Curvature (K) for each functional and terrain classification.

6.2.—

~~Table 6-2: Minimum Tangent Between Reverse Curves.~~

<del>Classification</del>	<del>Minimum Tangent Between Reverse Curves (feet)</del>
<del>Freeway or Expressway</del>	<del>*</del>
<del>Major Thoroughfare</del>	<del>*</del>
<del>Minor Thoroughfare</del>	<del>*</del>
<del>Major Collector</del>	<del>200</del>
<del>Minor Collector</del>	<del>200</del>
<del>Local Street</del>	<del>100</del>
<del>Alley</del>	<del>0</del>

~~\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.~~

~~0 e.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

**Table 6-3: Rate of Vertical Curvature (K)\*\*.**

Classification		Level Terrain	Rolling Terrain
Freeway or Expressway	Crest	*	*
	Sag	*	*
	Stop	*	*
Major Thoroughfare	Crest	*	*
	Sag	*	*
	Stop	*	*
Minor Thoroughfare	Crest	*	*
	Sag	*	*
	Stop	*	*
Major Collector	Crest	45	30
	Sag	45	30
	Stop	20	14
Minor Collector	Crest	45	30
	Sag	45	30
	Stop	20	14
Local Street	Crest	30	20
	Sag	30	20
	Stop	14	9
Alley	Crest	30	20
	Sag	30	20
	Stop	14	9

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

\*\*  $K = (\text{Length of the Vertical Curve in Feet}) \div (\text{Percent Algebraic Difference in the Grades Before and After the Vertical})$

## 7.0 Intersection Standards

- 7.1. **Angles of Intersection.** When practical, streets must intersect at an angle of ninety (90) degrees. The centerlines of the intersecting streets should remain straight for a minimum of fifty (50) feet from the ~~point of intersection of the two streets~~ **edge of travel way of the intersecting street.** In no case should the angle of intersection be less than seventy (70) degrees.
- 7.2. **Corners.**
  - a. *Quantity.* Intersections shall not have more than four (4) corners.

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~~0 e.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

- b. *Right-of-Way.* Property lines at intersections must be established so that the distance from the edge of pavement at the street turnout to the property line is at least as great as the distance from the edge of pavement to the property line along the intersecting streets.
  1. This property line can be established as a radius or as a sight triangle.
  2. Minimum and maximum street right-of-way curve radii are provided in Table 7-1.

**Table 7-1: Minimum and Maximum Right-of-Way Curve Radii at Intersections.**

Zoning District	Minimum Radii (feet)	Maximum Radii (feet)
AG	30	N/A
B-1	30	45
C-1	30	N/A
C-2	30	N/A
CC	30	45
CD	30	N/A
I-1	30	N/A
I-2	30	N/A
O-I	30	45
PUD	30	45
RC	30	45
RE	30	N/A
RL	30	N/A
RM-1	30	N/A
RM-2	30	N/A
RU	30	N/A
RV	30	45

**7.3. Backs-of-Curb.** Curbs must be rounded at the corners of intersections to facilitate the movement of traffic. The minimum corner radii for backs-of-curb at street intersections are provided in Table 7-2.

~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

**Table 7-2: Minimum Corner Radii for Backs-of-Curb at Intersections.**

Classification	Minimum Corner Radii (feet)
Freeway or Expressway	*
Major Thoroughfare	*
Minor Thoroughfare	*
Major Collector	30
Minor Collector	30
Local Street	30
Alley	20

\* Consult the N.C. Department of Transportation Division of Highways' Transportation Plan.

**7.3.7.4. Distances between Intersections.** -Proposed streets that intersect opposite sides of the same street (either existing or proposed) should be designed to intersect directly opposite one another as shown in Figure 7-1a.

**a. Minimum lengths for Local Streets and Minor Collectors.**

1. A minimum length of 200 feet between street-centerlines must separate proposed streets that cannot be aligned to create a shared intersection as shown in Figure 7-1b.
2. A minimum length of 400 feet between centerlines must separate streets with opposing left-hand turns as shown in Figure 7-1c.

**b. Minimum lengths for higher street classifications.** Minimum lengths for higher street classifications must be reviewed and approved by the Director of Transportation, but in no case can the distance be less than 400 feet.

- ~~a.~~
- ~~1. A minimum length of 200 feet between street centerlines must separate proposed streets that cannot be aligned to create a shared intersection as shown in Figure 7-1b.~~
  - ~~2. A minimum length of 400 feet between centerlines must separate streets with opposing left hand turns as shown in Figure 7-1c.~~
- ~~b. Minimum lengths for higher street classifications. Minimum lengths for higher street classifications must be reviewed and approved by the Director of Transportation, but in no case can the distance be less than 400 feet.~~

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0 c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:

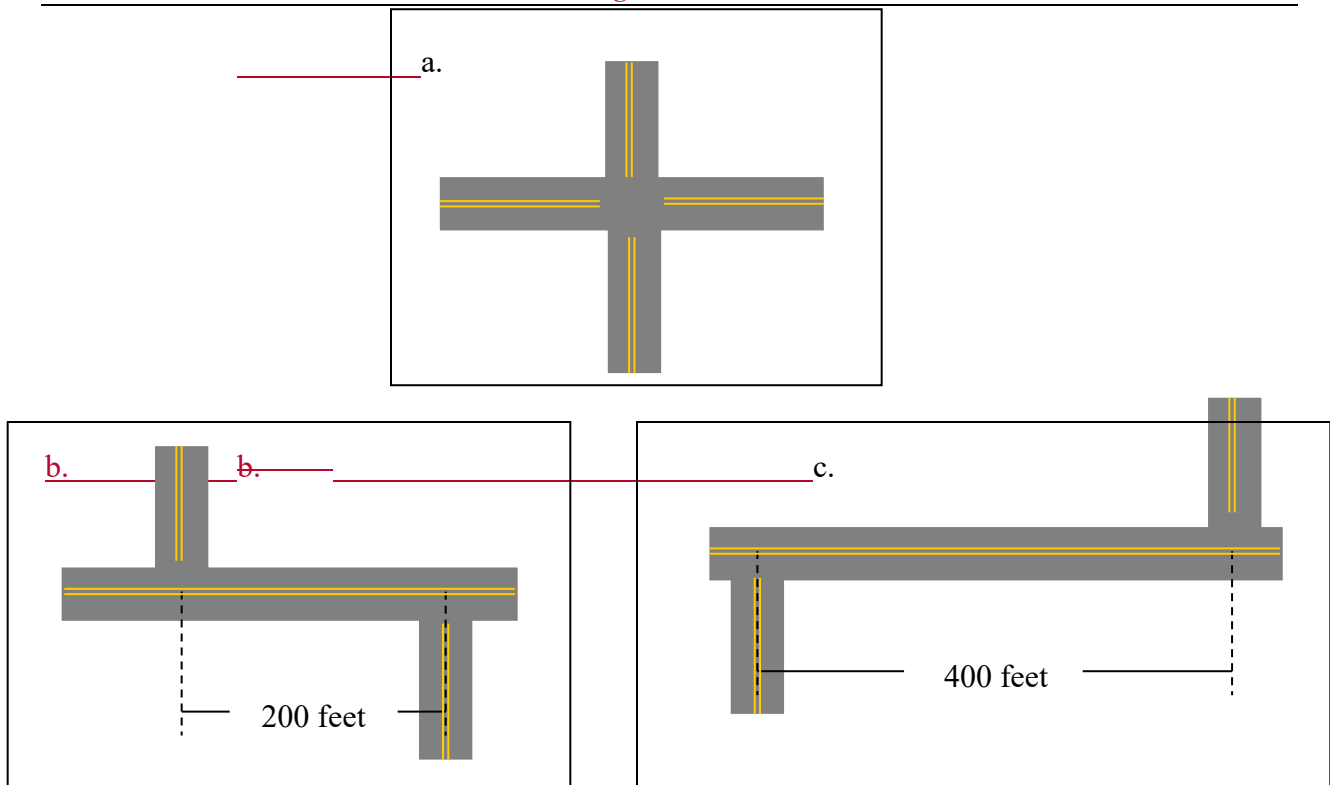


Figure 7-1: Two Streets Intersecting the Same Street.

**7.5. Sight Triangle Easements.** Sight triangle easements are required in every zoning district of the City except for the CC District. Sight triangle easements must be shown on all plans and recorded on a final plat. NCDOT may have separate and/or additional requirements regarding Sight Triangles, the strictest standard that satisfies all requirements will apply. Dimensions given in this section are the minimums, evaluation of sight distance may require larger sight triangle easements.

**A. Type 1**

**a.** Type 1 sight triangles must be maintained on property located at intersections of:

1. Two streets of any classification
2. A street and a railroad
3. A street and a non-residential driveway

**b. Size and Measurement** - A sample illustration is provided in Figure 7-2.

1. The lengths of the Type 1 sight triangle legs are based on the widths of the intersecting rights-of-way of the where the intersection occurs.



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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

**Table 7-3: Sight Triangle Leg Length along a Right-of-Way  
Measured from the Point of Intersection**

<b>Right-of-Way Width* (feet)</b>	<b>Length (F or G) (feet)</b>
≤50	25
60	30
70	35
80	40
90	45
>100	50
*Or pavement width where no R/W exists.	

2. Type 1 Sight triangles are measured from the following three points as shown on Figure 7-2:

- a. *Point 1.* The point of intersection of two right-of-way lines or driveway pavement edge.
- b. *Point 2.* The point along right-of-way one (1) a distance from Point 1 as determined by the width of right-of-way one (1) in accordance with Table 7-3, and
- c. *Point 3.* The point along right-of-way two (2) a distance from Point 1 as determined by the width of right-of-way two (2) in accordance with Table 7-3.

**B. Type 2**

1a. In addition to Type 1 sight triangles, Type 2 sight triangles must be maintained on property located at intersections of:

- 1. Any street with a street classified as a collector or higher.
- 2. Any non-residential driveway with a street classified as a collector or higher.

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0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:

**2b. Size and Measurement** - A sample illustration is provided in Figure 7-2.

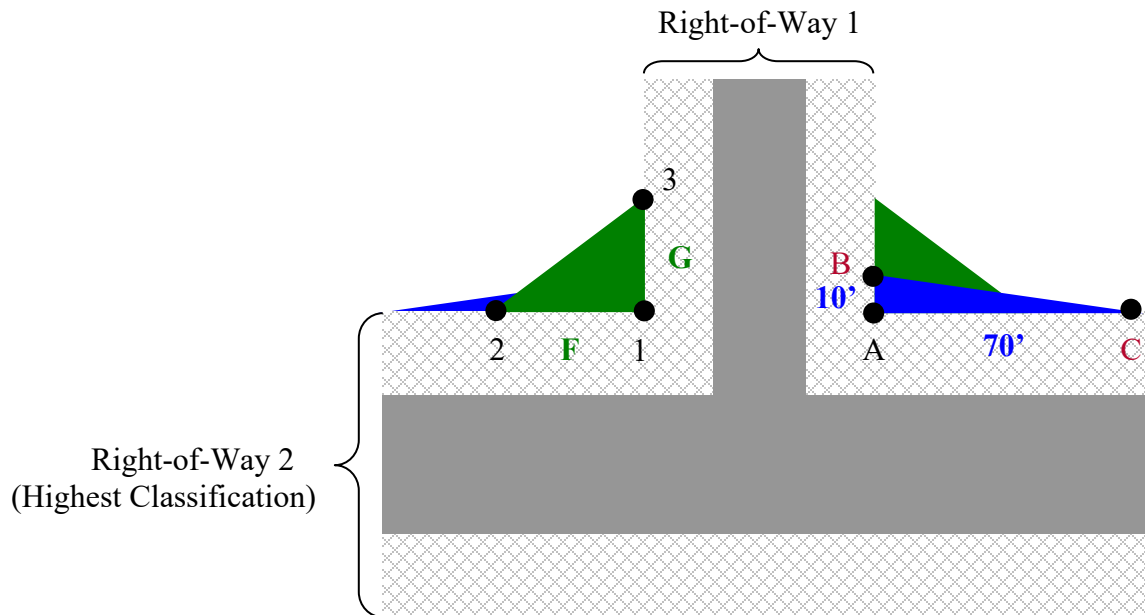
1. Type 2 Sight triangles are measured from the following three points as shown on Figure 7-2:

a. *Point A.* The point of intersection of two right-of-way lines or R/W and driveway pavement edge.;

b. *Point B.* The point along right-of-way one (1) a distance of 10 feet from Point A, and

c. *Point C.* The point along right-of-way two (2) a distance of 70 feet from Point A.

**Figure 7-2: Type 1 & 2 Sight Triangle Sample Illustration**



**C. Type 3**

a. Type 3 Sight Triangles must be maintained on property located at intersections of:

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0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:

a1. Residential driveways and streets

b. Size and Measurement - A sample illustration is provided in Figure 7-3.

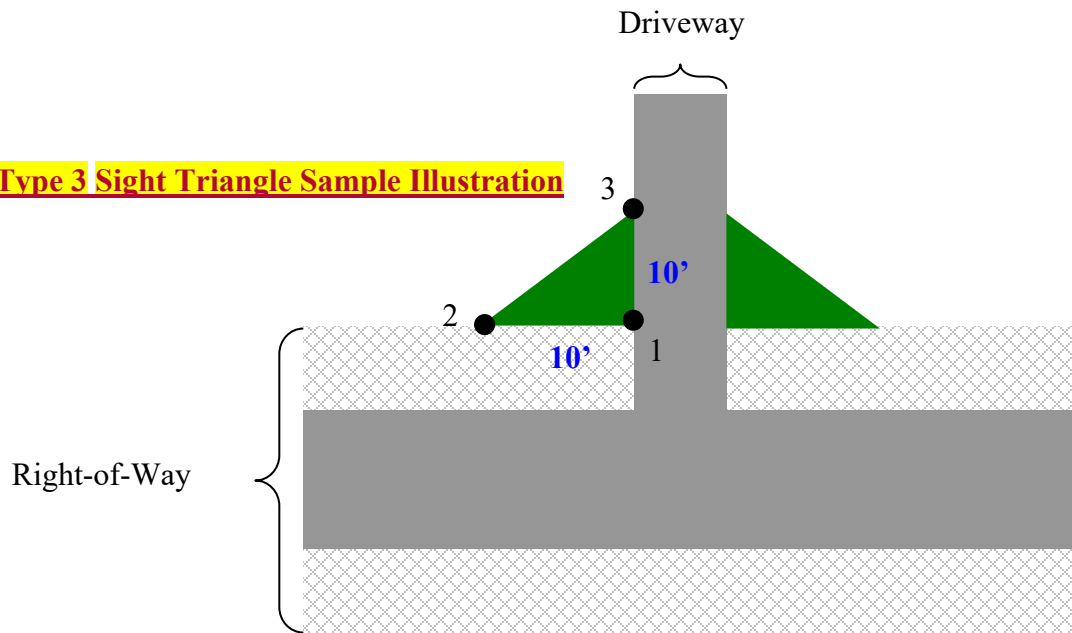
1. -Sight triangles are measured from the following three points:

1a. Point 1. The point of intersection of the street right-of-way line and the edge of the driveway pavement,

2b. Point 2. The point along the street right-of-way a distance of ten (10) feet from Point 1, and

3c. Point 3. The point along the edge of the driveway pavement a distance of ten (10) feet from Point 1

Figure 7-3: Type 3 Sight Triangle Sample Illustration



~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

**D. Objects Not Allowed within Sight Triangles.** Objects within sight triangles must be restricted to give the users of the street or driveway an unobstructed view of oncoming vehicles and pedestrians. No structures, berms, vegetation, or other visual obstruction with a height equal to or greater than two (2) feet above the street surface elevation is allowed within the sight triangle, except those listed in the following subsection. The dimensions given represent the dimensions of the Sight Triangle Easements as measured at the R/W.

**E. Objects Allowed within Sight Triangles.** The following objects are allowed within sight triangles:

1. Public utility poles.
2. Official warning signs or signals.
3. Supporting members or appurtenances to permanent buildings lawfully existing prior to April 11, 1996.
4. Other signs that meet all of the following criteria:
  - a. Conform to the City's sign ordinance, and
  - b. Are mounted at a height equal to or greater than ten (10) feet above the street surface, and
  - c. Have supports that do not obscure the view of oncoming vehicles and pedestrians.

~~Supporting members or appurtenances to permanent buildings lawfully existing prior to April 11, 1996.~~

~~7.4. **Sight Triangle Easements.** Sight triangle easements are required in every zoning district of the City except for the CC District. Sight triangle easements must be shown on all plans and recorded on a final plat.~~

~~a. *Locations.* Sight triangles must be maintained on property located at the intersection of:~~

- ~~1. Two streets of any classification,~~
- ~~2. A street and a railroad, and~~
- ~~3. A street and a driveway.~~

~~b. *Size and Measurement.* A sample illustration is provided in Figure 7-2.~~

~~c. *Intersections of Two Streets or Streets and Railroads.* The lengths of the legs of a site triangle are based on the widths of the intersecting rights-of-way and the functional classification of the streets where the intersection occurs.~~

~~d. *Sight Triangle Measurements.* Based on Width of Right of Way. Sight triangles are measured from the following three points:~~

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~~0 e.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

- ~~1. *Point 1.* The point of intersection of two right of way lines,~~
- ~~2. *Point 2.* The point along right of way one a distance from Point 1 as determined by the width of right of way one in accordance with Table 7-3, and~~
- ~~3. *Point 3.* The point along right of way two a distance from Point 1 as determined by the width of right of way two in accordance with Table 7-3.~~

**Table 7-3: Sight Triangle Leg Length along a Right-of-Way Measured from the Point of Intersection**

<b>Right-of-Way Width (feet)</b>	<b>Length (feet)</b>
50	25
60	30
70	35
80	40
90	45
≥100	50

~~e. **Functional Classification.** Additional site triangle easements are needed at the intersection of two streets if at least one of the streets has the following functional classification:~~

- ~~1. **freeway or expressway;**~~
- ~~2. **major thoroughfare;**~~
- ~~3. **minor thoroughfare, major collector; or**~~
- ~~4. **minor collector.**~~

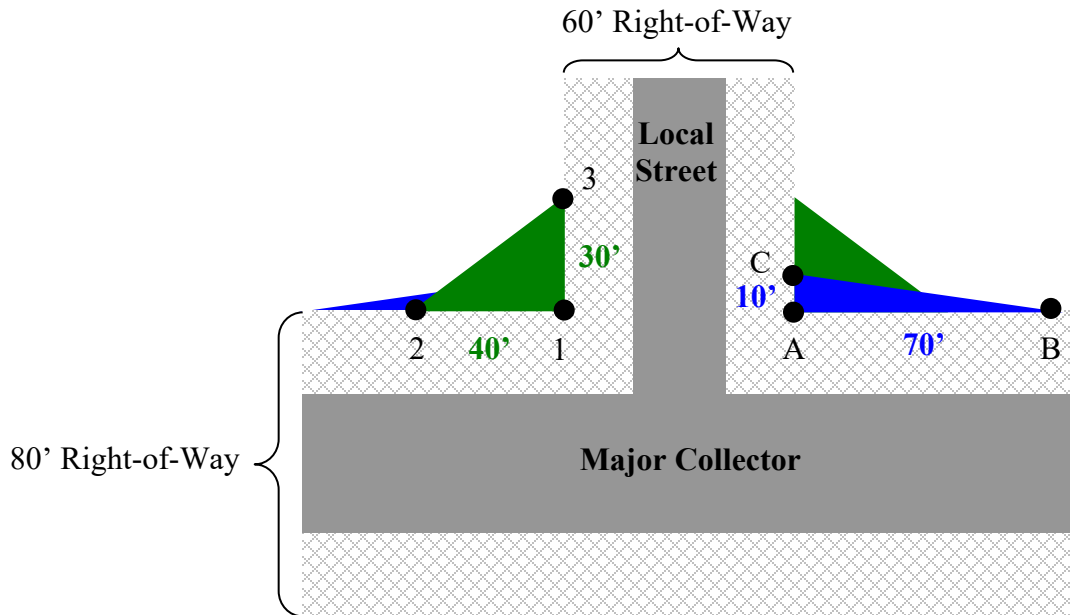
~~f. **Measuring.** Site triangles are measured from the following three points:~~

- ~~1. **Point A.** The point of intersection of the two street right-of-way lines,~~
- ~~2. **Point B.** The point along the right-of-way of the street with the highest functional classification (highest ADT) a distance of 70 feet from Point 1, and~~
- ~~3. **Point C.** The point along right-of-way of the intersecting street a distance of 10 feet from Point 1.~~

**Figure 7-2: Sight Triangle Sample Illustration**

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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~



- ~~g. Intersections of Streets and Residential Driveways. Sight triangles are measured from the following three points:~~
  - ~~1. Point 1. The point of intersection of the street right-of-way line and the edge of the driveway pavement,~~
  - ~~2. Point 2. The point along the street right-of-way a distance of ten (10) feet from Point 1, and~~
  - ~~3. Point 3. The point along the edge of the driveway pavement a distance of ten (10) feet from Point 1.~~
- ~~h. Intersections of Streets and Non-Residential Driveways. Site triangle requirements are addressed during the driveway permitting process.~~
- ~~i. Objects Not Allowed within Sight Triangles. Objects within sight triangles must be restricted to give the users of the street or driveway an unobstructed view of oncoming vehicles and pedestrians. No structures, berms, vegetation, or other visual obstruction with a height equal to or greater than two (2) feet above the street surface elevation is allowed within the sight triangle, except those listed in the following subsection:~~
- ~~j. Objects Allowed within Sight Triangles. The following objects are allowed within sight triangles:~~

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~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

- ~~1. Public utility poles,~~
- ~~2. Official warning signs or signals,~~
- ~~3. Other signs that meet all of the following criteria:~~
  - ~~(a) Conform to the City's sign ordinance, and~~
  - ~~(b) Are mounted at a height equal to or greater than ten (10) feet above the street surface, and~~
  - ~~(c) Have supports that do not obscure the view of oncoming vehicles and pedestrians.~~
- ~~4. Supporting members or appurtenances to permanent buildings lawfully existing prior to April 11, 1996.~~

~~7.6. Roundabouts/Traffic Circles. Roundabout/traffic circle designs must be reviewed and approved by the Director of Transportation based on current engineering standards. Sight Distance. Sight distance shall be measured at a height of 3.5' above the ground with a minimum of 1' vertical separation between the highest obstruction at ground level and the sight line, and 5' between the sight line and the bottom of tree canopies, or objects above the surface. Table 7-6 gives the sight distance for stop controlled intersections. Minimum Sight Distance should be provided as outlined in Article VIII, Appendix E of the TSM intersections.~~

**Table 7-6**

Design Speed (mph)	Minimum Intersection Sight Distance (ISD)*		
	Passenger Cars (ft.)	Single Unit Trucks (ft.)	Combination Trucks (ft.)
	Left / Right	Left / Right	Left / Right
20	225 / 195	279 / 250	337 / 310
25	280 / 240	348 / 315	422 / 385
30	335 / 290	418 / 375	506 / 465
35	390 / 335	488 / 440	590 / 540
40	445 / 385	557 / 500	675 / 620
45	500 / 430	627 / 565	759 / 695
50	555 / 480	697 / 625	843 / 770
55	610 / 530	766 / 685	927 / 850

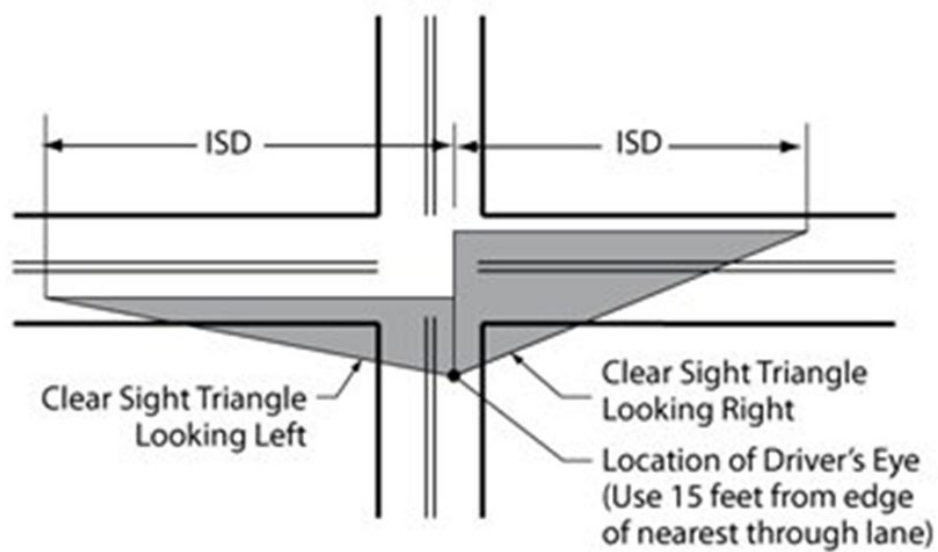
\*Values are based on case B1 and B2 from AASHTO Policy on Geometric Design of Highways and Streets with base condition of two-lane highway with no median and grades <=3%. For conditions outside of the base conditions appropriate adjustments should be made in accordance with AASHTO

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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

Policy.

Figure 7-6



7.7. **Roundabouts/Traffic Circles.** Roundabouts may be required at certain intersections within developments proposing a new network of public streets to provide traffic calming and help create a safe environment for drivers and pedestrians. Locations of Roundabouts will be determined by the Planning and Transportation Departments. Designs must be reviewed and approved by the Director of Transportation or their his/her representative.

7.5. —



~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

## 8.0 Median and Island Standards

- 8.1. *Where Required.* Entrance roads shall include a median in conformance with the City’s development ordinances, except that the Director of Transportation may waive this requirement if the Director determines that such a median is not ~~practical~~ **practical**, or such installation would create a hazard.
- 8.2. *Size.* Islands **must be a minimum of 75 square feet** and ~~entrance~~ medians must be a minimum **of one half the required stem length of the intersecting street(s) of 75 square feet in size** and at ~~least~~ **minimum of 4 feet wide. Lengths of non-entrance medians are to be approved by the Transportation Director.** Where median widths are specified, a median of not less than the designated width must be provided.
- 8.3. *Contents.* Structures, permanent materials or plantings within the island **or median** should not obscure the visibility of cars entering a cross street for a distance of 20 feet back from the curb face of the cross street, unless a larger setback is needed due to inadequate sight distance created by horizontal or vertical curve alignment. Islands **and medians must** ~~should~~ be landscaped at a density equivalent to a Class “A” buffer as set forth in the Landscaping Standards of in the City’s development ordinances.
- 8.4. *Specifications.* The nose of the median must be at least 6 feet from edge of ~~the~~ perpendicular thru lane. Standard **2’-6”** curb **and guttering should be used unless 1’-6” is approved** ~~must be used~~. A minimum 14-foot ~~travelway~~ **travel way** must be provided on each side of the median/island. **Medians and islands which encroach into NCDOT R/W must be approved by NCDOT.**

## 9.0 Drainage Standards

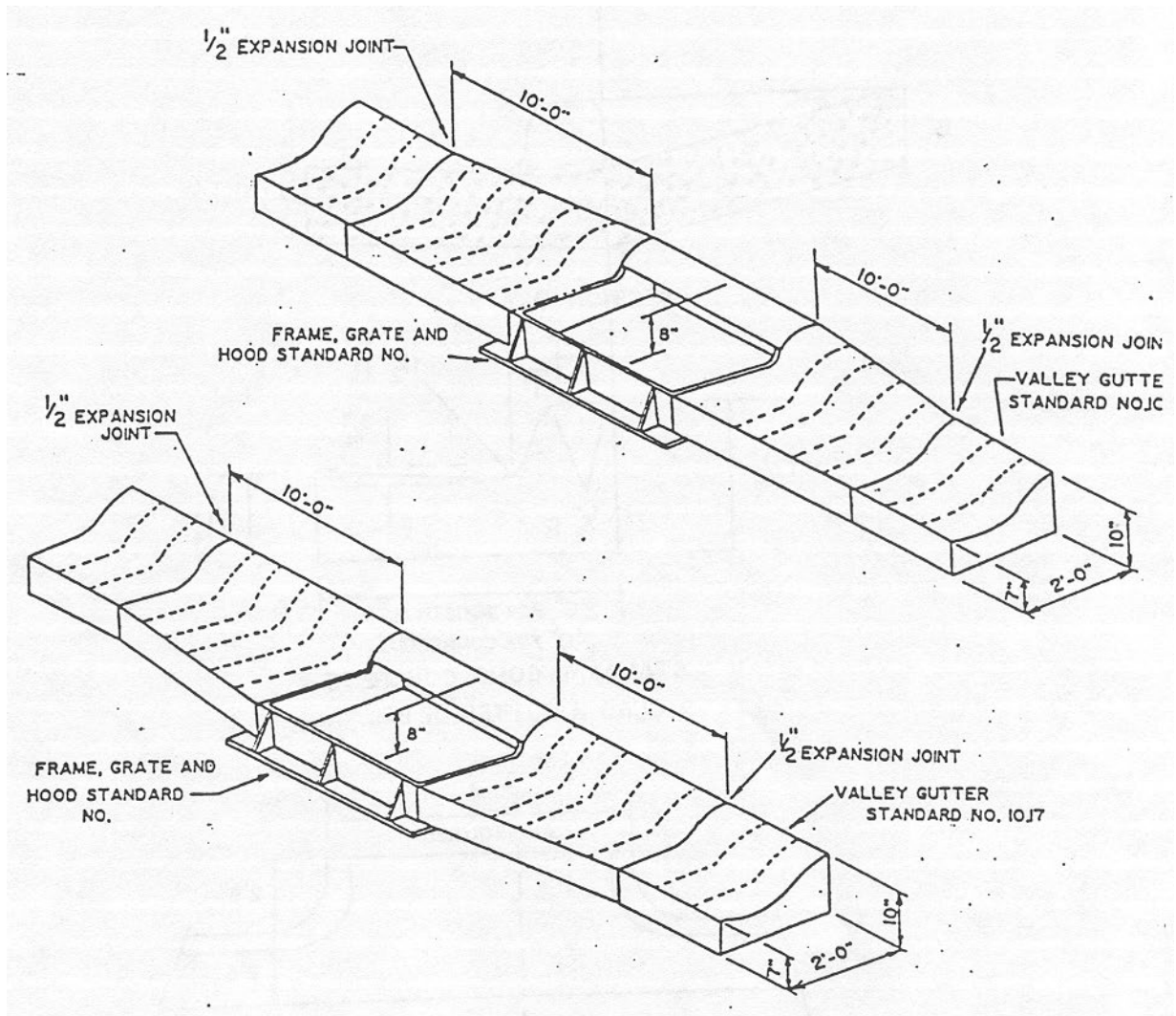
–A drainage system must be provided that adequately facilitates the movement of stormwater off and under streets. This drainage system may include curbs and gutters, catch basins, stormwater pipes, and graded channels. Each component of the drainage system should be designed by a registered professional engineer and installed in accordance to City construction specifications and standards. Please refer to Article 1 Section 3 of these Technical Standards.

### 9.1. Curbs and Gutters.

- a. *Required Locations.* Concrete curbs and gutters must be included on all new streets, ~~on and~~ all existing streets **which the property to be subdivided or developed fronts, and on all streets** that provide access to a new development or subdivision, except those listed in the following subsection.
- b. *Exemptions.* Concrete curbs and gutters are not required along the following streets:
1. Interstate highways,

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~~0~~ c.CBU units or combination of 32 or less mail receptacles may be located along a ~~street, other than a thoroughfare, provided a separate pull-off area is provided~~ and ~~all of the following are met:~~



2. Numbered State highways with topography that does not allow for reasonable or practical installation, and
  3. Numbered State highways where the N.C. Department of Transportation ~~has not determined the ultimate right-of-way width stipulates no curb and gutter should be installed.~~
- c. *Specifications.*

**Figure 9-1: Curb and Gutter Detail.**

1. Curbs and gutters must be built in accordance with City of Concord Standards and NCDOT Standards. NCDOT Standard 846.01 for Standard 2'-6" curb and gutter is to be used on all ~~major and minor collector streets~~ streets. Valley curb is allowed

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~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

~~only~~ on local streets and alleys.

~~2. All excess concrete on the front edge (lip) of gutter shall be removed when curb and gutter is poured with a machine.~~

~~3. All curb and gutter shall be backfilled with soil approved by the inspector within 48 hours after construction to prevent erosion.~~

9.2. **Catch Basins.**

a. *Required Locations.* Catch basins shall be located:

1. ~~Aas~~ outlined in Article 1 ~~Section 3~~ of these Technical Standards, and
2. On both sides of the street at low points.

b. *Specifications.*

1. Catch basin frames and grates must be in accordance with NCDOT Standards. Improvised grates will not be acceptable.
2. Catch basin frames must be cast with the following statement: "Dump No Waste Drains to Stream" or a comparable statement as approved by the Director of ~~Environmental Services~~ ~~Engineering~~.
3. Catch basins must be built in accordance with NCDOT Standards.
- ~~4.~~ ~~Catch basins~~ walls must be built straight with inside joints struck smooth. Precast catch basins may be acceptable with the approval of the Director of Engineering.
- ~~4.5. Roll-over frame and grate inlets are not permitted within driveways.~~

9.3. **Pipes.**

a. *Stormwater.*

1. *Required Locations.* Stormwater pipes should be placed at all low points in the street grade to transmit storm water transversely across the street. Additionally, stormwater pipes should be parallel ~~to~~ the street, but not under the street, ~~when necessary to~~ ~~unless~~ transmitting stormwater from one catch basin to another ~~on the opposite side of the street.~~
2. *Size.* The minimum pipe diameter shall be fifteen (15) inches, regardless of the size of the drainage area.
3. *Depth.* The minimum cover for all pipe shall be two (2) feet, ~~or as otherwise approved for Class IV and V RCP in accordance with NCDOT Standards.~~
4. *Material.* All pipe must be concrete conforming to the ~~N.C.~~-DOT Standard

~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

Specifications of Road and Structures. For special conditions, alternative pipe materials recommended by the manufacturer for the type of installation ~~involved, and involved and~~ approved by the Director of Engineering will be considered. Any concrete pipe laid between the concrete curbs shall be reinforced.

- b. *Construction.* All pipe must be laid with the bell or groove upgrade and joint entirely interlocking.
- c. *Groundwater.* Subdrainage must be provided where the groundwater table is within two (2) feet of the subgrade. Subdrainage design must be approved by the Director of Engineering.
- d. *Graded Channels.* Ditches proposed within the street rights-of-way will need to be approved on a case to case basis. Ditches should be a minimum of thirty-six (36) inches deep and two (2) feet in width. Ditches, swales, or other drainage features shall not be designed or allowed to discharge concentrate water flow onto or across sidewalks.

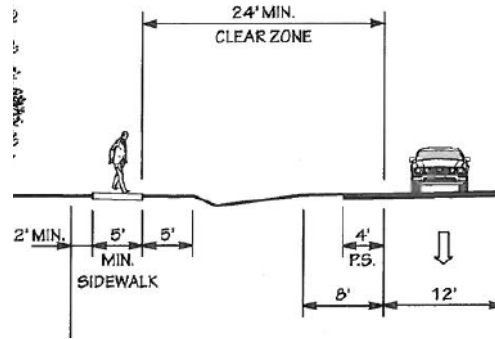
## 10.0 Sidewalk Standards

10.1. Locations. Sidewalks should be provided for the safe movement of pedestrians, separate from the movement of vehicular traffic, through residential, commercial, and industrial areas, as well as public places. Sidewalks must be constructed along both sides of all new streets in a subdivision, ~~and~~ along any street ~~that~~ which the property to be subdivided fronts and any street which provides access to the subdivision. ~~Multi-Family and Non-Residential developments shall provide sidewalk along the frontage of existing streets regardless of whether the site property is being subdivided.~~ Sidewalks ~~may~~will not be required along interstate highways (not designed for curb and gutter). Where identified in adopted City plans, Multi-Use paths will replace sidewalk where required.

- a. Except in unusual circumstances, sidewalk must be located a minimum of (8) eight feet from the back of the curb or at the back of the right-of-way. A recorded public sidewalk easement is required for all sidewalk located outside the public right-of-way, the width shall be equal to the distance from the right-of-way line to the back of the sidewalk plus a minimum of two feet or to the face of building, whichever is less. The sidewalk easement must be recorded with the Cabarrus County Register of Deeds prior to issuance of a certificate of occupancy for the corresponding building(s).
- b. Along NCDOT highways where curb and gutter is not recommended or approved by NCDOT, the minimum clear zone for sidewalks and multi-use paths is 24' as measured from the edge of the closest parallel travel lane subject to approval by NCDOT.

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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~



~~10.1.~~

10.2. **Specifications.** Sidewalks must:

- a. Have a minimum five (5) foot width;
- b. Be constructed of not less than three thousand **six hundred (3,0600)** pound-per-square-foot **inch** concrete;
- c. Be a minimum of four (4) inches thick when adjacent to standard 30" curb and gutter, the sidewalk must be six (6) inches thick when **placed** adjacent to valley curb and gutter **and no planting strip is present;**
- ~~e.~~ **d.** Be a minimum of six (6) inches thick at driveway crossings
- ~~d.e.~~ Be constructed on a ~~n adequately compacted and~~ properly graded base **with subgrade compacted to 95% of the maximum density obtainable with the Standard Proctor Test,**
- ~~e.f.~~ Have a lateral slope of one-quarter (1/4) inch per foot toward the street,
- ~~f.g.~~ Be steel-~~trowelled~~ **troweled** and light broom finished and cured properly,
- ~~g.h.~~ Have tooled joints at intervals of not more than five (5) feet and expansion joints at intervals of not more than forty (40) feet,
- ~~h.~~ **Be separated from the back of curb by a six-foot planting strip, and**
- ~~i.~~ Meet all current Americans with Disabilities Act (ADA) standards, **and,**
- ~~j.~~ **Meet NCDOT specifications for concrete sidewalks, stricter of any sapecification applies;**
- ~~i.k.~~ **Be designed and located so as to prevent transmission of drainage water from swales, ditches or other graded channels across the surface.**

10.3. **Transitions to Street Grade.** Access ramps must meet current **ADA and** NC-DOT standards and be constructed with materials that are approved by the Director of Transportation. **Truncated dome mats at all access ramps shall be red in color.**

~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

## 11.0 Curb and Gutter, and Sidewalk Exemptions

**Applicability.** Refer to Article 10 of the UDO.

## 12.0 Guardrails

### 12.1. Applicability.

- a. Guardrails must be provided in all areas required in accordance with the NC-DOT Roadway Design Manual.
- ~~b. Additionally, guardrails must be provided along all areas, regardless of the design speed, where an eight foot or greater drop in elevation exists between the edge of pavement and the area extending 40 feet beyond the edge of pavement, unless:~~
  - ~~1. Greater than or equal to 13 feet of flat, unobstructed area exists beyond the edge of pavement, and~~
  - ~~2. A 3:1 or flatter unobstructed slope exists beyond the flat area, and~~
  - ~~3. At least 8 feet of flat, unobstructed area exists beyond the toe of the slope.~~

## 13.0 Street and Subdivision Naming Standards

### 13.1. Uniqueness.

- a. Proposed street and subdivision names must not duplicate nor too closely approximate phonetically the name of any street within Cabarrus County.
- b. Where proposed streets are extensions of existing streets, the existing street names shall be used except where a new name can reasonably be used to facilitate proper house numbering or to avoid further street name duplication.

### 13.2. Labels.

In addition to names to identify new streets, the following labels must be included:

- a. A street oriented in a general north-south direction must be labeled a “Street;”
- b. A street oriented in a general east-west direction must be labeled an “Avenue;”
- c. A street that changes direction may be labeled a “Drive,” “Lane,” or “Road;”
- d. A street that forms a loop where both ends intersect with the same street may be labeled a “Circle;” and

~~0 e.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

- ~~e.~~ A cul-de-sac or street terminating in a similar dead-end must be labeled a “Place” if oriented in a north-south direction and a “Court” if oriented in an east-west direction.

~~e.—~~

## 14.0 Sign Standards

~~14.1. Standard Signs.~~ In all subdivisions that include public streets, except as provided below, standard street signs should be installed by the City of Concord. The developer must reimburse the City for the full cost of the installation. ~~Costs associated with signs requiring reinstallation due to damage or removal prior to City acceptance of the streets are the responsibility of the developer. The performance of installation, maintenance, and replacement of signs on public streets after the streets have been accepted by the City are the responsibility of the City.~~ **Signage Plan.** A separate signage plan should be included with the site plan showing the locations of all signs (stop, speed limit, street blades, no-parking, etc.). Signs should be indicated as standard or decorative.

~~14.1.~~14.2. **Standard Signs.** In all subdivisions that include public streets, except as provided below, standard street signs should be installed by the City of Concord. The developer must reimburse the City for the full cost of the installation. Costs associated with signs requiring reinstallation due to damage or removal prior to City acceptance of the streets are the responsibility of the developer. The performance of installation, maintenance, and replacement of signs on public streets after the streets have been accepted by the City are the responsibility of the City.

~~14.2.~~14.3. **Decorative Custom Signs Treatments.** [Encroachment process.] In subdivisions with architectural standards, restrictive covenants, and a property owner's association, **decorative custom street sign treatments s may shall may** be installed by the developer with all costs of installation, maintenance, and replacement paid by the developer. **Sign panels themselves shall be procured from the City of Concord for installation on the custom sign treatments. An encroachment agreement for the custom sign treatments must be completed prior to the installation approval of a site plan containing decorative signage.:**

### **a. Specifications.**

~~14.3.~~ **Decorative Custom street signs treatments** must comply with the Manual on Uniform Traffic Control Devices (MUTCD) published by the U.S. Department of Transportation and **City of Concord standards**, ~~may be installed only after written approval by the City Director of Transportation.~~ Submission requirements for consideration of **custom street decorative signs treatments** shall include detailed color drawings, plans and specifications of the proposed street signs, **signage plan showing locations**, and a written statement describing funding for installation, maintenance, and replacement.

~~0 c.CBU units or combination of 32 or less mail receptacles may be located along a street, other than a thoroughfare, provided a separate pull-off area is provided and all of the following are met:~~

~~14.4. b. Replacement.~~

- ~~1. Regulatory and Warning Signs.~~ Replacement of lost or damaged regulatory or warning signs, as defined by the ~~Uniform Manual~~ MUTCD, must be accomplished ~~immediately~~ within mandated time periods by the City using standard street signs until the developer or property owner's association installs replacement ~~custom decorative street sign treatments~~. If the developer or property owner's association fails to install replacement ~~custom street decorative signs treatments~~ for regulatory and warning signs within ninety (90) days, the replacement by the City shall be considered permanent and the full cost must be paid by the developer or property owner's association.
- ~~2. Guide Signs.~~ Replacement of lost or damaged guide signs, as defined by the MUTCD, on decorative sign treatments must be accomplished by the developer or property owner's association within ninety (90) days or the City shall install standard street signs with full costs paid by the developer or property owner's association.

~~14.5.~~

~~2. Guide Signs.~~ Replacement of lost or damaged guide signs, as defined by the Uniform Manual MUTCD, on decorative sign treatments must be accomplished by the developer or property owner's association within ninety (90) days or the City must install standard street signs with full costs paid by the developer or property owner's association.

~~14.6.~~

~~:~~

## 15.0 Public Street Acceptance

The City of Concord may consider the acceptance of streets/roads for maintenance upon written request. The City reserves the right to refuse acceptance of maintenance of streets which are not built to the standards outlined in the Technical Standards Manual or, upon inspection, are found to require redesign or extensive repair work to bring the street(s) up to current standards. Alleys will not be accepted by the City for maintenance.

15.1 A street must meet the following minimum requirements to be considered for public maintenance:

- a. Must be within City of Concord City limits,
- b. Shall be contiguous to streets currently maintained by the City or NCDOT. Streets which do not directly connect to an existing public street maintained by the City or NCDOT will not be accepted.



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- ~~c. Must meet current standards as outlined in the City of Concord Technical Standards.~~
- ~~d. Must be platted with at least minimum Right-of-Way (R/W) required for the designated classification.~~
- ~~e. The Owner(s)/Applicant(s) must not otherwise be in default of any other obligation to the City of Concord.~~

**15.2 Newly Constructed Streets Platted for City Maintenance**

To initiate the acceptance procedure for newly constructed streets platted for City maintenance, the following information shall be submitted to the City Engineer:

- a.** An Application for Street Maintenance Acceptance (Appendix A). The street(s) shall not have had the final surface lift of asphalt laid for more than 12 months.
- b.** One (1) PE Certification for Subdivisions and Streets (Appendix B), including applicable reports and inspection data.
- c.** One (1) Pavement Core Results Report. The report will include a cover letter, table of contents, project scope, data collection methodology, description of project limits, a map at a legible scale of the project limits containing street names, lengths, cross sections, and the location of the pavement core samples. The report will also include a core results table with street name, applicable City of Concord Technical Standards Manual Typical Section, core result material and thickness (in inches), and a statement of whether or not the core result meets the current minimum design standard per the applicable typical section. Pavement core samples shall be taken at 500' intervals (minimum of 1 core per street block), and no more than 4.0' from the centerline of the road. This report must be signed, dated, and stamped by a North Carolina registered professional engineer. The City may acquire its own pavement core samples as a quality control
- d.** Copies of all soils, compaction, concrete, and other applicable inspection data and records for all streets included in the acceptance request.
- e.** Upon receipt of the request, the City will perform an inspection of the subject street(s), and a review of all submitted materials. The City shall notify the owning entity of all construction deficiencies required to be corrected. Upon satisfactory inspection and/or completion of corrective measures, re-inspection, and final approval by the City Engineer, the street acceptance request will be presented to City Council for approval.
- f.** All additional requirements of Section 5.7.8 thru 5.7.10 of the City of Concord Development Ordinance apply to street acceptance.

**15.3 Existing Private Streets**

To initiate the acceptance procedure for existing private streets for City maintenance the following information shall be submitted to the City Engineer by the Applicant(s):

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- a. Private Street Maintenance Acceptance Petition (Appendix C), representing a minimum of 75% of the linear frontage of property owners (one per parcel) within the request area in favor of the request.
- b. One (1) map of the area with the subject streets identified.
- c. Copies of plats for all parcels with frontage along the subject street.
- d. Encroachment request information sheet for all non-city utilities.
- e. Upon receipt of the petition, the City Engineer or their representative will perform an inspection of the subject street(s), and review all submitted materials. The City shall notify the Applicant(s) of all deficiencies required to be corrected, and the Right-of-Way (R/W) that will be required to be dedicated for the subject street(s).
- f. Once the Applicant(s) receives notification of deficiencies and R/W requirements they should inform the City Engineer within one-hundred and twenty (120) days if they wish to continue the acceptance request.
- g. If the Applicant(s) wish to continue the request they will be responsible for correcting any identified deficiencies using a licensed contractor where applicable and ensuring the street(s) and related infrastructure meet current standards as outlined in the Technical Standards Manual (TSM). Where necessary, designs for the required work shall be prepared by a licensed professional engineer.
- h. If R/W is required for acceptance, the Applicant(s) will be responsible for having a Plat(s) prepared by a licensed professional land surveyor showing dedication of the required R/W. The Plat(s) should be accompanied by appropriate documentation from 100% of the landowners where the proposed R/W encroaches upon their property. The City of Concord will not provide compensation for any property dedicated as R/W as part of a voluntary request for acceptance of a private street for City maintenance.
- i. Upon satisfactory inspection and/or completion of corrective measures, re-inspection, approval of R/W dedication Plat(s), and final approval by the City Engineer, the street acceptance request will be presented to City Council for approval.

#### 15.4 Dedication of Public Streets on a Final Plat

- a. When a *street* is dedicated in connection with a *subdivision*, the approval of a *final plat* shall not be deemed to constitute or effect the acceptance by the City of Concord of any *street* shown on the *final plat*. All streets proposed for public dedication are subject to acceptance for maintenance in accordance with Section 15 of this Article.

#### 15.5 City Council Street Acceptance

Street acceptance requests must be approved by City Council during a regular council meeting. It is the applicant's responsibility to ensure the City Engineer has all documentation necessary for the request to be placed on the Council Agenda. No requests

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~~\_\_\_\_\_ for street acceptance will be considered during the June council meeting.~~

~~15.0~~**16.0 Unopened, Dedicated Street Standards**

Streets for which right-of-way has been dedicated by subdivision plat or deed to the North Carolina Department of Transportation or the City of Concord and recorded with the Cabarrus County Register of Deeds, but have never been constructed **or accepted for public maintenance**, will not be constructed or maintained by the City until the following conditions have been met:

~~15.1.16.1. \_\_\_\_\_~~ Rights-of-way **sufficiently wide for the street and utilities, as determined by the Director of Engineering**, have been dedicated, and surveyed if necessary, ~~sufficiently wide for the street and utilities, as determined by the Director of Engineering.~~

~~15.2.16.2. \_\_\_\_\_~~ Right-of-way has been cleared and graded to meet City standards for slope and drainage.

~~15.3.16.3. \_\_\_\_\_~~ Roadway shall be **constructed or improved to the standards set forth in this Article of the Technical Standards Manual**, with a surface of crusher-run stone to a depth of not less than eight (8) inches, two and a quarter (2.25) inches of intermediate course, and two (2) inches of surface course. ~~Width of roadway shall be not less than eighteen (18) feet.~~

~~15.4.16.4. \_\_\_\_\_~~ The Director of Engineering or ~~their~~**his/her** authorized representative has inspected all work.

~~16.5. \_\_\_\_\_~~ The Director of Engineering or ~~their~~**his/her** authorized representative has issued a certificate of completion for the required improvements.

~~15.5. \_\_\_\_\_~~ **City Council has approved the acceptance of the street(s) for public maintenance and the warranty period has passed.**

~~16.0~~ **16.0 Alley Standard**

~~\_\_\_\_\_ For developments utilizing alleys in their design, the following standard shall be used. Alleys are private streets which will not be accepted by and the City does not accept for maintenance.~~

~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

## 17.0 Cluster Mailbox Unit Requirement Standards

It is the responsibility of the Applicant to ensure that the appropriate method of mail delivery and locations are coordinated and approved with local USPS representatives for all proposed developments.

### 17.1 Site Plan Approval

A site plan will be required for review prior to approval of Cluster Mailbox Units (CBUs) associated with any subdivision or development application. If for any reason after approval of a site plan the location and other details pertaining to CBUs is altered, a revised site plan will be required to be submitted for review and compliance to all pertinent technical standards.

### 17.2 18.1—Arrangement

~~a. \_\_\_\_\_ a. \_\_\_\_\_~~ The location of CBU(s) is preferred to shall be located outside the public right-of-way \_\_\_\_\_ and located in a centralized common area(s) of the development. Sufficient parking should be provided to serve the location(s).

**b.** CBUs or combinations with 16 or less mail receptacles may be located along a local residential street outside of the R/W, provided all the following are met:

1. Posted speed limit on street is 25 mph or less.
2. Sidewalk must be located on the same side of the street as the CBU.
3. Access to the mailbox by users must be from the non-street side of the CBU.
4. The structure is located so that no conflicts with utilities, above or underground, exist.
5. At least one dedicated accessible parking space, on or off-street, is provided.

~~\_\_\_\_\_ CBUs or combinations of 32 or less mail receptacles may be located along a local or residential collector street provided all of the following are met:~~

~~a.c.~~

1. \_\_\_\_\_ 1. \_\_\_\_\_ Posted speed limit on the street is 35 mph or less.
2. \_\_\_\_\_ 2. \_\_\_\_\_ Sidewalk must be located on the same side of street as the CBU.
3. \_\_\_\_\_ 3. \_\_\_\_\_ Access to the mailbox by users must be from the non-street side of the CBU.
4. The structure(s) is located so that no conflicts with utilities, above or underground, exist.

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~~0-c.CBU units or combination of 32 or less mail receptacles may be located along a \_\_\_\_\_ street, other than a thoroughfare, provided a separate pull-off area is provided and \_\_\_\_\_ all of the following are met:~~

- ~~5. \_\_\_\_\_ 4. AA separatededicated on or off street pull-off or parallel parking area is provided with an appropriate \_\_\_\_\_ amount of parking spaces.~~
- ~~d. CBUs or combinations of 33 or more mail receptacles require a separate lot with street type driveway access containing an appropriate number of dedicated parking spots.~~
- ~~e. CBUs or combinations of any number for non-residential or multi-family developments and/or subdivisions require a separate lot with street type driveway access containing an appropriate number of dedicated parking spots.~~

**17.3 Location**

All cluster mailbox units and associated on-street parking must be erected:

- a. No closer than 100 feet measured from the curb-line of intersecting streets.
- b. Away from any location whereby reason of the position of, shape or color, it may interfere with or obstruct the view of, or be confused with any authorized traffic sign, signal or device.
- c. So as not to obstruct sight distance along the roadway and at intersecting streets, driveways, greenways, or trail facilities.
- d. No closer than 10 feet away from a residential driveway serving a detached, semi-attached, or townhome dwelling.
- e. In common areas or near property lines rather than directly in front of a residence.
- f. Outside of public or private utility easements, public or private storm drainage easements, and at least 10 feet away from water meters and cleanouts.
- g. No closer than 500 feet, measured along the street, from another CBU.

**17.4 Signs & Markings**

In areas where parking is provided for CBU(s), permissible parking signs shall be installed on both ends of the defined parking area and designated specifically for mail parking. Signs R7-21a, shall be used that states "MAIL PARKING, 15 MINUTE LIMIT." Reserved accessible spaces shall be clearly marked with an international accessibility symbol marked on the pavement and signs R7-8 and R7-8a installed. All pavement markings and signs shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

**17.5 Lighting**

Suitable and sufficient lighting to illuminate the CBU and associated parking areas (where applicable) should be provided for all CBU locations.

**17.6 Maintenance**

- a. The City does not have any responsibility for mail delivery; therefore, the city does not

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~~own or maintain CBUs.~~

~~b. The City will not be responsible for clearing snow and accumulations from the sidewalk, designated parking areas (if applicable), and pad around the CBU. In addition, the area around the CBUs is to be kept clean from trash and debris and clear from any obstacles that could impede mail delivery or retrieval.~~

~~c. These responsibilities must be provided by mailbox users or a legally responsible organization (i.e. homeowner's association, other legally recognized association, etc.) as acceptable to the Administrator. Documents to assure private responsibility of maintenance and repair by a homeowner's association or other legally recognized entity shall be approved as to form by the City Attorney.~~

**17.7 Signs on CBUs**

~~Signage affixed to CBUs located along streets is prohibited.~~

**17.8 Construction of CBUs**

~~Materials and specifications for the installation of CBUs and concrete pads are to be in accordance with USPS requirements and their approved manufacturer list.~~

**17.9 CBU Parking Requirements**

~~a. CBUs, or combinations of CBUs, require designated parking spots per Table 17-1.~~

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**Table 187-1: CBU Parking Requirements:**

CBU -Parking Requirements		
Number of Mail Receptacles	Accessible Parking Spaces*ets	Regular Parking Spacesets
0-16	-1	1
17-3248	1	-1
33-48	1	1
49-64	1	2
65-80	1	3
81-96	1	4
97-112	1	5
>112	**	**

\*Where only 1 accessible space is provided, it must be van accessible.

\*\*Requirements to be determined on a case by case basis.

**18.0 ReferencesReferences**

The following are publications, documents, models, etc. that were used as guidance or direct reference for developing this Article. -They are provided for citation and further review by the user of the contents of this article. Later editions and/or revisions of these references may be created in the future and shall be considered part of the standards in this manual where applicable.

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# City of Concord Technical Standards Manual

## Article III

### ~~Driveways~~ **Driveways & Street Connections**





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DRAFT

## 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:~~

The requirements contained within this article will serve as the rules and regulations to permit connections to public streets per Article IV, Section 50-121 of the City Code of Ordinances and 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 and street connections 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~~ publicly maintained street within the corporate limits and extraterritorial jurisdiction of the City of Concord. Standard details are provided in the Concord Manual of Standard Details to be used in conjunction with this article. In the event of a conflict between the standard details and the provisions in this Article, the stricter standards will apply. 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.

~~2.2. 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.~~

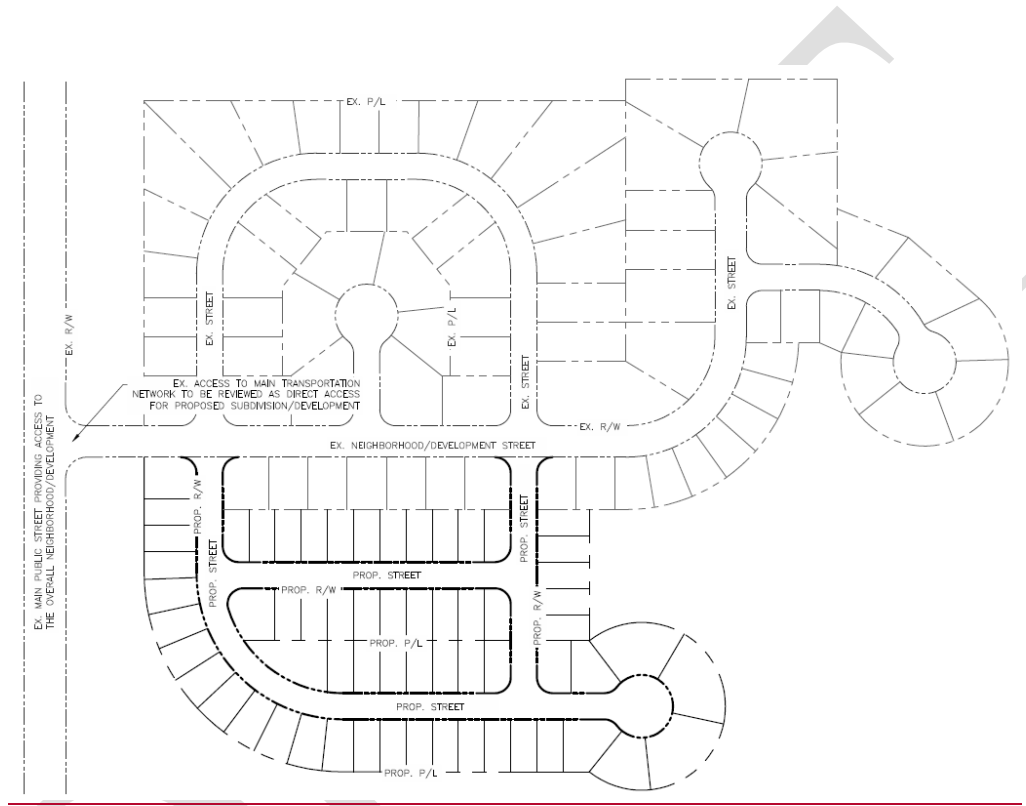
~~2.3.2.2.~~ Standards for private driveways on private property are included in Article 10 of the Development Ordinance.

2.3. Existing driveway approaches or street connections 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.

2.4. Where proposed accesses connect to an existing public or private neighborhood/development street network with no more than two (2) non-gated entrances/outlets, the proposed development may be

considered an expansion of the existing neighborhood/development and the existing entrances may be considered direct access entrances serving the proposed development and may be subject to current standards as they would apply to the proposed development. See figure 2.4-1 for an example.

**Figure 2.4-1: Existing Development Expansion Example**



2.4.

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.

- a. Where NCDOT stipulates a new/revised driveway permit is required if access is taken on a state-maintained street.

### 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. A new driveway permit will be required for non-residential change of use development plans if they meet any of the following criteria:

a. A new driveway permit will be required for non-residential change of use development plans if they meet any of the following criteria. Current driveway is in disrepair and does not meet City minimum design

b. When a change of use results in an additional 20 daily trips per day above the existing use.

c. In cases where the existing driveway does not meet ADA accessibility requirements.

d. When there are significant changes to the on-site parking layout and circulation pattern.

3.1.

3.3. If not completed as part of a previous application process, an approved Traffic Impact Analysis (TIA) and subsequent Transportation Mitigation Agreement (TMA) is required prior to the approval of Driveway Permits for all proposed non-residential and mixed-use developments, all multi-family and single-family attached residential developments, and all other residential developments with 6 or more total dwelling units. Refer to the Technical Standards Manual (TSM), Article VIII, Traffic Impact Analysis, for TIA requirements.

3.2.3.4. The application process and requirements for issuance of this permit are provided in Article 6.

3.5. The North Carolina Department of Transportation (NCDOT) is required to review all connections to state system streets, ~~unless~~ ~~This includes both driveway and street connections, with the exception of single family residential drives, which are~~ exempt from state review requirements. The Applicant is responsible for ensuring all NCDOT Driveway Permit materials are submitted to NCDOT as applicable. The City will not accept nor handle money associated with any NCDOT fees.

3.6. All connections to City maintained streets which will potentially add traffic or otherwise impact an existing City to State system connection will be reviewed by NCDOT to determine the potential for, and extent of improvements to State facilities to ensure the overall transportation infrastructure is adequate to serve proposed developments.

3.3.3.7. When determined that improvements are needed on NCDOT maintained streets and a NCDOT driveway permit is not required for the proposed access(s), an encroachment agreement between the Applicant and the NCDOT will be required for any work to be done within NCDOT right-of-way in accordance with NCDOT guidelines.



3.4.3.8. 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.

3.5.3.9. Driveway permits on state system streets, within the municipal limits of Concord, must also be submitted to the City for ~~the~~ initial review.

3.6.3.10. ~~Upon the City's approval, the site plans and NCDOT driveway permit forms will be forwarded to NCDOT for their approval.~~ When a NCDOT Driveway Permit or Encroachment Agreement is required, concurrent review is allowed however, the City cannot approve a development Site Plan until such time as final approval of the NCDOT Driveway Permit Encroachment Agreement application and plans approved by NCDOT are provided.

3.11. The maximum number of driveways allowed for any parcel prior to the subdivision of property is three.

3.7.3.12. Approval of a City Driveway Permit is contingent on the determination by the City and/or NCDOT that the overall existing transportation infrastructure, or planned improvements, is adequate to serve proposed accesses.

## 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 (Detached)	12	20	1	3
Residential Single Family (Attached)	10	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.

- c. 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 ~~curbline~~ curb line at the inside sidewalk line.

#### 4.2. Location.

- a. 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, or at least 5' from the edge of sidewalk furthest from the edge of the street. The greatest distance will apply.

- b. No portion of a driveway may be located within a sight triangle.

- 4.2.c. Driveways accessing Major or Minor Thoroughfares, Boulevards, or Major Collectors must provide on-site turnaround to prevent backing into the street from the driveway.

#### 4.3. Materials.

- a. Types.

1. *Portland Cement Concrete.* All driveway approaches must be Portland cement concrete (30600 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 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 in Table 5-1.5, ~~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, driveways should be located as far as possible from the intersection.

**Table 5-1: Minimum Driveway Separations**

Functional Classification	Separation between Driveways <sup>1</sup>	Separation between Driveway and Public Street <sup>2</sup>
Major Thoroughfare	400 feet	250 feet
Minor Thoroughfare	400 feet	250 feet
Major Collector	120 feet	120 feet
Minor Collector <sup>3</sup>	50 feet	60 feet
Non-Residential & Multi-Family	50 feet	60 feet
Single-Family Detached	30 feet	30 feet
Local Street (Inc. Alleys)	40 feet	60 feet
Non-Residential & Multi-Family	50 feet	60 feet
Single-Family Detached	30 feet	30 feet
Single-Family Attached	15 feet	30 feet

<sup>1</sup> Distance is measured from closest edge to closest edge.

<sup>2</sup> Distance is measured from closest edge of the driveway the closest parallel edge of the street right-of-way. Minimum stem lengths apply to all entrances to proposed developments from intersecting streets, the greatest distance will apply. Minimum separation between Driveways and Streets should be equal to the number shown in the table, the minimum distance required to ensure no portion of a driveway falls within a sight triangle, or the minimum stem length required along entrances to proposed developments. The greatest distance will apply.

**5.2 Stem Lengths.** The stem length shall be measured from the parallel edge of right-of-way of the intersecting street to the first point of conflict, such as parking areas or intersections. Where no right-of-way is dedicated along a private street, the stem length shall be measured from the closest edge of the intersecting street. Stem lengths for non-residential and multi-family driveways shall be established by raised curb and gutter or other acceptable physical barrier to prevent vehicles from entering and exiting the driveway within the required length. Minimum stem lengths are listed in Table 5-2.

**a. Residential Stem Lengths.** Minimum stem lengths for single-family residential developments will be required along all proposed entrances to the proposed development from intersecting streets.

**b. Non-Residential Stem Lengths.** Minimum stem lengths for non-residential and multi-family uses will be required along all streets. 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.

c. **Gated Driveways.** In order to ensure that no part of any vehicle using a driveway remains in or overhangs the R/W, sidewalk, or street while waiting on the gate to operate, proposed gates for all detached and attached residential driveways shall be located a minimum of 24 feet from the R/W, and proposed gates for all non-residential and multi-family driveways shall be located a minimum distance per the stem lengths shown in Table 5-2, or further if design vehicle is longer than the minimum stem length.

**Table 5-2: Minimum Stem Lengths.**

Functional Classification	Minimum Stem Length (feet)
Major Thoroughfare	125 feet
Minor Thoroughfare	100 feet
Major Collector	75 feet
Minor Collector	75 feet
Non-Residential & Multi-Family	70 feet
Single-Family Residential	60 feet
Local Street (Inc. Alleys)	50 feet

5.1.5.3. **Side Clearance.** All driveway approaches must have a minimum side clearance from property line as specified in Table 5-3. Additional side clearance may be needed to accommodate required turn lanes, deceleration lanes and/or tapers.

**Table 5-3: Minimum Side Clearance.**

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

5.2.5.4. **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 apart from the side clearance restriction along the property line where the access is located. Minimum separation of shared accesses shall follow Table 5-1 with the exception that the minimum separation for shared access points for Single-Family Attached from adjacent driveways shall be 30 feet. A shared access is treated as a single driveway for the purposes of allowed widths.

5.3.5.5. **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 indicated by the minimum separations and/or stem lengths shown in Tables 5-1 and 5-2.

5.4.5.6. **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).

## 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.

5. Minimum travel width on either side of medians and islands is 14'.

4. —

## 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.~~

<del>Land Use</del>	<del>Minimum Side Clearance</del>
<del>Single-Family Residential Uses</del>	<del>5 feet</del>
<del>All Other Uses</del>	<del>10 feet</del>

~~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 as indicated by the minimum separations and/or stem lengths shown in Tables 5-1 and 5-2. This requirement is not applicable to a residential subdivision with a lot width less than 85'.~~

~~7.2.~~

~~**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).~~

~~7.3.~~ 7.1 – 7.3 moved to 5.3 – 5.5

~~7.4.7.1.~~ **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. Sidewalk should be a minimum of 6" thick at driveway crossings.

~~7.2.~~ **Angle.** The driveway angle (the angle between the driveway centerline and the ~~curbline~~ curb line) must be ninety (90) degrees, unless engineering considerations dictate otherwise, as and approved by the Director of Transportation.

~~7.5.~~

~~7.6.7.3.~~ **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.

~~7.7.7.4.~~ **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 elements,
  2. catch basins,
  3. fire hydrants,
  4. crosswalks,
  - 3.5. curb ramps,
  6. loading zones,
  - 4.7. utility poles,

- 5.8. fire alarm supports,
- 6.9. meter boxes, and/or
- 7.10. sewer cleanouts.

b. The driveway approach must be located a minimum of 3 feet from any such facilities.

~~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 a part from the side clearance restriction along the property line where the shared access is located. Minimum separation of shared access points shall follow Table 5-1 with the exception that the minimum separation for shared access points for Single-Family Attached shall be 30 feet. Moved to 5.4~~

## 8.0 Turn Lanes

8.1 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 proposing direct or indirect (i.e. adding accesses to existing dead end or limited access neighborhood/development street networks) adjacent access 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. a. Fifty (50) or more off-street parking spaces are required;

8.2. b. 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 latest edition of 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. c. More than twenty-five (25) truck (more than 13,000 G.V.W.) trips per day through a single driveway are expected;

8.4. d. 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. e. At least fifty (50) attached or detached residential dwelling units are served by the

access point.

8.2 In addition to the criteria listed above, Tables C-1 and C-2 in Appendix C, Article VIII of the TSM, offers further guidance to warrant the installation of dedicated left or right turn lanes on streets throughout Concord.

8.3 NCDOT publishes a chart (pg. 80) in the NCDOT Policy On Street and Driveway Access that recommends storage lengths for left and right turn lanes based on the number of turns versus the opposing volume of traffic. This chart should be used as a basis for determining the storage length required for turn lanes into a site. The chart is included in Appendix C, Article VIII of the TSM. The typical minimum length is 100' for tapers, and 100' for storage. Storage and taper lengths less than 100' will be reviewed on a case-by-case basis.

8.4 Turn lanes should be designed per NCDOT recommendations. Two charts (pages 78 and 79) outlining NCDOT recommended treatments for turn lanes, included in the NCDOT Driveway Permit Manual, are provided in Appendix C, Article VIII of the TSM for general reference.

Note: Dual right- or left-turn lanes should be considered when the turning volume exceeds 300 vehicles per hour.

8.5 Where turn lanes are determined to be needed based on the above criteria, they will be considered necessary improvements for the transportation infrastructure to be considered adequate to safely and efficiently serve proposed accesses.

## 9.0 One-Way Access Point Standards

### 9.0

#### 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.



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

- a. All pipe located within the street right-of-way must be reinforced concrete pipe or other acceptable material approved on a case-by-case basis, 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.~~
- ~~e. 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.”
- b.c. Roll-over grates are not acceptable within driveways.**

### 11.0 Inspections

#### 11.0

- 11.1 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.
- 11.2 The applicant shall request an inspection by ~~the Director of Transportation~~ **a city inspector** 24 hours in advance of any concrete pouring. The Director of Transportation or ~~his/her~~ authorized representative shall have the authority to require the immediate stoppage of work not performed under the requirements of this article.
- 11.3 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 permit may be revoked and the property owner will be required to remove or correct** ~~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 approved encroachment agreement. ~~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. This includes vehicle queues from drive-through and curb side services.

### 13.2. Raised Curbing.

- a. Except for driveway approaches to single family 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.

- 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 580, **Traffic and Vehicles Streets, Sidewalks, and Other Public Places**, 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.

## 16.0 ~~15.0~~ Non-Residential and Multi-family Development

### 156.1 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~~

- a. ~~Handicapped~~ **Accessible** 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 (~~8~~ **eight** feet in width in addition to an ~~8~~ **eight** foot access aisle, **or 11 feet in width in addition to a 5 foot access aisle**); or 24 feet by 18 feet for a double van space, or a non-van and van double space (~~8~~ **eight** feet in width for each space with an eight foot access aisle between spaces). **Accessible** ~~P~~ 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~~

- b. **Compact Car Spaces are only permitted in** ~~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)

DRAFT

## 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.~~ **Standard DRV-121, and shall be 4" white paint.**

## 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.~~



**Location of Driveway(s):**

**CITY OF CONCORD  
STREET AND DRIVEWAY ACCESS PERMIT**

STAFF USE ONLY:

Property Street Address \_\_\_\_\_

Driveway #1: Exact Distance \_\_\_\_\_ N S E W  
From the Intersection of \_\_\_\_\_ and \_\_\_\_\_ heading toward \_\_\_\_\_

Driveway #2: Exact Distance \_\_\_\_\_ N S E W  
From the Intersection of \_\_\_\_\_ and \_\_\_\_\_ heading toward \_\_\_\_\_

Driveway #3: Exact Distance \_\_\_\_\_ N S E W  
From the Intersection of \_\_\_\_\_ and \_\_\_\_\_ heading toward \_\_\_\_\_

Permit Number \_\_\_\_\_

Street File \_\_\_\_\_

Approval Date \_\_\_\_\_

**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).

**Property Owner**

**Witness**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

**Applicant (if different than owner)**

**Witness**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

## 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:

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

Indicate North



# **City of Concord**

## **Technical Standards Manual**

### **Article II**

### **Streets and Pedestrian Paths**

### **Appendix B**

### **PE Certification for Subdivisions and Streets**



**PE Certification for Subdivisions and Streets**

Subdivision: \_\_\_\_\_ Phase / Map: \_\_\_\_\_

Street(s): _____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____

A final inspection of the streets, and complete storm drainage system for the above referenced subdivision has been performed by \_\_\_\_\_. I have reviewed the inspection data and have determined that all public infrastructure has been constructed in accordance with the design drawings approved by Cabarrus County and the City of Concord on \_\_\_\_\_ and all subsequent revisions. My observations and testing indicate the subgrade, base, and pavement have been constructed in accordance with the guidelines established by the City of Concord, as verified by the attached test results.

_____	_____	_____
<b>Signature</b>	<b>Print Name</b>	<b>Date</b>

\_\_\_\_\_

**NC PE #**

\_\_\_\_\_

**Seal**

Received by City of Concord: \_\_\_\_\_  
(initials)

Date: \_\_\_\_\_

*PE Certification for Subdivisions and Streets – Checklist*

**TYPICAL SECTION**

- \_\_\_\_\_ - Roadway has been constructed in the center of the right of way.
- \_\_\_\_\_ - Normal crown and/or superelevation have been properly established.
- \_\_\_\_\_ - Curb & gutter and/or ditches have been constructed properly with no standing water.
- \_\_\_\_\_ - Backfill of all curb & gutter / sidewalk properly placed and compacted.
- \_\_\_\_\_ - All slopes have been properly graded.
- \_\_\_\_\_ - Street Trees have been installed in accordance with approved plan.

**ROADWAY CONSTRUCTION**

- \_\_\_\_\_ - Subgrade density tested at minimum of every 200 LF, minimum of 3 tests per street, and 2 tests in each cul-de-sac. First 8” of subgrade compacted to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by NCDOT indicated for each test as shown in attached soil compaction reports.
- \_\_\_\_\_ - Subgrade has been proof rolled over the entire section. (pass/fail data & remarks included)
- \_\_\_\_\_ - Stone depth verified at 1 location per station (data included). Minimum design depth must be achieved over the entire roadway section.
- \_\_\_\_\_ - Stone density tested at minimum of every 200 LF, minimum of 3 tests per street, and 2 tests in each cul-de-sac. Stone base compacted to at least 100% of maximum density obtainable with the Modified Proctor Test (AASHTO-T180) indicated for each test as shown in attached stone compaction reports.
- \_\_\_\_\_ - Stone base has been proof rolled over the entire section. (Pass/fail data & remarks included)
- \_\_\_\_\_ - Prime Coat applied when/where needed.
- \_\_\_\_\_ - Asphalt course(s) was inspected for failures and appropriate repairs made prior to placement of each successive course.
- \_\_\_\_\_ - Tack Coats were applied between each layer of asphalt.

**PAVEMENT PLACEMENT**

- \_\_\_\_\_ - Asphalt placement temperatures & mix designs verified.
- \_\_\_\_\_ - Each asphalt course was tested for density at a minimum of 90% of the maximum specific gravity per attached results reports.
- \_\_\_\_\_ - Pavement Core Results Report (attached) indicates the core results meet the current minimum design standards per the City of Concord Technical Standards. Core samples shall be taken at 500’ intervals (minimum of 1 core per street block), and no more than 4.0’ feet from the centerline of the street.

**DRAINAGE**

- \_\_\_\_\_ - All materials are approved for use. (NCDOT stamp, etc.)
- \_\_\_\_\_ - All grates/frames/hoods are free of damage and of domestic origin.
- \_\_\_\_\_ - Masonry drainage structures have been properly constructed – steps installed, inverts poured, pipes cut and grouted, backfill compacted, and free of debris.
- \_\_\_\_\_ - All pipe inlets, outlets, and channels are properly stabilized and free of erosion.
- \_\_\_\_\_ - Pipes have been installed with proper cover and slope.
- \_\_\_\_\_ - Pipe sizes are correct. (per plans)

**TRAFFIC CONTROL**

- \_\_\_\_\_ - All traffic control signs are installed in locations per approved plans and are free of damage.
- \_\_\_\_\_ - All signs comply with MUTCD requirements.
- \_\_\_\_\_ - Encroachment agreement has been approved for all signs with decorative treatments.

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**NC PE #**

\_\_\_\_\_  
**Print Name**

\_\_\_\_\_  
**Seal**

**City of Concord**

**Technical Standards Manual**

**Article II**

**Streets and Pedestrian Paths**

**Appendix A**

**Application for New Street  
Maintenance Acceptance**





# **City of Concord**

## **Technical Standards Manual**

### **Article II**

#### **Streets and Pedestrian Paths**

##### **Appendix C**

### **Private Street Maintenance**

#### **Acceptance Petition**





**Private Street Maintenance Acceptance Petition**

I \_\_\_\_\_, being a property owner along the identified street segment(s), agree to be the main contact to the City in regards to this Petition.

There are a total of \_\_\_\_\_ properties along the street segment(s) listed on the Private Street Maintenance Acceptance Form. There are \_\_\_\_\_ valid signatures on the petition form, which represent \_\_\_\_\_ % of the properties along the identified street segment(s).

I certify, to the best of my knowledge, the signatures on the petition form are those of the property owners of record, that they are valid, and that only one signature per property has been considered in the above percentage.

Number of petition sheets attached: \_\_\_\_\_

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
\_\_\_\_\_

Address  
\_\_\_\_\_

Phone Number  
\_\_\_\_\_

Email Address  
\_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of Applicant





# **CITY OF CONCORD MANUAL OF STANDARD DETAILS**

**MARCH 2022**

<b>DRV - DRIVEWAY STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
DRV-100	GENERAL DRIVEWAY (DW) NOTES & DIMENSIONS
DRV-101 (2 SHEETS)	GENERAL DRIVEWAY LOCATION DIMENSIONS
DRV-102	DROP CURB RAMP TYPE DW (PLANT STRIP & 2'-6" C&G)
DRV-103	RADIUS CURB RAMP TYPE DW (PLANT STRIP & 2'-6" C&G)
DRV-104	RES. RAMP TYPE DW (BOC 2'-6" C&G)
DRV-105	STREET TYPE DW (2'-6" C&G)
DRV-106	RES. RAMP TYPE VALLEY CURB
DRV-107	RAMP TYPE DW RIBBON PAVEMENT
DRV-108	CONC. CURB & GUTTER DRIVEWAY CUT
DRV-120	ACCESSIBLE PARKING AND SIGNAGE STANDARDS
DRV-121	STANDARD PARKING DIMENSIONS

<b>MI - MISCELLANEOUS INFRASTRUCTURE STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
MI-101	CONC. CURB & GUTTER DETAILS
MI-102	CURB TRANSITION (2-6 TO 2)
MI-103	CURB TRANS. 2-6 TO 1-6
MI-104	CONC. SWLKS
MI-105	SWLK TRANS.
MI-106	CONCRETE MULTI-USE PATH
MI-107	ASPHALT MULTI-USE-PATH
MI-109	TYP. INTERSECTION CURB RAMP LAYOUT AND NOTES
MI-110	TRUNCATED DOMES
MI-111	PERP. CR 2-6 C&G
MI-112	PERP. CR 2-0 VALLEY C&G
MI-113	DIRECTIONAL CURB RAMP SMALL/MED RADIUS
MI-114	DIRECTIONAL CURB RAMP LARGE RADIUS
MI-115	DIRECTIONAL CURB RAMP W/VALLEY CURB
MI-116	PED REFUGE MEDIAN (1'-6" CURB)
MI-117	PED REFUGE MEDIAN (MONOLITHIC CONC.)

<b>STR - STREETS STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
STR-101	LOCAL RESIDENTIAL (RES.) STREET
STR-102	RES. COLLECTOR STREET
STR-103	RES. COLLECTOR STREET WITH BICYCLE LANES
STR-104	RES. COLLECTOR WITH PARALLEL PARKING
STR-105	RES. COLLECTOR WITH 45 DEG. REVERSE ANGLE PARKING
STR-106	NON-RES. COLLECTOR
STR-107	NON-RES. COLLECTOR WITH BICYCLE LANES
STR-108	NON-RES. COLLECTOR DIVIDED
STR-109	NON-RES. COLLECTOR 45 DEG. ANGLE PARKING
STR-110	NON-RES. COLLECTOR PARALLEL PARKING
STR-111	RES. CUL-DE-SAC LESS THAN 150'
STR-112	RES. CUL-DE-SAC GREATER THAN 150' (ENCROACHMENT)
STR-113	NON-RES. AND MIXED USE CUL-DE-SAC
STR-114	RES. ALLEY
STR-116	TRANSITION BETWEEN STREET CLASSIFICATIONS
STR-118	CATCH BASIN IN VALLEY CURB
STR-119	CULVERT CROSSING
STR-120	ON-STREET PARALLEL PARKING
STR-121	ACCESSIBLE ONSTREET PARALLEL PARKING
STR-122	ON-STREET REVERSE ANGLE PARKING

<b>MISC - MICELLANEOUS STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
MISC-201	CURB AND GUTTER REMOVAL / REPLACEMENT
MISC-202	UTILITY CUT REPLACEMENT DETAIL
MISC-203 (2 SHEETS)	END OF ROAD BARRICADE
MISC-204	END OF ROAD MARKER
MISC-205	END OF STREET FUTURE DEV. SIGN
MISC-206 (2 SHEETS)	SAFETY RAIL & WARRANTS

NOT TO SCALE



CONCORD MANUAL OF STANDARD DETAILS  
TABLE OF CONTENTS

3-2022  
CMSD - TOC  
SHEET 1 OF 1

MINIMUM DRIVEWAY SEPARATION		
	CORRESPONDING DIST. FROM DETAIL SHEETS	
	D	C
FUNCTIONAL CLASSIFICATION (STREET A)	SEPARATION BETWEEN DRIVEWAYS <sup>1</sup> (FEET)	SEPARATION BETWEEN DRIVEWAY & STREET <sup>2</sup> (FEET)
Major Thoroughfare		
Non-Res. & Multi-Family	400	250
Single-Family Detached	150	250
Minor Thoroughfare		
Non-Res. & Multi-Family	400	250
Single-Family Detached	150	250
Major Collector		
Non-Res. & Multi-Family	120	120
Single-Family Detached	120	120
Minor Collector		
Non-Res. & Multi-Family	50	60
Single-Family Detached	30	30
Local Street (Inc. Alleys)		
Non-Res. & Multi-Family	50	60
Single-Family Detached	30	30
Single-Family Attached	10	30

<sup>1</sup> Distance is measured from the closest edge to the closest edge.

<sup>2</sup> Distance is measured from closest edge of the driveway to the closest parallel edge of the street right-of-way. Minimum separation between Driveways and Streets should be equal to the number shown in the table, the minimum distance required to ensure no portion of a driveway falls within a sight triangle, or the minimum stem length required along entrances to proposed developments. The greatest distance will apply.

SIDE CLEARANCE	
LAND USE	S MINIMUM SIDE CLEARANCE
Single-Family Residential Uses	5 Feet
All Other Uses	10 Feet

MINIMUM STEM LENGTHS	
CLASSIFICATION OF PERPENDICULAR STREET	L - MINIMUM STEM LENGTH (FEET)
MAJOR THROUGHFARE	125
MINOR THROUGHFARE	100
MAJOR COLLECTOR	75
MINOR COLLECTOR	
Non-Residential & Multi-Family	70
Single Family Residential	60
LOCAL STREET (INC. ALLEYS)	50

MINIMUM AND MAXIMUM ACCESS WIDTHS				
DRIVEWAY TYPES	W - DRIVEWAY WIDTH (FEET)		F - FLARE / R-RADIUS (FEET)	
	MIN.	MAX.	MIN.	MAX.
Res. Single-Family (Detached)	12	20	1	3
Res. Multi-Family	24	36	5	10
Comm./Industrial (two-way)	24	36	10	30
Comm./Industrial (one-way)	15	20	10	30
Private Street Entrance	24	48	10*	30*
Street Type Driveway	24	36	10*	30*

\*Radius only

DRIVEWAY NOTES:

1. ALL CONNECTIONS TO STATE MAINTAINED STREETS MUST BE APPROVED BY NCDOT UNLESS EXEMPT.
2. WHERE NCDOT AND CITY STANDARDS DIFFER, THE STRICTEST STANDARDS MEETING THE MINIMUM REQUIREMENTS OF BOTH WILL APPLY.
3. THE DRIVEWAY APPROACH MUST BE INSTALLED TO THE RIGHT-OF-WAY LINE, AT LEAST 10 FEET FROM THE EDGE OF THE STREET AND/OR BACK OF CURB, OR AT LEAST 5' FROM THE EDGE OF SIDEWALK FURTHEST FROM THE EDGE OF THE STREET. THE GREATEST DISTANCE WILL APPLY.
4. DRIVEWAYS ACCESSING MAJOR OR MINOR THOROUGHFARES OR BOULEVARDS MUST PROVIDE ON-SITE TURNAROUND.
5. DRIVEWAYS ASSOCIATED WITH CORNER LOTS SHOULD BE LOCATED ON THE STREET WITH THE LOWER FUNCTIONAL CLASSIFICATION.
6. REFER TO SECTION 7.5 IN ARTICLE II OF THE TECHNICAL STANDARDS MANUAL (TSM) FOR SIGHT TRIANGLE REQUIREMENTS.
7. REFER TO ARTICLE III OF THE TSM FOR MORE STANDARDS PERTAINING TO DRIVEWAYS.

NOT TO SCALE



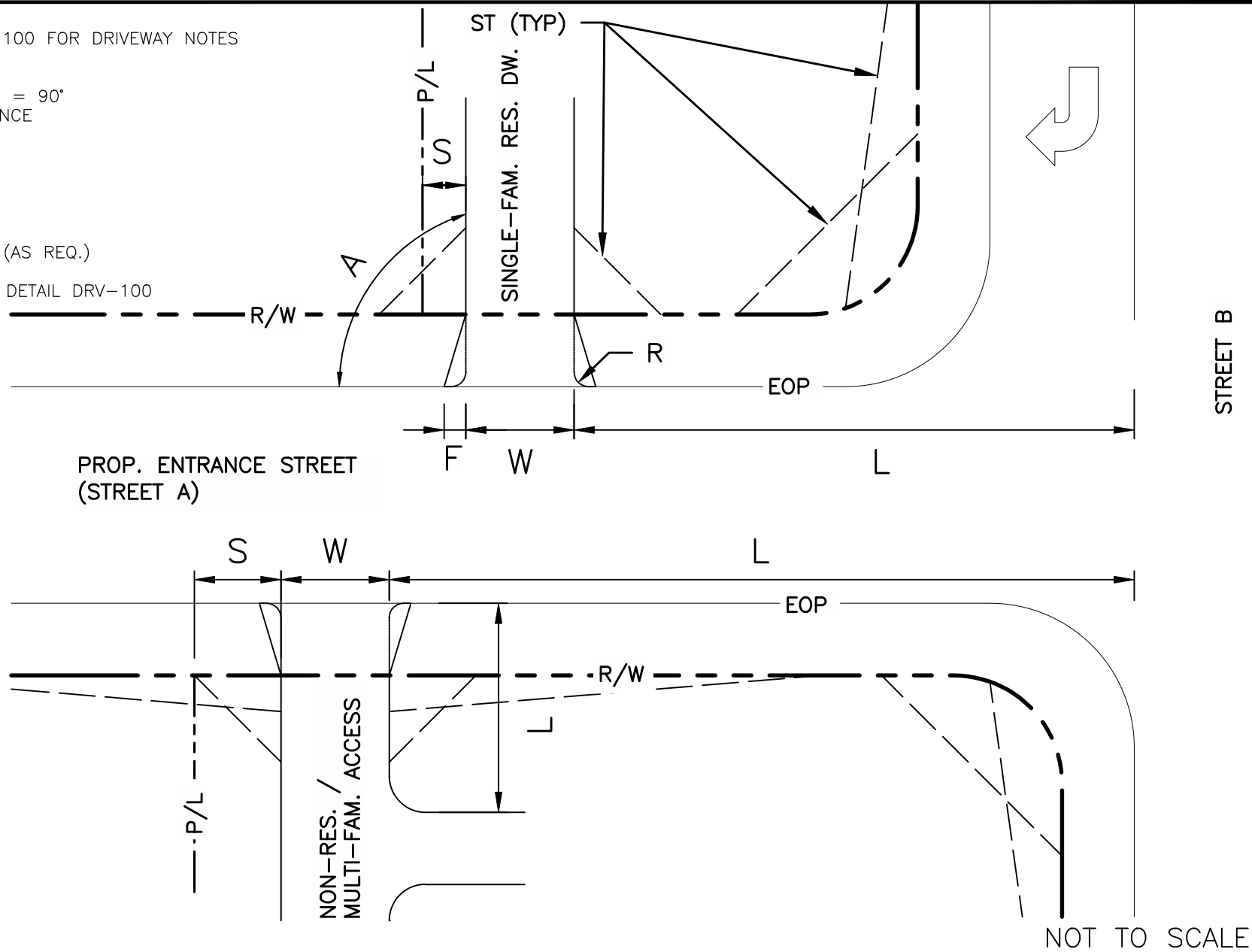
GENERAL DRIVEWAY NOTES &  
DIMENSIONS

3-2022  
DRV-100  
SHEET 1 OF 1

NOTES:  
SEE STD. DETAIL DRV-100 FOR DRIVEWAY NOTES

- A = APPROACH ANGLE = 90°
- C\* = CORNER CLEARANCE
- D\* = DW SEPARATION
- F\* = FLARE WIDTH
- L\* = STEM LENGTH
- R\* = RADIUS
- S\* = SIDE CLEARANCE
- W\* = DW WIDTH
- ST = SIGHT TRIANGLE (AS REQ.)

\*SEE TABLES ON STD. DETAIL DRV-100



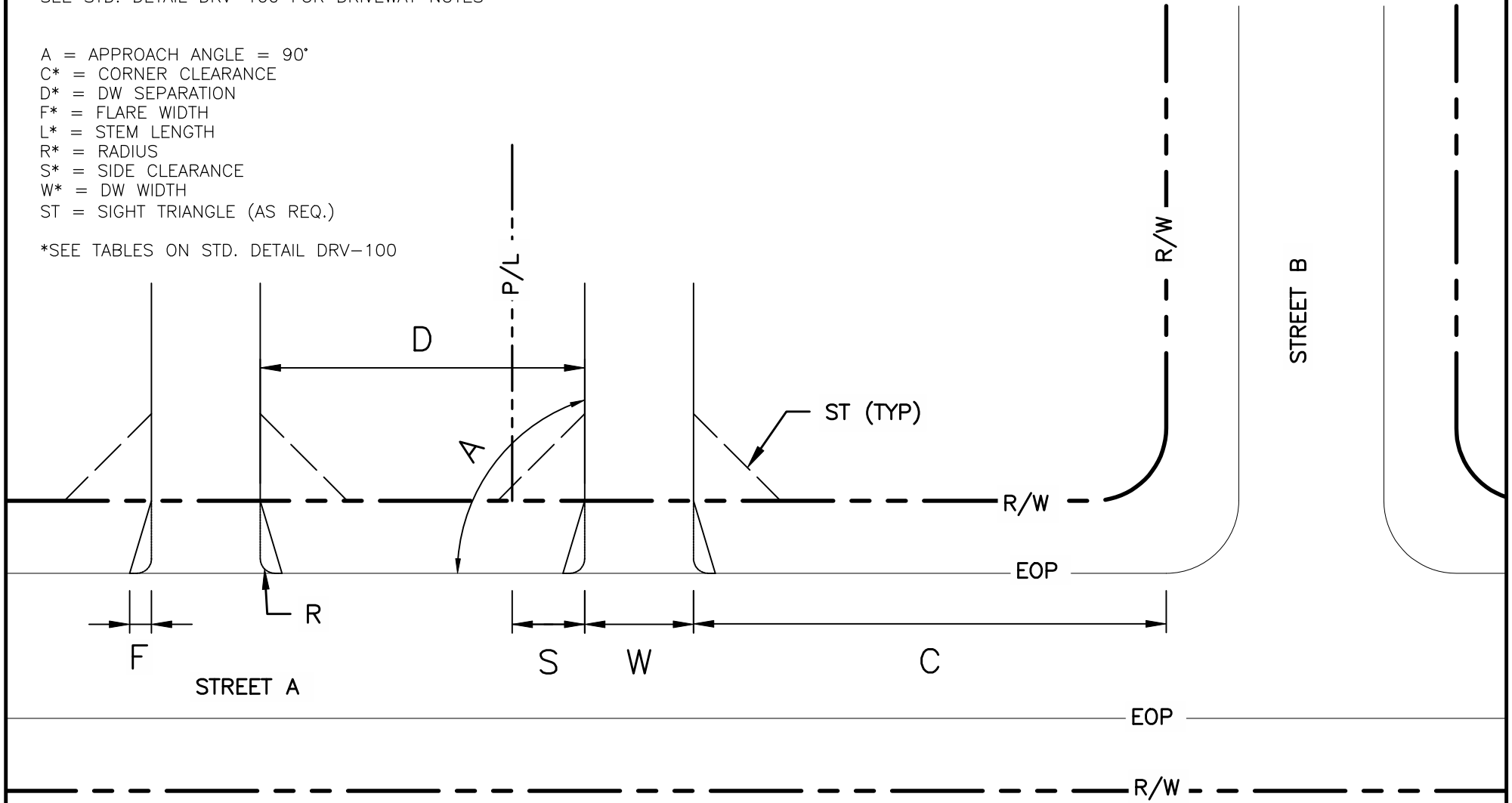
## GENERAL DRIVEWAY LOCATION DIMENSIONS

3-2022
DRV-101
SHEET 1 OF 2

NOTES:  
 SEE STD. DETAIL DRV-100 FOR DRIVEWAY NOTES

- A = APPROACH ANGLE = 90°
- C\* = CORNER CLEARANCE
- D\* = DW SEPARATION
- F\* = FLARE WIDTH
- L\* = STEM LENGTH
- R\* = RADIUS
- S\* = SIDE CLEARANCE
- W\* = DW WIDTH
- ST = SIGHT TRIANGLE (AS REQ.)

\*SEE TABLES ON STD. DETAIL DRV-100



NOT TO SCALE

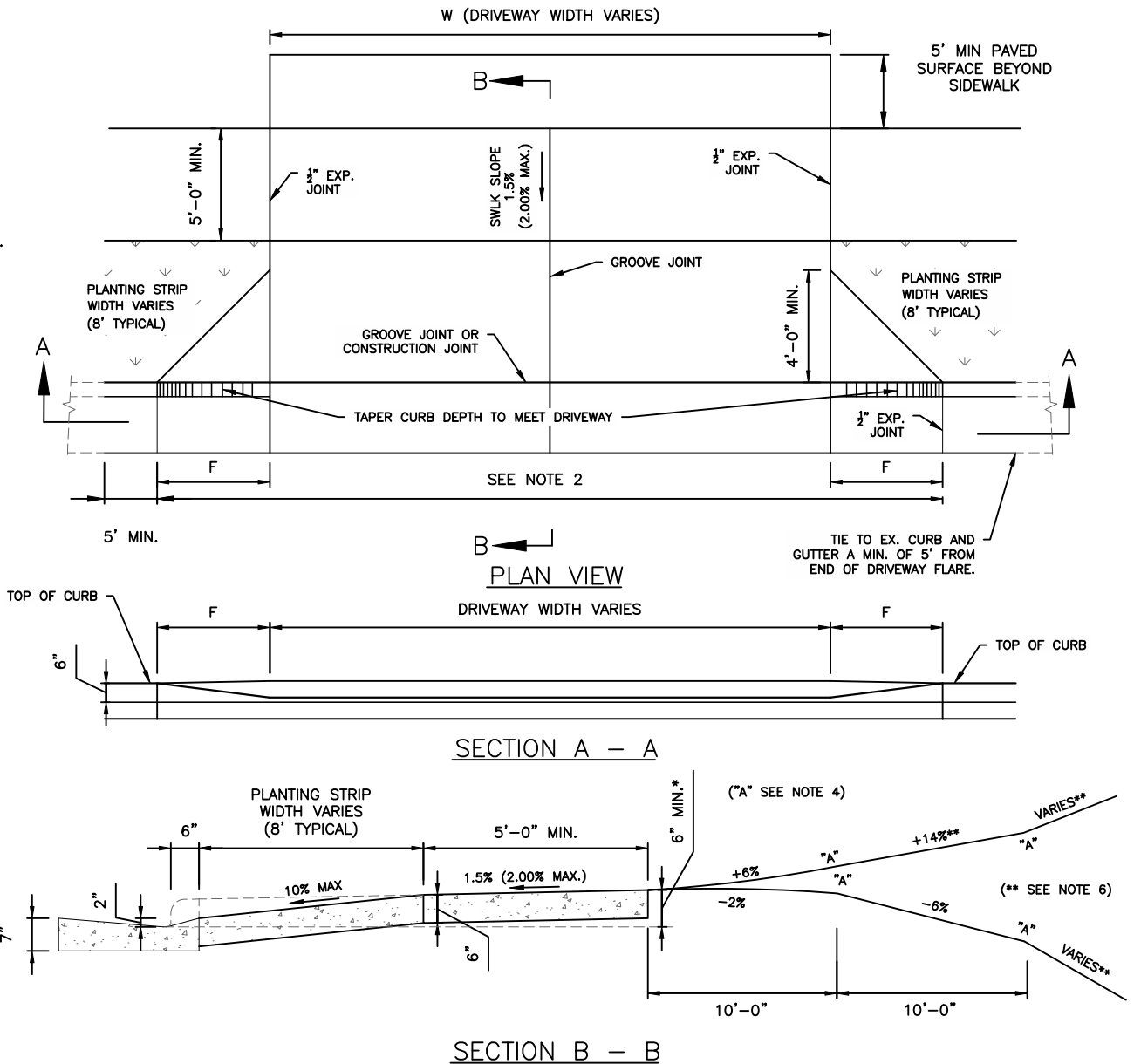


## GENERAL DRIVEWAY LOCATION DIMENSIONS

3-2022
DRV-101
SHEET 2 OF 2

**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" - BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* - PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. \* - THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.



DROP CURB RAMP TYPE DRIVEWAY  
PLANTING STRIP & 2'-6" CURB AND GUTTER

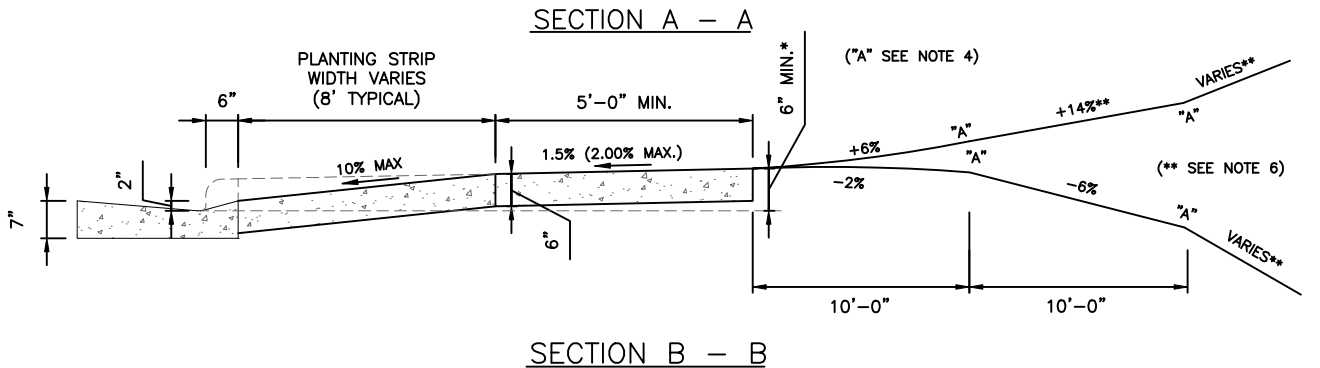
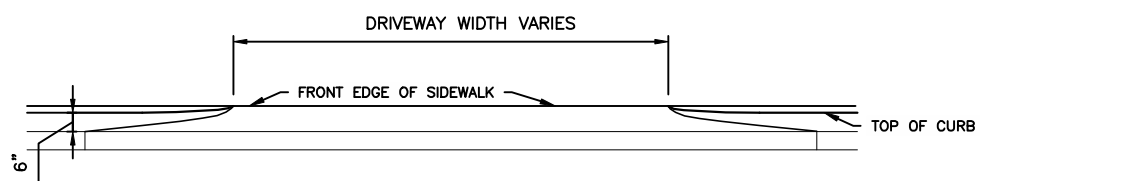
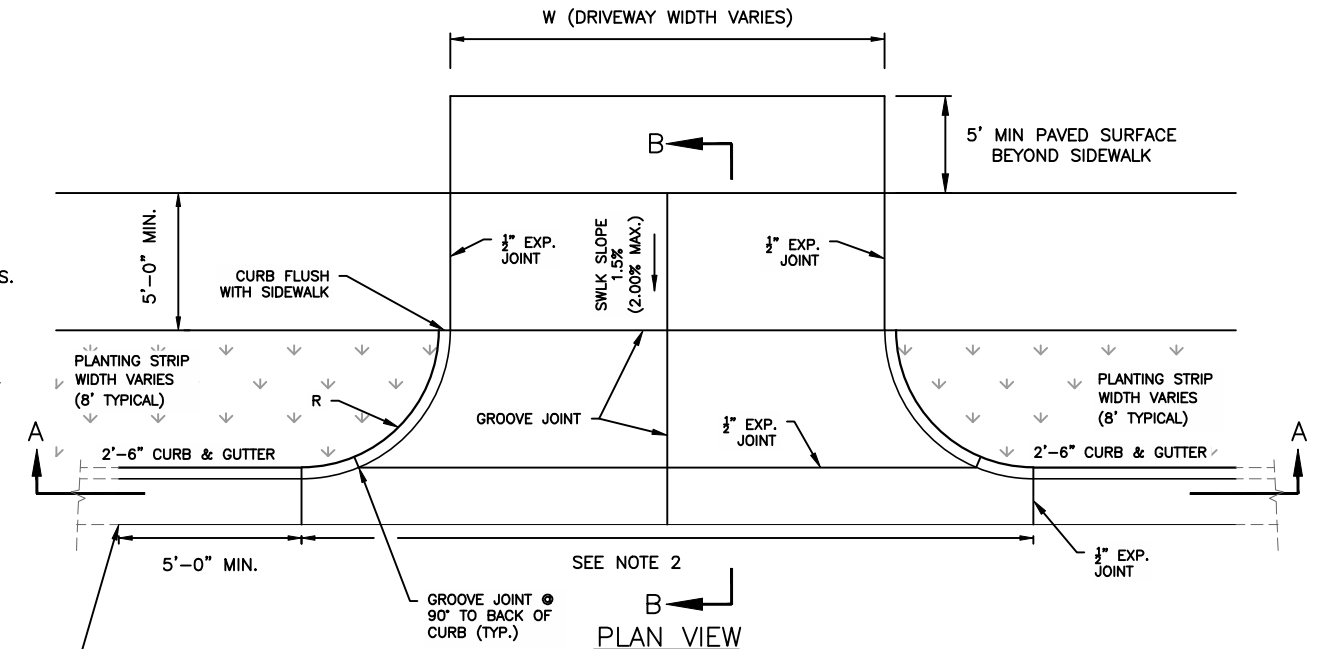
3-2022
DRV-102
SHEET 1 OF 1



**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" - BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* - PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. \* - THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.

TIE TO EX. CURB AND GUTTER A MIN. OF 5' FROM END OF DRIVEWAY FLARE.



RADIUS CURB RAMP TYPE DRIVEWAY  
PLANTING STRIP & 2'-6" CURB AND GUTTER

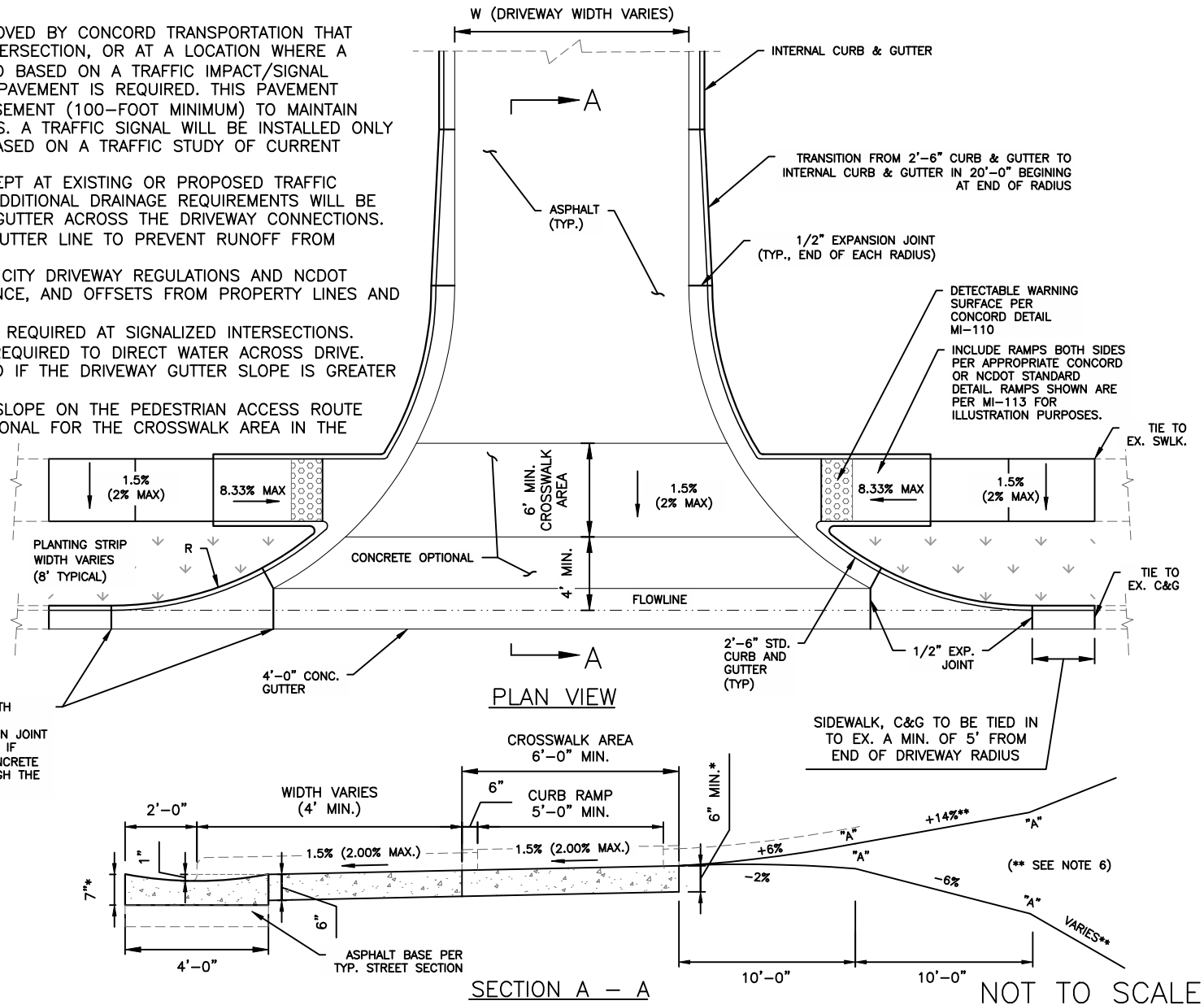
3-2022
DRV-103
SHEET 1 OF 1



**NOTES:**

1. WHERE A STREET TYPE DRIVEWAY IS APPROVED BY CONCORD TRANSPORTATION THAT CONNECTS TO AN EXISTING SIGNALIZED INTERSECTION, OR AT A LOCATION WHERE A TRAFFIC SIGNAL INSTALLATION IS PROPOSED BASED ON A TRAFFIC IMPACT/SIGNAL WARRANT STUDY, A FULL DEPTH ASPHALT PAVEMENT IS REQUIRED. THIS PAVEMENT DESIGN IS REQUIRED IN THE DRIVEWAY EASEMENT (100-FOOT MINIMUM) TO MAINTAIN DETECTOR LOOPS AND PAVEMENT MARKINGS. A TRAFFIC SIGNAL WILL BE INSTALLED ONLY IF IT IS DETERMINED TO BE NECESSARY BASED ON A TRAFFIC STUDY OF CURRENT CONDITIONS.
2. A CONCRETE GUTTER IS TO BE USED EXCEPT AT EXISTING OR PROPOSED TRAFFIC SIGNAL LOCATIONS. AT THESE LOCATIONS ADDITIONAL DRAINAGE REQUIREMENTS WILL BE NECESSARY TO ELIMINATE THE NEED FOR GUTTER ACROSS THE DRIVEWAY CONNECTIONS.
3. THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
4. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
5. TWO (2) CURB RAMPS PER CURB RETURN REQUIRED AT SIGNALIZED INTERSECTIONS.
6. FOUR (4) FOOT GUTTER AND WINGS ARE REQUIRED TO DIRECT WATER ACROSS DRIVE. GUTTER AND WINGS MAY NOT BE REQUIRED IF THE DRIVEWAY GUTTER SLOPE IS GREATER THAN 2%.
7. MAINTAIN UP TO 1.5% (MAX. 2%) CROSS-SLOPE ON THE PEDESTRIAN ACCESS ROUTE BETWEEN CURB RAMPS. CONCRETE IS OPTIONAL FOR THE CROSSWALK AREA IN THE DRIVEWAY.
8. WHERE DRIVEWAY CONNECTS TO AN NCDOT MAINTAINED STREET, NCDOT APPROVED CURB RAMPS SHOULD BE USED.
9. THE CROSSWALK AREA SHOULD BE GRADED TO ADA STANDARDS WHETHER OR NOT A STRIPED CROSSWALK IS INSTALLED. THE INCLUSION OF A STRIPED CROSSWALK WILL BE ON A CASE BY CASE BASIS.
10. REFER TO STD. DRV-100 & DRV 101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION

\* - TRANSITION CONCRETE DEPTH FROM 7" AT LIP TO 10" AT 4' CONCRETE GUTTER CONSTRUCTION JOINT IF NO ASPHALT BASE IS USED. IF ASPHALT BASE IS USED, 7" CONCRETE DEPTH CAN BE CARRIED THROUGH THE 4' CONCRETE GUTTER.



STREET TYPE DRIVEWAY  
2'-6" STD. CURB AND GUTTER

3-2022

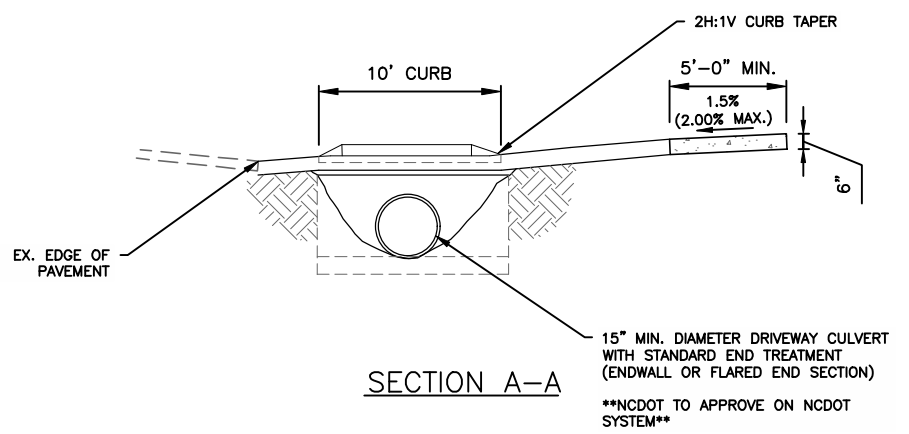
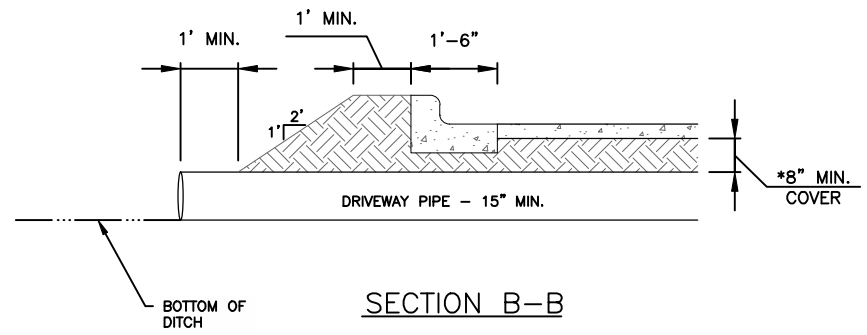
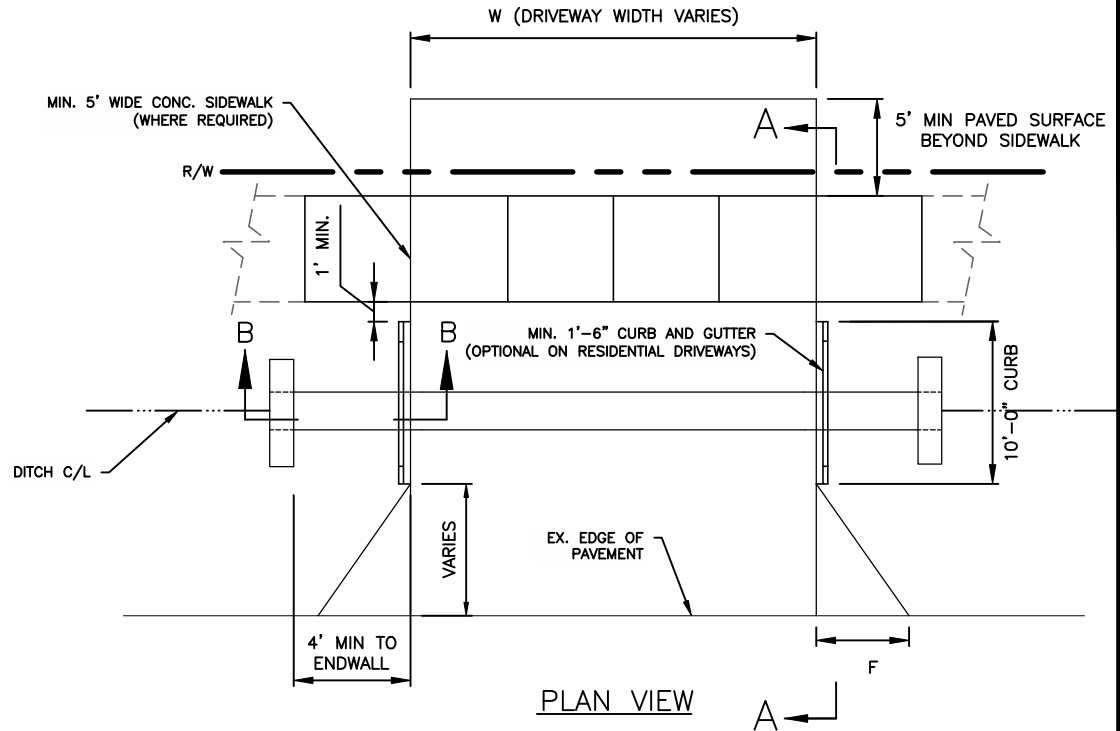
DRV-105

SHEET 1 OF 1



**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" - BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* - PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. TO BE USED ON ROADS WITHOUT CURB AND GUTTER WHERE CURB AND GUTTER IS NOT BEING INSTALLED (MUST MEET BOTH CRITERIA).
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.
10. \* MINIMUM COVER IS 8" WHEN CLASS IV RCP IS USED. WHERE A DIFFERENT MATERIAL IS APPROVED THE MINIMUM COVER WILL BE DETERMINED ON A CASE BY CASE BASIS.
11. THE PIPE SHALL BE A MINIMUM DIAMETER OF 15" REINFORCED CONCRETE A LARGER PIPE SIZE MAY BE REQUIRED WHERE DETERMINED BY A PROFESSIONAL ENGINEER.
12. THE MINIMUM LENGTH OF THE PIPE IS 20', OR THE LENGTH NEEDED TO EXTEND ONE (1) FOOT BEYOND THE TOE OF A 2:1 SLOPE. SEE SECTION B-B.



NOT TO SCALE

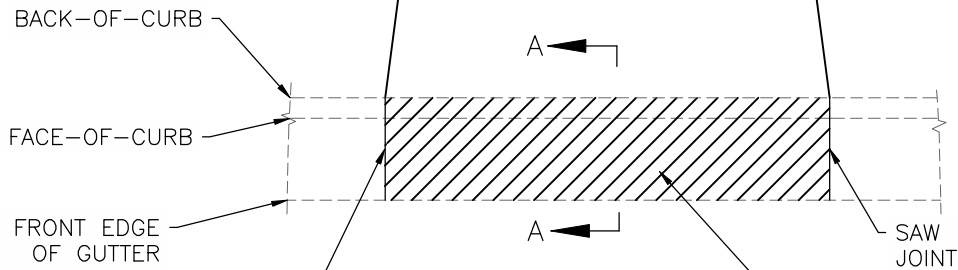


RAMP TYPE DRIVEWAY  
RIBBON PAVEMENT

3-2022
DRV-107
SHEET 1 OF 1

\*CONCRETE SHALL BE A MINIMUM OF 6" THICK IN THE RIGHT-OF WAY, MINIMUM 3600 PSI.

APRON MUST BE CONCRETE ON CURB AND GUTTER ROADS

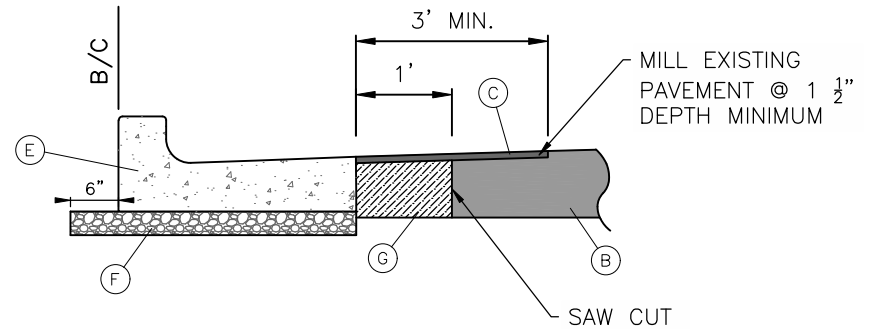


PLAN VIEW

CONCRETE CURB & GUTTER TO BE REMOVED COMPLETELY

NOTES

1. ANY DAMAGED CURB & GUTTER SHALL BE COMPLETELY REMOVED AND REPLACED WITH NEW CONCRETE.
2. ON STREETS WITH A CUL-DE-SAC, THE SAW CUT SHALL BE PERPENDICULAR TO THE FACE OF THE CURB & GUTTER.
3. NO SECTION OF EXISTING CURB & GUTTER WHICH WILL BE LESS THAN 5' SHALL REMAIN. LIMITS OF REMOVAL AND REPLACEMENT SHOULD BE ADJUSTED APPROPRIATELY.



SECTION A - A

KEY

- (B) EXISTING PAVEMENT STRUCTURE
- (C) MIN. 1 1/2" S 9.5B SURFACE COURSE
- (E) 2'-6" STANDARD CURB AND GUTTER SHOWN, APPROPRIATE CURB & GUTTER TO BE DETERMINED BASED ON STREET CLASSIFICATION
- (F) 6" COMPACTED AGGREGATE OR 4" B-25.0C BASE COURSE
- (G) MIN. 8" I-19.0C

NOT TO SCALE



CONCRETE CURB & GUTTER  
DRIVEWAY CUT

3-2022
DRV-108
SHEET 1 OF 1

## ACCESSIBLE PARKING REQUIREMENTS

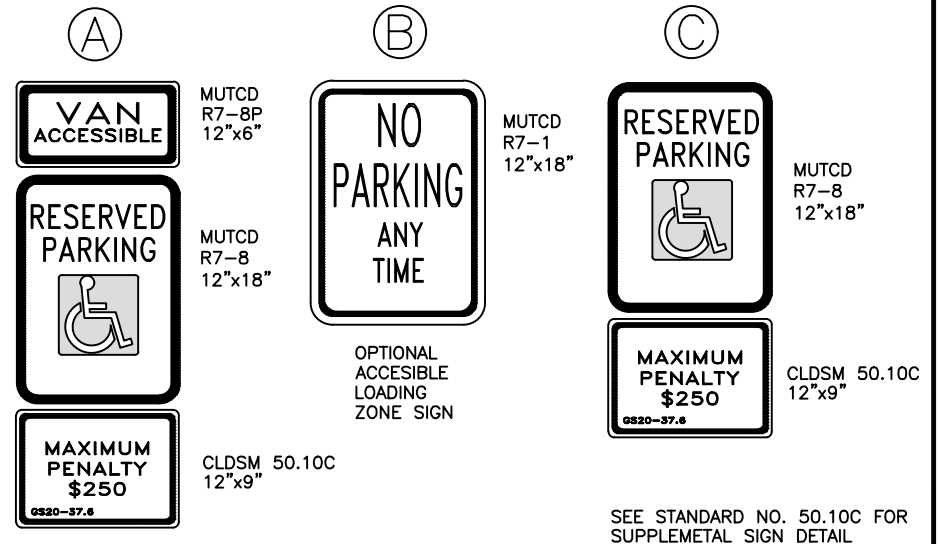
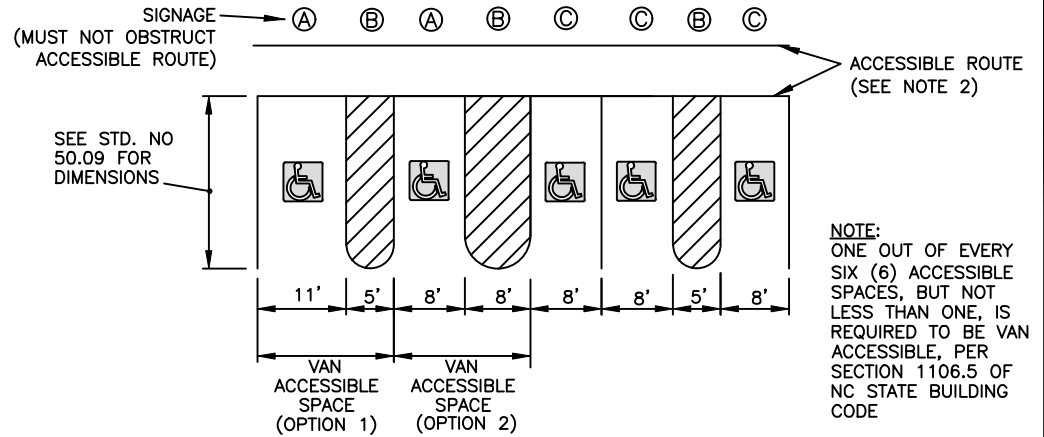
TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 6 ACCESSIBLE SPACES
1001 AND OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 6 ACCESSIBLE SPACES

REFERENCE: SECTION 1106 OF NC BUILDING CODE

### NOTES:

- ALL ACCESSIBLE SIGNS (R7-8P, R7-8, R7-1, AND 50.10C) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (PER MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
- IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA. MAINTAIN MIN. 4' WIDE CONTINUOUS PASSAGE.
- VERTICAL CLEARANCE FOR VANS MUST BE GREATER THAN 98-INCHES.
- THIS DETAIL IS TO PROVIDE GENERAL GUIDANCE FOR PARKING LAYOUT AND DESIGN; REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT AND NC BUILDING CODE FOR ADDITIONAL INFORMATION.

## PARKING SPACE PAVEMENT MARKINGS



NOT TO SCALE

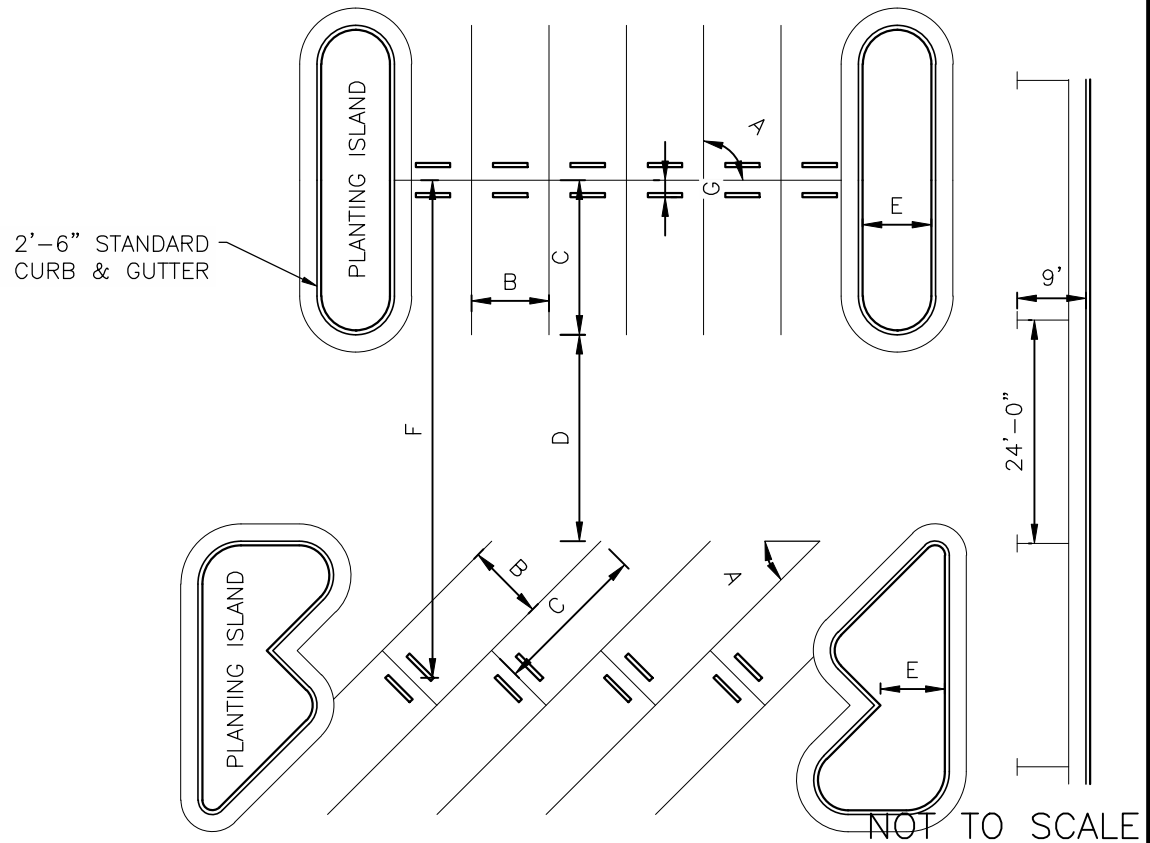
STANDARD SIZE SPACES						
A	B	C	D	E	F	G
45°	9.0'	18.0'	12.0' ONE-WAY	8.0'	51.0'	2.0'/4.0'
60°	9.0'	18.0'	18.0' ONE-WAY	8.0'	58.0'	2.0'/4.0'
90°	9.0'	18.0'	24.0' TWO-WAY	8.0'	60.0'	2.0'/4.0'
COMPACT SPACES						
A	B	C	D	E	F	G
45°	8.0'	16.0'	N/A	8.0'	N/A	1.5'/3.0'
60°	8.0'	16.0'	N/A	8.0'	N/A	1.5'/3.0'
90°	8.0'	16.0'	N/A </td <td>8.0'</td> <td>N/A</td> <td>1.5'/3.0'</td>	8.0'	N/A	1.5'/3.0'

**NOTES:**

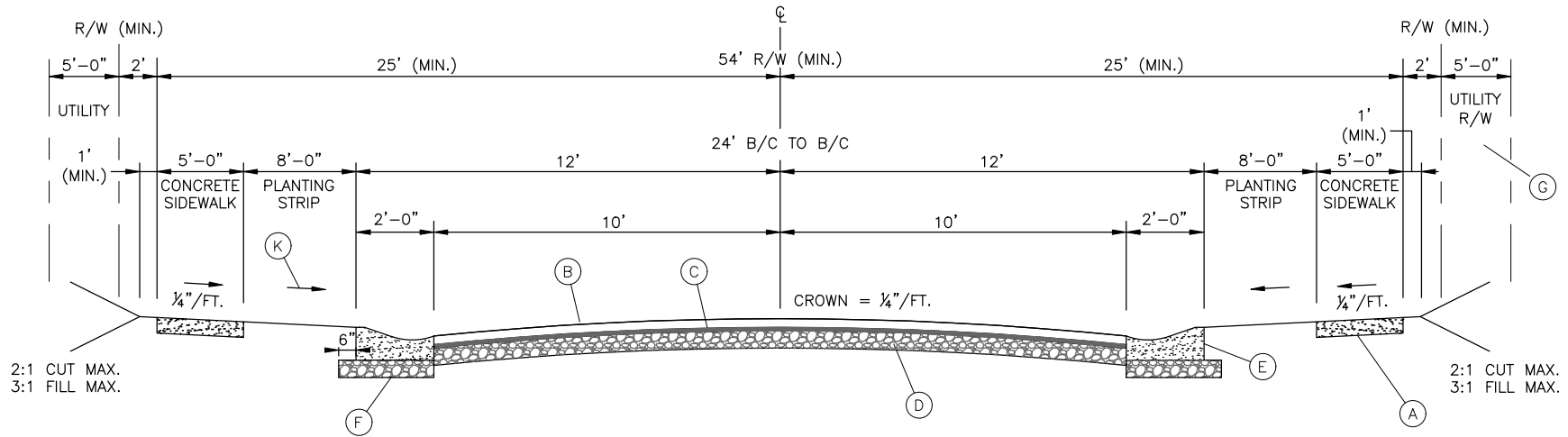
1. PARALLEL PARKING SPACES SHALL BE 9' BY 24' WITH A 20' TWO-WAY ACCESS, OR A 12' ONE-WAY ACCESS.
2. REFER TO STANDARD DRV-120 FOR ADA PARKING AND SIGNAGE STANDARDS.

**KEY:**

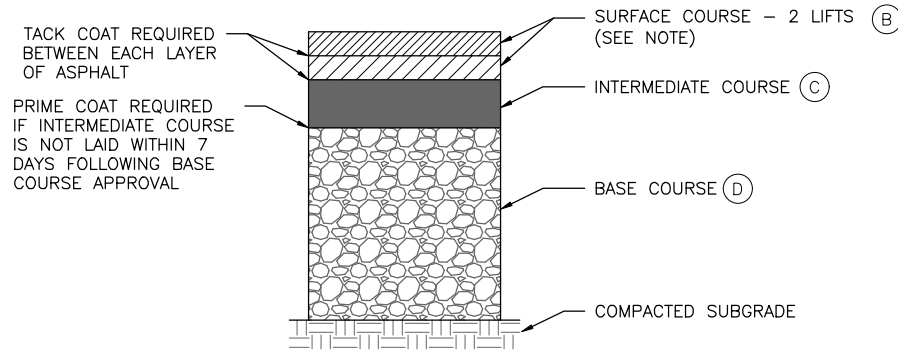
- A. PARKING ANGLE
- B. STALL WIDTH
- C. STALL DEPTH
- D. AISLE WIDTH
- E. PLANTING ISLAND WIDTH (MIN. WIDTH SHOWN, REFER TO ARTICLE 7 FOR MIN. AREA.)
- F. PARKING BAY WIDTH
- G. BUMPER OVERHANG (FRONT/REAR)







TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO  
 (2) SEPARATE LIFTS A MINIMUM OF 1" THICK.  
 THE FIRST LIFT MUST BE INSTALLED DIRECTLY  
 AFTER INTERMEDIATE COURSE HAS BEEN  
 INSTALLED AND ACCEPTED. THE FINAL LIFT  
 SHOULD BE INSTALLED AFTER ALL OTHER  
 REQUIREMENTS FOR ACCEPTANCE HAVE BEEN  
 MET.

TYPICAL PAVEMENT SECTION

KEY

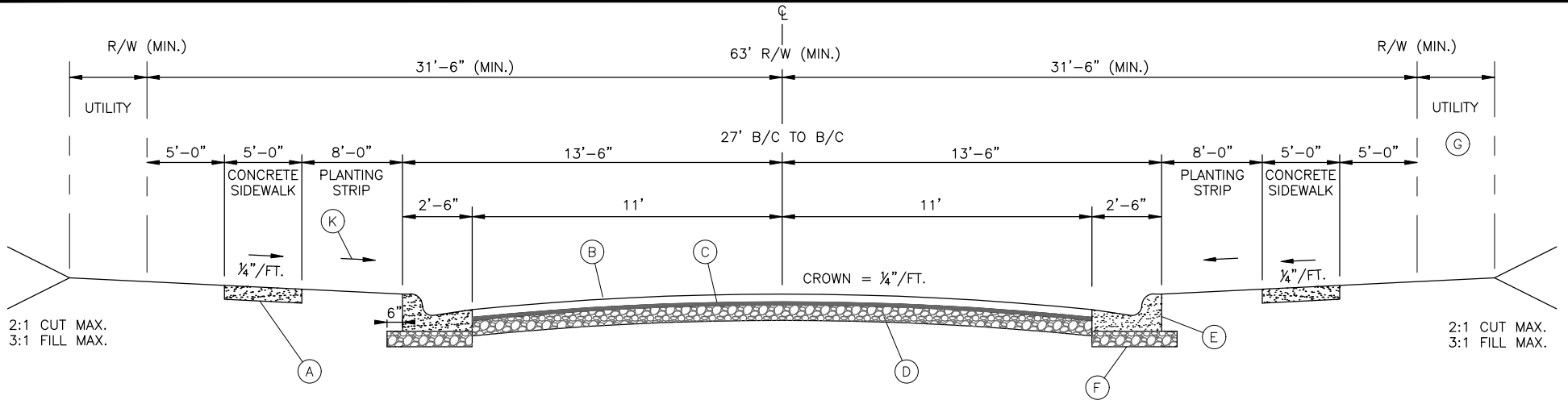
- (A) 4" SIDEWALK\*  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 2 1/2" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 8" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (E) 2'-0" VALLEY GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

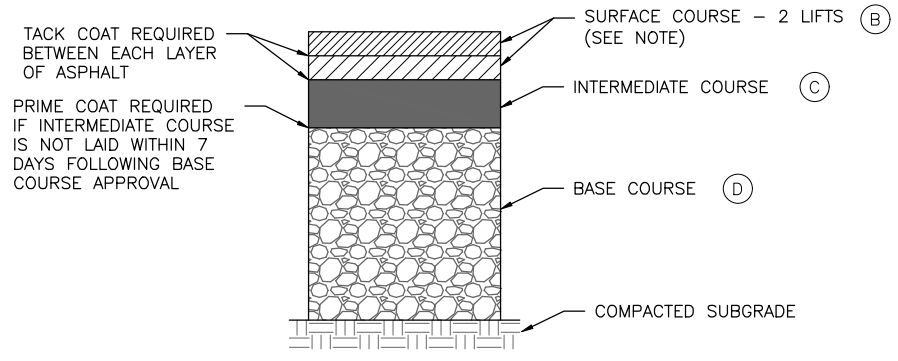


LOCAL RESIDENTIAL STREET

3-2022  
 STR-101  
 SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

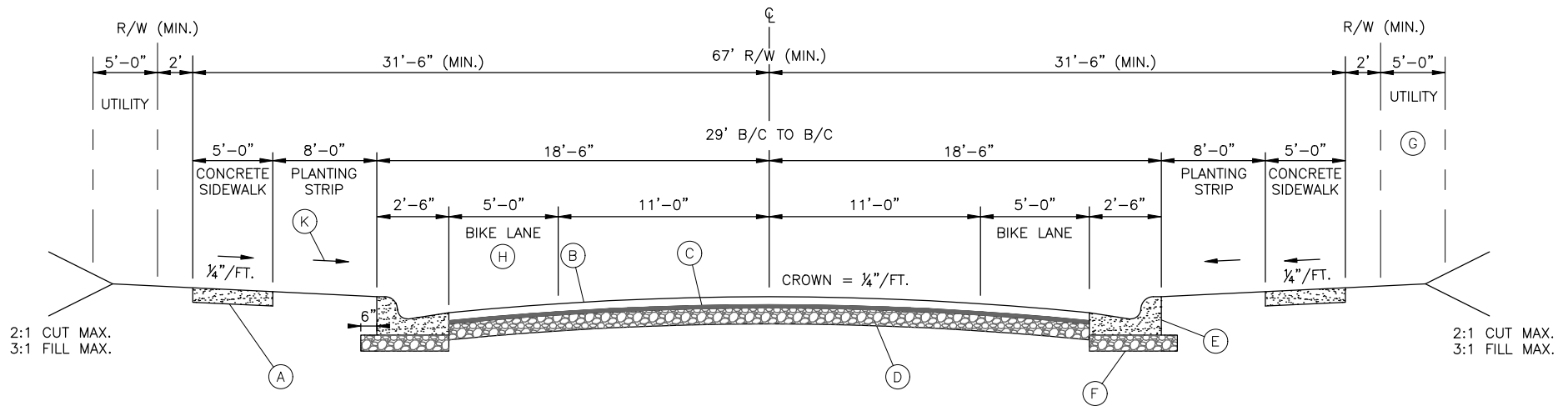
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

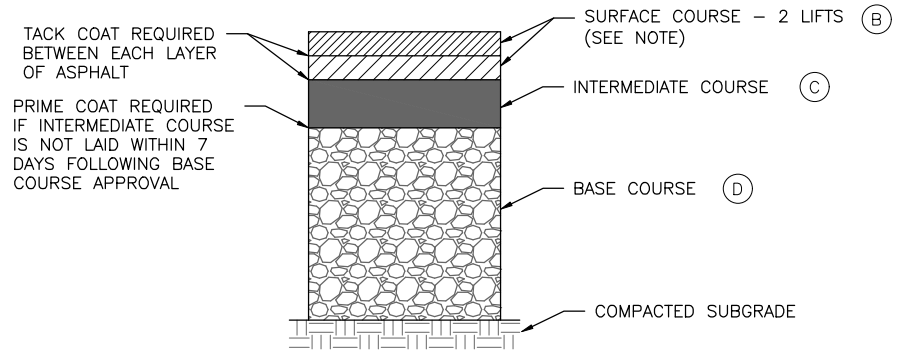


RESIDENTIAL COLLECTOR STREET

3-2022
STR-102
SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

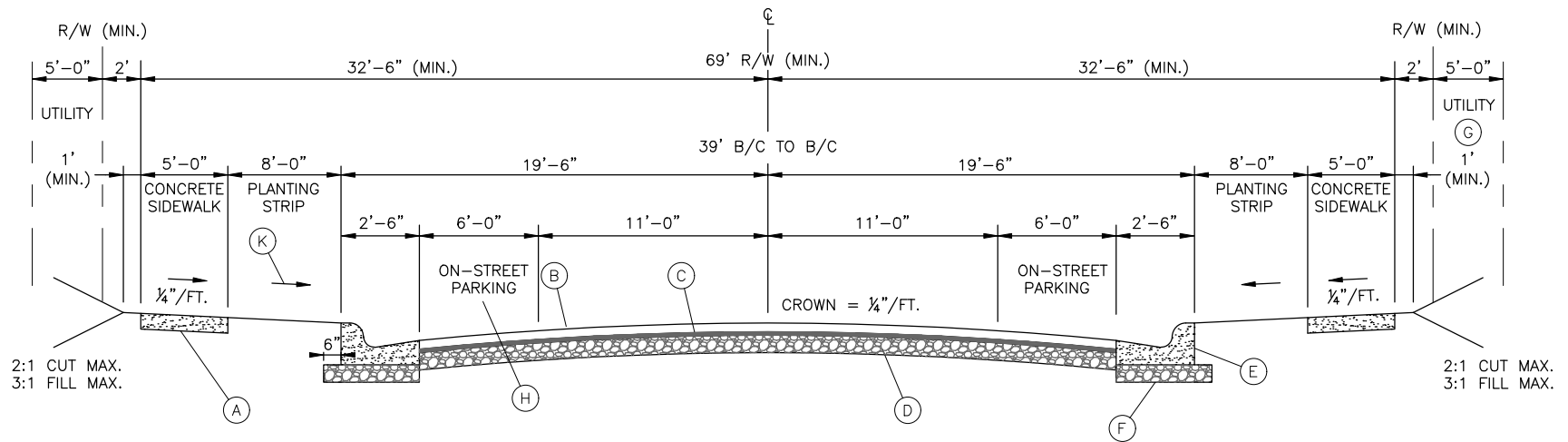
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING FOR BIKE LANE SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

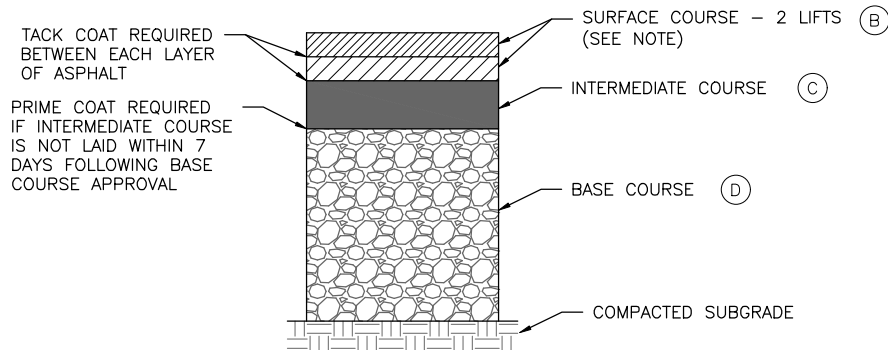


RESIDENTIAL COLLECTOR STREET  
 WITH BICYCLE LANES

3-2022  
 STR-103  
 SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING FOR PARKING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

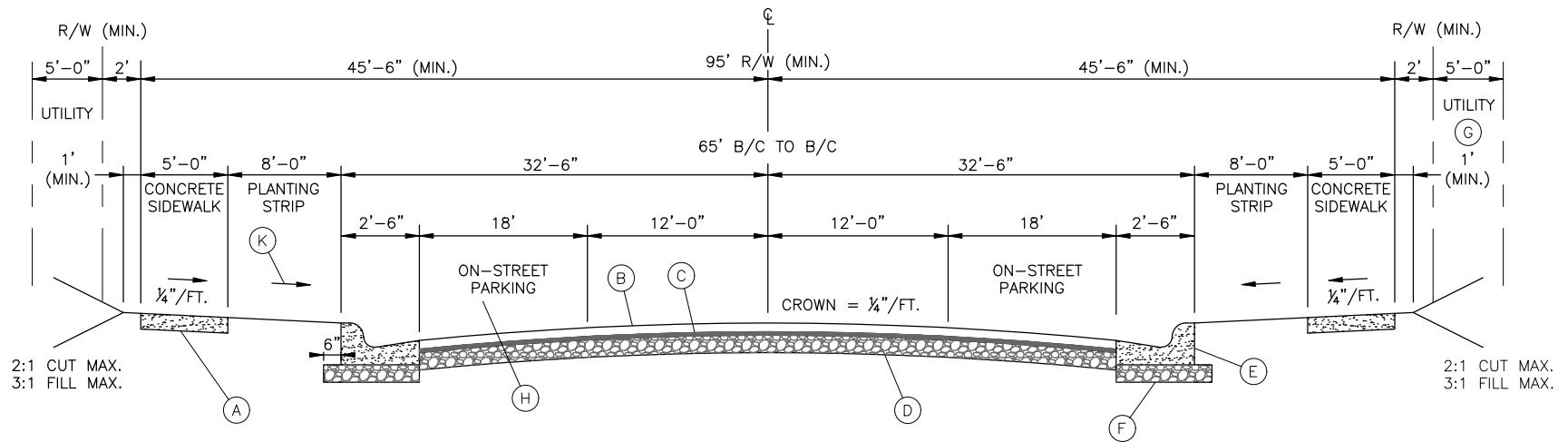


RESIDENTIAL COLLECTOR STREET  
WITH PARALLEL PARKING

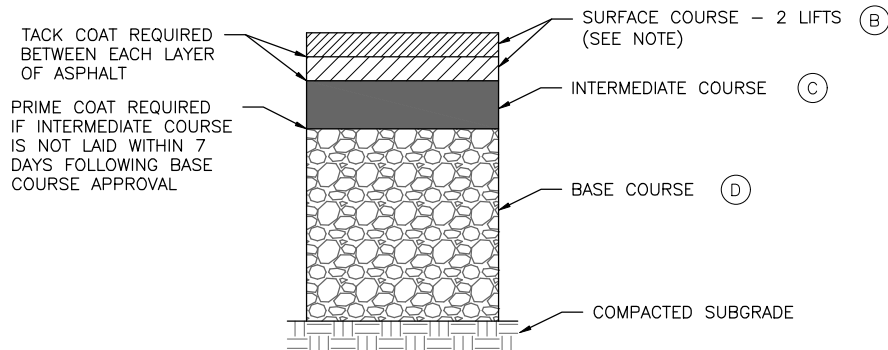
3-2022

STR-104

SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING FOR PARKING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

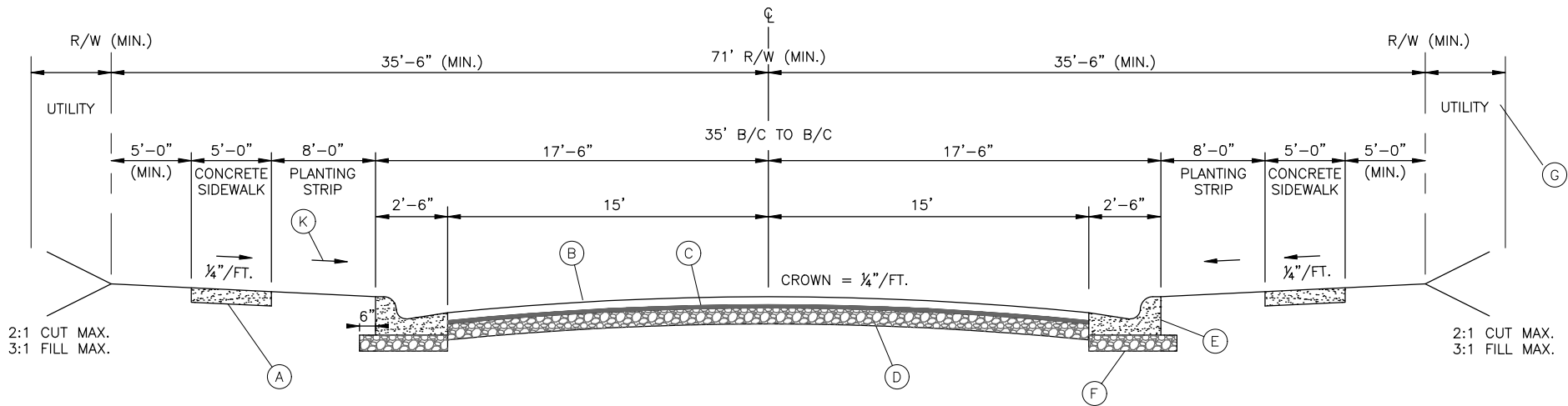


RESIDENTIAL COLLECTOR STREET  
WITH 45° REVERSE ANGLE PARKING

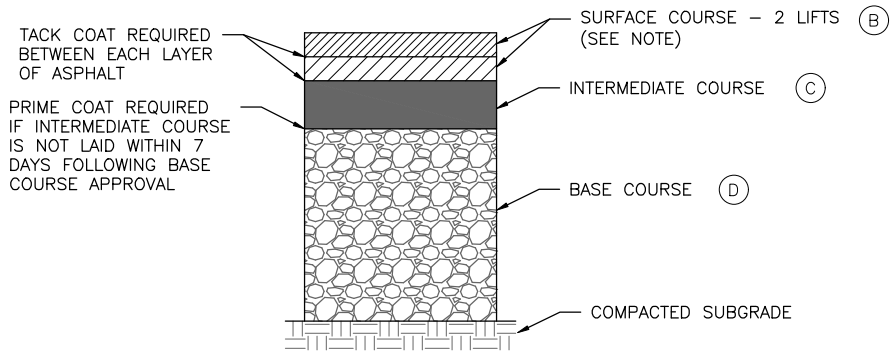
3-2022

STR-105

SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE

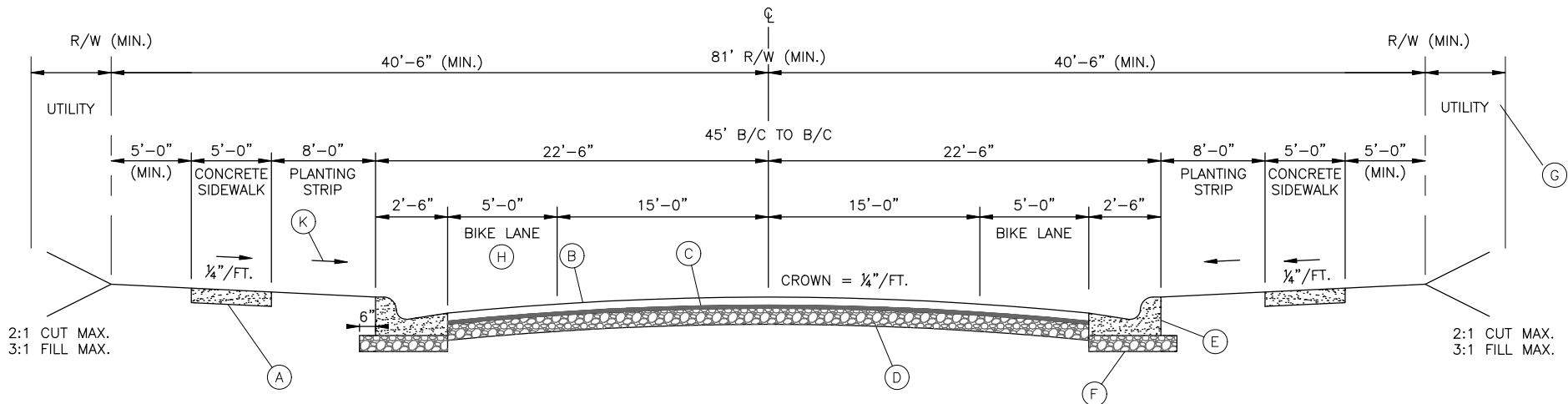


NON-RESIDENTIAL COLLECTOR STREET

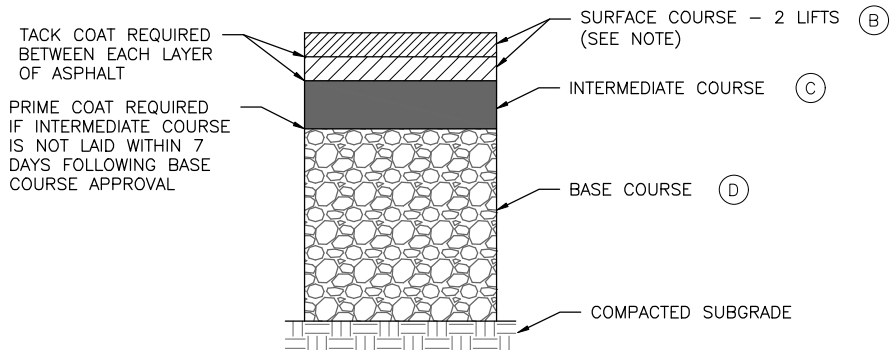
3-2022

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SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

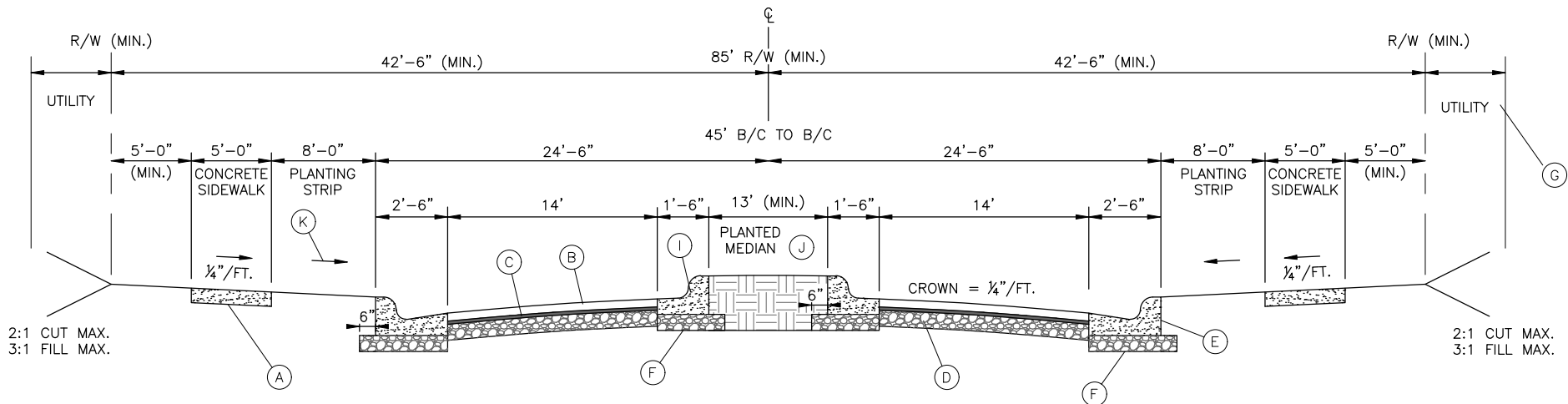
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" 1-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE



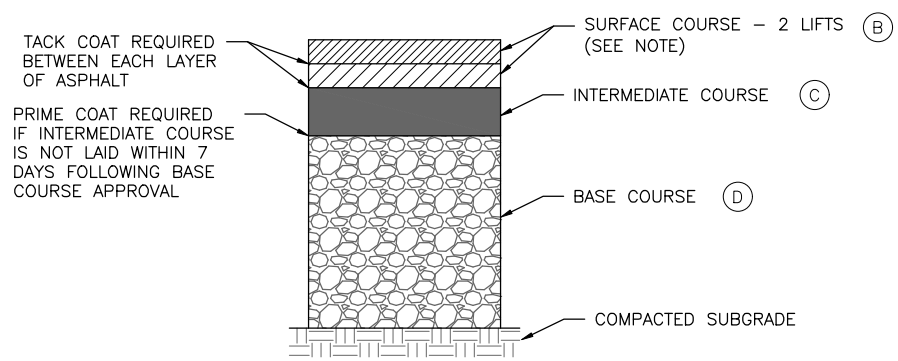
NON-RESIDENTIAL COLLECTOR STREET WITH BICYCLE LANES

3-2022  
 STR-107  
 SHEET 1 OF 1



TYPICAL CROSS SECTION

KEY



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (I) 1'-6" STANDARD CURB AND GUTTER
- (J) PLANTED MEDIAN, WIDTH VARIES BASED ON PROPOSED PLANTINGS. LANDSCAPING TO BE MAINTAINED BY PROPERTY OWNER'S ASSOCIATION WITH EXECUTED ENCROACHMENT AGREEMENT WITH CITY
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

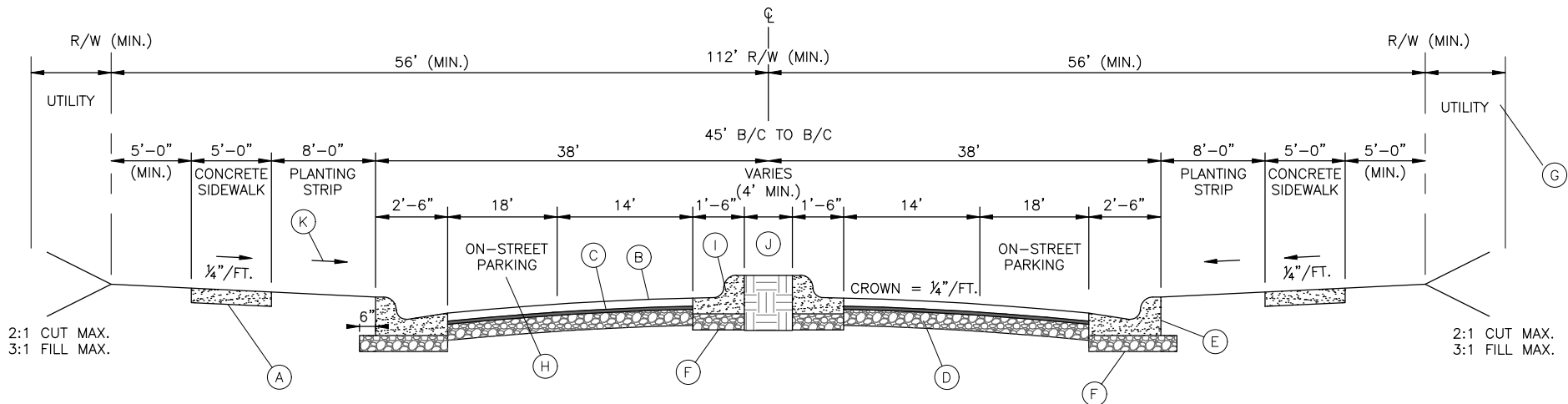
NOT TO SCALE



NON-RESIDENTIAL COLLECTOR STREET  
 DIVIDED WITH PLANTED MEDIAN

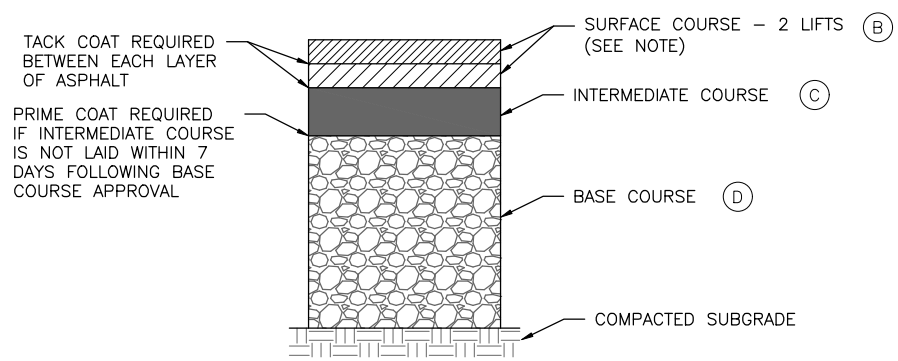
3-2022  
 STR-108  
 SHEET 1 OF 1





TYPICAL CROSS SECTION

KEY



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

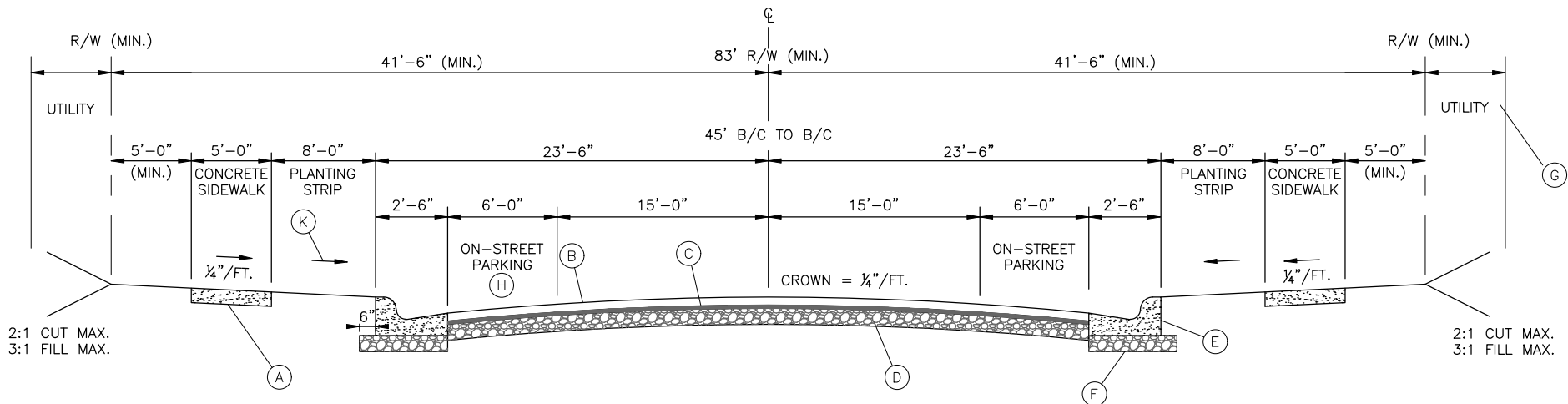
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (I) 1'-6" STANDARD CURB AND GUTTER
- (J) PLANTED MEDIAN, WIDTH VARIES BASED ON PROPOSED PLANTINGS. LANDSCAPING TO BE MAINTAINED BY PROPERTY OWNER'S ASSOCIATION WITH EXECUTED ENCROACHMENT AGREEMENT WITH CITY
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE

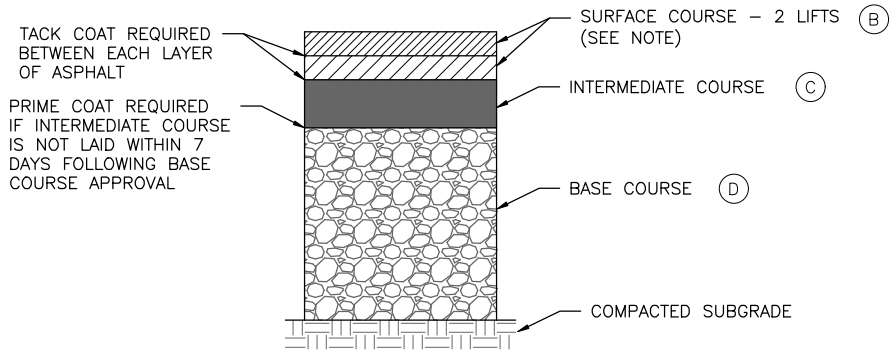


NON-RESIDENTIAL COLLECTOR STREET  
 WITH 45° REVERSE ANGLE PARKING

3-2022
STR-109
SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

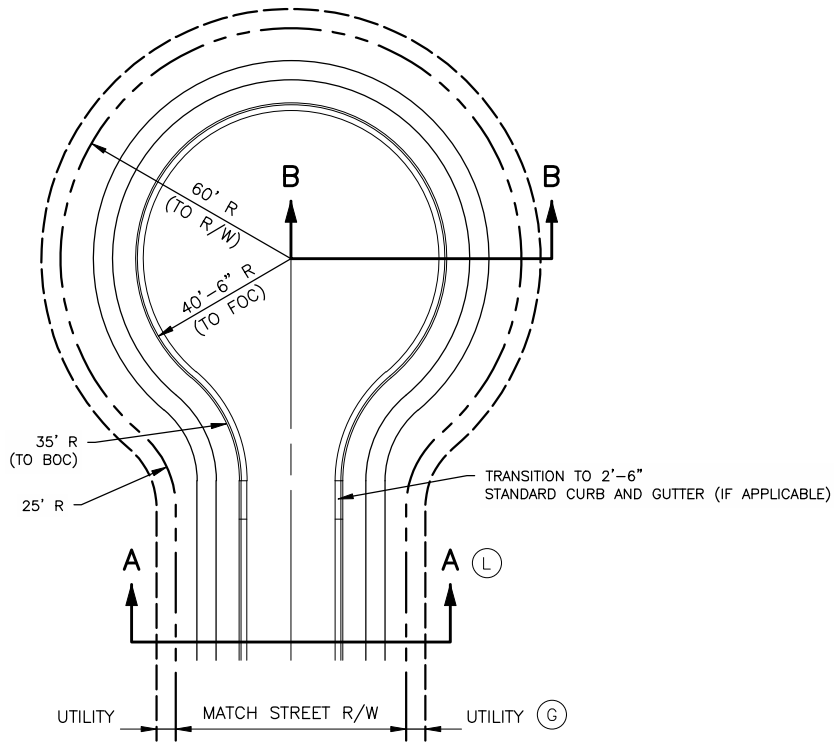
- (A) 4" SIDEWALK  
 \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE



NON-RESIDENTIAL COLLECTOR STREET WITH PARALLEL PARKING

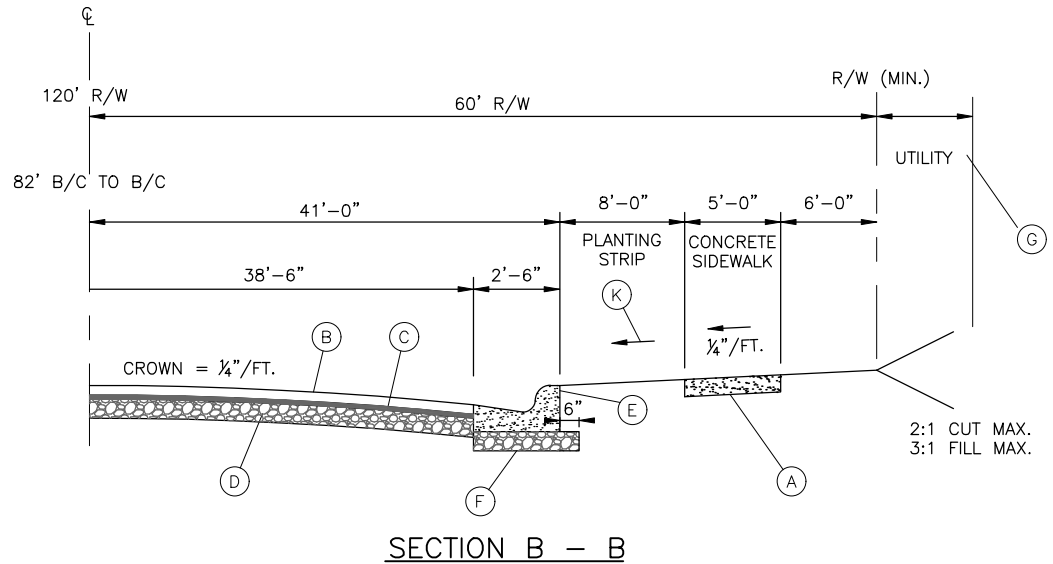
3-2022
STR-110
SHEET 1 OF 1



PLAN

NOTES

1. THIS DETAIL ONLY APPLIES TO RESIDENTIAL CUL-DE-SACS WITH A LENGTH LESS THAN 150' FROM THE CENTERLINE OF THE INTERSECTING STREET PROVIDING ACCESS TO THE CENTER TERMINUS OF THE CUL-DE-SAC.



SECTION B - B

KEY

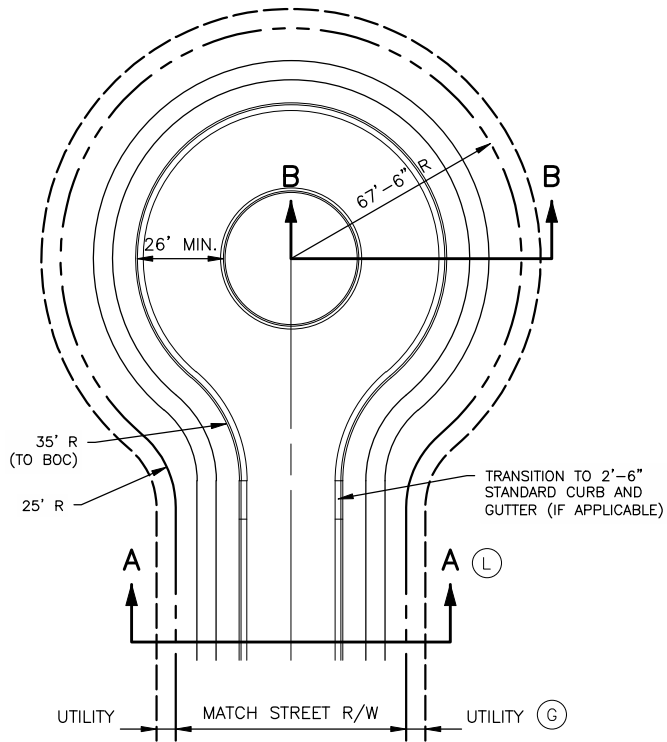
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (C) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (D) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (K)
- (L) SECTION A-A TO MATCH ADJOINING STREET CROSS SECTION

NOT TO SCALE



RESIDENTIAL CUL-DE-SAC  
LENGTH LESS THAN 150'

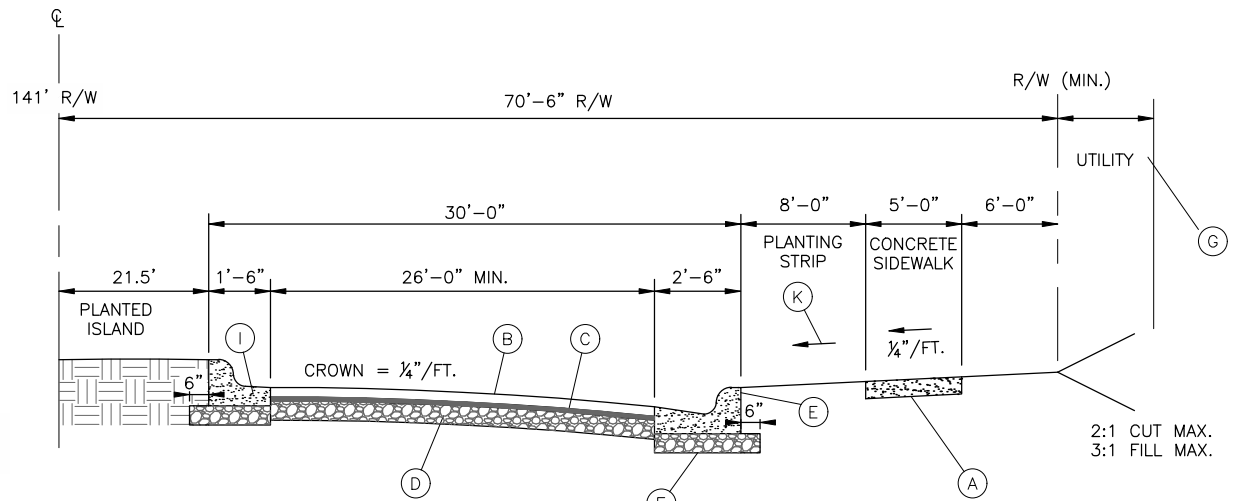
3-2022
STR-111
SHEET 1 OF 1



PLAN

NOTES

1. THIS DETAIL APPLIES TO RESIDENTIAL CUL-DE-SACS WITH A LENGTH GREATER THAN 150' FROM THE CENTERLINE OF THE INTERSECTING STREET PROVIDING ACCESS TO THE CENTER TERMINUS OF THE CUL-DE-SAC.
2. PLANTINGS IN ISLAND SHOULD BE GRASS/SHRUBS WITH A MAXIMUM MATURE HEIGHT OF 3'. TREES WITH WITH A CANOPY OF 8' OR HIGHER ABOVE THE STREET SURFACE MAY BE ALLOWED AS APPROVED BY THE CITY ARBORIST.
3. LANDSCAPING AND PLANTINGS WITHIN THE ISLAND SHALL BE MAINTAINED BY THE DEVELOPER, HOMEOWNER'S ASSOCIATION OR OTHER LEGAL ENTITY THROUGH AN ENCROACHMENT AGREEMENT WITH THE CITY OF CONCORD.



SECTION B - B

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (C) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (D) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (I) 1'-6" STANDARD CURB AND GUTTER
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (L) SECTION A-A TO MATCH ADJOINING STREET CROSS SECTION

NOT TO SCALE

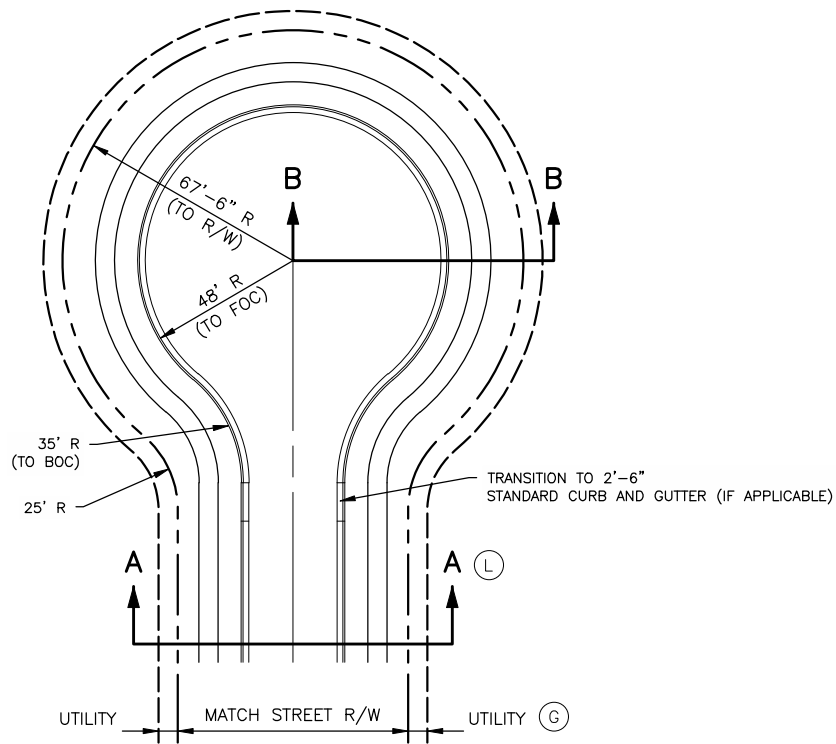


RESIDENTIAL CUL-DE-SAC  
LENGTH GREATER THAN 150'

3-2022

STR-112

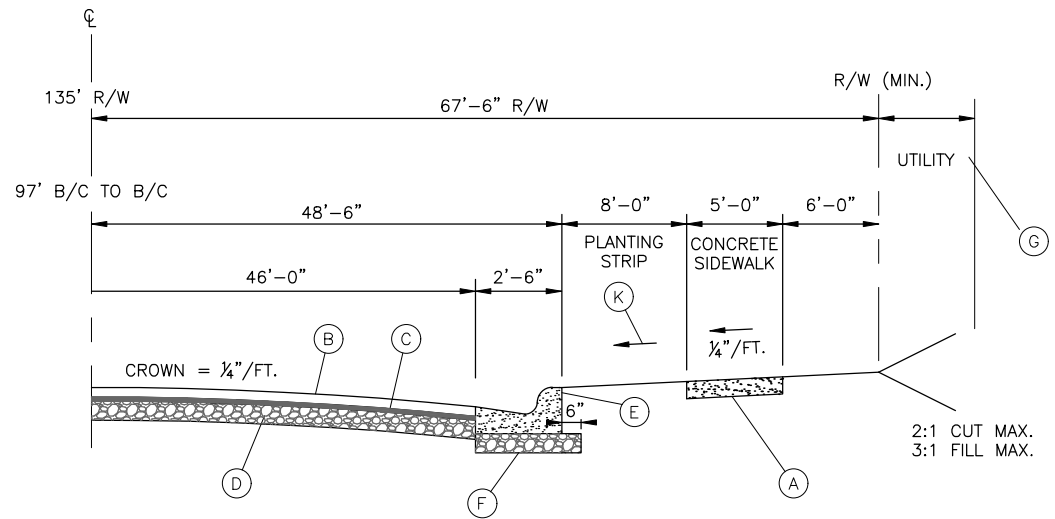
SHEET 1 OF 1



PLAN

NOTES

1. THIS DETAIL APPLIES TO ALL NON-RESIDENTIAL AND MIXED USE CUL-DE-SACS OF ALL LENGTHS.



SECTION B - B

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (C) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (D) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (K)
- (L) SECTION A-A TO MATCH ADJOINING STREET CROSS SECTION

NOT TO SCALE

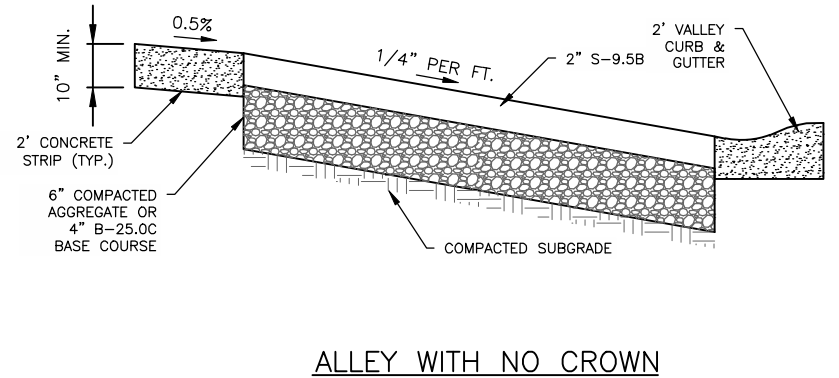
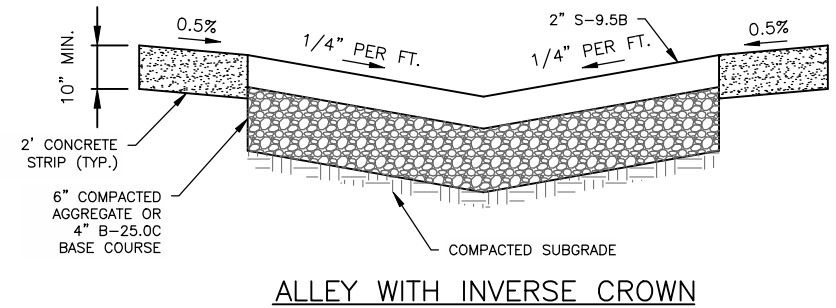
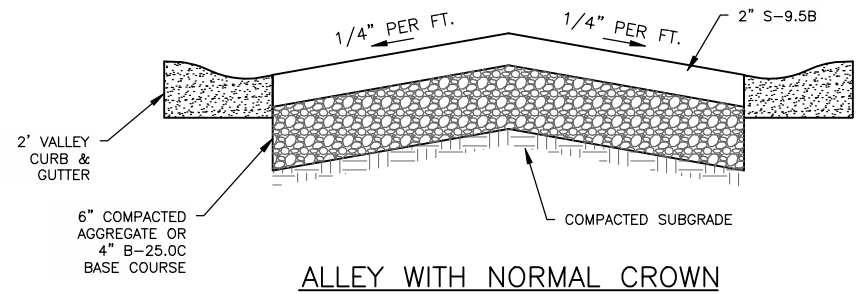
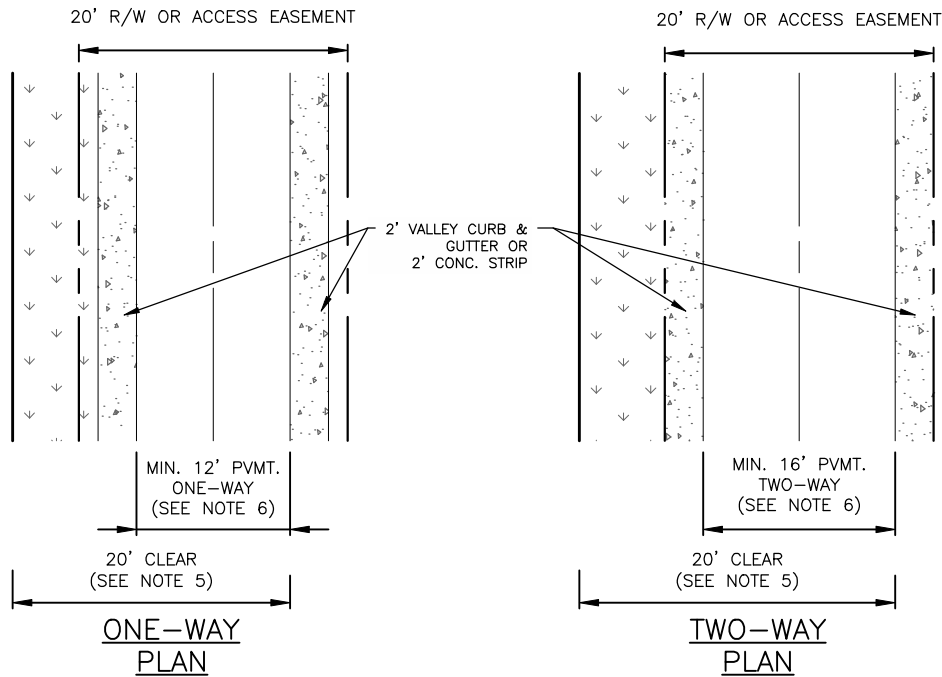


NON-RESIDENTIAL & MIXED USE CUL-DE-SAC  
ALL LENGTHS

3-2022
STR-113
SHEET 1 OF 1

**NOTES:**

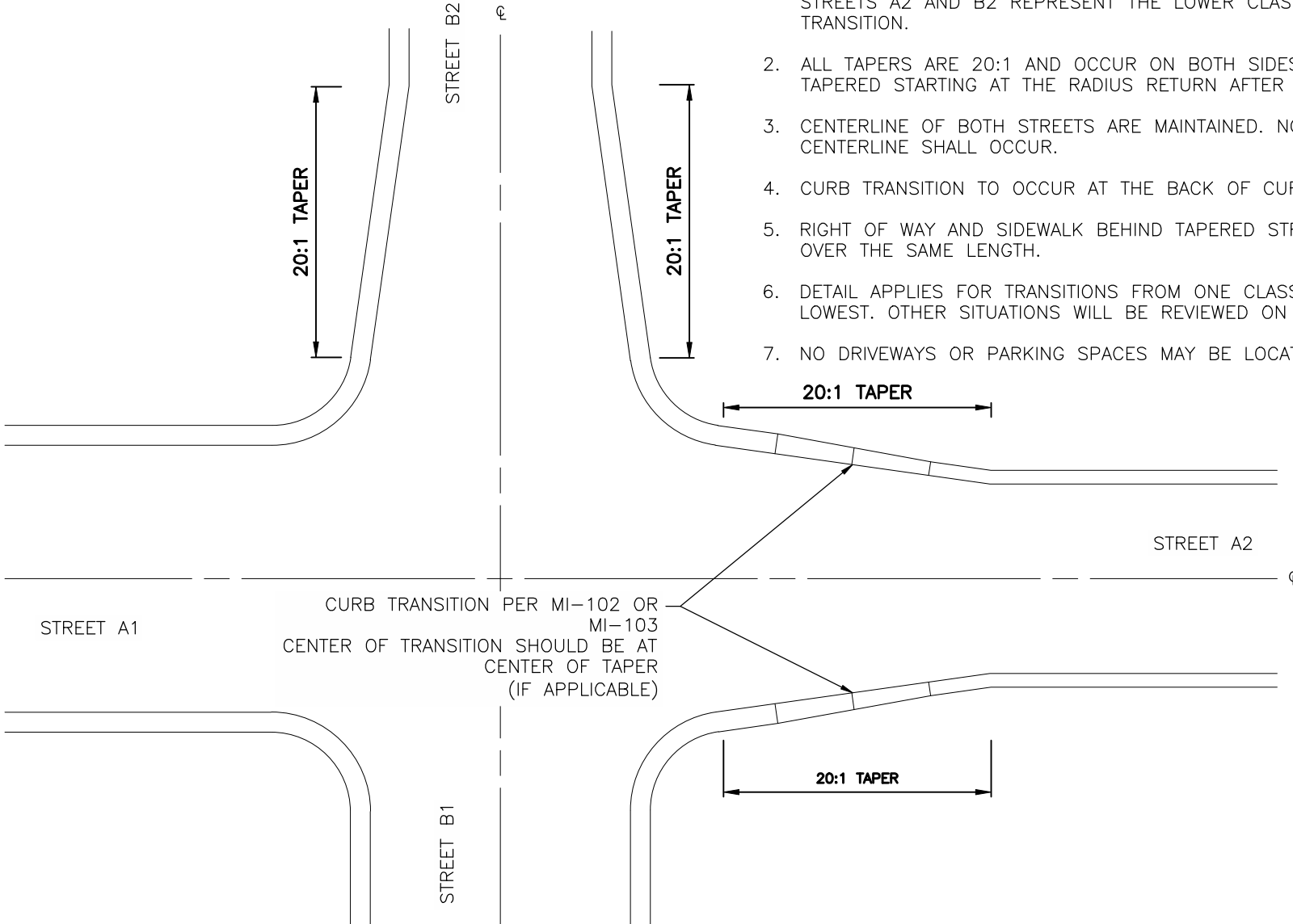
1. SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
2. STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
3. ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE CITY OF CONCORD.
4. DRIVEWAYS SHALL BE A MINIMUM OF 10' WIDE AND SEPARATED BY AT LEAST 6 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.
5. DETAIL APPLIES TO SINGLE- OR DOUBLE-LOADED ALLEYS. FOR SINGLE-LOADED ALLEYS, THERE SHALL BE A 20-FOOT CLEAR ZONE FREE OF CUT SLOPES, OBSTRUCTIONS, HEDGES, ETC. FROM THE LOADED SIDE EDGE OF PAVEMENT.
6. MINIMUM 20' WIDE PAVEMENT REQUIRED IF ALLEY IS TO BE CONSIDERED A "FIRE APPARATUS ACCESS ROAD" PER NC FIRE CODE. FIRE CODE MAY REQUIRE OTHER DIMENSIONAL AND PAVEMENT SECTION CHANGES TO ACCOMMODATE MINIMUM REQUIREMENTS.



NOT TO SCALE

GENERAL NOTES:

1. STREETS A1 AND B1 REPRESENT THE HIGHER CLASSIFICATION WHILE STREETS A2 AND B2 REPRESENT THE LOWER CLASSIFICATION AFTER THE TRANSITION.
2. ALL TAPERS ARE 20:1 AND OCCUR ON BOTH SIDERS OF THE ROAD TO BE TAPERED STARTING AT THE RADIUS RETURN AFTER THE INTERSECTION.
3. CENTERLINE OF BOTH STREETS ARE MAINTAINED. NO SHIFTING OF THE CENTERLINE SHALL OCCUR.
4. CURB TRANSITION TO OCCUR AT THE BACK OF CURB WHERE APPLICABLE.
5. RIGHT OF WAY AND SIDEWALK BEHIND TAPERED STREET SECTION TO TAPER OVER THE SAME LENGTH.
6. DETAIL APPLIES FOR TRANSITIONS FROM ONE CLASSIFICATION TO THE NEXT LOWEST. OTHER SITUATIONS WILL BE REVIEWED ON A CASE BY CASE BASIS.
7. NO DRIVEWAYS OR PARKING SPACES MAY BE LOCATED WITHIN THE TAPER.



NOT TO SCALE



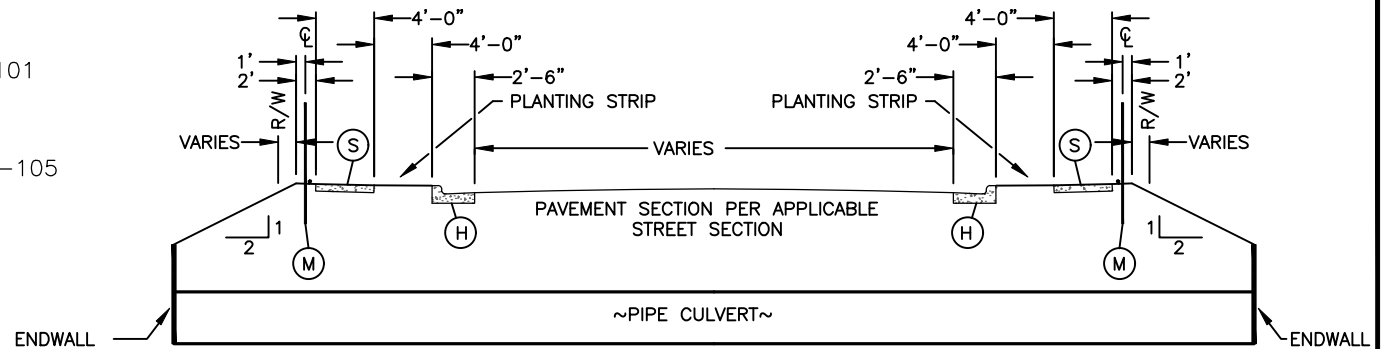
TRANSITION BETWEEN STREET CLASSIFICATIONS

3-2022
STR-116
SHEET 1 OF 1





- (H) 2'-6" CURB AND GUTTER, STD. MI-101
- (M) SAFETY RAIL, STD. MISC-206
- (S) 4'-0" SIDEWALK, STD. MI-104 & MI-105
- (H1) 2'-0" VALLEY GUTTER. STD. MI-101
- (H2) CURB TRANSITION 2'-6" CURB AND GUTTER TO 2'-0" VALLEY GUTTER, STD. MI-102



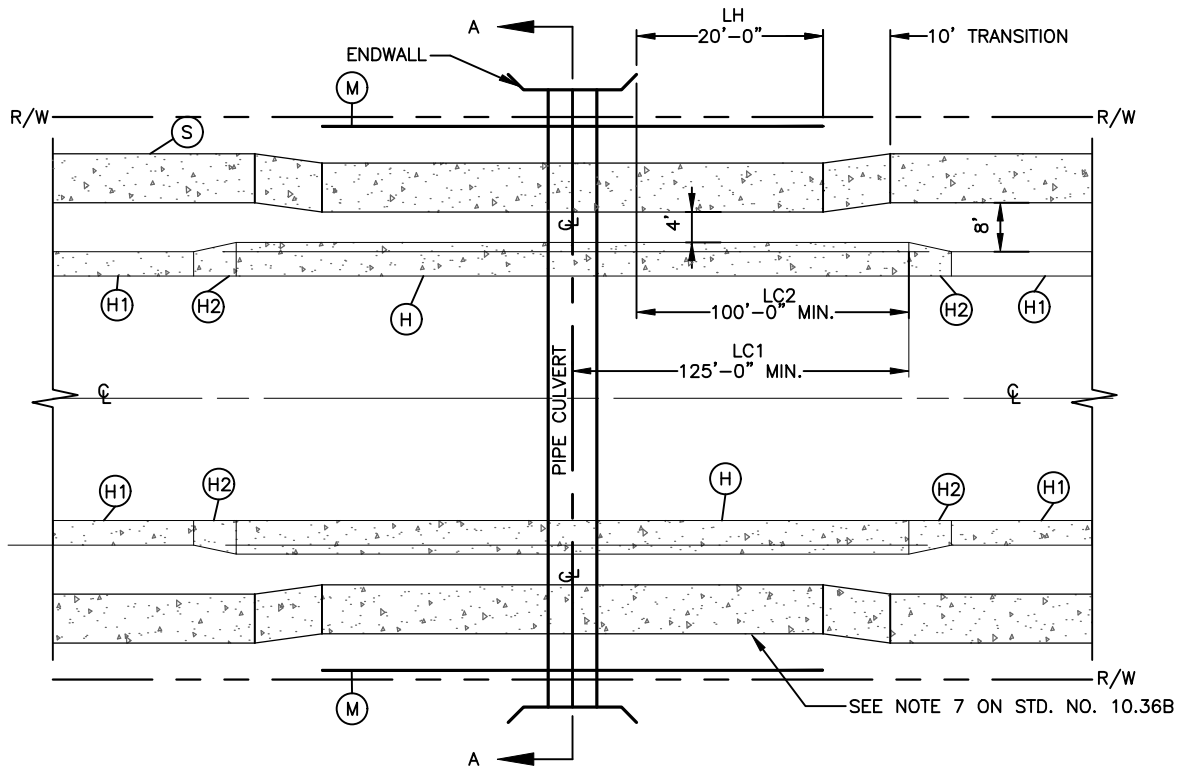
SECTION A - A

LH\* = DISTANCE FROM END OF WINGWALL TO END OF SAFETY RAIL.

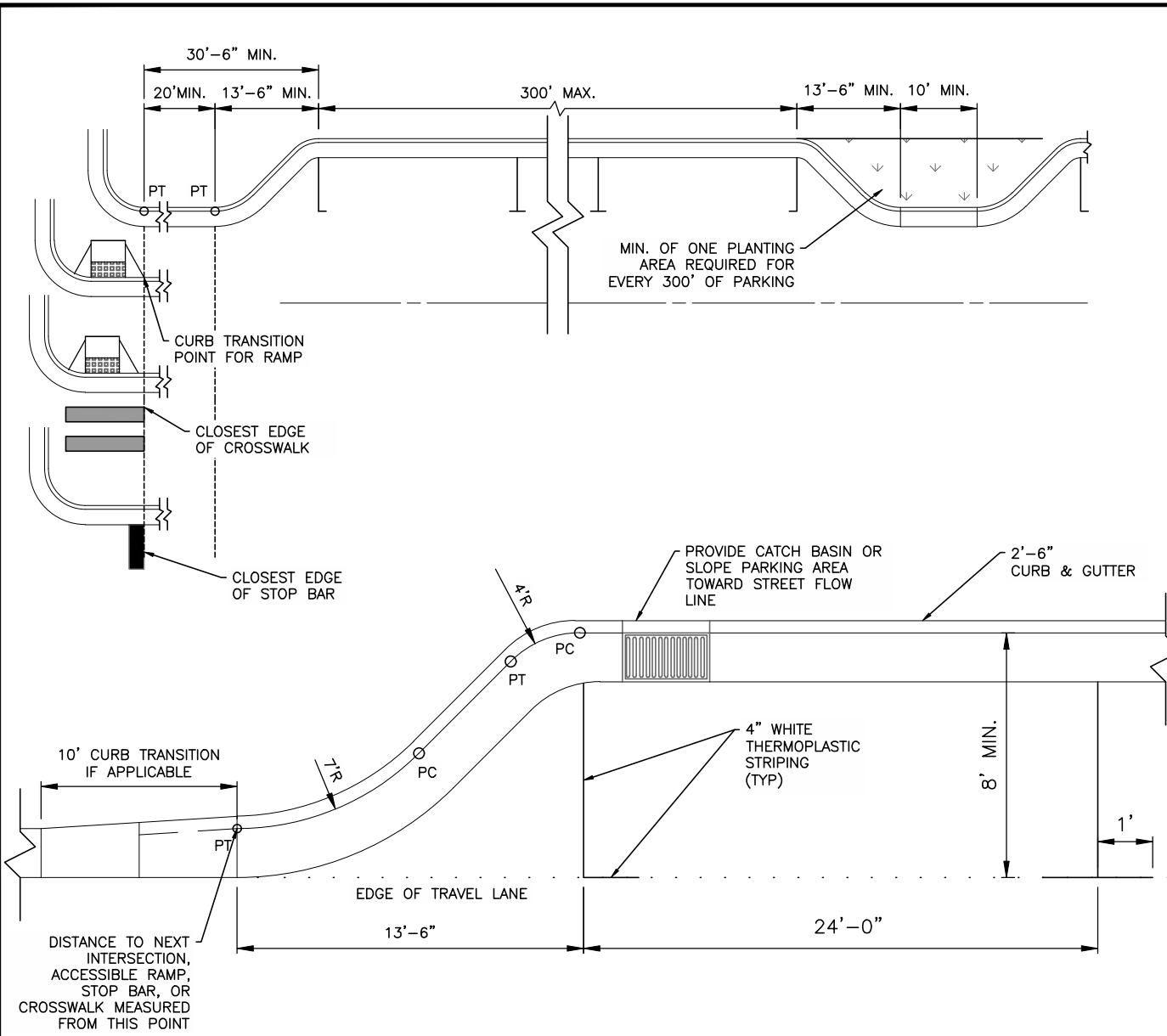
LC1 = DISTANCE FROM<sup>C</sup>L OF CULVERT TO END OF 2'-6" CURB AND GUTTER.

LC2\* = DISTANCE FROM END OF WINGWALL TO END OF 2'-6" CURB AND GUTTER.

\*LH AND LC2 TO BE MEASURED FROM THE OUTSIDE OF THE NEAREST WALL OF THE CULVERT BARREL.



NOT TO SCALE



**NOTES:**

1. ACCESSIBLE SPACES AND ACCESS AISLES SHALL BE PROVIDED PER ADA GUIDELINES, AND PER STD. STR-121
2. ALL CONCRETE TO BE 3600 P.S.I.
3. PARKING SPACES SHALL BE GRADED TO PROPERLY DRAIN AND ENSURE WATER, SEDIMENT, DEBRIS ETC. DOES NOT COLLECT.
4. WHERE A BICYCLE LANE IS REQUIRED ADJACENT TO PARALLEL PARKING SPACES, THE MINIMUM WIDTH IS 6'.

NOT TO SCALE



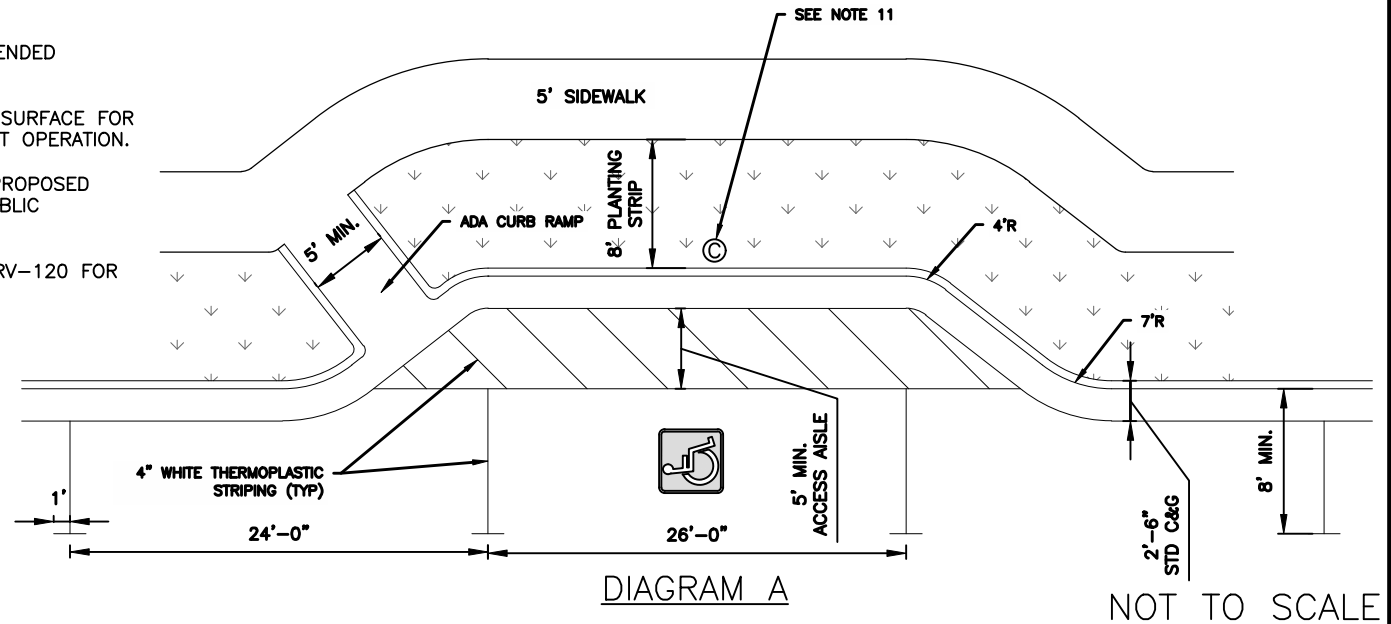
ON-STREET PARALLEL PARKING

3-2022
STR-120
SHEET 1 OF 1

**NOTES:**

1. AN ACCESS AISLE SHALL BE PROVIDED AT STREET LEVEL FOR ON-STREET PARALLEL PARKING WITH 5' MIN. WIDTH AND SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE.
2. ACCESSIBLE SPACE AND ACCESS AISLE SHALL BE OBSTRUCTION-FREE.
3. ALL CONCRETE TO BE 3600 P.S.I.
4. GUTTER FLOW LINE SHALL BE MAINTAINED THROUGH THE ACCESS AISLE.
5. ACCESS AISLE, CURB RAMP, AND PARKING SPACE SHALL BE GRADED TO PROPERLY DRAIN AND TO ENSURE WATER, SEDIMENT, DEBRIS, ETC., DOES NOT COLLECT.
6. ACCESSIBLE PAVEMENT MARKING DETAIL PER MUTCD:
  - INSTALL INTERNATIONAL SYMBOL OF ACCESSIBILITY PARKING SPACE MARKINGS, INCLUDING WHITE SYMBOL WITH BLUE BACKGROUND AND WHITE BORDER. SYMBOL SHALL HAVE MIN. HEIGHT OF 28 INCHES AND MIN. WIDTH OF 24 INCHES (EXCLUSIVE OF BLUE BACKGROUND AND WHITE BORDER). STROKE WIDTH SHALL BE MIN. 3 INCHES.
  - WHITE PAVEMENT MARKINGS PLACED ON CONCRETE SHALL BE SHADOWED WITH BLACK BORDER.
  - TYPICAL SYMBOL LOCATION AND ORIENTATION PER "DIAGRAM A" BELOW
8. LOCATE IN MOST LEVEL AREA OF BLOCK (RECOMMENDED PRACTICE) TO MAXIMIZE USABILITY.
9. SPACE AND ACCESS AISLE SHOULD HAVE SMOOTH SURFACE FOR LIFT DEPLOYMENT. MINIMIZE CROSS SLOPE FOR LIFT OPERATION.
10. FOR MORE INFORMATION SEE SECTION R309 OF "PROPOSED GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (PROWAG).
11. USE APPROPRIATE SIGNAGE AS SHOWN ON STD. DRV-120 FOR ON-STREET PARKING.

ON-STREET PARKING SPACES REQUIRED	
TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED
1 TO 25	1
26 TO 50	2
51 TO 75	3
76 TO 100	4
101 TO 150	5
151 TO 200	6
201 AND OVER	4% OF TOTAL
(BASED ON TABLE R214 OF PROWAG)	



ACCESSIBLE ON-STREET  
PARALLEL PARKING



3-2022

STR-121

SHEET 1 OF 1

**NOTES:**

1. ACCESSIBLE SPACES AND ACCESS AISLES SHALL BE PROVIDED PER ADA GUIDELINES. VAN ACCESSIBLE SPACES SHALL HAVE AN ACCESS AISLE WITH A MINIMUM WIDTH OF 8' LOCATED ON THE PASSENGER SIDE. NON-VAN ACCESS AISLES SHALL BE A MINIMUM OF 5' IN WIDTH.
2. ACCESSIBLE SPACE AND ACCESS AISLE SHALL BE OBSTRUCTION-FREE.
3. APPROPRIATE CURB RAMPS TO BE LOCATED AT EACH ACCESS AISLE.
4. ALL CONCRETE TO BE 3600 P.S.I.
5. ACCESSIBLE PAVEMENT MARKING DETAIL:
  - INSTALL INTERNATIONAL SYMBOL OF ACCESSIBILITY PARKING SPACE MARKINGS, INCLUDING WHITE SYMBOL WITH BLUE BACKGROUND AND WHITE BORDER. SYMBOL SHALL HAVE MIN. HEIGHT OF 28 INCHES AND MIN. WIDTH OF 24 INCHES (EXCLUSIVE OF BLUE BACKGROUND AND WHITE BORDER). STROKE WIDTH SHALL BE MIN. 3 INCHES.
  - WHITE PAVEMENT MARKINGS PLACED ON CONCRETE SHALL BE SHADOWED WITH BLACK BORDER.
  - TYPICAL SYMBOL LOCATION AND ORIENTATION PER "DIAGRAM A" BELOW
8. USE APPROPRIATE SIGNS AS SHOWN ON STD. DRV-120 FOR ACCESSIBLE ON-STREET PARKING.

PREFERRED DIMENSIONS FOR REVERSE ANGLE PARKING				
ANGLE (A)	STALL LENGTH (L)	STALL WIDTH (W)	STALL DEPTH (H)	PARALLEL WIDTH (C)
30°	32'	19	16'	9.5'
45°	25.46'	13.44'	18'	9.5'
60°	21.36	10.97	18.5'	9.5'

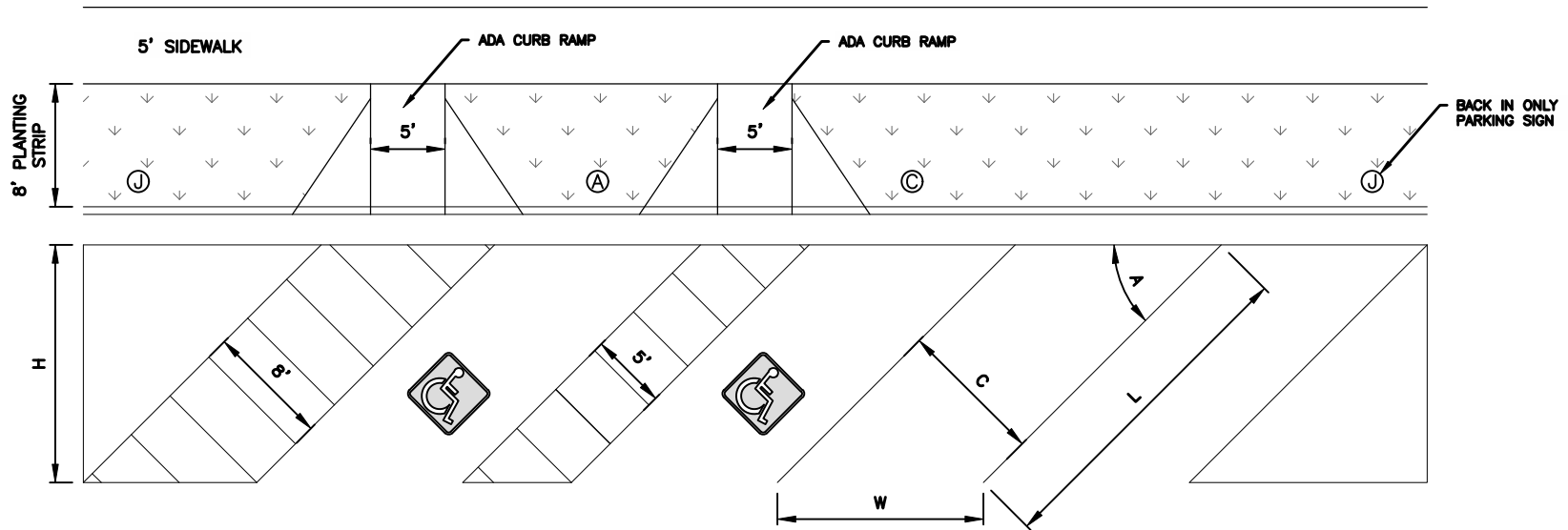
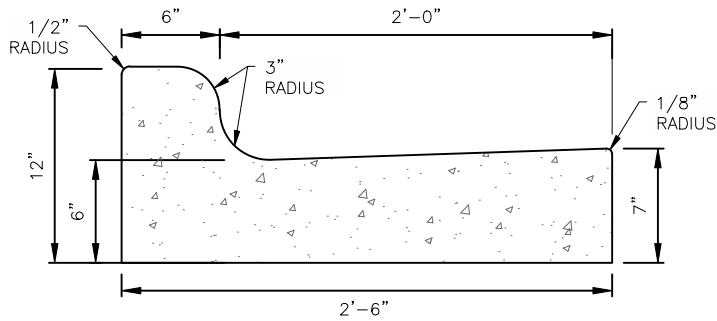
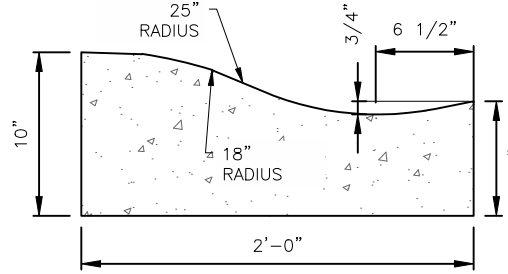


DIAGRAM A

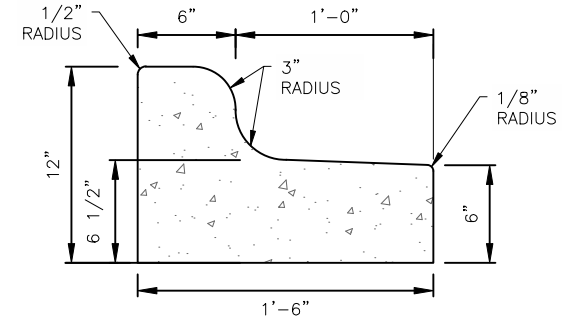
NOT TO SCALE



**STANDARD 2'-6" CURB & GUTTER**

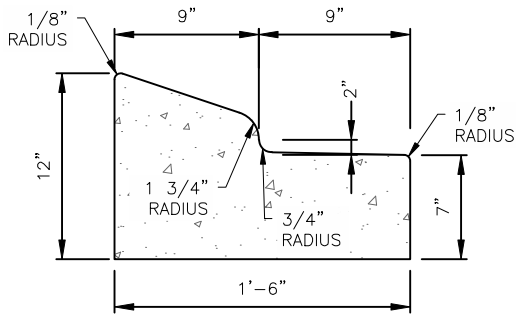


**2'-0" VALLEY CURB & GUTTER**



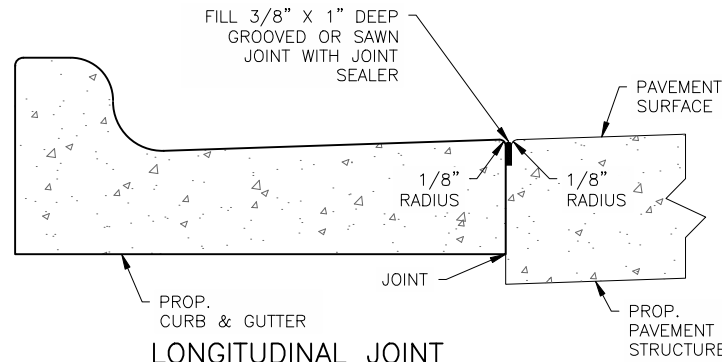
**1'-6" MEDIAN CURB & GUTTER**

TO BE USED IN MEDIANS WHEN LANES ARE SLOPED FROM ISLAND OR AS SPECIFIED BY THE APPROPRIATE CITY ENGINEERING DEPT.

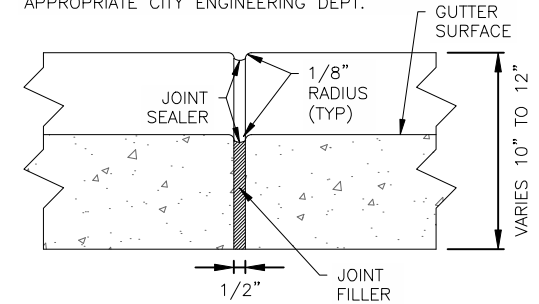


**1'-6" MOUNTABLE CURB & GUTTER**

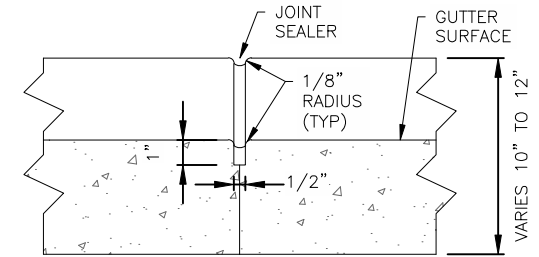
TO BE USED IN MEDIANS ONLY: WHEN SPECIFIED BY THE APPROPRIATE CITY DEPT.



**LONGITUDINAL JOINT**



**TRANSVERSE EXPANSION JOINT**



**CONTRACTION JOINT**

**NOTES**

1. NCDOT STANDARD DETAIL 846.01 TO BE USED FOR VARIOUS CURB AND GUTTER SUPERELEVATION RATES.
2. PLACE CONTRACTION JOINTS AT 10' INTERVALS. JOINT SPACING MAY BE ALTERED BY CITY ENGINEER TO PREVENT UNCONTROLLED CRACKING.
3. FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
4. SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATION WITH JOINTS IN ABUTTING SIDEWALK.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 P.S.I. IN 28 DAYS.
6. TOP 6" OF SUBGRADE BENEATH CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

NOT TO SCALE



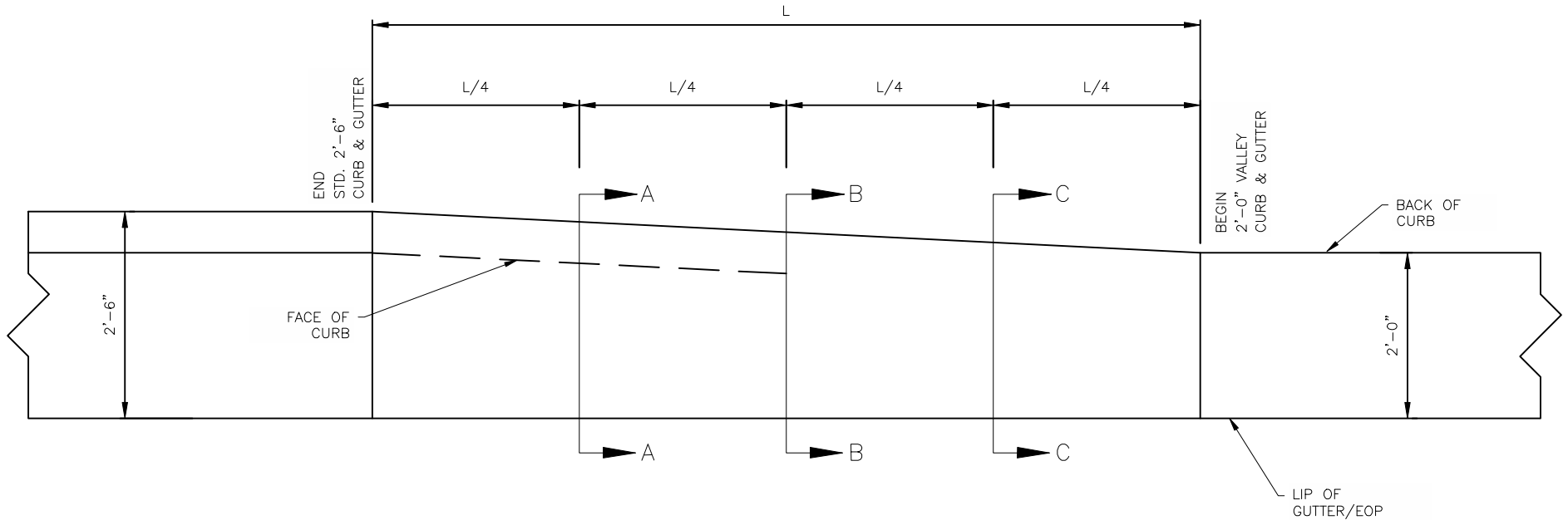
**CONCRETE CURB & GUTTER  
DETAILS**

3-2022

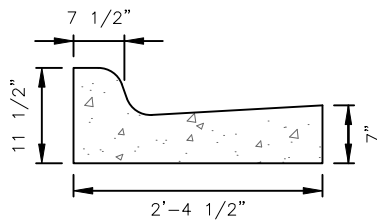
MI-101

SHEET 1 OF 1

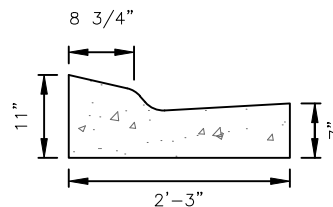
L = 10 FEET IN LONGITUDINAL SECTION



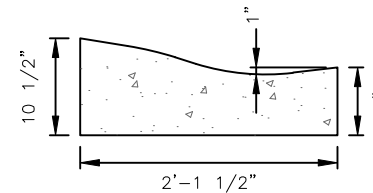
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

NOTES

1. TRANSITION SHALL NOT BE LOCATED WITHIN THE CURB RADIUS.
2. TRANSITION TO BE ALONG BACK OF CURB.

NOT TO SCALE



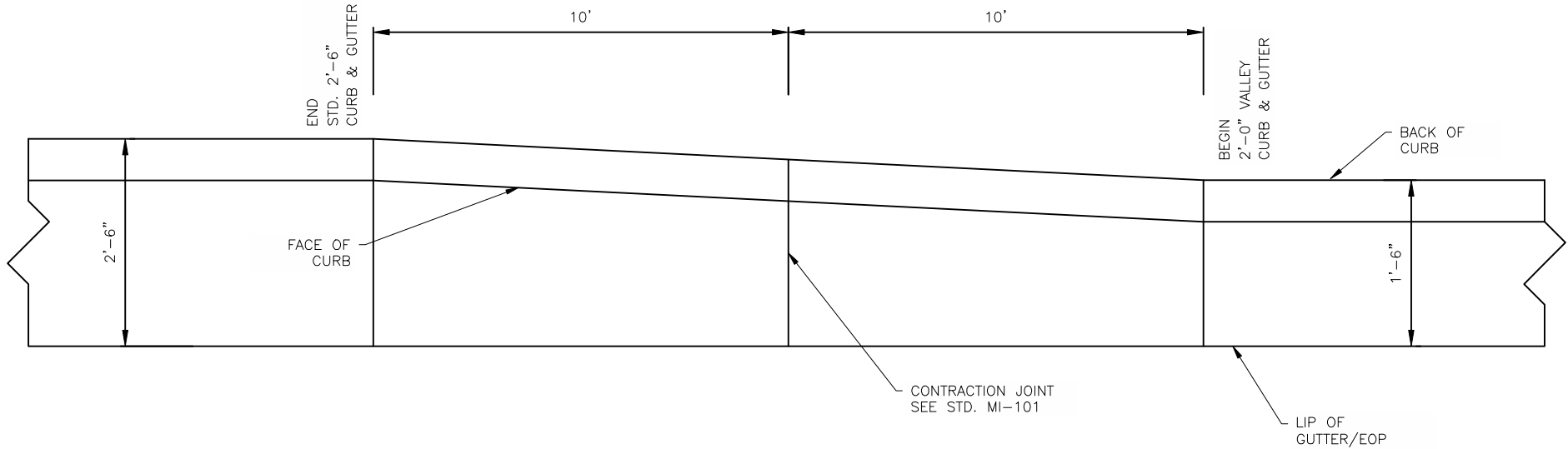
CURB TRANSITION  
2'-6" STANDARD TO 2'-0" VALLEY

3-2022

MI-102

SHEET 1 OF 1

L = 10 FEET IN LONGITUDINAL SECTION



PLAN VIEW

NOTES

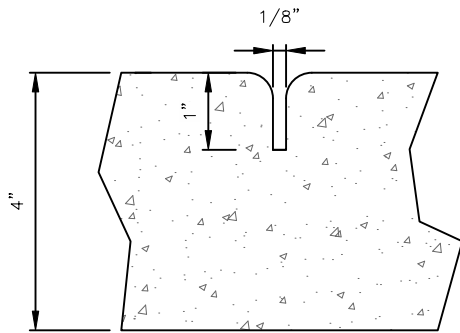
- 1. TRANSITION SHALL NOT BE LOCATED WITHIN THE CURB RADIUS.
- 2. TRANSITION TO BE ALONG BACK OF CURB.

NOT TO SCALE

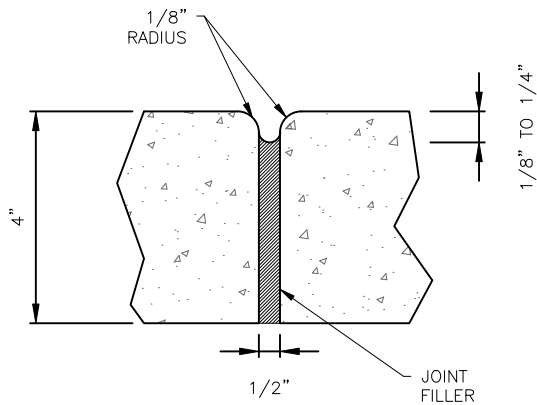


CURB TRANSITION  
 2'-6" STANDARD TO 1'-6" STANDARD

3-2022
MI-103
SHEET 1 OF 1



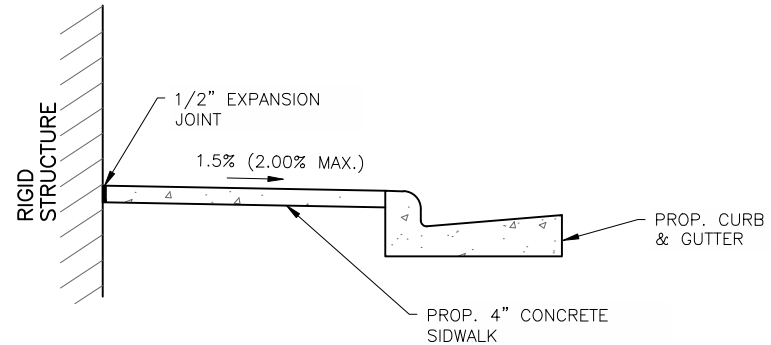
GROOVE JOINT IN SIDEWALK



TRANSVERSE EXPANSION  
JOINT IN SIDEWALK

GENERAL NOTES:

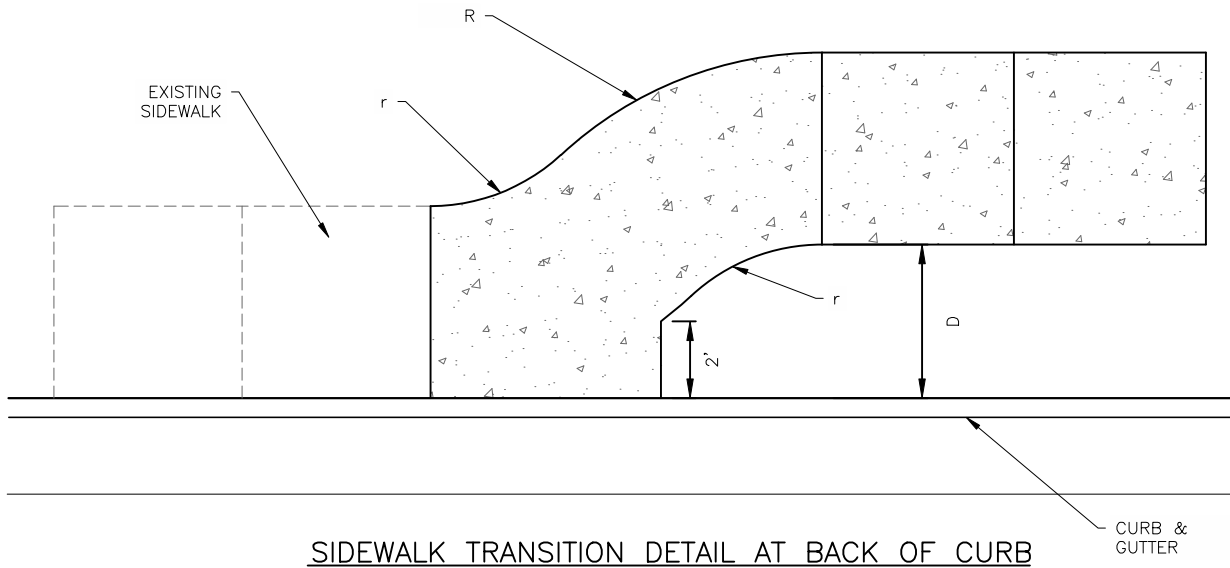
1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT INTERVALS OF NOT MORE THAN 45' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY CORSSINGS TO BE 6" THICK.
3. MINIMUM WIDTH OF SIDEWALK IS 5'
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI. IN 28 DAYS.
5. ZONING CONDITIONS MAY REQUIRE ADDITIONAL WIDTH SIDEWALKS WHICH SHALL SUPERSEDE THESE STANDARD DIMENSIONS SHOWN.
6. LIDS FOR JUNCTION BOXES AND UTILITY VAULTS SHALL BE NON-SKID AS SPECIFIED BY ENGINEER.
7. JOINT MATERIALS SHALL LIMIT SHRINK/SWELL SO POST CONSTRUCTION INSTALLATION RESULTS IN A MAXIMUM OF 1/4" FROM FLUSH.



DETAILS SHOWING EXPANSION JOINTS  
IN CONCRETE SIDEWALK

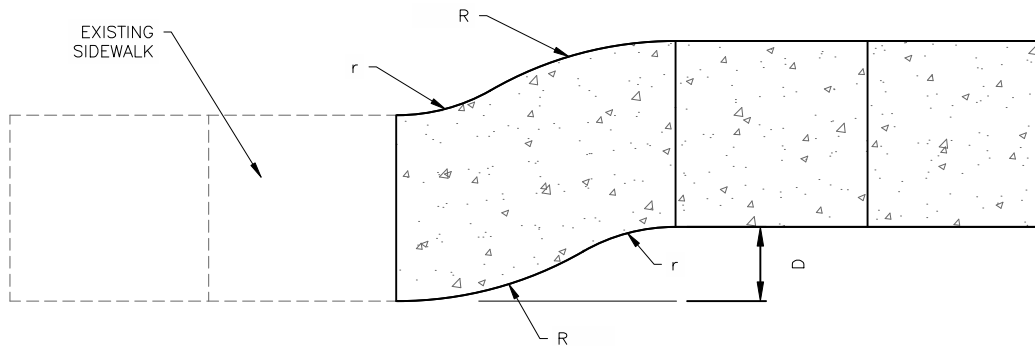
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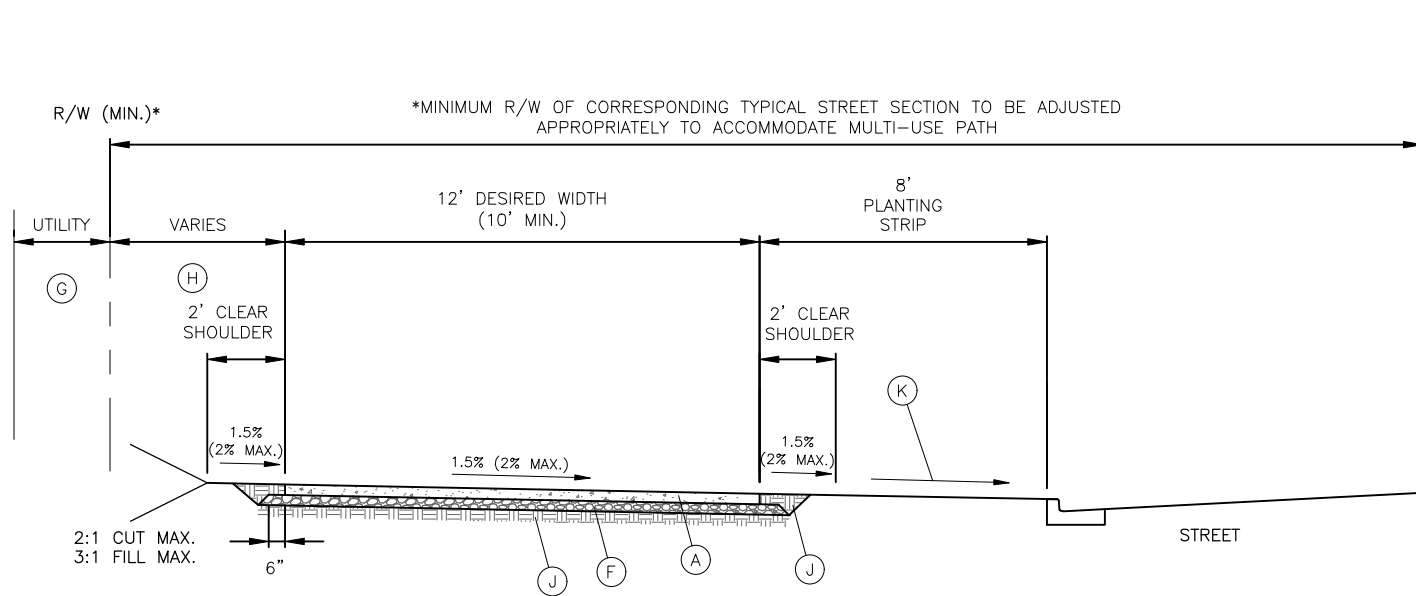
SIDEWALK TRANSITION DETAIL AT BACK OF CURB

KEY		
D	R	r
0'-2.9'	10'-0"	4'-0"
3'-7.9'	25'-0"	19'-0"
8'+	50'-0"	44'-0"



SIDEWALK TRANSITION DETAIL (PLANTING STRIP BOTH SIDES)

NOT TO SCALE



**NOTES:**

1. AT INTERSECTIONS WITH STREETS OR DRIVEWAYS, RAMP WIDTH MUST MATCH MULTI-USE PATH WIDTH.
2. ALL JOINTS MUST BE SEALED. SEAL MUST BE NON-SHRINKING AND FLUSH WITH FINISHED GRADE OF THE CONCRETE PATH.
3. ALL CONCRETE SHALL BE AT LEAST 3600 PSI COMPRESSIVE STRENGTH.
4. JOINTS MUST BE SAWCUT A MINIMUM OF 1/4 DEPTH OF CONCRETE DEPTH, BUT NO MORE THAN 1/2 OF CONCRETE DEPTH.
  - TRANSVERSE JOINTS MUST BE SAWCUT EVERY 6 FEET.
  - CONSTRUCTION JOINTS MUST BE EVERY 40 FEET.
5. NO ABOVE GROUND UTILITIES OR UTILITY SURFACE COVERS/PLATES/MANHOLES SHALL BE LOCATED WITHIN MULTI-USE-PATH AND SHALL BE A MINIMUM OF 2 FEET FROM THE EDGE OF THE PATH. RAISED MANHOLES SHALL BE LOCATED A MINIMUM OF 4' FROM EDGE OF PATH.
6. SIGN POSTS OR OTHER FIXED OBJECTS SHALL BE LOCATED A MINIMUM OF 2' FROM EDGE OF PATH.

**KEY**

- (A) 6" CONCRETE, 3600 PSI
- (F) 3" COMPACTED AGGREGATE BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) WIDTH TO BE DETERMINED BY TYPICAL SECTION OF STREET CLASSIFICATION
- (J) SUBGRADE COMPACTED TO A DENSITY NO LESS THAN 95%
- (K) PLANTING STRIP ADJACENT TO MULTI-USE PATH SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

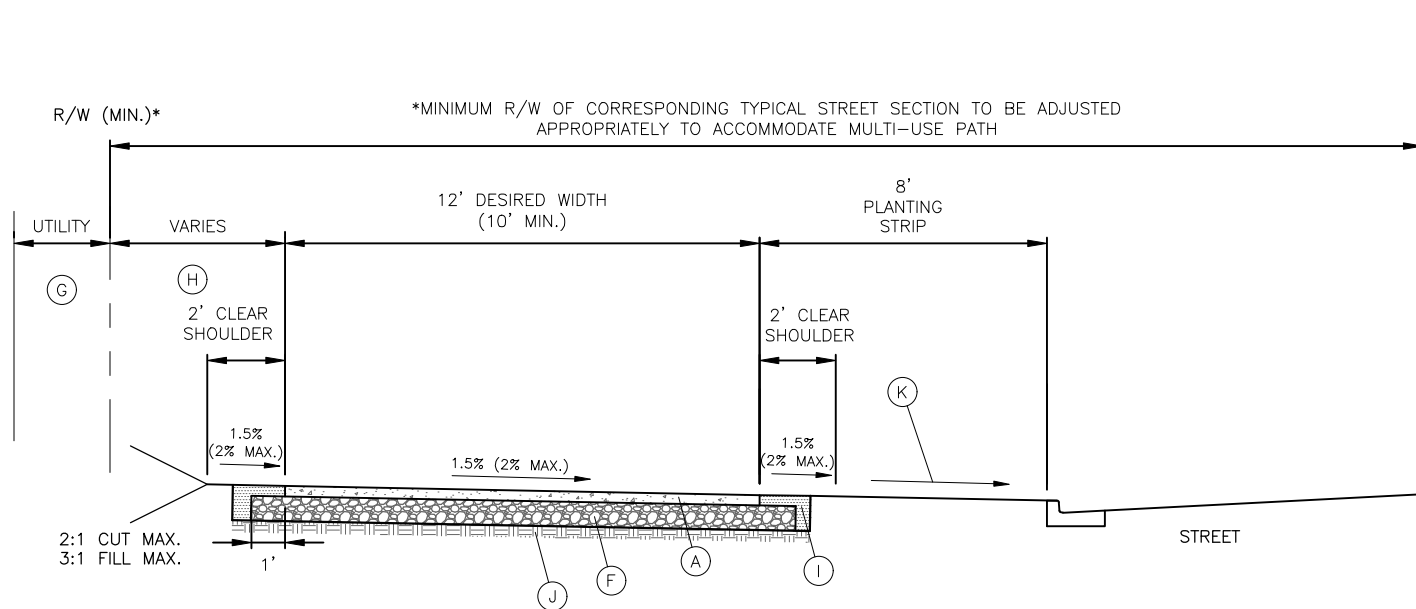
CONCRETE MULTI-USE PATH



3-2022

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SHEET 1 OF 1



**NOTES:**

1. AT INTERSECTIONS WITH STREETS OR DRIVEWAYS, RAMP WIDTH MUST MATCH MULTI-USE PATH WIDTH.
2. NO ABOVE GROUND UTILITIES OR UTILITY SURFACE COVERS/PLATES/MANHOLES SHALL BE LOCATED WITHIN MULTI-USE-PATH AND SHALL BE A MINIMUM OF 2 FEET FROM THE EDGE OF THE PATH. RAISED MANHOLES SHALL BE LOCATED A MINIMUM OF 4' FROM EDGE OF PATH.
3. SIGN POSTS OR OTHER FIXED OBJECTS SHALL BE LOCATED A MINIMUM OF 2' FROM EDGE OF PATH.

**KEY**

- (A) 2" ASPHALT CONCRETE S9.5B
- (F) 6" COMPACTED AGGREGATE BASE COURSE UNDERLINED WITH GEOTEXTILE FABRIC (SEE TABLE)
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) WIDTH TO BE DETERMINED BY TYPICAL SECTION OF STREET CLASSIFICATION
- (I) CLEAN BACKFILL
- (J) SUBGRADE COMPACTED TO A DENSITY OF 100%
- (K) PLANTING STRIP ADJACENT TO MULTI-USE PATH SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

GEOTEXTILE FABRIC SPECIFICATIONS		
	TYPICAL	TEST
TENSILE STRENGTH	200	ASTM D4632-86
ELONGATION AT Break, %	15	ASTM D4632
PUNCTURE STENGTH, LBS.	100	ASTM D0751
MULLEN BURST, PSI	400	ASTM D0751/3786
TRAPEZOID TEAR, LBS.	75	ASTM D4533

NOT TO SCALE

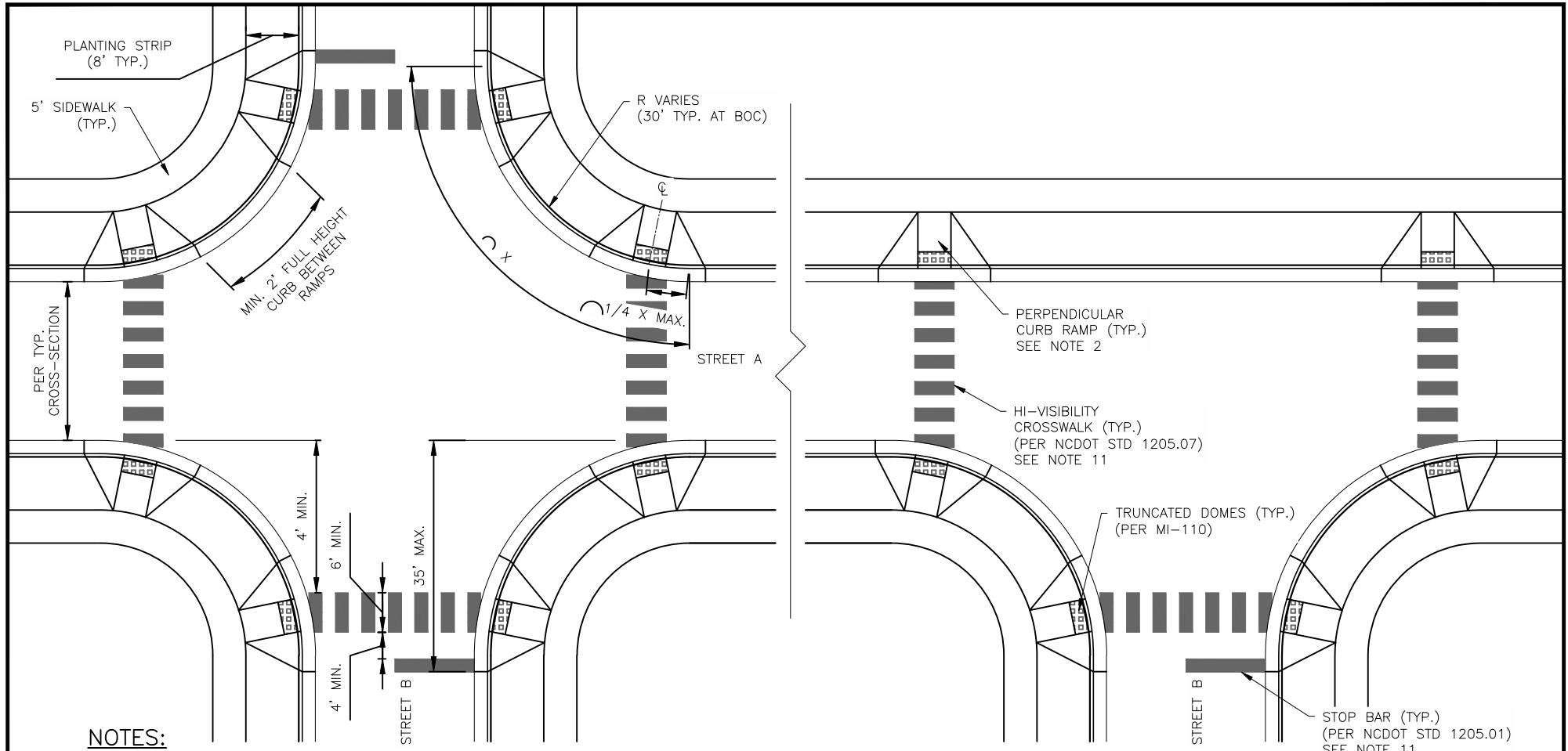


ASPHALT MULTI-USE PATH

3-2022

MI-107

SHEET 1 OF 1



**NOTES:**

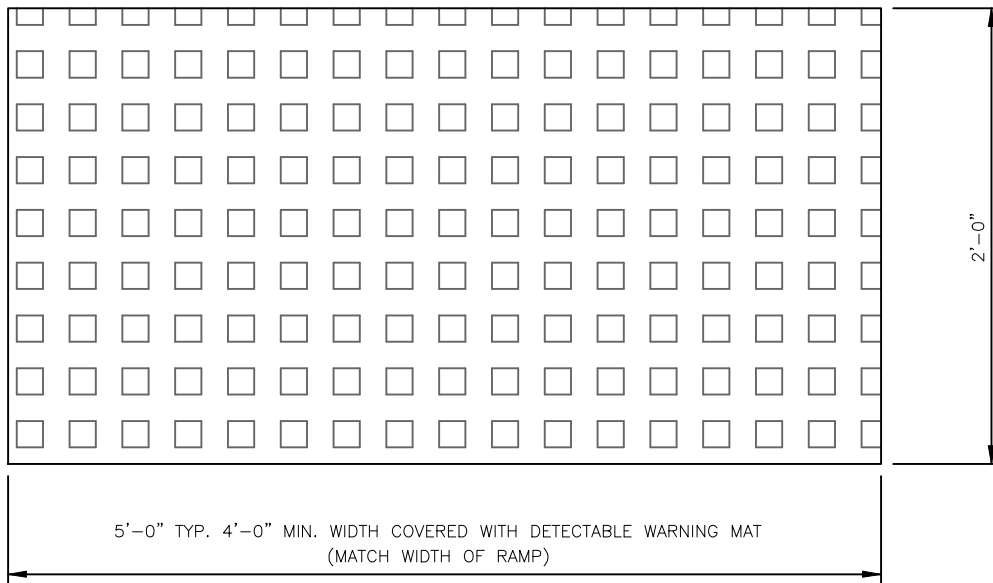
1. ALL RAMP AND SIDEWALK SHALL MEET CURRENT ADA STANDARDS.
2. PERPENDICULAR CURB RAMP PER DETAILS MI-111 AND MI-112 ARE STANDARD, OTHER TYPES WILL BE CONSIDERED ON A CASE BY CASE BASIS.
3. DUAL RAMP AT EACH CORNER ARE STANDARD. SINGLE DIAGONAL RAMP MAY BE CONSIDERED ONLY IN UNUSUAL CIRCUMSTANCES OR RETROFIT SITUATIONS AND MUST MEET ADA STANDARDS.
4. CURB RAMP AND CROSSWALK LOCATIONS AND TYPES AT INTERSECTIONS WITH NCDOT STREETS ARE SUBJECT TO REVIEW AND APPROVAL BY NCDOT.
5. FOR ALL RAMP AT MARKED CROSSWALKS, THE RAMP OPENING (AT THE FULLY DEPRESSED CURB) SHALL BE LOCATED WITHIN THE PARALLEL BOUNDARIES OF CROSSWALK MARKINGS.
6. DRAINAGE STRUCTURES, MAST ARMS, LIGHT POLES AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN LINE WITH RAMP. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF OBSTRUCTIONS EXCEPT WHERE EXISTING OBSTRUCTIONS ARE BEING UTILIZED IN THE NEW CONSTRUCTION.
7. NO UTILITY STRUCTURES MAY BE LOCATED WITHIN THE RAMP AREA.
8. NO PORTION OF A CURB RAMP MAY BE CONTAINED WITHIN A DRIVEWAY, NOR MAY A DRIVEWAY SERVE AS A CURB RAMP.
9. CATCH BASINS MUST BE PLACED APPROPRIATELY WITHOUT INTERFERING WITH THE CURB TRANSITIONS FOR RAMP.
10. WING AND RAMP SURFACES SHALL BE FINISHED IN ACCORDANCE WITH THE LATEST EDITION OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
11. CROSSWALKS AND STOP BARS SHALL BE WHITE THERMOPLASTIC 120 MILS THICK. LOCATIONS WILL BE DETERMINED ON A CASE BY CASE BASIS DURING THE PLAN REVIEW PROCESS.
12. TERMINATE PARKING A MINIMUM OF 20' FROM A PEDESTRIAN CROSSING.

NOT TO SCALE

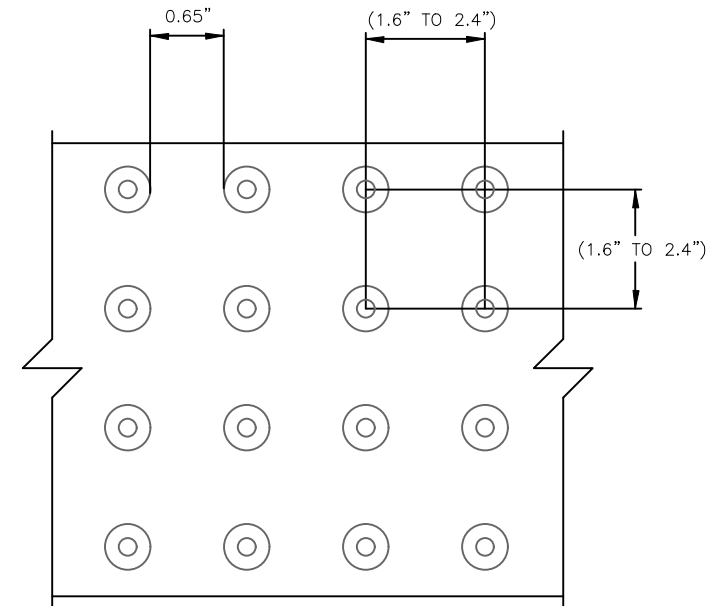


TYPICAL INTERSECTION CURB RAMP LAYOUT  
AND NOTES

3-2022
MI-109
SHEET 1 OF 1



TRUNCATED DOME PLAN VIEW

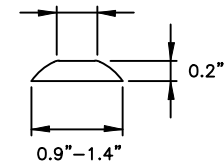


TRUNCATED DOME SPACING

**NOTES:**

1. ALL DETECTABLE WARNING DEVICES USED IN NEW CONSTRUCTION SHALL BE OF A RIGID PRECAST OR EMBEDDED PRODUCT APPROVED BY THE CITY ENGINEER. RETROFIT MATS WILL ONLY BE ALLOWED ON EXISTING RAMPS WITH PRIOR APPROVAL OF THE CITY ENGINEER FOR MATERIAL TYPE AND INSTALLATION (IE. RESURFACING).
2. RAMP AND DETECTABLE WARNING AREA SHALL BE A MINIMUM OF 4 FEET IN WIDTH, BUT NOT LESS THAN THE WIDTH OF SIDEWALK LEADING TO BACK OF RAMP.
3. DETECTABLE WARNING SURFACES SHALL EXTEND 2.0 FT MINIMUM IN THE DIRECTION OF PEDESTRIAN TRAVEL.
4. DETECTABLE WARNING AREA CAN BE PLACED SQUARE WHERE USED IN A CURB RADIUS.
5. THE ROWS OF TRUNCATED DOMES IN DETECTABLE WARNING SURFACES SHOULD BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. WHERE DETECTABLE WARNING SURFACES ARE PROVIDED ON A SURFACE WITH A SLOPE THAT IS LESS THAN 5 PERCENT, DOME ORIENTATION IS LESS CRITICAL.
6. DETECTABLE WARNING AREA SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE; RED COLOR SHALL BE USED.
7. MATS ARE TO BE RIGID WITH TURNED-DOWN EDGES EMBEDDED IN CONCRETE TO ELIMINATE TRIP HAZARD.
8. DIMENSIONS PER NCDOT 848.06

50%-65% OF BASE DIAMETER



TRUNCATED DOME SECTION

NOT TO SCALE



TRUNCATED DOMES

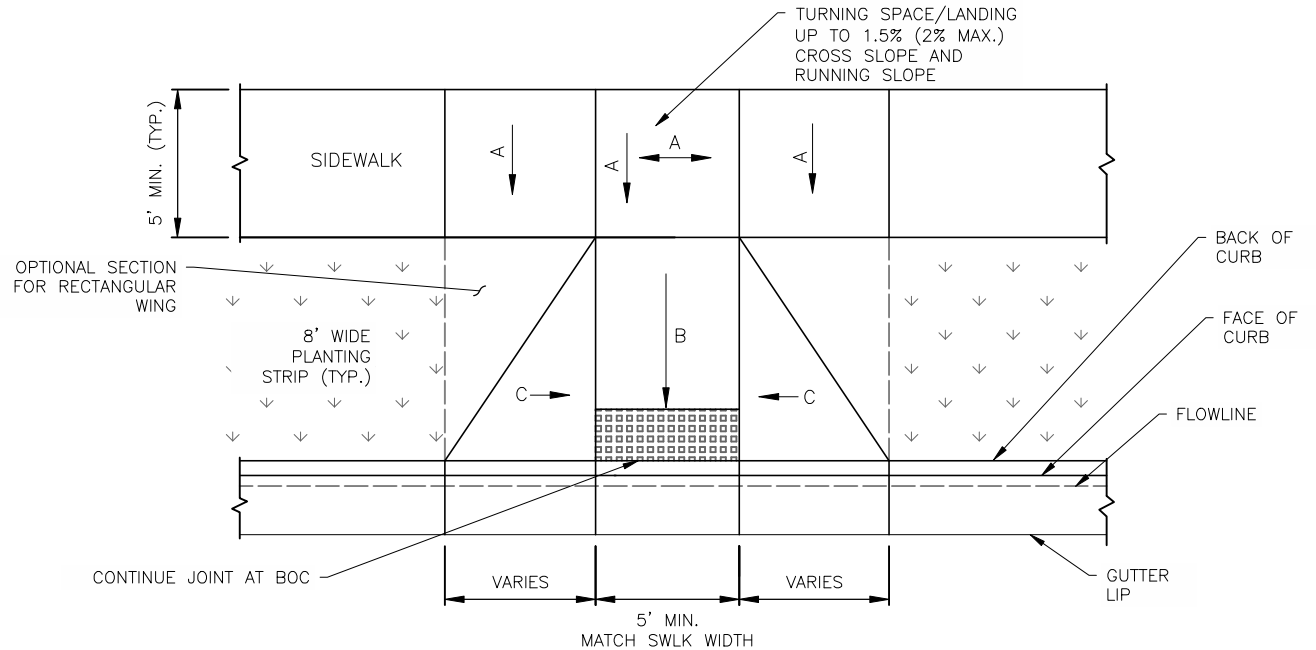
3-2022

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SHEET 1 OF 1

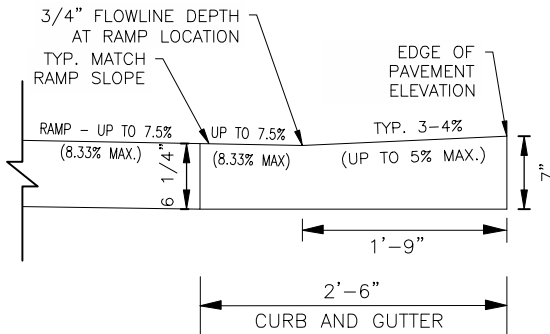
**NOTES:**

1. ALL CONCRETE SHALL BE A MINIMUM OF 3600 PSI.
2. ENSURE FLUSH CONDITIONS AT CURB RAMP TO GUTTER TRANSITION.
3. TYPICALLY, THE SIDEWALK RUNNING SLOPE SHALL NOT EXCEED THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET.
4. MAINTAIN POSITIVE DRAINAGE ALONG THE LIP OF GUTTER IN RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.
5. IF THE SLOPE FROM FLOWLINE TO BACK OF CURB AT RAMP IS LESS THAN 8.33%, THEN THE SLOPE FROM LIP TO FLOWLINE AT RAMP MAY EXCEED 5% AS LONG AS THE ALGEBRAIC DIFFERENCE BETWEEN THESE TWO SLOPES IS LESS THAN 13.33%.
6. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT TYPICALLY WALK ACROSS THE RAMP, THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE, OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.



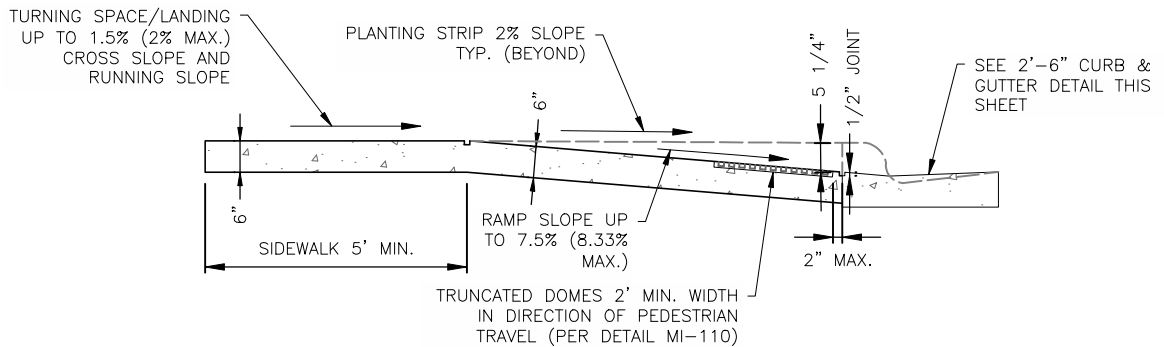
SLOPE "A" = UP TO 1.5% (2.00% MAX)
SLOPE "B" = UP TO 7.5% (8.33% MAX)
SLOPE "C" = UP TO 10% MAX

**PLAN VIEW**



**2'-6" CURB AND GUTTER RAMP DETAIL**

MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT RAMPS



**TYPICAL RAMP SECTION AT CENTERLINE**

NOT TO SCALE



PERPENDICULAR CURB RAMP  
2'-6" CURB & GUTTER

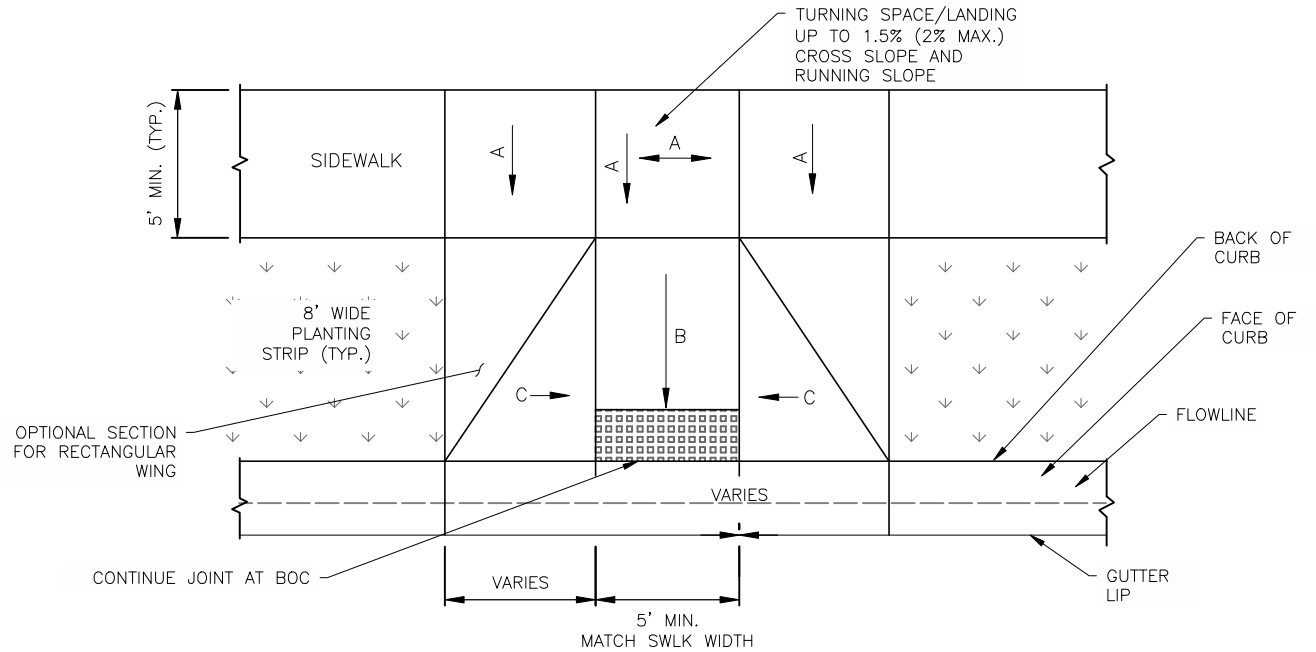
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MI-111

SHEET 1 OF 1

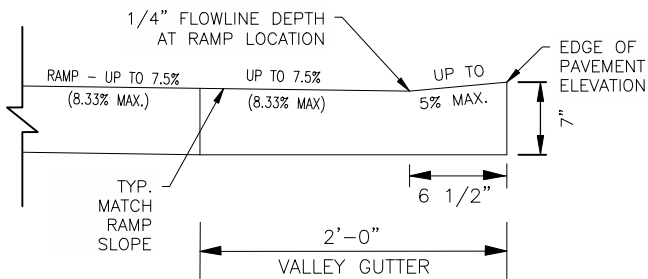
**NOTES:**

1. ALL CONCRETE SHALL BE A MINIMUM OF 3600 PSI.
2. ENSURE FLUSH CONDITIONS AT CURB RAMP TO GUTTER TRANSITION.
3. TYPICALLY, THE SIDEWALK RUNNING SLOPE SHALL NOT EXCEED THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET.
4. MAINTAIN POSITIVE DRAINAGE ALONG THE LIP OF GUTTER IN RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.
5. IF THE SLOPE FROM FLOWLINE TO BACK OF CURB AT RAMP IS LESS THAN 8.33%, THEN THE SLOPE FROM LIP TO FLOWLINE AT RAMP MAY EXCEED 5% AS LONG AS THE ALGEBRAIC DIFFERENCE BETWEEN THESE TWO SLOPES IS LESS THAN 13.33%.
6. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT TYPICALLY WALK ACROSS THE RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.

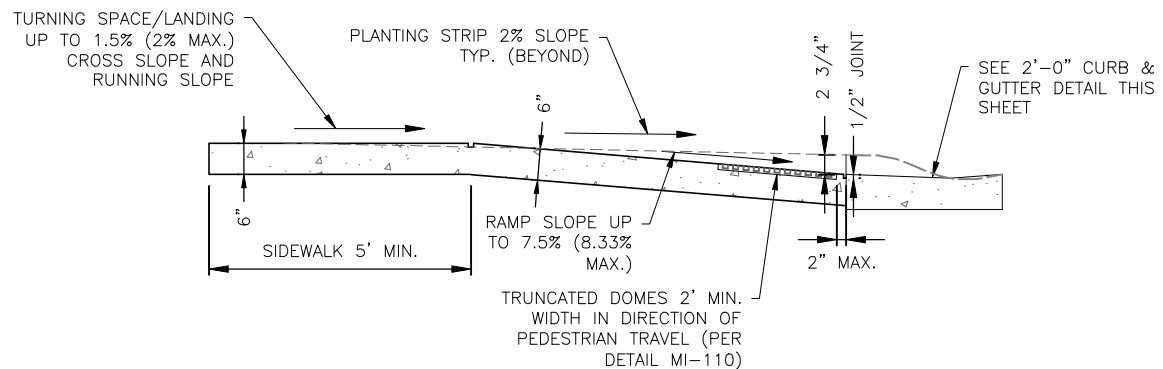


**PLAN VIEW**

SLOPE "A" = UP TO 1.5% (2.00% MAX)
SLOPE "B" = UP TO 7.5% (8.33% MAX)
SLOPE "C" = UP TO 10% MAX



**2'-0" CURB AND GUTTER DETAIL**  
 MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS



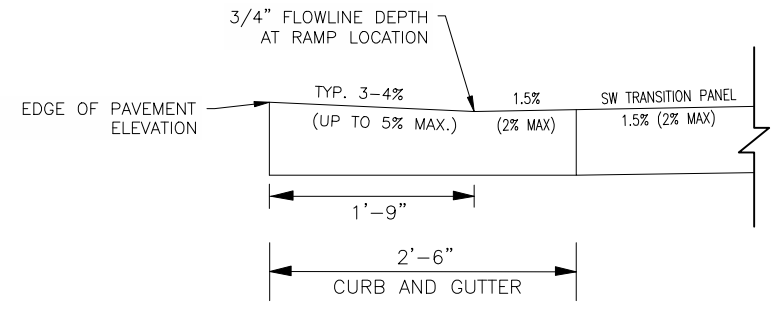
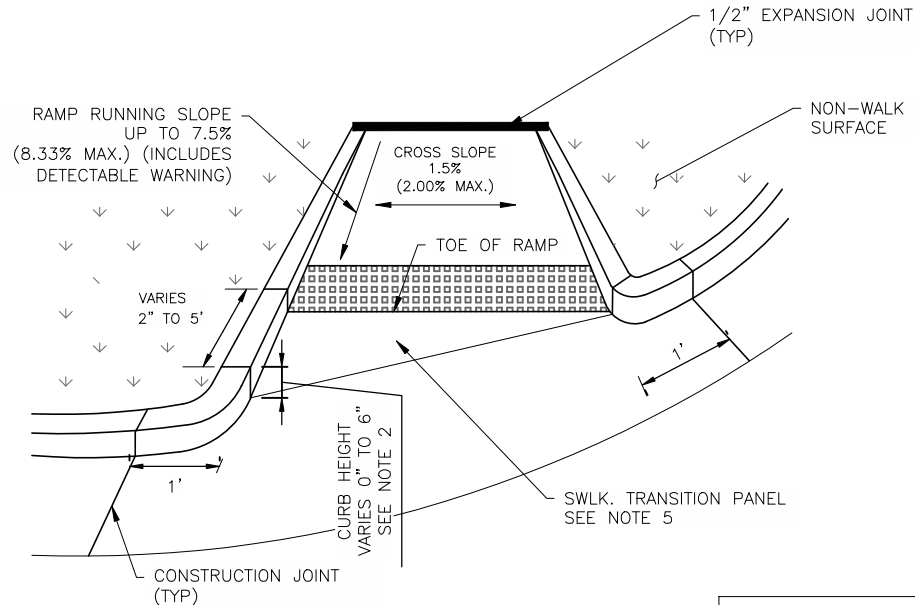
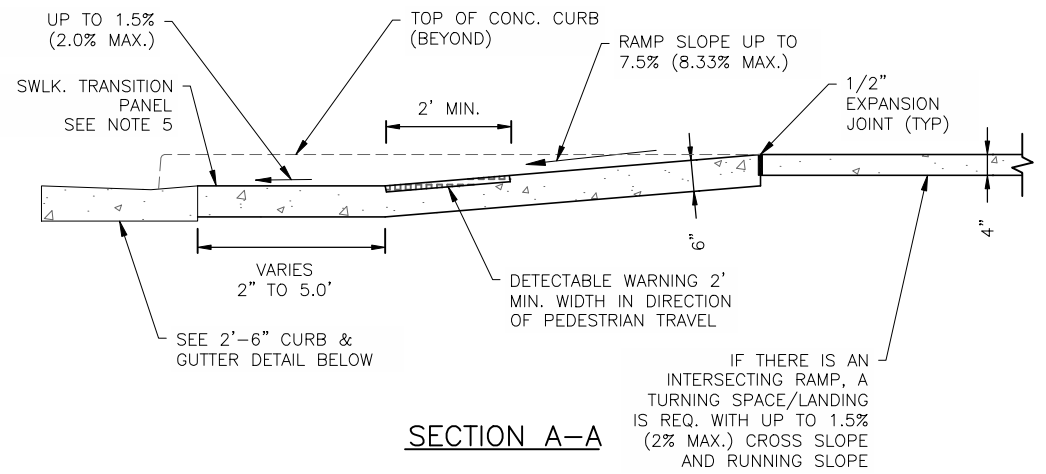
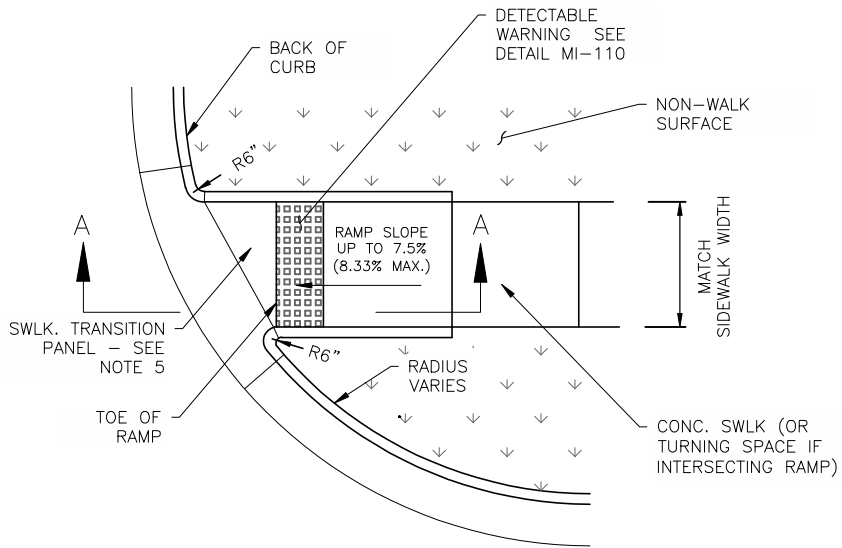
**TYPICAL RAMP SECTION AT CENTERLINE**

NOT TO SCALE



PERPENDICULAR CURB RAMP  
 2'-0" CURB & GUTTER

3-2022
MI-112
SHEET 1 OF 1



**2'-6" CURB AND GUTTER DETAIL**  
**MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS**

- NOTES:**
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
    - 5-FOOT SIDEWALKS WITH CURB RADII OF 35 FEET OR LESS
    - 6-FOOT SIDEWALKS WITH CURB RADII OF 30 FEET OR LESS
    - 8-FOOT SIDEWALKS WITH CURB RADII OF 25 FEET OR LESS
  - DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
  - ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
  - ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
  - SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.

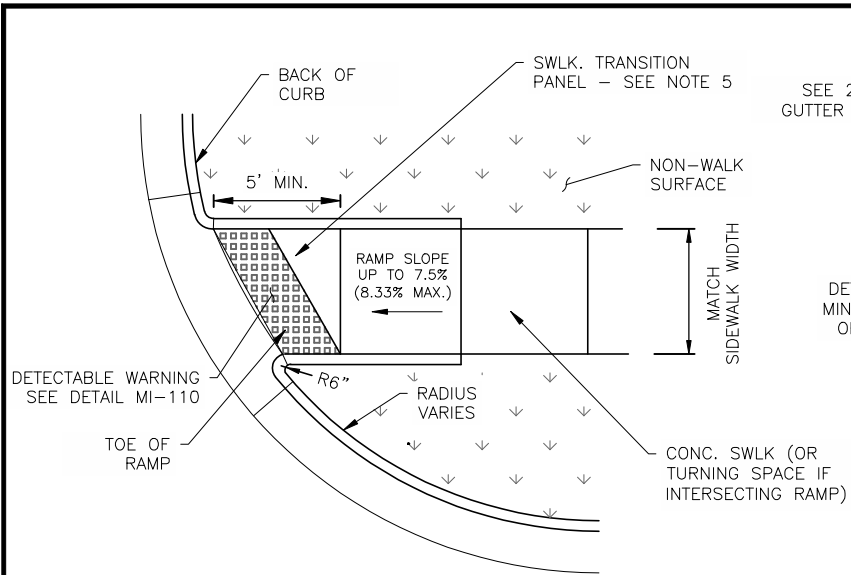
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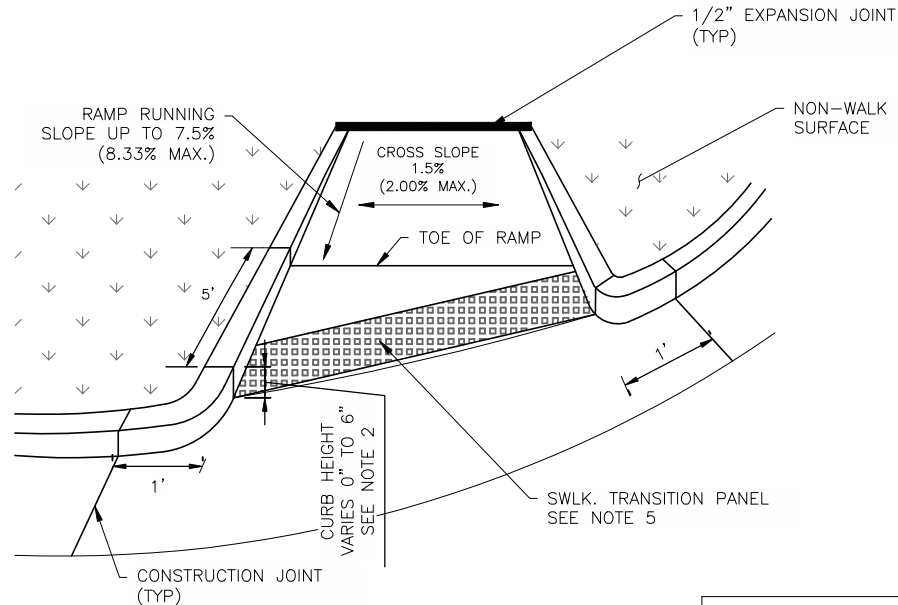
DIRECTIONAL CURB RAMP  
 SMALL/MEDIUM CURB RADII

3-2022
MI-113
SHEET 1 OF 1



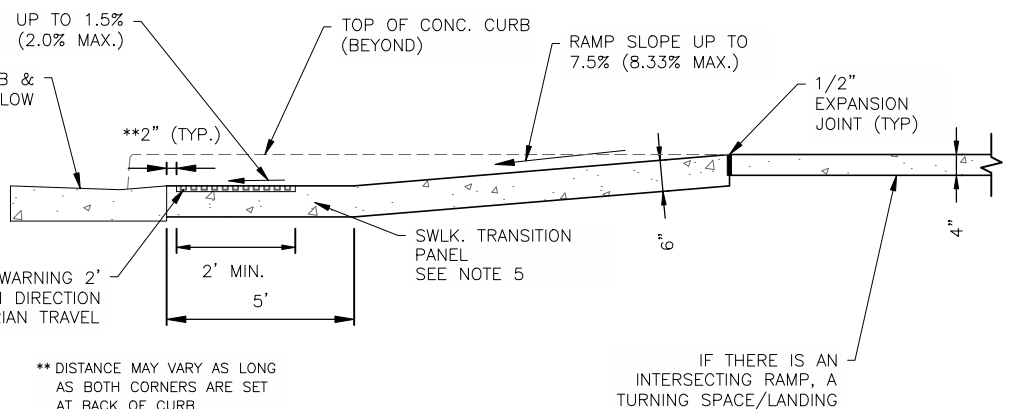


PLAN

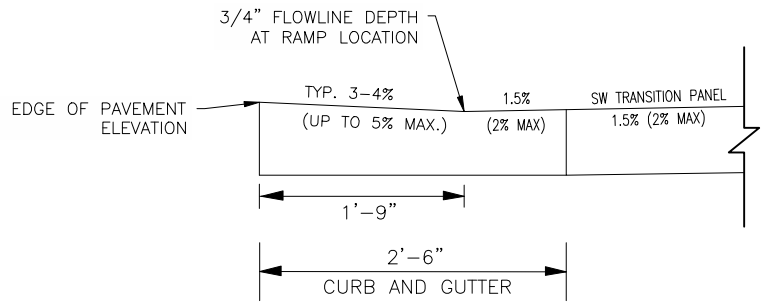


PERSPECTIVE

THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.



SECTION A-A



2'-6" CURB AND GUTTER DETAIL

MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS

NOTES:

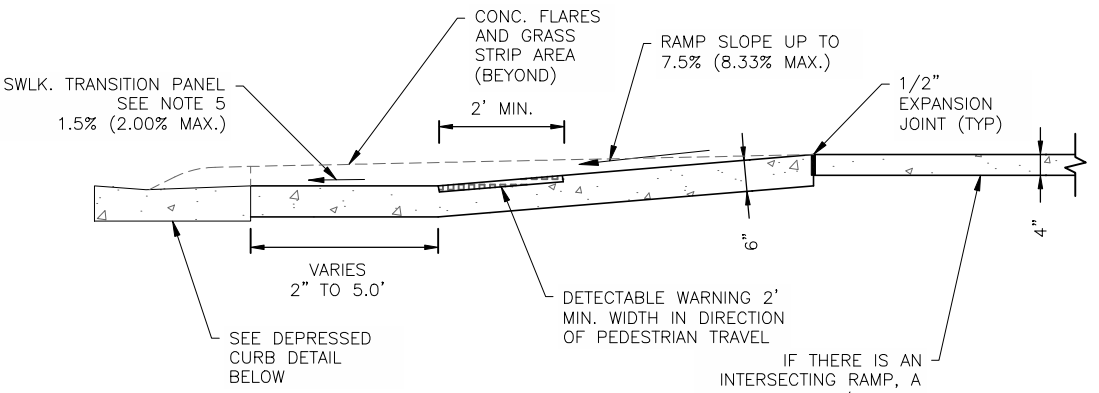
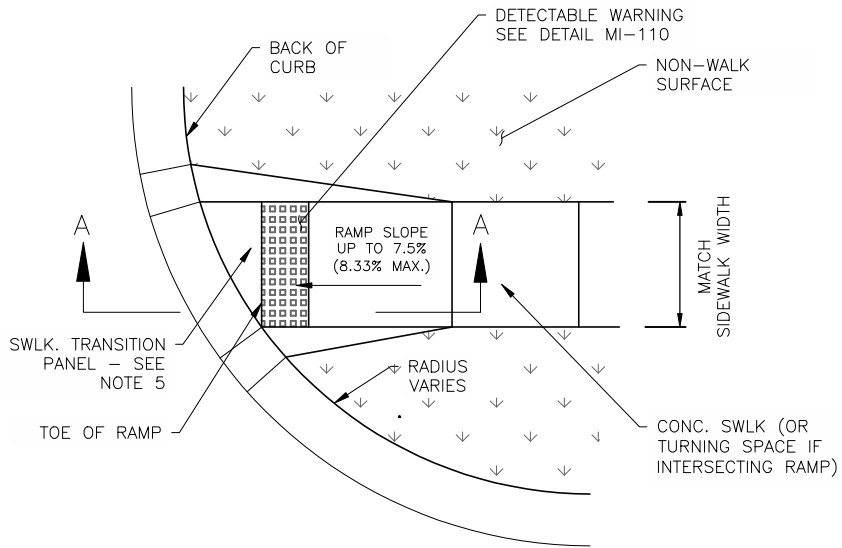
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
  - 5-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 35 FEET
  - 6-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 30 FEET
  - 8-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 25 FEET
- DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
- ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
- ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
- SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

NOT TO SCALE

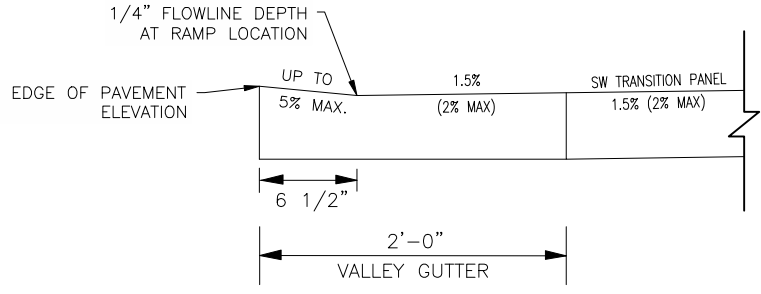
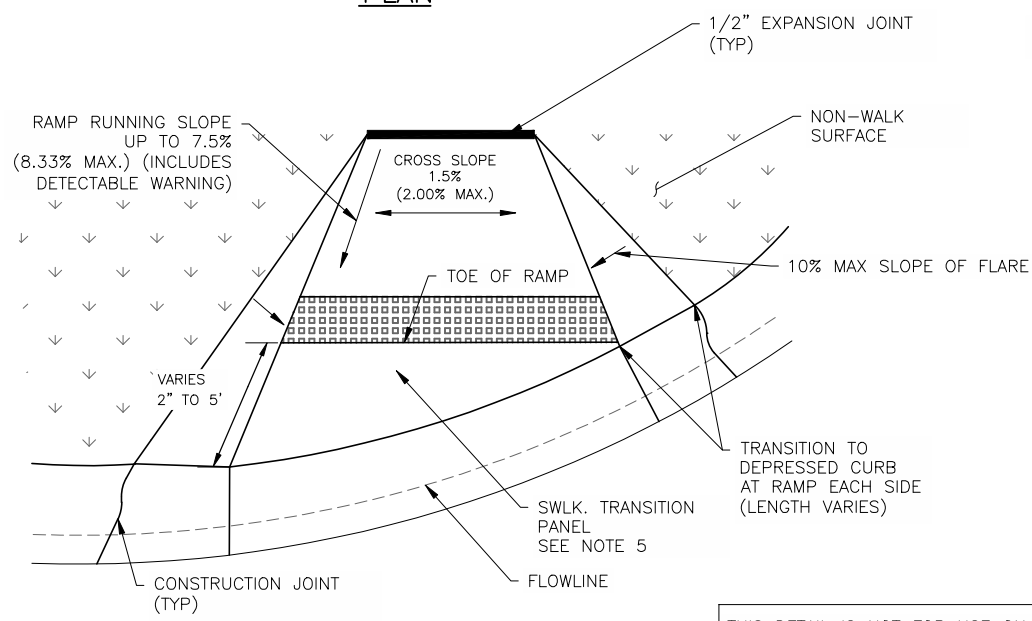


DIRECTIONAL CURB RAMP  
LARGE CURB RADIUS

3-2022  
MI-114  
SHEET 1 OF 1



IF THERE IS AN INTERSECTING RAMP, A TURNING SPACE/LANDING IS REQ. WITH UP TO 1.5% (2% MAX.) CROSS SLOPE AND RUNNING SLOPE



**2'-0" CURB AND GUTTER DETAIL**  
**MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS**

- NOTES:**
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
    - 5-FOOT SIDEWALKS WITH CURB RADII OF 35 FEET OR LESS
    - 6-FOOT SIDEWALKS WITH CURB RADII OF 30 FEET OR LESS
    - 8-FOOT SIDEWALKS WITH CURB RADII OF 25 FEET OR LESS
  - DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
  - ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
  - ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
  - SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.

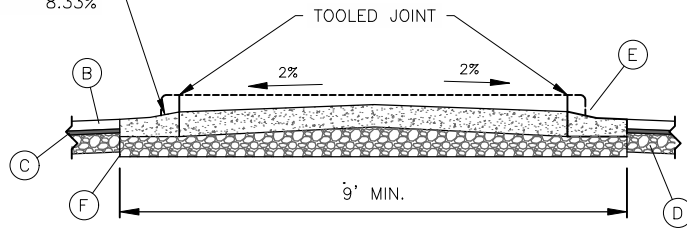
NOT TO SCALE



DIRECTIONAL CURB RAMP  
 VALLEY CURB

3-2022  
 MI-115  
 SHEET 1 OF 1

SLOPE ON DEPRESSED CURB  
AT DOMES CANNOT EXCEED  
8.33%



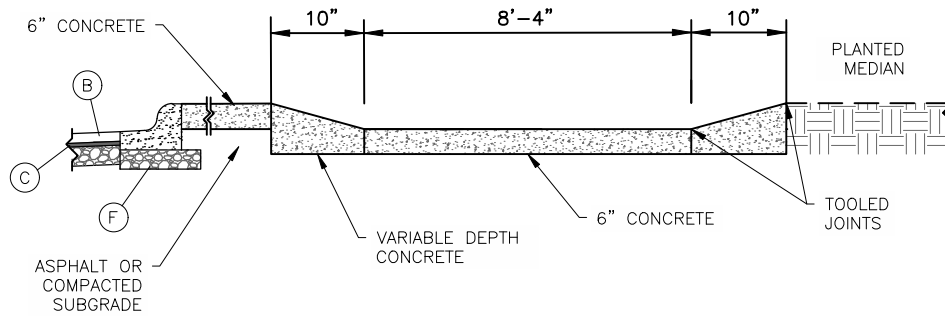
SECTION A-A

NOTES:

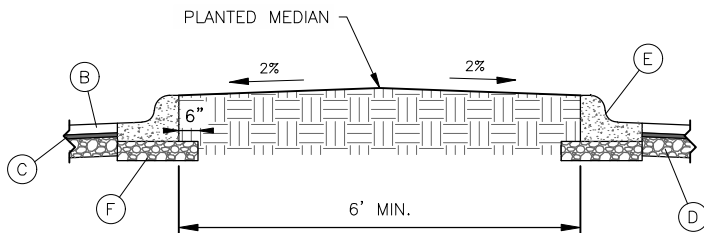
1. THIS DETAIL MAY BE USED ON NCDOT-MAINTAINED STREETS ONLY WITH APPROVAL FROM NCDOT.
2. ENSURE PEDESTRIAN PASS-THRU HAS ADEQUATE SLOPE DRAINAGE AND DOES NOT POND WATER.
3. THIS DETAIL MAY BE USED TO PROVIDE A PEDESTRIAN REFUGE PASS-THRU IN AN EXISTING MEDIAN WITH 1'-6" CURB & GUTTER.
4. FOR 1'-6" CURB AND GUTTER, USE CONCORD STANDARD MI-101 FOR CITY STREETS OR NCDOT 846.01 FOR NCDOT STREETS.
5. NCDOT REQUIRES 1' OFFSET FROM EDGE OF PAVEMENT ALONG CURBLINE TO LANE LINE.
6. ALL JOINTS IN THE ISLAND MUST BE SEALED PER APPROPRIATE STANDARD.
7. USE "QWICK KURB L104 REFLECTIVE YELLOW PADDLE" OR EQUIVALENT.
8. CONCORD STANDARD MISC-201 TO BE FOLLOWED IF MEDIAN IS BEING INSTALLED IN EXISTING PAVEMENT.

KEY

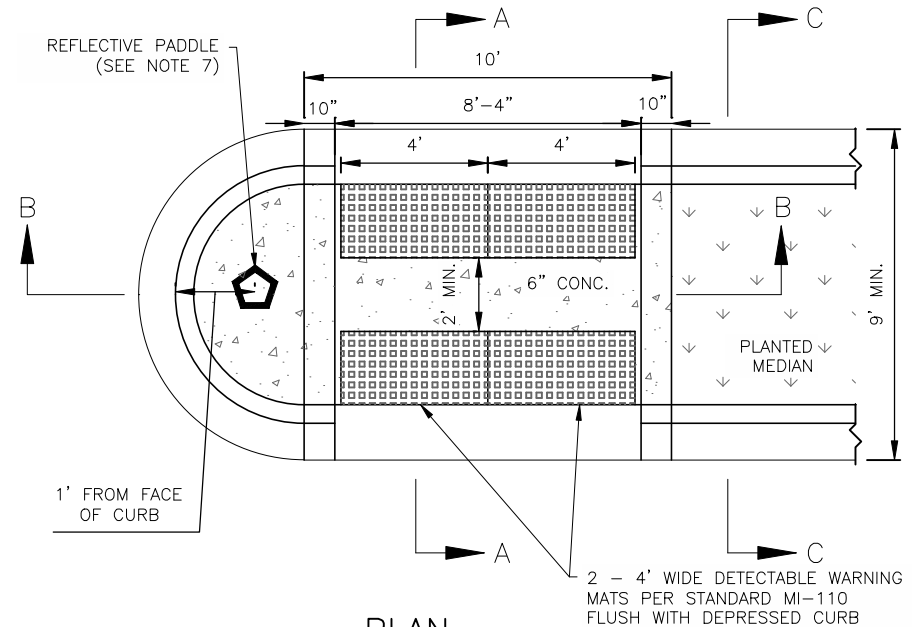
- (B) SURFACE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (C) INTERMEDIATE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (D) BASE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (E) 1'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE



SECTION B-B



SECTION C-C



PLAN

NOT TO SCALE

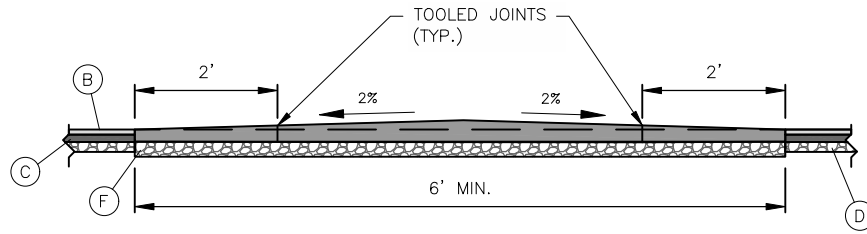


PEDESTRIAN REFUGE  
(1'-6" CURB & GUTTER)

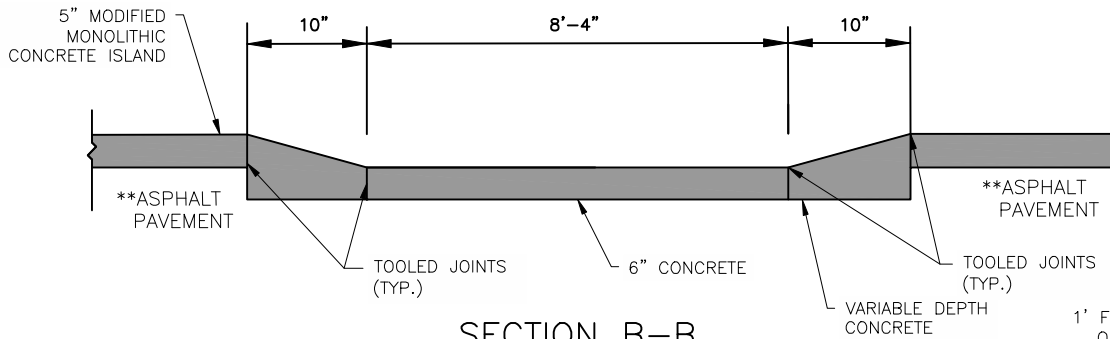
3-2022

MI-116

SHEET 1 OF 1

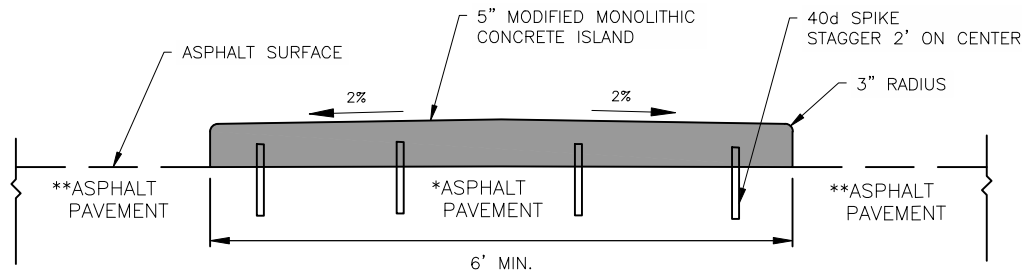


SECTION A-A



SECTION B-B

\*\* ASPHALT PAVEMENT PER APPROPRIATE TYPICAL CROSS SECTION STANDARD



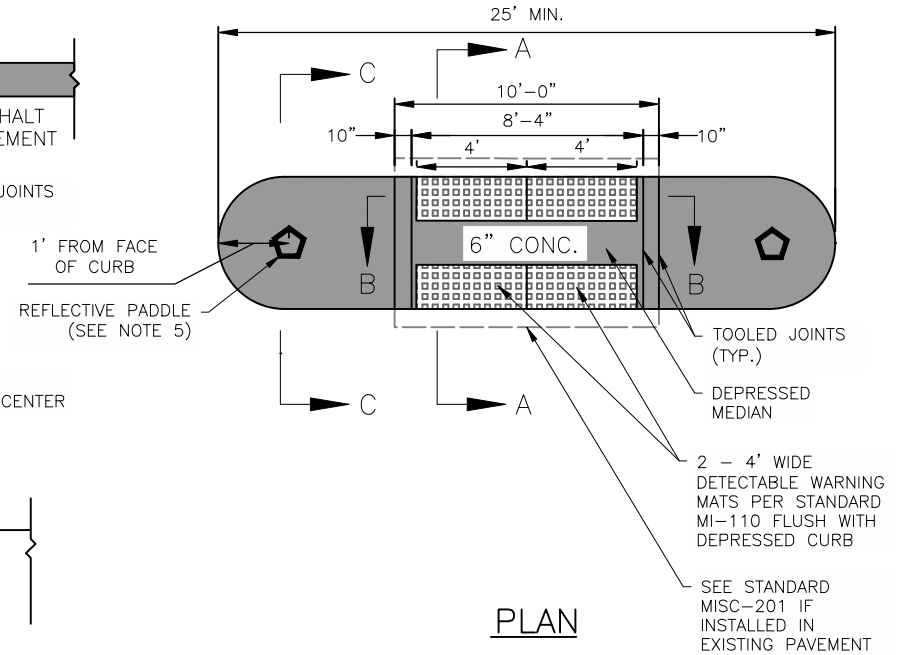
SECTION C-C

NOTES:

1. THIS DETAIL MAY BE USED ON NCDOT-MAINTAINED STREETS ONLY WITH APPROVAL FROM NCDOT.
2. ENSURE PEDESTRIAN PASS-THRU HAS ADEQUATE SLOPE DRAINAGE AND DOES NOT POND WATER.
3. NCDOT REQUIRES 1' OFFSET FROM EDGE OF PAVEMENT ALONG CURBLINE TO LANE LINE.
4. ALL JOINTS IN THE ISLAND MUST BE SEALED PER APPROPRIATE STANDARD.
5. USE "QWICK KURB L104 REFLECTIVE YELLOW PADDLE" OR EQUIVALENT.
6. CONCORD STANDARD MISC-201 TO BE FOLLOWED IF MEDIAN IS BEING INSTALLED IN EXISTING PAVEMENT.

KEY

- (B) SURFACE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (C) INTERMEDIATE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (D) BASE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (E) 1'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE



PLAN

NOT TO SCALE



PEDESTRIAN REFUGE  
(MONOLITHIC CONCRETE)

3-2022

MI-117

SHEET 1 OF 1

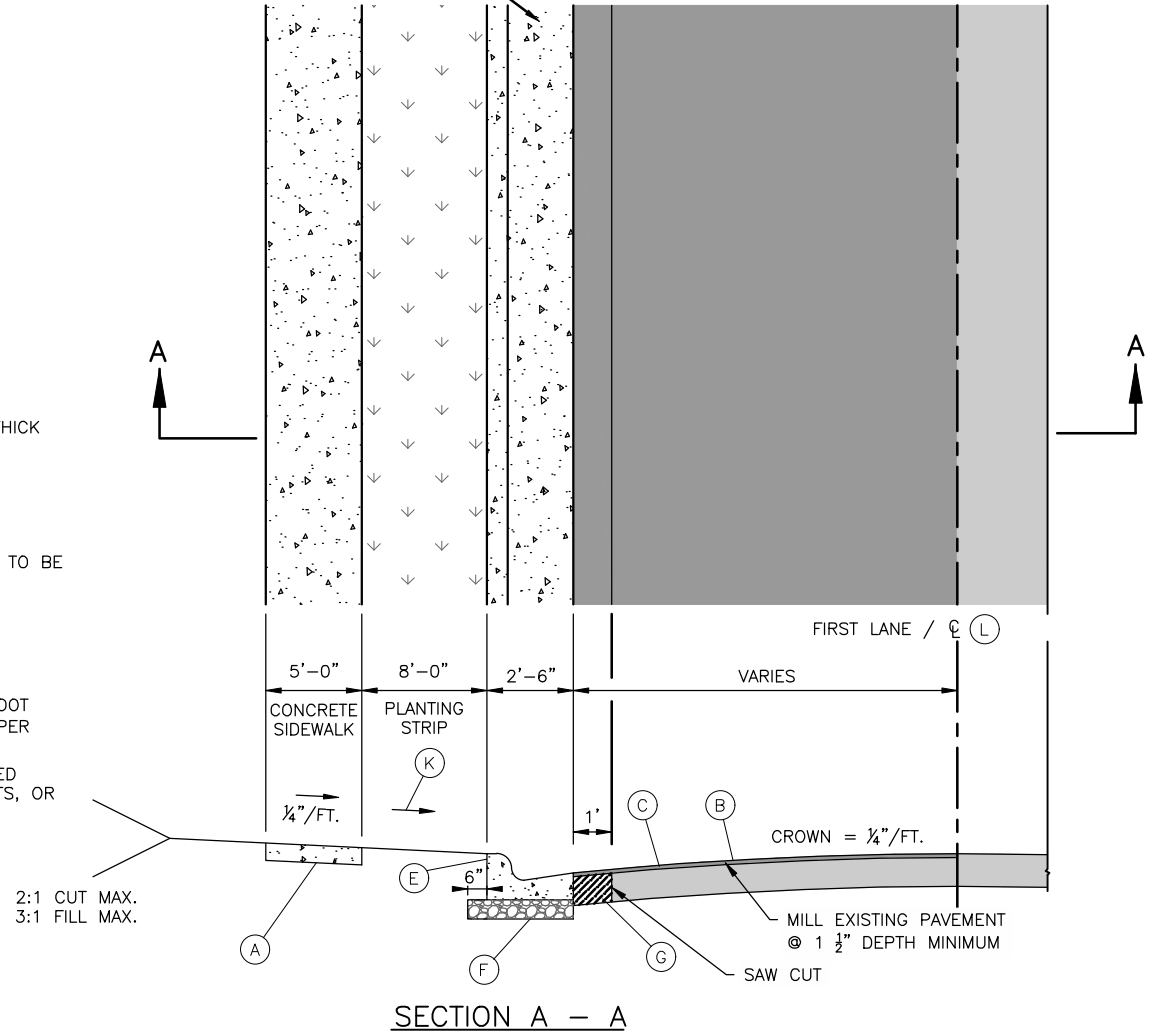
**NOTES:**

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

**KEY**

- (A) 4" SIDEWALK  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) EXISTING PAVEMENT
- (C) MIN. 1 1/2" S 9.5B SURFACE COURSE\*
- (E) 2'-6" STANDARD CURB AND GUTTER SHOWN, APPROPRIATE CURB & GUTTER TO BE DETERMINED BASED ON STREET CLASSIFICATION
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) MIN. 8" I-19.0C\*\*
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (L) MILLING LIMITS SHOULD BE TO EITHER THE CENTERLINE OF 2 LANE UNDIVIDED STREETS, TO THE OPPOSITE EDGE OF PAVEMENT ON 2 LANE DIVIDED STREETS, OR TO THE FULL WIDTH OF THE FIRST LANE FOR MULTI-LANE STREETS.

REPLACE EXISTING GRANITE/EXTRUDED CURB WITH CONCRETE CURB & GUTTER



NOT TO SCALE



CURB & GUTTER REMOVAL / REPLACEMENT

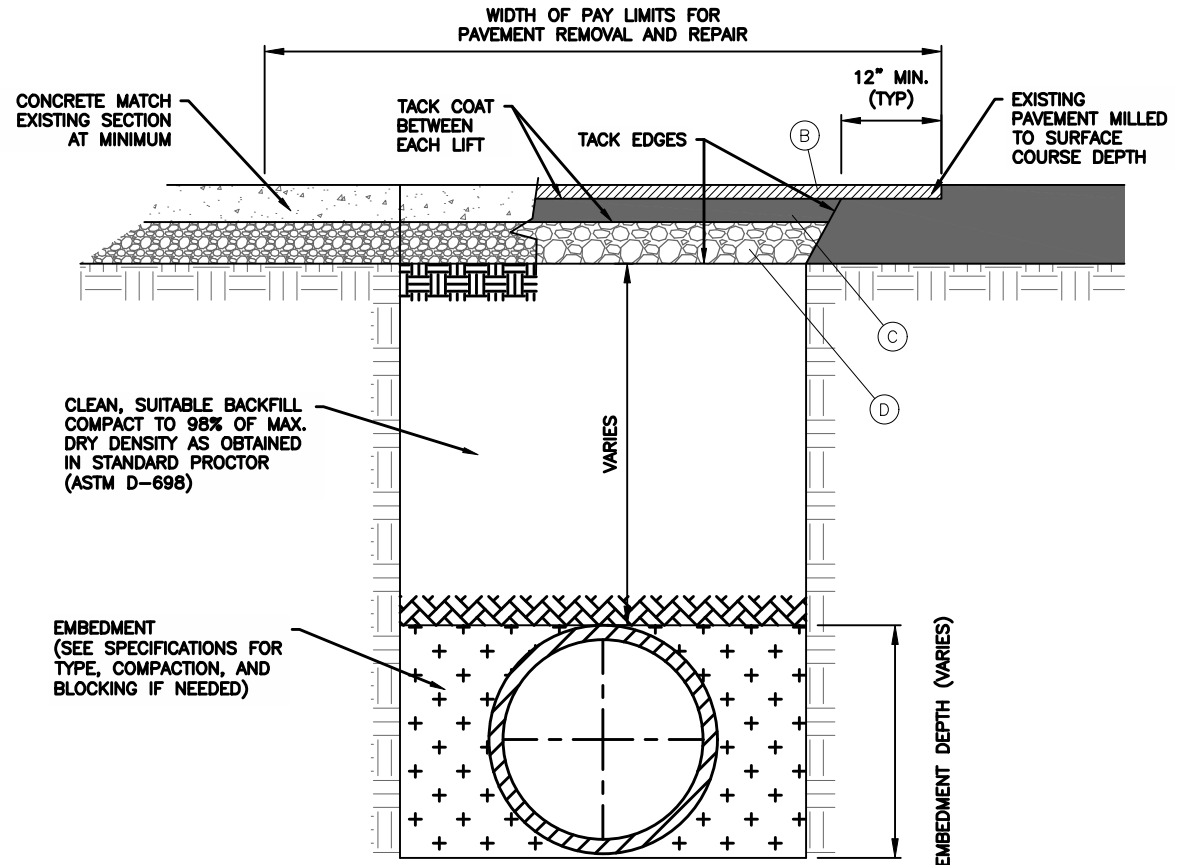
3-2022  
MISC-201  
SHEET 1 OF 1

**NOTES:**

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

**KEY**

- (B) SURFACE COURSE MATCH EXISTING | S9.5B (MIN. 2 1/2")
- (C) INTERMEDIATE COURSE MATCH EXISTING | I-19.0C (MIN. 2 1/4")
- (D) BASE COURSE MATCH EXISTING/PROPOSED | B25.0C COMPACTED SUBGRADE (MIN. 8")

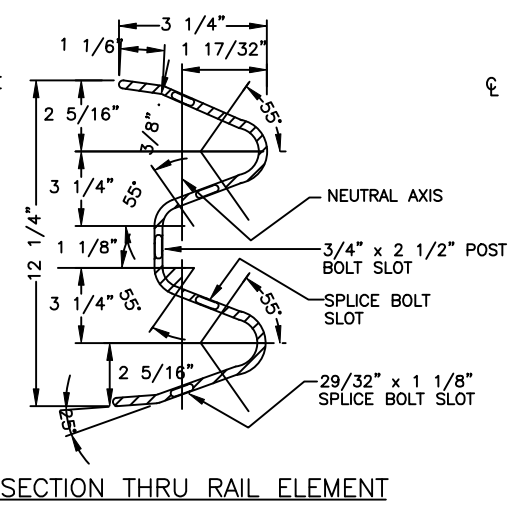
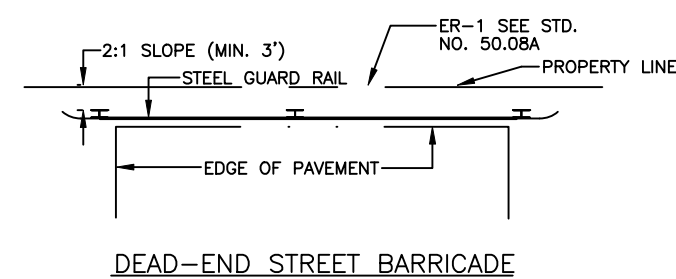
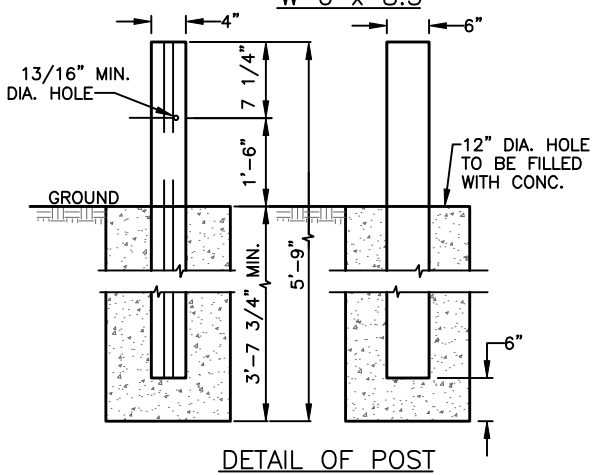
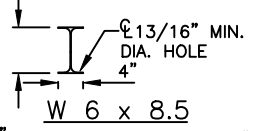
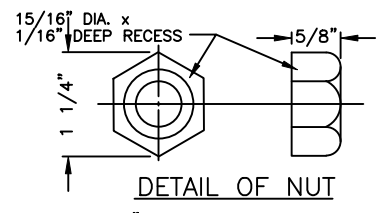
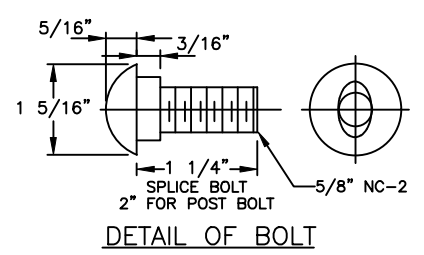
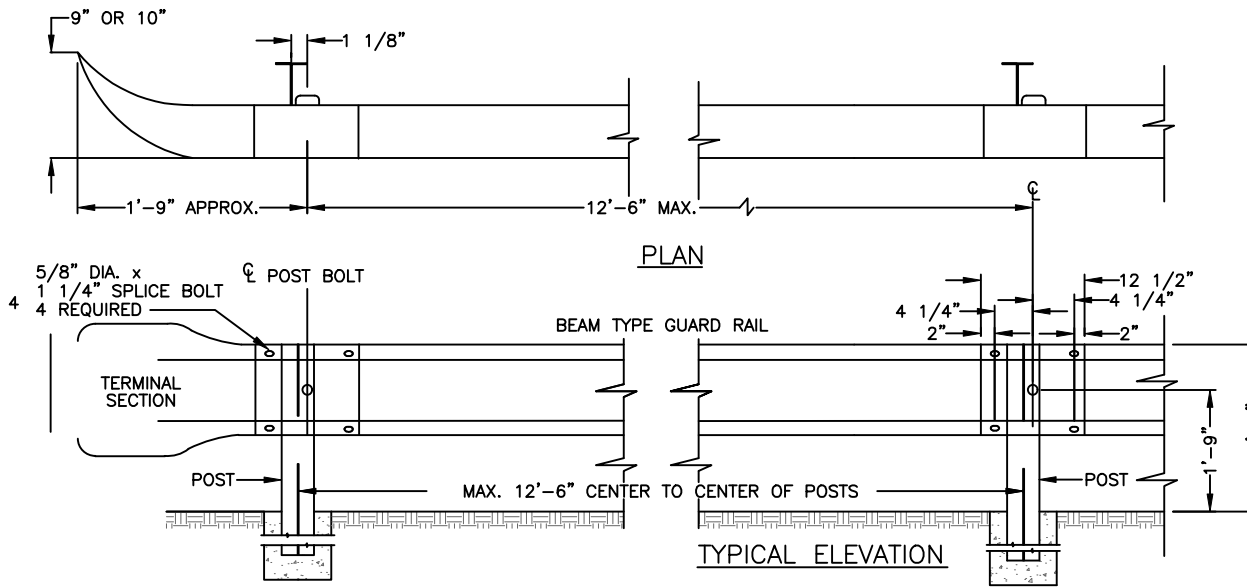


NOT TO SCALE

UTILITY CUT REPLACEMENT DETAIL



3-2022  
MISC-202  
SHEET 1 OF 1



**NOTE**  
 THIS DETAIL IS NOT A GUARDRAIL DETAIL. FOR  
 ROADSIDE GUARDRAIL, SEE NCDOT STANDARD  
 DRAWINGS 862.01-862.04.

NOT TO SCALE



# END OF ROAD BARRICADE

3-2022
MISC-203
SHEET 1 OF 2

GENERAL NOTES:

1. STEEL BEAM TYPE GUARD RAILS SHALL BE INSTALLED AT THE END OF ALL DEAD-END STREETS, EXCEPT CUL-DE-SAC STREETS WHICH HAVE BEEN IMPROVED WITH A PERMANENT TURN-AROUND.
2. FOR STREETS 26' IN WIDTH THE GUARD RAIL SHALL CONSIST OF TWO(2) 12'-6" SECTIONS OR ONE(1) 25' SECTION, THREE (3) STEEL POSTS, AND TWO (2) TERMINAL SECTIONS. FOR STREETS GREATER THAN 25' IN WIDTH THE GUARD RAIL SHALL SPAN THE ENTIRE WIDTH OF THE STREET.
3. GUARD RAIL SHALL CONSIST OF RAIL ELEMENTS FABRICATED TO DEVELOP CONTINUOUS BEAM STRENGTH AND INSTALLED AS SHOWN.
4. MINIMUM THICKNESS OF GUARD RAIL SHALL BE 12 GAGE U.S. STANDARD. THE RAIL ELEMENT INCLUDING SPLICES, SHALL HAVE A MINIMUM ULTIMATE TENSILE STRENGTH OF 80,000 LBS. GUARD RAIL PARTS FURNISHED SHALL BE INTERCHANGEABLE WITH SIMILAR PARTS REGARDLESS OF THE SOURCE OF MANUFACTURER. THE HOLES FOR CONNECTING BOLTS SHALL BE PUNCHED OR DRILLED, BURNING WILL NOT BE PERMITTED.
5. THE GUARD, BOLTS, NUTS, STEEL POSTS. AND ALL OTHER METAL PARTS SHALL BE GALVANIZED TO CONFORM TO THE REQUIREMENTS FOR THE COATING CLASS, (2.50 OUNCES PER SQUARE FOOT) OF THE CURRENT SPECIFICATIONS FOR ZINC-COATED (GALVANIZED) IRON, AND STEEL SHEETS, COILS, AND CUT LENGTHS, IN ACCORDANCE WITH ASTM 123A.
6. IF THE AVERAGE SPELTER COATING AS DETERMINED FROM THE REQUIRED SAMPLES IS LESS THAN TWO (2) OUNCES OF SPELTER PER SQUARE FOOT, OR IF ANY ONE SPECIMEN HAS LESS THAN 1.8 ONCES OF SPELTER PER SQUARE FOOT OF DOUBLE EXPOSED SURFACE, THE LOT SAMPLED SHALL BE REJECTED, THE FINISHED SHEETS SHALL BE OF FIRST CLASS COMMERCIAL QUALITY, FREE FROM INJURIOUS DEFECTS, SUCH AS BLISTERS, FLUX, AND UNCOATED SPOTS.
7. THE GUARD RAIL SHALL BE INSPECTED TO DETERMINE THAT THE MATERIAL, DIMENSIONS, AND WORKMANSHIP ARE IN ACCORDANCE WITH THIS PLAN.
8. WHERE A DEAD-END STREET REQUIRES A BARRICADE, END OF ROADWAY MARKER SIGNS SHALL ALSO BE REQUIRED. (SEE STD. MISC-204).

NOT TO SCALE

END OF ROAD BARRICADE



3-2022

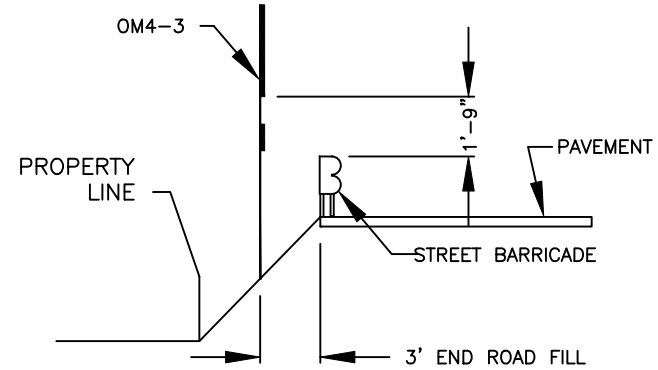
MISC-203

SHEET 2 OF 2

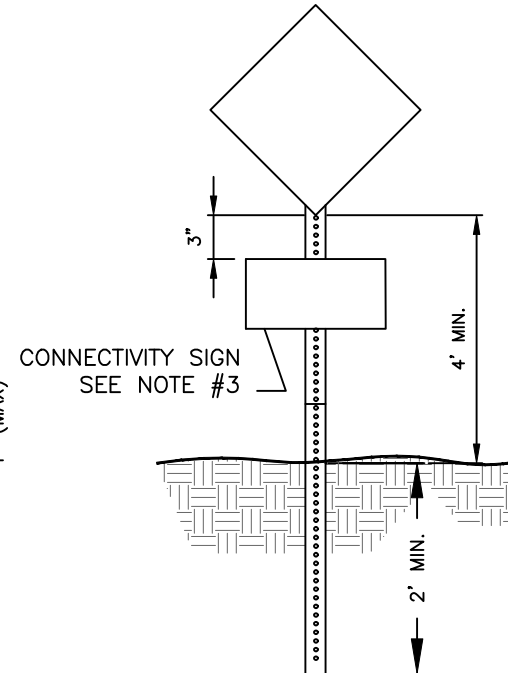
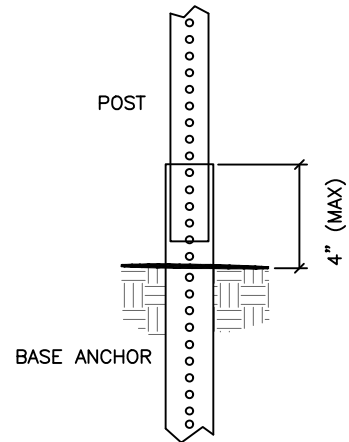
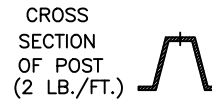


**NOTES:**

1. WHEN A DEAD-END OR STUBBED STREET REQUIRES A BARRICADE, END-OF-ROADWAY MARKER SIGNS (OM4-3, 24"x24", SOLID RED) SHALL BE PROVIDED.
2. SIGNS ARE TO BE PLACED BEHIND THE BARRICADE (SEE DETAIL MISC-203), EVENLY SPACED WITH ONE SIGN PLACED AT THE CENTERLINE LOCATION AND ADDITIONAL SIGNS AT 6' O.C. (MINIMUM OF 3 SIGNS, MAXIMUM OF 5 SIGNS).
3. WHEN BARRICADE IS USED ON A STREET STUB, THE SIGN AT THE CENTERLINE SHALL BE SUPPLEMENTED WITH A STREET CONNECTIVITY SIGN. SEE DETAIL MISC-205.
4. ALL SIGNS/MARKERS SHALL MEET OR EXCEED MUTCD STANDARDS FOR RETROREFLECTIVITY.



SIGN LOCATION DETAIL



NOT TO SCALE

END OF ROAD MARKER

3/4" OUTSIDE RADIUS (TYP.)

1/2" WIDE WHITE BORDER

1/4" INSIDE RADIUS (TYP.)

FUTURE DEVELOPMENT  
WILL EXTEND  
THIS STREET

GREEN BACKGROUND

WHITE TEXT (TYP.)

2" (TYP.)

12"

24"

**NOTES:**

1. SIGN SHALL MEET OR EXCEED MUTCD STANDARDS FOR RETROREFLECTIVITY
2. SIGN MATERIAL SHALL BE 0.080" THICK ALUMINUM
3. ALL LETTERS SHALL BE SERIES B-2000 FROM THE 2004 STANDARD HIGHWAY SIGNS MANUAL (AND ANY REVISION THERETO) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

NOT TO SCALE



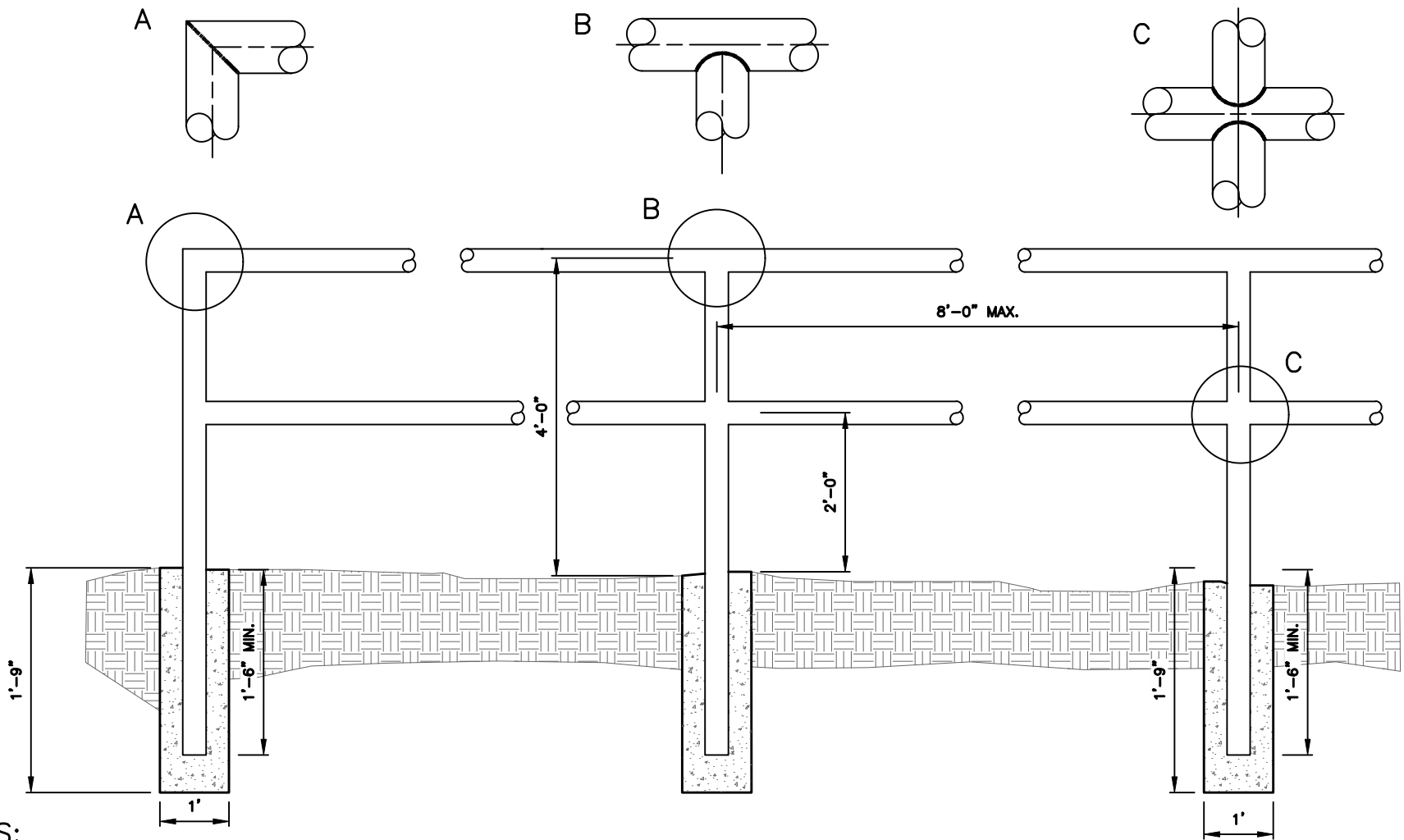
END OF STREET  
FUTURE DEVELOPMENT SIGN

3-2022

MISC-205

SHEET 1 OF 1





**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
2. TYPE OF PIPE TO BE USED IS 1-5/8" MAX. O.D. BLACK IRON, LOW CARBON PIPE OR GALVANIZED.
3. ALL JOINTS TO HAVE A 1/2" FILLET WELD AT ALL JOINTS.
4. PAINT ASSEMBLY AFTER INSTALLATION WITH BLACK ALL WEATHER ENAMEL.
5. SEE STD. MISC-206 SHEET 1 FOR WARRANTS

NOT TO SCALE



SAFETY RAIL & WARRANTS

3-2022
MISC-206
SHEET 2 OF 2

# **City of Concord**

## **Technical Standards Manual**

### **Article II**

### **Streets & Pedestrian Paths**



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**APPENDICES**

- APPENDIX A – Application for New Street Maintenance Acceptance
- APPENDIX B – PE Certification for Subdivisions and Streets
- APPENDIX C – Private Street Maintenance Acceptance Petition



## 1.0 Purpose

The purpose of this Article is to protect the safety of the traveling public in the City and to create a quality street network that will not require pre-mature maintenance. All public streets inside the municipal limits of the City must be constructed in conformance with City standards and specifications. If any conflicts arise between a City and North Carolina State Highway Commission standard, the more restrictive standard will apply.

- 1.1. The Director of Transportation, in consultation with other City departments and state agencies, may allow modifications to the design criteria. Modifications to the design criteria:
  - a. Must be based on sound engineering principles and practices,
  - b. Must not create an unsafe or hazardous situation,
  - c. Must be equivalent to the efficiency, functionality, durability, structural integrity, and long-term maintenance of the minimum criteria in this Article.
  - d. Classifications must be in conformance with the current City of Concord Transportation Plan.
- 1.2. The Director of Transportation is authorized to require studies or other pertinent information to help support or justify the modification.

## 2.0 Basic Design Considerations

Streets must be designed to accommodate the volume and type of traffic they are intended to serve and the geometry of the landscape on which they will be located.

- 2.1. A selection of standard details is provided in the City of **Concord Manual of Standard Details** to be used in conjunction with this Article. In the event of a conflict between the standard details and the provisions of this Article, the strictest standard will apply.
- 2.2. **Traffic Volumes.** The Average Daily Traffic (ADT) volume is a measurement of the users' demand for a street. ADT is defined as the total volume during a given time period (in whole days), greater than 1 day and less than 1 year, divided by the number of days in that time period. The current ADT volume for a street can be readily determined when continuous traffic counts are available. When only periodic counts are taken, the ADT volume can be estimated by adjusting the periodic counts according to such factors as the season, month, or day of the week. If the ADT of a street is unknown, traffic count studies may be required to determine the design volume.
- 2.3. **Functional Classifications.** Individual streets do not serve travel independently of one another. Most vehicular travel involves movement through a network of streets. Therefore, the functional classification of a street must be determined before design criteria can be established for any proposed improvement. Functional classifications are based on the nature of the services streets are intended to provide, combined with the proposed layout and location of new streets. Known or estimated Average Daily Traffic (ADT) may be used to determine whether a street needs a higher classification than that based solely on function. Table 2-1 identifies some general characteristics of each street classification. To verify the functional classification of existing streets in the City's transportation service area, please refer to the City's Transportation Plan. For the purposes of the City's

ordinances and these technical standards, the highest classification for the same street between that of the City or the NCDOT shall be used to determine the appropriate standards which apply. *Functional classifications for proposed streets must be approved by the Director of Transportation prior to the final design of roadway layouts and preliminary plats.*

**Table 2-1: Functional Classifications.**

<b>Classification</b>	<b>Function</b>
Freeway or Expressway	Serves substantial statewide or interstate travel and exists solely to serve vehicular traffic; does not serve pedestrian and bicycle traffic
Major Thoroughfare (Includes Boulevard)	Provides for expeditious movement of high volumes of traffic within and through urban areas
Minor Thoroughfare	Collects traffic from local streets and collectors and carries it to the major thoroughfare system; supplements the major thoroughfare system by facilitating minor thru traffic movements; and sometimes serves adjacent property
Major Collector	Serves intra-county travel corridors and traffic generators and provides access to the thoroughfare system
Minor Collector	Provides service to small local communities and traffic generators and provides access to the major collector system
Local Street	Provides access to adjacent property over relatively short distances
Alley	Provides access to adjacent property, typically to the rear of the structures located on the property served, and usually serves as a route for utilities, garbage collection, and garage access in residential areas

- 2.4. **Service Classifications.** Major collectors, minor collectors, local streets, and alleys may also be categorized as residential or non-residential.
- a. *Residential Streets.* Residential streets serve residential property. In general, 50% or more of the properties fronting a residential street are zoned for residential purposes.
  - b. *Non-Residential Streets.* When less than 50% of the street frontage is adjacent to residential property, the street is considered a non-residential street.

2.5. **Terrain Classifications.** Two terrain classifications are applicable to the Concord area. These classifications affect street design criteria. All streets should be designed in accordance with the level terrain classification unless the necessary supporting data is presented and approved by the Director of Transportation for each street section designed using rolling terrain classification. The term “slope” in this subsection includes the rise and fall of the existing topography measured both parallel and perpendicular to the centerline of the proposed street.

- a. *Level.* Slopes in a level terrain range from 0% to 8%. In level terrain, horizontal and vertical street sight distances are generally long or can be designed to be so without construction difficulties.
- b. *Rolling.* Slopes in a rolling terrain range from 8.1% to 15%. Natural slopes consistently rise above and fall below the street grade line, and occasional steep slopes offer some restriction to normal highway horizontal and vertical alignment.

*Rolling Terrain Classification Request*

1. Memo with reasoning for request that indicates the section of the proposed classification by the range of stations for each street included in the request.
2. Plan view showing the horizontal alignment with appropriate stationing, existing topography, and other pertinent plan view elements.
3. Profile view showing existing and proposed vertical alignment with the grades appropriately labeled and stationing corresponding with the plan view.

2.6. **Design Speeds.** Designers should use the highest design speed that is practical to attain the best possible degree of safety, mobility, and efficiency. The design speed of a city street should be five (5) miles per hour (mph) above the anticipated posted speed. Geometric design features should be consistent with the selected design speed. Design speeds for each functional classification are provided in Table 2-2.

**Table 2-2: Design Speeds.**

Classification	Minimum Design Speed (mph)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	*	*
Major Thoroughfare	60	55
Minor Thoroughfare	50	45
Major Collector	50	50
Minor Collector	40	40
Local Street	30	30
Alley	20	15

\*Reference NCDOT Guidelines

### 3.0 Cross-Section Standards

#### 3.1. Widths.

- a. *Rights-of-Way.* Right-of-way widths are based on the street classification. Rights-of-way must be at least as wide as the minimum widths provided in Table 3-1. Rights-of-way must be platted and dedicated in the location and at the width shown on the approved plans.

**Table 3-1: Minimum Right-of-Way Widths**

Classification		Minimum Right-of-Way Width (feet)
Major Thoroughfare	All	100
Minor Thoroughfare	All	80
Collector	Non-Residential	71
	Residential	63
Local Street	All	50
Alley*	All	20
Cul-de-Sac	Non-Residential	80 67.5-foot radius
	Residential	60 60-foot radius

\*Alleys may be either R/W or Access Easement. Alleys will not be accepted by the City of Concord for maintenance.

- b. *Pavement.* Pavement widths are based on the street classifications and locations. Fire, or other City codes may dictate different widths, the minimum width that satisfies all standards will apply. The width from the edge of pavement perpendicularly to the edge of pavement must be at least as wide as the minimum widths provided in Table 3-2:

**Table 3-2: Minimum Pavement Widths**

Classification		Minimum Pavement Width (feet)
Major Thoroughfare	All	24 for each of two divided sections
Minor Thoroughfare	All	24 for each of two divided sections or 36' non-divided
Collector	Non-Residential	30
	Residential with On-Street Parallel Parking	34
	Residential without On-Street Parking	22
Local Street	All	20
Alley	All	16
Cul-de-Sac	Non-Residential	46-foot radius
	Residential	38.5-foot radius

- 3.2. **Materials.** All work and materials shall conform to the latest edition of the NCDOT Standard Specifications for Roads and Structures unless otherwise specified. The following material standards and thicknesses represent the minimum acceptable standards of the City. Pavement designs must consider existing soil types and geotechnical conditions. The Engineering Department will review pavement designs. Failure to meet the following requirements may result in the delay or prevention of street acceptance by the City of Concord or NCDOT.

All applicable compaction, soils, concrete, or other required tests will be performed at no cost to the City and by an inspector sufficiently certified to perform such tests. Results from all applicable tests, all pavement and concrete mix designs, and all other material specifications shall be provided to the City inspector. The developer shall maintain their own records of all tests and inspections throughout the construction period. These records shall, at a minimum and as applicable, include information such as dates inspections are requested and performed, inspector's name, results of inspections, re-inspections, dates and results of tests, and other applicable information as may be necessary.

- a. Subgrade.** Shape the roadway to conform to the lines, grades and typical sections shown on the plans. Strip all existing vegetation from the ground surface wherever shaping of the roadway is to be done. Use all suitable surplus material in the construction of the roadway or stockpile for use in shoulder construction. Dispose of surplus material in excess of that needed for roadway or shoulder construction as waste. Remove all unsuitable material, boulders and all vegetative matter and replace with suitable material. Obtain suitable material, when not available from the shaping or fine grading operation, from roadway excavation or borrow sources.
1. Preparation of Subgrade. Shape the subgrade to the lines, grades and typical sections shown on the plans.
  2. Compaction of Subgrade. Compact all material to a depth of 8 inches below the finished surface of the subgrade to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by NCDOT. These modified testing procedures can be found in the NCDOT Conventional Density Operator's Manual. Provide private lab soil compaction reports to the inspector for random subgrade tests every 200 LF, 3 minimum per street, and 2 per cul-de-sac, or as directed by the inspector.
  3. New densities may be required if it has been more than 7 days since the densities were performed or there has been a rain event greater than ½".
  4. Contractor should perform a self-proofroll and repair deficiencies before calling for an inspection.
  5. Subgrade should be neat, clean, trimmed, and rolled down.
  6. After all above items have been completed, then a subgrade proofroll can be scheduled and performed with the inspector.
  7. Base Course must be placed within 7 days or before any ½" or greater rain event or another proofroll may be required.

- b. Base Course.** Prior to the placement of the base course the subgrade shall be sufficiently compacted, inspected and accepted by the City inspector. The material for the base course of the street must be crusher-run stone with aggregates ranging from one and one-half (1½) inch diameter particles to dust and must meet the standards of NCDOT's latest edition of Standard Specifications for Roads and Structures. The City inspector shall be given a (24) twenty-four-hour notification to inspect the base course prior to the application of the intermediate course. All deficiency repairs are to be monitored by a City inspector and accepted prior to application of the intermediate course.
1. The material should consist of tough durable aggregate, containing sufficient fines to ensure a well-bonded and uniform base after compaction.
  2. The aggregate must be free from an excess of flat, elongated, soft disintegrated pieces, and should not contain clay, silt, vegetative, or other objectionable matter.
  3. The mixing and shaping of the base course material must be performed with a power-driven motor grader, equipped with a blade not less than ten (10) feet long, and equal to or equivalent to a full-size motor grader with 125 horsepower or greater.
  4. All edges and manholes are to be trimmed to the proper depth. Remove any loose stone. All manhole covers shall be adjusted to final pavement grade and slope.
  5. The base shall be compacted to 100% of the maximum density obtainable with the Modified Proctor Test (AASHTO-T180) by rolling with ring or temping roller or with pneumatic tired roller with a minimum weight of ten tons. When completed, the base course must be smooth, hard, dense, unyielding and well bonded. The procedures for the Modified AASHTO-T180 test can be found in the NCDOT Conventional Density Operator's Manual. Provide private lab stone base compaction reports to the inspector.
  6. New densities may be required if it has been more than 7 days since the densities were performed or there has been a rain event greater than ½”.
  7. Contractor shall perform a self-proofroll and repair deficiencies before calling for an inspection.
  8. After all above items have been completed then a proofroll can be scheduled and performed with the inspector.
  9. Intermediate Course must be placed within 7 days or before any ½” or greater rain event or another proofroll may be required.
- c. Prime Coat.** If application of the intermediate course is not completed within seven (7) days following stone base approval, a prime coat shall be applied. The material for the prime coat must be consistent with NCDOT Standard Specifications for Roads and Structures.
- d. Intermediate Course.** The material for the intermediate course of the street must be consistent with NCDOT Standard Specifications for Roads and Structures. Asphalt plants providing the material for the intermediate course must be certified by NCDOT. The City inspector shall be given a (24) twenty-four-hour notification to inspect the

intermediate course prior to the application of the first lift of the surface course. All deficiency repairs are to be monitored by a City inspector and accepted prior to application of the first lift of the surface course.

1. Compaction must meet NCDOT requirements. The contractor shall perform quality control on asphalt by performing random density tests every 200 LF, 3 minimum per street, and 2 in each cul-de-sac, or as directed by inspector. Superpave mixes are to be compacted 90.0% of the maximum specific gravity. Provide results to inspector the following day.
- e. Surface Course.** The material for the surface course of the street must be consistent with NCDOT Standard Specifications for Roads and Structures. Asphalt plants providing the material for the surface course must be certified by NCDOT. The City inspector shall be given a (72) seventy-two-hour notification to inspect the initial surface course lift prior to the application of the final lift. All deficiency repairs are to be monitored by a City inspector and accepted prior to the application of the final lift of asphalt surface course.
1. The surface lift should be installed in 2 separate lifts a minimum of 1” thick for Local Streets, and 1.5” thick for higher classifications. The first lift should be applied directly following the application, inspection, and acceptance of the intermediate course, and the second lift is to be installed after all other requirements for City acceptance have been met. All known base failures shall be repaired prior to the application of the final lift of asphalt surface course.
  2. Compaction must meet NCDOT requirements. The contractor shall perform quality control on asphalt by performing random density tests every 200 LF, 3 minimum per street, and 2 in each cul-de-sac, or as directed by inspector. Superpave mixes are to be compacted 90.0% of the maximum specific gravity. Provide results to inspector the following day.

**Table 3-3: Base, Intermediate, and Surface Courses**

Classification		Base Course	Intermediate Course	Surface Course
Major Thoroughfare	All	*	*	*
Minor Thoroughfare	All	*	*	*
Major Collector	Non-Residential	*	*	*
	Residential	10” CABC or 5” B-25.0C	2.25” I-19.0C	3.0” S 9.5B
Minor Collector	Non-Residential	*	*	*
	Residential	10” CABC or 5” B-25.0C	2.25” I-19.0C	3.0” S 9.5B
Local Street	Non-Residential	*	*	*
	Residential	8” CABC or 4” B-25.0C	2.25” I-19.0C	2.5” S 9.5B
Alley	All	8” CABC		1.5” S 9.5B

\* Pavement sections must be designed on a case by case basis with the residential specifications being the minimum requirements.

- f. *Tack Coat.* The material for tack coats must be consistent with NCDOT Standard Specifications for Roads and Structures. Asphalt plants providing the material for tack coats must be certified by NCDOT.
1. **Tack coats** must be applied between each layer of asphalt to be placed.
- g. **Street Shoulder.** Fill embankments must be formed of suitable materials placed in successive layers of not more than six (6) inches in depth for the full width of the cross section, including the width of the slope area. All materials for fill embankments must be consistent with NCDOT Standard Specifications for Roads and Structures.
1. No stumps, trees, brush, rubbish or other unsuitable materials or substances shall be placed in the embankments within any right-of-way or easement.
  2. Each successive six-inch layer shall be thoroughly compacted by a sheepfoot tamping roller, ten-ton power roller, pneumatic-tired roller or other method approved by the Director of Engineering. Embankments over and around all pipes and culverts shall be of select material, placed and thoroughly tamped and compacted as directed by the Director of Engineering or their representative. Any soft spots or pumping areas must be removed and replaced in the manner stated above until satisfactory compaction is achieved.
- h. **Concrete.** ALL concrete used for streets, curb and gutter, sidewalks and multi-use paths, etc. shall have a minimum compressive strength of 3600 PSI at 28 days. This requirement shall be provided regardless of any lesser compressive strength specified in the NCDOT Standard Specifications for Roads and Structures. The contractor shall prepare concrete test cylinders in accordance with section 1000 of the NCDOT Standard Specifications for Roads and Structures at the direction of the project inspector. All equipment and cylinder molds shall be furnished by the contractor. It shall be the responsibility of the contractor to protect the cylinders until such time as they are transported for testing. Testing for projects shall be performed by an independent testing lab sufficiently certified to perform such tests, at no cost to the City. The contractor shall provide equipment and perform tests on concrete for a maximum slump and air content as defined in Section 1000 of the NCDOT Standard Specifications for Roads and Structures. These tests shall be performed at a frequency established by the inspector. Materials failing to meet the specifications shall be removed by the contractor.
1. All concrete shall be cured with 100% Resin Base, white pigmented curing compound which meets ASTM Specifications C-309, Type 1, applied at a uniform rate of one (1) gallon to 400 square feet within 24 hours of placement of concrete.
- i. *Backfill.* All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and the material shall have no tendency to flow or behave in a plastic manner under the tamping blows or proof rolling.
1. Materials deemed by the inspector as unsuitable for backfill purposes shall be removed and replaced with select backfill material.



- j. Concrete or asphalt shall not be placed until the air temperature measured at the location of the paving operation is at 35 degrees F and rising by 10:00 a.m. Concrete or paving operations should be suspended when the air temperature is 40 degrees F and descending. The contractor shall protect freshly placed concrete or asphalt in accordance with Sections 420 (Concrete Structures), 600 (Asphalt Bases And Pavements), and 700 (Concrete Pavements And Shoulders) of the NCDOT Standard Specifications for Roads and Structures when the air temperature is at or below 35 degrees F and the concrete has not obtained an age of 72 hours.

## 4.0 Cul-de-Sac Design Standards

- 4.1. Where a turn-around is required on a public or private street, a properly dimensioned cul-de-sac should be provided. “Hammer-head” designs will not be permitted.
- 4.2. **Design Standard Exceptions.** Cul-de-sacs are subject to the same design guidelines as those given for the appropriate street classification, with the exception of the following design standards that are specific to cul-de-sacs.
  - a. *Service Limits.* A cul-de-sac can serve no more than twenty (20) residential units.
  - b. *Lengths.* Cul-de-sacs must not exceed the lengths provided in Table 4-2. Length is measured from the center of the terminus to the centerline of the closest intersecting street providing access to the cul-de-sac.

**Table 4-2: Maximum Lengths for Cul-de-Sacs.**

Zoning District	Maximum Length (feet)
AG	1,000
B-1	500
C-1	500
C-2	500
CC	300
CD	1,500
I-1	1,500
I-2	1,500
O-I	500
PUD	500
RC	300
RE/RL	1,000
RM-1	800
RM-2	800
RU	300
RV	600

- c. *Connectivity Provisions.* If the cul-de-sac is located along a corridor included in the City of Concord’s Transportation Plan or if the cul-de-sac is located along a corridor that will serve as a future thru street in accordance with a recorded subdivision plat or site plan, preliminary and final engineering plans must show a stub (extension of the street right-of-way) from the terminus of the cul-de-sac to the edge of the area being developed. Prior to final plat the stub must be duly signed in the field as to the potential for future extension.
- d. *Termini.* The terminus of the cul-de-sac must be designed to allow vehicles to turn around and exit to the adjoining street.
  - 1. *Radii.* The radius for the terminus (bulb or turnaround) must not be less than forty (40) feet to the face of curb as shown on the detail drawings.
  - 2. *Islands.* An island may be proposed or required in the center of the terminus of the cul-de-sac. Islands will be reviewed on a case-by-case-basis.

## 5.0 Slope Standards

5.1. **Longitudinal Grade.** Longitudinal grades may range between one percent (1.0%) and twelve percent (12%). Table 5-1 identifies the maximum longitudinal grade for each functional classification.

**Table 5-1: Maximum Longitudinal Grades.**

<b>Classification</b>	<b>Conditions (Terrain or Proximity to Intersection)</b>	<b>Maximum Grade</b>
Freeway or Expressway		*
Major Thoroughfare		*
Minor Thoroughfare		*
Major Collector	Level Terrain	6%
	Rolling Terrain	9%
	Intersection in ≤ 100 feet	3%
Minor Collector	Level Terrain	6%
	Rolling Terrain	9%
	Intersection in ≤ 100 feet	5%
Local Street	Level Terrain	9%
	Rolling Terrain	12%
	Intersection in ≤ 100 feet	5%
Alley	Level Terrain	9%
	Rolling Terrain	12%
	Intersection in ≤ 100 feet	5%

\* Consult the latest edition of AASHTO’s *The Policy on Geometric Design of Highways and Streets*.

### 5.2. Transverse Grade.

- a. *Street Surface.* Transverse grades on the street surface must have a one-fourth (¼) inch rise to one (1) foot run slope. Superelevation rates, minimum runoff lengths, and methods of distribution should be designed in accordance with AASHTO guidelines.

**Table 5-2: Maximum Superelevation Transverse Slope for Minimum Centerline Radius.**

Classification	Maximum Superelevation Transverse Slope (feet/foot)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	*	*
Major Thoroughfare	*	*
Minor Thoroughfare	*	*
Major Collector	0.04	0.04
Minor Collector	0.04	0.04
Local Street	normal crown	normal crown
Alley	N/A	N/A

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

**b. Street Shoulder.**

1. *Minimum width.* The minimum shoulder width shall be 6 feet wide measured from the edge of pavement. The transverse grade for street shoulders shall be ¼" per foot.
2. *Fill/Cut Slopes.* The maximum transverse grade for fill slopes is a one (1) foot rise to three (3) foot run, and one (1) foot rise to two (2) foot run for cut slopes.

## 6.0 Curve Standards

- 6.1. **Horizontal Centerline Curve Radius.** Table 6-1 provides the minimum horizontal centerline curve radii for each functional classification.

**Table 6-1: Minimum Horizontal Centerline Curve Radii.**

Classification	Minimum Horizontal Centerline Curve Radii (feet)	
	Level Terrain	Rolling Terrain
Freeway or Expressway	*	*
Major Thoroughfare	*	*
Minor Thoroughfare	*	*
Major Collector	310	230
Minor Collector	310	230
Local Street	230	150
Alley	90	90

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

6.2. **Tangent Between Reverse Curves.** Table 6-2 provides the minimum tangent between reverse curves for each functional classification.

**Table 6-2: Minimum Tangent Between Reverse Curves.**

Classification	Minimum Tangent Between Reverse Curves (feet)
Freeway or Expressway	*
Major Thoroughfare	*
Minor Thoroughfare	*
Major Collector	200
Minor Collector	200
Local Street	100
Alley	0

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

6.3. **Vertical Centerline Curves.** Table 6-3 provides the minimum Rates of Vertical Curvature (K) for each functional and terrain classification.

**Table 6-3: Rate of Vertical Curvature (K)\*\*.**

Classification		Level Terrain	Rolling Terrain
Freeway or Expressway	Crest	*	*
	Sag	*	*
	Stop	*	*
Major Thoroughfare	Crest	*	*
	Sag	*	*
	Stop	*	*
Minor Thoroughfare	Crest	*	*
	Sag	*	*
	Stop	*	*
Major Collector	Crest	45	30
	Sag	45	30
	Stop	20	14
Minor Collector	Crest	45	30
	Sag	45	30
	Stop	20	14
Local Street	Crest	30	20
	Sag	30	20
	Stop	14	9
Alley	Crest	30	20
	Sag	30	20
	Stop	14	9

\* Consult the latest edition of AASHTO's *The Policy on Geometric Design of Highways and Streets*.

\*\*  $K = (\text{Length of the Vertical Curve in Feet}) \div (\text{Percent Algebraic Difference in the Grades Before and After the Vertical})$

## 7.0 Intersection Standards

- 7.1. **Angles of Intersection.** When practical, streets must intersect at an angle of ninety (90) degrees. The centerlines of the intersecting streets should remain straight for a minimum of fifty (50) feet from the edge of travel way of the intersecting street. In no case should the angle of intersection be less than seventy (70) degrees.
- 7.2. **Corners.**
- a. *Quantity.* Intersections shall not have more than four (4) corners.
  - b. *Right-of-Way.* Property lines at intersections must be established so that the distance from the edge of pavement at the street turnout to the property line is at least as great as the distance from the edge of pavement to the property line along the intersecting streets.
    1. This property line can be established as a radius or as a sight triangle.
    2. Minimum and maximum street right-of-way curve radii are provided in Table 7-1.

**Table 7-1: Minimum and Maximum Right-of-Way Curve Radii at Intersections.**

Zoning District	Minimum Radii (feet)	Maximum Radii (feet)
AG	30	N/A
B-1	30	45
C-1	30	N/A
C-2	30	N/A
CC	30	45
CD	30	N/A
I-1	30	N/A
I-2	30	N/A
O-I	30	45
PUD	30	45
RC	30	45
RE	30	N/A
RL	30	N/A
RM-1	30	N/A
RM-2	30	N/A
RU	30	N/A
RV	30	45

- 7.3. **Backs-of-Curb.** Curbs must be rounded at the corners of intersections to facilitate the movement of traffic. The minimum corner radii for backs-of-curb at street intersections are provided in Table 7-2.

**Table 7-2: Minimum Corner Radii for Backs-of-Curb at Intersections.**

Classification	Minimum Corner Radii (feet)
Freeway or Expressway	*
Major Thoroughfare	*
Minor Thoroughfare	*
Major Collector	30
Minor Collector	30
Local Street	30
Alley	20

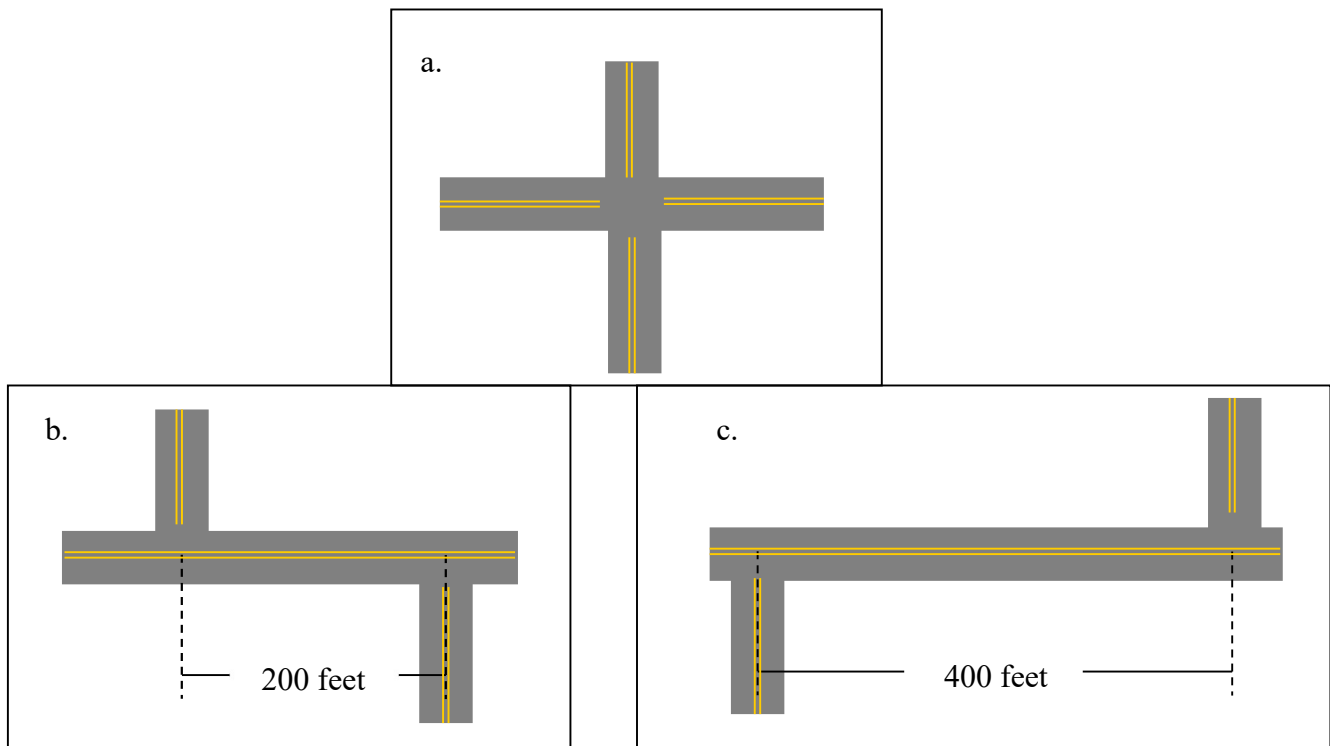
\* Consult the N.C. Department of Transportation Division of Highways' Transportation Plan.

7.4. **Distances between Intersections.** Proposed streets that intersect opposite sides of the same street (either existing or proposed) should be designed to intersect directly opposite one another as shown in Figure 7-1a.

a. *Minimum lengths for Local Streets and Minor Collectors.*

1. A minimum length of 200 feet between centerlines must separate proposed streets that cannot be aligned to create a shared intersection as shown in Figure 7-1b.
2. A minimum length of 400 feet between centerlines must separate streets with opposing left-hand turns as shown in Figure 7-1c.

b. *Minimum lengths for higher street classifications.* Minimum lengths for higher street classifications must be reviewed and approved by the Director of Transportation, but in no case can the distance be less than 400 feet.



**Figure 7-1: Two Streets Intersecting the Same Street.**

7.5. **Sight Triangle Easements.** Sight triangle easements are required in every zoning district of the City except for the CC District. Sight triangle easements must be shown on all plans and recorded on a final plat. NCDOT may have separate and/or additional requirements regarding Sight Triangles, the strictest standard that satisfies all requirements will apply. Dimensions given in this section are the minimums, evaluation of sight distance may require larger sight triangle easements.

**A. Type 1**

a. Type 1 sight triangles must be maintained on property located at intersections of:

1. Two streets of any classification
2. A street and a railroad
3. A street and a non-residential driveway

b. **Size and Measurement** - A sample illustration is provided in Figure 7-2.

1. The lengths of the Type 1 sight triangle legs are based on the widths of the intersecting rights-of-way where the intersection occurs.

**Table 7-3: Sight Triangle Leg Length along a Right-of-Way**  
Measured from the Point of Intersection

<b>Right-of-Way Width* (feet)</b>	<b>Length (F or G) (feet)</b>
≤50	25
60	30
70	35
80	40
90	45
≥100	50
*Or pavement width where no R/W exists.	

2. Type 1 Sight triangles are measured from the following three points as shown on Figure 7-2:

- a. *Point 1.* The point of intersection of two right-of-way lines or driveway pavement edge.
- b. *Point 2.* The point along right-of-way one (1) a distance from Point 1 as determined by the width of right-of-way one (1) in accordance with Table 7-3, and
- c. *Point 3.* The point along right-of-way two (2) a distance from Point 1 as determined by the width of right-of-way two (2) in accordance with Table 7-3.

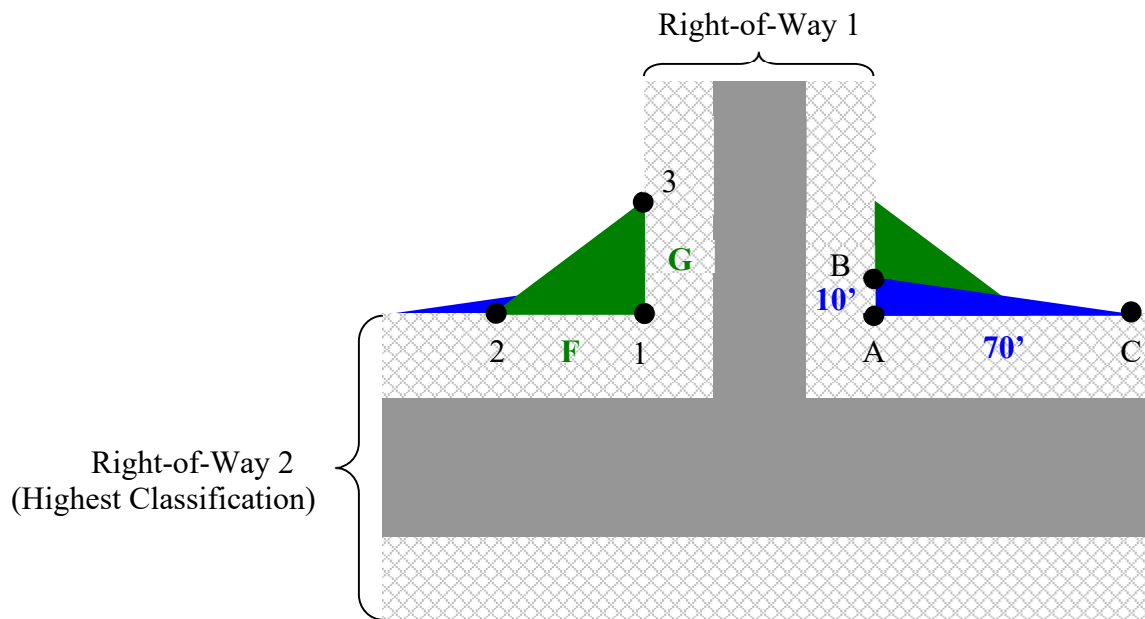
**B. Type 2**

a. In addition to Type 1 sight triangles, Type 2 sight triangles must be maintained on property located at intersections of:

1. Any street with a street classified as a collector or higher.

2. Any non-residential driveway with a street classified as a collector or higher.
- b. Size and Measurement** - A sample illustration is provided in Figure 7-2.
1. Type 2 Sight triangles are measured from the following three points as shown on Figure 7-2:
    - a. *Point A*. The point of intersection of two right-of-way lines or R/W and driveway pavement edge.
    - b. *Point B*. The point along right-of-way one (1) a distance of 10 feet from Point A, and
    - c. *Point C*. The point along right-of-way two (2) a distance of 70 feet from Point A.

**Figure 7-2: Type 1 & 2 Sight Triangle Sample Illustration**

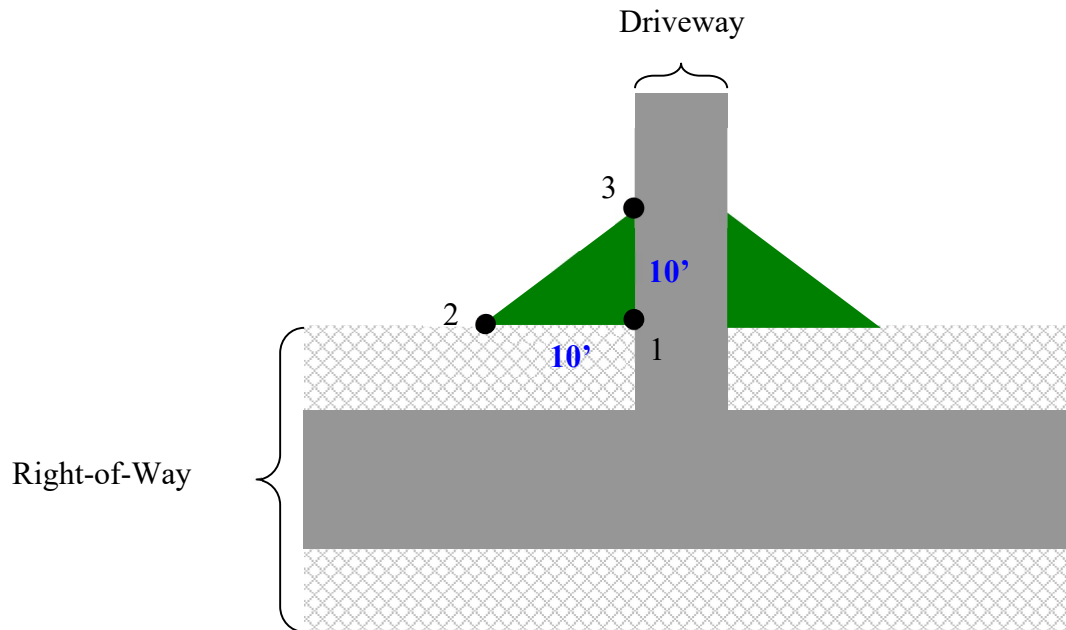


**C. Type 3**

- a. Type 3 Sight Triangles must be maintained on property located at intersections of:
    1. Residential driveways and streets
- b. Size and Measurement** - A sample illustration is provided in Figure 7-3.
1. Sight triangles are measured from the following three points:
    - a. Point 1. The point of intersection of the street right-of-way line and the edge of the driveway pavement,
    - b. Point 2. The point along the street right-of-way a distance of ten (10) feet from Point 1, and
    - c. Point 3. The point along the edge of the driveway pavement a distance of ten (10) feet from Point 1



Figure 7-3: Type 3 Sight Triangle Sample Illustration



**D. Objects Not Allowed within Sight Triangles.** Objects within sight triangles must be restricted to give the users of the street or driveway an unobstructed view of oncoming vehicles and pedestrians. No structures, berms, vegetation, or other visual obstruction with a height equal to or greater than two (2) feet above the street surface elevation is allowed within the sight triangle, except those listed in the following subsection. The dimensions given represent the dimensions of the Sight Triangle Easements as measured at the R/W.

**E. Objects Allowed within Sight Triangles.** The following objects are allowed within sight triangles:

1. Public utility poles,
2. Official warning signs or signals,
3. Supporting members or appurtenances to permanent buildings lawfully existing prior to April 11, 1996.
4. Other signs that meet all of the following criteria:
  - a. Conform to the City's sign ordinance, and
  - b. Are mounted at a height equal to or greater than ten (10) feet above the street surface, and
  - c. Have supports that do not obscure the view of oncoming vehicles and pedestrians.

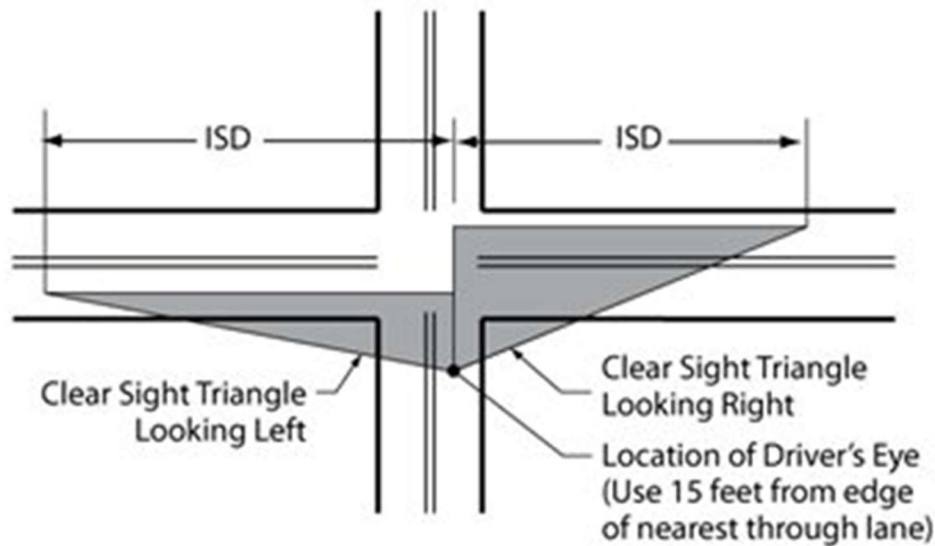
7.6. **Sight Distance.** Sight distance shall be measured at a height of 3.5' above the ground with a minimum of 1' vertical separation between the highest obstruction at ground level and the sight line, and 5' between the sight line and the bottom of tree canopies, or objects above the surface. Table 7-6 gives the sight distance for stop controlled intersections.

Table 7-6

Design Speed (mph)	Minimum Intersection Sight Distance (ISD)*		
	Passenger Cars (ft.) Left / Right	Single Unit Trucks (ft.) Left / Right	Combination Trucks (ft.) Left / Right
20	225 / 195	279 / 250	337 / 310
25	280 / 240	348 / 315	422 / 385
30	335 / 290	418 / 375	506 / 465
35	390 / 335	488 / 440	590 / 540
40	445 / 385	557 / 500	675 / 620
45	500 / 430	627 / 565	759 / 695
50	555 / 480	697 / 625	843 / 770
55	610 / 530	766 / 685	927 / 850

\*Values are based on case B1 and B2 from AASHTO Policy on Geometric Design of Highways and Streets with base condition of two-lane highway with no median and grades <=3%. For conditions outside of the base conditions appropriate adjustments should be made in accordance with AASHTO Policy.

Figure 7-6



7.7. **Roundabouts/Traffic Circles.** Roundabouts may be required at certain intersections within developments to provide traffic calming and help create a safe environment for drivers and pedestrians. Locations of Roundabouts will be determined by the Planning and Transportation Departments. Designs must be reviewed and approved by the Director of Transportation or their representative.

## 8.0 Median and Island Standards

- 8.1. *Where Required.* Entrance roads shall include a median in conformance with the City’s development ordinances, except that the Director of Transportation may waive this requirement if the Director determines that such a median is not practical, or such installation would create a hazard.
- 8.2. *Size.* Islands must be a minimum of 75 square feet and entrance medians must be a minimum of one half the required stem length of the intersecting street(s) and a minimum of 4 feet wide. Lengths of non-entrance medians are to be approved by the Transportation Director. Where median widths are specified, a median of not less than the designated width must be provided.
- 8.3. *Contents.* Structures, permanent materials or plantings within the island or median should not obscure the visibility of cars entering a cross street for a distance of 20 feet back from the curb face of the cross street, unless a larger setback is needed due to inadequate sight distance created by horizontal or vertical curve alignment. Islands and medians should be landscaped at a density equivalent to a Class “A” buffer as set forth in the Landscaping Standards of in the City’s development ordinances.
- 8.4. *Specifications.* The nose of the median must be at least 6 feet from edge of the perpendicular thru lane. Standard 2’-6” curb and gutter should be used unless 1’-6” is approved. A minimum 14-foot travel way must be provided on each side of the median/island. Medians and islands which encroach into NCDOT R/W must be approved by NCDOT.

## 9.0 Drainage Standards

A drainage system must be provided that adequately facilitates the movement of stormwater off and under streets. This drainage system may include curbs and gutters, catch basins, stormwater pipes, and graded channels. Each component of the drainage system should be designed by a registered professional engineer and installed in accordance to City construction specifications and standards. Please refer to Article 1 Section 3 of these Technical Standards.

### 9.1. Curbs and Gutters.

- a. *Required Locations.* Concrete curbs and gutters must be included on all new streets, on all existing streets which the property to be subdivided or developed fronts, and on all streets that provide access to a new development or subdivision, except those listed in the following subsection.
- b. *Exemptions.* Concrete curbs and gutters are not required along the following streets:
  1. Interstate highways,
  2. Numbered State highways with topography that does not allow for reasonable or practical installation, and
  3. Numbered State highways where the N.C. Department of Transportation stipulates no curb and gutter should be installed.
- c. *Specifications.*
  1. Curbs and gutters must be built in accordance with City of Concord Standards and

NCDOT Standards. Standard 2'-6" curb and gutter is to be used on all collector streets. Valley curb is allowed only on local streets and alleys.

2. All excess concrete on the front edge (lip) of gutter shall be removed when curb and gutter is poured with a machine.
3. All curb and gutter shall be backfilled with soil approved by the inspector within 48 hours after construction to prevent erosion.

9.2. **Catch Basins.**

a. *Required Locations.* Catch basins shall be located:

1. As outlined in Article 1 of these Technical Standards, and
2. On both sides of the street at low points.

b. *Specifications.*

1. Catch basin frames and grates must be in accordance with NCDOT Standards. Improvised grates will not be acceptable.
2. Catch basin frames must be cast with the following statement: "Dump No Waste Drains to Stream" or a comparable statement as approved by the Director of Engineering.
3. Catch basins must be built in accordance with NCDOT Standards.
4. Catch basin walls must be built straight with inside joints struck smooth. Precast catch basins may be acceptable with the approval of the Director of Engineering.
5. Roll-over frame and grate inlets are not permitted within driveways.

9.3. **Pipes.**

a. *Stormwater.*

1. *Required Locations.* Stormwater pipes should be placed at all low points in the street grade to transmit storm water transversely across the street. Additionally, stormwater pipes should be parallel to the street, but not under the street, unless transmitting stormwater from one catch basin to another on the opposite side of the street.
2. *Size.* The minimum pipe diameter shall be fifteen (15) inches, regardless of the size of the drainage area.
3. *Depth.* The minimum cover for all pipe shall be two (2) feet, or as otherwise approved for Class IV and V RCP in accordance with NCDOT Standards.
4. *Material.* All pipe must be concrete conforming to the NCDOT Standard Specifications of Road and Structures. For special conditions, alternative pipe materials recommended by the manufacturer for the type of installation involved and approved by the Director of Engineering will be considered. Any concrete pipe laid between the concrete curbs shall be reinforced.

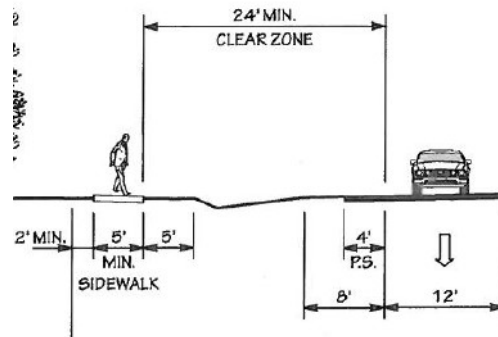
b. *Construction.* All pipe must be laid with the bell or groove upgrade and joint entirely interlocking.

- c. *Groundwater.* Subdrainage must be provided where the groundwater table is within two (2) feet of the subgrade. Subdrainage design must be approved by the Director of Engineering.
- d. *Graded Channels.* Ditches proposed within the street rights-of-way will need to be approved on a case to case basis. Ditches should be a minimum of thirty-six (36) inches deep and two (2) feet in width. Ditches, swales, or other drainage features shall not be designed or allowed to concentrate flow onto or across sidewalks.

## 10.0 Sidewalk Standards

10.1. **Locations.** Sidewalks should be provided for the safe movement of pedestrians, separate from the movement of vehicular traffic, through residential, commercial, and industrial areas, as well as public places. Sidewalks must be constructed along both sides of all new streets in a subdivision, along any street which the property to be subdivided fronts and any street which provides access to the subdivision. Multi-Family and Non-Residential developments shall provide sidewalk along the frontage of existing streets regardless of whether the site property is being subdivided. Sidewalks may not be required along interstate highways not designed for curb and gutter. Where identified in adopted City plans, Multi-Use paths will replace sidewalk where required.

- a. Except in unusual circumstances, sidewalk must be located a minimum of (8) eight feet from the back of the curb. A recorded public sidewalk easement is required for all sidewalk located outside the public right-of-way, the width shall be equal to the distance from the right-of-way line to the back of the sidewalk plus a minimum of two feet or to the face of building, whichever is less. The sidewalk easement must be recorded with the Cabarrus County Register of Deeds prior to issuance of a certificate of occupancy for the corresponding building(s).
- b. Along NCDOT highways where curb and gutter is not recommended or approved by NCDOT, the minimum clear zone for sidewalks and multi-use paths is 24' as measured from the edge of the closest parallel travel lane subject to approval by NCDOT.



10.2. **Specifications.** Sidewalks must:

- a. Have a minimum five (5) foot width;
- b. Be constructed of not less than three thousand six hundred (3,600) pound-per-square-inch concrete,
- c. Be a minimum of four (4) inches thick when adjacent to standard 30" curb and gutter,

the sidewalk must be six (6) inches thick when placed adjacent to valley curb and gutter and no planting strip is present,

- d. Be a minimum of six (6) inches thick at driveway crossings
  - e. Be constructed on a properly graded base with subgrade compacted to 95% of the maximum density obtainable with the Standard Proctor Test,
  - f. Have a lateral slope of one-quarter (1/4) inch per foot toward the street,
  - g. Be steel-troweled and light broom finished and cured properly,
  - h. Have tooled joints at intervals of not more than five (5) feet and expansion joints at intervals of not more than forty (40) feet,
  - i. Meet all current Americans with Disabilities Act (ADA) standards, and
  - j. Meet NCDOT specifications for concrete sidewalks, stricter of any specification applies,
  - k. Be designed and located so as to prevent transmission of drainage water from swales, ditches or other graded channels across the surface.
- 10.3. **Transitions to Street Grade.** Access ramps must meet current ADA and NCDOT standards and be constructed with materials that are approved by the Director of Transportation. Truncated dome mats at all access ramps shall be red in color.

## 11.0 Curb and Gutter, and Sidewalk Exemptions

**Applicability.** Refer to Article 10 of the UDO.

## 12.0 Guardrails

### 12.1. **Applicability.**

- a. Guardrails must be provided in all areas required in accordance with the NCDOT Roadway Design Manual.

## 13.0 Street and Subdivision Naming Standards

### 13.1. **Uniqueness.**

- a. Proposed street and subdivision names must not duplicate nor too closely approximate phonetically the name of any street within Cabarrus County.
- b. Where proposed streets are extensions of existing streets, the existing street names shall be used except where a new name can reasonably be used to facilitate proper house numbering or to avoid further street name duplication.

### 13.2. **Labels.** In addition to names to identify new streets, the following labels must be included:

- a. A street oriented in a general north-south direction must be labeled a “Street;”
- b. A street oriented in a general east-west direction must be labeled an “Avenue;”
- c. A street that changes direction may be labeled a “Drive,” “Lane,” or “Road;”
- d. A street that forms a loop where both ends intersect with the same street may labeled a

“Circle;” and

- e. A cul-de-sac or street terminating in a similar dead-end must be labeled a “Place” if oriented in a north-south direction and a “Court” if oriented in an east-west direction.

## 14.0 Sign Standards

- 14.1. **Signage Plan.** A separate signage plan should be included with the site plan showing the locations of all signs (stop, speed limit, street blades, no-parking, etc.). Signs should be indicated as standard or decorative.
- 14.2. **Standard Signs.** In all subdivisions that include public streets, except as provided below, standard street signs should be installed by the City of Concord. The developer must reimburse the City for the full cost of the installation. Costs associated with signs requiring reinstallation due to damage or removal prior to City acceptance of the streets are the responsibility of the developer. The performance of installation, maintenance, and replacement of signs on public streets after the streets have been accepted by the City are the responsibility of the City.
- 14.3. **Decorative Sign Treatments.** [Encroachment process.] In subdivisions with architectural standards, restrictive covenants, and a property owner's association, decorative sign treatments may be installed by the developer with all costs of installation, maintenance, and replacement paid by the developer. Sign panels themselves shall be procured from the City of Concord for installation on the custom sign treatments. An encroachment agreement for the custom sign treatments must be completed prior to the approval of a site plan containing decorative signage.

### a. Specifications.

Decorative sign treatments must comply with the Manual on Uniform Traffic Control Devices (MUTCD) published by the U.S. Department of Transportation and City of Concord standards. Submission requirements for consideration of decorative sign treatments shall include detailed color drawings, plans and specifications of the proposed street signs, signage plan showing locations, and a written statement describing funding for installation, maintenance, and replacement.

### b. Replacement.

- 1. Regulatory and Warning Signs. Replacement of lost or damaged regulatory or warning signs, as defined by the MUTCD, must be accomplished within mandated time periods by the City using standard street signs until the developer or property owner's association installs replacement decorative sign treatments. If the developer or property owner's association fails to install replacement decorative sign treatments for regulatory and warning signs within ninety (90) days, the replacement by the City shall be considered permanent and the full cost must be paid by the developer or property owner's association.
- 2. Guide Signs. Replacement of lost or damaged guide signs, as defined by the MUTCD, on decorative sign treatments must be accomplished by the developer or property owner's association within ninety (90) days or the City shall install standard street signs with full costs paid by the developer or property owner's association.

## 15.0 Public Street Acceptance

The City of Concord may consider the acceptance of streets/roads for maintenance upon written request. The City reserves the right to refuse acceptance of maintenance of streets which are not built to the standards outlined in the Technical Standards Manual or, upon inspection, are found to require redesign or repair work to bring the street(s) up to current standards. Alleys will not be accepted by the City for maintenance.

15.1 A street must meet the following minimum requirements to be considered for public maintenance:

- a. Must be within City of Concord City limits,
- b. Shall be contiguous to streets currently maintained by the City or NCDOT. Streets which do not directly connect to an existing public street maintained by the City or NCDOT will not be accepted.
- c. Must meet current standards as outlined in the City of Concord Technical Standards.
- d. Must be platted with at least minimum Right-of-Way (R/W) required for the designated classification.
- e. The Owner(s)/Applicant(s) must not otherwise be in default of any other obligation to the City of Concord.

### 15.2 Newly Constructed Streets Platted for City Maintenance

To initiate the acceptance procedure for newly constructed streets platted for City maintenance, the following information shall be submitted to the City Engineer:

- a. An Application for Street Maintenance Acceptance (Appendix A). The street(s) shall not have had the final surface lift of asphalt laid for more than 12 months.
- b. One (1) PE Certification for Subdivisions and Streets (Appendix B), including applicable reports and inspection data.
- c. One (1) Pavement Core Results Report. The report will include a cover letter, table of contents, project scope, data collection methodology, description of project limits, a map at a legible scale of the project limits containing street names, lengths, cross sections, and the location of the pavement core samples. The report will also include a core results table with street name, applicable City of Concord Technical Standards Manual Typical Section, core result material and thickness (in inches), and a statement of whether or not the core result meets the current minimum design standard per the applicable typical section. Pavement core samples shall be taken at 500' intervals (minimum of 1 core per street block), and no more than 4.0' from the centerline of the road. This report must be signed, dated, and stamped by a North Carolina registered professional engineer. The City may acquire its own pavement core samples as a quality control
- d. Copies of all soils, compaction, concrete, and other applicable inspection data and records for all streets included in the acceptance request.
- e. Upon receipt of the request, the City will perform an inspection of the subject street(s), and a review of all submitted materials. The City shall notify the owning entity of all



construction deficiencies required to be corrected. Upon satisfactory inspection and/or completion of corrective measures, re-inspection, and final approval by the City Engineer, the street acceptance request will be presented to City Council for approval.

- f. All additional requirements of Section 5.7.8 thru 5.7.10 of the City of Concord Development Ordinance apply to street acceptance.

### 15.3 Existing Private Streets

To initiate the acceptance procedure for existing private streets for City maintenance the following information shall be submitted to the City Engineer by the Applicant(s):

- a. Private Street Maintenance Acceptance Petition (Appendix C), representing a minimum of 75% of the linear frontage of property owners (one per parcel) within the request area in favor of the request.
- b. One (1) map of the area with the subject streets identified.
- c. Copies of plats for all parcels with frontage along the subject street.
- d. Encroachment request information sheet for all non-city utilities.
- e. Upon receipt of the petition, the City Engineer or their representative will perform an inspection of the subject street(s), and review all submitted materials. The City shall notify the Applicant(s) of all deficiencies required to be corrected, and the Right-of-Way (R/W) that will be required to be dedicated for the subject street(s).
- f. Once the Applicant(s) receives notification of deficiencies and R/W requirements they should inform the City Engineer within one-hundred and twenty (120) days if they wish to continue the acceptance request.
- g. If the Applicant(s) wish to continue the request they will be responsible for correcting any identified deficiencies using a licensed contractor where applicable and ensuring the street(s) and related infrastructure meet current standards as outlined in the Technical Standards Manual (TSM). Where necessary, designs for the required work shall be prepared by a licensed professional engineer.
- h. If R/W is required for acceptance, the Applicant(s) will be responsible for having a Plat(s) prepared by a licensed professional land surveyor showing dedication of the required R/W. The Plat(s) should be accompanied by appropriate documentation from 100% of the landowners where the proposed R/W encroaches upon their property. The City of Concord will not provide compensation for any property dedicated as R/W as part of a voluntary request for acceptance of a private street for City maintenance.
- i. Upon satisfactory inspection and/or completion of corrective measures, re-inspection, approval of R/W dedication Plat(s), and final approval by the City Engineer, the street acceptance request will be presented to City Council for approval.

### 15.4 Dedication of Public Streets on a Final Plat

- a. When a *street* is dedicated in connection with a *subdivision*, the approval of a *final plat* shall not be deemed to constitute or effect the acceptance by the City of Concord of any *street* shown on the *final plat*. All streets proposed for public

dedication are subject to acceptance for maintenance in accordance with Section 15 of this Article.

#### **15.5 City Council Street Acceptance**

Street acceptance requests must be approved by City Council during a regular council meeting. It is the applicant's responsibility to ensure the City Engineer has all documentation necessary for the request to be placed on the Council Agenda. No requests for street acceptance will be considered during the June council meeting.

### **16.0 Unopened, Dedicated Street Standards**

Streets for which right-of-way has been dedicated by subdivision plat or deed to the North Carolina Department of Transportation or the City of Concord and recorded with the Cabarrus County Register of Deeds, but have never been constructed or accepted for public maintenance, will not be constructed or maintained by the City until the following conditions have been met:

- 16.1. Rights-of-way sufficiently wide for the street and utilities, as determined by the Director of Engineering, have been dedicated and surveyed if necessary.
- 16.2. Right-of-way has been cleared and graded to meet City standards for slope and drainage.
- 16.3. Roadway shall be constructed or improved to the standards set forth in the Technical Standards Manual.
- 16.4. The Director of Engineering or their authorized representative has inspected all work.
- 16.5. The Director of Engineering or their authorized representative has issued a certificate of completion for the required improvements.
- 16.6. City Council has approved the acceptance of the street(s) for public maintenance and the warranty period has passed.

## 17.0 Cluster Mailbox Unit Standards

It is the responsibility of the Applicant to ensure that the appropriate method of mail delivery and locations are coordinated and approved with local USPS representatives for all proposed developments.

### 17.1 Site Plan Approval

A site plan will be required for review prior to approval of Cluster Mailbox Units (CBUs) associated with any subdivision or development application. If for any reason after approval of a site plan the location and other details pertaining to CBUs is altered, a revised site plan will be required to be submitted for review and compliance to all pertinent technical standards.

### 17.2 Arrangement

- a. CBUs shall be located outside the public right-of-way and located in a centralized common area(s) of the development. Sufficient parking should be provided to serve the location(s).
- b. CBUs or combinations with 16 or less mail receptacles may be located along a local residential street outside of the R/W, provided all the following are met:
  1. Posted speed limit on street is 25 mph or less.
  2. Sidewalk must be located on the same side of the street as the CBU.
  3. Access to the mailbox by users must be from the non-street side of the CBU.
  4. The structure is located so that no conflicts with utilities, above or underground, exist.
  5. At least one dedicated accessible parking space, on or off-street, is provided.
- c. CBUs or combinations of 32 or less mail receptacles may be located along a local or residential collector street provided all of the following are met:
  1. Posted speed limit on the street is 35 mph or less.
  2. Sidewalk must be located on the same side of street as the CBU.
  3. Access to the mailbox by users must be from the non-street side of the CBU.
  4. The structure(s) is located so that no conflicts with utilities, above or underground, exist.
  5. A dedicated on or off street parking area is provided with an appropriate amount of parking spaces.
- d. CBUs or combinations of 33 or more mail receptacles require a separate lot with street type driveway access containing an appropriate number of dedicated parking spots.
- e. CBUs or combinations of any number for non-residential or multi-family developments and/or subdivisions require a separate lot with street type driveway access containing an appropriate number of dedicated parking spots.

**17.3 Location**

All cluster mailbox units and associated on-street parking must be erected:

- a.** No closer than 100 feet measured from the curb-line of intersecting streets.
- b.** Away from any location whereby reason of the position of, shape or color, it may interfere with or obstruct the view of, or be confused with any authorized traffic sign, signal or device.
- c.** So as not to obstruct sight distance along the roadway and at intersecting streets, driveways, greenways, or trail facilities.
- d.** No closer than 10 feet away from a residential driveway serving a detached, semi-attached, or townhome dwelling.
- e.** In common areas or near property lines rather than directly in front of a residence.
- f.** Outside of public or private utility easements, public or private storm drainage easements, and at least 10 feet away from water meters and cleanouts.
- g.** No closer than 500 feet, measured along the street, from another CBU.

**17.4 Signs & Markings**

In areas where parking is provided for CBUs, permissible parking signs shall be installed on both ends of the defined parking area and designated specifically for mail parking. Signs R7-21a, shall be used that state "MAIL PARKING, 15 MINUTE LIMIT." Reserved accessible spaces shall be clearly marked with an international accessibility symbol marked on the pavement and signs R7-8 and R7-8a installed. All pavement markings and signs shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

**17.5 Lighting**

Suitable and sufficient lighting to illuminate the CBU and associated parking areas (where applicable) should be provided for all CBU locations.

**17.6 Maintenance**

- a.** The City does not have any responsibility for mail delivery; therefore, the city does not own or maintain CBUs.
- b.** The City will not be responsible for clearing snow and accumulations from the sidewalk, designated parking areas (if applicable), and pad around the CBU. In addition, the area around the CBUs is to be kept clean from trash and debris and clear from any obstacles that could impede mail delivery or retrieval.
- c.** These responsibilities must be provided by mailbox users or a legally responsible organization (i.e. homeowner's association, other legally recognized association, etc.) as acceptable to the Administrator. Documents to assure private responsibility of maintenance and repair by a homeowner's association or other legally recognized entity shall be approved as to form by the City Attorney.

**17.7 Signs on CBUs**

Signage affixed to CBUs located along streets is prohibited.

**17.8 Construction of CBUs**

Materials and specifications for the installation of CBUs and concrete pads are to be in accordance with USPS requirements and their approved manufacturer list.

**17.9 CBU Parking Requirements**

- a.** CBUs, or combinations of CBUs, require designated parking spots per Table 17-1.

**Table 17-1: CBU Parking Requirements**

CBU Parking Requirements		
Number of Mail Receptacles	Accessible Spaces*	Regular Parking Spaces
0-16	1	-
17-48	1	1
49-64	1	2
65-80	1	3
81-96	1	4
97-112	1	5
>112	**	**

\*Where only 1 accessible space is provided, it must be van accessible.

\*\*Requirements to be determined on a case by case basis.

## 18.0 References

The following are publications, documents, models, etc. that were used as guidance or direct reference for developing this Article. They are provided for citation and further review by the user of the contents of this article. Later editions and/or revisions of these references may be created in the future and shall be considered part of the standards in this manual where applicable.

North Carolina department of Transportation Standard Specifications for Roads and Structures, January 2018.

North Carolina Department of Transportation, Roadway Standards Drawings, 2018.

City of Concord Technical Standards Manual, Article 1, Stormwater.

American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 7<sup>th</sup> edition.

North Carolina Department of Transportation, Roadway Design Manual, 2021.

North Carolina Department of Environment and Natural Resources, Erosion and Sediment Control Planning and Design Manual, 2013.

NCDENR, Storm Water Best Management Practices, 2020.

Federal Highway Administration, Manual on Uniform Traffic Control Devices (MUTCD), 2009.

# City of Concord

## Technical Standards Manual

### Article III

### Driveways & Street Connections



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APPENDIX A –Street and Driveway Access Permit



## **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.

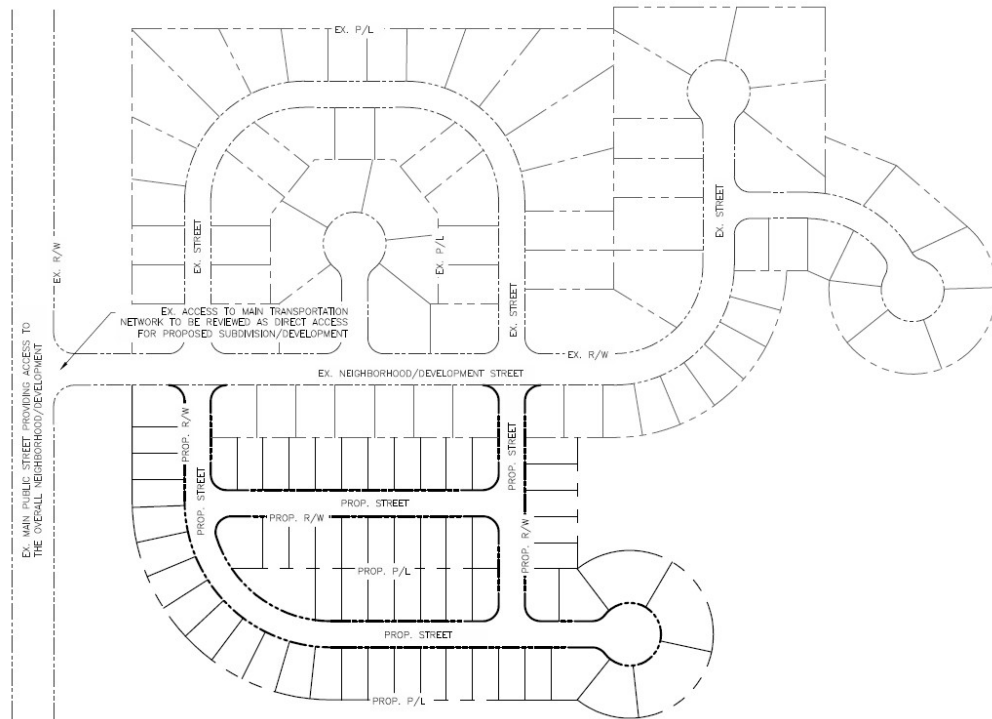
The requirements contained within this article will serve as the rules and regulations to permit connections to public streets per Article IV, Section 50-121 of the City Code of Ordinances and have been established:

- 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 and street connections 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. Standard details are provided in the Concord Manual of Standard Details to be used in conjunction with this article. In the event of a conflict between the standard details and the provisions in this Article, the stricter standards will apply. 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.
- 2.2. Standards for private driveways on private property are included in Article 10 of the Development Ordinance.
- 2.3. Existing driveway approaches or street connections 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.
- 2.4. Where proposed accesses connect to an existing public or private neighborhood/development street network with no more than two (2) non-gated entrances/outlets, the proposed development may be considered an expansion of the existing neighborhood/development and the existing entrances may be considered direct access entrances serving the proposed development and may be subject to current standards as they would apply to the proposed development. See figure 2.4-1 for an example.

**Figure 2.4-1: Existing Development Expansion Example**



### **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. A new driveway permit will be required for non-residential change of use development plans if they meet any of the following criteria:
  - a. Current driveway is in disrepair and/or does not meet City minimum design standards.
  - b. When a change of use results in an additional 20 daily trips per day above the existing use.
  - c. In cases where the existing driveway does not meet ADA accessibility requirements.
  - d. When there are significant changes to the on-site parking layout and circulation pattern.
  - e. Where NCDOT stipulates a new/revised driveway permit is required.
- 3.3. If not completed as part of a previous application process, an approved Traffic Impact Analysis (TIA) and subsequent Transportation Mitigation Agreement (TMA) is required prior to the approval of Driveway Permits for all proposed non-residential and mixed-use developments, all multi-family and single-family attached residential developments, and all other residential developments with 6 or more total dwelling units. Refer to the Technical Standards Manual (TSM), Article VIII, Traffic Impact Analysis, for TIA requirements.
- 3.4. The application process and requirements for issuance of this permit are provided in Article 6.
- 3.5. The North Carolina Department of Transportation (NCDOT) is required to review all connections to state system streets, unless exempt from state review requirements. The Applicant is responsible for ensuring all NCDOT Driveway Permit materials are submitted to NCDOT as applicable. The City will not accept nor handle money associated with any NCDOT fees.
- 3.6. All connections to City maintained streets which will potentially add traffic or otherwise impact an

existing City to State system connection will be reviewed by NCDOT to determine the potential for, and extent of improvements to State facilities to ensure the overall transportation infrastructure is adequate to serve proposed developments.

- 3.7. When determined that improvements are needed on NCDOT maintained streets and a NCDOT driveway permit is not required for the proposed access(s), an encroachment agreement between the Applicant and the NCDOT will be required for any work to be done within NCDOT right-of-way in accordance with NCDOT guidelines.
- 3.8. 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.
- 3.9. Driveway permits on state system streets, within the municipal limits of Concord, must also be submitted to the City for review.
- 3.10. When a NCDOT Driveway Permit or Encroachment Agreement is required, concurrent review is allowed however, the City cannot approve a development Site Plan until such time as final approval of the NCDOT Driveway Permit or Encroachment Agreement application and plans approved by NCDOT are provided.
- 3.11. The maximum number of driveways allowed for any parcel prior to the subdivision of property is three.
- 3.12. Approval of a City Driveway Permit is contingent on the determination by the City and/or NCDOT that the overall existing transportation infrastructure, or planned improvements, is adequate to serve proposed accesses.

## **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 in Table 4-1.

**Table 4-1: Minimum and Maximum Access Widths**

Driveway Types	Driveway Width (feet)		Flare/Radius (feet)	
	Minimum	Maximum	Minimum	Maximum
Residential Single Family (Detached)	12	20	1	3
Residential Single Family (Attached)	10	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.

- c. 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 curb line at the inside sidewalk line.

4.2. **Location.**

- a. The driveway approach must be installed to the right-of-way line, at least ten feet from the edge of the street and/or back-of-curb, or at least 5' from the edge of sidewalk furthest from the edge of the street. The greatest distance will apply.
- b. No portion of a driveway may be located within a sight triangle.
- c. Driveways accessing Major or Minor Thoroughfares, Boulevards, or Major Collectors must provide on-site turnaround to prevent backing into the street from the driveway.

4.3. **Materials.**

a. Types.

- 1. *Portland Cement Concrete.* All driveway approaches must be Portland cement concrete (3600 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 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 in Table 5-1. Driveways cannot be located within sight triangles. For corner lots, driveways should be located as far as possible from the intersection.

5.2. **Stem Lengths.** The stem length shall be measured from the parallel edge of right-of-way of the intersecting street to the first point of conflict, such as parking areas or intersections. Where no right-of-way is dedicated along a private street, the stem length shall be measured from the closest edge of the intersecting street. Stem lengths for non-residential and multi-family driveways shall be established by raised curb and gutter or other acceptable physical barrier to prevent vehicles from entering and exiting the driveway within the required length. Minimum stem lengths are listed in Table 5-2.

- a. **Residential Stem Lengths.** Minimum stem lengths for single-family residential developments will be required along all proposed/existing entrances to the proposed development from intersecting streets.
- b. **Non-Residential Stem Lengths.** Minimum stem lengths for non-residential and multi-family uses will be required along all streets.
- c. **Gated Driveways.** In order to ensure that no part of any vehicle using a driveway remains in or overhangs the R/W, sidewalk, or street while waiting on the gate to operate, proposed gates for all detached and attached residential driveways shall be located a minimum of 24 feet from the R/W, and proposed gates for all non-residential and multi-family driveways shall be located a

minimum distance per the stem lengths shown in Table 5-2, or further if design vehicle is longer than the minimum stem length.

**Table 5-1: Minimum Driveway Separations**

<b>Functional Classification</b>	<b>Separation between Driveways<sup>1</sup></b>	<b>Separation between Driveway and Street<sup>2</sup></b>
Major Thoroughfare	400 feet	250 feet
Minor Thoroughfare	400 feet	250 feet
Major Collector	120 feet	120 feet
Minor Collector		
Non-Residential & Multi-Family	50 feet	60 feet
Single-Family Detached	30 feet	30 feet
Local Street		
Non-Residential & Multi-Family	50 feet	60 feet
Single-Family Detached	30 feet	30 feet

<sup>1</sup> Distance is measured from closest edge to closest edge.

<sup>2</sup> Distance is measured from closest edge of the driveway to the closest parallel edge of the street right-of-way. Minimum separation between driveways and streets should be equal to the number shown in the table, the minimum distance required to ensure no portion of a driveway falls within a sight triangle, or the minimum stem length required along entrances to proposed developments. The greatest distance will apply.

**Table 5-2: Minimum Stem Lengths**

<b>Functional Classification</b>	<b>Minimum Stem Length (feet)</b>
Major Thoroughfare	125 feet
Minor Thoroughfare	100 feet
Major Collector	75 feet
Minor Collector	
Non-Residential & Multi-Family	70 feet
Single-Family Residential	60 feet
Local Street (Inc. Alleys)	50 feet

- 5.3. **Side Clearance.** All driveway approaches must have a minimum side clearance from property line as specified in Table 5-3. Additional side clearance may be needed to accommodate required turn lanes, deceleration lanes and/or tapers.

**Table 5-3: Minimum Side Clearance**

<b>Land Use</b>	<b>Minimum Side Clearance</b>
Single-Family Residential Uses	5 feet
All Other Uses	10 feet

- 5.4. **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 apart from the side clearance restriction along the property line where the access is located. Minimum separation of shared accesses shall follow Table 5-1 with the exception that the minimum separation for shared access points for Single-Family Attached from adjacent driveways shall be 30 feet. A shared access is treated as a single driveway for the purposes of allowed widths. No portion of a shared access driveway may be counted towards parking requirements.
- 5.5. **Corner Clearance.** All driveway approaches must have a minimum clearance from the edge of parallel public rights-of-way (street intersections) to the nearest edge of the driveway approach as indicated by the minimum separations and/or stem lengths shown in Tables 5-1 and 5-2.
- 5.6. **Corner Lots.** Driveways associated with corner lots should be located on the street with the lower street functional classification.

## **6.0 Attached Single Family Dwelling Access Standards**

- 6.1. For the purposes of this section, the following definitions will apply:
- a. **Structure** – any single building consisting of a number of Single Family or Multi-Family Attached dwelling units.
  - b. **Attached Multi-Family Dwelling** – any single dwelling unit attached to one or more dwelling units within the same structure located on a single parcel.
  - c. **Attached Single Family Dwelling** – any single dwelling unit located on its own individual parcel and attached to one or more single family dwelling units within the same structure.
  - d. **Townhome** – a single family dwelling unit attached to other units creating a structure of 2 (two) or more units in a row.
  - e. **Duplex** – a structure consisting of no more than two (2) single family attached dwelling units. Duplexes proposed within a development also proposing townhome structures containing 3 or more single family dwellings will be treated as townhomes.
  - f. **Primary Street** – Any street other than an alley, public or private, providing direct or indirect access to the structure.
  - g. **Alley** – Private access connection providing an indirect link from each individual unit or structure’s driveway, parking, and/or garage to the primary street. Intersections between private alleys and primary streets shall meet all requirements





## 8.0 Alignment and Grades

- 8.1. **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. Sidewalk shall be a minimum of 6" thick at driveway crossings.
- 8.2. **Angle.** The driveway angle (the angle between the driveway centerline and the curb line) must be ninety (90) degrees, unless engineering considerations dictate otherwise and approved by the Director of Transportation.
- 8.3. **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.
- 8.4. **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 elements,
    2. Catch basins,
    3. Fire hydrants,
    4. Crosswalks,
    5. Curb ramps,
    6. Loading zones,
    7. Utility poles,
    8. Fire alarm supports,
    9. Meter boxes, and/or
    10. Sewer cleanouts.
  - b. The driveway approach must be located a minimum of 3 feet from any such facilities.

## 9.0 Turn Lanes

- 9.1. 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 proposing direct or indirect (i.e. adding accesses to existing dead end or limited access neighborhood/development street networks) access 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 eight thousand (8,000) vehicles per day, if any one of the following conditions are also present:
- a. Fifty (50) or more off-street parking spaces are required;
  - b. 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 latest editions of

- 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;
- c. More than twenty-five (25) truck (more than 13,000 G.V.W.) trips per day through a single driveway are expected;
  - d. 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
  - e. At least fifty (50) residential dwelling units are served by the access point.
- 9.2. In addition to the criteria listed above, Tables C-1 and C-2 in Appendix C, Article VIII of the TSM, offer further guidance to warrant the installation of dedicated left or right turn lanes on streets throughout Concord.
- 9.3. NCDOT publishes a chart (pg. 80) in the NCDOT Policy on Street and Driveway Access that indicates warrants and recommends storage lengths for left and right turn lanes based on the number of turns versus the opposing volume of traffic. This chart should be used as a basis for determining the storage length required for turn lanes into a site and as additional guidance for when turn lanes are warranted. The chart is included in Appendix C, Article VIII of the TSM. The typical minimum length is 100’ for tapers, and 100’ for storage. Storage and taper lengths less than 100’ will be reviewed on a case-by-case basis.
- 9.4. Turn lanes should be designed per NCDOT recommendations. Two charts (pages 78 and 79) outlining NCDOT recommended treatments for turn lanes, included in the NCDOT Driveway Permit Manual, are provided in Appendix C, Article VIII of the TSM for general reference.
- Note: Dual right- or left-turn lanes should be considered when the turning volume exceeds 300 vehicles per hour.
- 9.5. Where turn lanes are determined to be needed based on the above criteria, they will be considered necessary improvements for the transportation infrastructure to be considered adequate to serve developments safely and efficiently.

## **10.0 One-Way Access Point Standards**

### **10.1. 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.**

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.

## 11.0 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.

- 11.1. **Drainage System.** Roadside drainage is accomplished using ditches, driveway pipes, curb and gutter, or some combination of both systems.
- 11.2. **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.
- 11.3. **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 backfilling 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.

#### **11.4. Pipe Construction Options**

- a. All non-residential 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.

#### **11.5. Acceptable Piping Materials**

- a. All pipe located within the street right-of-way must be reinforced concrete pipe or other acceptable material approved on a case-by-case basis.

#### **11.6. 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."
- c. Roll-over grates are not acceptable within driveways.

### **12.0 Inspections**

- 12.1. 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.
- 12.2. The applicant shall request an inspection by a city inspector 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.
- 12.3. In the event of failure to comply with the provisions of this article or the terms of the permit or in the case of faulty workmanship or materials, the permit may be revoked and the property owner will be required to remove or correct the non-complying driveway at the property owner's expense.

## 13.0 Street and Utility Repairs

- 13.1. 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.
- 13.2. 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.
- 13.3. 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.
- 13.4. A copy of the permit must be kept at the job location.
- 13.5. 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.
- 13.6. If circumstances justify, the Director of Transportation may grant an extension of these time requirements.

## 14.0 Use and Protection of Property

- 14.1. **Rights-of-Way.**
  - a. Rights-of-way of streets may not be used for private or commercial purposes without an approved encroachment agreement.
  - 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. This includes vehicle queues from drive-through and curb side services.
- 14.2. **Raised Curbing.**
  - a. Except for driveway approaches to single family 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.
- 14.3. **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 within property lines.
  - 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.
- 14.4. Except as may be provided for under the Concord City Code, Part II, Chapter 50, Streets, Sidewalks, and Other Public Places, no part of the right-of-way or the area between the curb and 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.

## **15.0 Protecting the public from injury**

- 15.1. 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.
- 15.2. 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 Transportation and in accordance with the Manual on Uniform Traffic Control Devices.
- 15.3. 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.
- 15.4. 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.

## 16.0 Parking and Loading

Parking and Loading shall be designed and provided in accordance with this article as well as the guidelines in Article 10 of the City of Concord development ordinance.

### 16.1. Parking Aisle and Space Dimensions

Minimum dimensions of parking spaces and maneuvering areas shall be as set forth below.

- a. Accessible 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 (8 feet in width in addition to an 8 foot access aisle, or 11 feet in width in addition to a 5 foot access aisle); or 24 feet by 18 feet for a double van space, or a non-van and van double space (8 feet in width for each space with an eight foot access aisle between spaces). Accessible parking spaces shall comply with the N.C. Accessibility Code.
- b. Compact Car Spaces are only permitted in parking facilities providing 100 spaces or more. Not more than 20% of the off-street parking spaces required shall be designed as compact car parking spaces. Each compact car parking space shall be a minimum of eight (8) feet wide and sixteen (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.

**Table 15-1: Parking Area Dimensional Standards**

STANDARD SIZE SPACES						
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'
COMPACT SPACES						
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'

### 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 of 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 Standard DRV-121, and shall be 4" white paint.





# **CITY OF CONCORD MANUAL OF STANDARD DETAILS**

**MARCH 2022**

<b>DRV - DRIVEWAY STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
DRV-100	GENERAL DRIVEWAY (DW) NOTES & DIMENSIONS
DRV-101 (2 SHEETS)	GENERAL DRIVEWAY LOCATION DIMENSIONS
DRV-102	DROP CURB RAMP TYPE DW (PLANT STRIP & 2'-6" C&G)
DRV-103	RADIUS CURB RAMP TYPE DW (PLANT STRIP & 2'-6" C&G)
DRV-104	RES. RAMP TYPE DW (BOC 2'-6" C&G)
DRV-105	STREET TYPE DW (2'-6" C&G)
DRV-106	RES. RAMP TYPE VALLEY CURB
DRV-107	RAMP TYPE DW RIBBON PAVEMENT
DRV-108	CONC. CURB & GUTTER DRIVEWAY CUT
DRV-120	ACCESSIBLE PARKING AND SIGNAGE STANDARDS
DRV-121	STANDARD PARKING DIMENSIONS

<b>MI - MISCELLANEOUS INFRASTRUCTURE STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
MI-101	CONC. CURB & GUTTER DETAILS
MI-102	CURB TRANSITION (2-6 TO 2)
MI-103	CURB TRANS. 2-6 TO 1-6
MI-104	CONC. SWLKS
MI-105	SWLK TRANS.
MI-106	CONCRETE MULTI-USE PATH
MI-107	ASPHALT MULTI-USE-PATH
MI-109	TYP. INTERSECTION CURB RAMP LAYOUT AND NOTES
MI-110	TRUNCATED DOMES
MI-111	PERP. CR 2-6 C&G
MI-112	PERP. CR 2-0 VALLEY C&G
MI-113	DIRECTIONAL CURB RAMP SMALL/MED RADIUS
MI-114	DIRECTIONAL CURB RAMP LARGE RADIUS
MI-115	DIRECTIONAL CURB RAMP W/VALLEY CURB
MI-116	PED REFUGE MEDIAN (1'-6" CURB)
MI-117	PED REFUGE MEDIAN (MONOLITHIC CONC.)

<b>STR - STREETS STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
STR-101	LOCAL RESIDENTIAL (RES.) STREET
STR-102	RES. COLLECTOR STREET
STR-103	RES. COLLECTOR STREET WITH BICYCLE LANES
STR-104	RES. COLLECTOR WITH PARALLEL PARKING
STR-105	RES. COLLECTOR WITH 45 DEG. REVERSE ANGLE PARKING
STR-106	NON-RES. COLLECTOR
STR-107	NON-RES. COLLECTOR WITH BICYCLE LANES
STR-108	NON-RES. COLLECTOR DIVIDED
STR-109	NON-RES. COLLECTOR 45 DEG. ANGLE PARKING
STR-110	NON-RES. COLLECTOR PARALLEL PARKING
STR-111	RES. CUL-DE-SAC LESS THAN 150'
STR-112	RES. CUL-DE-SAC GREATER THAN 150' (ENCROACHMENT)
STR-113	NON-RES. AND MIXED USE CUL-DE-SAC
STR-114	RES. ALLEY
STR-116	TRANSITION BETWEEN STREET CLASSIFICATIONS
STR-118	CATCH BASIN IN VALLEY CURB
STR-119	CULVERT CROSSING
STR-120	ON-STREET PARALLEL PARKING
STR-121	ACCESSIBLE ONSTREET PARALLEL PARKING
STR-122	ON-STREET REVERSE ANGLE PARKING

<b>MISC - MICELLANEOUS STANDARDS</b>	
<i>Standard</i>	<i>Title</i>
MISC-201	CURB AND GUTTER REMOVAL / REPLACEMENT
MISC-202	UTILITY CUT REPLACEMENT DETAIL
MISC-203 (2 SHEETS)	END OF ROAD BARRICADE
MISC-204	END OF ROAD MARKER
MISC-205	END OF STREET FUTURE DEV. SIGN
MISC-206 (2 SHEETS)	SAFETY RAIL & WARRANTS

NOT TO SCALE



CONCORD MANUAL OF STANDARD DETAILS  
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3-2022  
CMSD - TOC  
SHEET 1 OF 1

MINIMUM DRIVEWAY SEPARATION		
	CORRESPONDING DIST. FROM DETAIL SHEETS	
	D	C
FUNCTIONAL CLASSIFICATION (STREET A)	SEPARATION BETWEEN DRIVEWAYS <sup>1</sup> (FEET)	SEPARATION BETWEEN DRIVEWAY & STREET <sup>2</sup> (FEET)
Major Thoroughfare		
Non-Res. & Multi-Family	400	250
Single-Family Detached	150	250
Minor Thoroughfare		
Non-Res. & Multi-Family	400	250
Single-Family Detached	150	250
Major Collector		
Non-Res. & Multi-Family	120	120
Single-Family Detached	120	120
Minor Collector		
Non-Res. & Multi-Family	50	60
Single-Family Detached	30	30
Local Street (Inc. Alleys)		
Non-Res. & Multi-Family	50	60
Single-Family Detached	30	30
Single-Family Attached	10	30

<sup>1</sup> Distance is measured from the closest edge to the closest edge.

<sup>2</sup> Distance is measured from closest edge of the driveway to the closest parallel edge of the street right-of-way. Minimum separation between Driveways and Streets should be equal to the number shown in the table, the minimum distance required to ensure no portion of a driveway falls within a sight triangle, or the minimum stem length required along entrances to proposed developments. The greatest distance will apply.

SIDE CLEARANCE	
LAND USE	S MINIMUM SIDE CLEARANCE
Single-Family Residential Uses	5 Feet
All Other Uses	10 Feet

MINIMUM STEM LENGTHS	
CLASSIFICATION OF PERPENDICULAR STREET	L - MINIMUM STEM LENGTH (FEET)
MAJOR THROUGHFARE	125
MINOR THROUGHFARE	100
MAJOR COLLECTOR	75
MINOR COLLECTOR	
Non-Residential & Multi-Family	70
Single Family Residential	60
LOCAL STREET (INC. ALLEYS)	50

MINIMUM AND MAXIMUM ACCESS WIDTHS				
DRIVEWAY TYPES	W - DRIVEWAY WIDTH (FEET)		F - FLARE / R-RADIUS (FEET)	
	MIN.	MAX.	MIN.	MAX.
Res. Single-Family (Detached)	12	20	1	3
Res. Multi-Family	24	36	5	10
Comm./Industrial (two-way)	24	36	10	30
Comm./Industrial (one-way)	15	20	10	30
Private Street Entrance	24	48	10*	30*
Street Type Driveway	24	36	10*	30*

\*Radius only

DRIVEWAY NOTES:

1. ALL CONNECTIONS TO STATE MAINTAINED STREETS MUST BE APPROVED BY NCDOT UNLESS EXEMPT.
2. WHERE NCDOT AND CITY STANDARDS DIFFER, THE STRICTEST STANDARDS MEETING THE MINIMUM REQUIREMENTS OF BOTH WILL APPLY.
3. THE DRIVEWAY APPROACH MUST BE INSTALLED TO THE RIGHT-OF-WAY LINE, AT LEAST 10 FEET FROM THE EDGE OF THE STREET AND/OR BACK OF CURB, OR AT LEAST 5' FROM THE EDGE OF SIDEWALK FURTHEST FROM THE EDGE OF THE STREET. THE GREATEST DISTANCE WILL APPLY.
4. DRIVEWAYS ACCESSING MAJOR OR MINOR THOROUGHFARES OR BOULEVARDS MUST PROVIDE ON-SITE TURNAROUND.
5. DRIVEWAYS ASSOCIATED WITH CORNER LOTS SHOULD BE LOCATED ON THE STREET WITH THE LOWER FUNCTIONAL CLASSIFICATION.
6. REFER TO SECTION 7.5 IN ARTICLE II OF THE TECHNICAL STANDARDS MANUAL (TSM) FOR SIGHT TRIANGLE REQUIREMENTS.
7. REFER TO ARTICLE III OF THE TSM FOR MORE STANDARDS PERTAINING TO DRIVEWAYS.

NOT TO SCALE



GENERAL DRIVEWAY NOTES &  
DIMENSIONS

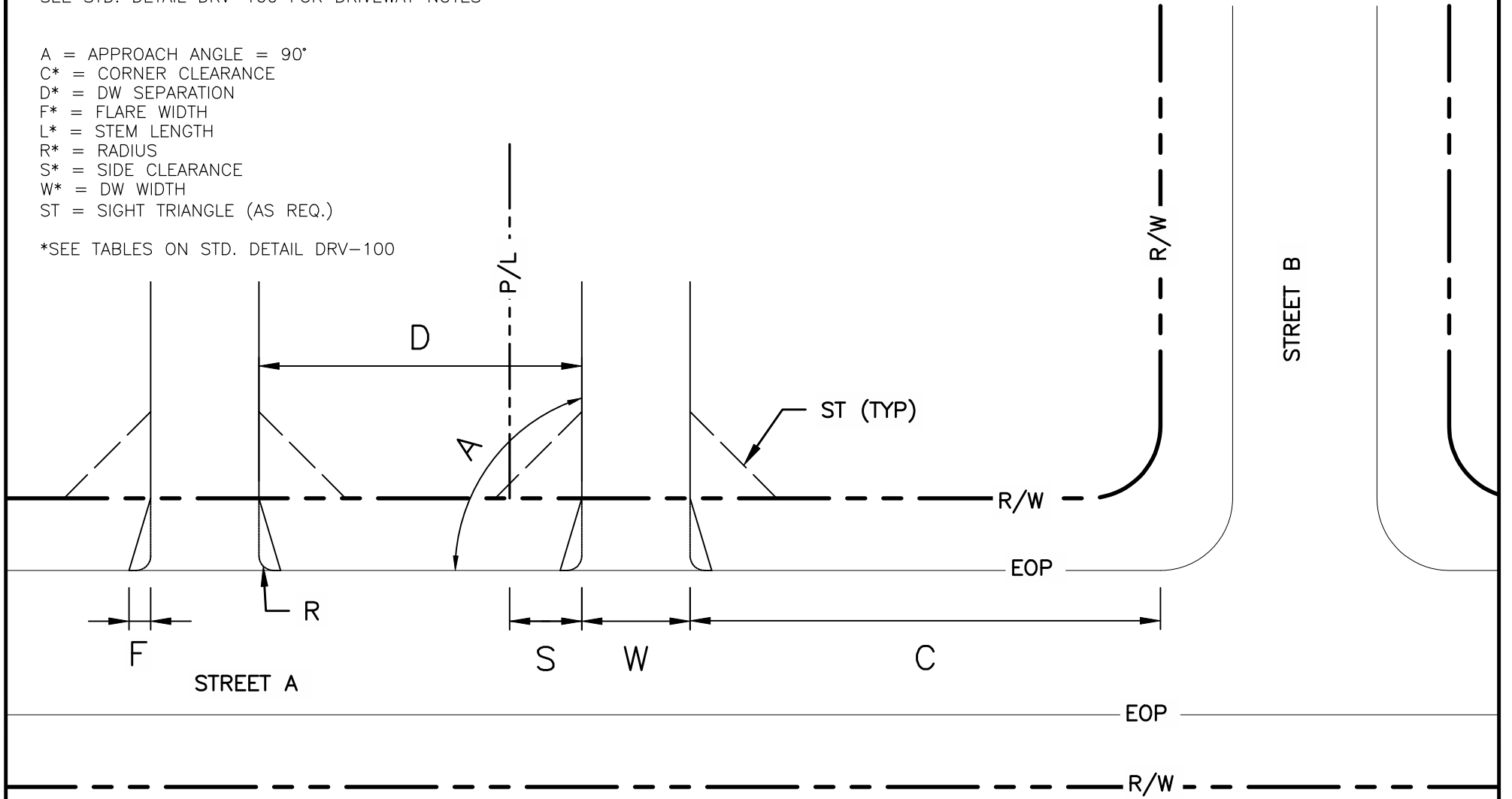
3-2022  
DRV-100  
SHEET 1 OF 1



NOTES:  
 SEE STD. DETAIL DRV-100 FOR DRIVEWAY NOTES

- A = APPROACH ANGLE = 90°
- C\* = CORNER CLEARANCE
- D\* = DW SEPARATION
- F\* = FLARE WIDTH
- L\* = STEM LENGTH
- R\* = RADIUS
- S\* = SIDE CLEARANCE
- W\* = DW WIDTH
- ST = SIGHT TRIANGLE (AS REQ.)

\*SEE TABLES ON STD. DETAIL DRV-100



NOT TO SCALE

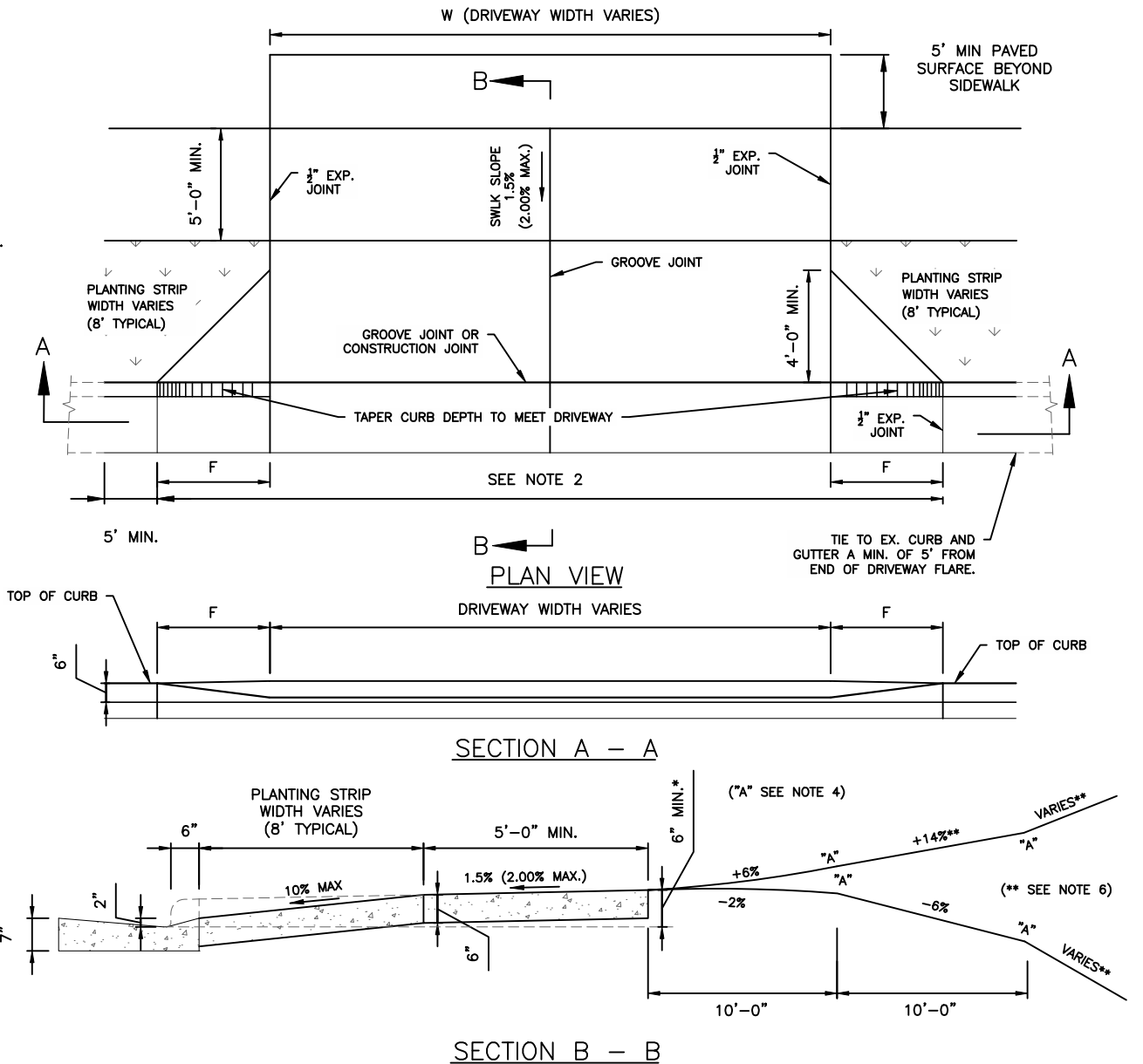


## GENERAL DRIVEWAY LOCATION DIMENSIONS

3-2022
DRV-101
SHEET 2 OF 2

**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" – BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* – PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. \* – THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.



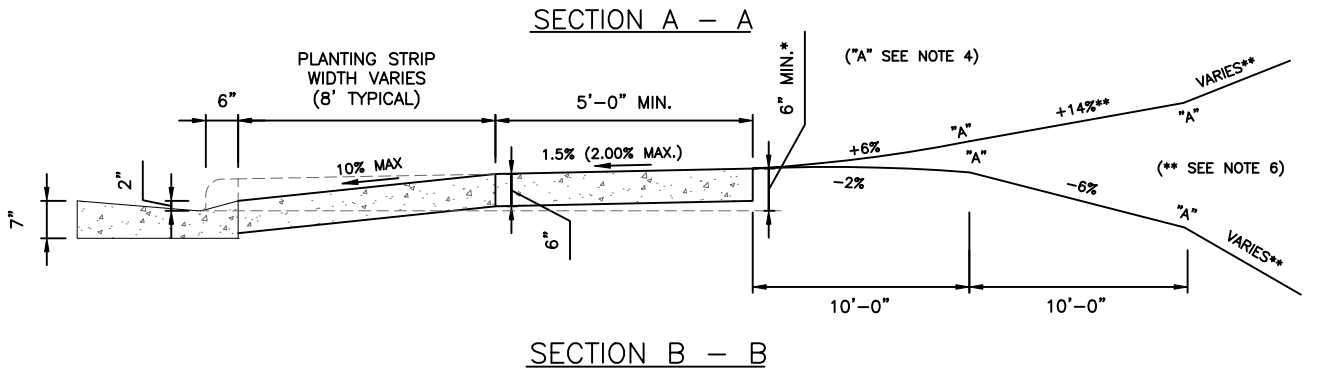
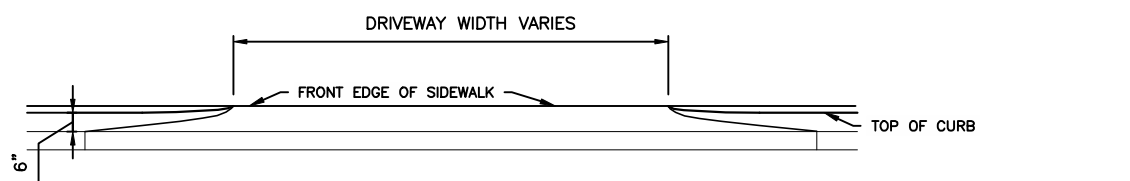
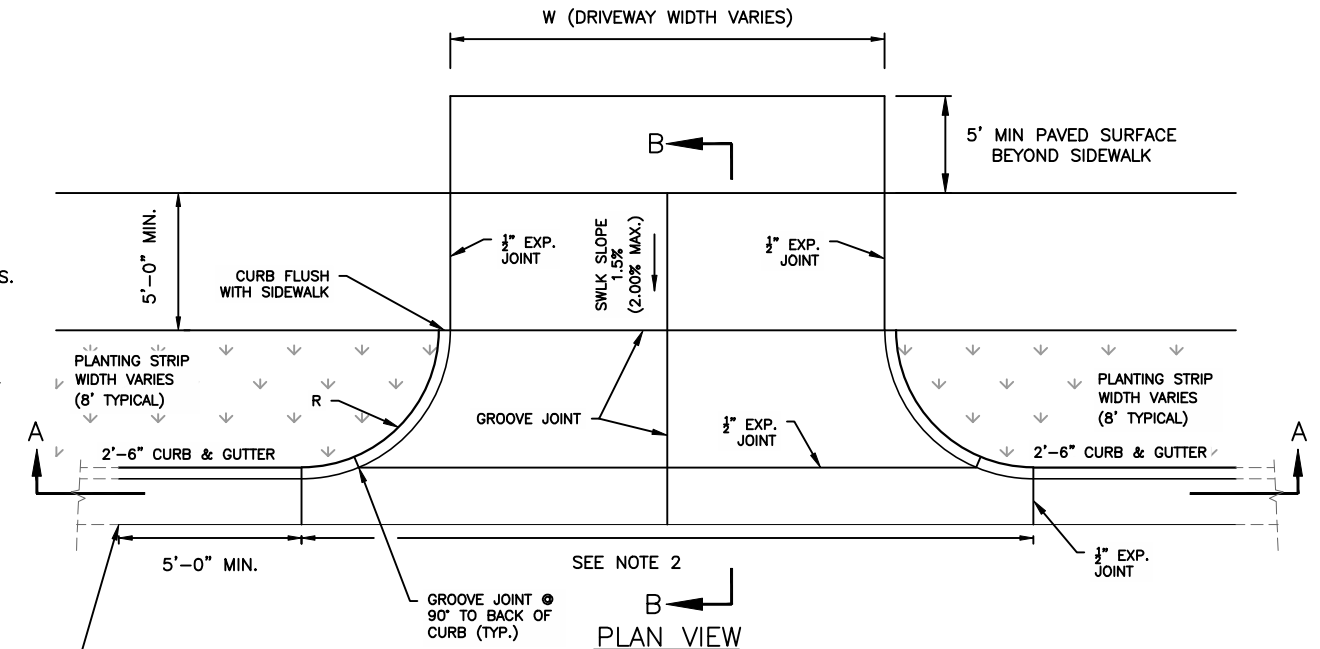
DROP CURB RAMP TYPE DRIVEWAY  
PLANTING STRIP & 2'-6" CURB AND GUTTER

3-2022  
DRV-102  
SHEET 1 OF 1

**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" - BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* - PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. \* - THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.

TIE TO EX. CURB AND GUTTER A MIN. OF 5' FROM END OF DRIVEWAY FLARE.



RADIUS CURB RAMP TYPE DRIVEWAY  
PLANTING STRIP & 2'-6" CURB AND GUTTER

3-2022  
DRV-103  
SHEET 1 OF 1

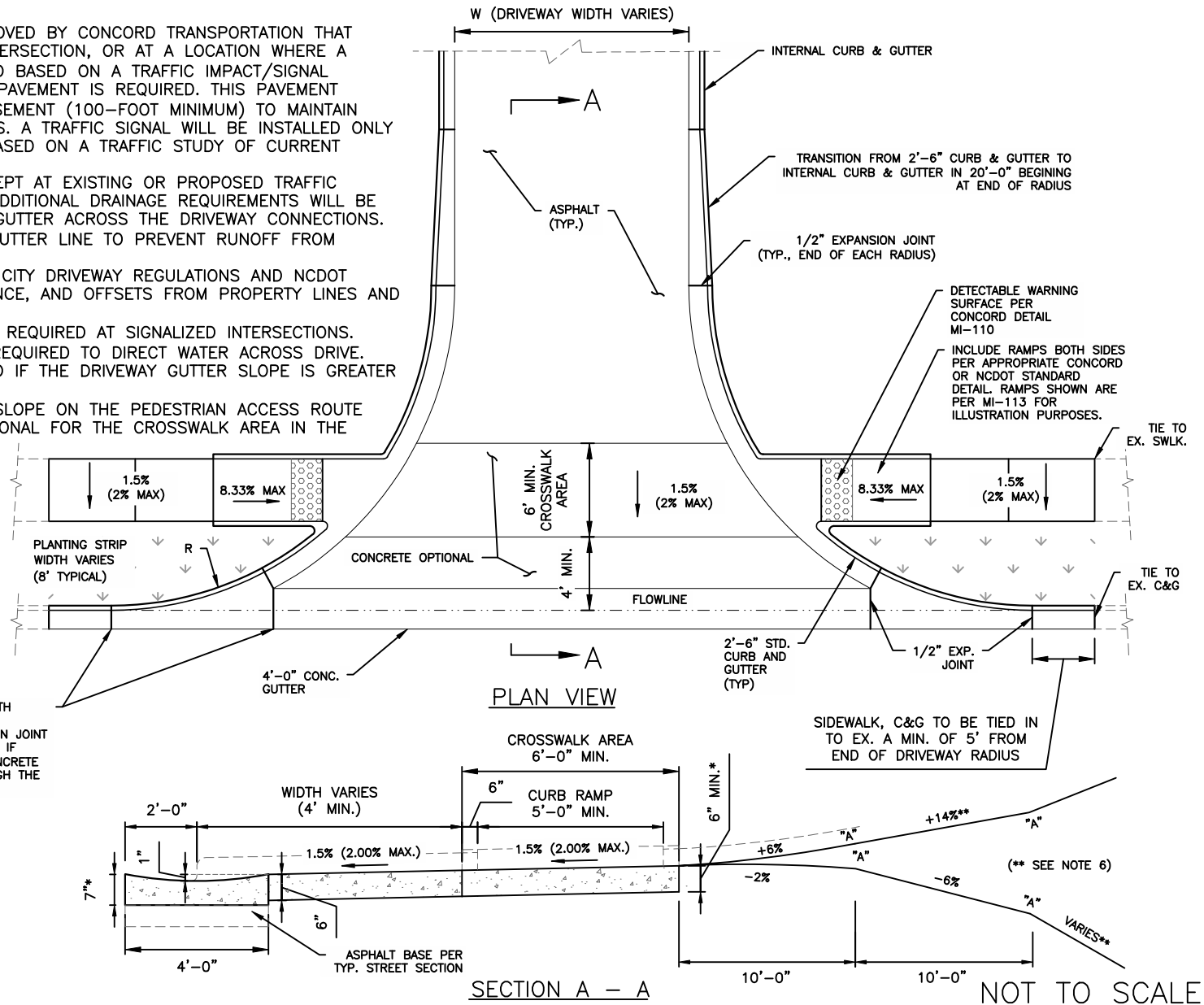




**NOTES:**

1. WHERE A STREET TYPE DRIVEWAY IS APPROVED BY CONCORD TRANSPORTATION THAT CONNECTS TO AN EXISTING SIGNALIZED INTERSECTION, OR AT A LOCATION WHERE A TRAFFIC SIGNAL INSTALLATION IS PROPOSED BASED ON A TRAFFIC IMPACT/SIGNAL WARRANT STUDY, A FULL DEPTH ASPHALT PAVEMENT IS REQUIRED. THIS PAVEMENT DESIGN IS REQUIRED IN THE DRIVEWAY EASEMENT (100-FOOT MINIMUM) TO MAINTAIN DETECTOR LOOPS AND PAVEMENT MARKINGS. A TRAFFIC SIGNAL WILL BE INSTALLED ONLY IF IT IS DETERMINED TO BE NECESSARY BASED ON A TRAFFIC STUDY OF CURRENT CONDITIONS.
2. A CONCRETE GUTTER IS TO BE USED EXCEPT AT EXISTING OR PROPOSED TRAFFIC SIGNAL LOCATIONS. AT THESE LOCATIONS ADDITIONAL DRAINAGE REQUIREMENTS WILL BE NECESSARY TO ELIMINATE THE NEED FOR GUTTER ACROSS THE DRIVEWAY CONNECTIONS.
3. THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
4. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
5. TWO (2) CURB RAMPS PER CURB RETURN REQUIRED AT SIGNALIZED INTERSECTIONS.
6. FOUR (4) FOOT GUTTER AND WINGS ARE REQUIRED TO DIRECT WATER ACROSS DRIVE. GUTTER AND WINGS MAY NOT BE REQUIRED IF THE DRIVEWAY GUTTER SLOPE IS GREATER THAN 2%.
7. MAINTAIN UP TO 1.5% (MAX. 2%) CROSS-SLOPE ON THE PEDESTRIAN ACCESS ROUTE BETWEEN CURB RAMPS. CONCRETE IS OPTIONAL FOR THE CROSSWALK AREA IN THE DRIVEWAY.
8. WHERE DRIVEWAY CONNECTS TO AN NCDOT MAINTAINED STREET, NCDOT APPROVED CURB RAMPS SHOULD BE USED.
9. THE CROSSWALK AREA SHOULD BE GRADED TO ADA STANDARDS WHETHER OR NOT A STRIPED CROSSWALK IS INSTALLED. THE INCLUSION OF A STRIPED CROSSWALK WILL BE ON A CASE BY CASE BASIS.
10. REFER TO STD. DRV-100 & DRV 101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION

\* - TRANSITION CONCRETE DEPTH FROM 7" AT LIP TO 10" AT 4' CONCRETE GUTTER CONSTRUCTION JOINT IF NO ASPHALT BASE IS USED. IF ASPHALT BASE IS USED, 7" CONCRETE DEPTH CAN BE CARRIED THROUGH THE 4' CONCRETE GUTTER.



STREET TYPE DRIVEWAY  
2'-6" STD. CURB AND GUTTER

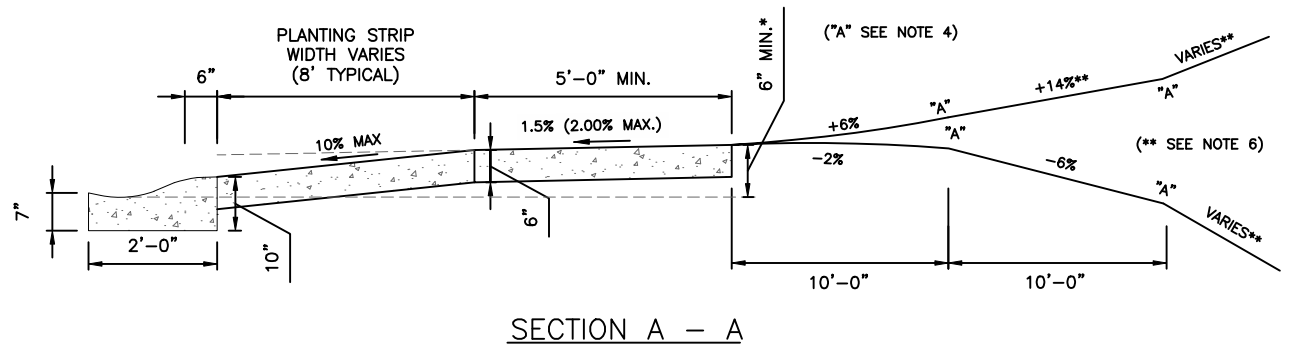
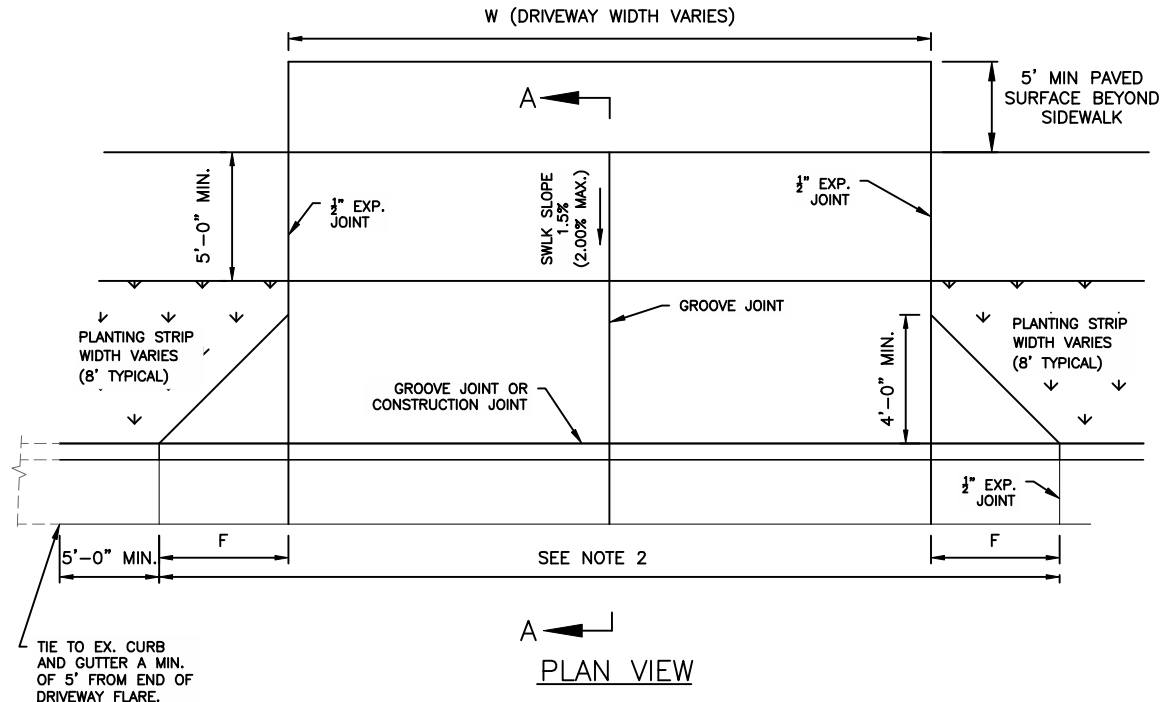
3-2022

DRV-105

SHEET 1 OF 1

**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" – BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* – PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. \* – THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION



NOT TO SCALE

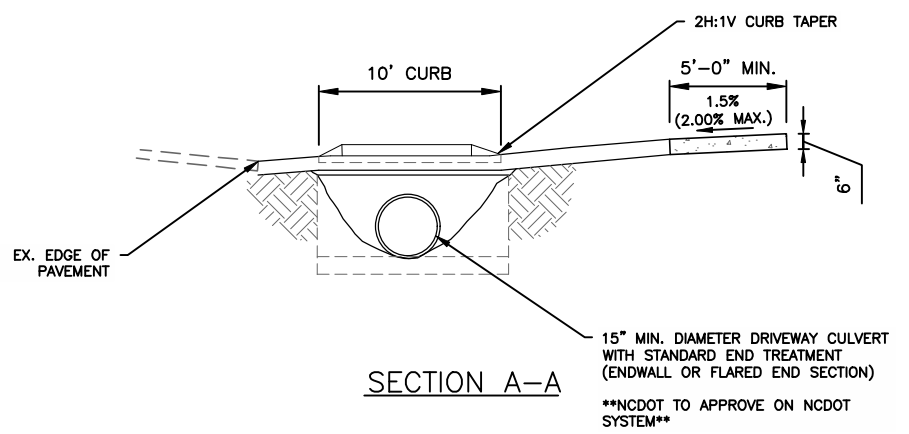
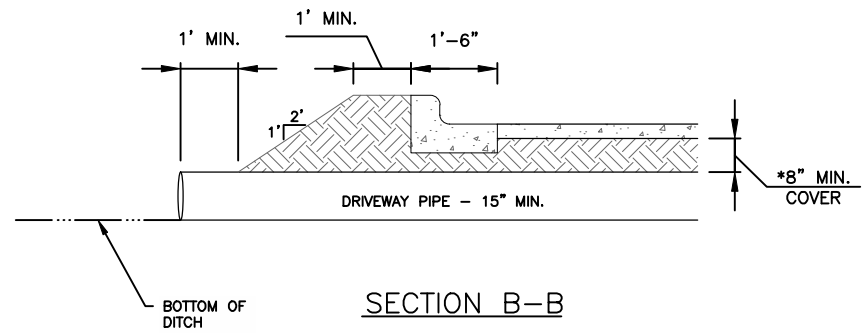
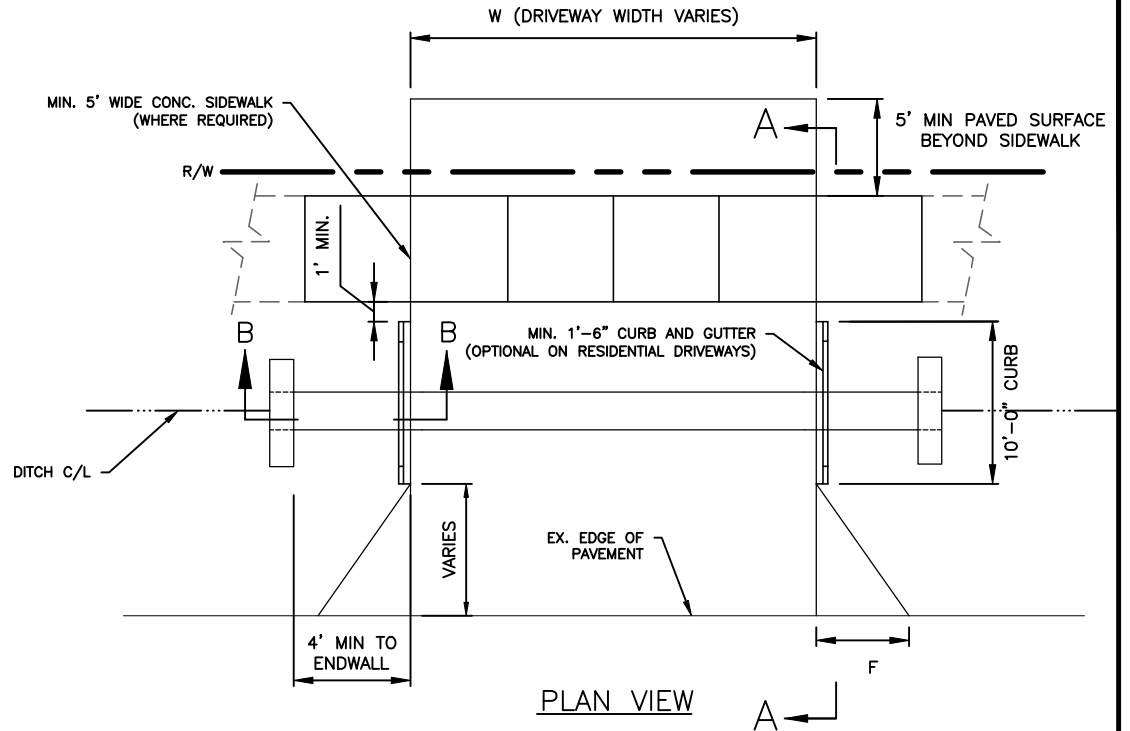


RESIDENTIAL RAMP TYPE DRIVEWAY  
2'-0" VALLEY CURB AND GUTTER

3-2022
DRV-106
SHEET 1 OF 1

**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
3. ALL DRIVEWAYS MUST MEET THE CURRENT CITY DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" - BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED ON GRADES EXCEEDING WHAT ARE SHOWN.
6. \*\* - PER NC IFC SECTION D103.2, FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE.
7. JOINT MATERIAL SHOULD BE PLACED FLUSH WITH CONCRETE.
8. TO BE USED ON ROADS WITHOUT CURB AND GUTTER WHERE CURB AND GUTTER IS NOT BEING INSTALLED (MUST MEET BOTH CRITERIA).
9. REFER TO TSM AND STD. DRV-100 AND DRV-101 FOR ASSOCIATED DIMENSIONS AND LOCATION INFORMATION.
10. \* MINIMUM COVER IS 8" WHEN CLASS IV RCP IS USED. WHERE A DIFFERENT MATERIAL IS APPROVED THE MINIMUM COVER WILL BE DETERMINED ON A CASE BY CASE BASIS.
11. THE PIPE SHALL BE A MINIMUM DIAMETER OF 15" REINFORCED CONCRETE A LARGER PIPE SIZE MAY BE REQUIRED WHERE DETERMINED BY A PROFESSIONAL ENGINEER.
12. THE MINIMUM LENGTH OF THE PIPE IS 20', OR THE LENGTH NEEDED TO EXTEND ONE (1) FOOT BEYOND THE TOE OF A 2:1 SLOPE. SEE SECTION B-B.



NOT TO SCALE

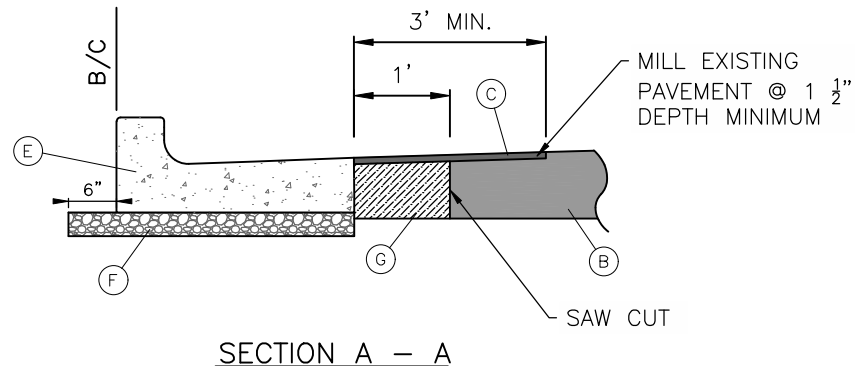
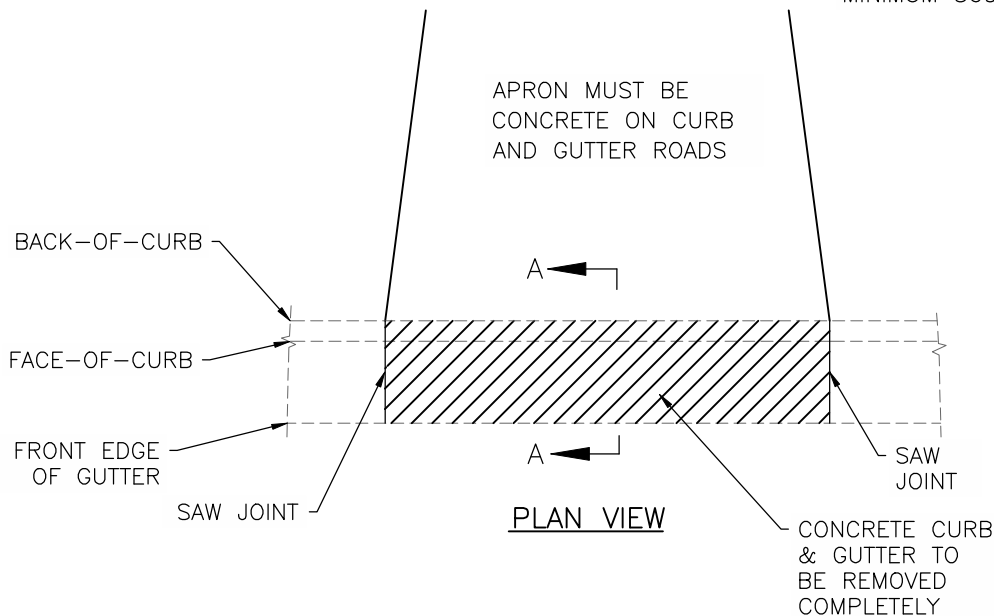


RAMP TYPE DRIVEWAY  
RIBBON PAVEMENT

3-2022
DRV-107
SHEET 1 OF 1

\*CONCRETE SHALL BE A MINIMUM OF 6" THICK IN THE RIGHT-OF WAY, MINIMUM 3600 PSI.

APRON MUST BE CONCRETE ON CURB AND GUTTER ROADS



NOTES

1. ANY DAMAGED CURB & GUTTER SHALL BE COMPLETELY REMOVED AND REPLACED WITH NEW CONCRETE.
2. ON STREETS WITH A CUL-DE-SAC, THE SAW CUT SHALL BE PERPENDICULAR TO THE FACE OF THE CURB & GUTTER.
3. NO SECTION OF EXISTING CURB & GUTTER WHICH WILL BE LESS THAN 5' SHALL REMAIN. LIMITS OF REMOVAL AND REPLACEMENT SHOULD BE ADJUSTED APPROPRIATELY.

KEY

- (B) EXISTING PAVEMENT STRUCTURE
- (C) MIN. 1 1/2" S 9.5B SURFACE COURSE
- (E) 2'-6" STANDARD CURB AND GUTTER SHOWN, APPROPRIATE CURB & GUTTER TO BE DETERMINED BASED ON STREET CLASSIFICATION
- (F) 6" COMPACTED AGGREGATE OR 4" B-25.0C BASE COURSE
- (G) MIN. 8" I-19.0C

NOT TO SCALE



CONCRETE CURB & GUTTER  
DRIVEWAY CUT

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SHEET 1 OF 1

## ACCESSIBLE PARKING REQUIREMENTS

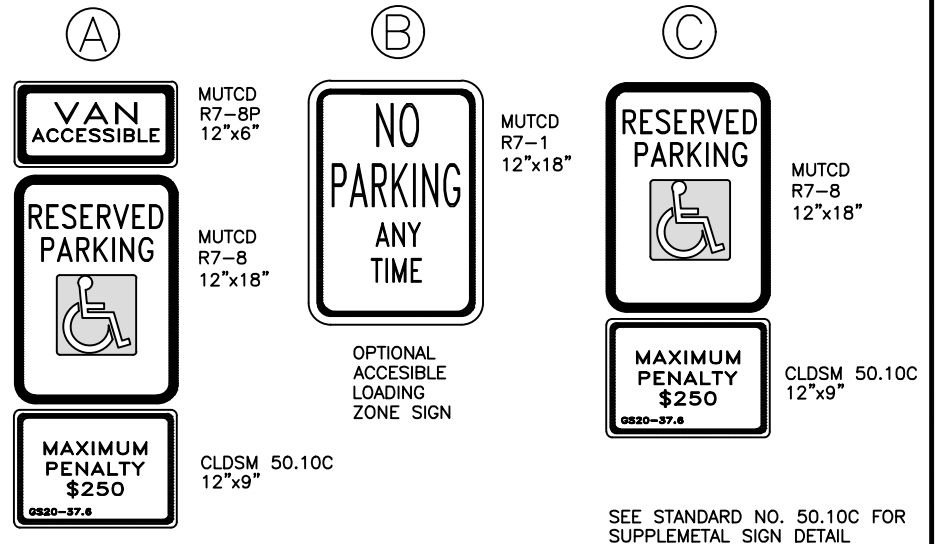
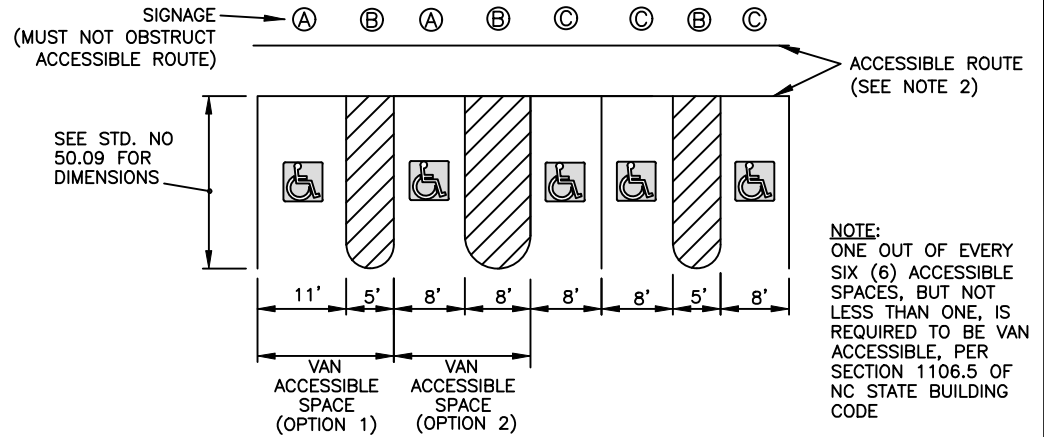
TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 6 ACCESSIBLE SPACES
1001 AND OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 6 ACCESSIBLE SPACES

REFERENCE: SECTION 1106 OF NC BUILDING CODE

### NOTES:

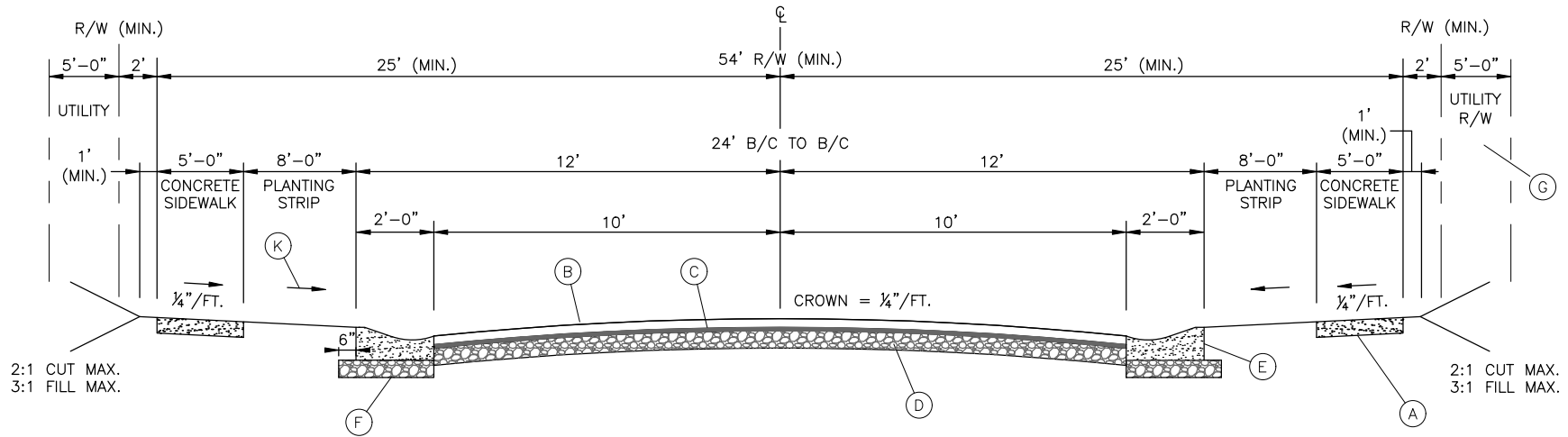
- ALL ACCESSIBLE SIGNS (R7-8P, R7-8, R7-1, AND 50.10C) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (PER MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
- IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA. MAINTAIN MIN. 4' WIDE CONTINUOUS PASSAGE.
- VERTICAL CLEARANCE FOR VANS MUST BE GREATER THAN 98-INCHES.
- THIS DETAIL IS TO PROVIDE GENERAL GUIDANCE FOR PARKING LAYOUT AND DESIGN; REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT AND NC BUILDING CODE FOR ADDITIONAL INFORMATION.

## PARKING SPACE PAVEMENT MARKINGS

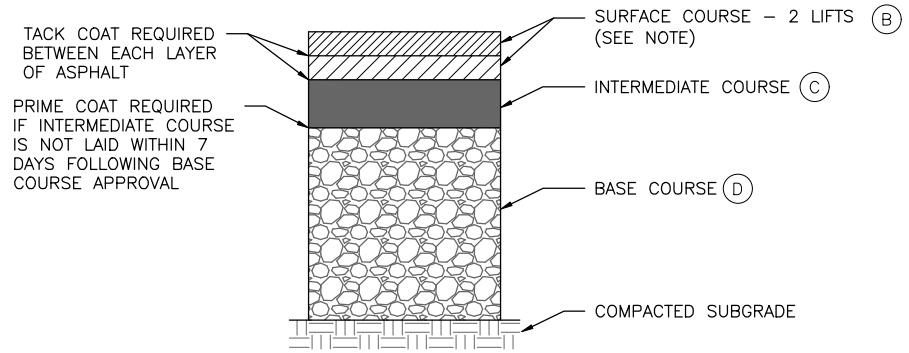


NOT TO SCALE





TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO  
 (2) SEPARATE LIFTS A MINIMUM OF 1" THICK.  
 THE FIRST LIFT MUST BE INSTALLED DIRECTLY  
 AFTER INTERMEDIATE COURSE HAS BEEN  
 INSTALLED AND ACCEPTED. THE FINAL LIFT  
 SHOULD BE INSTALLED AFTER ALL OTHER  
 REQUIREMENTS FOR ACCEPTANCE HAVE BEEN  
 MET.

TYPICAL PAVEMENT SECTION

KEY

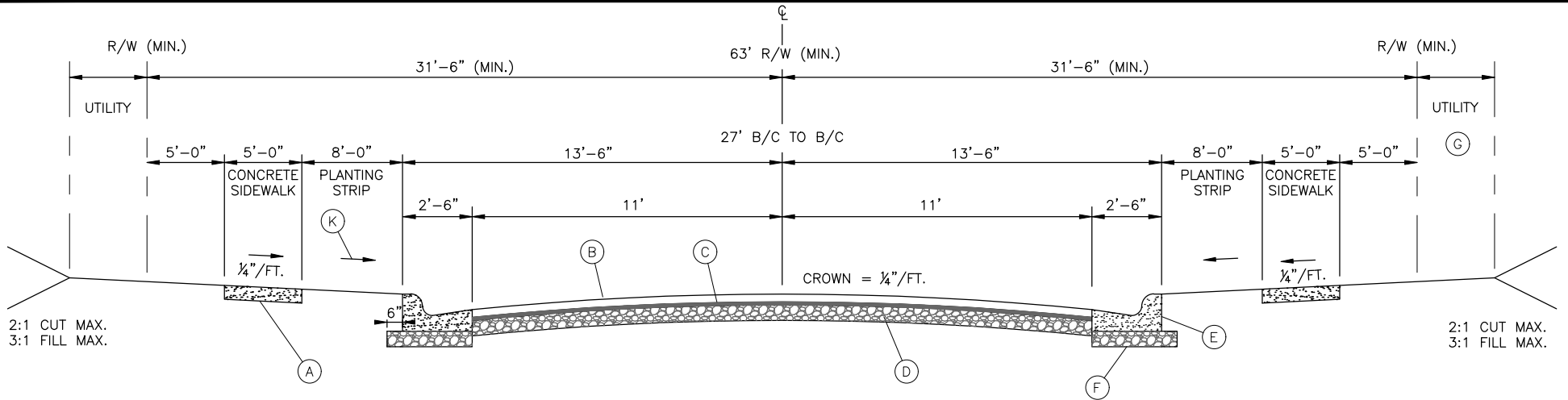
- (A) 4" SIDEWALK\*  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 2 1/2" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 8" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (E) 2'-0" VALLEY GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

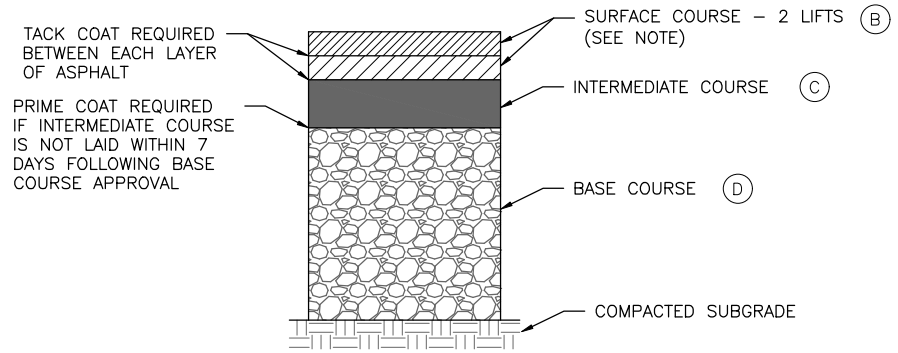


LOCAL RESIDENTIAL STREET

3-2022
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TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

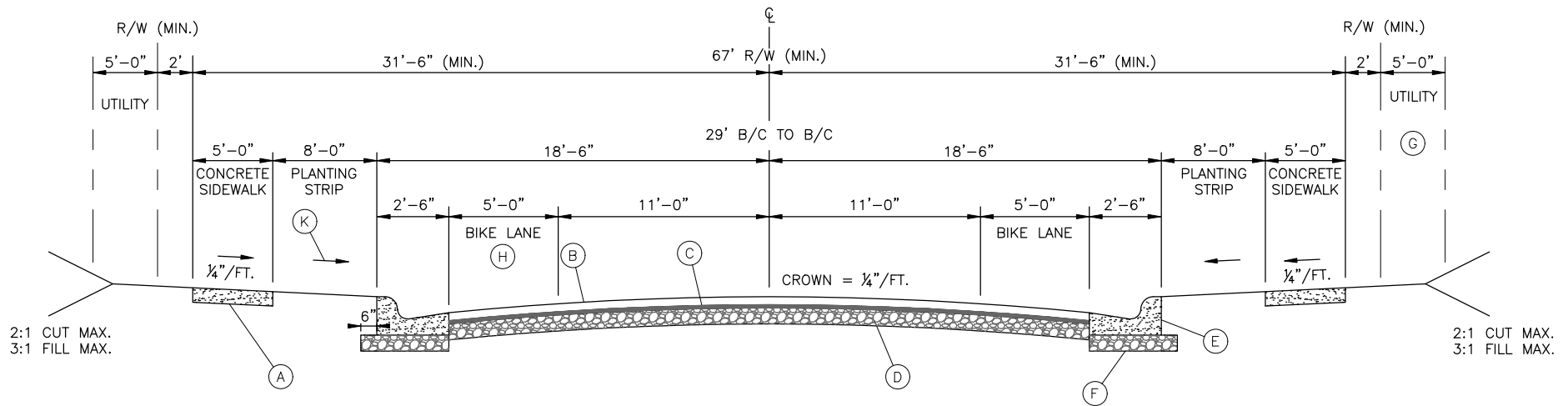
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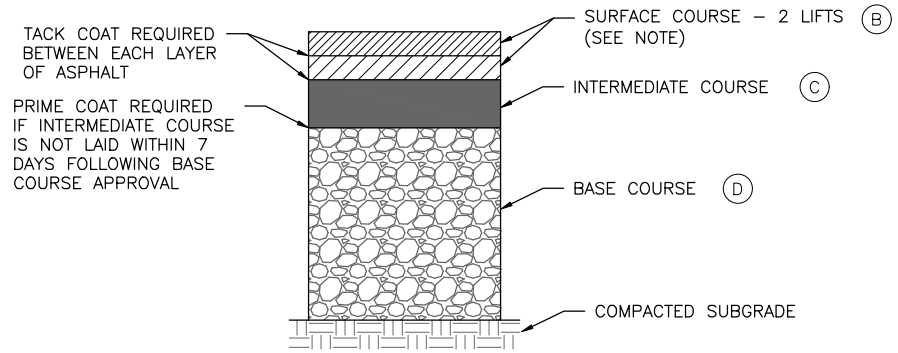
RESIDENTIAL COLLECTOR STREET

3-2022
STR-102
SHEET 1 OF 1





TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

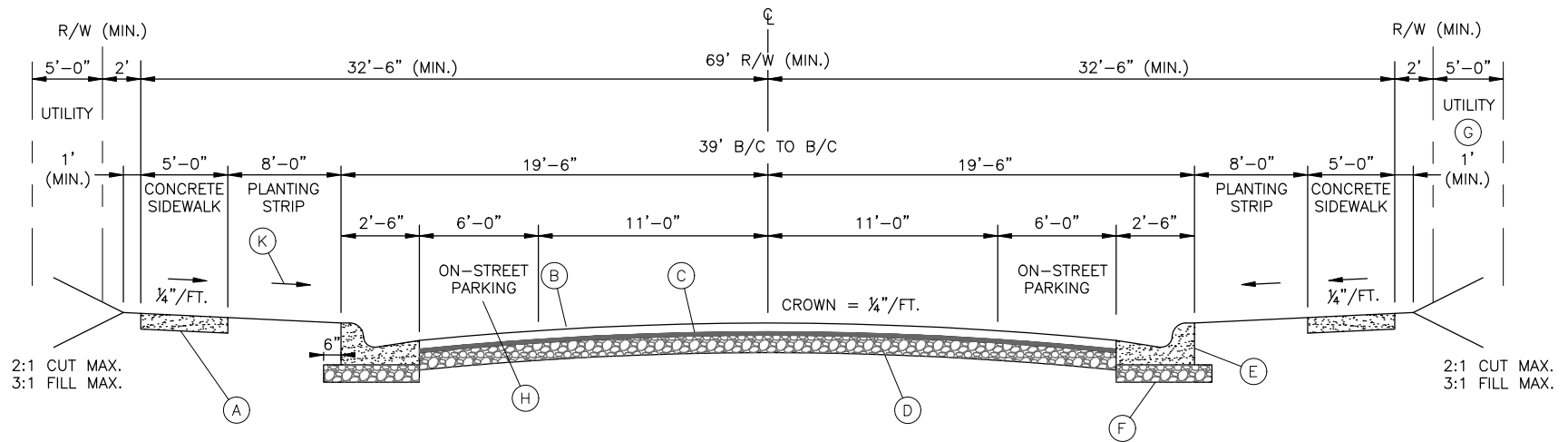
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING FOR BIKE LANE SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

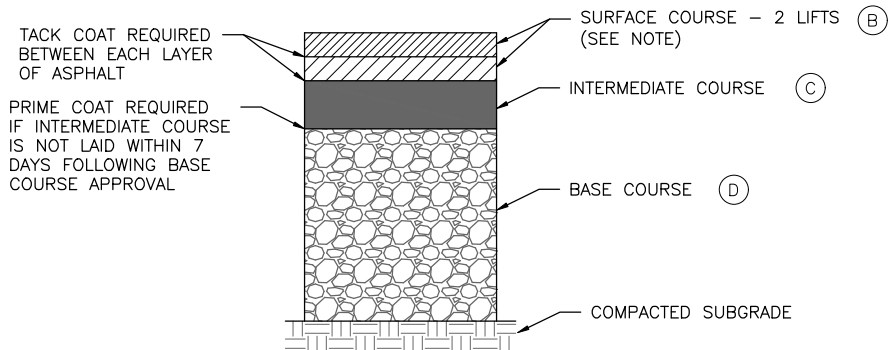


RESIDENTIAL COLLECTOR STREET  
 WITH BICYCLE LANES

3-2022  
 STR-103  
 SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) 3" S9.5B SURFACE COURSE
- (C) 2.25" I-19.0C INTERMEDIATE COURSE
- (D) 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING FOR PARKING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

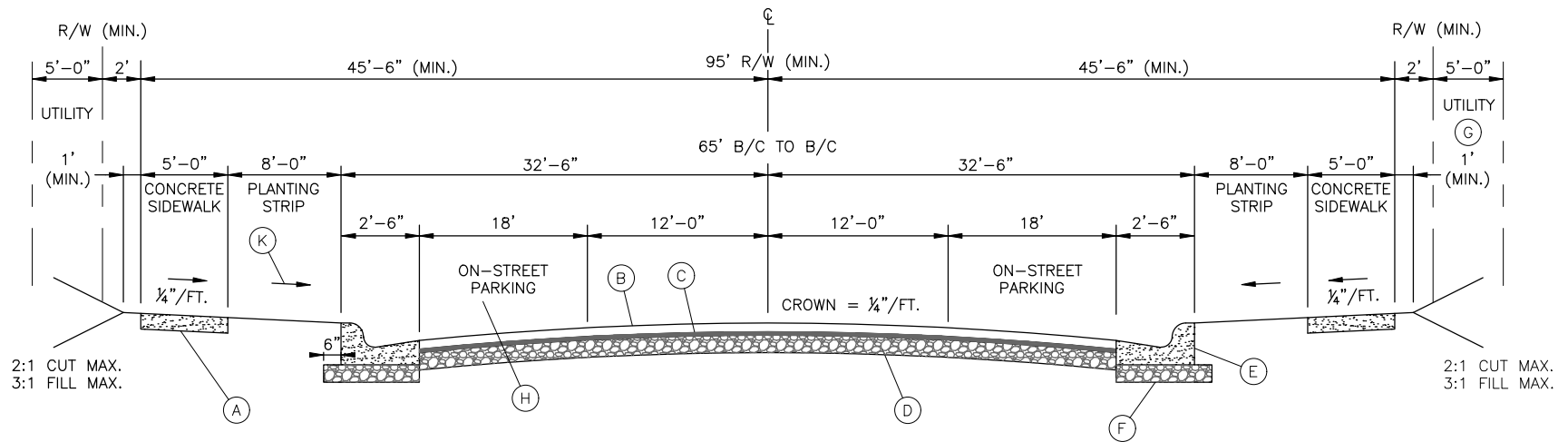


RESIDENTIAL COLLECTOR STREET  
 WITH PARALLEL PARKING

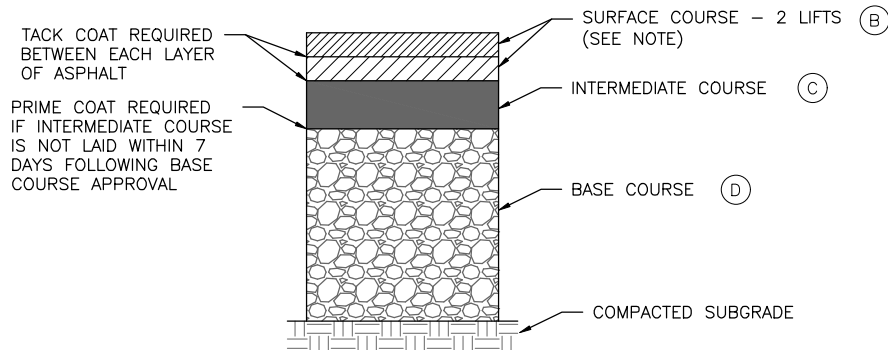
3-2022

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SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- ⓐ 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- ⓑ 3" S9.5B SURFACE COURSE
- ⓒ 2.25" I-19.0C INTERMEDIATE COURSE
- ⓓ 10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C
- ⓔ 2'-6" STANDARD CURB AND GUTTER
- ⓕ 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- ⓖ ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- ⓗ TEMPORARY STRIPING FOR PARKING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- ⓘ PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

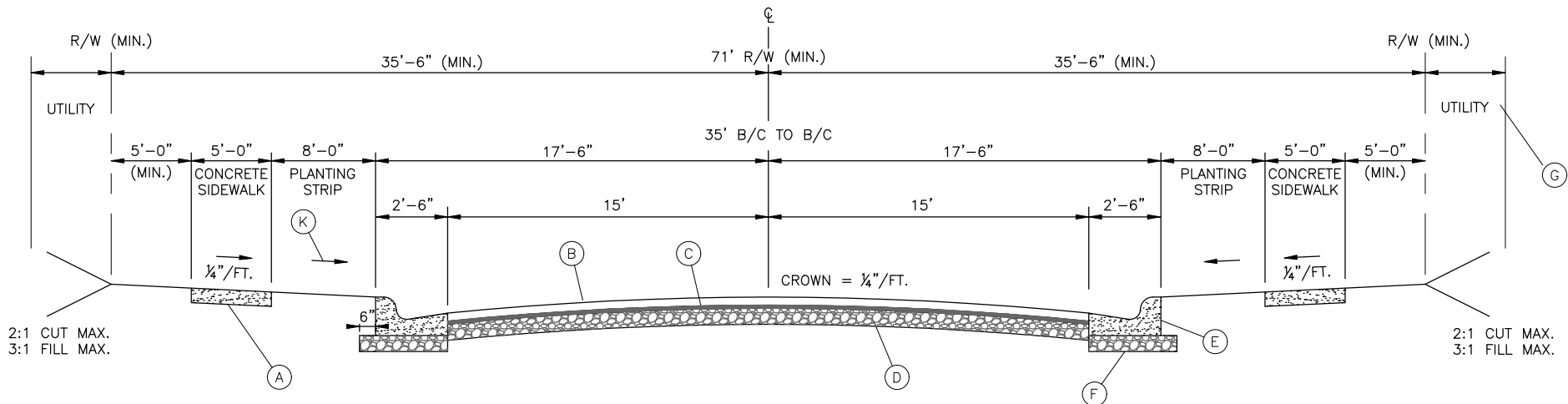


RESIDENTIAL COLLECTOR STREET  
WITH 45° REVERSE ANGLE PARKING

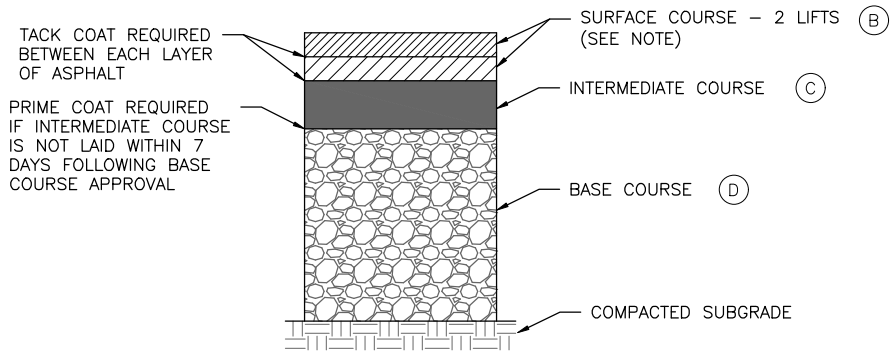
3-2022

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SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK  
 \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE

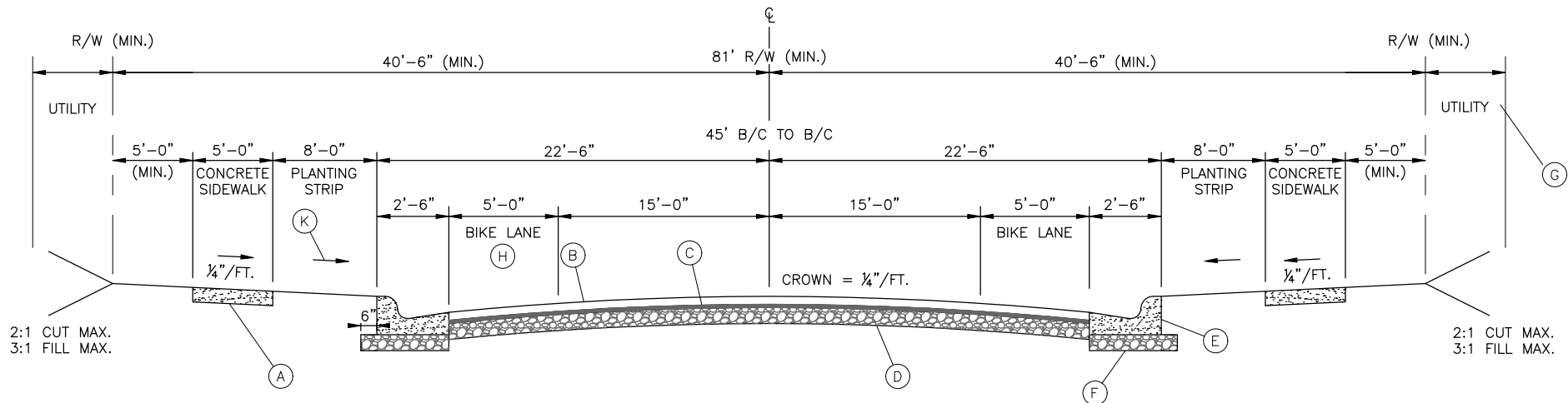


NON-RESIDENTIAL COLLECTOR STREET

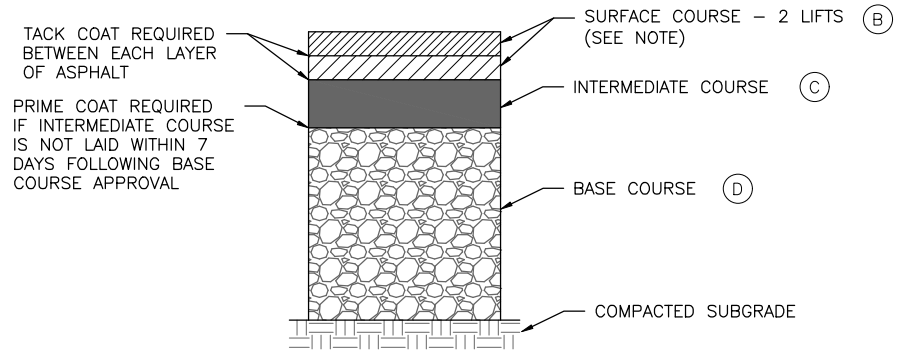
3-2022

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SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

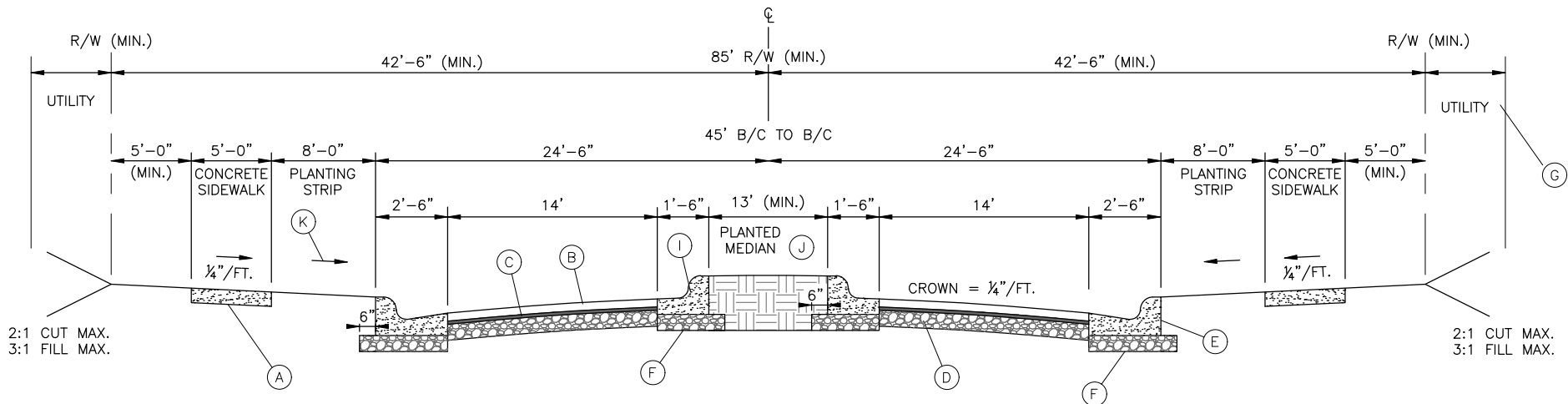
- (A) 4" SIDEWALK  
 \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" 1-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE



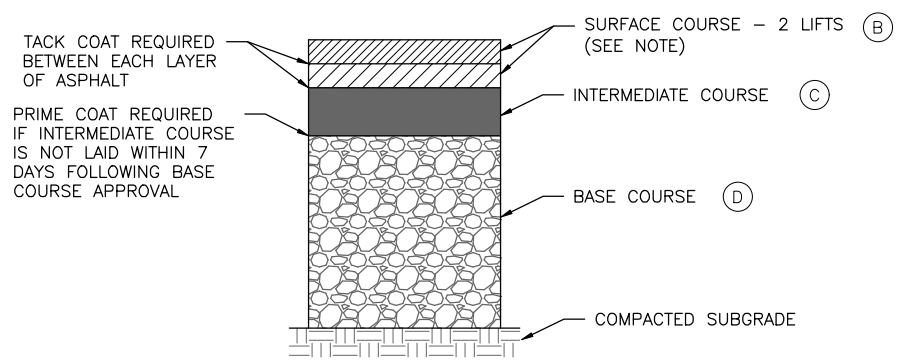
NON-RESIDENTIAL COLLECTOR STREET WITH BICYCLE LANES

3-2022  
 STR-107  
 SHEET 1 OF 1



TYPICAL CROSS SECTION

KEY



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

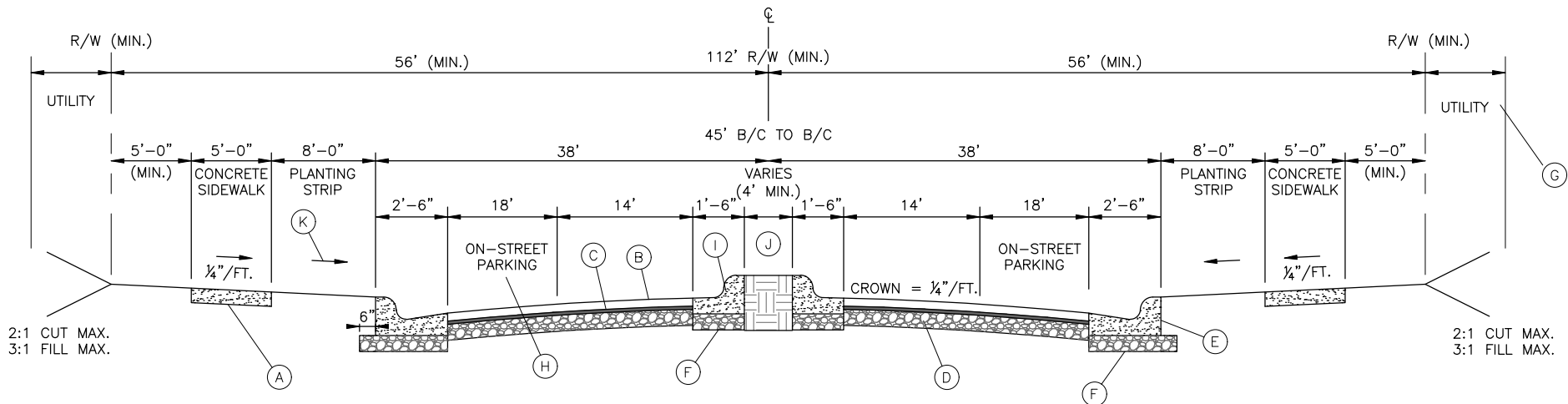
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (I) 1'-6" STANDARD CURB AND GUTTER
- (J) PLANTED MEDIAN, WIDTH VARIES BASED ON PROPOSED PLANTINGS. LANDSCAPING TO BE MAINTAINED BY PROPERTY OWNER'S ASSOCIATION WITH EXECUTED ENCROACHMENT AGREEMENT WITH CITY
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE



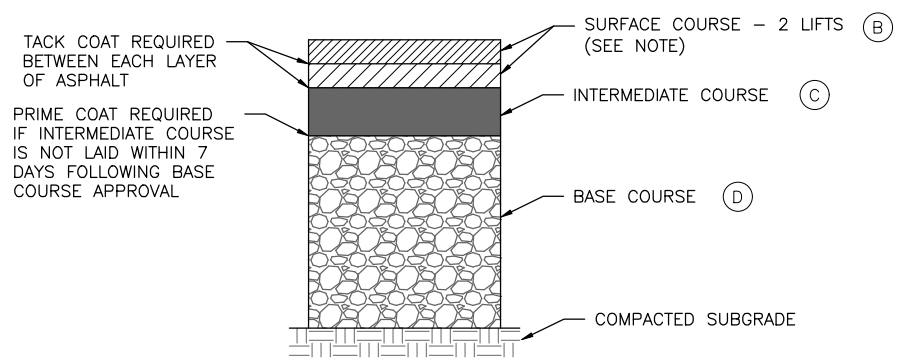
NON-RESIDENTIAL COLLECTOR STREET  
 DIVIDED WITH PLANTED MEDIAN

3-2022
STR-108
SHEET 1 OF 1



TYPICAL CROSS SECTION

KEY



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

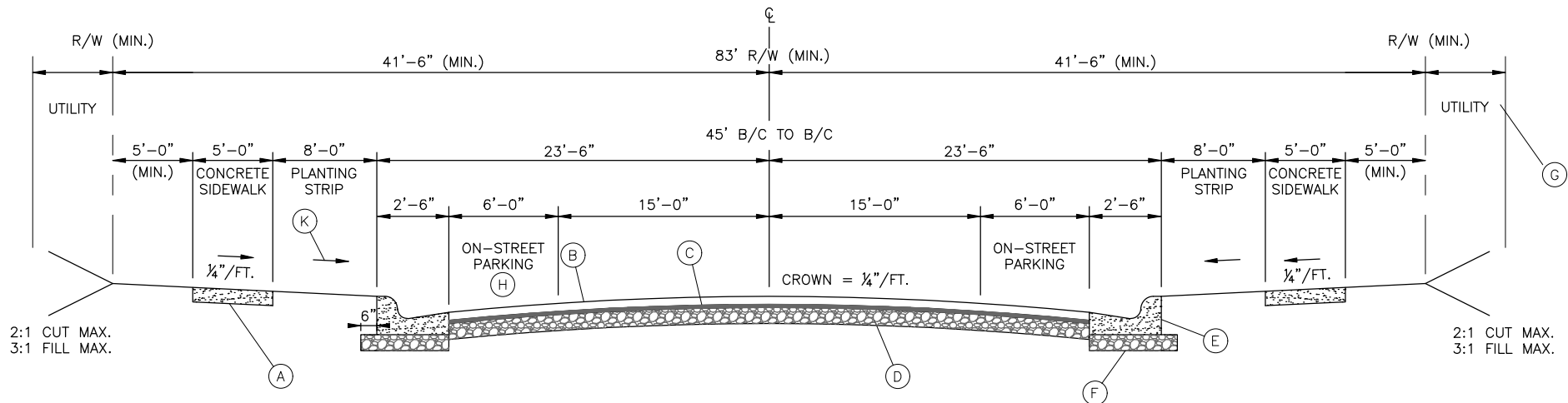
- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (I) 1'-6" STANDARD CURB AND GUTTER
- (J) PLANTED MEDIAN, WIDTH VARIES BASED ON PROPOSED PLANTINGS. LANDSCAPING TO BE MAINTAINED BY PROPERTY OWNER'S ASSOCIATION WITH EXECUTED ENCROACHMENT AGREEMENT WITH CITY
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES

NOT TO SCALE

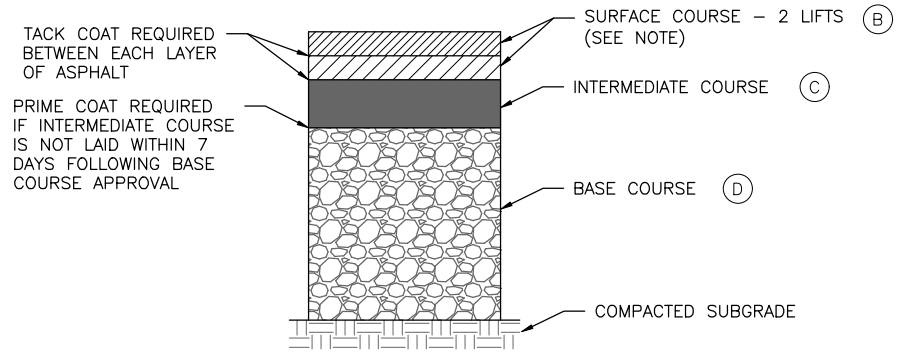


NON-RESIDENTIAL COLLECTOR STREET  
 WITH 45° REVERSE ANGLE PARKING

3-2022
STR-109
SHEET 1 OF 1



TYPICAL CROSS SECTION



NOTE:  
 SURFACE COURSE TO BE INSTALLED IN TWO (2) SEPARATE LIFTS A MINIMUM OF 1.5" THICK. THE FIRST LIFT MUST BE INSTALLED DIRECTLY AFTER INTERMEDIATE COURSE HAS BEEN INSTALLED AND ACCEPTED. THE FINAL LIFT SHOULD BE INSTALLED AFTER ALL OTHER REQUIREMENTS FOR ACCEPTANCE HAVE BEEN MET.

TYPICAL PAVEMENT SECTION

KEY

- (A) 4" SIDEWALK  
 \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) PER APPROVED PAVEMENT DESIGN (3" S9.5B SURFACE COURSE MIN.)
- (C) PER APPROVED PAVEMENT DESIGN (2.25" I-19.0C INTERMEDIATE COURSE MIN.)
- (D) PER APPROVED PAVEMENT DESIGN (10" COMPACTED AGGREGATE BASE COURSE OR 5" B-25.0C MIN.)
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) TEMPORARY STRIPING SHOULD BE INSTALLED ONCE INITIAL SURFACE LIFT IS APPLIED, PERMANENT STRIPING SHOULD BE INSTALLED AFTER FINAL SURFACE LIFT IS APPLIED
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

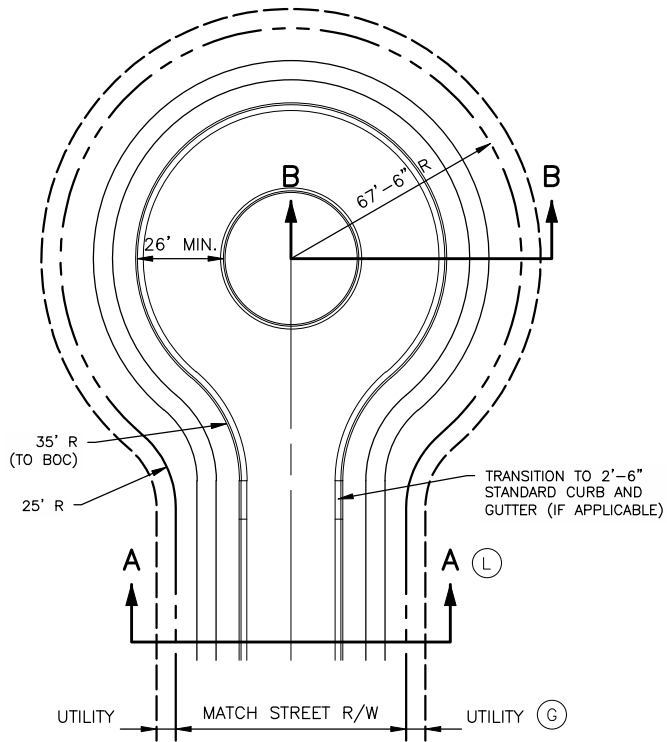


NON-RESIDENTIAL COLLECTOR STREET  
 WITH PARALLEL PARKING

3-2022
STR-110
SHEET 1 OF 1



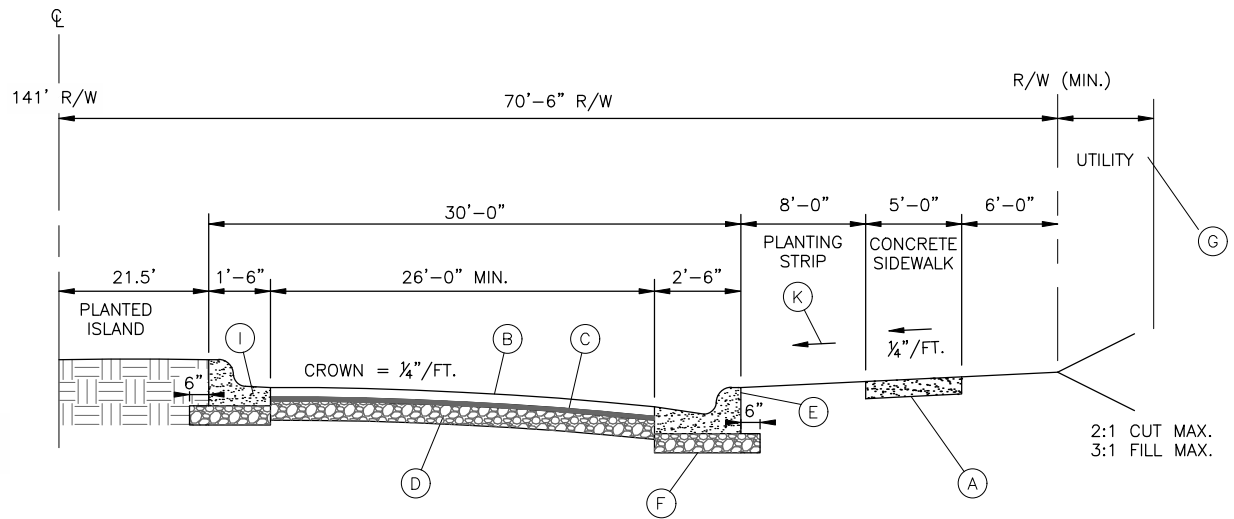




PLAN

NOTES

1. THIS DETAIL APPLIES TO RESIDENTIAL CUL-DE-SACS WITH A LENGTH GREATER THAN 150' FROM THE CENTERLINE OF THE INTERSECTING STREET PROVIDING ACCESS TO THE CENTER TERMINUS OF THE CUL-DE-SAC.
2. PLANTINGS IN ISLAND SHOULD BE GRASS/SHRUBS WITH A MAXIMUM MATURE HEIGHT OF 3'. TREES WITH WITH A CANOPY OF 8' OR HIGHER ABOVE THE STREET SURFACE MAY BE ALLOWED AS APPROVED BY THE CITY ARBORIST.
3. LANDSCAPING AND PLANTINGS WITHIN THE ISLAND SHALL BE MAINTAINED BY THE DEVELOPER, HOMEOWNER'S ASSOCIATION OR OTHER LEGAL ENTITY THROUGH AN ENCROACHMENT AGREEMENT WITH THE CITY OF CONCORD.



SECTION B - B

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (C) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (D) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (I) 1'-6" STANDARD CURB AND GUTTER
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (L) SECTION A-A TO MATCH ADJOINING STREET CROSS SECTION

NOT TO SCALE

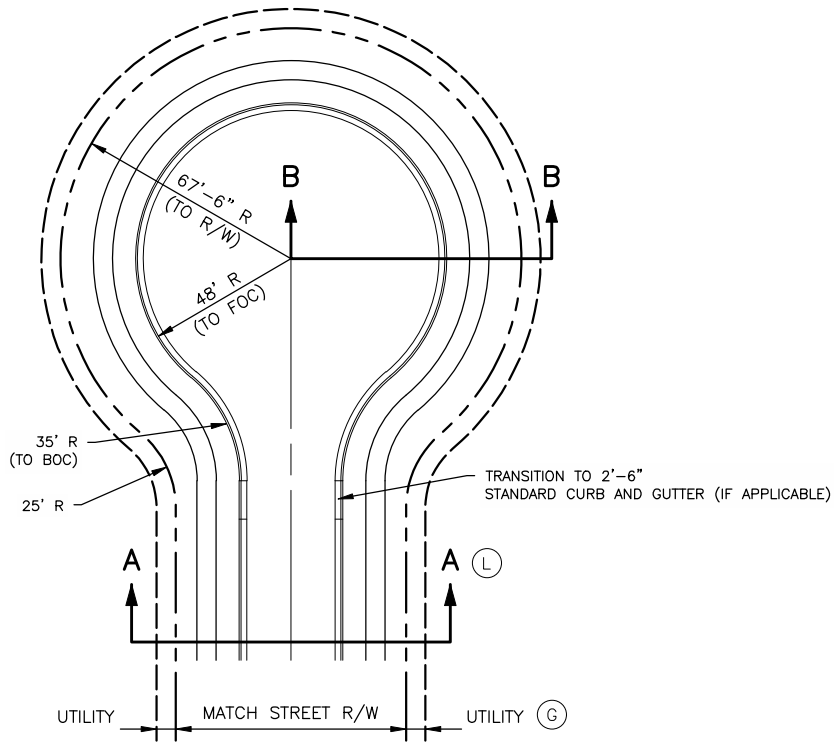


RESIDENTIAL CUL-DE-SAC  
LENGTH GREATER THAN 150'

3-2022

STR-112

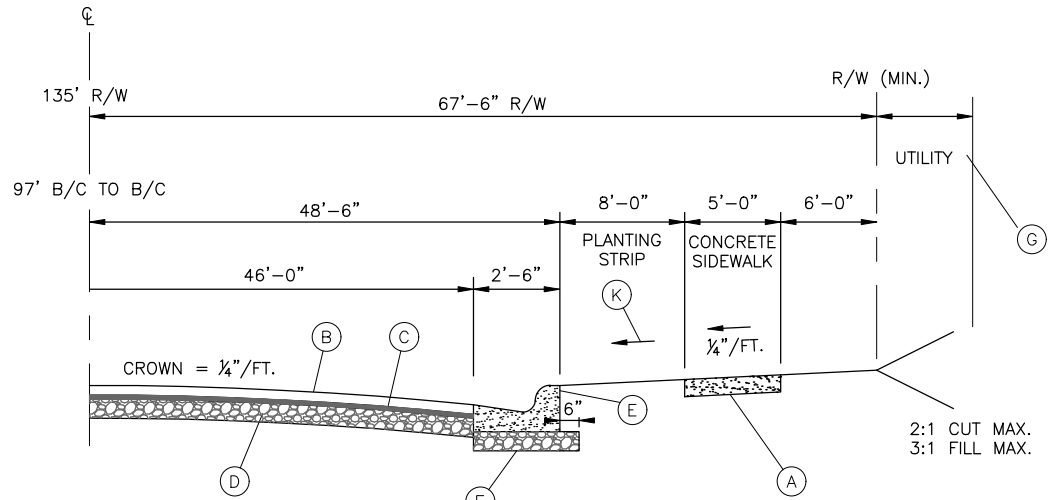
SHEET 1 OF 1



PLAN

NOTES

1. THIS DETAIL APPLIES TO ALL NON-RESIDENTIAL AND MIXED USE CUL-DE-SACS OF ALL LENGTHS.



SECTION B - B

KEY

- (A) 4" SIDEWALK
- \*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (C) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (D) TO MATCH TYPICAL SECTION OF ADJOINING STREET
- (E) 2'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (K)
- (L) SECTION A-A TO MATCH ADJOINING STREET CROSS SECTION

NOT TO SCALE

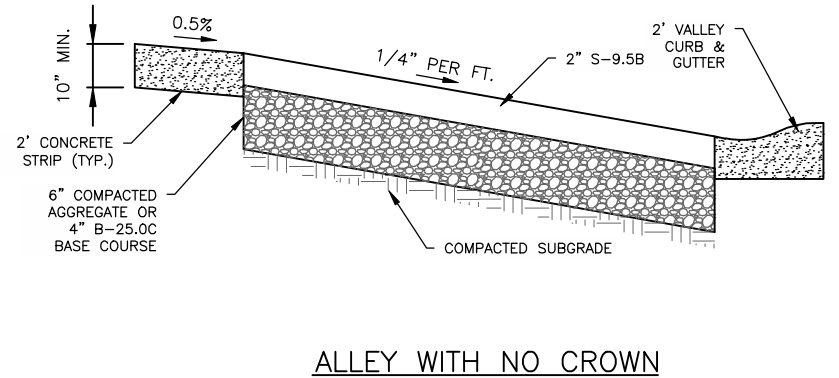
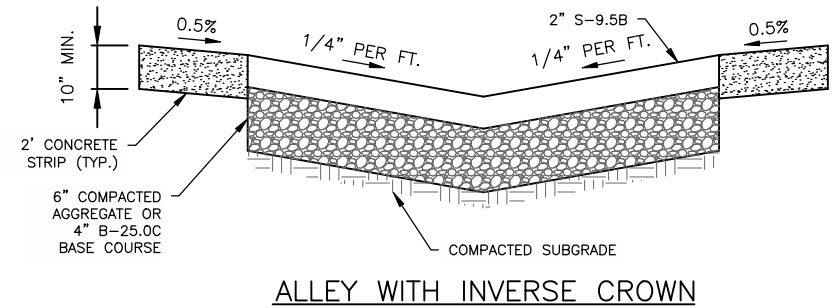
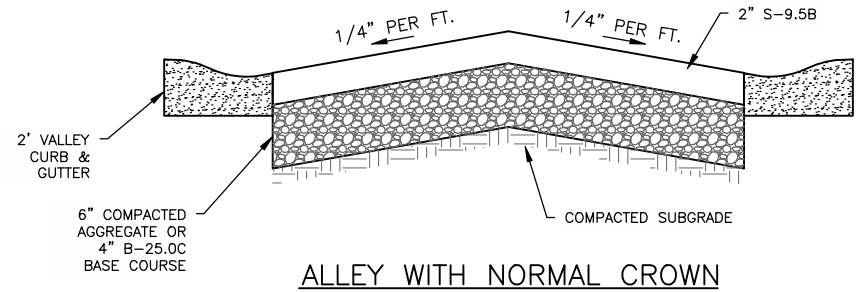
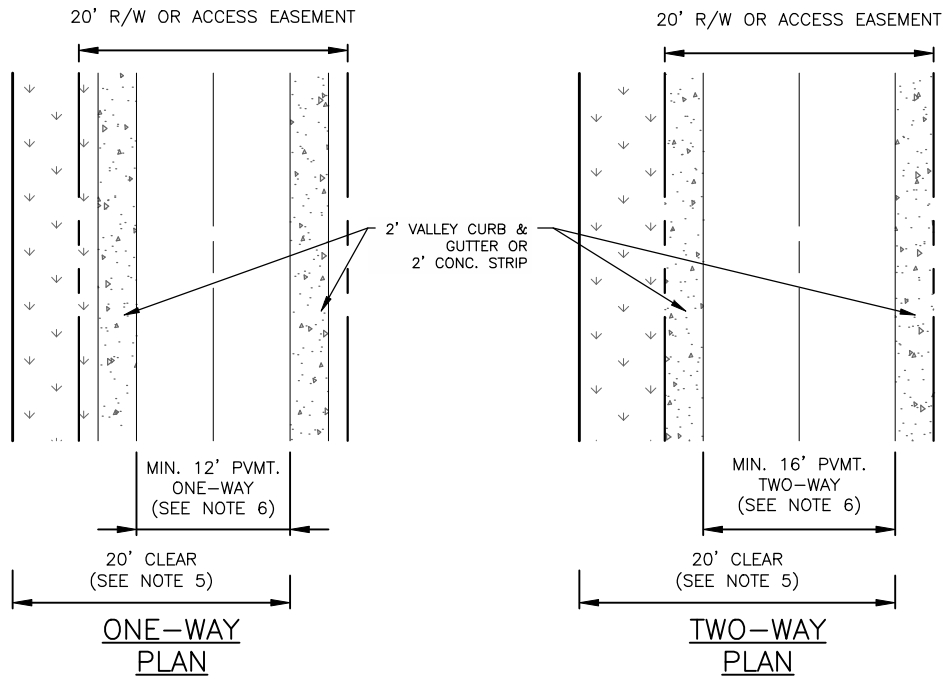


NON-RESIDENTIAL & MIXED USE CUL-DE-SAC  
ALL LENGTHS

3-2022  
STR-113  
SHEET 1 OF 1

**NOTES:**

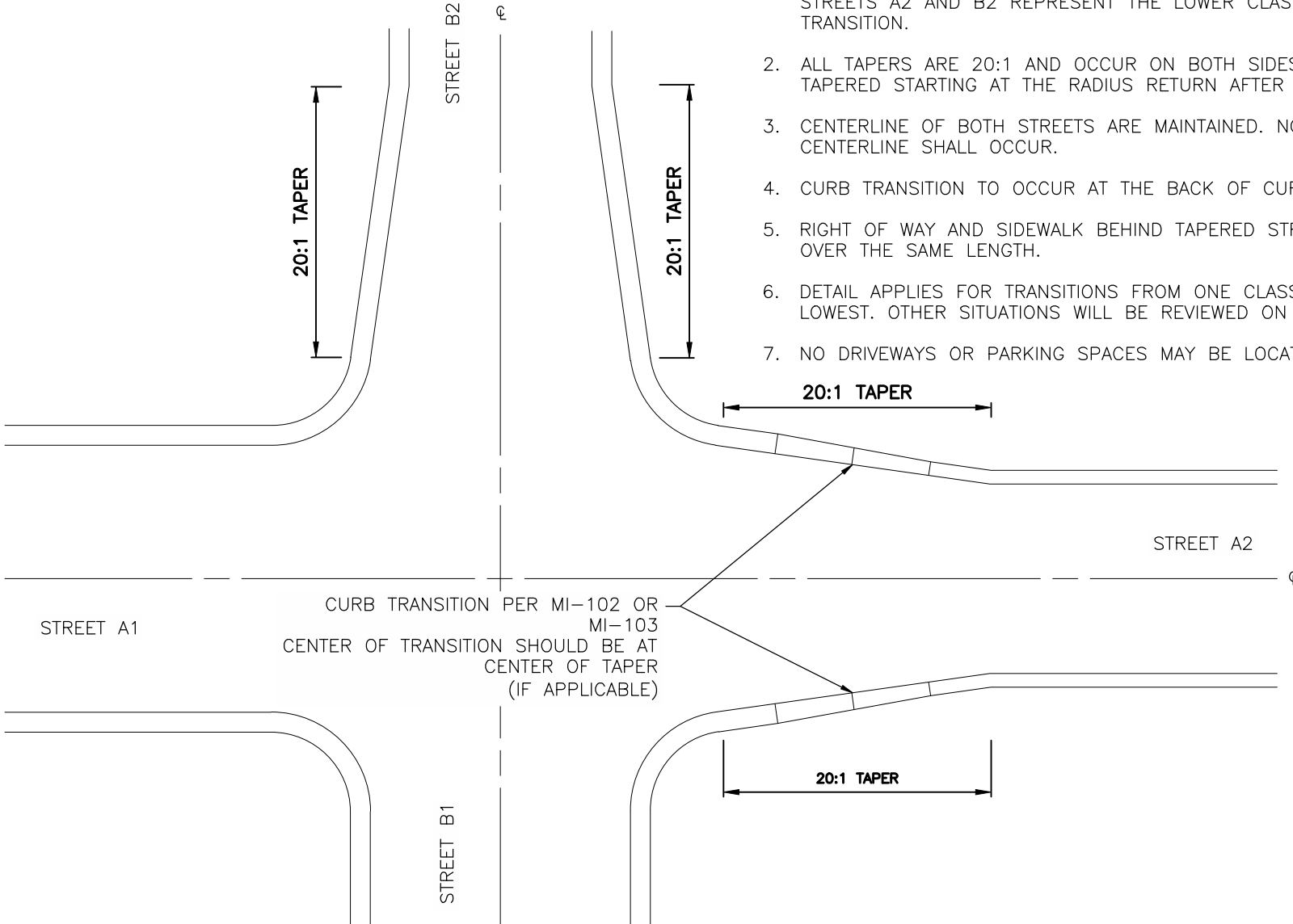
1. SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
2. STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
3. ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE CITY OF CONCORD.
4. DRIVEWAYS SHALL BE A MINIMUM OF 10' WIDE AND SEPARATED BY AT LEAST 6 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.
5. DETAIL APPLIES TO SINGLE- OR DOUBLE-LOADED ALLEYS. FOR SINGLE-LOADED ALLEYS, THERE SHALL BE A 20-FOOT CLEAR ZONE FREE OF CUT SLOPES, OBSTRUCTIONS, HEDGES, ETC. FROM THE LOADED SIDE EDGE OF PAVEMENT.
6. MINIMUM 20' WIDE PAVEMENT REQUIRED IF ALLEY IS TO BE CONSIDERED A "FIRE APPARATUS ACCESS ROAD" PER NC FIRE CODE. FIRE CODE MAY REQUIRE OTHER DIMENSIONAL AND PAVEMENT SECTION CHANGES TO ACCOMMODATE MINIMUM REQUIREMENTS.



NOT TO SCALE

**GENERAL NOTES:**

1. STREETS A1 AND B1 REPRESENT THE HIGHER CLASSIFICATION WHILE STREETS A2 AND B2 REPRESENT THE LOWER CLASSIFICATION AFTER THE TRANSITION.
2. ALL TAPERS ARE 20:1 AND OCCUR ON BOTH SIDES OF THE ROAD TO BE TAPERED STARTING AT THE RADIUS RETURN AFTER THE INTERSECTION.
3. CENTERLINE OF BOTH STREETS ARE MAINTAINED. NO SHIFTING OF THE CENTERLINE SHALL OCCUR.
4. CURB TRANSITION TO OCCUR AT THE BACK OF CURB WHERE APPLICABLE.
5. RIGHT OF WAY AND SIDEWALK BEHIND TAPERED STREET SECTION TO TAPER OVER THE SAME LENGTH.
6. DETAIL APPLIES FOR TRANSITIONS FROM ONE CLASSIFICATION TO THE NEXT LOWEST. OTHER SITUATIONS WILL BE REVIEWED ON A CASE BY CASE BASIS.
7. NO DRIVEWAYS OR PARKING SPACES MAY BE LOCATED WITHIN THE TAPER.



NOT TO SCALE

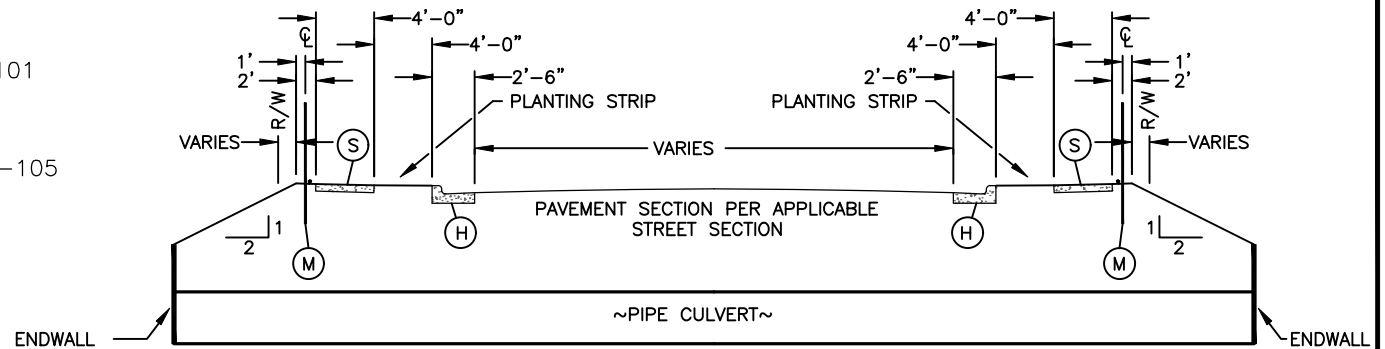


TRANSITION BETWEEN STREET CLASSIFICATIONS

3-2022
STR-116
SHEET 1 OF 1



- (H) 2'-6" CURB AND GUTTER, STD. MI-101
- (M) SAFETY RAIL, STD. MISC-206
- (S) 4'-0" SIDEWALK, STD. MI-104 & MI-105
- (H1) 2'-0" VALLEY GUTTER, STD. MI-101
- (H2) CURB TRANSITION 2'-6" CURB AND GUTTER TO 2'-0" VALLEY GUTTER, STD. MI-102



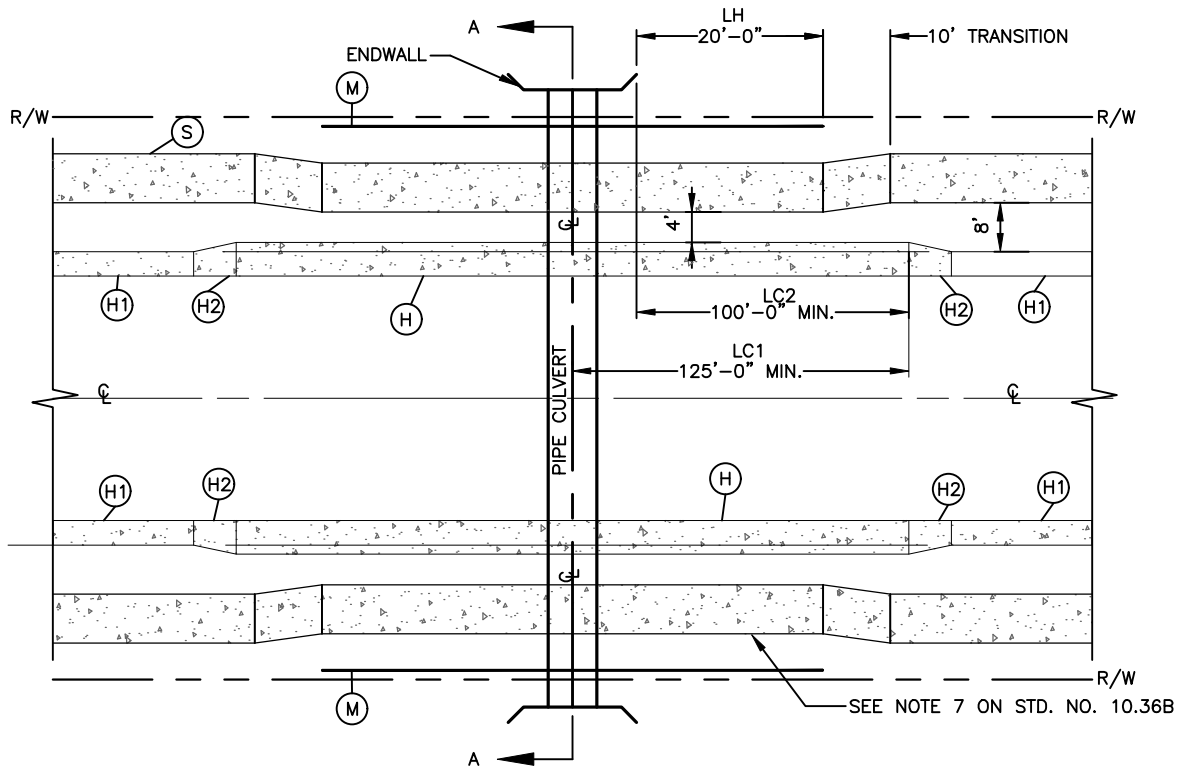
SECTION A - A

LH\* = DISTANCE FROM END OF WINGWALL TO END OF SAFETY RAIL.

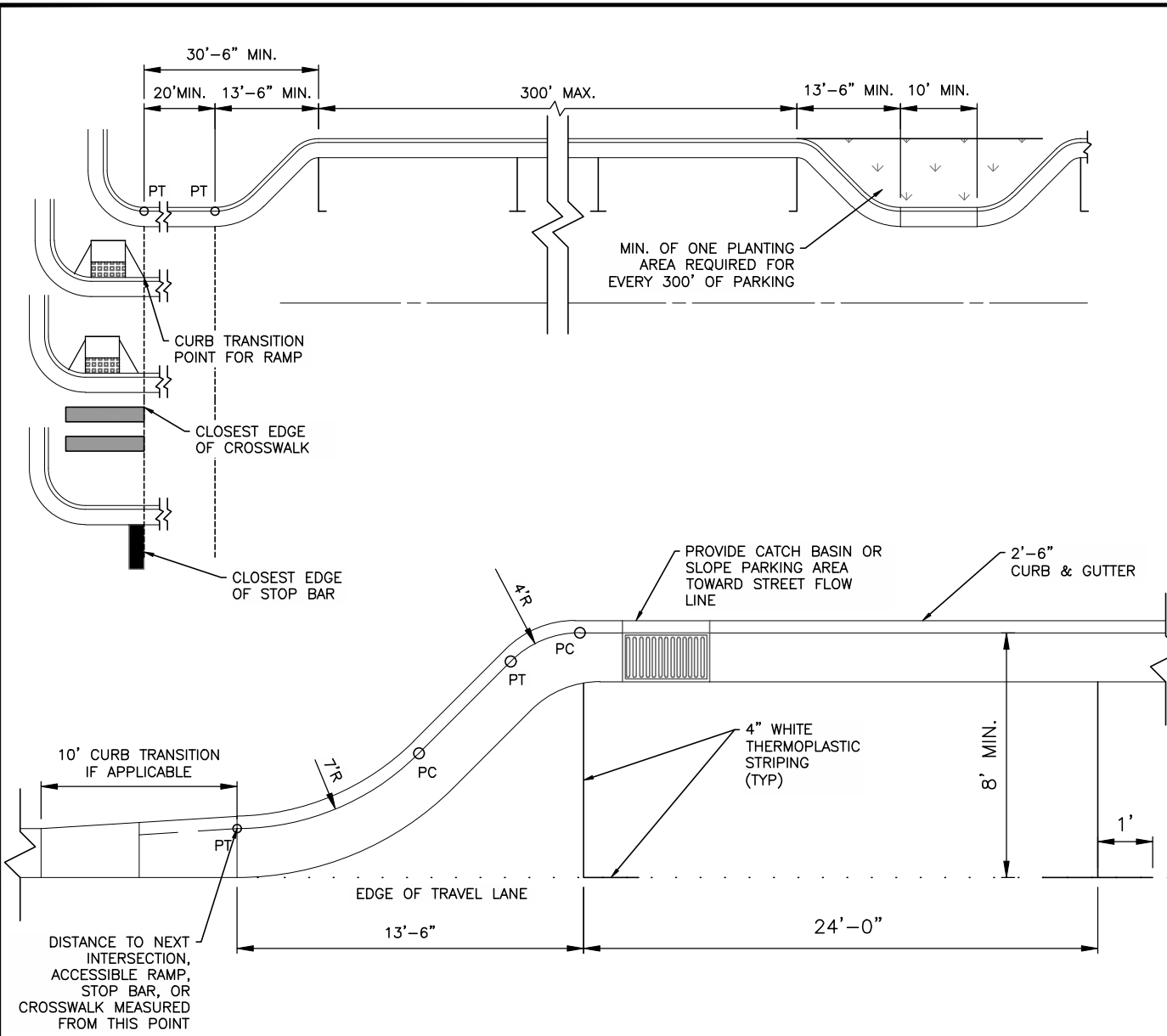
LC1 = DISTANCE FROM<sup>C</sup>L OF CULVERT TO END OF 2'-6" CURB AND GUTTER.

LC2\* = DISTANCE FROM END OF WINGWALL TO END OF 2'-6" CURB AND GUTTER.

\*LH AND LC2 TO BE MEASURED FROM THE OUTSIDE OF THE NEAREST WALL OF THE CULVERT BARREL.



NOT TO SCALE



**NOTES:**

1. ACCESSIBLE SPACES AND ACCESS AISLES SHALL BE PROVIDED PER ADA GUIDELINES, AND PER STD. STR-121
2. ALL CONCRETE TO BE 3600 P.S.I.
3. PARKING SPACES SHALL BE GRADED TO PROPERLY DRAIN AND ENSURE WATER, SEDIMENT, DEBRIS ETC. DOES NOT COLLECT.
4. WHERE A BICYCLE LANE IS REQUIRED ADJACENT TO PARALLEL PARKING SPACES, THE MINIMUM WIDTH IS 6'.

NOT TO SCALE



ON-STREET PARALLEL PARKING

3-2022
STR-120
SHEET 1 OF 1





**NOTES:**

1. ACCESSIBLE SPACES AND ACCESS AISLES SHALL BE PROVIDED PER ADA GUIDELINES. VAN ACCESSIBLE SPACES SHALL HAVE AN ACCESS AISLE WITH A MINIMUM WIDTH OF 8' LOCATED ON THE PASSENGER SIDE. NON-VAN ACCESS AISLES SHALL BE A MINIMUM OF 5' IN WIDTH.
2. ACCESSIBLE SPACE AND ACCESS AISLE SHALL BE OBSTRUCTION-FREE.
3. APPROPRIATE CURB RAMP TO BE LOCATED AT EACH ACCESS AISLE.
4. ALL CONCRETE TO BE 3600 P.S.I.
5. ACCESSIBLE PAVEMENT MARKING DETAIL:
  - INSTALL INTERNATIONAL SYMBOL OF ACCESSIBILITY PARKING SPACE MARKINGS, INCLUDING WHITE SYMBOL WITH BLUE BACKGROUND AND WHITE BORDER. SYMBOL SHALL HAVE MIN. HEIGHT OF 28 INCHES AND MIN. WIDTH OF 24 INCHES (EXCLUSIVE OF BLUE BACKGROUND AND WHITE BORDER). STROKE WIDTH SHALL BE MIN. 3 INCHES.
  - WHITE PAVEMENT MARKINGS PLACED ON CONCRETE SHALL BE SHADOWED WITH BLACK BORDER.
  - TYPICAL SYMBOL LOCATION AND ORIENTATION PER "DIAGRAM A" BELOW
8. USE APPROPRIATE SIGNS AS SHOWN ON STD. DRV-120 FOR ACCESSIBLE ON-STREET PARKING.

PREFERRED DIMENSIONS FOR REVERSE ANGLE PARKING				
ANGLE (A)	STALL LENGTH (L)	STALL WIDTH (W)	STALL DEPTH (H)	PARALLEL WIDTH (C)
30°	32'	19	16'	9.5'
45°	25.46'	13.44'	18'	9.5'
60°	21.36	10.97	18.5'	9.5'

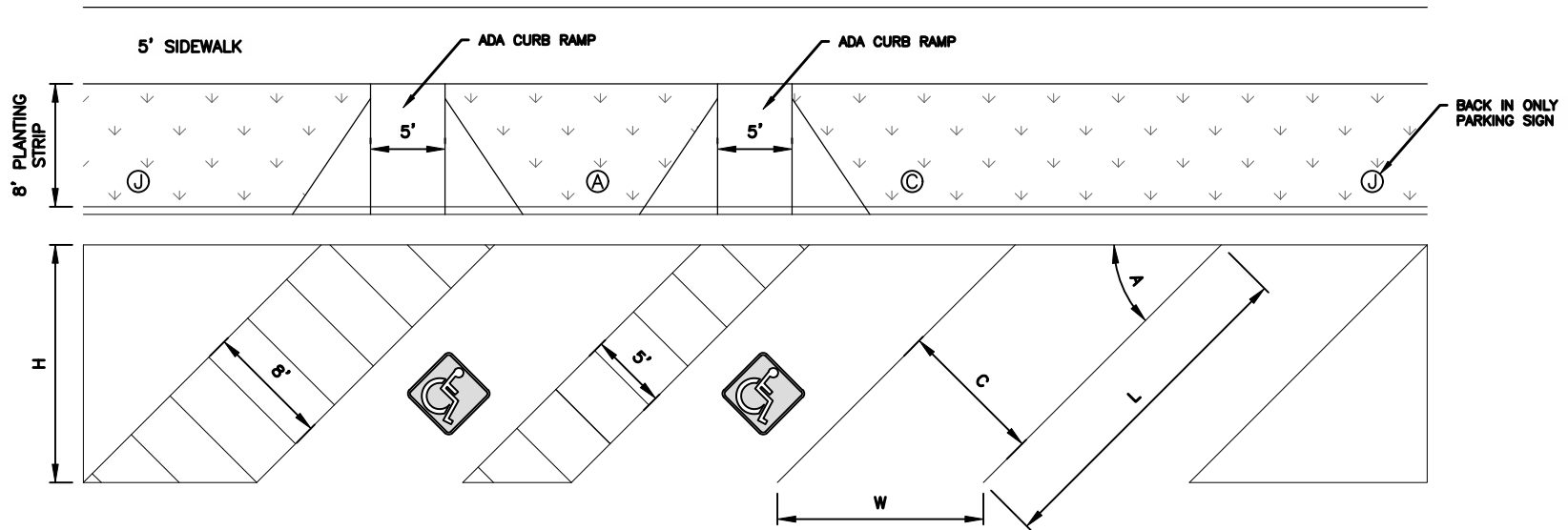
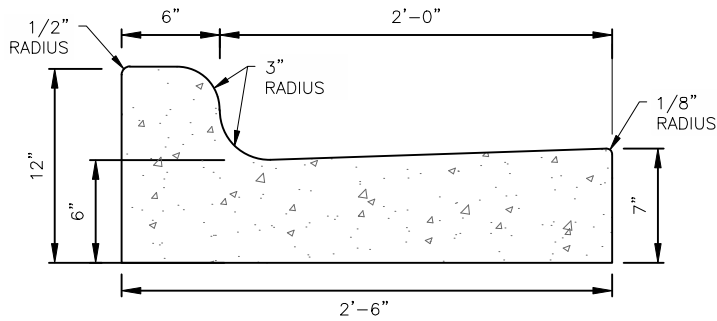
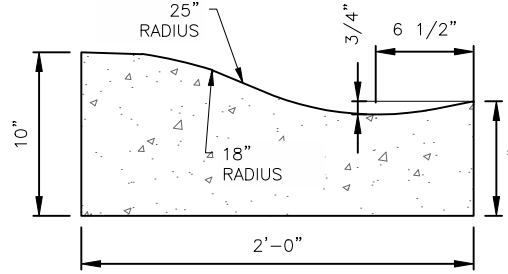


DIAGRAM A

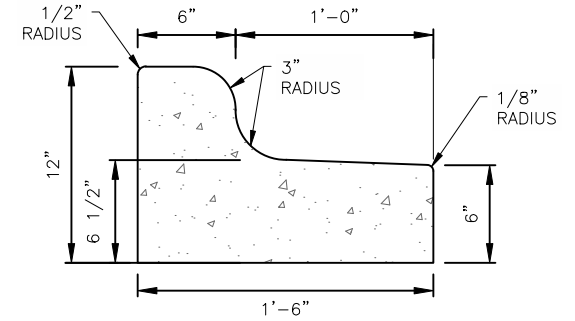
NOT TO SCALE



**STANDARD 2'-6" CURB & GUTTER**

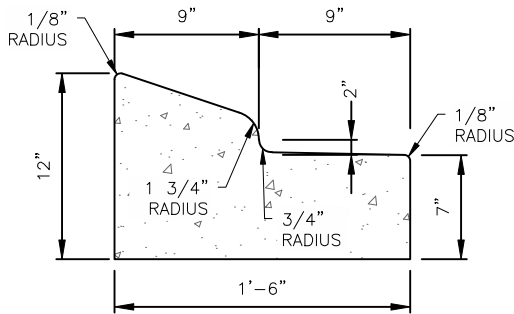


**2'-0" VALLEY CURB & GUTTER**



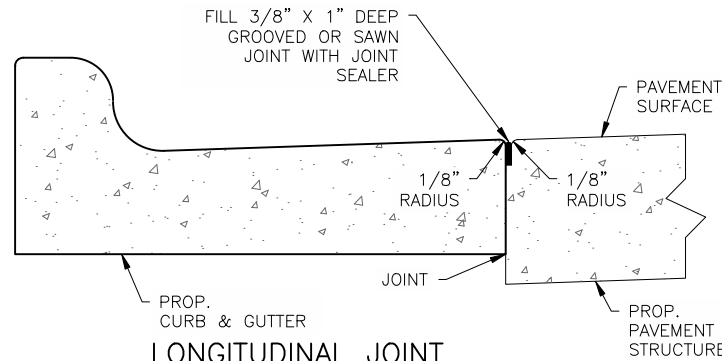
**1'-6" MEDIAN CURB & GUTTER**

TO BE USED IN MEDIANS WHEN LANES ARE SLOPED FROM ISLAND OR AS SPECIFIED BY THE APPROPRIATE CITY ENGINEERING DEPT.

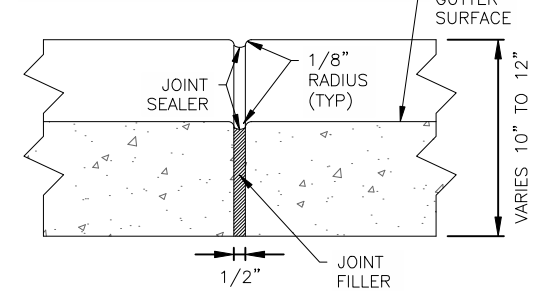


**1'-6" MOUNTABLE CURB & GUTTER**

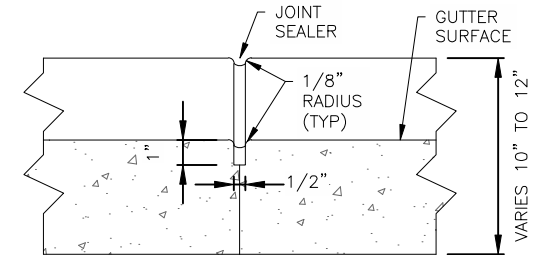
TO BE USED IN MEDIANS ONLY: WHEN SPECIFIED BY THE APPROPRIATE CITY DEPT.



**LONGITUDINAL JOINT**



**TRANSVERSE EXPANSION JOINT**



**CONTRACTION JOINT**

**NOTES**

1. NCDOT STANDARD DETAIL 846.01 TO BE USED FOR VARIOUS CURB AND GUTTER SUPERELEVATION RATES.
2. PLACE CONTRACTION JOINTS AT 10' INTERVALS. JOINT SPACING MAY BE ALTERED BY CITY ENGINEER TO PREVENT UNCONTROLLED CRACKING.
3. FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
4. SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATION WITH JOINTS IN ABUTTING SIDEWALK.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 P.S.I. IN 28 DAYS.
6. TOP 6" OF SUBGRADE BENEATH CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

NOT TO SCALE



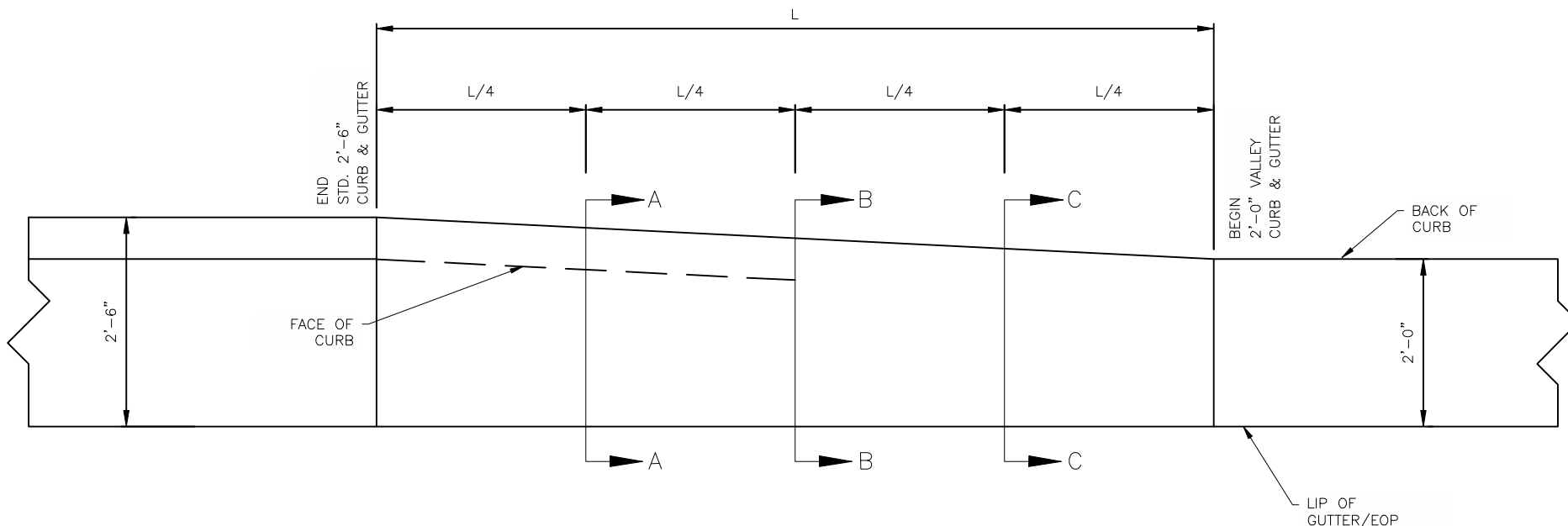
**CONCRETE CURB & GUTTER  
DETAILS**

3-2022

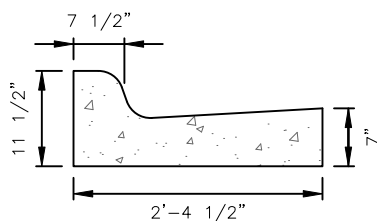
MI-101

SHEET 1 OF 1

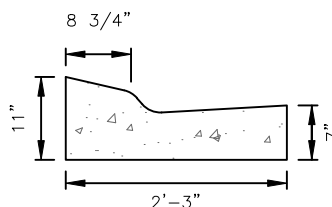
L = 10 FEET IN LONGITUDINAL SECTION



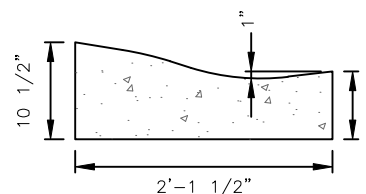
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

NOTES

1. TRANSITION SHALL NOT BE LOCATED WITHIN THE CURB RADIUS.
2. TRANSITION TO BE ALONG BACK OF CURB.

NOT TO SCALE



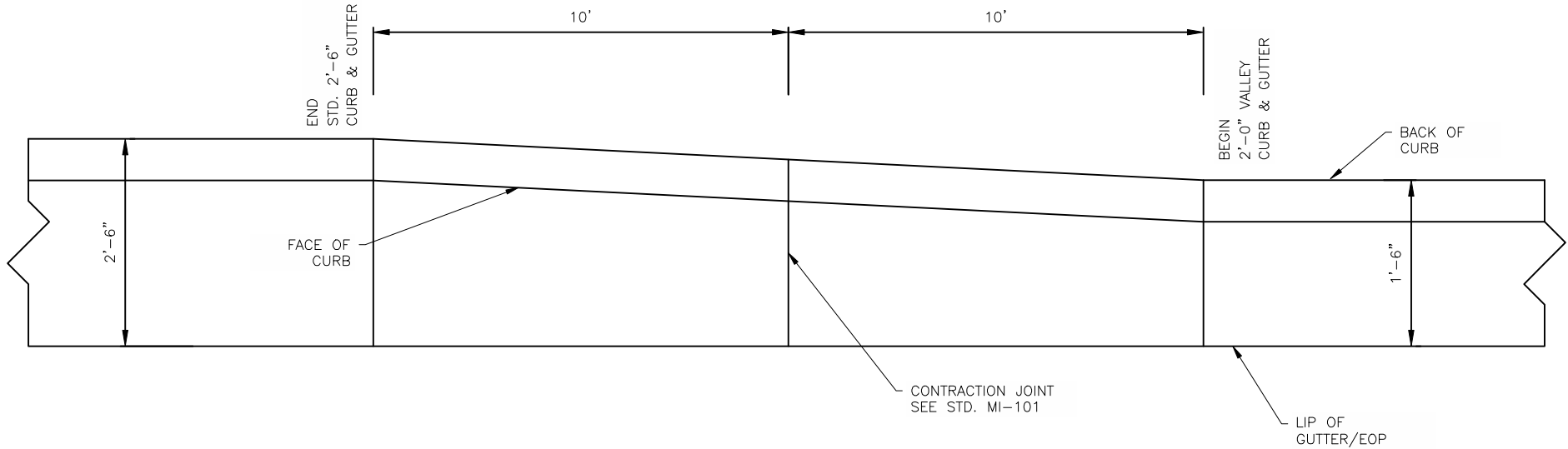
CURB TRANSITION  
2'-6" STANDARD TO 2'-0" VALLEY

3-2022

MI-102

SHEET 1 OF 1

L = 10 FEET IN LONGITUDINAL SECTION



PLAN VIEW

NOTES

- 1. TRANSITION SHALL NOT BE LOCATED WITHIN THE CURB RADIUS.
- 2. TRANSITION TO BE ALONG BACK OF CURB.

NOT TO SCALE

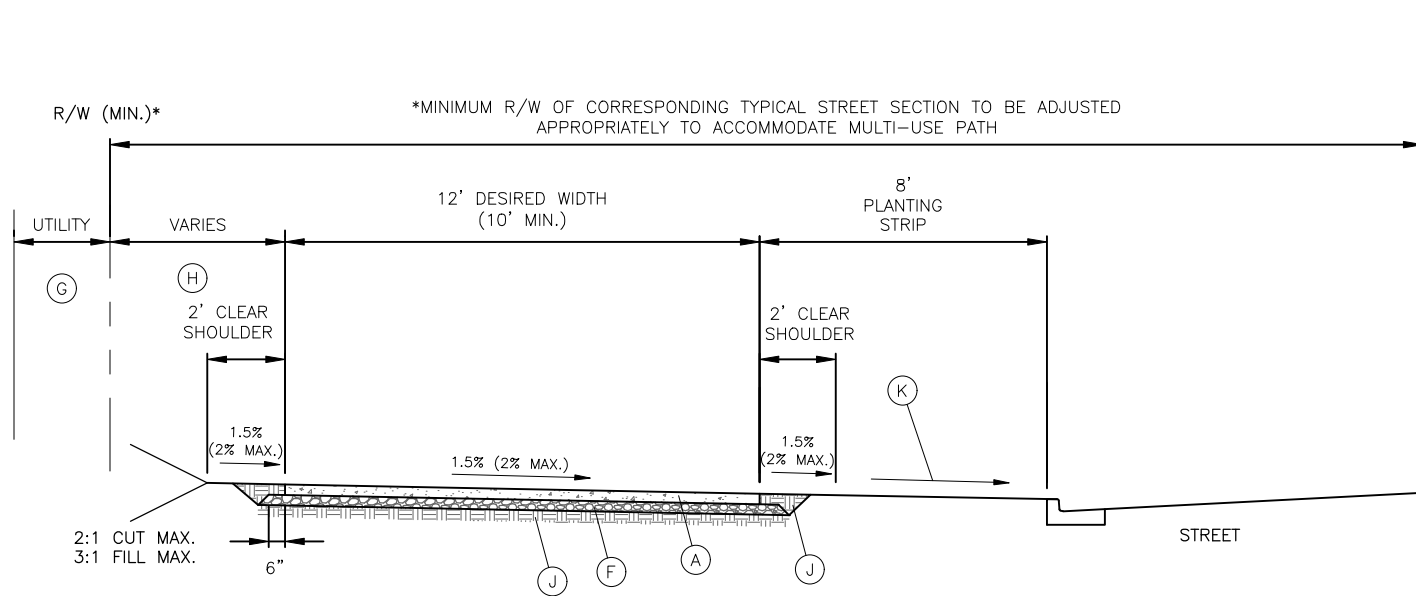


CURB TRANSITION  
 2'-6" STANDARD TO 1'-6" STANDARD

3-2022
MI-103
SHEET 1 OF 1







**NOTES:**

1. AT INTERSECTIONS WITH STREETS OR DRIVEWAYS, RAMP WIDTH MUST MATCH MULTI-USE PATH WIDTH.
2. ALL JOINTS MUST BE SEALED. SEAL MUST BE NON-SHRINKING AND FLUSH WITH FINISHED GRADE OF THE CONCRETE PATH.
3. ALL CONCRETE SHALL BE AT LEAST 3600 PSI COMPRESSIVE STRENGTH.
4. JOINTS MUST BE SAWCUT A MINIMUM OF 1/4 DEPTH OF CONCRETE DEPTH, BUT NO MORE THAN 1/2 OF CONCRETE DEPTH.
  - TRANSVERSE JOINTS MUST BE SAWCUT EVERY 6 FEET.
  - CONSTRUCTION JOINTS MUST BE EVERY 40 FEET.
5. NO ABOVE GROUND UTILITIES OR UTILITY SURFACE COVERS/PLATES/MANHOLES SHALL BE LOCATED WITHIN MULTI-USE-PATH AND SHALL BE A MINIMUM OF 2 FEET FROM THE EDGE OF THE PATH. RAISED MANHOLES SHALL BE LOCATED A MINIMUM OF 4' FROM EDGE OF PATH.
6. SIGN POSTS OR OTHER FIXED OBJECTS SHALL BE LOCATED A MINIMUM OF 2' FROM EDGE OF PATH.

**KEY**

- (A) 6" CONCRETE, 3600 PSI
- (F) 3" COMPACTED AGGREGATE BASE COURSE
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) WIDTH TO BE DETERMINED BY TYPICAL SECTION OF STREET CLASSIFICATION
- (J) SUBGRADE COMPACTED TO A DENSITY NO LESS THAN 95%
- (K) PLANTING STRIP ADJACENT TO MULTI-USE PATH SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

NOT TO SCALE

CONCRETE MULTI-USE PATH

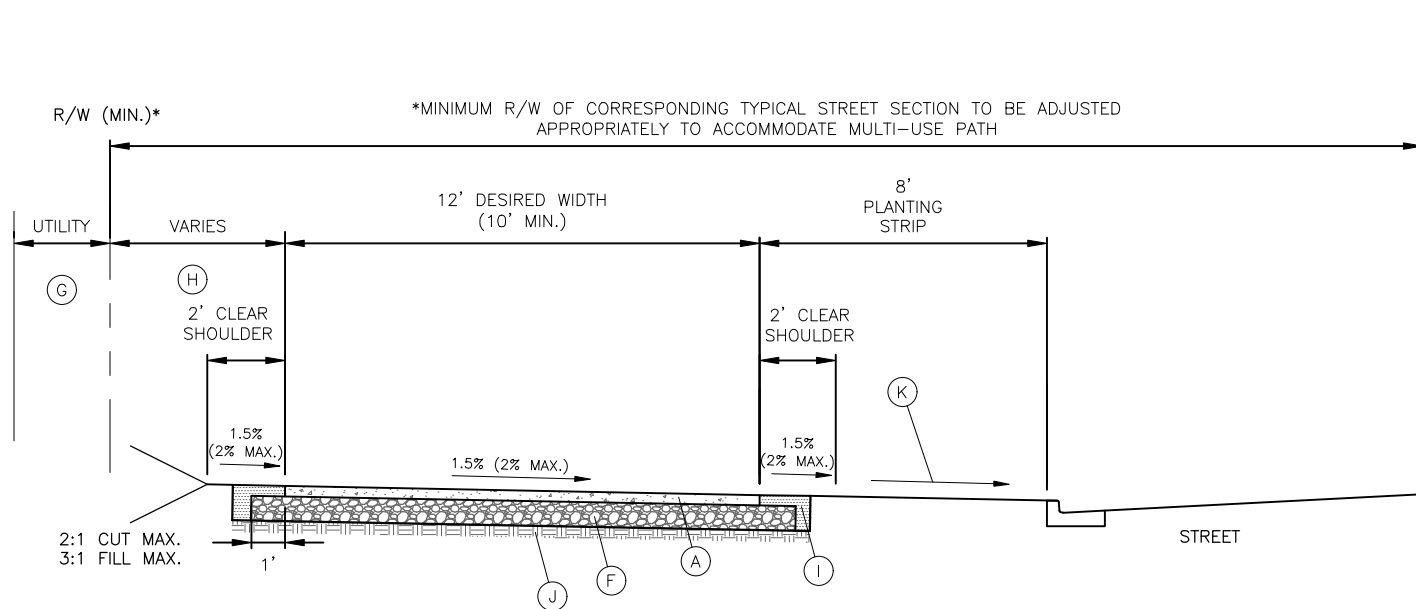


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SHEET 1 OF 1





**NOTES:**

1. AT INTERSECTIONS WITH STREETS OR DRIVEWAYS, RAMP WIDTH MUST MATCH MULTI-USE PATH WIDTH.
2. NO ABOVE GROUND UTILITIES OR UTILITY SURFACE COVERS/PLATES/MANHOLES SHALL BE LOCATED WITHIN MULTI-USE-PATH AND SHALL BE A MINIMUM OF 2 FEET FROM THE EDGE OF THE PATH. RAISED MANHOLES SHALL BE LOCATED A MINIMUM OF 4' FROM EDGE OF PATH.
3. SIGN POSTS OR OTHER FIXED OBJECTS SHALL BE LOCATED A MINIMUM OF 2' FROM EDGE OF PATH.

**KEY**

- (A) 2" ASPHALT CONCRETE S9.5B
- (F) 6" COMPACTED AGGREGATE BASE COURSE UNDERLINED WITH GEOTEXTILE FABRIC (SEE TABLE)
- (G) ADDITIONAL UTILITY R/W OR EASEMENT TO BE DETERMINED BY APPLICABLE PARTIES
- (H) WIDTH TO BE DETERMINED BY TYPICAL SECTION OF STREET CLASSIFICATION
- (I) CLEAN BACKFILL
- (J) SUBGRADE COMPACTED TO A DENSITY OF 100%
- (K) PLANTING STRIP ADJACENT TO MULTI-USE PATH SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES.

GEOTEXTILE FABRIC SPECIFICATIONS		
	TYPICAL	TEST
TENSILE STRENGTH	200	ASTM D4632-86
ELONGATION AT Break, %	15	ASTM D4632
PUNCTURE STENGTH, LBS.	100	ASTM D0751
MULLEN BURST, PSI	400	ASTM D0751/3786
TRAPEZOID TEAR, LBS.	75	ASTM D4533

NOT TO SCALE

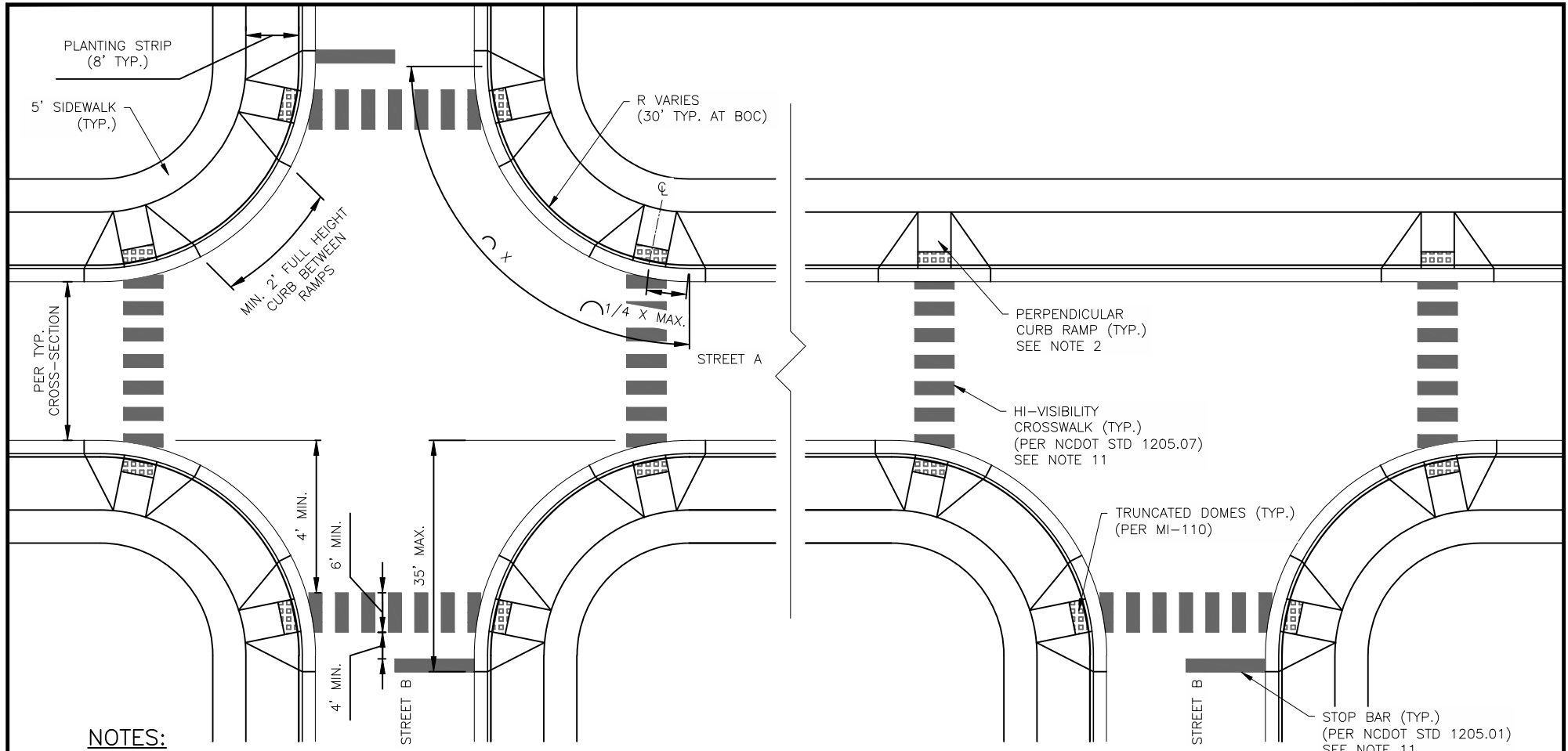


ASPHALT MULTI-USE PATH

3-2022

MI-107

SHEET 1 OF 1



**NOTES:**

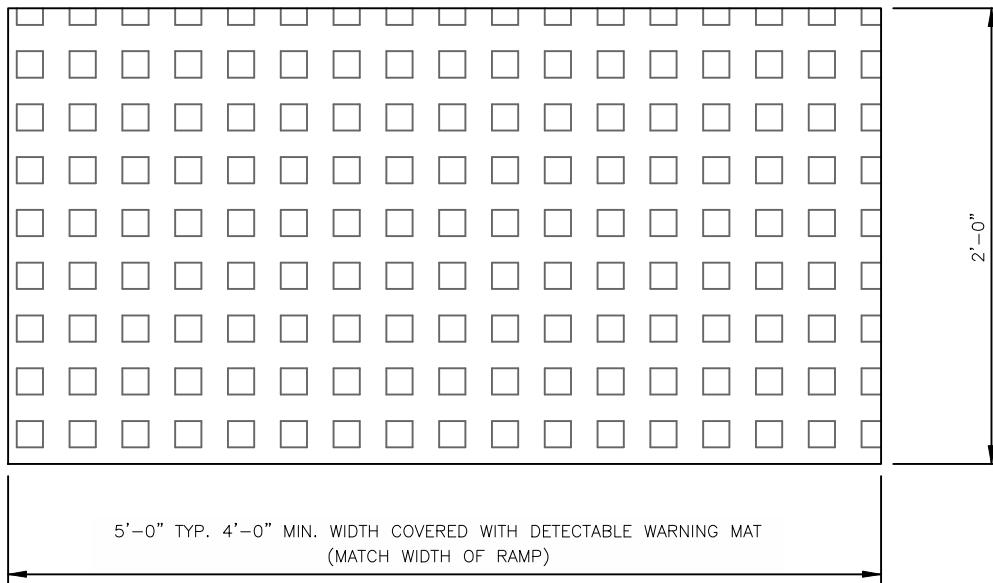
1. ALL RAMP AND SIDEWALK SHALL MEET CURRENT ADA STANDARDS.
2. PERPENDICULAR CURB RAMP PER DETAILS MI-111 AND MI-112 ARE STANDARD, OTHER TYPES WILL BE CONSIDERED ON A CASE BY CASE BASIS.
3. DUAL RAMP AT EACH CORNER ARE STANDARD. SINGLE DIAGONAL RAMP MAY BE CONSIDERED ONLY IN UNUSUAL CIRCUMSTANCES OR RETROFIT SITUATIONS AND MUST MEET ADA STANDARDS.
4. CURB RAMP AND CROSSWALK LOCATIONS AND TYPES AT INTERSECTIONS WITH NCDOT STREETS ARE SUBJECT TO REVIEW AND APPROVAL BY NCDOT.
5. FOR ALL RAMP AT MARKED CROSSWALKS, THE RAMP OPENING (AT THE FULLY DEPRESSED CURB) SHALL BE LOCATED WITHIN THE PARALLEL BOUNDARIES OF CROSSWALK MARKINGS.
6. DRAINAGE STRUCTURES, MAST ARMS, LIGHT POLES AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN LINE WITH RAMP. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF OBSTRUCTIONS EXCEPT WHERE EXISTING OBSTRUCTIONS ARE BEING UTILIZED IN THE NEW CONSTRUCTION.
7. NO UTILITY STRUCTURES MAY BE LOCATED WITHIN THE RAMP AREA.
8. NO PORTION OF A CURB RAMP MAY BE CONTAINED WITHIN A DRIVEWAY, NOR MAY A DRIVEWAY SERVE AS A CURB RAMP.
9. CATCH BASINS MUST BE PLACED APPROPRIATELY WITHOUT INTERFERING WITH THE CURB TRANSITIONS FOR RAMP.
10. WING AND RAMP SURFACES SHALL BE FINISHED IN ACCORDANCE WITH THE LATEST EDITION OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
11. CROSSWALKS AND STOP BARS SHALL BE WHITE THERMOPLASTIC 120 MILS THICK. LOCATIONS WILL BE DETERMINED ON A CASE BY CASE BASIS DURING THE PLAN REVIEW PROCESS.
12. TERMINATE PARKING A MINIMUM OF 20' FROM A PEDESTRIAN CROSSING.

NOT TO SCALE

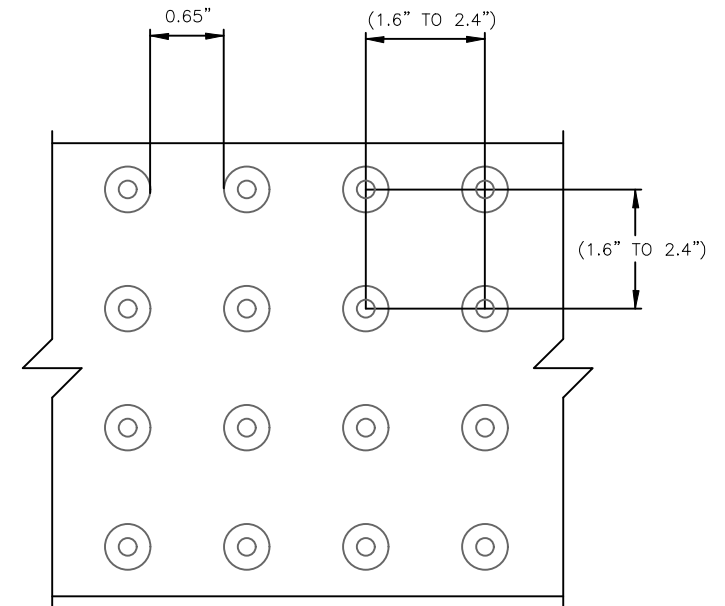


TYPICAL INTERSECTION CURB RAMP LAYOUT  
AND NOTES

3-2022
MI-109
SHEET 1 OF 1



TRUNCATED DOME PLAN VIEW

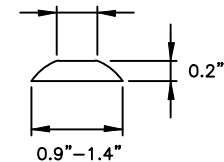


TRUNCATED DOME SPACING

**NOTES:**

1. ALL DETECTABLE WARNING DEVICES USED IN NEW CONSTRUCTION SHALL BE OF A RIGID PRECAST OR EMBEDDED PRODUCT APPROVED BY THE CITY ENGINEER. RETROFIT MATS WILL ONLY BE ALLOWED ON EXISTING RAMPS WITH PRIOR APPROVAL OF THE CITY ENGINEER FOR MATERIAL TYPE AND INSTALLATION (IE. RESURFACING).
2. RAMP AND DETECTABLE WARNING AREA SHALL BE A MINIMUM OF 4 FEET IN WIDTH, BUT NOT LESS THAN THE WIDTH OF SIDEWALK LEADING TO BACK OF RAMP.
3. DETECTABLE WARNING SURFACES SHALL EXTEND 2.0 FT MINIMUM IN THE DIRECTION OF PEDESTRIAN TRAVEL.
4. DETECTABLE WARNING AREA CAN BE PLACED SQUARE WHERE USED IN A CURB RADIUS.
5. THE ROWS OF TRUNCATED DOMES IN DETECTABLE WARNING SURFACES SHOULD BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. WHERE DETECTABLE WARNING SURFACES ARE PROVIDED ON A SURFACE WITH A SLOPE THAT IS LESS THAN 5 PERCENT, DOME ORIENTATION IS LESS CRITICAL.
6. DETECTABLE WARNING AREA SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE; RED COLOR SHALL BE USED.
7. MATS ARE TO BE RIGID WITH TURNED-DOWN EDGES EMBEDDED IN CONCRETE TO ELIMINATE TRIP HAZARD.
8. DIMENSIONS PER NCDOT 848.06

50%-65% OF BASE DIAMETER



TRUNCATED DOME SECTION

NOT TO SCALE



TRUNCATED DOMES

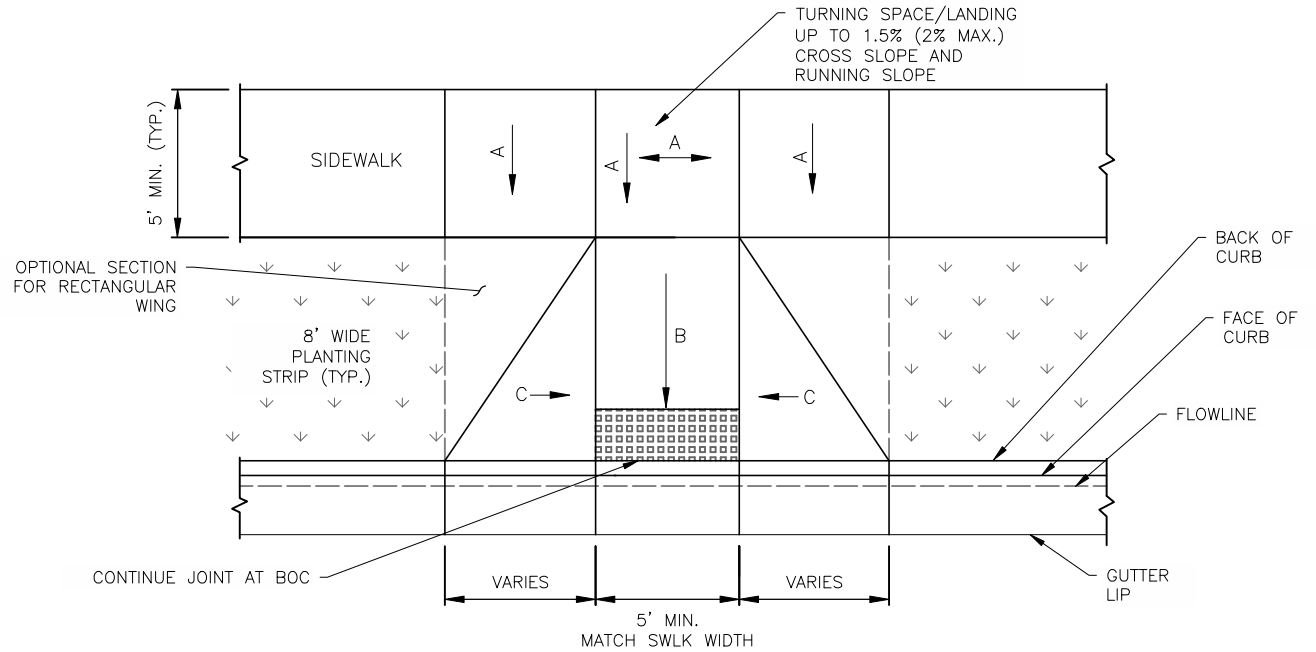
3-2022

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SHEET 1 OF 1

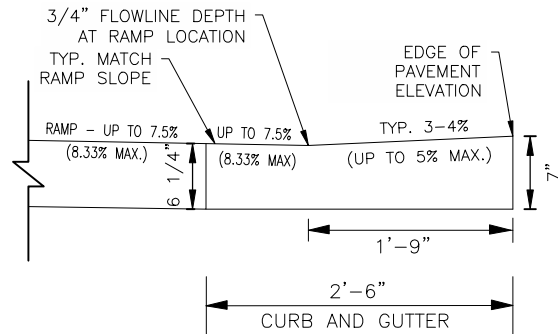
**NOTES:**

1. ALL CONCRETE SHALL BE A MINIMUM OF 3600 PSI.
2. ENSURE FLUSH CONDITIONS AT CURB RAMP TO GUTTER TRANSITION.
3. TYPICALLY, THE SIDEWALK RUNNING SLOPE SHALL NOT EXCEED THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET.
4. MAINTAIN POSITIVE DRAINAGE ALONG THE LIP OF GUTTER IN RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.
5. IF THE SLOPE FROM FLOWLINE TO BACK OF CURB AT RAMP IS LESS THAN 8.33%, THEN THE SLOPE FROM LIP TO FLOWLINE AT RAMP MAY EXCEED 5% AS LONG AS THE ALGEBRAIC DIFFERENCE BETWEEN THESE TWO SLOPES IS LESS THAN 13.33%.
6. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT TYPICALLY WALK ACROSS THE RAMP, THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE, OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.



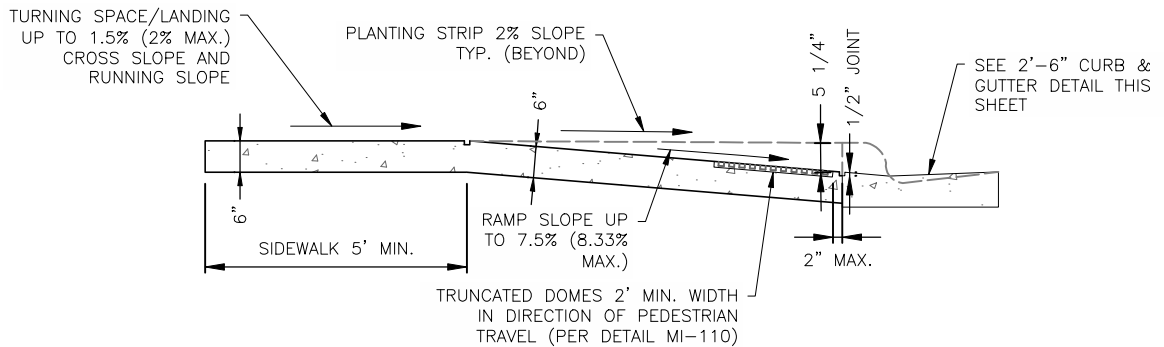
SLOPE "A" = UP TO 1.5% (2.00% MAX)
SLOPE "B" = UP TO 7.5% (8.33% MAX)
SLOPE "C" = UP TO 10% MAX

**PLAN VIEW**



**2'-6" CURB AND GUTTER RAMP DETAIL**

MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT RAMPS



**TYPICAL RAMP SECTION AT CENTERLINE**

NOT TO SCALE



PERPENDICULAR CURB RAMP  
2'-6" CURB & GUTTER

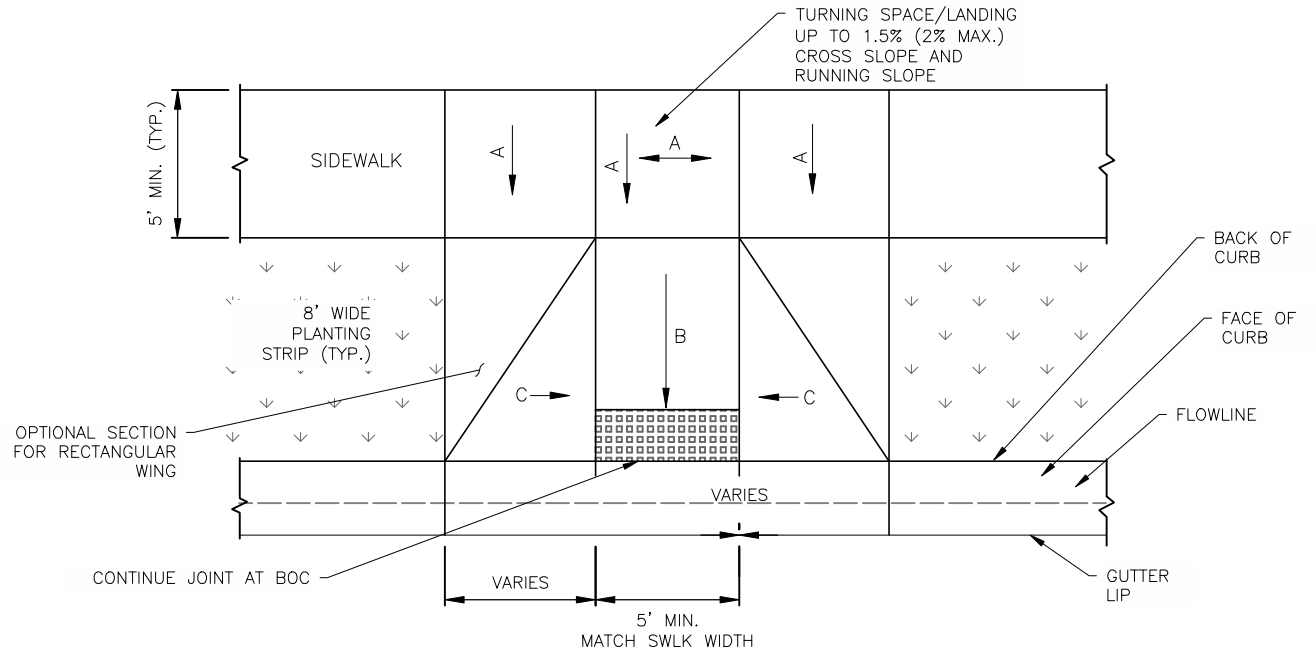
3-2022

MI-111

SHEET 1 OF 1

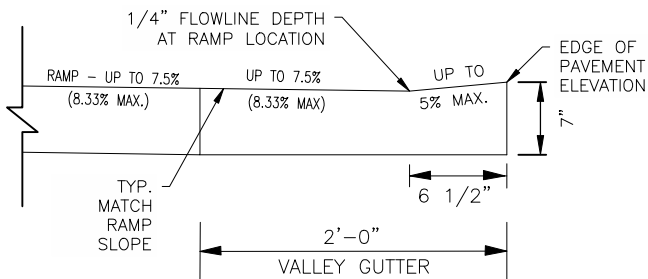
**NOTES:**

1. ALL CONCRETE SHALL BE A MINIMUM OF 3600 PSI.
2. ENSURE FLUSH CONDITIONS AT CURB RAMP TO GUTTER TRANSITION.
3. TYPICALLY, THE SIDEWALK RUNNING SLOPE SHALL NOT EXCEED THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET.
4. MAINTAIN POSITIVE DRAINAGE ALONG THE LIP OF GUTTER IN RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.
5. IF THE SLOPE FROM FLOWLINE TO BACK OF CURB AT RAMP IS LESS THAN 8.33%, THEN THE SLOPE FROM LIP TO FLOWLINE AT RAMP MAY EXCEED 5% AS LONG AS THE ALGEBRAIC DIFFERENCE BETWEEN THESE TWO SLOPES IS LESS THAN 13.33%.
6. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT TYPICALLY WALK ACROSS THE RAMP. IN FLAT AREAS, ADDITIONAL CATCH BASINS MAY BE REQUIRED ON THE SIDES OF THE RAMP TO MINIMIZE STANDING WATER AT THE RAMP LOCATION.

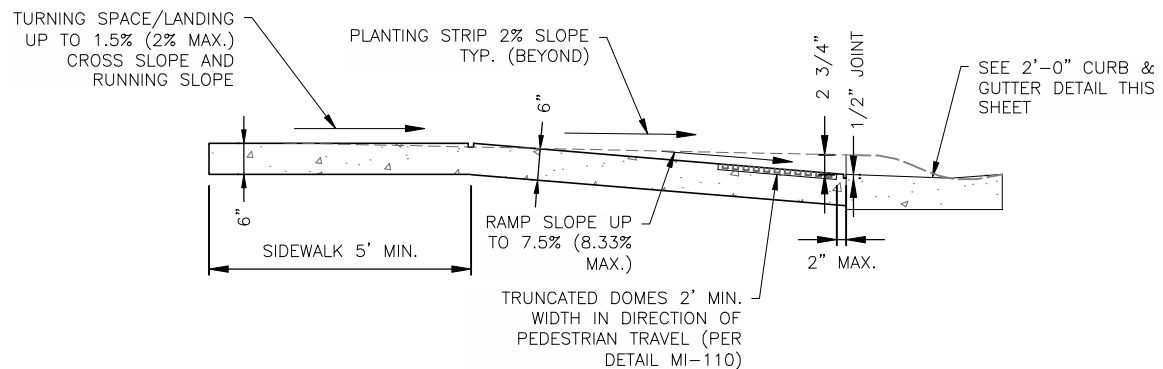


**PLAN VIEW**

SLOPE "A" = UP TO 1.5% (2.00% MAX)
SLOPE "B" = UP TO 7.5% (8.33% MAX)
SLOPE "C" = UP TO 10% MAX



**2'-0" CURB AND GUTTER DETAIL**  
 MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS



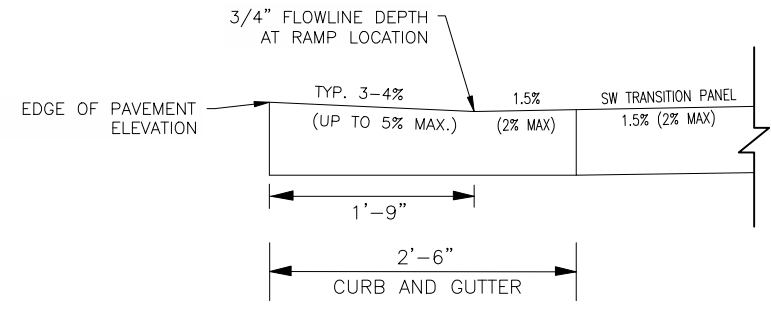
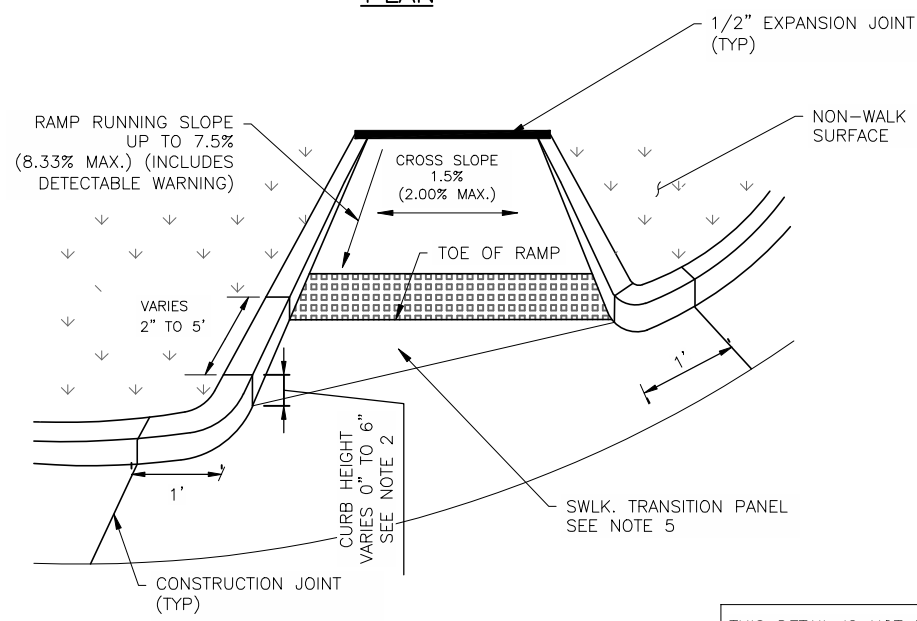
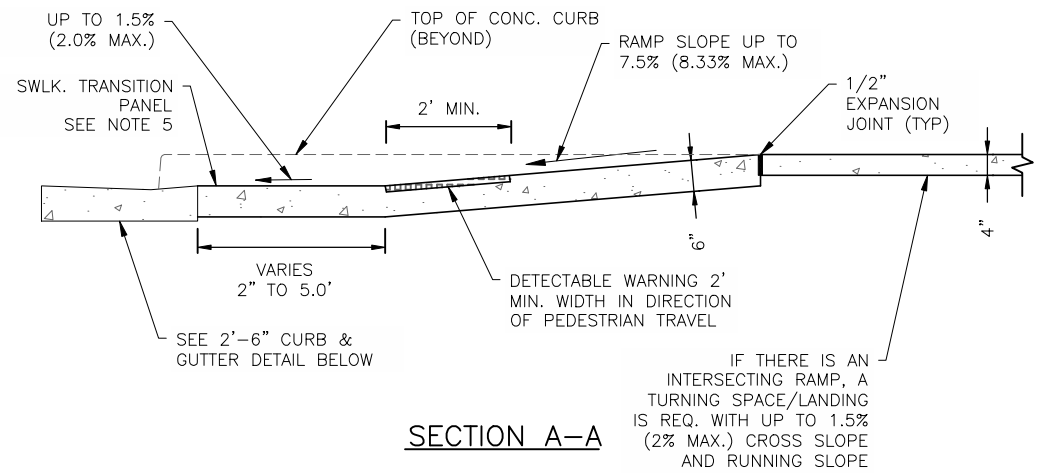
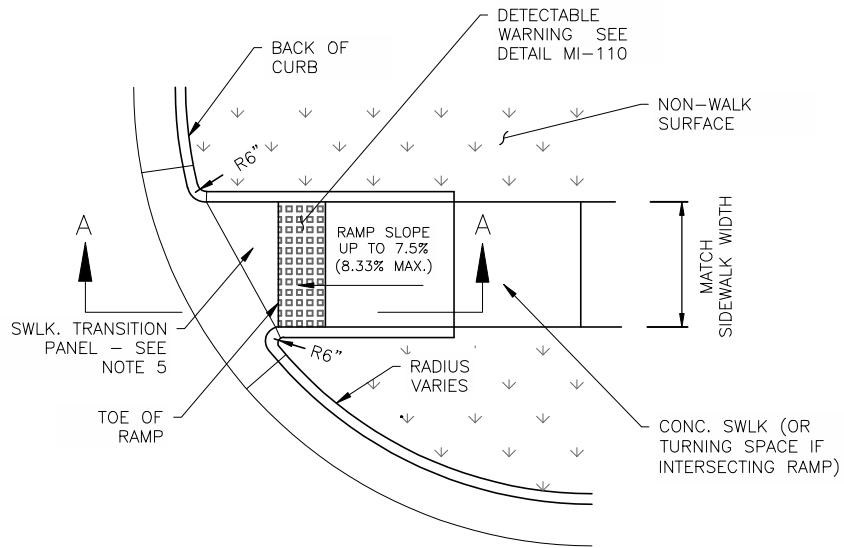
**TYPICAL RAMP SECTION AT CENTERLINE**

NOT TO SCALE



PERPENDICULAR CURB RAMP  
 2'-0" CURB & GUTTER

3-2022
MI-112
SHEET 1 OF 1



**2'-6" CURB AND GUTTER DETAIL**  
**MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS**

- NOTES:**
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
    - 5-FOOT SIDEWALKS WITH CURB RADII OF 35 FEET OR LESS
    - 6-FOOT SIDEWALKS WITH CURB RADII OF 30 FEET OR LESS
    - 8-FOOT SIDEWALKS WITH CURB RADII OF 25 FEET OR LESS
  - DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
  - ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
  - ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
  - SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

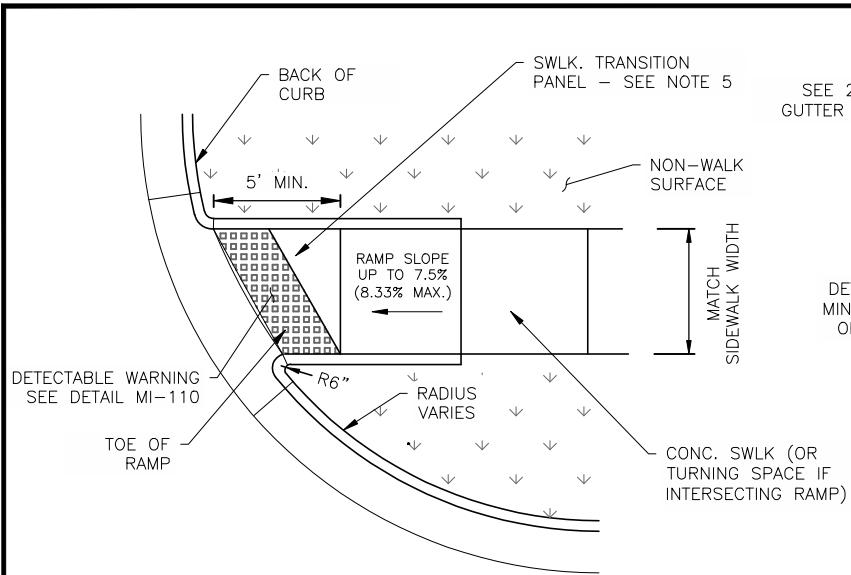
THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.

NOT TO SCALE

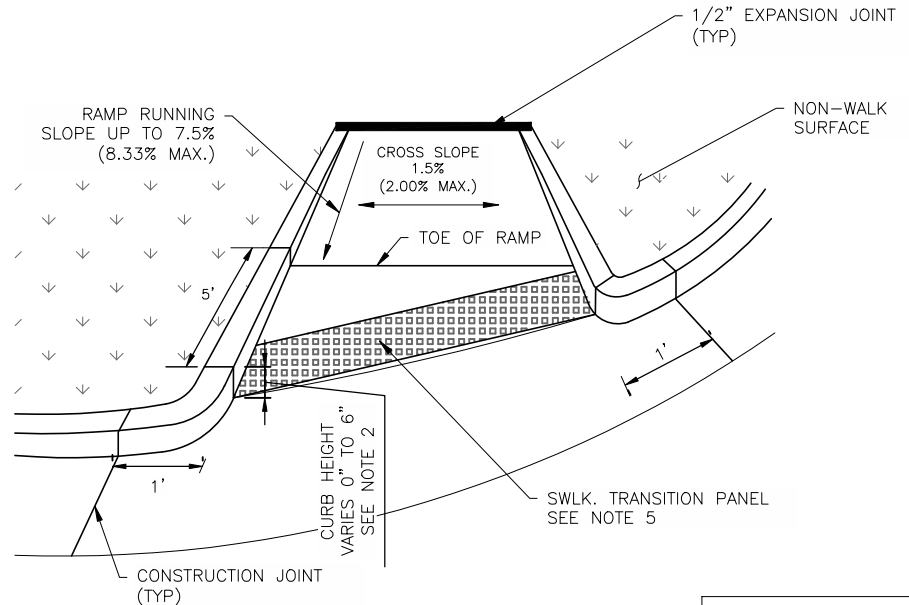


DIRECTIONAL CURP RAMP  
 SMALL/MEDIUM CURB RADII

3-2022
MI-113
SHEET 1 OF 1

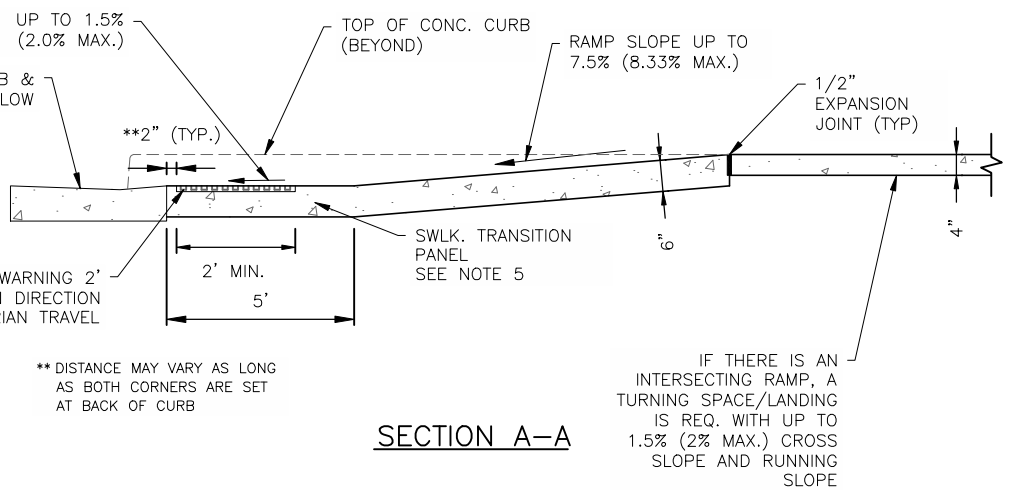


PLAN

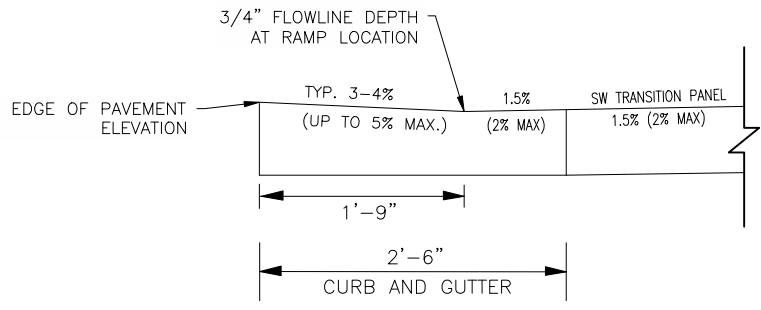


PERSPECTIVE

THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.



SECTION A-A



2'-6" CURB AND GUTTER DETAIL

MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS

NOTES:

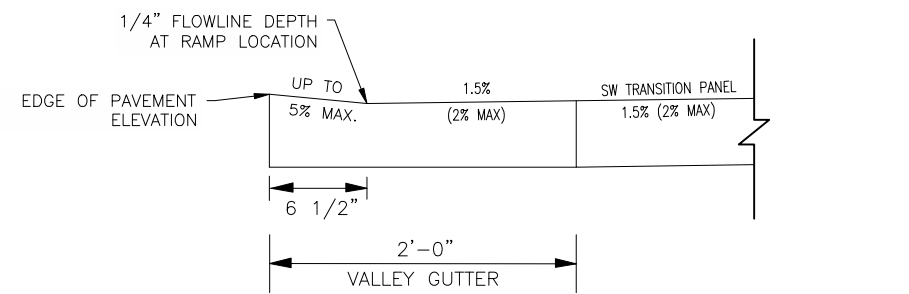
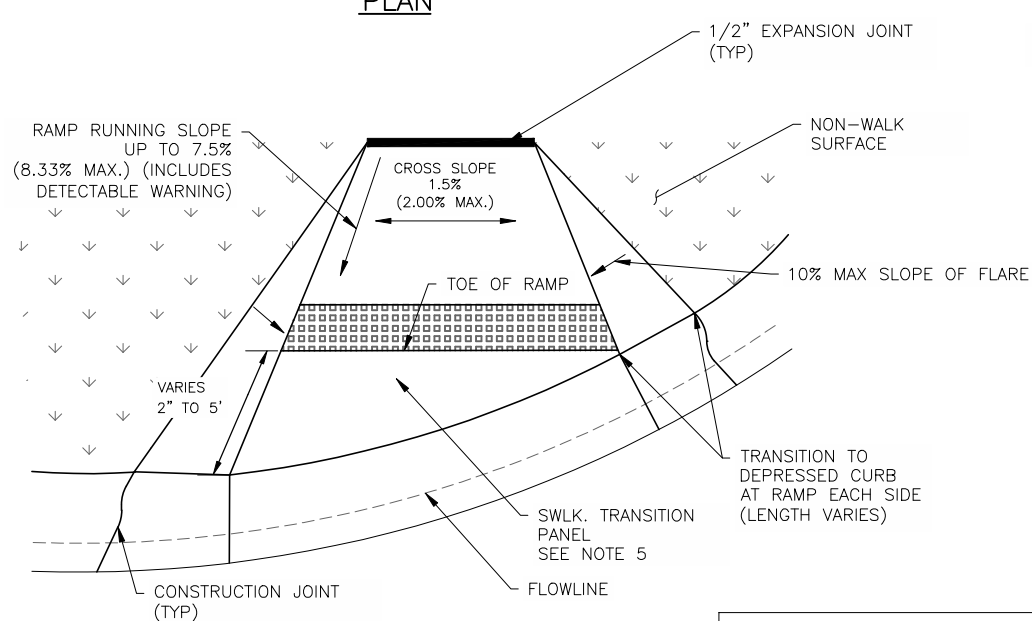
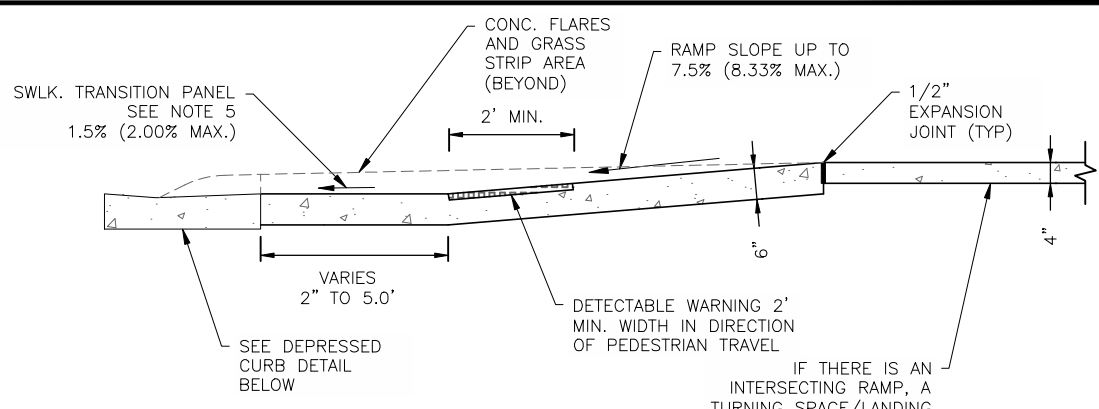
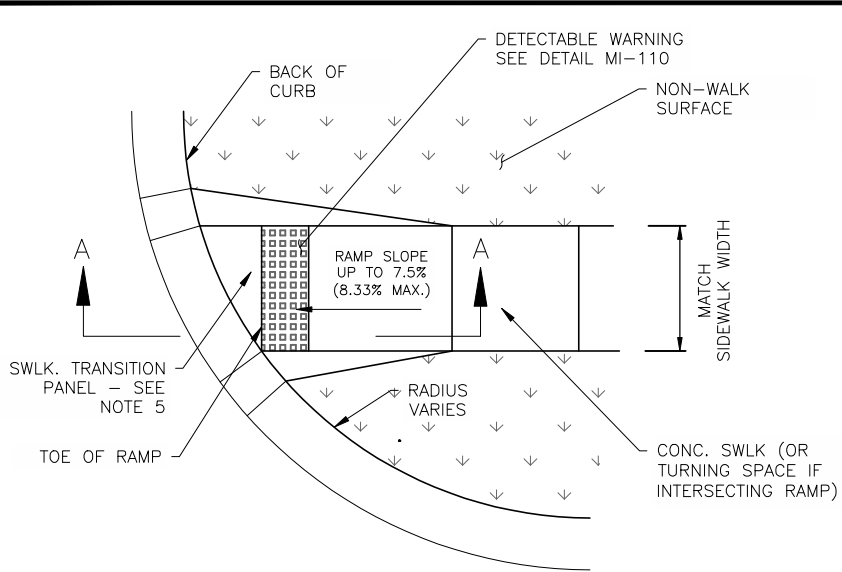
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
  - 5-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 35 FEET
  - 6-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 30 FEET
  - 8-FOOT SIDEWALKS WITH CURB RADII OF GREATER THAN 25 FEET
- DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
- ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
- ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
- SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

NOT TO SCALE



DIRECTIONAL CURB RAMP  
LARGE CURB RADIUS

3-2022  
MI-114  
SHEET 1 OF 1



**2'-0" CURB AND GUTTER DETAIL**  
**MAXIMUM SLOPES FOR CURB AND GUTTER DEPRESSION AT DIRECTIONAL RAMPS**

- NOTES:**
- USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
    - 5-FOOT SIDEWALKS WITH CURB RADII OF 35 FEET OR LESS
    - 6-FOOT SIDEWALKS WITH CURB RADII OF 30 FEET OR LESS
    - 8-FOOT SIDEWALKS WITH CURB RADII OF 25 FEET OR LESS
  - DIRECTIONAL RAMPS WITH RETURNED CURBS AS SHOWN MAY BE USED WHEN A PLANTING STRIP (NON-WALK SURFACE) IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE (WALKABLE SURFACE) INSTEAD OF A PLANTING STRIP. IF A WALKABLE SURFACE IS ADJACENT TO RAMP CONSTRUCT CONCRETE FLARES WITH SLOPES UP TO 10% MAX, INSTEAD OF RETURNED CURBS.
  - ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
  - ENSURE FLUSH CONDITIONS AT RAMP TO GUTTER TRANSITION.
  - SIDEWALK TRANSITION PANEL: PREFERRED DESIGN IS 1.5% (2.0% MAX) IN ALL DIRECTIONS IN FRONT OF GRADE BREAK & DRAIN TO FLOW LINE. RUNNING SLOPE OF THIS AREA MUST NOT EXCEED 2%. CROSS-SLOPE MAY MATCH STREET GRADE AT BACK OF CURB WHEN STREET GRADE >2%. TRANSITION TO 1.5% (2.0% MAX) CROSS-SLOPE AT TOE OF RAMP.

THIS DETAIL IS NOT FOR USE ON NCDOT-MAINTAINED STREETS.

NOT TO SCALE

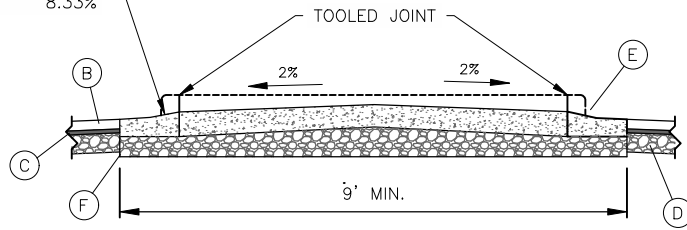


**DIRECTIONAL CURB RAMP**  
**VALLEY CURB**

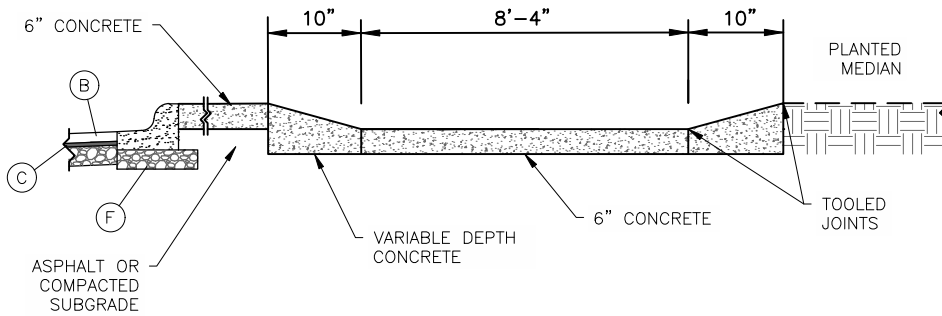
3-2022  
 MI-115  
 SHEET 1 OF 1



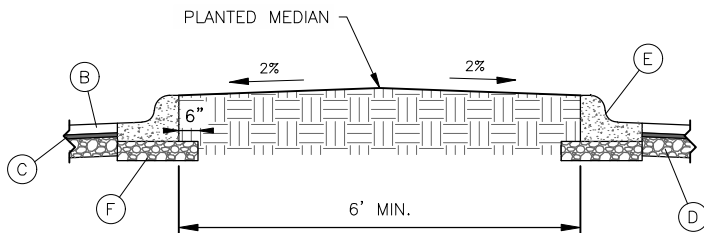
SLOPE ON DEPRESSED CURB  
AT DOMES CANNOT EXCEED  
8.33%



SECTION A-A



SECTION B-B



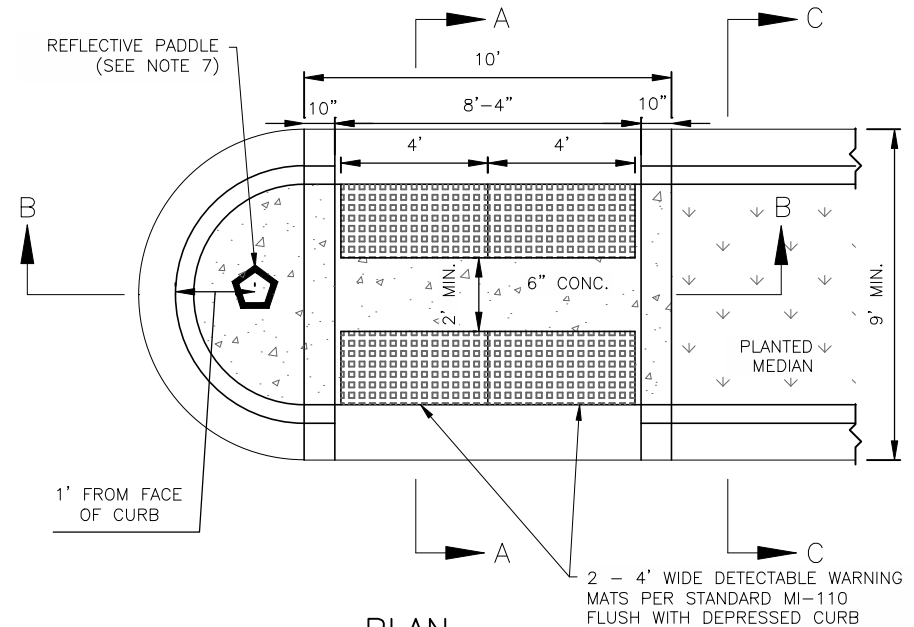
SECTION C-C

NOTES:

1. THIS DETAIL MAY BE USED ON NCDOT-MAINTAINED STREETS ONLY WITH APPROVAL FROM NCDOT.
2. ENSURE PEDESTRIAN PASS-THRU HAS ADEQUATE SLOPE DRAINAGE AND DOES NOT POND WATER.
3. THIS DETAIL MAY BE USED TO PROVIDE A PEDESTRIAN REFUGE PASS-THRU IN AN EXISTING MEDIAN WITH 1'-6" CURB & GUTTER.
4. FOR 1'-6" CURB AND GUTTER, USE CONCORD STANDARD MI-101 FOR CITY STREETS OR NCDOT 846.01 FOR NCDOT STREETS.
5. NCDOT REQUIRES 1' OFFSET FROM EDGE OF PAVEMENT ALONG CURBLINE TO LANE LINE.
6. ALL JOINTS IN THE ISLAND MUST BE SEALED PER APPROPRIATE STANDARD.
7. USE "QWICK KURB L104 REFLECTIVE YELLOW PADDLE" OR EQUIVALENT.
8. CONCORD STANDARD MISC-201 TO BE FOLLOWED IF MEDIAN IS BEING INSTALLED IN EXISTING PAVEMENT.

KEY

- (B) SURFACE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (C) INTERMEDIATE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (D) BASE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (E) 1'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE



PLAN

NOT TO SCALE

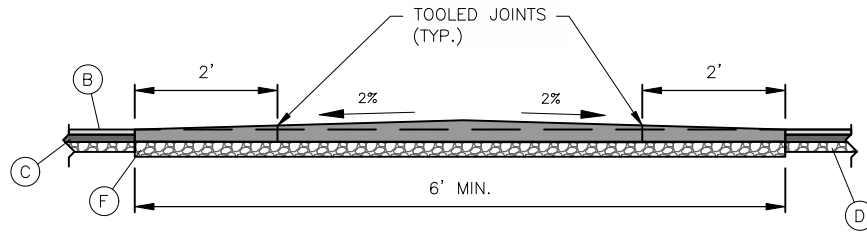


PEDESTRIAN REFUGE  
(1'-6" CURB & GUTTER)

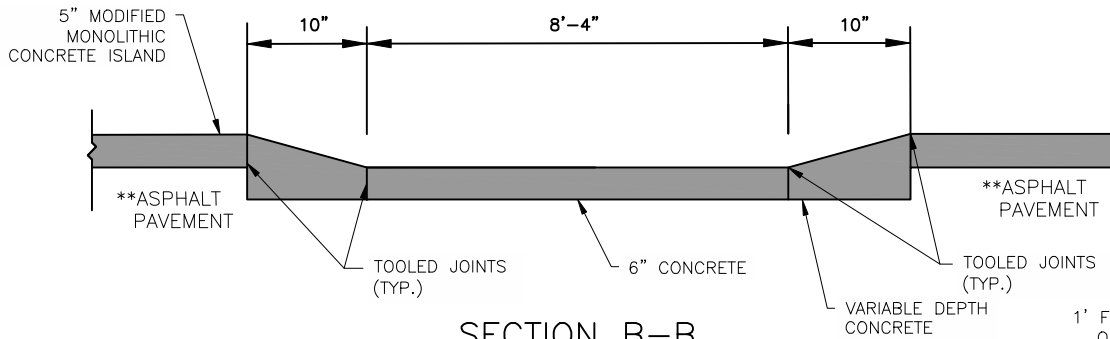
3-2022

MI-116

SHEET 1 OF 1

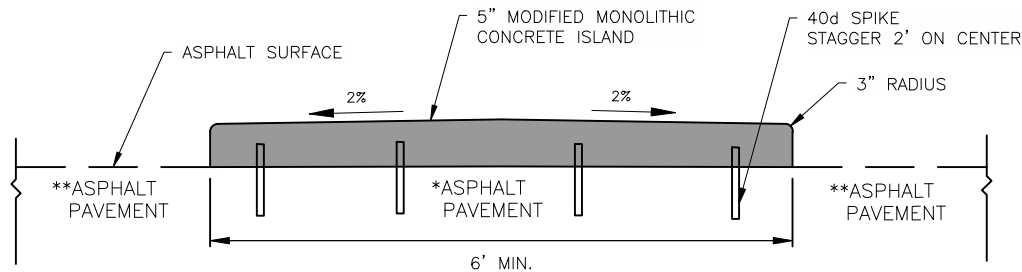


SECTION A-A



SECTION B-B

\*\* ASPHALT PAVEMENT PER APPROPRIATE TYPICAL CROSS SECTION STANDARD



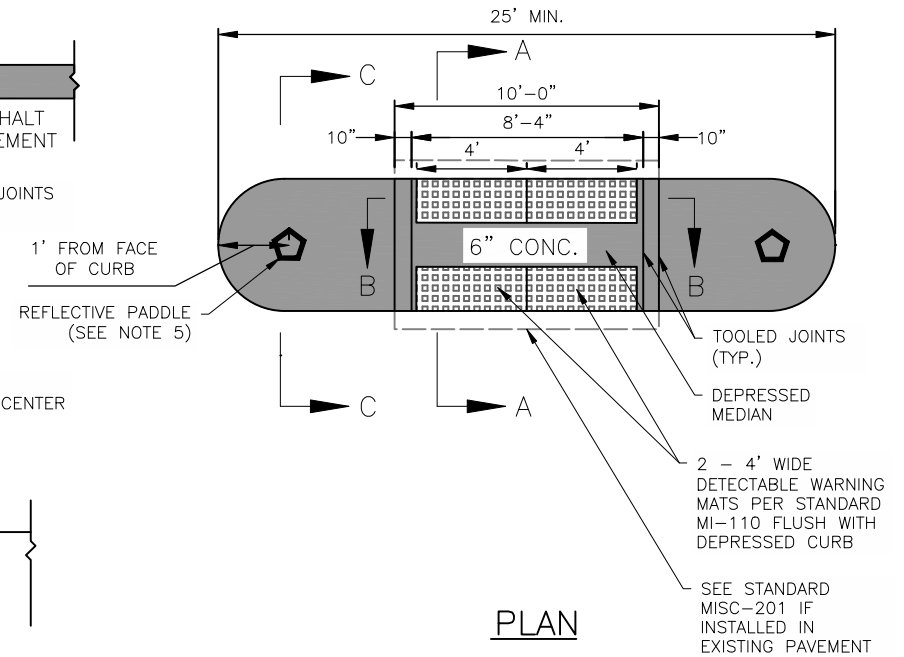
SECTION C-C

NOTES:

1. THIS DETAIL MAY BE USED ON NCDOT-MAINTAINED STREETS ONLY WITH APPROVAL FROM NCDOT.
2. ENSURE PEDESTRIAN PASS-THRU HAS ADEQUATE SLOPE DRAINAGE AND DOES NOT POND WATER.
3. NCDOT REQUIRES 1' OFFSET FROM EDGE OF PAVEMENT ALONG CURBLINE TO LANE LINE.
4. ALL JOINTS IN THE ISLAND MUST BE SEALED PER APPROPRIATE STANDARD.
5. USE "QWICK KURB L104 REFLECTIVE YELLOW PADDLE" OR EQUIVALENT.
6. CONCORD STANDARD MISC-201 TO BE FOLLOWED IF MEDIAN IS BEING INSTALLED IN EXISTING PAVEMENT.

KEY

- (B) SURFACE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (C) INTERMEDIATE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (D) BASE COURSE PER APPROPRIATE TYPICAL CROSS SECTION STANDARD
- (E) 1'-6" STANDARD CURB AND GUTTER
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE



PLAN

NOT TO SCALE



PEDESTRIAN REFUGE  
(MONOLITHIC CONCRETE)

3-2022

MI-117

SHEET 1 OF 1

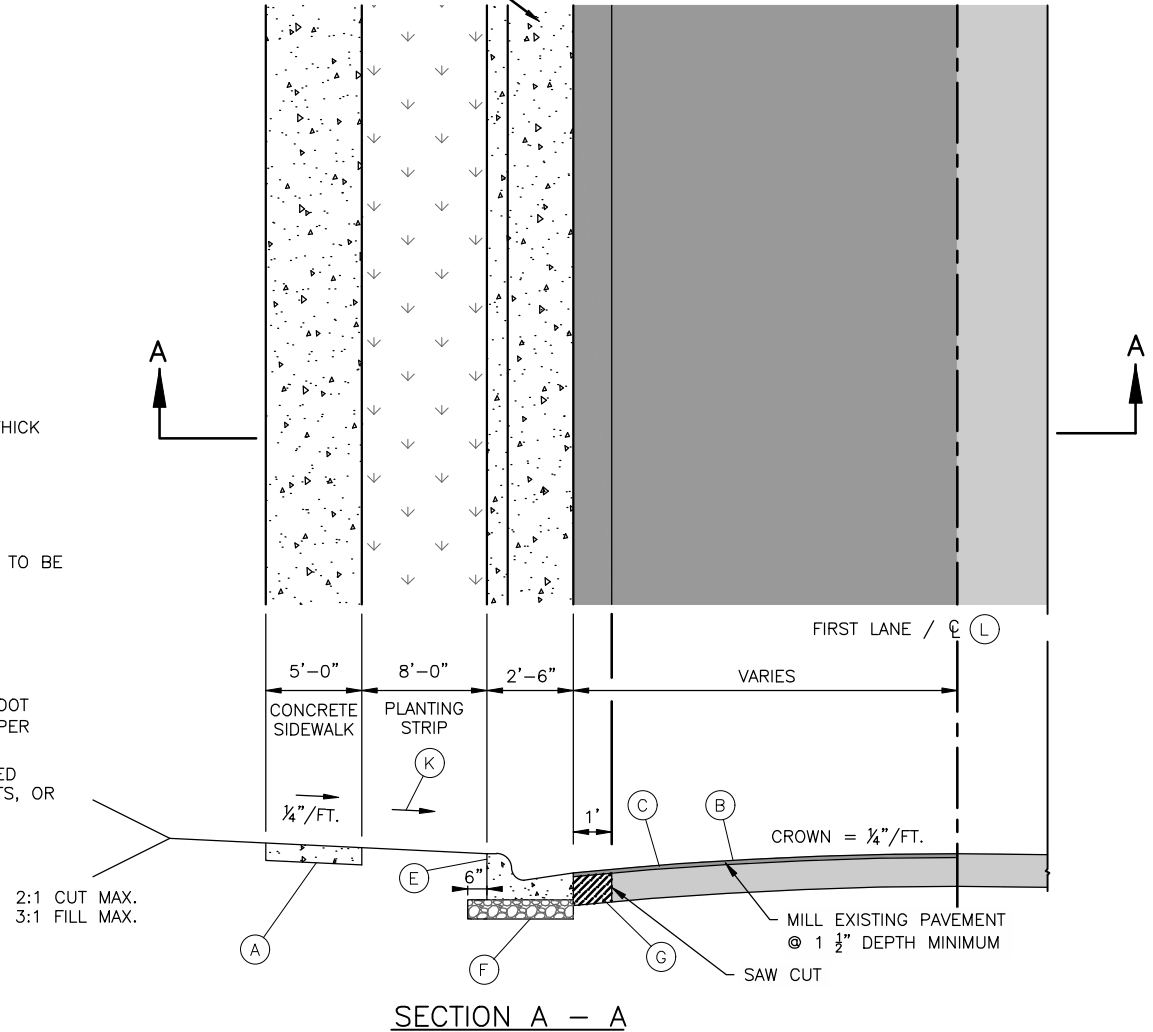
**NOTES:**

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

**KEY**

- (A) 4" SIDEWALK  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) EXISTING PAVEMENT
- (C) MIN. 1 1/2" S 9.5B SURFACE COURSE\*
- (E) 2'-6" STANDARD CURB AND GUTTER SHOWN, APPROPRIATE CURB & GUTTER TO BE DETERMINED BASED ON STREET CLASSIFICATION
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) MIN. 8" I-19.0C\*\*
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (L) MILLING LIMITS SHOULD BE TO EITHER THE CENTERLINE OF 2 LANE UNDIVIDED STREETS, TO THE OPPOSITE EDGE OF PAVEMENT ON 2 LANE DIVIDED STREETS, OR TO THE FULL WIDTH OF THE FIRST LANE FOR MULTI-LANE STREETS.

REPLACE EXISTING GRANITE/EXTRUDED CURB WITH CONCRETE CURB & GUTTER

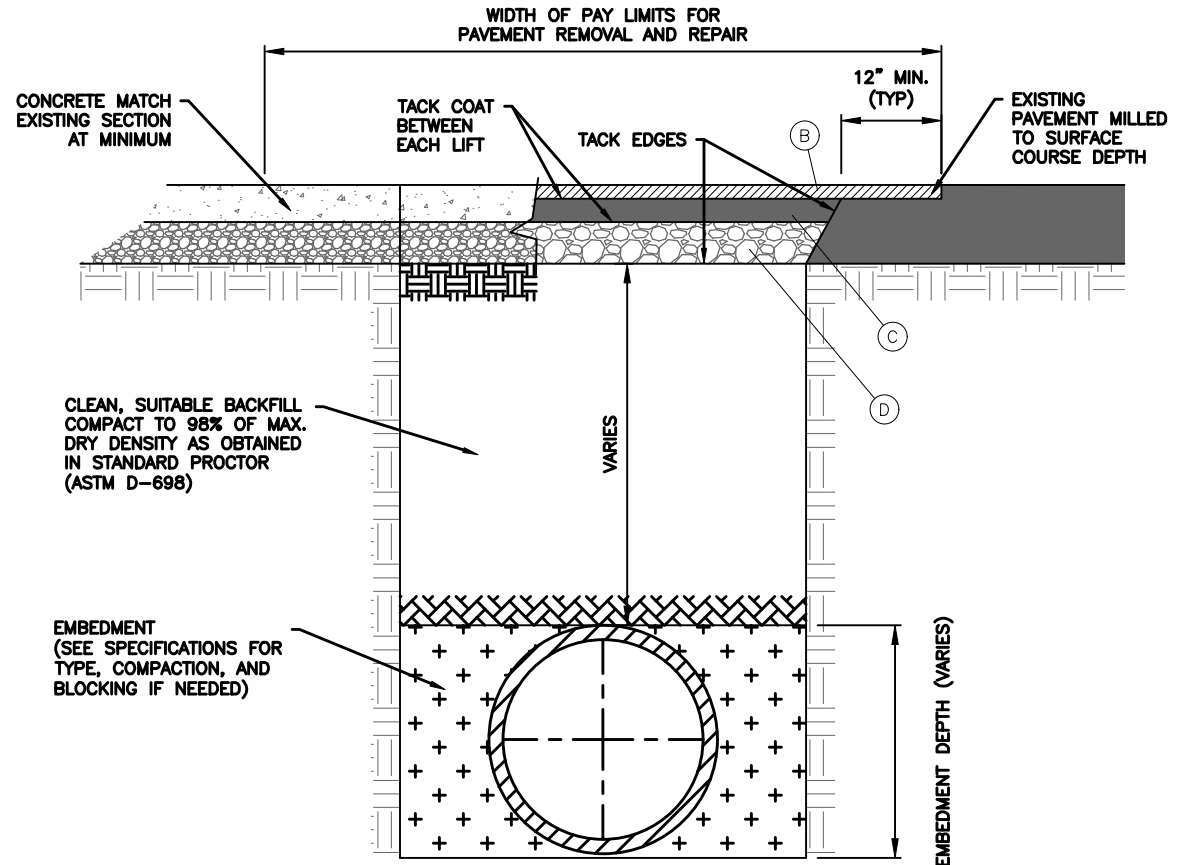


**NOTES:**

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

**KEY**

- (B) SURFACE COURSE MATCH EXISTING | S9.5B (MIN. 2 1/2")
- (C) INTERMEDIATE COURSE MATCH EXISTING | I-19.0C (MIN. 2 1/4")
- (D) BASE COURSE MATCH EXISTING/PROPOSED | B25.0C COMPACTED SUBGRADE (MIN. 8")

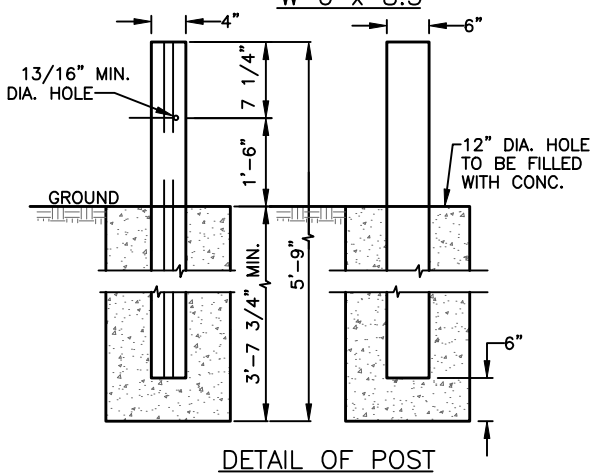
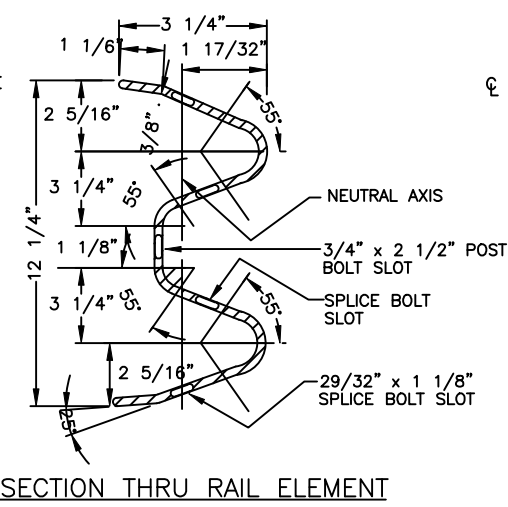
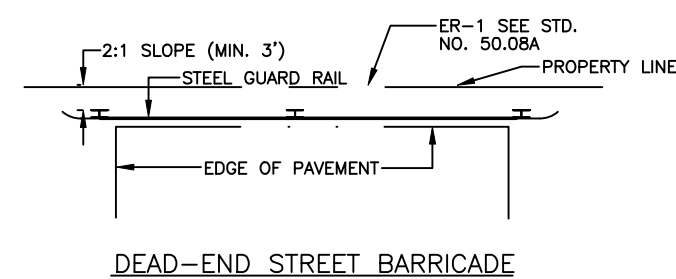
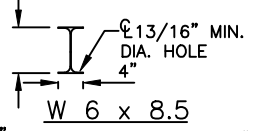
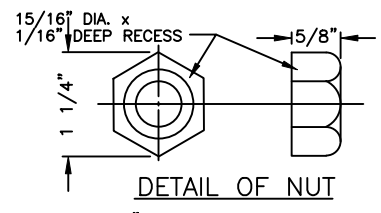
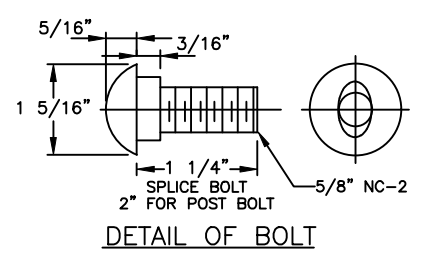
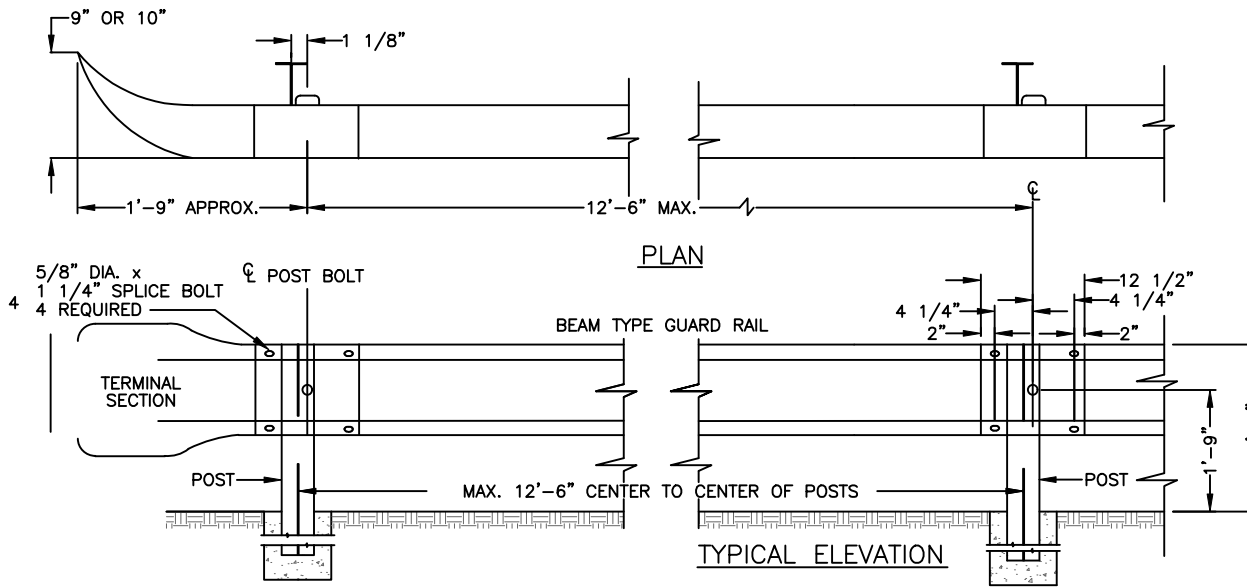


NOT TO SCALE

UTILITY CUT REPLACEMENT DETAIL



3-2022  
MISC-202  
SHEET 1 OF 1



**NOTE**  
 THIS DETAIL IS NOT A GUARDRAIL DETAIL. FOR  
 ROADSIDE GUARDRAIL, SEE NCDOT STANDARD  
 DRAWINGS 862.01-862.04.

NOT TO SCALE



END OF ROAD BARRICADE

3-2022
MISC-203
SHEET 1 OF 2

GENERAL NOTES:

1. STEEL BEAM TYPE GUARD RAILS SHALL BE INSTALLED AT THE END OF ALL DEAD-END STREETS, EXCEPT CUL-DE-SAC STREETS WHICH HAVE BEEN IMPROVED WITH A PERMANENT TURN-AROUND.
2. FOR STREETS 26' IN WIDTH THE GUARD RAIL SHALL CONSIST OF TWO(2) 12'-6" SECTIONS OR ONE(1) 25' SECTION, THREE (3) STEEL POSTS, AND TWO (2) TERMINAL SECTIONS. FOR STREETS GREATER THAN 25' IN WIDTH THE GUARD RAIL SHALL SPAN THE ENTIRE WIDTH OF THE STREET.
3. GUARD RAIL SHALL CONSIST OF RAIL ELEMENTS FABRICATED TO DEVELOP CONTINUOUS BEAM STRENGTH AND INSTALLED AS SHOWN.
4. MINIMUM THICKNESS OF GUARD RAIL SHALL BE 12 GAGE U.S. STANDARD. THE RAIL ELEMENT INCLUDING SPLICES, SHALL HAVE A MINIMUM ULTIMATE TENSILE STRENGTH OF 80,000 LBS. GUARD RAIL PARTS FURNISHED SHALL BE INTERCHANGEABLE WITH SIMILAR PARTS REGARDLESS OF THE SOURCE OF MANUFACTURER. THE HOLES FOR CONNECTING BOLTS SHALL BE PUNCHED OR DRILLED, BURNING WILL NOT BE PERMITTED.
5. THE GUARD, BOLTS, NUTS, STEEL POSTS. AND ALL OTHER METAL PARTS SHALL BE GALVANIZED TO CONFORM TO THE REQUIREMENTS FOR THE COATING CLASS, (2.50 OUNCES PER SQUARE FOOT) OF THE CURRENT SPECIFICATIONS FOR ZINC-COATED (GALVANIZED) IRON, AND STEEL SHEETS, COILS, AND CUT LENGTHS, IN ACCORDANCE WITH ASTM 123A.
6. IF THE AVERAGE SPELTER COATING AS DETERMINED FROM THE REQUIRED SAMPLES IS LESS THAN TWO (2) OUNCES OF SPELTER PER SQUARE FOOT, OR IF ANY ONE SPECIMEN HAS LESS THAN 1.8 ONCES OF SPELTER PER SQUARE FOOT OF DOUBLE EXPOSED SURFACE, THE LOT SAMPLED SHALL BE REJECTED, THE FINISHED SHEETS SHALL BE OF FIRST CLASS COMMERCIAL QUALITY, FREE FROM INJURIOUS DEFECTS, SUCH AS BLISTERS, FLUX, AND UNCOATED SPOTS.
7. THE GUARD RAIL SHALL BE INSPECTED TO DETERMINE THAT THE MATERIAL, DIMENSIONS, AND WORKMANSHIP ARE IN ACCORDANCE WITH THIS PLAN.
8. WHERE A DEAD-END STREET REQUIRES A BARRICADE, END OF ROADWAY MARKER SIGNS SHALL ALSO BE REQUIRED. (SEE STD. MISC-204).

NOT TO SCALE

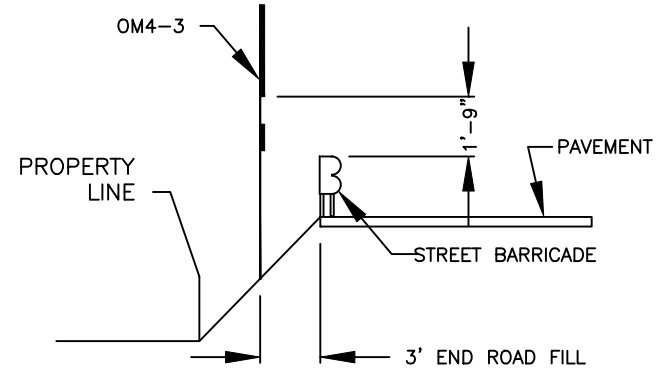
END OF ROAD BARRICADE



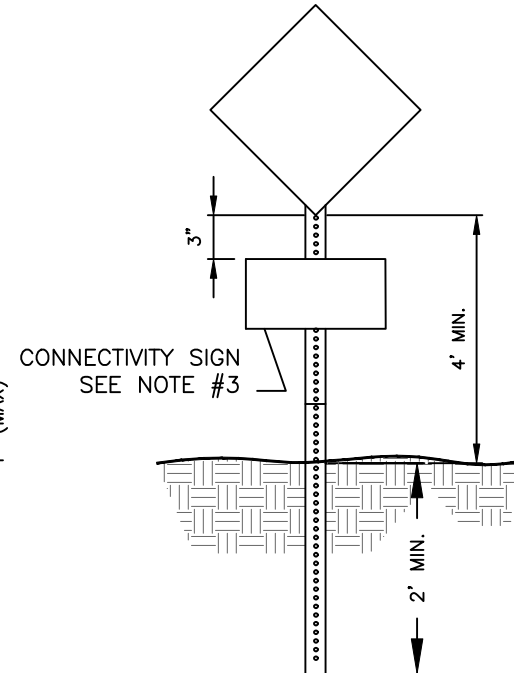
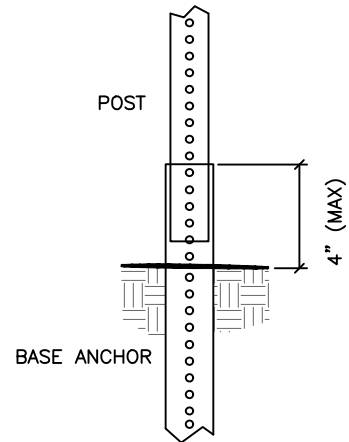
3-2022
MISC-203
SHEET 2 OF 2

**NOTES:**

1. WHEN A DEAD-END OR STUBBED STREET REQUIRES A BARRICADE, END-OF-ROADWAY MARKER SIGNS (OM4-3, 24"x24", SOLID RED) SHALL BE PROVIDED.
2. SIGNS ARE TO BE PLACED BEHIND THE BARRICADE (SEE DETAIL MISC-203), EVENLY SPACED WITH ONE SIGN PLACED AT THE CENTERLINE LOCATION AND ADDITIONAL SIGNS AT 6' O.C. (MINIMUM OF 3 SIGNS, MAXIMUM OF 5 SIGNS).
3. WHEN BARRICADE IS USED ON A STREET STUB, THE SIGN AT THE CENTERLINE SHALL BE SUPPLEMENTED WITH A STREET CONNECTIVITY SIGN. SEE DETAIL MISC-205.
4. ALL SIGNS/MARKERS SHALL MEET OR EXCEED MUTCD STANDARDS FOR RETROREFLECTIVITY.



SIGN LOCATION DETAIL



NOT TO SCALE

END OF ROAD MARKER

3/4" OUTSIDE RADIUS (TYP.)

1/2" WIDE WHITE BORDER

1/4" INSIDE RADIUS (TYP.)

FUTURE DEVELOPMENT  
WILL EXTEND  
THIS STREET

GREEN BACKGROUND

WHITE TEXT (TYP.)

24"

12"

2" (TYP.)

**NOTES:**

1. SIGN SHALL MEET OR EXCEED MUTCD STANDARDS FOR RETROREFLECTIVITY
2. SIGN MATERIAL SHALL BE 0.080" THICK ALUMINUM
3. ALL LETTERS SHALL BE SERIES B-2000 FROM THE 2004 STANDARD HIGHWAY SIGNS MANUAL (AND ANY REVISION THERETO) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.

NOT TO SCALE



END OF STREET  
FUTURE DEVELOPMENT SIGN

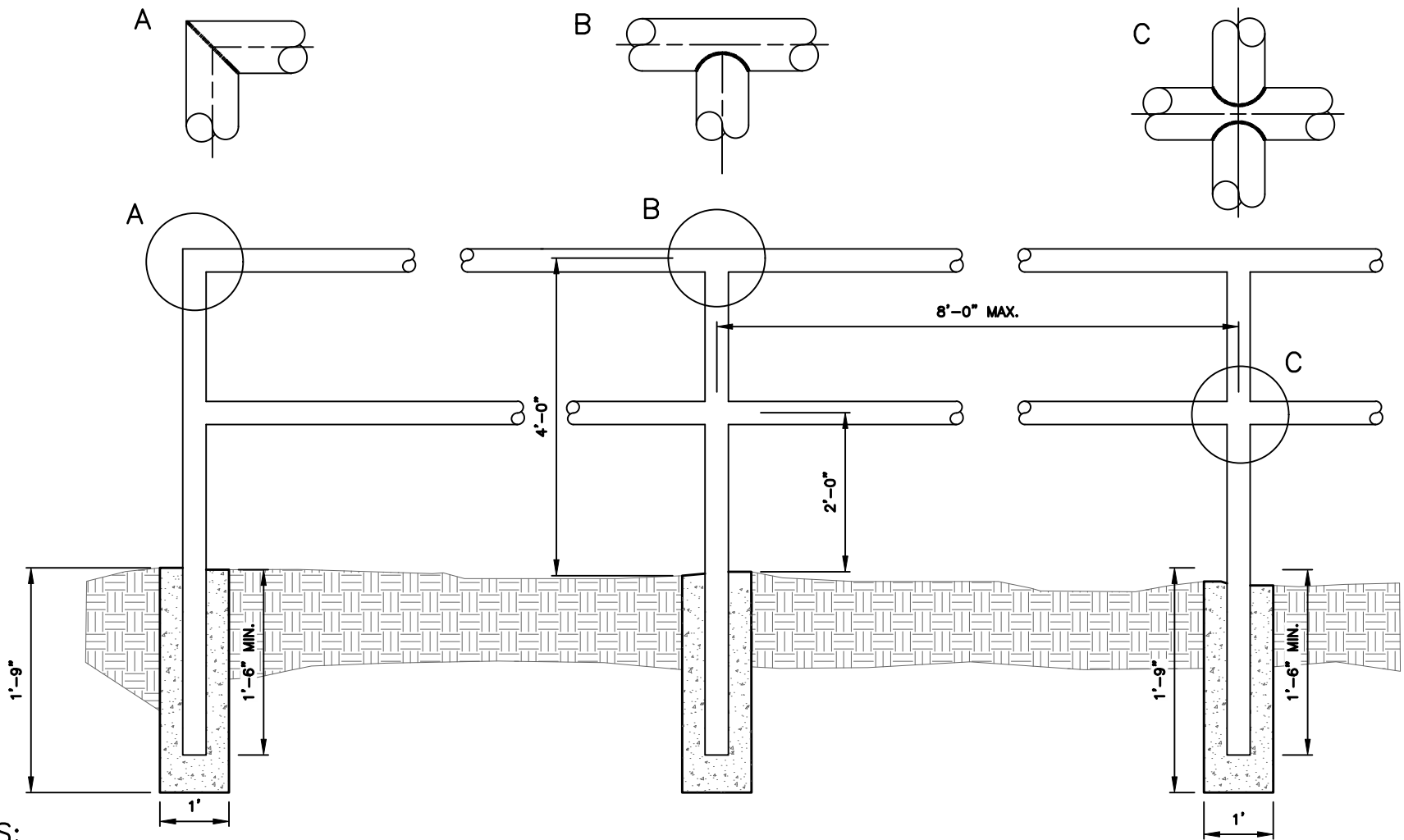
3-2022

MISC-205

SHEET 1 OF 1







**NOTES:**

1. ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
2. TYPE OF PIPE TO BE USED IS 1-5/8" MAX. O.D. BLACK IRON, LOW CARBON PIPE OR GALVANIZED.
3. ALL JOINTS TO HAVE A 1/2" FILLET WELD AT ALL JOINTS.
4. PAINT ASSEMBLY AFTER INSTALLATION WITH BLACK ALL WEATHER ENAMEL.
5. SEE STD. MISC-206 SHEET 1 FOR WARRANTS

NOT TO SCALE



SAFETY RAIL & WARRANTS

3-2022
MISC-206
SHEET 2 OF 2

**City of Concord**

**Technical Standards Manual**

**Article II**

**Streets and Pedestrian Paths**

**Appendix A**

**Application for New Street  
Maintenance Acceptance**





# **City of Concord**

## **Technical Standards Manual**

### **Article II**

#### **Streets and Pedestrian Paths**

##### **Appendix B**

### **PE Certification for Subdivisions and Streets**



**PE Certification for Subdivisions and Streets**

Subdivision: \_\_\_\_\_ Phase / Map: \_\_\_\_\_

Street(s): _____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____
_____	Length: _____

A final inspection of the streets, and complete storm drainage system for the above referenced subdivision has been performed by \_\_\_\_\_. I have reviewed the inspection data and have determined that all public infrastructure has been constructed in accordance with the design drawings approved by Cabarrus County and the City of Concord on \_\_\_\_\_ and all subsequent revisions. My observations and testing indicate the subgrade, base, and pavement have been constructed in accordance with the guidelines established by the City of Concord, as verified by the attached test results.

_____	_____	_____
<b>Signature</b>	<b>Print Name</b>	<b>Date</b>

\_\_\_\_\_

**NC PE #**

\_\_\_\_\_

**Seal**

Received by City of Concord: \_\_\_\_\_  
(initials)

Date: \_\_\_\_\_

*PE Certification for Subdivisions and Streets – Checklist*

**TYPICAL SECTION**

- \_\_\_\_\_ - Roadway has been constructed in the center of the right of way.
- \_\_\_\_\_ - Normal crown and/or superelevation have been properly established.
- \_\_\_\_\_ - Curb & gutter and/or ditches have been constructed properly with no standing water.
- \_\_\_\_\_ - Backfill of all curb & gutter / sidewalk properly placed and compacted.
- \_\_\_\_\_ - All slopes have been properly graded.
- \_\_\_\_\_ - Street Trees have been installed in accordance with approved plan.

**ROADWAY CONSTRUCTION**

- \_\_\_\_\_ - Subgrade density tested at minimum of every 200 LF, minimum of 3 tests per street, and 2 tests in each cul-de-sac. First 8” of subgrade compacted to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by NCDOT indicated for each test as shown in attached soil compaction reports.
- \_\_\_\_\_ - Subgrade has been proof rolled over the entire section. (pass/fail data & remarks included)
- \_\_\_\_\_ - Stone depth verified at 1 location per station (data included). Minimum design depth must be achieved over the entire roadway section.
- \_\_\_\_\_ - Stone density tested at minimum of every 200 LF, minimum of 3 tests per street, and 2 tests in each cul-de-sac. Stone base compacted to at least 100% of maximum density obtainable with the Modified Proctor Test (AASHTO-T180) indicated for each test as shown in attached stone compaction reports.
- \_\_\_\_\_ - Stone base has been proof rolled over the entire section. (Pass/fail data & remarks included)
- \_\_\_\_\_ - Prime Coat applied when/where needed.
- \_\_\_\_\_ - Asphalt course(s) was inspected for failures and appropriate repairs made prior to placement of each successive course.
- \_\_\_\_\_ - Tack Coats were applied between each layer of asphalt.

**PAVEMENT PLACEMENT**

- \_\_\_\_\_ - Asphalt placement temperatures & mix designs verified.
- \_\_\_\_\_ - Each asphalt course was tested for density at a minimum of 90% of the maximum specific gravity per attached results reports.
- \_\_\_\_\_ - Pavement Core Results Report (attached) indicates the core results meet the current minimum design standards per the City of Concord Technical Standards. Core samples shall be taken at 500’ intervals (minimum of 1 core per street block), and no more than 4.0’ feet from the centerline of the street.

**DRAINAGE**

- \_\_\_\_\_ - All materials are approved for use. (NCDOT stamp, etc.)
- \_\_\_\_\_ - All grates/frames/hoods are free of damage and of domestic origin.
- \_\_\_\_\_ - Masonry drainage structures have been properly constructed – steps installed, inverts poured, pipes cut and grouted, backfill compacted, and free of debris.
- \_\_\_\_\_ - All pipe inlets, outlets, and channels are properly stabilized and free of erosion.
- \_\_\_\_\_ - Pipes have been installed with proper cover and slope.
- \_\_\_\_\_ - Pipe sizes are correct. (per plans)

**TRAFFIC CONTROL**

- \_\_\_\_\_ - All traffic control signs are installed in locations per approved plans and are free of damage.
- \_\_\_\_\_ - All signs comply with MUTCD requirements.
- \_\_\_\_\_ - Encroachment agreement has been approved for all signs with decorative treatments.

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**NC PE #**

\_\_\_\_\_  
**Print Name**

\_\_\_\_\_  
**Seal**

**Location of Driveway(s):**

**CITY OF CONCORD  
STREET AND DRIVEWAY ACCESS PERMIT**

STAFF USE ONLY:

Property Street Address \_\_\_\_\_

Driveway #1: Exact Distance            N    S    E    W  
From the Intersection of                      and                      heading toward

Driveway #2: Exact Distance            N    S    E    W  
From the Intersection of                      and                      heading toward

Driveway #3: Exact Distance            N    S    E    W  
From the Intersection of                      and                      heading toward

Permit Number \_\_\_\_\_

Street File \_\_\_\_\_

Approval Date \_\_\_\_\_

**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).

**Property Owner**

**Witness**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

**Applicant (if different than owner)**

**Witness**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_

\_\_\_\_\_ Phone #: \_\_\_\_\_



## 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:

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

Indicate North



# **City of Concord**

## **Technical Standards Manual**

### **Article II**

#### **Streets and Pedestrian Paths**

##### **Appendix C**

### **Private Street Maintenance**

#### **Acceptance Petition**



**Private Street Maintenance Acceptance Petition**

I \_\_\_\_\_, being a property owner along the identified street segment(s), agree to be the main contact to the City in regards to this Petition.

There are a total of \_\_\_\_\_ properties along the street segment(s) listed on the Private Street Maintenance Acceptance Form. There are \_\_\_\_\_ valid signatures on the petition form, which represent \_\_\_\_\_ % of the properties along the identified street segment(s).

I certify, to the best of my knowledge, the signatures on the petition form are those of the property owners of record, that they are valid, and that only one signature per property has been considered in the above percentage.

Number of petition sheets attached: \_\_\_\_\_

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
\_\_\_\_\_

Address  
\_\_\_\_\_

Phone Number  
\_\_\_\_\_

Email Address  
\_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of Applicant



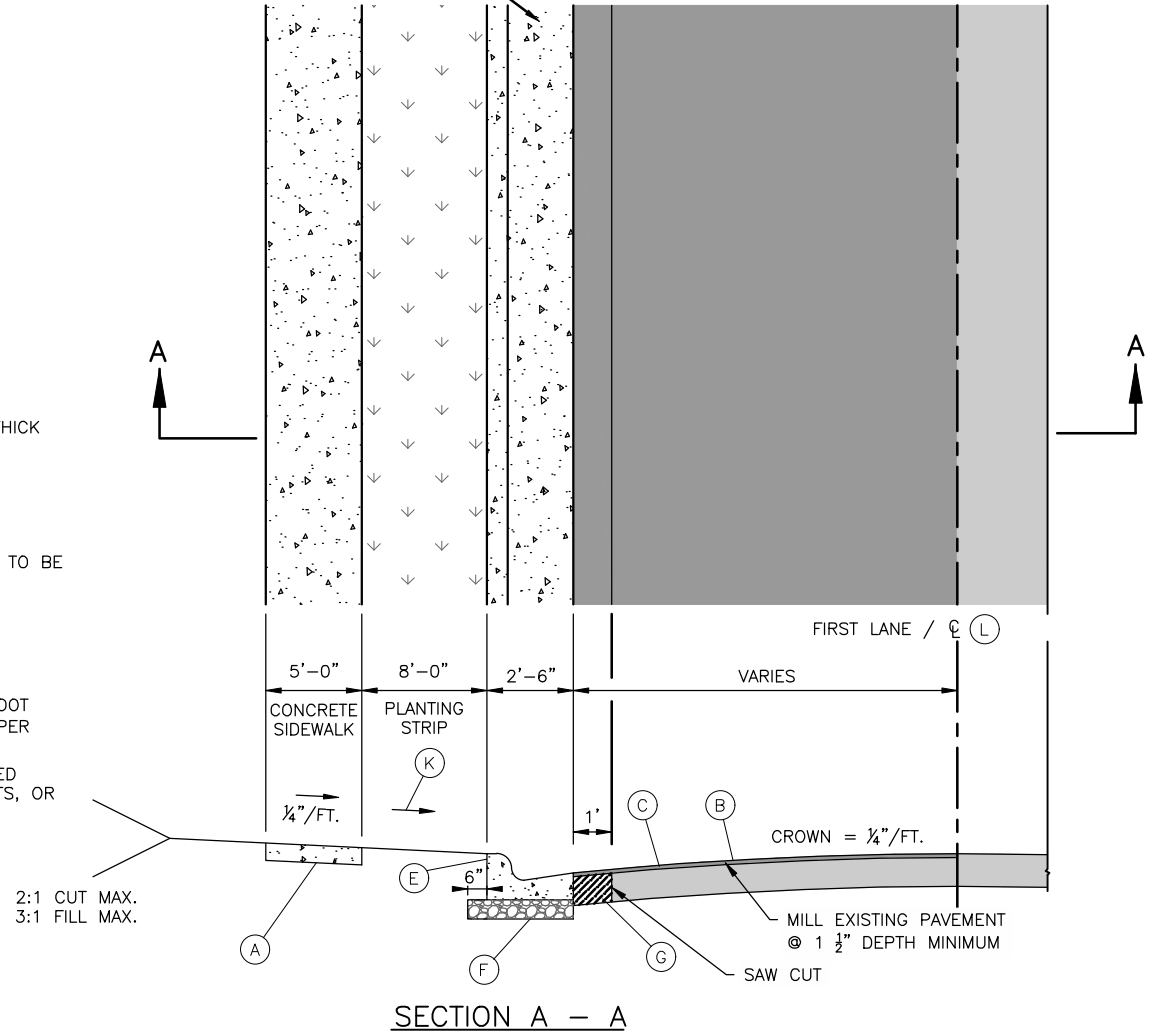
**NOTES:**

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

**KEY**

- (A) 4" SIDEWALK  
\*DRIVEWAY APRON AND SIDEWALK AT DRIVEWAY CROSSINGS SHOULD BE 6" THICK
- (B) EXISTING PAVEMENT
- (C) MIN. 1 1/2" S 9.5B SURFACE COURSE\*
- (E) 2'-6" STANDARD CURB AND GUTTER SHOWN, APPROPRIATE CURB & GUTTER TO BE DETERMINED BASED ON STREET CLASSIFICATION
- (F) 6" COMPACTED AGGREGATE BASE COURSE OR 4" B-25.0C BASE COURSE
- (G) MIN. 8" I-19.0C\*\*
- (K) PLANTING STRIP ADJACENT TO SIDEWALK SHALL BE GRADED TO 1/4" PER FOOT (MIN.) TO 1-1/4" PER FOOT (MAX.). PRIOR APPROVAL REQUIRED FOR STEEPER GRADES
- (L) MILLING LIMITS SHOULD BE TO EITHER THE CENTERLINE OF 2 LANE UNDIVIDED STREETS, TO THE OPPOSITE EDGE OF PAVEMENT ON 2 LANE DIVIDED STREETS, OR TO THE FULL WIDTH OF THE FIRST LANE FOR MULTI-LANE STREETS.

REPLACE EXISTING GRANITE/EXTRUDED CURB WITH CONCRETE CURB & GUTTER



NOT TO SCALE



CURB & GUTTER REMOVAL / REPLACEMENT

3-2022

MISC-201

SHEET 1 OF 1

AN ORDINANCE AMENDING THE ZONING ORDINANCE  
OF THE CITY OF CONCORD, NORTH CAROLINA

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by the North Carolina General Statute §160A-364 enacted an Official Zoning Ordinance for the City of Concord, North Carolina and the Area of Extraterritorial Jurisdiction on July 28, 1977; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute §§160D-601 through 160D-605, 160D-701 through 160D-706, 160D-801 through 160D-808 and 160D-901 through 160D-951, may from time to time as necessary amend, supplement, change, modify or repeal certain of its zoning regulations and restrictions and zone boundaries; and

WHEREAS, the City of Concord, North Carolina pursuant to the authority conferred by North Carolina General Statute 160D-601 through 160D-605, 160D-701 through 160D-706, 160D-801 through 160D-808 and 160D-901 through 160D-951 does hereby recognize a need to amend the text of certain articles of the City of Concord Development Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord, North Carolina:

**SECTION 1:** That the following section of Technical Standards Manual (TSM) Article 2 "Streets and Pedestrian Paths," and Article 3 "Driveways" be deleted in their entirety.

**SECTION 2:** That the following section of Technical Standards Manual (TSM) Article 2 "Streets and Pedestrian Paths," and Article 3 "Driveways" be rewritten as indicated on Attachment A.

**SECTION 3:** That all remaining Articles and Sections of this Ordinance be renumbered to include the newly created Articles and Sections.

SECTION 4: That this Ordinance be effective immediately upon adoption.

Adopted in this May 12, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

ATTEST:

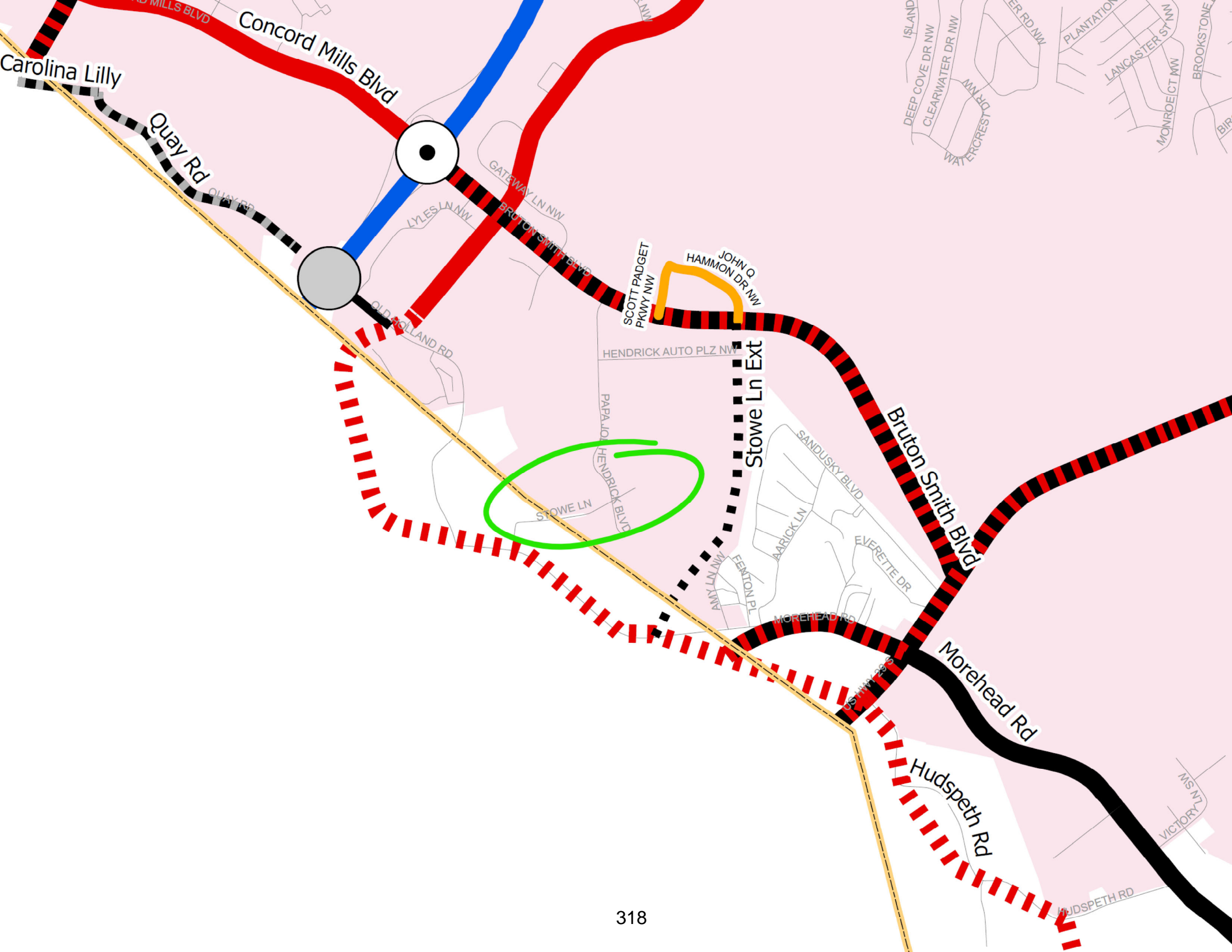
\_\_\_\_\_  
William C. Dusch, Mayor

\_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney







**CITY OF CONCORD  
 BID TABULATION FORM**

**OLD CHARLOTTE SIDEWALK EXTENSION**

**LOCATION: ALFRED M. BROWN OPERATIONS CENTER, 635 ALFRED BROWN JR COURT, SW, CONCORD, NC**

**TIME: 2:00 P.M. DATE: April 5, 2022**

Contractor				Carolina Siteworks		Piedmont Asphalt Paving Co. Inc.	
N.C. License No.				45224		45869	
Address				PO Box 280		PO Box 5226	
City, State Zip				China Grove, NC 28023		Concord, NC 28027	
No.	Item	Units	Quantity	Unit Price	Item Total	Unit Price	Item Total
1	Mobilization	LS	1	\$10,900.00	\$10,900.00	\$21,150.00	\$21,150.00
2	Site and Traffic Control	LS	1	\$53,000.00	\$53,000.00	\$33,300.00	\$33,300.00
<b>Concrete</b>							
3	4" thk. Concrete Sidewalk	SY	650	\$75.50	\$49,075.00	\$92.00	\$59,800.00
4	6" thk. Concrete Driveways and Sidewalk	SY	470	\$91.50	\$43,005.00	\$115.00	\$54,050.00
5	6" thk. ADA Ramp (includes ADA mats)	EA	3	\$1,550.00	\$4,650.00	\$1,250.00	\$3,750.00
6	2' 6" Curb & Gutter	LF	1,435	\$35.00	\$50,225.00	\$42.00	\$60,270.00
7	Misc. Concrete	CY	15	\$435.00	\$6,525.00	\$300.00	\$4,500.00
<b>Earthwork/Demolition</b>							
8	Grading and other (includes saw cutting, demolition, disposals, fill material, etc.)	LS	1	\$52,000.00	\$52,000.00	\$75,150.00	\$75,150.00
9	Demolition of Existing concrete, curb and gutter, sidewalk, etc	LS	1	\$12,200.00	\$12,200.00	\$14,200.00	\$14,200.00
10	Tree Removal	LS	1	\$14,500.00	\$14,500.00	\$25,000.00	\$25,000.00
11	Non-Engineered Retaining Wall	SY	550	\$57.00	\$31,350.00	\$125.00	\$68,750.00
12	Removal of RCP Culverts (2 Driveways)	LS	1	\$2,200.00	\$2,200.00	\$500.00	\$500.00
13	Silt Fence	LF	375	\$4.40	\$1,650.00	\$8.00	\$3,000.00
<b>Storm Drainage</b>							
14	Catch Basin Frame, Grate, and Hood	EA	5	\$925.00	\$4,625.00	\$3,600.00	\$18,000.00
15	Catch Basin with Open Throat (CB)	EA	4	\$6,150.00	\$24,600.00	\$3,600.00	\$14,400.00
16	Double Catch Basin with Open Throat (DCB)	EA	1	\$10,560.00	\$10,560.00	\$7,000.00	\$7,000.00
17	Steel Plate (Approved by City)	EA	5	\$1,800.00	\$9,000.00	\$1,000.00	\$5,000.00
18	15" RCP Culverts (Class IV)	LF	570	\$89.50	\$51,015.00	\$130.00	\$74,100.00
19	Flared End Section	EA	1	\$1,450.00	\$1,450.00	\$2,300.00	\$2,300.00
20	NCDOT Class B Rip Rap	TN	5	\$72.50	\$362.50	\$100.00	\$500.00
<b>Asphalt/Stone</b>							
21	Surface Course 2" - S9.5B	TN	40	\$290.00	\$11,600.00	\$375.00	\$20,625.00*
21A	Surface Course 3" - S9.5B	TN	10	\$290.00	\$2,900.00		
22	Intermediate Course 2.25" I19B	TN	8	\$280.00	\$2,240.00	\$375.00	\$7,500.00*
22A	Intermediate Course 5" I19B	TN	98	\$280.00	\$27,440.00		
23	ABC Stone (6" Curb Base and New Pavement)	TN	100	\$96.00	\$9,600.00	\$75.00	\$7,500.00
24	ABC Stone (Driveway Tie-ins and Incidental)	TN	30	\$96.00	\$2,880.00	\$75.00	\$2,250.00
<b>Landscaping</b>							
25	Seeding and Mulching	SY	335	\$3.30	\$1,105.50	\$10.00	\$3,350.00
<b>Striping</b>							
26	Crosswalk Striping [City of Concord Standard]	LF	150	\$24.00	\$3,600.00	\$25.00	\$3,750.00
27	Stop Bar - 24"	LF	45	\$21.00	\$945.00	\$20.00	\$900.00
TOTAL BASE BID (ITEMS 1 THRU 24).....					\$495,203.00		\$590,595.00*
+ 10% CONTINGENCY					\$49,520.30		\$59,059.50*
<b>TOTAL BASE BID</b>					\$544,723.30		\$649,654.50*
<b>ALTERNATE BID ITEMS</b>							
A28	Manhole Adjustment	EA	1	\$725.00	\$725.00	\$1,500.00	\$1,500.00
A29	Alternate plastic pipe in place of RCP. Alternate Must be approved by City Staff and able to be installed to manufacturers specifications	LF	570	\$92.60	\$52,782.00	\$186.00	\$106,020.00
TOTAL ALTERNATE BID (ITEMS A28-A29)					\$53,507.00		\$107,520.00
<b>TOTAL ALTERNATE BID</b>					\$53,507.00		\$107,520.00
<b>TOTAL BID ALL ITEMS</b>					\$598,230.30		\$757,174.50*

This Certified Quote Tabulation is true and correct to the best of my abilities and knowledge.

signed: *Phillip graham*, PE

\* Numbers do not reflect updated bid form from addendum #2 posted 3/31/2022

Phillip Graham, P.E., Transportation Director

(amounts rounded up to nearest \$0.01)

**CITY OF CONCORD**  
**CERTIFIED BID TABULATION FORM**  
**STREETS PRESERVATION CONTRACT STR21 Bid No. 2530**

**LOCATION: TRAFFIC MANAGEMENT CENTER, 880 WARREN C COLEMAN BLVD CONCORD, NC**  
**TIME: 2:00 P.M. DATE: April 22, 2021**

Contractor		Blythe Construction Inc.		Ferebee Corporation		J.T. Russell & Sons, Inc.		Blythe Brothers Asphalt Co. LLC			
N.C. License No.		7639		18306		2767		42840			
Address		PO Box 31635		PO Box 480066		PO Box 670		1415 E Westinghouse Blvd			
City, State Zip		Charlotte, NC 28231		Charlotte, NC 28269		Albermarle, NC 28002		Charlotte, NC 28273			
5% Bid Bond Included		Yes		Yes		Yes		Yes			
No.	Item	Units	Quantity	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
<b>Crack and Joint Sealing</b>											
1.1	Seal Existing pavement cracks and joints	lbs	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
					<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>
<b>Patching, Leveling, Asphalt Seal Coating</b>											
2.1	Asphalt Full Depth Finished Patching - Place and compact Intermediate Course 3" I19.0B with 2" Surface Course S9.5 B Cap (areas to be determined)	Tons	5,000	\$134.00	\$670,000.00	\$138.00	\$690,000.00	\$135.00	\$675,000.00	\$134.00	\$670,000.00
2.2	Asphalt Full Depth Patching - Place and compact Intermediate Course I19.0B (no Surface Course Cap)	Tons	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
2.3	Asphalt Leveling - Place and compact Intermediate Course I19.0B	Tons	6,540	\$90.90	\$594,486.00	\$95.00	\$621,300.00	\$104.00	\$680,160.00	\$104.00	\$680,160.00
2.4	Asphalt Leveling - Place and compact Asphalt Open Graded Leveling Course (P78 or mix as approved by Director)	Tons	2,125	\$98.50	\$209,312.50	\$97.50	\$207,187.50	\$100.00	\$212,500.00	\$109.00	\$231,625.00
2.5	Place and compact suitable Sub-base material (Location to be determined)	Cu. Yd	50	\$175.00	\$8,750.00	\$60.00	\$3,000.00	\$100.00	\$5,000.00	\$100.00	\$5,000.00
2.6	Asphalt Seal Coat	Sq. Yd	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
					<b>\$1,482,548.50</b>		<b>\$1,521,487.50</b>		<b>\$1,572,660.00</b>		<b>\$1,586,785.00</b>
<b>Milling</b>											
3.1	Full Mill the bituminous pavement - Depth 0" to 4"	Sq. Yd	40,645	\$2.54	\$103,238.30	\$2.50	\$101,612.50	\$3.00	\$121,935.00	\$2.50	\$101,612.50
3.2	Edge Mill the bituminous pavement - Depth 0" to 4"	Sq. Yd	40,745	\$2.58	\$105,122.10	\$2.75	\$112,048.75	\$3.50	\$142,607.50	\$2.60	\$105,937.00
3.3	Incidental Milling 0" to 6"	Sq. Yd	400	\$10.10	\$4,040.00	\$20.00	\$8,000.00	\$17.00	\$6,800.00	\$12.00	\$4,800.00
					<b>\$212,400.40</b>		<b>\$221,661.25</b>		<b>\$271,342.50</b>		<b>\$212,349.50</b>
<b>Reclamation</b>											
4.1	Reclamation of existing roadway with concrete stabilization	Sq. Yd	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
4.2	Undercut and replace with approved suitable material for subgrade repairs	Tons	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
					<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>
<b>Resurfacing</b>											
5.1	Asphalt Resurfacing - Place and compact 1.25" of Surface Course S9.5B	Tons	7,785	\$102.00	\$794,070.00	\$105.00	\$817,425.00	\$100.00	\$778,500.00	\$109.00	\$848,565.00
5.2	Asphalt Resurfacing - Place and compact 1.5" of Surface Course S9.5B	Tons	3,660	\$100.00	\$366,000.00	\$105.00	\$384,300.00	\$100.00	\$366,000.00	\$108.00	\$395,280.00
					<b>\$1,160,070.00</b>		<b>\$1,201,725.00</b>		<b>\$1,144,500.00</b>		<b>\$1,243,845.00</b>
<b>Concrete</b>											
6.1	City of Concord Standard Valley Type Concrete Curb and Gutter (Incidental and as directed:	LF	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
6.2	City of Concord Standard 2'-6" Concrete Curb and Gutter (Incidental and as directed):	LF	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
6.3	Wheelchair Ramps (Incidental and as directed:	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
6.4	4" Thick Concrete Sidewalk	Sq. Yd	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
					<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>		<b>NO BID</b>
<b>Re-Striping, Remarking, And Replace Pavement Marker</b>											
7.1	Thermoplastic Pavement Marking Lines 4" Double Yellow Solid	LF	11,257	\$2.50	\$28,142.50	\$3.30	\$37,148.10	\$2.00	\$22,514.00	\$2.66	\$29,943.62
7.2	Thermoplastic Pavement Marking Lines 4" Yellow Solid, Skip, and Mini Skip Line	LF	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.3	Thermoplastic Pavement Marking Lines 8" Yellow Gore Line	LF	81	\$6.50	\$526.50	\$5.50	\$445.50	\$4.00	\$324.00	\$7.06	\$571.86
7.4	Thermoplastic Pavement Marking Lines 4" White Solid, Skip, and Mini Skip and Parking Stall Line	LF	462	\$2.25	\$1,039.50	\$2.20	\$1,016.40	\$2.00	\$924.00	\$2.44	\$1,127.28
7.5	Thermoplastic Pavement Marking Lines STOP Bar - 24"	LF	38	\$14.25	\$541.50	\$22.00	\$836.00	\$16.00	\$608.00	\$15.48	\$588.24
7.6	Thermoplastic Pavement Marking Lines Crosswalk - 8" White NCDOT Std.	LF	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.7	Thermoplastic Pavement Marking Lines Crosswalk, Hi-Visibility - 24" White Bars NCDOT Std.	LF	191	\$14.25	\$2,721.75	\$22.00	\$4,202.00	\$17.00	\$3,247.00	\$15.48	\$2,956.68
7.8	Thermoplastic Pavement Marking Symbol Yield Lane Symbol	LF	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.9	Thermoplastic Pavement Marking Symbol Thur, Right-Turn or Left-Turn Arrow	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.10	Thermoplastic Pavment Marking Symbol Combo Arrow - Thur-Rt. / Thru-Lf. / Thru Rt. & Lf.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.11	Thermoplastic Pavement Marking Symbol Characters 8'-4" NCDOT Std.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.12	Thermoplastic Pavement Marking Symbol SCHOOL 10' w/ 24" Band NCDOT Std.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.13	Thermoplastic Marking Symbol Railroad - RXR NCDOT	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.14	Thermoplastic Pavement Marking Symbol Bicycle Shared Lane NCDOT Std.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.15	Thermoplastic Pavement Marking Symbol Bicycle Detector NCDOT Std.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.16	Thermoplastic Pavement Marking Symbol Handicap Symbol NCDOT Std.	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.17	Permanent Raised Pavement Marker Yellow / Yellow	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.18	Permanent Raised Pavement Marker Crystal / Red	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.19	Permanent Raised Pavement Marker Blue / Blue at Fire Hydrant Locations	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.20	Permanent Raised Pavement Marker Crystal / Crystal	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
7.21	(Match Existing) - "Fire Lane" Red Box with White Lettering	Ea.	0	-	NO BID	-	NO BID	-	NO BID	-	NO BID
					<b>\$32,971.75</b>		<b>\$43,648.00</b>		<b>\$27,617.00</b>		<b>\$35,187.68</b>
<b>Alt. Signal Detection Loops</b>											
A7.1	Install Various Size Traffic Signal Embedded Roadway Loops (Includes Saw Cut, Loop Wire, & Sealant	LF	5,000	\$11.66	\$58,300.00	\$18.37	\$91,850.00	\$12.00	\$60,000.00	\$13.77	\$68,850.00
					<b>\$58,300.00</b>		<b>\$91,850.00</b>		<b>\$60,000.00</b>		<b>\$68,850.00</b>
<b>Alt. Resurfacing Bid</b>											
A8.1	Asphalt Resurfacing - Place and compact 1.25" of Surface Course S9.5B	TN	75	\$167.03	\$12,527.25	\$105.00	\$7,875.00	\$140.00	\$10,500.00	\$110.00	\$8,250.00
A8.2	Asphalt Leveling - Place and Compact Intermediate Course I19-B	TN	60	\$202.74	\$12,164.40	\$105.00	\$6,300.00	\$150.00	\$9,000.00	\$125.00	\$7,500.00
					<b>\$24,691.65</b>		<b>\$14,175.00</b>		<b>\$19,500.00</b>		<b>\$15,750.00</b>
<b>BASE BID SECTIONS SUBTOTAL</b>					\$2,887,990.65		\$2,988,521.75		\$3,016,119.50		\$3,078,167.18
<b>+ 10% CONTINGENCY</b>					\$288,799.07		\$298,852.18		\$301,611.95		\$307,816.72
<b>TOTAL BASE BID</b>					<b>\$3,176,789.72</b>		<b>\$3,287,373.93</b>		<b>\$3,317,731.45</b>		<b>\$3,385,983.90</b>
<b>ALTERNATE BID</b>					\$82,991.65		\$106,025.00		\$79,500.00		\$84,600.00
<b>TOTAL BID</b>					<b>\$3,259,781.37</b>		<b>\$3,393,398.93</b>		<b>\$3,397,231.45</b>		<b>\$3,470,583.90</b>

This is to certify that bids tabulated herein were publicly opened and read aloud at 2:00 p.m. on April 18, 2022, in the conference room at the Brown Operations Center at 635 Alfred Brown Jr. Ct. SW, Concord, North Carolina.

This Certified Bid Tabulation is true and correct to the best of my abilities and knowledge.  
(amounts rounded up to nearest \$0.01)

signed: *Phillip Graham, PE*  
Phillip Graham, P.E., Transportation Director

Street Name	FROM	TO	Full Mill	Edge Mill	Flex	I19	L (ft)	W (ft)	Surface (in)
STATE ST	EASTCLIFF DR	LAWNDALE AVE				X	324.45	21	1.25
KINGS CREEK CT	MIRAMAR ST	END	X			X	528.82	18	1.5
MIRAMAR ST	GRANDVIEW DR	BRANCHVIEW DR/NC3		X		X	1352.50	24.3 (AVG)	
MIRAMAR ST	MIRAWOOD TR	CASTLEWOOD ST		X		X	273.57	23	1.25
MIRAMAR ST	KINGS CREEK CT	GRANDVIEW DR		X		X	390.27	23	1.25
MIRAMAR ST	SCENIC DR NE	GRANDVIEW DR NE		X		X	1437.37	27	1.25
MIRAMAR ST	CASTLEWOOD ST	KINGS CREEK CT		X		X	575.59	23	1.25
MIRAMAR ST	BRANCHVIEW DR	MIRAWOOD TR		X		X	386.66	27	1.25
WILHELM PL	McGREGOR DR	END				X	3472.00	19	1.25
GOVERNORS POINTE	COPPERFIELD BLVD	END		X	X		1694.90	28	1.25
WILSHIRE CT	WHISHIRE DR	END		X		X	1241.90	32	1.25
ZION CHURCH RD	WARREN C COLEMAN	WILSHIRE DR		X		X	745.07	24	1.25
RUTHERFORD ST	WHILSHIRE DR	BRIDGE/ LINCOLN ST		X		X	2226.60	24	1.25
LINCOLN ST	BRIDGE/ RUTHERFORD ST	CHESTNUT ST	X			X	5151.90	23.5 (AVG)	
LINCOLN ST	PARKVIEW AVE SW	FAIRVIEW AVE SW	X			X	269.12	21	1.5
LINCOLN ST	FAIRVIEW AVE SW	COZART AVE SW	X			X	255.10	21	1.5
LINCOLN ST	BRIDGE (RUTHERFORD ST)	COZART AVE	X			X	728.27	21	1.5
LINCOLN ST	HIGH AVE	RONE AVE	X			X	301.79	23	1.5
LINCOLN ST	PRINCESS AVE	HIGH AVE	X			X	666.17	23	1.5
LINCOLN ST	CHESTNUT DR	PRINCESS AVE	X			X	310.99	23	1.5
LINCOLN ST	MELROSE DR	HAROLD GOODMAN CIR	X			X	233.82	26	1.5
LINCOLN ST	HAROLD GOODMAN CIR SW	PARKVIEW AVE	X			X	248.96	26	1.5
LINCOLN ST	HAROLD GOODMAN CIR SW	BRIEF ST	X			X	200.18	26	1.5
LINCOLN ST	BRIEF AVE	HAROLD GOODMAN CIR	X			X	156.14	26	1.5
LINCOLN ST	BOOKER DR	BROAD DR	X			X	473.80	28	1.5
LINCOLN ST	BROAD DR	GRIFFIC CIR	X			X	159.05	28	1.5
LINCOLN ST	RONE AVE	BOOKER DR	X			X	306.38	28	1.5
LINCOLN ST	GRIFFIN CIR	MALVERN DR	X			X	108.48	28	1.5
LINCOLN ST	GRIFFIN CIR	GRIFFIN CIR	X			X	393.88	28	1.5
LINCOLN ST	MALVERN DR	POLK AVE	X			X	210.62	28	1.5
LINCOLN ST	POLK AVE	MELROSE DR	X			X	129.12	28	1.5
CLINE AVE	UNION ST S	TOURNAMENT DR				X	797.70	17.5 (AVG)	
CLINE AVE	TOURNAMENT DR	SPRING ST				X	382.17	16	1.25
CLINE AVE	SPRING ST	S. UNION ST				X	415.49	19	1.25
CLINE CT	TOURNAMENT DR	END				X	491.95	20	1.25
DONNIE AVE	UNION ST N	SPRING ST	X			X	655.87	14	1.5

NEWELL ST	TODD DR	WINECOFF AVE				X	622.47	17	1.25
SPARTA ST	TODD DR	WINECOFF AVE				X	547.03	18	1.25
TARLTON PL	TODD DR	END		X	X		279.86	23	1.25
TODD DR NE	CHURCH ST	HYDE PARK DR	X			X	3214.80	23.4 (AVG)	
TODD DR NE	CHURCH ST	HYDE PARK DR	X			X	297.12	22	1.5
TODD DR NE	HYDE PARK DR	TETBURY AVE	X			X	917.21	23	1.5
TODD DR NE	WINECOFF AVE	MILTON AVE NE	X			X	330.94	23	1.5
TODD DR NE	TETBURY AVE	WINECOFF AVE	X			X	80.61	23	1.5
TODD DR NE	MILTON AVE NE	HILLANDALE ST	X			X	861.04	23	1.5
TODD DR NE	ENGLEWOOD ST	HYDE PARK DR	X			X	367.64	25	1.5
TODD DR NE	HILLANDALE ST	ENGLEWOOD ST	X			X	360.19	25	1.5
TODD DR NW	CHURCH ST	ALLISON ST	X			X	2471.90	25	1.5
CASCADE DR NW	CABARRUS AVE	ANDREWS ST				X	2014.50	18	1.25
MELCHOR CT SW	OLD CHARLOTTE RD	END				X	386.40	18	1.25
PENROD DR SW	OLD CHARLOTTE RD	END				X	744.60	16	1.25
ALBERTA CT SW	OLD CHARLOTTE RD	END				X	610.89	14	1.25
WHITMIRE LN SW	OLD CHARLOTTE RD	END		X	X		187.82	11	1.25
HARTSELL SCHOOL RD	OLD CHARLOTTE RD	GREEN DR				X	1345.80	19 (AVG)	
HARTSELL SCHOOL RD	GREEN DR SW	SWINK ST SW				X	496.30	15	1.25
HARTSELL SCHOOL RD	SWINK ST	OLD CHARLOTTE RD				X	849.52	23	1.25
SWINK ST SW	OLD CHARLOTTE RD	END		X		X	2993.30	20.4 (AVG)	
SWINK ST SW	OLD CHARLOTTE RD SW	HARTSELL SCHOOL RD SW		X		X	473.87	18	1.25
SWINK ST SW	SUNDERLAND RD	BOST AVE SW		X		X	840.84	18	1.25
SWINK ST SW	BOST AVE SW	END		X		X	554.69	18	1.25
SWINK ST SW	HARTSELL SCHOOL RD	GREEN DR SW		X		X	335.46	24	1.25
SWINK ST SW	GREEN DR SW	SUNDERLAND RD		X		X	788.49	24	1.25
COLLEGE CIR SW	SUNDERLAND RD	SUNDERLAND RD		X		X	1141.63	18	1.25
BOST AVE SW	JOHNSON ST	END				X	1525.70	19 (AVG)	
BOST AVE SW	WHITE ST SW	BROWN ST SW				X	355.00	18	1.25
BOST AVE SW	BROWN ST SW	JOHNSON ST SW				X	329.03	18	1.25
BOST AVE SW	SWINK ST SW	End				X	516.11	20	1.25
BOST AVE SW	SWINK ST SW	WHITE ST				X	325.60	20	1.25
JOHNSON ST SW	SUNDERLAND RD	END				X	952.80	18	1.25
PALMER AVE SW	WHITE ST	GAYLAN CT				X	1248.00	17	1.25
MONTFORD AVE	GROFF ST	ROCKHILL CHURCH RD		X		X	5821.10	21.5 (AVG)	
MONTFORD AVE	CONCORD PKWY	HELEN DR		X		X	1084.99	18	1.25
MONTFORD AVE	HELEN DR	GROFF ST		X		X	1396.71	18	1.25
BROOK GREEN PL	MONTFORD AVE	END		X	X		650.43	23	1.25

ALLEN DR	POPLAR TENT RD	END				X	1618.19	18	1.25
HEARTHSTONE CT	COBBLESTONE LN	END				X	452.93	20	1.25
COBBLESTONE LN	POPLAR TENT RD	END				X	2002.00	20	1.25
CHARMWOOD CT	COBBLESTONE LN	END				X	260.11	20	1.25
BURCK DR	POPLAR TENT RD	VILLAGE DR	X		X		1790.60	24.7 (AVG)	
BURCK DR	NOLEN AVE	VILLAGE DR	X		X		339.20	22	1.5
BURCK DR	FETZER AVE	NOLEN AVE	X		X		217.68	22	1.5
BURCK DR	POPLAR TENT RD	FETZER AVE	X		X		1233.69	30	1.5
FETZER AVE	BURCK DR	McCURDY ST	X		X		720.55	22	1.5
NOLAN AVE	McCURDY ST	BURCK DR	X		X		687.48	22	1.5
KALISPELL LN	CITY LIMITS	END		X	X		251.00	18	1.25
HOBBITSHIRE LN	SOLWAY LN	END		X	X		656.15	22	1.25
NICOLE LN	SOLWAY LN	END		X	X		693.04	22	1.25
SOLWAY LN	LEGOLAS LN	LEGOLAS LN		X	X		2096.40	24	1.25
LEGOLAS LN	MILLSTREAM RIDGE RD	END		X	X		2515.00	24	1.25

ALTERNATE BID

DRIVE	PITTS SCHOOL ROAD	PITTS BAPTIST LOT		X	X		22		1.25
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APPLICATION FOR FORMAL RECOGNITION OF NEIGHBORHOOD ORGANIZATIONS

1. Name of Neighborhood Organization

Hunton Forest

2. Type of Organization ( please check one)

Neighborhood Association [ ]

Homeowner Association [x]

Other (specify):

3. Neighborhood Boundaries. Please include all street names and block numbers for partial streets. (Additional pages and/or map may be attached)

Hunton Dale Rd, Crabapple Ct, Stream Dale Cir, Cherry Blossom Ave, Hunton Forest Drive

Holly Crove Ct, Hunton Spring Ln, Tulip Tree St, Greenleaf St, Fir Tree Ct

4. Estimated number of households in neighborhood: 299

5. Please list below the names, addresses, phone numbers and email addresses of the officers for your Neighborhood Organization. (\*If officers' titles are different than those listed, please indicate below.)

Name: Joseph Marino Title: President

Address: 4415 Hunton Dale Rd, NW

Phone Number: 704-221-4993 Email: joemarino65@yahoo.com

Name: Arnold Woodruff Title: Vice President

Address: 428 Hunton Forest Dr NW

Phone Number: 601-209-1118 Email: dalewoodruff@bellsouth.net

Name: Christopher Simms Title: Treasure

Address: 4398 Hunton Dale Rd NW

Phone Number: 919-812-6122 Email: cysdsimms1@gmail.com

Name: Takeida Carter Title: Secretary

Address: 4273 Hunton Dale Rd NW

Phone Number: 410-303-4792 Email: carter.elsey@gmail.com

Other Board members (attached separate sheet if necessary)

Name: Alex Ventura Title: At-Large

Address: 4391 Hunton Dale Dr. NW

Phone Number: 704-778-1736 Email: ~~joemarino65@yahoo.com~~ alventura160@yahoo.com

5. What is your association's meeting schedule? Please provide the date(s) and time(s), for future meetings.  
TBA--HOA was just turned over by the developer. Meetings will be monthly

6. Location of meeting(s): TBA Fire Station 7

7. When is the election of officers held? Yearly in February

8. If your organization has a website, please list it so that we can link it to the City's Neighborhood Program page.

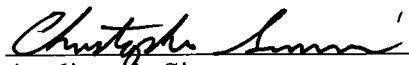
9. Is membership to your organization open to anyone who lives or owns property in the neighborhood regardless of race, religion, color, sex, national origin, familial status, or disability?  Yes  No

**Please attach the following:**

1. Paragraph about the history/character of the neighborhood
2. List of neighborhood goals
3. Map of neighborhood boundaries
4. Copy of By-Laws/Constitution /Principles of Operation

Christopher Simms  
Applicant's Name (please print)

Treasure  
Applicant's Title

  
Applicant's Signature

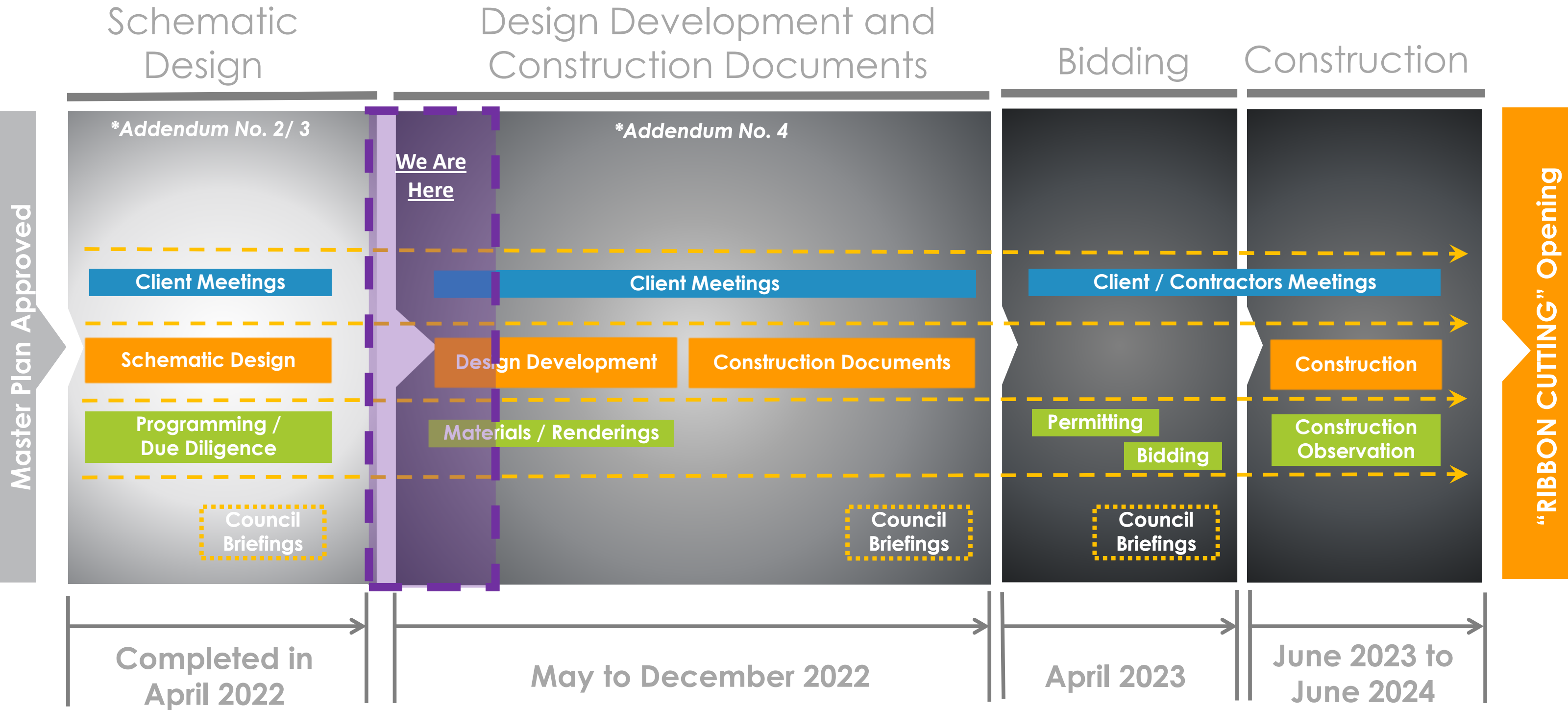
4/12/22  
Date of Application

**PLEASE RETURN FORM AND DIRECT QUESTIONS TO:**

Katherine Ramirez Campbell  
Community Outreach Coordinator  
City Manager's Office  
35 Cabarrus Ave West  
Concord, NC 28025-0308  
Phone: 704.920.5298  
Email: ramirezkc@concordnc.gov



# JIM RAMSEUR PARK PLAN DEVELOPMENT PROCESS



**J.E. Ramseur Park**  
(formerly known as Northwest Community Park)

**ADDENDUM**

**Addendum No.4**  
**04/28/2022**

This Addendum No. 4 is attached to and made part of the Standard Form of Agreement for Professional Services dated June 16, 2020, (City PO # 129664 dated 7/14/2020), as executed by and between the City of CONCORD and Woolpert North Carolina PLLC. The following modifications are identified and made, and become effective as of \_\_\_\_\_ [Date]:

- Construction Document Design and Fee, Attachment A

The parties agree to amend the Standard Form of Agreement for Professional Services dated June 16, 2020, (City PO # 129664 dated 7/14/2020) ,by way of this Addendum No. 4, as shown above and/or attached hereto. *Except as expressly contained and amended herein, all other terms, agreements and conditions, as contained and set forth in the Contract are hereby affirmed and ratified.*

*Services and/or Work intended to be modified by this Addendum will only commence upon the full execution of this Addendum, and when returned to the above-identified Woolpert personnel.*

IN WITNESS WHEREOF, this Agreement is accepted as of the date first written above.

CITY OF CONCORD:

By: \_\_\_\_\_

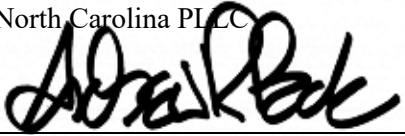
City Manager

Date: \_\_\_\_\_

ATTEST BY:

\_\_\_\_\_  
City Clerk

Woolpert North Carolina PLLC

By:  \_\_\_\_\_

Signature of President/Vice President/Manager/Partner

Printed Name: Andrew R. Pack, PLA, ASLA

Title: Member

Date: April 28, 2022

ATTEST: \_\_\_\_\_

BY:  \_\_\_\_\_

Signature of Vice President, Secretary, or other officer

Printed Name: Flint Holbrook, PE, PH

Title: Member

APPROVED AS TO FORM:

Attorney for the City of Concord

**APPROVAL BY CITY FINANCE OFFICER**

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

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Signature

# Attachment A: Scope of Services

## Woolpert's Contacts

David Welling, AIA, CCCA, LEED®  
Project Manager  
Direct Line (704) 526-3130  
[david.welling@woolpert.com](mailto:david.welling@woolpert.com)

Andrew R. Pack, PLA, ASLA  
Project Director  
Direct Line (704) 526-3102  
[andrew.pack@woolpert.com](mailto:andrew.pack@woolpert.com)

## Services

### General

The following proposed approach includes a fully detailed plan of services as required for the next phases of design by Woolpert for J.E. Ramseur Park. The proposed J.E. Ramseur Park is located at 1252 Cox Mill Road in Concord and consists of three tax parcels recently purchased by the city (PID: 4680-23-8327, 4680-33-2486, and 4680-43-2510) totaling approximately 28.6 acres. The property currently includes a 3-story residence (~3,302 square feet), a shop/ storage building, and a house barn. The driveway access to the property comes from Cox Mill Road, but the property is also adjacent to Cox Mill Elementary School to the South, and the Clarke Creek Wetland and Herron Rookery to the North. Both are owned by Cabarrus County. Approximately 15.6 acres of the property is located outside of the floodplain and 13 acres within the floodplain.

The City of Concord wishes to proceed with the development of construction documents from the approved schematic design as prepared by Woolpert. The project delivery method will be design-bid-build and cost estimates will be provided at design development (DD) and construction document (CD) stage prior to bidding of the project. Currently no bidding nor construction administration services are part of this contract/ addendum. These services can be added at a later date per the Owner's (City of Concord) request and/or need.

## I. DUE DILEGENCE and OTHER SERVICES

### Task 1 Project Meeting for the Start Up of Design Development

1. Project Meeting (CD phases): The Woolpert Team will facilitate a start-up meeting with the "Project Team/Committee" that will include representatives from the Owner (City of Concord) and other consultants. Woolpert will meet with the team to outline the current design schedule, permitting items, programming and review the budget and probable construction costs for the initial phase of the project. The meeting will cover the following information:
  - A. Confirm the goals and objectives of the vision for the project, the desired project outcomes.
  - B. Review comments and feedback provided by the City of Concord with regards to the schematic design previously provided by Woolpert.
  - C. Project Issues / Challenges. The team can brainstorm potential issues and challenges with the project(s).
  - D. In addition, the team will review the current project program with the Owner for final confirmation before proceeding into the Design Development Phase.
  - E. Prepare and review the project(s) risk and mitigation matrix.
  - F. Discuss design responsibilities for the "Project Team"
  - G. Review the anticipated Project Schedule and milestones. (Nov. '22 Bond, permitting, construction, etc.)
  - H. Review the project construction budget and identify priority programming elements
  - I. Traffic Impact Assessment (TIA)
  - J. Confirm the desired programming, branding, and architectural style of the proposed buildings



- K. Identification of any City Standards to be incorporated into the design for the project, i.e., lighting, utility connections, and other site / building elements.
- 2. Owner to confirm Phase One Programming and Site Plan: Woolpert anticipates developing DD drawings utilizing the approved/revised Park Master Plan dated April 22, 2022 defined by Attachment C.
  - A. Site Plan and Floorplan Review: Woolpert has budgeted for one minor revision to the approved Master Plan if applicable, they are required to be incorporated prior to commencement of the design development phase.
- 3. Preliminary Cost Estimates: The culmination of these previous tasks will result in a prioritized park and recreation improvements plan providing guidelines for the City for investing in and developing the park(s). The final plan will be presented with preliminary costs and any add alternates to be considered within a projected total construction budget of \$ 16,500,000 to 19,000,000 million dollars. This range is proposed based on, owner input, recent park changes, and high inflation trends.
- 4. Traffic Impact Assessment (TIA): Woolpert’s sub-consultant (STV) will prepare a TIA for the proposed park development along Cox Road. First task is to prepare a “ Pre-traffic impact scoping”. The following efforts will include:
  - A TIA “Need Screening/Scoping Request” packet will be prepared for NCDOT and City of Concord (Concord) utilizing the above information and include the site plan, projected build out year and projected ITE vehicle trip generation for the proposed use.
  - If a TIA is deemed required, STV will coordinate with NCDOT and Concord providing an area of influence map(s) indicating a minimum study area and study intersections (including the proposed access locations on the existing street network).
  - STV will coordinate and attend up to three virtual TIA scoping meetings with NCDOT/Concord staff to review the TIA scoping packet and determine all TIA parameters, including final study intersections that will be required with the TIA.

Woolpert’s sub-consultant will then conduct a traffic impact study for the proposed site after the pre-traffic impact scoping phase in completed. The study will be completed in accordance with the approved scope documentation agreed upon by STV, NCDOT, and City of Concord. Based upon City of Concord TIA procedures outlined within the Technical Standards Manual (TSM), it is assumed that the study will be considered a “Medium Development”. The study’s assumptions are noted below:

Land Uses

- 1. Phase 1: Public Park
  - Dog Park
  - Basketball Courts
  - Tennis Courts
  - Playgrounds
  - Splash Pad
  - Shelter Areas & Restrooms
- 2. Phase 2/Full Build: Recreation Center Added
  - 52,000 SF Recreation Center
  - Added land adjacent to Cox Mill Road near Dog Park
- 3. Build Year
  - 2024 Phase 1 – Public Park
  - 2030 Full Build – Includes Recreation Center
- 4. Study Scenarios
  - 2024 Base Year No-Build Conditions
  - 2024 Future Year No-Build Conditions (Phase 1)
  - 2024 Future Year Phase 1 Build Conditions
  - 2024 Future Year Phase 1 Build Conditions + Improvements (as necessary)
  - 2030 Future Year No-Build Conditions (Full Build)
  - 2030 Future Year Full Build Conditions
  - 2030 Future Year Full Build Conditions + Improvements (as necessary)
  - 2035 Horizon Year No Build Condition (without development)



- 2035 Horizon Year Build Condition (with development)
- 5. Peaks Analyzed
  - Weekday AM/School Arrival Peak (6:00am-9:00am)
  - Weekday School Dismissal Peak (1:00pm-4:00pm)
  - Weekday PM Peak (4:00pm-7:00pm)
  - Saturday Peak (11:00am-1:00pm assumed)
- 6. Background Growth Rate: TBD
- 7. Approved Developments/Planned Improvements: TBD
- 8. Study Intersections
  - Assumed up to 11 intersections to include:
    - Site Access/Cox Mill High School Driveway @ Cox Mill Road
    - Cox Mill Road @ Christenbury Parkway
    - Cox Mill Road @ Heritage Farm Avenue NW
    - Cox Mill Road @ Pacing Lane NW
    - Cox Mill Road @ Pressley Drive NW
    - Cox Mill Road @ Cox Mill Elementary/Cox Mill High School Driveway 1
    - Cox Mill Road @ Cox Mill Elementary/Cox Mill High School Driveway 2
    - Cox Mill Road @ Planned Development Access North of Park
    - Cox Mill Road @ Herringbone Lane 1
    - Cox Mill Road @ Herringbone Lane 2
    - Cox Mill Road @ Poplar Tent Road
- 9. Agency of review: NCDOT, City of Concord

Due to the lack of trip generation data present in the ITE Trip Generation Manual for the Public Park land use, it is assumed that local data from nearby representative sites will be required. This scope includes traffic counts at three (3) park locations in the Cabarrus/Mecklenburg County area with similar available amenities. Prior to collecting the data, STV will coordinate with the City/NCDOT in determining the appropriate representative sites.

Based upon City of Concord TIA procedures for Small Development's the following information will be contained within the TIA documentation:

- Existing Roadway Geometrics, Traffic Controls, and Traffic Volumes
- Sight Distance Evaluation
- Access Evaluation: Number and Spacing & LOS Analysis
- Trip Generation
- Site Circulation Evaluation
- Turn Lane Determination
- Traffic Signal and/or Multi-Way Stop Analysis
- Planning Level Capacity Analysis
- Ped/Bike LOS Analysis
- Crash History/Analysis
- Trip Distribution and Assignment
- Intersection Operation Analysis
- Mitigation Analysis

Through the duration of the project, two (2) STV staff members will attend up to eight (8) meetings. The attendance at these meetings is anticipated to be virtual and one (1) hour in duration. Exclusions of Traffic Study:

- Traffic counts are expected in the study for the outlined (11) study intersections and three (3) sites for trip generation purposes. Should additional traffic counts be required later, the efforts would be subject to additional services.
- Modifications to the site plan that change land uses/densities or traffic patterns are subject to additional services
- Changes to the build year, project phasing, or additional intersection analysis will require additional services
- Design services such as roadway/intersection design or signal design may be provided as an additional service
- Meeting representation beyond what is referenced herein



5. Wetlands Permitting (Section 404/401 Nationwide Permit): Woolpert’s sub-consultant, STV, Inc., will prepare a Pre-Construction Notification (PCN), i.e., application, pursuant to the Nationwide Permit (NWP) Program. The PCN will include documentation of the wetland delineation and USACE wetland boundary jurisdictional determination and provide drawings showing the extent of delineated jurisdictional areas overlain by the proposed project. Essential elements of the PCN will be the purpose and need of the project and a review of strategies to avoid and minimize impacts to water of the U.S. Other important elements of the application would be the need to address the potential for the project to impact federally protected plants and animals and/or significant cultural resources; strategies to compensate for project impacts to regulated waters of the U.S., i.e., compensatory mitigation; and a stormwater management plan. It is our understanding that Woolpert will prepare an overlay of the construction limits, with the boundaries of jurisdictional waters of the U.S., i.e., permit drawings; Woolpert will also prepare the stormwater management plan and provide a narrative describing same.

The PCN will utilize correspondence obtained from the State Historic Preservation Office (SHPO) and U.S. Fish and Wildlife Service completed as part of the due diligence process to address potential cultural resources and protected species issues on the project site. STV will conduct a survey(s) for protected plants, notably, Schweinitz’s sunflower, if appropriate habitat is present on the site – this survey would need to be conducted during the flowering window which extends from late August through the first frost. Other federally-protected species listed in Cabarrus County will be addressed in the NWP application, including bald eagle, northern long-eared bat, and Carolina heelsplitter, however, formal surveys for these species are not anticipated/included.

Compensatory mitigation may need to be provided to offset unavoidable impacts to waters of the U.S. as part of the NWP application. It is anticipated that compensatory mitigation for project impacts will be in the form of a monetary payment made to the N.C. Division of Mitigation Services or a private mitigation bank.

This task also includes a submittal to the NCDWR pursuant to their Section 401 Water Quality Certification (WQC) process. Section 401 WQCs and associated conditions are dependent upon the USACE NWP pursued and the type of activities/impacts associated with the project. The appropriate application fee for NCDWR will be required and is included. This task also anticipates a post-application field review with the USACE and NCDWR representatives. Also included in this task is a response to comments emanating from the USACE/NCDWR’s review of the PCN.

Meetings with the design team to discuss site opportunities, especially with respect to potential interpretive areas, etc., are anticipated.

Items to be Furnished by the Client, or arrange by client for others to provide, the following items for the PROJECT:

- Access to the subject property to conduct the delineation efforts
  - Property owner signatures, as needed, granting the USACE and DWR representatives’ access to the subject property to verify the delineated boundaries
  - Payment of any required mitigation fees
6. Geotechnical: A Geotechnical Investigation has been performed by Terracon Consultants Inc. Additional information will be required with the development of the design development documents and prior to the preparation of construction documents. Said additional information may include but is not limited to evaluations necessary for the site retaining walls and infiltration as may be necessary for the storm water management effort. An Allowance has been established for \$ 15,000 dollars for geotechnical needs for the phase one of the project.
  7. Site Retaining Walls: Woolpert’s sub-consultant (Terracon) will also assist and prepare construction documents for the proposed site retaining walls. It is anticipated these retaining walls will be designed as a pre-engineered pre-cast concrete modular units. An Allowance has also been established for \$ 15,000 dollars for geotechnical needs for the phase one of the project.

Deliverables for Master Planning Task 1:

- A. Meeting minutes
- B. TIA Report & Analysis Files
- C. Utility Due Diligence Memo
- D. Wetlands Permit Application
- E. Preliminary Retaining Wall Design Documents

## II. CONSTRUCTION DOCUMENTS

### Task 1 – Programming & Schematic Design

*This task has already been completed by Woolpert under a separate task order and provided to the City.*

### Task 2 – Design Development

1. Based on the current master plan & schematic design prepared in Task 1 noted above, Woolpert will prepare, for approval by the City, the design development documents. This set of drawings for the park will serve as the (35%) preliminary stage submittal for the construction documents. The design development will consist of drawings, product descriptions to include cut sheets, outline specifications, and other documents to affix and describe the size and character of the proposed improvements for the park bid packages as described below:

- A. Architectural: Based upon the desired programming from the City, Woolpert will prepare a layout floor plan for the following buildings:

Park Buildings:

1. Pickleball Court Restroom Facility
2. Spraypad/ Adventure Playground Restroom/ Shelter Facility
3. Basketball Court Restroom/ Shelter Facility
4. Maintenance / Storage Building
5. +/- 5 Pre-Engineered Picnic Shelters/ Pavilions

- B. Site/Civil/Landscape Architecture: Based upon the desired programming from the City, Woolpert anticipates preparing the following as part of the design development plans the following site programming areas:

Park Program Areas:

1. Pickleball Courts (6) w/ Traditional Playground Area
2. Open green Space and/or Plaza (front of Future Recreation Center)
3. Adventure Playground and Spraypad
4. Basketball Court (2)
5. Dog Park
6. Maintenance Area
7. Boardwalk and Trails

The Site / Civil / Landscape Architecture plans will be combined with the architectural drawings and will show the existing site conditions/demolition, layout of the proposed facilities including the general layout plan, preliminary grading/ storm drainage plan, landscape plan, utility plan, and site enlargements of the park program elements and associated amenities, entry drive along Cox road, park drives, parking lots, and pedestrian corridors /walks. In addition, site details will be identified and accompany the site plans to describe the character of the different program areas as noted above for the proposed park development.

- C. Site Utility Plan:

1. Woolpert will prepare a combined Utility Plan illustrating water main, fire main, sanitary sewer main, storm lines and utility sleeves. The plan will show existing locations and anticipated route for gas, electric and telephone/data services. Utility services will be depicted up to 5' from the proposed buildings.
2. Woolpert (or Woolpert's sub consultant )will prepare an updated Opinion of Probable Construction Cost associated with the proposed design development documents. At this point, as part of a bidding strategy add alternates will be defined, confirmed or re-defined by Owner priorities and concurrence.





3. Woolpert will schedule one progress meeting with the City to review the design development documents. Prior to this meeting, Woolpert will provide three (3) sets of design development documents for the project to the City for review.
4. Within one week after the progress meeting the City shall provide to Woolpert a written statement of their comments and possible revisions to be made by Woolpert. Woolpert will address the review comments of the City and make the necessary revisions to the design development documents of the park prior to commencement of the final construction document phase of the project.

Deliverables for Task 2:

- A. Design Development Drawings (35% DD submittal) (Digital Documents)
- B. Outline Specifications / product cut sheets (Digital Documents)
- C. Opinion of Estimated Construction Cost
- D. Progress Meeting Minutes

### Task 3 – Final Construction Documents & Permitting

1. Construction Documents: Based on the approved design development documents authorized by the City, Woolpert will prepare construction documents consisting of drawings and specifications for the construction of the park project. Future fixtures and equipment, building finishes, signage, wayfinding graphics and will be included in the construction documents. The construction documents and any make or models/ manufacturers will be specified to comply with City standards.

The construction sheets will be drawn at the appropriate scales. Woolpert anticipates that the following drawings will be prepared and provided as part of the final construction package:

- A. Title Sheet
- B. Architectural Code Data sheet
- C. Construction General Notes
- D. Existing Conditions Plan
- E. Demolition Plan
- F. Site Plans
- G. Grading and Drainage Plans
- H. Erosion and Sediment Control Plans and Details
- I. Site Utility Plans (potable water, fire main, gravity sewer, site lighting, electrical)
- J. Lift Station and Force Main Plan and Details
- K. Landscape Plan and Details
- L. Any Enlargement Site Layout Plans (buildings, adventure playground/ spraypad, plazas, trails, etc.)
- M. Other Site Construction Design Details or other elements as may be appropriate based upon the scope of services.
- N. Architectural Documents
- O. Mechanical Plans
- P. Plumbing Plans
- Q. Electrical Plans

Woolpert will keep the City informed of any changes in requirements or in construction materials, systems or equipment as the drawings and specifications are being developed.

2. Woolpert will prepare the project manual setting forth in detail the requirements for the construction of the project(s). The project manual can include the necessary bidding information, bidding forms, bonding information for proposals, add alternates, contract and maintenance bond, technical specifications and the conditions of the contract as required by the City.
3. At 95% completion of the construction document phase Woolpert will update the Opinions of Probable Construction Costs. Given the current economic environment of escalation for labor, materials and unpredictable

supply chain delay and shortages Woolpert will coordinate with the Owner of a mutual agreed upon inflation of total cost of the work to a point in the future that the Owner expects to bid and construct the Park project.

4. At two intervals appropriate to the progress of the construction document phase, Woolpert will forward plans to the City for interim review. These two intervals are the mid-final stage (65%) and final stage (95%). For the review at each stage, Woolpert can submit digital documents of the sets of plans, cost estimates, and specifications. Upon completion of each review session, the City shall provide to Woolpert within one week a written statement of their comments along with a redlined set of drawings and specifications. A meeting will be scheduled for Woolpert to review with the City the progress of the drawings. The preliminary stage (35%) will have been submitted as part of Task 2 of Section 2 of this scope of services.
5. Woolpert will address the City review comments until they are in satisfactory agreement with the construction documents prior to bidding.
6. Permitting: The design team shall be diligent in apprising themselves of local, state, and federal codes, which may pertain to this project. Woolpert will assist and / or file the associated plan review permits and required documents for the approval of governmental authorities having jurisdiction over the project. The design team will prepare a final list of required permits /documentation for the project as shared at the startup meeting or following master planning or design meetings and maintain a written log of agency submissions. The following are anticipated permits that Woolpert will prepare documentation and applications for:
  - A. City of Concord Planning Department
    - Using the ACCELA Citizen Access Central Permitting process. Application will include the City application form, check sheet and checklists. Woolpert understands that allocation of capacity will be made by the City pending approval of the project plans.
    - Prepare and submit a hydraulic design report and calculation for the water main extension to demonstrate the extension will meet the fire flow requirements.
    - Initial preliminary application submission for building permit(s)
  - B. City of Concord and or Cabarrus County (appropriate jurisdiction)
    - Health Department (sprayground - if applicable)
  - C. NC DEQ Division of Land Quality for Erosion and Sediment Control
    - Prepare a draft e-NOI application to NC DEQ Division of Land Quality for NPDES coverage. Final submission and certification will be the responsibility of the client.
  - D. North Carolina Department of Transportation (NCDOT)
    - Driveway encroachment
    - Utility encroachment permit for the water connection on Cox Mill Road
  - E. NC DEQ Division of Water Quality for Sewer Extension Permitting
    - Prepare and submit application to NC DEQ Division of Water Quality for the construction of both the lift station and force main to service the project.

Woolpert will revise the plans up to two (2) times to meet requirements of review agencies and permitting entities. Additional reviews and revisions may be considered as an additional service. Woolpert is not responsible for delays caused by the review agencies and permitting entities.

Woolpert will provide support and coordination while working towards an approved set of drawings with the appropriate review agencies and permitting entities. This scope includes up to two meetings with authorities having jurisdiction to obtain final approvals and permits for the entry drives, grading plans, utility plans, and stormwater design. Said meetings may be virtual or in person. Revisions to the construction documents during the jurisdictional review are expected to be minor. Should major revisions be necessary due to comments from the City, County, NC DOT, NC DEQ, or other regulating authority, an addendum to this contract may be required. Meetings may include

preparation as required for the meeting, attendance at the meeting, and the preparation of meeting minutes as required.

All permit and application fees shall be the responsibility of the Client.

7. All Building Permits to be obtained by the General Contractor and sub-contractors as appropriate by trade (Woolpert will submit plans for initial permit review/ approvals). The design team will setup and utilize a permit log, keeping it updated and will share with the entire team the status of all permits/ approvals.
8. Unknown permits, not listed above, that may emerge during the design process will be prepared as Additional Services. Please note the scope of work does include design of any offsite utilities or offsite improvements for the park. Any and all associated building/ site permit fees for the project are to be paid by the City.
9. Primary electrical distribution system will be for electrical components at proposed buildings, parking lot/ park drive and distribution of electrical service to be coordinated with the local utility company (Duke Energy). Woolpert will further coordinate with general contractor on loading requirements for the proposed buildings, for their final coordination.
10. Woolpert assumes the following in support of preparing the site / civil construction plans:
  - Offsite roadway improvements are limited to the driveway taper and sidewalk improvements within the Cox Mill Road right of way. Woolpert anticipates the taper will be full depth asphalt while the mill and overlay will be employed for the roadway within the limits of construction. Other offsite improvements such as line widening, traffic circle, turn lane additions and channelized medians are to be determined by the traffic impact analysis and therefore not included as part of this scope.
  - While the scope does include sidewalks within the public right of way, other offsite pedestrian improvements such as walkways connecting to the Cox Mill Elementary School athletic fields have yet to be finalized and may be considered an additional service.
  - AutoTurn will be used to analyze roadway and driveway access based on the largest design vehicle as required by the Client. Radii at the point of ingress and egress to the site will be subject to NC DOT approval.
  - Drainage improvements shall be limited to the project site. A profile for the storm sewer is not required.
  - Storm water management calculations will be prepared for design and permitting purposes for the project. Drainage calculations and improvements shall include water budget analysis for design of detention facilities and stormwater routing calculations for the developed portion(s) of the project. Storm water management calculations shall be in accordance with the NC DEQ requirements as well as the City of Concord ordinance. The project is low-density as per the state definition. However, the City ordinance has a *“High density pocket” provision that states “If the density for any drainage basin or sub-basin exceeds 34-percent built upon area, structural BMPs sufficient to achieve 85-percent average annual TSS removal shall be required for that basin or sub-basin, even if the total project density is 24-percent built upon area or less; and the discharge stormwater at a rate equal to or less than the pre-development discharge rate for both the one-year 24-hour storm and the ten-year 24-hour storm.”* The easterly portion of the site meets the City definition as a High-Density Pocket. Unless directed otherwise, Woolpert assumes the developed portion of the site will provide a combination of underground detention and limited amount of above ground detention for attenuation. Study and inclusion of drainage areas beyond the property/site limits is not included.
  - Calculations for NPDES Phase II requirements will be prepared for water quality. While the project is low-density as per the state definition, the developed portion of the site is a *“High density pocket”*. Therefore, Woolpert anticipates inclusion of water quality measures to the extent practical with the combination of measures meeting the intent of the City’s requirements for water quality.
  - Pipe sizing calculations for the storm catchment and conveyance network will be prepared.
  - Erosion and Sediment Control Plans and Computations per NC DEQ will be prepared. Woolpert anticipates an Initial, Intermediate and Final Phase of the Erosion and Sediment Control Plans. This scope assumes that the plans will be prepared for construction of the entire site at one time with additional phasing.
  - Adequate Potable Water and Sanitary Sewer treatment capacity is available for the proposed improvements. Water and sanitary sewer design calculations will include Average and Peak Flow Computations for the facility, Gravity main sizing based upon minimum velocities per NC DEQ.
  - The project will utilize the Water and Sewer Authority of Cabarrus County’s *“Standard Specifications for Wastewater Collection and Water Distribution for Cabarrus County”*. Specifications specific to the City will be



incorporated into the construction plans. The project will utilize the City of Concord Standard Water and Sanitary Sewer Details.

- Woolpert understands the City is entertaining a proposal from a third party that may extend gravity sewer through the subject property. For the purpose of this scope of services and the independence of this project from third party agreements, Woolpert assumes the project will require a lift station capable of pumping effluent to the existing gravity sewer main located on the westerly side of Clarke Creek and the wetland areas. A direct bore is anticipated for the crossing of Clarke Creek and the wetland area. The lift station will be sufficient to accommodate the anticipated flow from the project at the time of buildout. The plan details will include a system head curve to aid a pump supplier in selection. The lift station be located in the southwesterly area of the project site.
- If required, a specific purpose survey of the utilities and existing conditions located outside of the project limits will be performed by others as/if necessary. According to available records, a 16" water main is located on the easterly side of Cox Mill Road. For the purposes of this Agreement, Woolpert assumes that potable water and adequate fire service will be available from said main.
- Preparation of a Stormwater Pollution Prevention Plan ("SWPPP") is not required for permitting purposes.
- Woolpert will coordinate with local electric, telephone, and gas service providers. However, the respective utility companies will be responsible for the design of their services. Furthermore, the general contractor will be responsible for final coordination of utility installation.
- Irrigation design is not included in this scope of services but can be provided as an additional service.
- A dedicated fire main will be proposed to serve not only the proposed fire hydrants for the site, but also consider fire flow for the future recreation center building. The anticipated demand will be calculated in accordance with local regulations upon receipt of the Fire Hydrant Flow Test results. The future building sprinkler demands shall be provided by the architectural team and the fire sprinkler system designed as part of the building design. The fire main will be designed in accordance with the anticipated point of service to the building.
- This scope is based upon preparing one set of site/civil construction plans. The plans will identify the future recreation building and identify other improvements as may be constructed as part of the second phase. Phasing of the construction must be determined by the general contractor and approved by the owner.

#### 11. Deliverables for Task 3:

- a. 65% Mid-Final Digital Construction Drawings
- b. 95% Final Digital Construction Drawings
- c. Bid Project Manual
- d. Final Opinion of Estimated Construction Cost
- e. Meeting Minutes (project meetings at 65%,95% and 100%)

### Task 4 – Bidding Assistance

*Bidding is currently not part of this contract/ addendum. This task can be added at a later date per the Owner's (City of Concord) request and/or need.*

### Task 5 – Periodic Construction Administration, Observation and Certification

*Construction Administration, Observation and Certification is currently not part of this contract/ addendum. This task can be added at a later date per the Owner's (City of Concord) request and/or need.*

## III. OPTIONAL SERVICES

The following services currently not anticipated for the scope of work (SOW) but can be provided upon request by the City:

- A. Providing any bidding services for the project.
- B. Providing any construction administration, observation, record drawings and certification services for the project.
- C. Providing services resulting from preparing additional separate sets of construction documents other than stated in the statement of work.
- D. Providing irrigation plans for the project.
- E. Providing services to investigate existing conditions or facilities, or to make measured drawings thereof, or to verify the accuracy of drawings or other information furnished by the City in conjunction therewith.



- F. Providing services in connection with alternative design for cost estimating purposes in 65% and 95% phases on the Construction Documents.
- G. Making revisions in drawings, specifications, or other documents when such revisions are inconsistent with written approvals or instructions previously given or are required by the enactment or revisions of codes, laws, or regulations after the preparation of such documents, or are due to other causes not solely within the control of Woolpert.
- H. Preparing drawings, specifications, and supporting data and providing other services in connection with change orders.
- I. Providing consultation concerning replacement or any work damaged by fire or other cause during construction and furnishing services as may be required in connection with the replacement of such work.
- J. Providing services made necessary by the failure of performance; by default, of a contractor; by major defects or deficiencies in the work of any contractor; or by failure of performance of either the City or any contractor under the contracts for construction.
- K. Providing extensive assistance in the utilization of any equipment or system such as initial start-up or testing, adjusting and balancing, preparation of operation and maintenance manuals, training personnel for operation and maintenance and consultation during operation.
- L. Providing services after approval by the City of the final project(s) certificate for payment, or in the absence of a final Project(s) Certificate for Payment, more than 60 days after the date of substantial completion of the project(s), unless the parties disagree that the project(s) is substantially complete.
- M. Preparing to serve or serving as a witness in connection with any public hearing, arbitration proceeding or legal proceeding relating to the project(s), except as required by law.
- N. Providing additional rendered drawings or models of the project(s) not already stipulated in the scope of services.
- O. Providing any additional printing or reproduction of drawings and specifications not already stipulated in the scope of services.
- P. Providing additional services resulting from re-bidding of the project(s).
- Q. Providing any other services not otherwise included in this Agreement or not customarily furnished in accordance with generally accepted architectural/engineering practice.
- R. Providing site observation or coordination with outside agencies such as utility companies on issues not specifically the responsibility of Woolpert.
- S. Providing additional surveying services in connection with the project(s) not already stipulated in the scope of services.
- T. Providing any geotechnical or environmental engineering services beyond those expressly described herein.
- U. Providing consultation services during the year warranty period for the project.
- V. Providing any design services or coordination with adjoining parcels and/or offsite infrastructure improvements (i.e., utilities, turn lane/ roadway, preparing easements, plats, etc.) for the projects.
- W. Any and all associated building / site permit fees. All permit fees for plan review and approvals are to be paid by the City.

### III. Time Frame & Schedule

1. Woolpert shall perform the services as outlined in this proposal as expeditiously as is consistent with professional skill and care and the orderly progress of the project. Reasonable extensions of time for unforeseen or unavoidable delays may be made by mutual consent of the parties involved. For the purpose of this Agreement, the following schedule will begin with the date that Woolpert receives written notice to proceed (or purchase order) from the City. In addition, a timeline been determined for each phase of the project for which Woolpert's fees shall be valid without need of re-negotiation due to unforeseen time delays. The following schedule outline will be updated with dates and provided at the startup meeting with the City. In addition, the project schedule will be further discussed, reviewed and redefined throughout each phase of the project as necessary.



Task Project Timeline

- Award of Consultant Contract (Notice to Proceed) ..... TBD

Due Diligence / Other Misc. Services (1 month)

- Restart-up Team Meeting ..... TBD
- Start Traffic Impact Assessment (TIA) ..... TBD
- Start Soil & Geotechnical Borings / Wetlands..... TBD

Design Development Documents (35 % review) (4- months)

- Site and Architectural Design Development Drawings ..... TBD
- Project Team Meeting..... TBD
- Review Design Development Drawings
- Evaluate the Probable Cost Estimates
- Review Project Schedule
- Develop Design Development Drawings ..... TBD
- Site Drawings
- Utility Drawings
- Architectural Drawings (coordination with owners designer)
- Outline of probable site permitting issues / constraints
- Outline Specifications
- Probable Cost Estimates
- Project Team Meeting..... TBD
- Review Design Development Drawings ( 35 % review)
- Evaluate the Probable Cost Estimates
- Review Project Schedule

Final Construction Document Drawings & Permitting (5 months)

- Construction Document Drawings ..... TBD
- Site Drawings
- Utility Drawings
- Architectural Drawings
- Outline of probable site / building permitting issues / constraints
- Outline Specifications
- Probable Cost Estimates
- Project Team Meeting ( 65 % review)..... TBD
- Review 65 % Construction Document Drawings
- Review Probable Cost Estimates
- Project Team Meeting ( 95 % review)..... TBD
- Review 95 % Construction Document Drawings
- Review Probable Cost Estimates
- Submit Plans for Site/ Building permitting..... TBD



Bidding / Construction Contract Approval (2 months) \* currently not part of addendum SOW

- Bidding of Project (100% dwgs) ..... TBD

- Bid Advertisement
- Pre- Bid Meeting
- Bid Opening
- Award of Contract

Construction Administration (12 months) \* currently not part of addendum SOW

- Construction Administration ..... TBD

- Pre- Construction Meeting
- Site Meetings/ visits (every two weeks)
- Preliminary Punch list
- Final Inspection and Approvals
- Woolpert 12-month Warranty Review

End of Attachment A

# Attachment B: Compensation

## Lump Sum Summary

### 1. Basic Design Services Fees:

*\*The following construction design fees are based upon the aforementioned scope of work and a projected total construction budget of the park is \$ 16,500,000 to 19,000,000 dollars. Below does not include bidding or construction administration.*

– Design Development (35%) .....	\$ 400,416.00
– Final Construction Documents (65%/95%/100%) .....	\$ 640,323.00
– Plan Review Permitting .....	<u>\$22,423.00</u>
1. Subtotal .....	\$ 1,063,162.00

### 2. Other NON-Construction Document Expenses and Fees:

– Traffic Impact Assessment (TIA): .....	\$ 58,300.00
– Wetlands Permitting (404/401 Nationwide).....	\$ 17,000.00
– Geotechnical Investigation Allowance.....	\$ 15,000.00
– Cost Estimating .....	\$ 18,700.00
– Site Retaining Wall Allowance.....	\$ 15,000.00
– Reimbursable Expenses Allowance (per phases)	
Design Development Phase .....	\$700.00
Construction Document Phase.....	\$700.00
Permitting Phase .....	<u>\$500.00</u>
subtotal.....	\$ 1,900.00
2. Subtotal .....	\$125,900.00

*\*\* The noted reimbursable expense allowance includes travel mileage, meals, copying, shipping/overnight delivery and printing costs for owner submittals and permit submittals only.*

*Reimbursable expenses don't include any building permit fees as required by the General Contractor, nor does it include cost for bid documents for bid advertisement, or any final hard copy of construction documents to the contractor(s) or owner. In addition, doesn't include any associated building/ site permit fees for the project. These are to be paid by the City.*

**Total Fee (Items 1& 2) .....** \$ 1,189,062.00



## Attachment C: Programming Site Plan



The Approved Park Master Plan ***“J.E. ‘Jim” Ramseur Park, Master Plan dated April 22, 2022”*** is incorporated as reference into this proposal.

# J.E. "Jim" Ramseur Park Master Plan

April 22, 2023



**Key**

- 1 Future Recreation Center & Outdoor Education (Phase 2)
- 2 Pickle Ball Courts & Shade Structures
- 3 Open Lawn/Event Space
- 4 Parking (+/- 256 Spaces)
- 5 Splash Pad
- 6 Adventure / Obstacle Playground
- 7 Restrooms & Pavilion
- 8 [2] Basketball Courts w/Restroom/Storage
- 9 Maintenance Area
- 10 Greenway Trail / Boardwalks
- 11 Pedestrian Bridge / Boardwalk
- 12 Small & Large Dog Park

**Proposed Pavilion**

**Asphalt Pavement**

**Concrete Walls**

**Scorewalk / Bridge**

**Play Area**

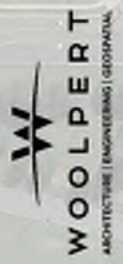
**10' Multi-Use Trail**

**Natural Surface Trail**

**100 Year Flood Elevation**

**Wetland**

**Property Lines**



## EXHIBIT "A"

This document is an Exhibit to the Agreement for Professional Services between the CITY OF CONCORD and **KIMLEY HORN** dated April 28<sup>th</sup>, 2022.

### **Scope of Services**

Kimley-Horn will provide the services specifically set forth below.

#### **Task 1: Project Management and Coordination**

The Consultant shall attend up to 3 monthly meetings and up to 5 additional coordination meetings. This task also includes coordination time with the project manager, including emails and phone calls throughout the project.

#### **Task 2: Surveying and Mapping**

Horizontal and Vertical Survey Control - Provide sufficient project control and professional oversight and management to this project as it relates to Survey Services.

Design Surveys to locate planimetric and topographic features for 3 phases of the proposed alignment. This survey does not include the bridge connection from Ramseur Park to Aragorn Ln.

- Provide a 1' contour interval topographical map. Topo will be field run
- Existing sewer manholes and inverts
- Sewers connecting into the existing line
- Locations of storm drain pipes and drainage structures including sizes, shapes, material, invert elevations, and rim/grate elevations
- Edge of top of stream bank and toe of slope
- Edge and elevation of pavement
- Top of shoulder and toe of slope
- Utilities (water, sewer, gas, fiber, OH electric, etc.)
- Locations of power pole, buffers, and all utility easements. Include roads, fences, structures, ruins, clearings, storm water pond berms, visible aboveground utilities.
- Corners of buildings or building faces located within the 100-foot band width.
- Locations of trees greater than or equal to 18" diameter (labeled with size and variety), ornamental trees of any size, any landscaped areas and/or forested areas/tree lines within the 30-foot band width of proposed trail.

#### **Task 3: Pre-Planning**

The Consultant shall perform a site visit to visually assess the project corridor. The Consultant shall document visual opportunities and constraints within the proposed corridor. The Consultant shall prepare a brief memo along with photo pages to document the observations made during the visit. It is assumed that the Consultant will not seek to engage any property owners along the corridor.

The Consultant will develop a concept plan for one (1) feasible alternative for two (2) phases of the project. Once the concept is complete, it will be submitted to the Client for their review and subsequent approval.

Phase 1: Phase 1 includes 10-ft greenway trail from J.R. Ramseur Park and connecting to Shrader Street Northwest. It is anticipated that phase 1 will have one (1) pedestrian bridge crossing Clarke Creek. Approximate location of necessary boardwalk structures will be determined in planning. This phase also includes a connection to Warrenton Ave NW with a pedestrian bridge.

Phase 2: Phase 2 connects phase 1 to Cox Mill Road along Clarke Creek. It is anticipated that phase 2 will have one (2) pedestrian bridges crossing Clarke Creek and its tributaries. Approximate location of necessary boardwalk structures will be determined in planning.

Phase 3: Phase 3 includes a 10-ft greenway trail from Cox Mill Rd to Cox Mill Elementary, behind the Granary Oaks neighborhood.

The plan is anticipated to include publicly available LiDAR topographic information, aerial photography, GIS parcel boundaries, and planimetric layers. The visible utilities will be sketched into the plan based on aerial photography. Water and sewer utilities will be sketched in based on as-built information obtained from Water and Sewer Authority of Cabarrus County. The plan does not include any detailed profile design or grading, retaining wall envelopes or design, stream restoration design.

The Consultant shall prepare field mapping and conduct field reconnaissance of the project area to verify the absence or presence of potential waters of the U.S., including wetlands. Wetlands and open waters within the project area will be identified utilizing the three-parameter approach for wetland delineation as described in the *U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual*. Kimley-Horn will determine the absence or presence of potentially jurisdictional streams utilizing the current North Carolina Division of Water Resources (NCDWR) stream identification methodology. The documentation of site conditions will include limited sub-meter global positioning system (GPS) data collection to approximate the geographical extents of potentially jurisdictional aquatic resources on a figure to provide to the Client for planning purposes.

The Consultant shall provide a preliminary flood study, stream modeling, and profiles for the project and evaluate alternatives to mitigate for project improvements, modeling the full length of the streams adjacent to the trail to account for trail grading impacts in the floodplain. Clarke Creek is a FEMA regulated stream studied by detailed methods. Sections of the proposed alignment will encroach into the effective FEMA floodway requiring hydraulic modeling and analysis. Based on the preliminary alignment of the greenway, the Consultant anticipates that the floodway/floodplain encroachment can be approved as a no-rise certification.

The Consultant has, or will obtain, the FEMA HEC-RAS Stream models for Clarke Creek. The Consultant will utilize the provided HEC-RAS stream models to evaluate the proposed greenway improvements to regulate floodplain. Areas of proposed fill or structures that encroach or cross the floodway will be evaluated. The modeling effort will include a duplicate effective, corrective effective and proposed conditions model run(s). This model will incorporate corrections to the received HEC-RAS model, as well as project specific survey data and gather supplemental hydraulic surveys, which will be incorporated into the model. Consultant will prepare a hydraulic modeling in HEC-RAS v5.0.7 format using the following assumptions:

- Hydrology - The peak discharges for the 2, 10, 25, and 100-year storms will be based on existing FEMA model data (obtained from the County). No separate hydrologic analysis will be performed.
- Hydraulics - Consultant will use the existing effective or preliminary HEC-RAS to models (obtained from the County) to create a duplicate effective model. FEMA LiDAR (ncfloodmaps.com) data will be supplemented with the project specific topographic base mapping to create a surface for existing and proposed condition models.
- Consultant will model the pedestrian bridge to verify that a no-rise condition can be achieved. Minor bank grading may be required. It is anticipated that the grading design will be an iterative process (maximum of 10 iterations assumed for this scope).

The Consultant shall prepare a concept level opinion of preliminary construction costs based on the concepts.

### **Additional Services**

Any services not specifically provided for in the above scope will be billed as additional services and performed at our then current hourly rates. Additional services we can provide include, but are not limited to, the following:

- Construction Plans
- Geotechnical
- Permitting
- Utility Coordination

### **Responsibilities of Client**

In addition to other responsibilities set out in this Agreement, the Client shall:

- Provide access to the project area
- Real Estate Negotiations

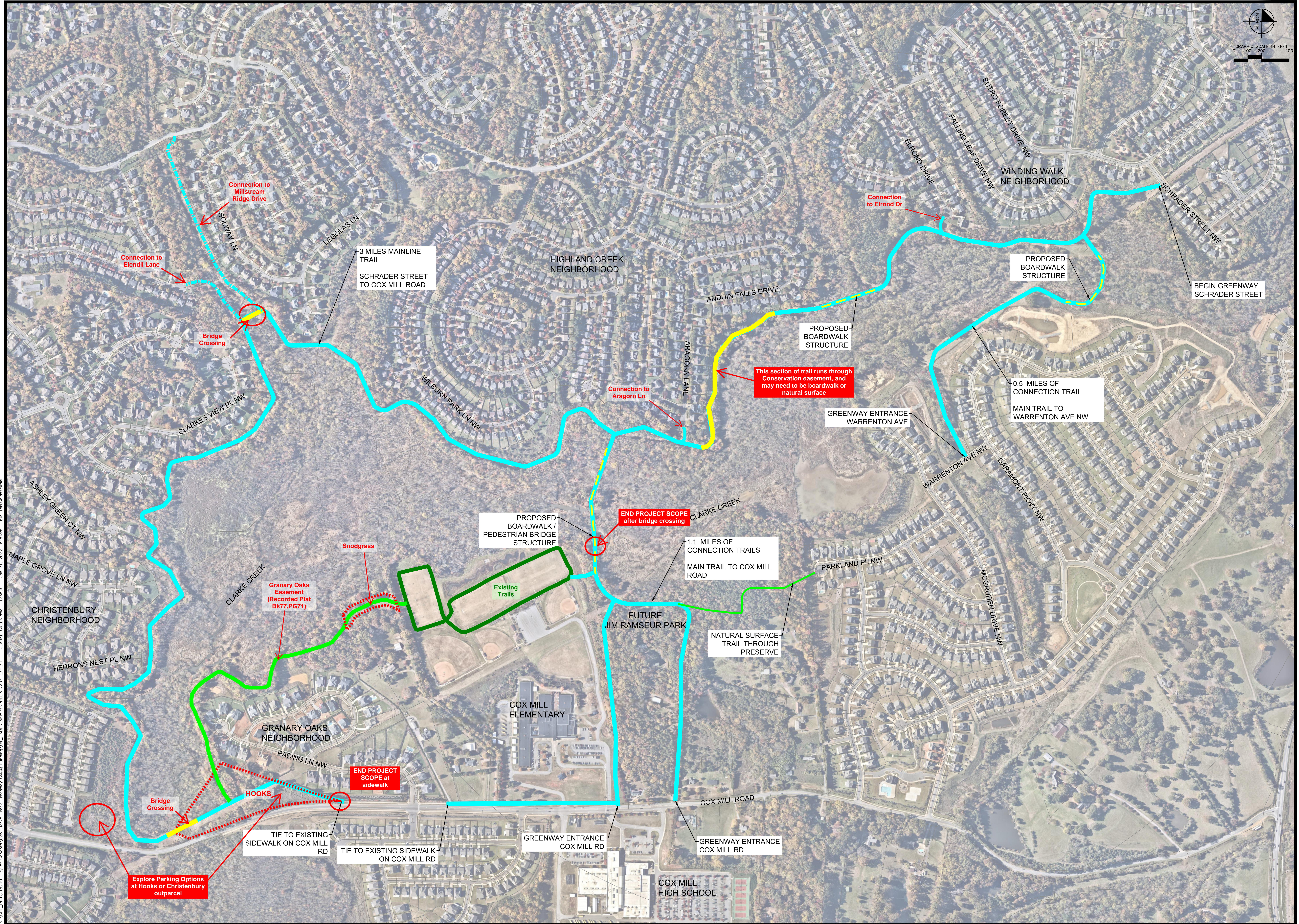
Invoices shall be directed to: City of Concord Attention: Jason Pauling, Post Office Box 308, Concord, NC 28026-0308. Should changes or extra services be needed, which will cause a cost overrun; **Tori Golaszewski** will consult with the City for adjustments prior to conducting the work.

### **Fee for Scope of Services:**

Kimley-Horn will perform the services in Tasks 1-3 for the total lump sum labor fee below. Individual task amounts are informational only. In addition to the lump sum labor fee, direct reimbursable expenses such as express delivery services, fees, air travel, and other direct expenses will be billed at 1.15 times cost.

Task 1 Project Management and Coordination	\$11,300.00
Task 2 Survey and Mapping	\$72,200.00
Task 3 Pre-Planning	\$56,600.00
Total Labor Fee	\$140,100.00
Expenses	\$1,000.00

The fee for services shall not exceed **\$141,100** and shall be based on a lump sum format, whereby fees would be invoiced by the amount of actual time/material expended. It is understood however, that the City of Concord has no obligations to increase the not to exceed amounts nor shall KIMLEY HORN be obligated to render services once the not to exceed amount has been reached unless the parties mutually agree to increase the limit in an amendment or addendum to this Agreement. Fees for staff time shall be based on the rate schedule provided below. Invoices shall be directed to: City of Concord Attention: Jason Pauling, Post Office Box 308, Concord, NC 28026-0308. Should changes or extra services be needed, which will cause a cost overrun; **Tori Golaszewski, P.E. – Project Manager** will consult with the City for adjustments prior to conducting the work.



Drawing name: K:\CHL\_PRA\151920 City of Concord\026 Clarke Creek Greenway DMA0 Funding\04\_CADD\Exhibits\PRELIMINARY EXHIBIT - CLARKE CREEK.dwg Layout1 Jan 31, 2022 6:51am by: Ted Gotszewski

# CLARKE CREEK GREENWAY

DATE: 01-07-2022

SHEET 1 of 1

# DORTON PARK

## MASTER PLAN ADOPTED

Ph 1 Options (w/design): **\$3,028,300**

- Restroom & Playground (Yorke side)
- Parking Expansion (NCDOT)
- New Bridge
- Field Renovations
- Disc Golf Expansion

Ph 2 Options (w/design): **\$1,806,560**

- Stream Restoration
- Replace original restroom and maintenance buildings

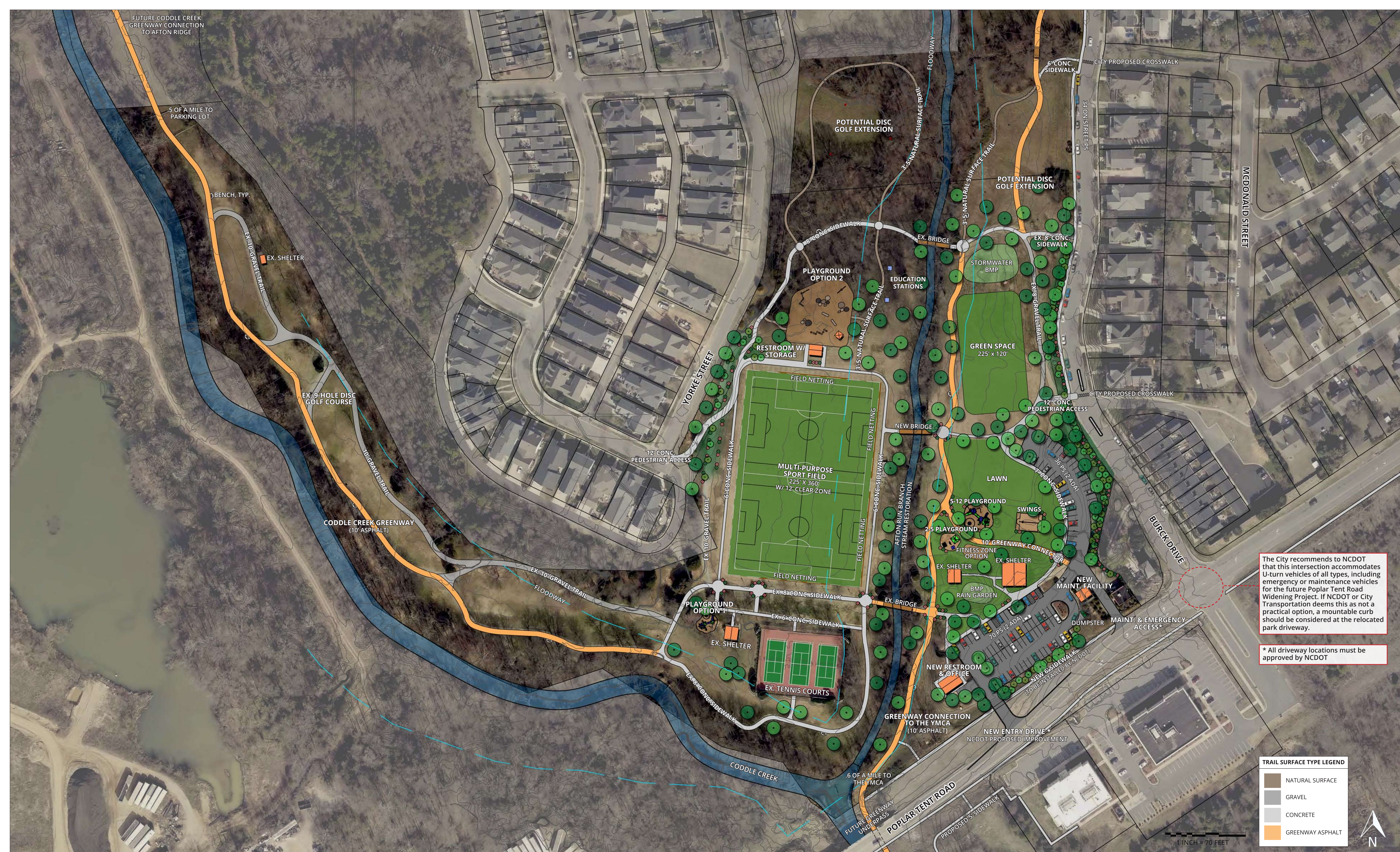
**\$ 4,834,860**



Concord  
High Performance Living  
DODD STUDIO

**DORTON PARK MASTER PLAN**  
CITY OF CONCORD, NC

August 2020



The City recommends to NCDOT that this intersection accommodates U-turn vehicles of all types, including emergency or maintenance vehicles for the future Poplar Tent Road Widening Project. If NCDOT or City Transportation deems this as not a practical option, a mountable curb should be considered at the relocated park driveway.

\* All driveway locations must be approved by NCDOT

# DORTON PARK MASTER PLAN

CITY OF CONCORD, NC

Adopted September 10, 2020



# HARTSELL PARK

## MASTER PLAN ADOPTED

Phase 1 (w/design): **\$4,350,000**

- Splash Pad
- Playground & Shelters
- Picnic sitting areas
- Open Lawn
- Pickleball courts
- Expand Parking

Phase 2 (w/design): **\$1,430,000**

Ballfield Improvements

Phase 3 (w/design): **\$1,650,000**

- Outdoor Learning Zone
- Informal, programmed open spaces
- Activity Zones
- Trails & Connectivity

**\$ 7,430,000**



## EXHIBIT "A"

This document is an Exhibit to the Agreement for Professional Services between the CITY OF CONCORD and **BOLTON & MENK, INC. dba COLEJENEST & STONE** dated \_\_\_\_\_, 2022.

### Scope of Services

The Consultant will provide the services specifically set forth below and also as part of the attached "Task Order".

- **Task 1: Due Diligence:** Including Site surveys, site reports, jurisdictional codes and conditions, utility information, transportation impacts, Meetings with City staff, etc.
- **Task 2: Survey & Mapping Services:** This phase may include a survey allowance for all survey work needs throughout the course of the project, and may include additional boundary and ground topographic survey work beyond what is being provided by the City.
- **Task 3: Schematic Design:** Consultant and subconsultants will prepare design plans for review by City staff that may include demolition and grading plans, materials plans, landscaping plans, drainage and erosion control plans, architectural and other plans as determined to complete schematic design
- **Task 4: Design Development Plans:** The Consultant and subconsultants shall attend coordination meetings with the City, and complete a design development package that will include improvements to all phases of Hartsell Park based on the adopted Park Master Plan.
- **Task 5: Construction Documents:** The Consultant and subconsultants shall advance the design development once approved by staff into the construction documents phase, which will require review and direction by staff at the 50%, 95% and 100% CD level.
- **Task 6: Geotechnical Investigations, Environmental Services & Wetland Delineation:** The Consultant and subconsultants shall coordinate geotechnical investigations, and environmental review of the site concurrently as part of the Design Development and Construction Document phases.
- **Task 7: Architectural & Structural Engineering Services:** The Consultant and subconsultants shall coordinate architectural designs of any new or renovated buildings on the site, and structural engineering for any other structures such as retaining walls as part of the Design Development and Construction Document phases. The architectural plans will include elevations, floor plans, and mechanical, electrical and plumbing plans as applicable.
- **Task 8: Cost Estimation Services:** The Consultant and subconsultants shall coordinate City staff to discuss cost estimates throughout the project. This will include an opinion of probable cost during the schematic design phase, more detailed cost estimates at the Design Development stage, and final cost estimates at 95% CD level, just before the project is ready for bidding.
- **Other: Reimbursable Expenses** not to exceed \$5,000.

### **Fee for Scope of Services:**

The fee for services shall not exceed **\$532,155** and shall be based on the attached task order, which includes lump sum estimates and certain allowances, whereby fees would be invoiced by the amount of actual

time/material expended. It is understood however, that the City of Concord has no obligations to increase the not to exceed amounts nor shall the Consultant be obligated to render services once the not to exceed amount has been reached unless the parties mutually agree to increase the limit in an amendment or addendum to this Agreement. Fees for staff time shall be based on the rate schedule provided per the attached. Invoices shall be directed to: City of Concord Attention: **Jason Pauling, Post Office Box 308, Concord, NC 28026-0308**. Should changes or extra services be needed, which will cause a cost overrun; **Marshall Giles, Project Manager** will consult with the City for adjustments prior to conducting the work.

Exhibit A – Task Order

4806.00 – City of Concord Hartsell Park

April 27, 2022

New Contract

Amendment

To: City of Concord

Attention: Jason T. Pauling, AICP – Senior Planner

Email: [paulingj@ConcordNC.gov](mailto:paulingj@ConcordNC.gov)

Phone: 704-920-5641

Bolton & Menk, Inc doing business as “ColeJenest & Stone” (“CJS”) is pleased to provide our proposal to City of Concord (herein after referred to as the “Client”) for civil engineering and landscape architecture services in connection with development of the ±22.50-acre property located on Hartsell School Road SW in Concord, NC. This proposal is based upon a project consisting of renovated and new program elements outlined in Hartsell Park Master Plan adopted December 9, 2021 (attached).

**Assumptions/Notes**

- I. Park property is approximately 22.50 acres and consists of parcels 5620513566 and 5620527265.
- II. Construction budget is \$7.43M and implementation is assumed to occur over 3 phases (Exhibit).
- III. The vertical playground and ropes course illustrated in the Master Plan is excluded.
- IV. It is assumed the adopted Master Plan will be amended during Schematic Design based on survey data and to accommodate program and/or site constraints that may be determined during Due Diligence.
- V. A stormwater strategy will be developed during Schematic Design. It is assumed some of the BUA may be grandfathered, but the adopted Master Plan may need to be amended to accommodate space for stormwater requirements.
- VI. Permitting, Bidding, Construction Administration, Construction Administration Meetings, Project Closeout & Warranty are excluded. It is understood these services are to be added later.

**Scope of Services**

- I. **Due Diligence**
  - A. CJS will complete site- related project due diligence based on the intended used of the property as follows
    1. Review of the Client-supplied survey
    2. Review of site reports (geotechnical, environmental, etc.)
    3. Research jurisdictional codes, maps and plans as they relate to:
      - a. Zoning
      - b. Transportation
      - c. Environmental Conditions (stream buffers, floodplain, watershed, etc.)

- d. Water Service
  - e. Sanitary Sewer Service
  - f. Stormwater Drainage
  - g. Landscape Requirements
4. Review and confirm the plan submittal and approval process with the Authority Having Jurisdiction (AHJ) (City of Concord/Cabarrus County)
  5. Schedule and lead a pre-submittal meeting with the AHJ. (City of Concord/Cabarrus County)
  6. Submit to local utility for Willingness to Serve for water and sanitary sewer service.
  7. Obtain a fire -hydrant flow test.
- B. CJS will prepare a project base drawing using the Client-supplied survey and / or publicly available mapping information.
  - C. CJS will conduct (1) preliminary site walk with the Client.
  - D. CJS will conduct (1) site meeting with client and project team (as needed) prior to Schematic Design.

## II. Schematic Design

- A. CJS will prepare the following Schematic Design Plans using AutoCAD Civil 3D based on the Client-provided Master Plan:
  1. Site Demolition Plan
  2. Dimension Control Plan
  3. Materials Plan
  4. Spray/Play Plan (Conceptual/Programmatic Development)
  5. Grading and Drainage Plan
  6. Cut/Fill Analysis
  7. Water Distribution and Sanitary Sewer Plan
  8. Planting Plan (Code Required Only)
- B. The Schematic Design Plans will be submitted to Client, project Architect and related subconsultants to validate the project budget and to identify value engineering options prior to advancing to the Design Development phase.
- C. CJS will conduct (1) site meeting with the City of Concord arborist.
- D. CJS will conduct (1) site meeting with the City of Concord maintenance & operations.
- E. CJS will conduct (1) site meeting with Client and project team (as needed) to review comments prior to Design Development.

## III. Design Development

- A. CJS will prepare the following Design Development Plans using AutoCAD Civil 3D based on the Client-approved Schematic Design Plans:
  1. Site Demolition Plan
  2. Dimension Control Plan
  3. Materials Plan
  4. Spray/Play Plan
  5. Erosion Control Plan
  6. Grading and Drainage Plan
  7. Cut/Fill Analysis
  8. Stormwater Management Plan
  9. Water Distribution and Sanitary Sewer Plan
  10. Planting Plan (Code Required & Areas for Supplemental)
  11. Site & Landscape Architectural Details
- B. CJS will prepare site-related specifications following CSI MasterFormat (Divisions 31 – 33).
- C. The Design Development Plans will be submitted to Client, project Architect and related subconsultants to validate the project budget and to identify value engineering options prior to advancing to the Construction Document phase.
- D. CJS will conduct (1) meeting with Client and project team (as needed) to review comments prior to Construction Documents.

#### IV. Construction Documents

- A. CJS will prepare the following Construction Documents using AutoCAD Civil 3D based on the Client-approved Design Development Plans:
  - 1. Site Demolition Plan
  - 2. Dimension Control Plan
  - 3. Materials Plan
  - 4. Spray/Play Plan
  - 5. Erosion Control Plan
  - 6. Grading and Drainage Plan
  - 7. Stormwater Management Plan
  - 8. Water Distribution and Sanitary Sewer Plan
  - 9. Street Profiles
  - 10. Phasing Plan(s)
  - 11. Traffic Control Plan
  - 12. Fire & Emergency Access
  - 13. Accessible Route Plan (to be coordinated with project Architect)
  - 14. Planting Plan (Code Required & Supplemental)
  - 15. Site & Landscape Architectural Details
- B. CJS will conduct (1) interim review meeting with Client and project team (as needed) to review progress between Design Development and issuance of Construction Documents.
- C. CJS will issue 95% Construction Documents prior to permitting for interim cost estimating and 100% Construction Documents prior to bidding.
- D. CJS will prepare site-related specifications following CSI MasterFormat (Divisions 31 – 33) for 100% Construction Documents.
- E. The Construction Documents will be utilized for project permitting through the AHJ.
- F. CJS will coordinate with the AHJ, Client, project Architect and related subconsultants to address plan review comments

#### V. Survey Services (Mapping, Preparation of Plats, As-Builts, etc.)

- A. A boundary/topographic survey is being provided by the City of Concord.
- B. An allowance is being provided for additional survey needs through CDs.

#### VI. Geotechnical Investigation and Environmental Analysis

- A. CJS will consult with a Geotechnical and Environmental Engineer to provide the following services:
  - 1. Geotechnical Services – up to (10) borings
  - 2. Phase I Environmental
  - 3. Preliminary Threatened and Endangered Species Assessment
  - 4. Historical/Cultural Resources Review

#### VII. Wetland Delineation

- A. CJS will consult with an Environmental Engineer to provide the following services:
  - 1. Wetland coordination & delineation. Wetland permitting is excluded.

#### VIII. Architectural Services

- A. CJS will consult with an Architect to provide architectural design of the structural elements illustrated in the adopted Master Plan, including new multi-level press box/restroom, dugouts, bleacher & viewing shelters, playground restroom, group shelters/restrooms, and multi-level press box renovation.
- B. Architect to provide Structural, Electrical/MEP design as needed.
- C. Architectural Concepts for proposed structures are to be issued during Schematic Design.
- D. Architectural Plans and specifications are to be issued at the following phases:
  - 1. Design Development (50%)
  - 2. Construction Documents (95%)

3. Construction Documents (100%)

**IX. Irrigation Design**

- A. CJS will consult with an Irrigation Designer to provide irrigation design for the ball fields, Informal Play Lawn, and areas near the recreation center. It is assumed a majority of the park will remain unirrigated.
- B. Irrigation Plans and specifications are to be issued at the following phases:
  - 1. Design Development (50%)
  - 2. Construction Documents (95%)
  - 3. Construction Documents (100%)

**X. Cost Estimating**

- A. CJS will consult with a Cost Estimator to provide interim cost estimates throughout the project.
- B. Cost Estimates are to be issued at the following phases:
  - 1. Schematic Design (25%) – Opinion of Probable Construction Cost
  - 2. Design Development (50%)
  - 3. Construction Documents (95%) – Prior to Bidding

**XI. Project Specification Manual**

- A. CJS will consult with a Specification Consultant to develop a project specification manual, including Procurement and Contracting Documents (Division 00) and General Requirements (Division 01).
- B. Specifications are to be formatted using the current edition of MasterFormat.
- C. Specifications are to be issued at the following phases:
  - 1. Design Development (50%)
  - 2. Construction Documents (100%)

**XII. Structural Engineering – Site**

- A. CJS will consult with a Structural Engineer to provide structural design for site related items, including proposed site walls and (1) pedestrian crossing illustrated in the Master Plan.
- B. Structural Plans and related specifications are to be issued at the following phases:
  - 1. Design Development (50%)
  - 2. Construction Documents (95%)
  - 3. Construction Documents (100%)
- C. An allowance is being provided for structural design until the Master Plan has been validated in Schematic Design.

**XIII. Exclusions/Additional Services**

- A. Permitting and Bidding.
- B. Construction Administration and Construction Administration Meetings.
- C. Project Closeout & Warranty.
- D. Irrigation Design.
- E. Rezoning, administrative amendment or variance preparation, submittals, or consulting.
- F. Transportation impact studies.
- G. Wetland permitting.
- H. Changes to Site Plan or building footprints following approval of the Schematic Design and Preliminary Engineering Plans that results in increased complexity or requiring re-work of plans.
- I. Public street or transportation improvements (turn/deceleration lanes, widenings, curb and drainage, signalization, etc.).
- J. Off-site utility improvements (stormwater drainage, water distribution, sanitary sewer, etc.).
- K. Temporary or permanent site shoring or dewatering design.
- L. Stormwater drainage or sanitary sewer pump station design and permitting.
- M. Global/regional drainage studies beyond the project limits, including flood studies.
- N. Site lighting design, including preparation of photometric plans.

- O. Fountain or water feature design and coordination.
- P. Green roof or amenity deck over structure or other related design.
- Q. Design/detail of parking areas/circulation within the building footprints or parking deck.
- R. Stormwater fee credit applications.
- S. Preparation and permitting of phased construction documents not specifically described in the Scope of Services.
- T. Digital 3-D Models or Perspectives
- U. Express permit review processes requiring designer attendance at review session.
- V. LEED or other green building related coordination and certification submittals.
- W. Preparation and execution of Lender Agreements (engineer's consent/certification, etc.).
- X. Other Client-directed services not specifically described in the Scope of Services.

The above-described services are not included under this agreement. Should these services be required in the future, a Task Order amendment may be prepared to cover the additional scope of work and associated fee.

**XIV. Reimbursable Expenses**

- A. Expenditures made by CJS (and subcontractors or subconsultants of CJS) in the interest of the Project may be billed against the Reimbursable Allowance as indicated in the Fee Summary and in accordance with the hourly rates and reimbursable expenses set forth on Exhibit B.

**XV. Fee Summary**

Task	Phase	Fee Type	Fee
I.	Due Diligence	Lump Sum	\$8,450.00
II.	Schematic Design	Lump Sum	\$54,950.00
III.	Design Development	Lump Sum	\$84,500.00
IV.	Construction Documents	Lump Sum	\$143,745.00
V.	Survey Services	Allowance	\$28,750.00
VI.	Geotechnical Investigation and Environmental Analysis	Allowance	\$15,985.00
VII.	Wetland Delineation	Allowance	\$5,175.00
VIII.	Architectural Services:		
	Schematic Design	Lump Sum	\$18,900.00
	Design Development	Lump Sum	\$50,400.00
	Construction Documents	Lump Sum	\$67,830.00
IX.	Irrigation Design	Lump Sum	\$9,835.00
X.	Cost Estimating	Lump Sum	\$15,235.00
XI.	Project Specifications Manual	Lump Sum	\$1,400.00
XII.	Structural - Site	Allowance	\$22,000.00
XIII.	Exclusions / Additional Services	TBD	TBD
XIV.	Reimbursable Expenses	Allowance	\$5,000.00



**XVI. Signature**

By signature below, Client confirms acceptance of the above-described Scope of Services and fee.

Subject to the Terms and Conditions and Hourly and Reimbursable Expense Rates included in the attached Professional Services Agreement.

City of Concord

By:

Print:

Title:

Date:

Subject to the Terms and Conditions and Hourly and Reimbursable Expense Rates of the original Agreement dated.

Bolton & Menk, Inc., d/b/a ColeJenest & Stone

By:

Print: Marshall E. Giles, ASLA, PLA

Title: Principal | Director of Design and Planning

Date:





# Southeastern Consulting Engineers, Inc.

April 25, 2022

Mr. Alex Burris  
Director of Electric Systems  
City of Concord  
P. O. Box 308  
Concord, North Carolina 28025

Ref.: Substation T Construction  
Bid Recommendation

Dear Alex:

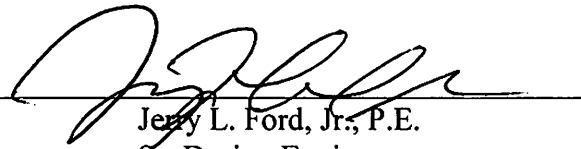
The City received sealed proposals at 2:00 p.m. on April 20, 2022 from six contractors for the construction of the City's new substation to be located on Concord Parkway. The six bids were reviewed for compliance with the specifications and relevant project experience. A bid tabulation is attached.

The low bid was submitted by Service Electric Company located in Chattanooga, TN in the amount of \$1,324,965.00. The bid includes an allowance for rock removal in the amount of \$115,500.00 that we anticipate will be used on this project. We do not have prior experience with Service Electric but have received favorable feedback from their references. Service Electric has over 30 specialized substation crews located throughout the southeast.

We recommend that the City accept Service Electric's proposal and proceed with executing the contract documents. Please let us know if you have any questions or need any additional information.

Very Truly Yours,

SOUTHEASTERN CONSULTING ENGINEERS, INC.

By   
Jerry L. Ford, Jr., P.E.  
Sr. Design Engineer

Enc: Bid Tabulation

cc: Mr. Scott Chunn  
Mrs. Andrea Cline  
Mr. Ty Barbee

600 MINUET LANE P.O. BOX 240436 CHARLOTTE, NC 28224  
PHONE: (704) 523-6045 FAX: (704) 523-8317

**BID TABULATION**  
Construction of Substation T

City of Concord  
Concord, North Carolina

Date: April 20, 2022  
Time: 2:00 PM, EDST

<u>Bidder</u>	<u>TIC</u> <u>The Industrial Co.</u>	<u>Carolina Power</u> <u>Signalization</u>	<u>Sumter Utilities</u>	<u>Pike Electric</u>	<u>Aubrey Silvey</u>
<b>Total, Construction</b>	<b>\$ <u>2,815,075.73</u></b>	<b>\$ <u>1,347,252.00</u></b>	<b>\$ <u>1,397,685.23</u></b>	<b>\$ <u>1,339,239.94</u></b>	<b>\$ <u>1,720,000.00</u></b>
Bid Bond	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>Additional Prices to be used</u> <u>on City Approved Changes:</u>					
Unit Adder for Additional Concrete	\$ <u>2,326.45</u> /cu. yd.	\$ <u>815.00</u> /cu. yd.	\$ <u>996.00</u> /cu. yd.	\$ <u>952.60</u> /cu. yd.	\$ <u>800.00</u> /cu. yd.
Unit Adder for Additional Rebar #3	\$ <u>2.00</u> /ft.	\$ <u>1.00</u> /ft.	\$ <u>0.60</u> /ft.	\$ <u>0.53</u> /ft.	\$ <u>0.90</u> /ft.
Unit Adder for Additional Rebar #4	\$ <u>3.65</u> /ft.	\$ <u>1.75</u> /ft.	\$ <u>1.00</u> /ft.	\$ <u>0.94</u> /ft.	\$ <u>1.25</u> /ft.
Unit Adder for Additional Rebar #5	\$ <u>5.65</u> /ft.	\$ <u>2.75</u> /ft.	\$ <u>1.55</u> /ft.	\$ <u>1.45</u> /ft.	\$ <u>1.60</u> /ft.
Unit Adder for Additional Rebar #6	\$ <u>7.98</u> /ft.	\$ <u>3.50</u> /ft.	\$ <u>2.20</u> /ft.	\$ <u>2.10</u> /ft.	\$ <u>2.10</u> /ft.
Unit Adder for Additional Rebar #7	\$ <u>10.97</u> /ft.	\$ <u>4.53</u> /ft.	\$ <u>3.00</u> /ft.	\$ <u>2.86</u> /ft.	\$ <u>2.65</u> /ft.
Unit Adder for Additional Rebar #8	\$ <u>13.96</u> /ft.	\$ <u>7.00</u> /ft.	\$ <u>4.00</u> /ft.	\$ <u>3.73</u> /ft.	\$ <u>3.30</u> /ft.
Unit Adder for Additional Rebar #9	\$ <u>17.95</u> /ft.	\$ <u>8.50</u> /ft.	\$ <u>5.00</u> /ft.	\$ <u>4.75</u> /ft.	\$ <u>4.05</u> /ft.
Unit Adder for Additional Excavation and Disposal	\$ <u>99.71</u> /cu. yd.	\$ <u>75.00</u> /cu. yd.	\$ <u>605.00</u> /cu. yd.	\$ <u>39.60</u> /cu. yd.	\$ <u>50.00</u> /cu. yd.
Unit Labor Adder for Removal and Replacement of Unsuitable Soils with Suitable Fill	\$ <u>99.71</u> /cu. yd.	\$ <u>87.50</u> /cu. yd.	\$ <u>79.00</u> /cu. yd.	\$ <u>74.80</u> /cu. yd.	\$ <u>75.00</u> /cu. yd.
Unit Adder for Removal of Unsuitable Soils and Replacement with ABC	\$ <u>212.70</u> /cu. yd.	\$ <u>110.00</u> /cu. yd.	\$ <u>105.00</u> /cu. yd.	\$ <u>96.80</u> /cu. yd.	\$ <u>80.00</u> /cu. yd.
Unit Adder for 1½" Sch. 40 PVC	\$ <u>162.13</u> /ft.	\$ <u>6.75</u> /ft.	\$ <u>3.35</u> /ft.	\$ <u>7.19</u> /ft.	\$ <u>8.50</u> /ft.
Unit Adder for 2" Sch. 40 PVC	\$ <u>162.96</u> /ft.	\$ <u>10.00</u> /ft.	\$ <u>5.45</u> /ft.	\$ <u>8.49</u> /ft.	\$ <u>10.00</u> /ft.
Unit Adder for 4" Sch. 40 PVC	\$ <u>171.39</u> /ft.	\$ <u>25.00</u> /ft.	\$ <u>7.95</u> /ft.	\$ <u>17.78</u> /ft.	\$ <u>19.50</u> /ft.
Unit Adder for 6" Sch. 40 PVC	\$ <u>179.20</u> /ft.	\$ <u>50.00</u> /ft.	\$ <u>20.25</u> /ft.	\$ <u>26.70</u> /ft.	\$ <u>30.50</u> /ft.

**BID TABULATION**  
**Construction of Substation T**

City of Concord  
 Concord, North Carolina

Date: April 20, 2022  
 Time: 2:00 PM, EDST

Bidder	<u>Service Electric Company</u>	_____	_____	_____	_____
<b>Total, Construction</b>	<b>\$ <u>1,324,965.00</u></b>	<b>\$ _____</b>	<b>\$ _____</b>	<b>\$ _____</b>	<b>\$ _____</b>
Bid Bond	<u>✓</u>	_____	_____	_____	_____
<u>Additional Prices to be used on City Approved Changes:</u>					
Unit Adder for Additional Concrete	\$ <u>866.00</u> /cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.
Unit Adder for Additional Rebar #3	\$ <u>0.48</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #4	\$ <u>0.85</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #5	\$ <u>1.32</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #6	\$ <u>1.91</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #7	\$ <u>2.60</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #8	\$ <u>3.39</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Rebar #9	\$ <u>4.32</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for Additional Excavation and Disposal	\$ <u>36.00</u> /cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.
Unit Labor Adder for Removal and Replacement of Unsuitable Soils with Suitable Fill	\$ <u>68.00</u> /cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.
Unit Adder for Removal of Unsuitable Soils and Replacement with ABC	\$ <u>88.00</u> /cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.	\$ _____/cu. yd.
Unit Adder for 1½" Sch. 40 PVC	\$ <u>20.13</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for 2" Sch. 40 PVC	\$ <u>22.94</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for 4" Sch. 40 PVC	\$ <u>32.13</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.
Unit Adder for 6" Sch. 40 PVC	\$ <u>43.22</u> /ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.	\$ _____/ft.

**CITY OF CONCORD  
PURCHASING BID REVIEW AND ROUTING FORM**

DATE: April 20, 2022

FORMAL BID: Yes

BID DATE: April 20, 2022

DEPARTMENT: Electric-Construction Sub T

BIDDERS	AMOUNT	DELIVERY
Service Electric Co	\$1,324,965.00	n/a
Pike Electric	\$1,339,239.94	n/a
Carolina Power Signallization	\$1,347,252.00	n/a
Sumter Utilities	\$1,397,685.23	n/a
Aubrey Silvey	\$1,720,000.00	n/a

RECOMMENDATION: Service Electric Co

LOW BIDDER: YES  NO  (IF NOT, DOCUMENTATION REQUIRED)

ADDED OPTIONS: \_\_\_\_\_

PRICE: \_\_\_\_\_

\*\*\*\*\*

FLEET SERVICES SIGNATURE (IF REQUIRED) Digitally signed by Alex Burris

**Alex Burris**

Date: 2022.04.28 10:47:25 -04'00'

DEPARTMENT HEAD: \_\_\_\_\_ DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

\*\*\*\*\*

ASSISTANT CITY MANAGER OR EXECUTIVE DIRECTOR OF OPERATIONS:

**LeDerick Blackburn**

Digitally signed by LeDerick Blackburn  
Date: 2022.05.04 16:15:29 -04'00'

DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

PURCHASING OFFICIAL: Ryan LeClear Digitally signed by Ryan LeClear  
Date: 2022.05.05 13:46:48 -04'00' DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

FINANCE DIRECTOR: Jessica Jones Digitally signed by Jessica Jones  
Date: 2022.05.05 15:12:24 -04'00' DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

\*\*\*\*\*

APPROVE AS RECOMMENDED:  YES DATE: \_\_\_\_\_

CITY MANAGER: Lloyd Wm. Payne, Jr., ICMA-CM Digitally signed by Lloyd Wm. Payne, Jr., ICMA-CM  
Date: 2022.05.05 16:09:01 -04'00' DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

**CITY OF CONCORD  
PURCHASING BID REVIEW AND ROUTING FORM**

DATE: April 20, 2022

FORMAL BID: Yes

BID DATE: April 20, 2022

DEPARTMENT: Electric-Construction Sub T

BIDDERS	AMOUNT	DELIVERY
TIC The Industrial Company	\$2,815,075.73	n/a

RECOMMENDATION: Service Electric Company. - See Page 1

LOW BIDDER: YES  NO  (IF NOT, DOCUMENTATION REQUIRED)

ADDED OPTIONS: \_\_\_\_\_

PRICE: \_\_\_\_\_

♦♦♦♦♦

FLEET SERVICES SIGNATURE (IF REQUIRED): Alex Burris Digitally signed by Alex Burris  
Date: 2022.04.28 10:47:52 -04'00'

DEPARTMENT HEAD: \_\_\_\_\_ DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

♦♦♦♦♦

ASSISTANT CITY MANAGER OR EXECUTIVE DIRECTOR OF OPERATIONS: LeDerick Blackburn Digitally signed by LeDerick Blackburn  
Date: 2022.05.05 08:14:07 -04'00'

DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

♦♦♦♦♦

PURCHASING OFFICIAL: Ryan LeClear Digitally signed by Ryan LeClear  
Date: 2022.05.05 13:46:12 -04'00'

DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

♦♦♦♦♦

FINANCE DIRECTOR: Jessica Jones Digitally signed by Jessica Jones  
Date: 2022.05.05 15:12:38 -04'00'

DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

♦♦♦♦♦

APPROVE AS RECOMMENDED:  YES DATE: \_\_\_\_\_

CITY MANAGER: Lloyd Wm. Payne, Jr., ICMA-CM Digitally signed by Lloyd Wm. Payne, Jr., ICMA-CM  
Date: 2022.05.05 16:09:32 -04'00'

DATE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

**BOND ORDER AUTHORIZING THE ISSUANCE OF \$60,000,000 GENERAL OBLIGATION PARKS AND RECREATION BONDS OF THE CITY OF CONCORD, NORTH CAROLINA**

*WHEREAS*, the City Council of the City of Concord, North Carolina has ascertained and hereby determines that it is necessary to pay the capital costs of providing parks and recreation facilities, including without limitation land, athletic fields, parks, shelters, parking, lighting, trails and greenways and the renovation and improvement of existing facilities; and

*WHEREAS*, an application has been filed with the Secretary of the Local Government Commission of North Carolina requesting Commission approval of the General Obligation Parks and Recreation Bonds hereinafter described as required by the Local Government Bond Act, and the City Clerk has notified the City Council that the application has been accepted for submission to the Local Government Commission.

*NOW, THEREFORE, BE IT ORDERED* by the City Council of the City of Concord, North Carolina, as follows:

Section 1. In order to raise the money required for the purposes described above, in addition to any funds which may be made available for such purpose from any other source, General Obligation Parks and Recreation Bonds of the City are hereby authorized and shall be issued pursuant to the Local Government Finance Act of North Carolina. The maximum aggregate principal amount of such General Obligation Parks and Recreation Bonds authorized by this order shall be \$60,000,000.

Section 2. Taxes will be levied in an amount sufficient to pay the principal and interest on the General Obligation Parks and Recreation Bonds.

Section 3. A sworn statement of the City's debt has been filed with the City Clerk and is open to public inspection.

Section 4. This bond order will take effect when approved by the voters of the City at a referendum scheduled for November 8, 2022.

The foregoing bond order was read by title and introduced by the City Council of the City of Concord, North Carolina this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

ATTEST:

---

William C. Dusch, Mayor

---

Kim J. Deason, City Clerk

STATE OF NORTH CAROLINA            )  
  )  
CITY OF CONCORD                            )            ss:

I, Kim J. Deason, City Clerk of the City of Concord, North Carolina, ***DO HEREBY CERTIFY*** that the foregoing is a true and exact copy of so much of the proceedings of the City Council as it relates to the introduction of the bond order entitled “**BOND ORDER AUTHORIZING THE ISSUANCE OF \$60,000,000 GENERAL OBLIGATION PARKS AND RECREATION BONDS OF THE CITY OF CONCORD, NORTH CAROLINA**” by the City Council of the City of Concord, North Carolina, at a meeting held on the 12th day of May, 2022 and that such proceedings are to be recorded in the minute books of said City Council.

***WITNESS*** my hand and the seal of the City of Concord, North Carolina, this the \_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
City Clerk  
City of Concord, North Carolina

(SEAL)



**RESOLUTION OF THE CITY OF CONCORD, NORTH CAROLINA SETTING A PUBLIC HEARING ON A GENERAL OBLIGATION BOND ORDER AND RELATED MATTERS**

**WHEREAS**, a bond order entitled:

“BOND ORDER AUTHORIZING THE ISSUANCE OF \$60,000,000 GENERAL OBLIGATION PARKS AND RECREATION BONDS OF THE CITY OF CONCORD, NORTH CAROLINA;”

has been introduced at a meeting of the City Council (the “*City Council*”) of the City of Concord, North Carolina this 12th day of May, 2022; and

**WHEREAS**, the City Council desires to provide for the holding of a public hearing thereon on June 9, 2022 and the submission of a statement of debt in connection therewith as required by The Local Government Bond Act.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CONCORD, NORTH CAROLINA** that the public hearing on said bond order shall be held on the 9th day of June, 2022 at or about 6:00 p.m. in the Council Chambers of City Hall, 35 Cabarrus Ave. W., Concord, NC 28025.

**BE IT FURTHER RESOLVED** that the City Clerk is hereby directed to cause a copy of said bond order to be published with a notice of such hearing in the form prescribed by law in a newspaper of general circulation in the City on or before the 3rd day of June, 2022.

**BE IT FURTHER RESOLVED** that the City’s finance officer is hereby directed to file with the City Clerk, prior to publication of the bond order, along with the notice of such public hearing, a statement setting forth the debt incurred or to be incurred, the net debt of the City, the assessed value of property subject to taxation by the City and the percentage that net debt of the City bears to the assessed value of property subject to taxation.

**BE IT FURTHER RESOLVED** that this Resolution shall become effective on the date of its adoption.

Read, approved and adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

ATTEST:

\_\_\_\_\_  
William C. Dusch, Mayor

\_\_\_\_\_  
Kim J. Deason, City Clerk

STATE OF NORTH CAROLINA            )  
  )  
CITY OF CONCORD                            )            ss:

I, Kim J. Deason , City Clerk of the City of Concord, North Carolina, ***DO HEREBY CERTIFY*** that the foregoing is a true and exact copy of a resolution titled “**RESOLUTION OF THE CITY OF CONCORD, NORTH CAROLINA SETTING A PUBLIC HEARING ON A GENERAL OBLIGATION BOND ORDER AND RELATED MATTERS**” duly adopted by the City Council of the City of Concord, North Carolina, at a meeting held on the 12th day of May, 2022 and that such proceedings are to be recorded in the minute books of said City Council.

***WITNESS*** my hand and the seal of the City of Concord, North Carolina, this the \_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
City Clerk  
City of Concord, North Carolina

(SEAL)



## RESOLUTION AUTHORIZING THE SALE OF REAL PROPERTY

WHEREAS, North Carolina General Statutes §157-9 authorizes the City of Concord, acting as the Housing Authority of the City of Concord (“City”) to sell, exchange, transfer, assign or pledge any property real or personal or any interest therein to any person, firm, corporation, municipality, city, or government; and

WHEREAS, the City owns the following thirteen (13) properties (the “Properties”):

- (1) 77 Cabarrus Avenue SW; PIN 5620-86-7504; Vesting Deed 5724-334
- (2) 338 Lincoln Street SW; PIN 5620-92-1802; Vesting Deed 4975-1
- (3) 11 Powder Street NW; PIN 5620-65-1519; Vesting Deed 10027-258
- (4) 13 Powder Street NW; PIN 5620-65-0663; Vesting Deed 10032-212
- (5) 23 Powder Street NW; PIN 5620-55-9784; Vesting Deed 15510-17
- (6) 26 Powder Street NW; PIN 5620-65-0866; Vesting Deed 15899-332
- (7) 30 Powder Street NW; PIN 5620-65-0829; Vesting Deed 15899-332
- (8) 34 Powder Street NW; PIN 5620-55-9973; Vesting Deed 15899-332
- (9) 69 Powder Street NW; PIN 5620-56-5142; Vesting Deed 15899-332
- (10) 94 Chestnut Street SW; PIN 5620-95-4723; Vesting Deed 7929-1
- (11) 327 Howerton Avenue NW; PIN 5620-55-8562; Vesting Deed 15954-149
- (12) Lot 30, Fenix Drive SW; PIN 5620-75-4472; Vesting Deed 15954-149
- (13) Lot 20, Swink Street SW; PIN 5620-32-8989; Vesting Deed 15954-149; and

WHEREAS, the City has negotiated with WeBuild Concord (“Buyer”) to convey the Properties to the North Carolina non-profit corporation for the purpose of constructing affordable housing for a public purpose; and

WHEREAS, the construction of affordable housing will assist the City in meeting the housing needs of low- and moderate-income households; and

WHEREAS, the Properties shall subject to such covenants, conditions, and restrictions as may be deemed to be in the public interest or to carry out a public purpose, including without limitation certain deed restrictions requiring the development of affordable housing, requiring the Properties to remain held in a land trust, and requiring the Properties to revert to the City in the event of a breach of these covenants;

WHEREAS, the City received an Offer to Purchase the Properties from the Buyer for \$588,321.00; and

WHEREAS, the City has held a public hearing to consider whether to approve the conveyance of the Properties above.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL, ACTING AS THE HOUSING AUTHORITY OF THE CITY OF CONCORD, THAT:

1. The City Council accepts the offer described above pursuant to North Carolina General Statute § 157-9.
2. The final sale shall include the following terms:
  - a. The City will convey, in fee simple determinable title, 77 Cabarrus Avenue SW; 338 Lincoln Street SW; 11 Powder Street NW, 13 Powder Street NW, 23 Powder Street NW, 26 Powder Street NW, 30 Powder Street NW, 34 Powder Street NW, 69 Powder Street NW, 94 Chestnut Street SW, 327 Howerton Avenue NW, Lot 30, Fenix Drive SW, and Lot 20, Swink Street SW to WeBuild Concord, as stated in the Agreement for Purchase and Sale of Real Property.
  - b. The City will convey 77 Cabarrus Avenue SW; 338 Lincoln Street SW; 11 Powder Street NW, 13 Powder Street NW, 23 Powder Street NW, 26 Powder Street NW, 30 Powder Street NW, 34 Powder Street NW, 69 Powder Street NW, 94 Chestnut Street SW, 327 Howerton Avenue NW, Lot 30, Fenix Drive SW, and Lot 20, Swink Street SW subject to all existing public utility easements, restrictions, rights-of-way, protective covenants, zoning laws, conditions, and any ordinance of record, along with the contingency of the affordability restrictions and all related conditions to the sale.

- c. The closing shall take place on or before June 30, 2022, unless otherwise agreed by the parties.
- 3. The consideration for the conveyance is \$588,321.00 and the conditions, covenants, and restrictions, which shall be incorporated in the deed given by the City of Concord to the WeBuild Concord:
- 4. City Manager, City Clerk and City Attorney are authorized to take all necessary steps and to execute the necessary instruments to effectuate the sale of the real properties located 77 Cabarrus Avenue SW; 338 Lincoln Street SW; 11 Powder Street NW, 13 Powder Street NW, 23 Powder Street NW, 26 Powder Street NW, 30 Powder Street NW, 34 Powder Street NW, 69 Powder Street NW, 94 Chestnut Street SW, 327 Howerton Avenue NW, Lot 30, Fenix Drive SW, and Lot 20, Swink Street SW in accordance with this resolution.

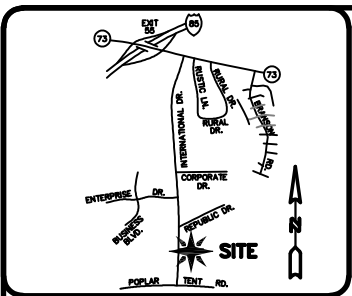
Adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William "Bill" Dusch, Mayor

ATTEST:

\_\_\_\_\_  
Kim J. Deason, City Clerk



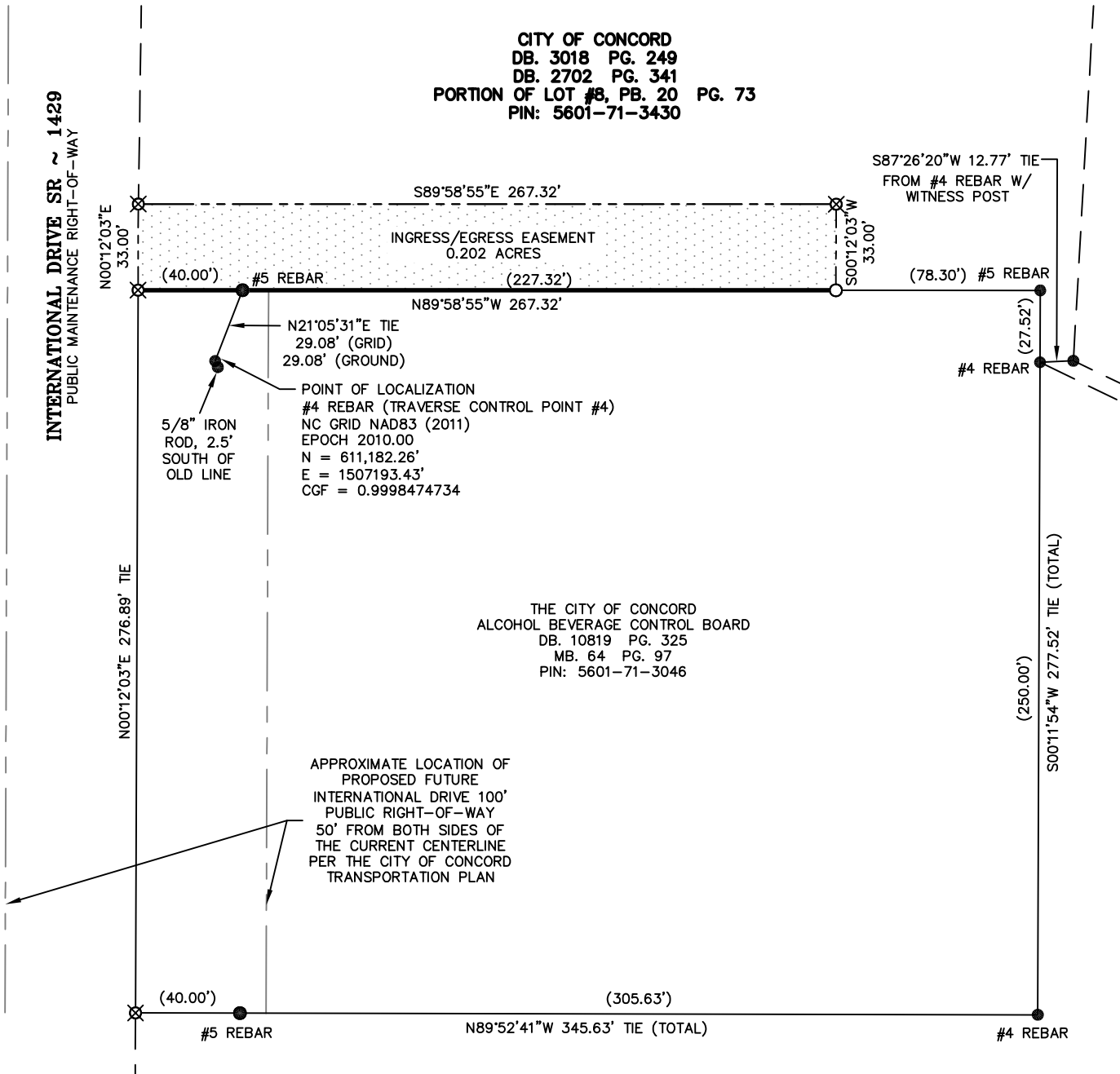
VICINITY MAP  
NOT TO SCALE

**LEGEND**

- EIP (AS DESCRIBED)
- SIP (#5 REBAR)
- ⊗ NPS (NO POINT SET)
- BOUNDARY LINE (AS SURVEYED)
- BOUNDARY LINE (BY DEED OR PLAT)
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- TIE LINE



**CITY OF CONCORD**  
 DB. 3018 PG. 249  
 DB. 2702 PG. 341  
 PORTION OF LOT #8, PB. 20 PG. 73  
 PIN: 5601-71-3430



**NOTES:**

1. TRAVERSE ADJUSTED BY THE LEAST SQUARES ADJUSTMENT METHOD.
2. AREAS DETERMINED BY COORDINATE COMPUTATIONS.
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
4. NC GRID NAD 83 (2011) EPOCH 2010.00 BASIS OF BEARING DERIVED FROM NCGS NETWORK RTK BETWEEN 01-20-2022 AND 01-21-2022 (HORIZONTAL POSITIONAL ACCURACY = 0.09') USING GEOID MODEL GEOID18. PROJECT LOCALIZED HOLDING EXISTING BOUNDARY CORNER #4 (N=611,182.26', E=1,507,193.43'), AND USING A COMBINED GRID FACTOR OF 0.9998474734. UNITS ARE US SURVEY FEET.
5. SUBJECT PROPERTY IS LOCATED IN THE FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SCALED FROM FLOOD INSURANCE RATE MAP NUMBER 3710560100K; MAP REVISED NOVEMBER 16, 2018.

**REFERENCES:**

1. ALL DEEDS AND MAPS SHOWN HEREON.
2. MAP TITLED "RECOMBINATION SURVEY OF: THE CITY OF CONCORD ALCOHOL BEVERAGE CONTROL BOARD" DATED FEBRUARY 18, 2022, BY CONCORD ENGINEERING & SURVEYING, INC.

**PLAT CERTIFICATION**

I, DAVID L. HAYWOOD, JR., CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTIONS RECORDED IN REFERENCES AS SHOWN HEREON); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION AS SHOWN HEREON; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:98,000; THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56.1600); AND THAT:

- D. THE SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION;

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 7TH DAY OF APRIL, 2022 A.D.

**PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES OR SALES.**

DAVID L. HAYWOOD, JR., PLS                      LICENSE NO. L-4822

**EASEMENT SURVEY**

PROPERTY OF: **CITY OF CONCORD**  
 NUMBER 2 TOWNSHIP, CABARRUS CD., NC  
 ADDRESS: 250 INTERNATIONAL DRIVE NW, CONCORD, NC  
 LOT X, BLOCK X, X

PLAT RECORDED IN MB. X, PG. X, DEED RECORDED IN DB. X, PG. X

FOR CLIENT: **THE CITY OF CONCORD  
ALCOHOL BEVERAGE CONTROL BOARD**

SCALE: 1 IN. = 60 FT.                      DATE: APRIL 07, 20 22



CIVIL - GEOTECHNICAL - SURVEYING  
 N.C. FIRM LICENSE NO. C-0263  
 45 SPRING STREET SW CONCORD (704) 786-5404  
 CONCORD, NC 28025 FAX (704) 786-7454  
 ACAD FILE: 220008-000 EASEMENT.DWG



RESOLUTION AUTHORIZING THE SALE OF GOVERNMENTAL PROPERTY TO A  
GOVERNMENTAL UNIT

WHEREAS, North Carolina General Statute § 160A-274 permits the City to sell real property to another governmental unit upon such terms and conditions as it deems wise; and

WHEREAS, the City of Concord acquired a various width strip of property, being a portion of the real property located at 250 International Drive NW by a deed recorded on October 31, 2000 in Deed Book 3018, at Page 249 of the Cabarrus County Registry; and

WHEREAS, a Various Width Strip of Property and Gap Property identified as a portion of 250 International Drive NW ("Property") is further described as follows:

LYING AND BEING in Township Number Two (2), City of Concord, Cabarrus County and specifically BEING a portion of a real property parcel identified as PIN No. 5601-71-3430 and being a part of Lot Number 8 as shown on map titled, "Subdivision Plat of Niblock Industrial Park" as recorded in Map Book 20, at Page 73 of the Cabarrus Registry, being labeled as "Proposed Area of PIN 5601-71-3046 to be Recombined with PIN 5601-71-3046," and is more fully described as follows:

BEGINNING at an existing #4 rebar in the right of way of International Drive (a public maintenance right of way), having a North Carolina Grid NAD 83 grid coordinate of 611,182.26', E: 1,507,193.43'; thence N 89°58'55"W 29.63' to a computed point, said point being the shared corner of City of Concord (DB. 3018 PG. 249) and the City of Concord Alcohol Beverage Control Board (DB. 10819 PG. 325); thence N 00°12'03"E 27.00' to a computed point; thence S 89°58'55"E (passing a set #5 rebar at 40.00') 345.62' to a set #5 rebar; thence S 00°11'54"W 27.00' to a computed point, said point being S 89°46'19"W 12.76' from an existing #4 rebar & witness post, a corner of White Park, LLC (DB. 5429 PG. 214, LOT #8 OF PB. 20 PG. 73); thence N 89°58'55" W 315.99' to the POINT OF BEGINNING, as shown on map titled, "BOUNDARY & TOPOGRAPHIC SURVEY OF: THE CITY OF CONCORD ALCOHOL CONTROL BOARD" by Concord Engineering and Surveying, Inc. dated February 18, 2022 and is attached as Exhibit A for further reference.

LYING AND BEING in Township Number Two (2), City of Concord, Cabarrus County and specifically BEING a portion of a real property parcel identified as PIN No. 5601-71-3430 and being a part of Lot Number 8 as shown on map titled, "Subdivision Plat of Niblock Industrial Park" as recorded in Map Book 20, at Page 73 of the Cabarrus Registry, being labeled as "POSSIBLE GAP AREA, 0.002 Acres" and is more fully described as follows:

BEGINNING at an existing #4 rebar in the right of way of International Drive (a public maintenance right of way), having a North Carolina Grid NAD 83 Coordinate of N: 611,182.26', E: 1,507,193.43'; thence S 89°58'55" E 315.99' to a computed point, said point being S 89°46'19" W 12.76' from an existing #4 rebar & witness post, a corner of White Park, LLC (DB. 5429 PG. 214, LOT #8 OF PB. 20 PG. 73); thence S 00°11'54"W 0.52' TO A #4 REBAR, SAID REBAR BEING N63°59'16"W 179.30' FROM A 1 ½" IRON PIPE & 1" WITNESS ROD; THENCE N89°53'45"W 345.62' TO A COMPUTED POINT, SAID POINT BEING THE SHARED CORNER OF CITY OF CONCORD (DB. 3018 PG. 249) AND THE CITY OF CONCORD ALCOHOL BEVERAGE CONTROL BOARD (DB. 10819 PG. 325); ; THENCE S89°58'55"E 29.63' TO THE POINT OF BEGINNING. , as shown on map titled, "Boundary & Topographic Survey of: The City of Concord Alcohol Beverage Control Board " by Concord Engineering and Surveying, Inc. dated February 18, 2022 and is attached as Exhibit A for further reference. Property is to be conveyed SUBJECT TO the reservation of all current and existing easements and easement rights located on and affecting the real property described above to the City of Concord.

The conveyance of the above-described property will be made subject to the easement right of egress by the Buyer, its successors/assigns to use the easement area as shown on "EXHIBIT B."

The Buyer will also be responsible for 30% of the cost of maintenance of the improvement located at the easement.

WHEREAS, on May 12, 2022, the City received an Offer to Purchase the Property from the City of Concord Alcohol Beverage Control Board ("Buyer") for \$71,316.00; and

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CONCORD, THAT:



1. The City Council accepts the offer described above pursuant to North Carolina General Statute § 160A-274.

2. The final sale shall include the following terms:

- a. The City will convey a various width strip of property, being a portion of the real property located at 250 International Drive NW to the Highest Bidder, as stated in the Agreement for Purchase and Sale of Real Property.
- b. The City will convey the property subject to the reservation of all current and existing easements and easement rights located on and affecting the real property described above to the City of Concord, along with any and all existing public utility easements, restrictions, rights-of-way, protective covenants, zoning laws, conditions, and any ordinance of record.
- c. The closing shall take place on or before June 30, 2022, unless otherwise agreed by the parties.

3. The City Attorney is directed to take all necessary steps to complete the. The City Manager is authorized to execute the necessary instruments to effectuate the sale of a various width strip of property, being a portion of the real property located at 250 International Drive NW in accordance with this resolution.

Adopted this 12 day of May, 2022

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

---

William "Bill" Dusch, Mayor

ATTEST:

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Kim J. Deason, City Clerk

**Bid Tabulation Summary**  
**2022-019 Coddle Creek Water Treatment Plant Lagoon Sludge Removal**

				Bionomic Services , Inc.		Merrell Brothers, Inc.	
No.	Description	Units	QTY.	Unit Price (\$)	Item Total (\$)	Unit Price (\$)	Item Total (\$)
1	Dewater Sludge	3350	TON	\$ 85.32	\$ 285,822.00	\$ 156.49	\$ 524,241.50
				<b>Estimated Base Cost</b>	\$ 285,822.00		\$ 524,241.50
				<b>10% Contingency</b>	\$ 28,582.20		\$ 52,424.15
				<b>Total Estimated Cost</b>	\$ 314,404.20		\$ 576,665.65
				Bid Bond	Yes		Yes
				Irregularities	None		None

CERTIFICATION: This is certified to be an accurate tabulation of bids received for the project.

*Emique A. Blat*  


4/29/2022



## SPECIAL WASTE SERVICE AGREEMENT NON-HAZARDOUS WASTES

Special Waste Profile Number: 5010 Y9 11255

**Generator Billing Information**

**Republic Waste Location (Company)**

Name: The City of Concord/ Coddle Creek Water Plant  
 Address: 6935 Davidson hywy  
 City: Concord  
 State: NC Zip: 28027  
 Phone: 704 920 5163 Fax: \_\_\_\_\_  
 Contact: Danny Williamson/Rick Blatt

BFI Waste Systems of North America, LLC dba  
Charlotte Motor Speedway LF  
5105 Morehead Rd  
Concord, NC 28027  
704-262-6003 John Marston

**Project:** same **County and State of Origin:** Cabarrus

Additional Information: \_\_\_\_\_

1. **Special Waste Service.** Subject to the terms and conditions contained herein, the Company and the Generator agree to be legally bound hereby, and the Company agrees to accept at its facility identified above ("Facility"), Acceptable Waste (as defined in Section 6) delivered by Generator.

2. **(A) Rates for Disposal:**

<u>Waste</u>	<u>Disposal Method</u>	<u>Disposal Rate:</u>	<u>Fees / Taxes / Misc.</u>	<u>Transportation</u>
<u>Alum sludge</u>	<u>Landfill</u>	<u>\$80.00 per ton</u>	<u>no</u>	<u>no</u>
_____	_____	_____	_____	_____

Additional Information: \_\_\_\_\_

Generator shall also be liable for all taxes, fees, or other charges imposed by federal, state, local or provincial laws and regulations.

Cannot Exceed Daily Volume of N/A Without Prior Approval of Company.

**(B) Incorporation by Reference.** In addition to Special Waste Profile(s), the following documents are incorporated by reference into this Agreement as if fully set forth herein.

- 1) Exhibit - A
- 2)

3. **Term of Agreement.** This Agreement is effective for 24 months, commencing 1/2/20 and shall automatically be renewed for a similar term thereafter unless either party shall give written notice (via certified mail) of termination to the other party at least thirty (30) days before the expiration of the then-current term.

**THE COMPANY AND THE GENERATOR, IN CONSIDERATION OF THE MUTUAL OBLIGATIONS CONTAINED HEREIN, AGREE THAT THIS IS A LEGALLY BINDING AGREEMENT WHICH IS SUBJECT TO THE TERMS AND CONDITIONS SET FORTH ON THIS PAGE AND ON THE REVERSE SIDE OF THIS DOCUMENT. IN ADDITION, THE GENERATOR IS CERTIFYING THE ATTACHED TERMS AND CONDITIONS HAVE BEEN REVIEWED AND INITIALLED AT THE BOTTOM OF THE PAGE.**

**GENERATOR**

**REPUBLIC SERVICES/COMPANY**

\_\_\_\_\_  
SIGNATURE (AUTHORIZED REPRESENTATIVE)

[Signature]  
SIGNATURE (AUTHORIZED REPRESENTATIVE)

\_\_\_\_\_  
NAME AND TITLE (PLEASE PRINT)

ROB LATOURETTE (GENERAL MGR)  
NAME AND TITLE (PLEASE PRINT)

\_\_\_\_\_  
DATE

1/20/2020  
DATE



**EXHIBIT "A"**

This document is an Exhibit to the Agreement for Professional Services between the CITY OF CONCORD and REPUBLIC SERVICES, INC. dated JANUARY 20 2020.

**Scope of Services: Disposal of approximately 3,866 tons of Alum Sludge at a cost of \$80.00 per Ton, for a total estimated cost of \$309,333.00**

**Fee for Scope of Services:**

The fee for services shall not exceed \$309,333.00 and shall be based on a time and material format, whereby fees would be invoiced by the actual tonnage deliver to the Republic Landfill at \$80.00 per Ton. Invoices shall be directed to: City of Concord Attention: **ENRIQUE A. BLAT**, Post Office Box 308, Concord, NC 28026-0308.

The budget for the scope of services is based on the following estimates:

Maximum of 3,866.00 Tons at \$80.00 per Ton for a total of \$309,333.00

RESOLUTION TO CONVEY EASEMENT  
TO THE CITY OF KANNAPOLIS

WHEREAS, North Carolina General Statutes §160A-273 authorizes the City to grant easements over, through, under, or across any city property or the right-of-way of any public street; and

WHEREAS, North Carolina General Statutes §160A-274 authorizes the City upon such terms and conditions as it deems wise, with or without consideration, exchange with, lease to, lease from, sell to, or purchase from any other governmental unit any interest in real or personal property; and

WHEREAS, the City of Concord (by the assumption of the Board of Light and Water Commissioners of the City of Concord) acquired 100-acre tract of land located in Cabarrus County in Deed Book 172, at Page 198 and a 3.44-acre tract of land located in Rowan County in Deed Book 267, at Page 89 (“Concord Property”) for the purpose of acquiring an additional water source for the City of Concord; and

WHEREAS, the City of Kannapolis (“Kannapolis”) owns a 55.32-acre parcel identified as 2888 Moose Rd, Kannapolis, Rowan County, North Carolina and further identified as Parcel ID No. 145-023 (“Kannapolis Property”); and

WHEREAS, Kannapolis has expressed the intent to redevelop the Kannapolis Property located at the end of Stadium Drive; and

WHEREAS, Kannapolis has requested street and sidewalk easements from for the benefit of the Kannapolis Property; and

WHEREAS, it has been determined that the street and sidewalk easements requested by Kannapolis from Concord are necessary for the redevelopment of the Kannapolis Property; and

NOW THEREOF, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CONCORD, THAT:

1. The City Council authorizes the conveyance of the street and sidewalk easements as described below:

Stadium Drive - Cabarrus County Property

Lying and being in Township Number Five (5), Cabarrus County and being a portion of a parcel of property labeled as Stadium Drive 3.91 Acres or 170,332.42 Square Feet as shown on the map titled, “Map 1 of 2, Stadium Drive Right of Way City of Concord” as recorded in Map Book 91, at Pages 10 of the Cabarrus County Registry.

Stadium Drive - Rowan County Property

Lying and being in Township Number Five (5), Rowan County and being a portion of a parcel of property labeled as Stadium Drive 3.91 Acres or 170,332.42 Square Feet as shown on the map titled, “Map 2 of 2 Stadium Drive Right of Way City of Concord” as recorded in Map Book 9995, at Page 9994 of the Rowan County Registry.  
The property described herein is subject to all rights-of-way, easements and restrictions of record, including the riparian rights of the Grantor to Lake Fisher.

2. The City Manager, City Clerk and City Attorney are hereby authorized to take all necessary steps and to execute the necessary documents in order to affect the conveyance of the stated street and sidewalk easements in accordance with this resolution.
3. This resolution shall be effective upon passage.

Adopted this 12<sup>th</sup> Day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

---

William "Bill" Dusch, Mayor

ATTEST:

---

Kim J. Deason, City Clerk

Prepared by and Return to Concord City Attorney, ROD Box

STATE OF NORTH CAROLINA )

P/O PINs # 5633-18-6654 & 145-005

COUNTY OF CABARRUS )

Permanent Right of Way

The undersigned Grantor, the City of Concord, a North Carolina municipal corporation. (“Grantor”), in consideration of payment to the Grantor of the sum of One Dollar, (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby grant, bargain, sell and release unto the City of Kannapolis, a North Carolina municipal corporation ("Grantee"), its successors, assigns and licenses, the right, privilege, and permanent easement to enter and re-enter, at any time, and to install, dig, build, erect, maintain, repair, rebuild, operate, and patrol one or more streets, sidewalks, public utilities, and related appurtenances over ground or underground, the premises to be affected as shown on the attached Exhibit “A” titled “Map 1 of 2, Stadium Drive Right of Way City of Concord” and “Map 2 of 2, Stadium Drive Right of Way City of Concord” both dated October 11, 2021 by Alley, Williams, Carmen, and King, Inc. and hereby being more particularly described as follows:

Stadium Drive - Cabarrus County Property

Lying and being in Township Number Five (5), Cabarrus County and being a portion of a parcel of property, labeled as Stadium Drive 3.91 Acres or 170,332.42 Square Feet as shown on the map titled, “Map 1 of 2, Stadium Drive Right of Way City of Concord” as recorded in Map Book 91, at Page 10 of the Cabarrus County Registry.

Stadium Drive - Rowan County Property

Lying and being in Township Number Five (5), Rowan County and being a portion of a parcel of property, labeled as Stadium Drive 3.91 Acres or 170,332.42 Square Feet as shown on the map titled, “Map 2 of 2 Stadium Drive Right of Way City of Concord” as recorded in Map Book 9995, at Page 9944 of the Rowan County Registry.

**This property right may be assigned by the Grantee, or its successors or assigns.**

The Grantor shall have the right to use the above-described Permanent Right of Way for purposes not inconsistent with Grantee's full enjoyment of the rights hereby granted.



IN WITNESS WHEREOF these presents have been duly executed under seal by the Grantor on this the \_\_\_\_\_ day of \_\_\_\_\_, 2022.

**GRANTOR:**

City of Concord,  
a North Carolina municipal corporation

BY: \_\_\_\_\_

Lloyd Wm. Payne, Jr. City Manager

ATTEST:

By: \_\_\_\_\_

Kim J. Deason, City Clerk

[SEAL]

STATE OF NORTH CAROLINA  
COUNTY OF CABARRUS

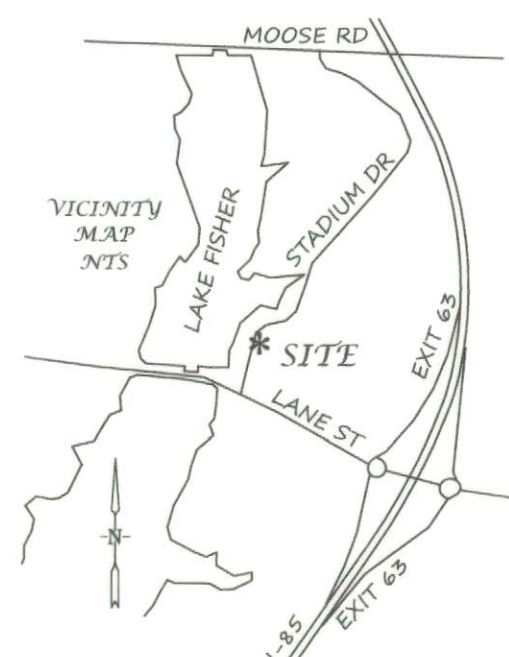
I, \_\_\_\_\_, a Notary Public of the aforesaid County and State, do hereby certify that Kim J. Deason personally appeared before me this day and acknowledged that she is the City Clerk of the City of Concord and that by authority duly given and as the act of the municipal corporation, the foregoing instrument was signed in its name by Lloyd Wm. Payne, Jr., as its City Manager, sealed with its corporate seal and attested by her as its City Clerk.

WITNESS my hand and notarial seal, this the \_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

[SEAL]



- LEGEND**
- NIR = New Iron Rebar (1/2" Set)
  - EIP = Existing Iron Pipe, as described (FOUND)
  - EIR = Existing Iron Rod, as described (FOUND)
  - △ = Computed Point / No Physical Monumentation
  - = Proposed Right-of-way
  - - - = Property Line (Surveyed)
  - - - = Property Line (NOT Surveyed)
  - - - = Existing Right of way
  - - - = Existing Fence line
  - - - = Overhead Utility line
  - = Utility pole
  - NTS = Not to Scale
  - PL = Property line
  - MB PG = Map Book & Page
  - DB PG = Deed Book & Page

CITY OF CONCORD  
(FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
DB 172 PG 198  
STADIUM DRIVE ACCESS EASEMENT  
DB 10162 PG 259, MB 62 PG 14  
PIN # 5633-18-6654  
NUMBER 5 TOWNSHIP  
CABARRUS COUNTY  
ZONED: LC

- NOTES:**
- THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL RECORDED OR UNRECORDED EASEMENTS, RIGHTS-OF-WAY, OR RESTRICTIVE COVENANTS, OTHER THAN SHOWN.
  - AREA COMPUTED BY COORDINATED METHOD.
  - A PORTION OF THIS PROPERTY DOES LIE IN A SPECIAL FLOOD HAZARD ZONE. REFERENCE FEMA MAP# 3710563400L, NOVEMBER 16, 2018.
  - NO NCGS MONUMENTS WERE FOUND WITHIN 2,000' OF THIS PROPERTY.

LAKE FISHER

TOTAL AREA IN R/W  
170332.42 SF - 3.91 AC

THE CHARLOTTE MECKLENBURG HOSPITAL AUTHORITY  
DB 8278 PG 193  
PIN # 5634-30-4981

EXISTING FEATURES BY AVIOIMAGE MAPPING SERVICES, INC. DOWNLOADED FROM NORSTAR LAND SURVEYING INC. (57.784 AC. MOOSE RD 9-1-21)

**LINE TABLE**

LINE	BEARING	DISTANCE
L1	N 11°16'58" E	40.00'
L2	N 21°45'30" E	110.00'
L3	S 78°43'02" E	30.26'
L4	N 84°52'39" E	33.52'
L5	N 05°07'21" W	10.00'
L12	S 84°52'39" W	33.52'
L13	S 89°15'13" W	27.53'
L14	N 02°48'54" E	53.99'

**CURVE TABLE**

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	275.00'	353.36'	329.55'	N 48°04'00" E
C8	185.00'	110.81'	109.16'	S 67°43'04" W
C9	1959.86'	159.24'	159.20'	N 65°31'55" W
C10	1959.86'	137.68'	137.65'	N 69°52'20" W

**CERTIFICATE OF SURVEY AND ACCURACY**

I, MATTHEW M. CUNNINGHAM, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE BY ME OR UNDER MY SUPERVISION BY DEEDS REFERENCED ON THE FACE OF THIS PLAT; THAT DASHED LINES INDICATE LINES NOT SURVEYED; THAT THE RATIO OF PRECISION AS CALCULATED DOES EXCEED 1:10,000+; THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH GS. 47-30 AS AMENDED.

GS. 47-30 (F)(11-D) THAT THE SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXEMPTION OF EXCEPTION TO THE DEFINITION OF SUBDIVISION.

I, ALSO CERTIFY, A GPS SURVEY WAS MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

- CLASS OF SURVEY: A
- TYPE OF FIELD PROCEDURE: STATIC
- POSITIONAL ACCURACY: < 0.10 US SURVEY FEET
- DATE OF SURVEY: OCTOBER 12, 2021
- DATUM: NAD 83(2011) EPOCH: 2010
- POSITION DETERMINED BY OPUS: PUBLISHED/FIXED CONTROL USED: LEXINGTON CORS (NCLE), SALISBURY CORS (NCSA), MOORESVILLE CORS (NCMO).
- GEOID MODEL: GEOID 18
- COMBINED GRID FACTORY: 0.99985310
- UNITS: U.S. SURVEY FEET

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 16th DAY OF FEBRUARY, 2022.

*Matthew M. Cunningham*  
MATTHEW M. CUNNINGHAM  
PROFESSIONAL LAND SURVEYOR L-4393



**CERTIFICATE OF OWNERSHIP**

I HEREBY CERTIFY THAT THE CITY OF CONCORD IS THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON LOCATED IN CABARRUS AND ROWAN COUNTIES.

*Lloyd Payne, Jr.* Feb. 17, 2022  
LLOYD PAYNE, JR. CITY MANAGER  
35 CABARRUS AVE. W  
CONCORD, NC 28025

**CERTIFICATE OF FINAL PLAT APPROVAL**  
CITY OF KANNAPOLIS

IT IS HEREBY CERTIFIED THAT THIS PLAT IS IN COMPLIANCE WITH THE SUBDIVISION REGULATIONS OF THE CITY OF KANNAPOLIS, AND THEREFORE THIS PLAT HAS BEEN APPROVED, SUBJECT TO ITS BEING RECORDED WITH CABARRUS COUNTY AND ROWAN COUNTY REGISTER OF DEEDS WITHIN 30 DAYS OF THE DATE BELOW.

*Greg Belk*  
DATE: 2/16/22 PLANNING DIRECTOR

**REVIEW OFFICER'S CERTIFICATE:**  
STATE OF NORTH CAROLINA, COUNTY OF CABARRUS

I, Greg Belk, REVIEW OFFICER OF CABARRUS COUNTY CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

*Greg Belk* 2/17/2022  
REVIEW OFFICER DATE

**REVIEW OFFICER'S CERTIFICATE:**  
STATE OF NORTH CAROLINA, COUNTY OF ROWAN

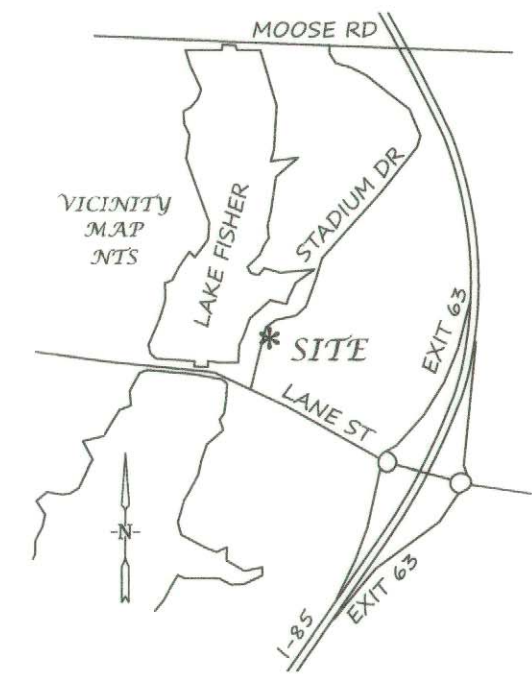
I, Share Stewart, REVIEW OFFICER OF ROWAN COUNTY CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

*Share Stewart* 2/17/22  
REVIEW OFFICER DATE

Map 1 of 2  
Stadium Drive Right of way  
City of Concord  
(formerly Board of Light & Water)  
Part of Pin# 5633-18-6654, D'B 8531 PG 325, Cabarrus Co.  
& Part of Parcel No. 145-005, DB 267 PG 89, Rowan Co.  
Survey for  
The City of Kannapolis  
401 Laureate Way  
Kannapolis, NC 28081  
704-920-4200  
Twp. No. 5, Cabarrus Co. & China Grove Twp, Rowan Co. Kannapolis, NC  
Survey Date: October 11, 2021  
Plat Prepared: February 16, 2022



**awck** alley, williams, carmen, & king, inc.  
CONSULTING ENGINEERS  
FIRM LICENSE No. F-0203  
120 SOUTH MAIN STREET KANNAPOLIS, NC 28082 P.O. BOX 1248 704/938-1515



- LEGEND**
- NIR = New Iron Rebar (1/2" Set)
  - EIP = Existing Iron Pipe, as described (FOUND)
  - EIR = Existing Iron Rod, as described (FOUND)
  - △ = Computed Point / No Physical Monumentation
  - = Proposed Right-of-way
  - - - = Property Line (Surveyed)
  - - - = Property Line (NOT Surveyed)
  - - - = Existing Right of way
  - = Overhead Utility line
  - = Utility pole
  - NTS = Not to Scale
  - - - = Existing Fence line
  - PL = Property line
  - MB PG = Map Book & Page
  - DB PG = Deed Book & Page

NC GRID NAD 83 (2011)  
GROUND COORD.  
N: 641981.313'  
E: 1533410.026'

NC GRID COORDINATE  
NAD 83 (2011) BY  
STATIC GPS POINT  
MAG NAIL (SET)  
N: 642952.963'  
E: 1534383.175'  
ELEV: 714.59 NAVD 88

CITY OF KANNAPOLIS  
DB 1199 PG 457  
PART OF REF: PLAT 469  
ALEX YOST FARM  
PARCEL ID # 145 023  
ROWAN COUNTY  
ZONED: O1

CITY OF CONCORD  
(FORMERLY THE BOARD OF LIGHT &  
WATER COMMISSIONERS)  
DB 267 PG 90 (THIRD TRACT)  
PARCEL ID # 145 005  
CHINA GROVE TOWNSHIP  
ROWAN COUNTY  
ZONED: O1

CITY OF CONCORD  
(FORMERLY THE BOARD OF  
LIGHT & WATER  
COMMISSIONERS)  
DB 267 PG 89  
PARCEL ID # 145 005  
STADIUM DRIVE ACCESS  
EASEMENT DB 1203 PG 492,  
MB 9995 PG 7325  
CHINA GROVE TOWNSHIP  
ROWAN COUNTY  
ZONED: O1

CITY OF CONCORD  
(FORMERLY THE BOARD OF LIGHT &  
WATER COMMISSIONERS)  
DB 172 PG 198  
STADIUM DRIVE ACCESS EASEMENT  
DB 10162 PG 259, MB 62 PG 14  
PIN # 5633-18-6654  
NUMBER 5 TOWNSHIP  
CABARRUS COUNTY  
ZONED: LC

CITY OF CONCORD  
(FORMERLY THE BOARD OF LIGHT &  
WATER COMMISSIONERS)  
DB 172 PG 198  
STADIUM DRIVE ACCESS EASEMENT  
DB 10162 PG 259, MB 62 PG 14  
PIN # 5633-18-6654  
NUMBER 5 TOWNSHIP  
CABARRUS COUNTY  
ZONED: LC

BASIS OF BEARING  
NC GRID NAD 83 (2011)

LAKE FISHER

APPROXIMATE LOCATION OF COUNTY LINE

ROWAN COUNTY  
CABARRUS COUNTY

STADIUM DRIVE  
R/W VARIES

**CERTIFICATE OF SURVEY AND ACCURACY**

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS  
16th DAY OF FEBRUARY, 2022.

*Matthew M. Cunningham*  
MATTHEW M. CUNNINGHAM  
PROFESSIONAL LAND SURVEYOR L-4393



**LINE TABLE**

LINE	BEARING	DISTANCE
L5	N 05°07'21" W	10.00'
L6	N 15°01'34" E	96.20'
L7	N 74°58'26" W	40.00'
L8	N 15°01'34" E	101.51'
L9	N 17°38'04" E	25.60'
L10	S 17°38'04" W	25.60'
L11	N 74°58'26" W	50.00'

**CURVE TABLE**

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C2	195.00'	237.74'	223.29'	N 49°57'11" E
C3	2125.51'	46.76'	46.76'	N 36°19'49" E
C4	365.00'	70.68'	70.57'	N 23°10'55" E
C5	175.00'	83.07'	82.30'	S 31°14'02" W
C6	1935.51'	88.11'	88.10'	S 16°19'49" W
C7	295.00'	359.64'	337.78'	S 49°57'06" W

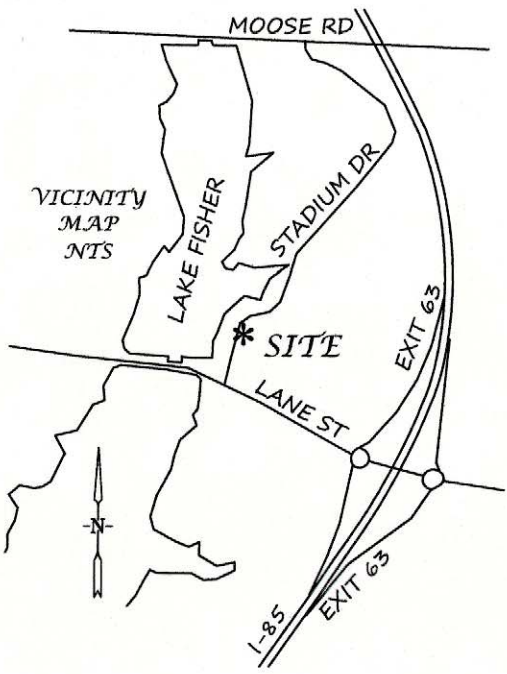
MATCHLINE SEE SHEET 1 OF 2

Map 2 of 2  
**Stadium Drive Right of way**  
City of Concord  
(formerly Board of Light & Water)  
Part of Pin# 5633-18-6654, DB 8531 PG 325, Cabarrus Co.  
& Part of Parcel No. 145-005, DB 267 PG 89, Rowan Co.

Survey for  
**The City of Kannapolis**  
401 Laureate Way  
Kannapolis, NC 28081  
704-920-4200  
Twp. No. 5, Cabarrus Co. &  
China Grove Twp, Rowan Co. Kannapolis, NC  
Survey Date: October 11, 2021  
Plat Prepared: February 16, 2022

Scale: 1" = 50'  
Job No. 21501-03

**alloy, williams, carmen, & king, inc.**  
**CONSULTING ENGINEERS**  
FIRM LICENSE No. F-0203  
120 SOUTH MAIN STREET P.O. BOX 1248  
KANNAPOLIS, NC 28082 704/938-1515



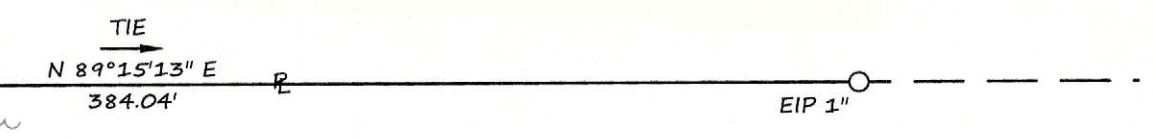
- LEGEND**
- NIR = New Iron Rebar (1/2" Set)
  - EIP = Existing Iron Pipe, as described (FOUND)
  - EIR = Existing Iron Rod, as described (FOUND)
  - △ = Computed Point / No Physical Monumentation
  - = Proposed Right-of-way
  - = Property Line (Surveyed)
  - - - = Property Line (NOT Surveyed)
  - - - = Existing Right of way
  - - - = Existing Fence line
  - - - = Overhead Utility line
  - = Utility pole
  - NTS = Not to Scale
  - PL = Property line
  - MB PG = Map Book & Page
  - DB PG = Deed Book & Page

CITY OF CONCORD  
(FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
DB 172 PG 198  
STADIUM DRIVE ACCESS EASEMENT  
DB 10162 PG 259, MB 62 PG 14  
PIN # 5633-18-6654  
NUMBER 5 TOWNSHIP  
CABARRUS COUNTY  
ZONED: LC

- NOTES:**
- THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL RECORDED OR UNRECORDED EASEMENTS, RIGHTS-OF-WAY, OR RESTRICTIVE COVENANTS, OTHER THAN SHOWN.
  - AREA COMPUTED BY COORDINATED METHOD.
  - A PORTION OF THIS PROPERTY DOES LIE IN A SPECIAL FLOOD HAZARD ZONE. REFERENCE FEMA MAP# 3710563400L, NOVEMBER 16, 2018.
  - NO NCQS MONUMENTS WERE FOUND WITHIN 2,000' OF THIS PROPERTY.

ROWAN COUNTY, NORTH CAROLINA  
Filed for registration at 2:00:04 o'clock P M  
Feb 17, 2022 and registered  
In Map Book 9995 Page 9944

J.E. Brindle, REGISTER OF DEEDS  
BY: Selma Comarchie ASST/DEPUTY



**CERTIFICATE OF SURVEY AND ACCURACY**

I, MATTHEW M. CUNNINGHAM, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE BY ME OR UNDER MY SUPERVISION BY DEEDS REFERENCED ON THE FACE OF THIS PLAT; THAT DASHED LINES INDICATE LINES NOT SURVEYED; THAT THE RATIO OF PRECISION AS CALCULATED DOES EXCEED 1:10,000+; THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH GS. 47-30 AS AMENDED.

GS. 47-30 (F)(11-D) THAT THE SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXEMPTION OF EXCEPTION TO THE DEFINITION OF SUBDIVISION.

I, ALSO CERTIFY, A GPS SURVEY WAS MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

- CLASS OF SURVEY: A
- TYPE OF FIELD PROCEDURE: STATIC
- POSITIONAL ACCURACY: < 0.10 US SURVEY FEET
- DATE OF SURVEY: OCTOBER 12, 2021
- DATUM: NAD 83(2011) EPOCH: 2010
- POSITION DETERMINED BY OPUS: PUBLISHED/FIXED CONTROL USED: LEXINGTON CORS (NCLC), SALISBURY CORS (NCSA), MOORESVILLE CORS (NCMO).
- GEOID MODEL: GEOID 18
- COMBINED GRID FACTORY: 0.99985310
- UNITS: U.S. SURVEY FEET

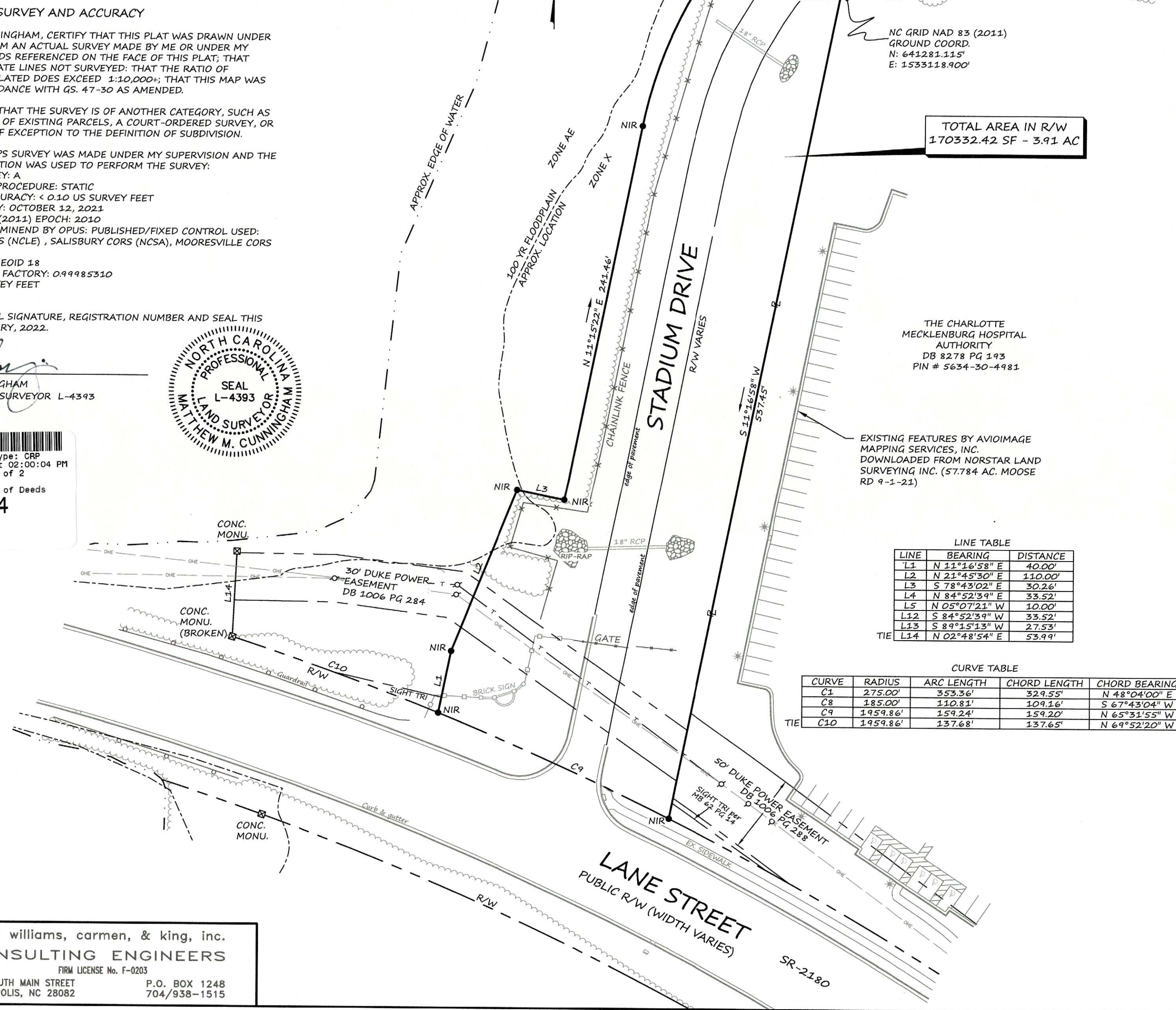
WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 16th DAY OF FEBRUARY, 2022.

*Matthew M. Cunningham*  
MATTHEW M. CUNNINGHAM  
PROFESSIONAL LAND SURVEYOR L-4393



Doc ID: 014953360002 Type: CRP  
Recorded: 02/17/2022 at 02:00:04 PM  
Fee Amt: \$42.00 Page 1 of 2  
Rowan, NC  
J. E. Brindle Register of Deeds  
BK 9995 Pg 9944

**LAKE FISHER**



TOTAL AREA IN R/W  
170332.42 SF - 3.91 AC

THE CHARLOTTE MECKLENBURG HOSPITAL AUTHORITY  
DB 8278 PG 193  
PIN # 5634-30-4981

EXISTING FEATURES BY AVIOIMAGE MAPPING SERVICES, INC. DOWNLOADED FROM NORSTAR LAND SURVEYING INC. (57.784 AC. MOOSE RD 9-1-21)

**LINE TABLE**

LINE	BEARING	DISTANCE
L1	N 11°16'58" E	40.00'
L2	N 21°45'30" E	110.00'
L3	S 78°43'02" E	30.24'
L4	N 84°52'39" E	33.52'
L5	N 05°07'21" W	10.00'
L12	S 84°52'39" W	33.52'
L13	S 89°15'13" W	27.53'
L14	N 02°48'54" E	53.99'

**CURVE TABLE**

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	275.00'	353.36'	329.55'	N 48°04'00" E
C8	185.00'	110.81'	109.16'	S 67°43'04" W
C9	1959.86'	159.24'	159.20'	N 65°31'55" W
C10	1959.86'	137.68'	137.65'	N 69°52'20" W

**CERTIFICATE OF OWNERSHIP**

I HEREBY CERTIFY THAT THE CITY OF CONCORD IS THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON LOCATED IN CABARRUS AND ROWAN COUNTIES.

*Lloyd Payne, Jr.* Feb 22, 2022  
LLOYD PAYNE, JR. CITY MANAGER  
35 CABARRUS AVE. W  
CONCORD, NC 28025

**CERTIFICATE OF FINAL PLAT APPROVAL**  
CITY OF KANNAPOLIS

IT IS HEREBY CERTIFIED THAT THIS PLAT IS IN COMPLIANCE WITH THE SUBDIVISION REGULATIONS OF THE CITY OF KANNAPOLIS, AND THEREFORE THIS PLAT HAS BEEN APPROVED, SUBJECT TO ITS BEING RECORDED WITH CABARRUS COUNTY AND ROWAN COUNTY REGISTER OF DEEDS WITHIN 30 DAYS OF THE DATE BELOW.

*Shane Steyer* 2/16/22  
DATE PLANNING DIRECTOR

**REVIEW OFFICER'S CERTIFICATE:**  
STATE OF NORTH CAROLINA, COUNTY OF CABARRUS

I, *Greg Beck*, REVIEW OFFICER OF CABARRUS COUNTY CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

*Greg Beck* GDB 2/17/2022  
REVIEW OFFICER DATE

**REVIEW OFFICER'S CERTIFICATE:**  
STATE OF NORTH CAROLINA, COUNTY OF ROWAN

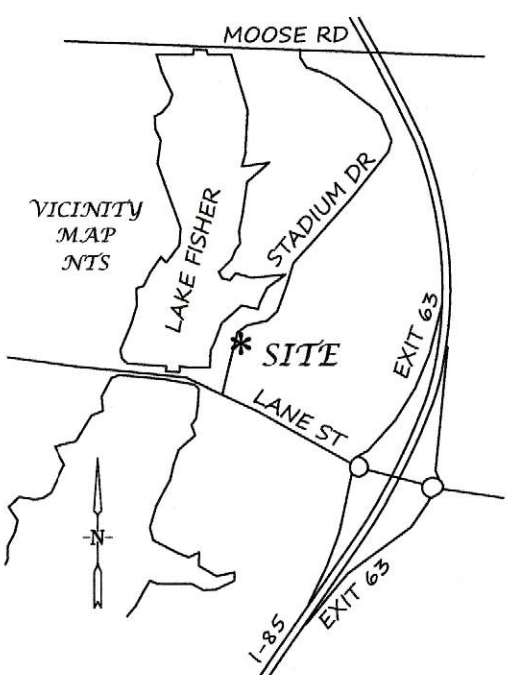
I, *Shane Steyer*, REVIEW OFFICER OF ROWAN COUNTY CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

*Shane Steyer* 2/17/22  
REVIEW OFFICER DATE

Map 1 of 2  
**Stadium Drive Right of way**  
City of Concord  
(formerly Board of Light & Water)  
Part of Pin# 5633-18-6654, DB 8531 PG 325, Cabarrus Co.  
& Part of Parcel No. 145-005, DB 267 PG 89, Rowan Co.  
Survey for  
**The City of Kannapolis**  
401 Laureate Way  
Kannapolis, NC 28081  
704-920-4200  
Twp. No. 5, Cabarrus Co. & China Grove Twp, Rowan Co. Kannapolis, NC  
Survey Date: October 11, 2021  
Plat Prepared: February 16, 2022

Scale: 1" = 50' Job No. 21501-03

**awck** alley, williams, carmen, & king, inc.  
CONSULTING ENGINEERS  
FIRM LICENSE No. F-0203  
120 SOUTH MAIN STREET P.O. BOX 1248  
KANNAPOLIS, NC 28082 704/938-1515



- LEGEND**
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Doc ID: 014933360002 Type: CRP  
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 Fee Amt: \$42.00 Page 1 of 2  
 Rowan, NC  
 J. E. Brindle Register of Deeds  
**9995 PG 9944**

NC GRID NAD 83 (2011) BY STATIC GPS POINT  
 MAG NAIL (SET)  
 N: 642952.963'  
 E: 1534383.175'  
 ELEV: 714.59 NAVD 88

NC GRID NAD 83 (2011) GROUND COORD.  
 N: 641981.313'  
 E: 1533410.026'

CITY OF KANNAPOLIS  
 DB 1199 PG 457  
 PART OF REF. PLAT 469  
 ALEX YOST FARM  
 PARCEL ID # 145 023  
 ROWAN COUNTY  
 ZONED: O1

CITY OF CONCORD  
 (FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
 DB 267 PG 89  
 PARCEL ID # 145 005  
 STADIUM DRIVE ACCESS EASEMENT DB 1203 PG 492,  
 MB 9995 PG 7325  
 CHINA GROVE TOWNSHIP  
 ROWAN COUNTY  
 ZONED: O1

CITY OF CONCORD  
 (FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
 DB 267 PG 90 (THIRD TRACT)  
 PARCEL ID # 145 005  
 CHINA GROVE TOWNSHIP  
 ROWAN COUNTY  
 ZONED: O1

CITY OF CONCORD  
 (FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
 DB 172 PG 198  
 STADIUM DRIVE ACCESS EASEMENT  
 DB 10162 PG 259, MB 62 PG 14  
 PIN # 5633-18-6654  
 NUMBER 5 TOWNSHIP  
 CABARRUS COUNTY  
 ZONED: LC

CITY OF CONCORD  
 (FORMERLY THE BOARD OF LIGHT & WATER COMMISSIONERS)  
 DB 172 PG 198  
 STADIUM DRIVE ACCESS EASEMENT  
 DB 10162 PG 259, MB 62 PG 14  
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 CABARRUS COUNTY  
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LAKE FISHER

STADIUM DRIVE  
 R/W VARIES

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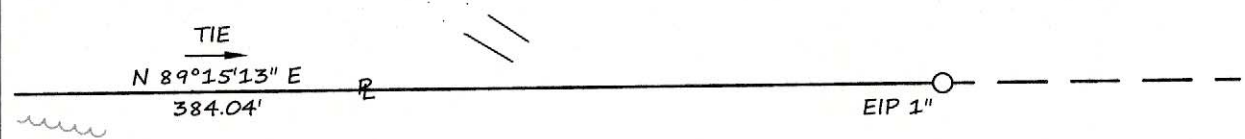
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 MATTHEW M. CUNNINGHAM  
 PROFESSIONAL LAND SURVEYOR L-4393



MATCHLINE SEE SHEET 1 OF 2



**Map 2 of 2**  
**Stadium Drive Right of way**  
 City of Concord  
 (formerly Board of Light & Water)  
 Part of Pin# 5633-18-6654, DB 8531 PG 325, Cabarrus Co.  
 & Part of Parcel No. 145-005, DB 267 PG 89, Rowan Co.  
 Survey for  
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 704-920-4200  
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**CONSULTING ENGINEERS**  
 FIRM LICENSE No. F-0203  
 120 SOUTH MAIN STREET P.O. BOX 1248  
 KANNAPOLIS, NC 28082 704/938-1515

RESOLUTION  
CITY CLERK SIGNATURE AUTHORITY

WHEREAS, the General Statutes allow the Governing Board authority to authorize the Deputy City Clerk to perform certain City Clerk duties if designated; and

WHEREAS, N.C.G.S. 160A-171 provides there shall be a city clerk who shall give notice of meetings of the council, keep a journal of the proceedings of the council, be the custodian of all city records, and shall perform any other duties that may be required by law or the council.; and

WHEREAS, N.C.G.S. 160A-172 provides that the council may provide for a deputy city clerk who shall have full authority to exercise and perform any of the powers and duties of the city clerk that may be specified by the council.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Concord, North Carolina, does hereby appoint:

1. The City Manager to act as the Deputy City Clerk in the absence of the City Clerk
2. Any Assistant City Manager, to act as the Deputy City Clerk in the absence of the City Clerk and the City Manager.
3. The acting Deputy City Clerk shall have the authority to sign documents and administer the City Seal on behalf of the City Clerk in his/her absence.
2. This Resolution shall become effective immediately upon adoption.

Adopted this 12th day of May 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST:

\_\_\_\_\_  
Kim Deason, City Clerk

# Title VI Program Plan

**Concord Kannapolis Area Transit (Rider)**

June 1, 2022 – May 31, 2025

**L.J. Weslowski**

Transit Director

45 Transit Court, Northwest

Concord, NC 28025



Concord Kannapolis Area Transit

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This document is submitted to the Federal Transit Administration in 2022 as an update to the Rider Transit Title VI Program Plan of 2019. This Plan was developed according to the October 1, 2012 FTA C 4702.1B Title VI Requirements and Guidelines for Federal Transit Administration Recipients.

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(As prescribed by FTA C 4702.1B- Appendix A)

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Page 11—Language Assistance Plan

Page 16—Membership of Non-Elected Committees and Councils

Page 16—Monitoring of Sub-Recipients

Page 16—Title VI Facility Equity Analysis Page 17—Concord Kannapolis Transit Commission  
Meeting Minutes

### **Requirements of Transit Providers (Chapter IV)**

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Page 19—Vehicle Load Standards

Page 19—Vehicle Headway Standards

Page 20—On-Time Performance Standards

Page 20—Service Availability Standards

Page 20—Service Policies

Page 20—Transit Amenities Policy

Page 20—Vehicle Assignment Policy

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Page 36— Rider Transit Language Assistance Sheet

## **General Requirements (Chapter III)**

### **Title VI Notice to the Public**

Notification to customers of Title VI benefits and protection is available at [ckrider.com](http://ckrider.com) and has been posted on all transit vehicles. This information has been translated to Spanish and made available in those locations as well.

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance. Specifically, Title VI provides that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” (42 U.S. Code Section 2000d).

The Federal Transit Administration works to ensure non-discriminatory transportation in support of our mission to enhance the social and economic quality of life for all Americans. The FTA Office of Civil Rights is responsible for civil rights compliance and monitoring to ensure non-discriminatory provision of transit services.

For more information, go to: <https://www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/civil-rightsada>

### **Rider Transit Policy Statement of the Civil Rights Act of 1964**

Rider Transit is committed to ensuring that no person is excluded from participation in or denied the benefits of its transit services on the basis of race, color, or national origin, as protected by Title VI of the Civil Rights Act of 1964.

If you believe you have been subjected to discrimination under Title VI, you may file a written complaint with the Rider Transit System Office at 45 Transit Court, Northwest, Concord, NC 28025; or call Rider Customer Care at 704.920.7433; or by e-mail to [weslowlj@concordnc.gov](mailto:weslowlj@concordnc.gov).

### **How to File a Title VI Complaint**

You may file a signed, written complaint ***not later than 180 days after*** the alleged discrimination. The complaint should include the following information:

- Your name, address, and contact information (telephone number or e-mail address);
- How, why, when, and where you believe you were discriminated against. (Include the location and names and contact information of any witnesses. If the alleged incident occurred on the bus, give date, time of day, and bus number.);
- Your signature.

## **Rider cumple con el Título VI**

El Título VI de la Ley de Derechos Civiles de 1964 prohíbe la discriminación en base a raza, color o nacionalidad en los programas y actividades que reciben asistencia financiera federal. Específicamente, el Título VI sostiene que “ninguna persona en los Estados Unidos debe, en base a raza, color o nacionalidad, ser excluida de participar, negársele los beneficios de o ser sujeto de discriminación en cualquier programa o actividad que reciba asistencia financiera federal.” (42 U.S.C. Sección 2000d).

La Administración Federal de Transporte (Federal Transit Administración, FTA) trabaja para asegurar un transporte sin discriminación en apoyo de nuestra misión de ampliar la calidad de vida social y económica para todos los estadounidenses. La Oficina de Derechos Civiles de la FTA es responsable de la supervisión y el cumplimiento de los derechos civiles para asegurar la provisión sin discriminación de los servicios de transporte.

Para obtener más información, visite: <https://www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/civil-rightsada>

## **Declaración de políticas de Rider de la Ley de Derechos Civiles de 1964**

Rider está comprometido con asegurar que ninguna persona sea excluida de participar o se le nieguen los beneficios de sus servicios de transporte en base a raza, color o nacionalidad, tal como lo protegé el Título VI de la Ley de Derechos Civiles de 1964.

Si piensa que ha sido sujeto de discriminación según el Título VI, puede presentar una queja por escrito en la Oficina del Sistema de Transporte Rider en 3600 South Ridge Avenue, Concord, NC 28025; o llamando a Rider Customer Care al 704.920. 7433; o por correo electrónico a [weslowlj@concordnc.gov](mailto:weslowlj@concordnc.gov).

## **Cómo presentar una queja del Título VI**

Puede presentar una queja por escrito firmada hasta 180 días después de la alegada discriminación. La queja debe incluir la siguiente información:

- Su nombre, dirección y forma de contactarlo (número telefónico o dirección de correo electrónico);
- Cómo, por qué, cuándo y dónde considera usted que fue discriminado(a). (Incluya la ubicación y los nombres e información de contacto de cualquier testigo. Si el alegado incidente ocurrió en el autobús, brinde la fecha, hora del día y el número del autobús.);
- Debe firmar la carta de queja.

## **Title VI Complaint Procedures**

### **Rider Transit Title VI Policy Statement**

Rider Transit is committed to ensuring that no person is excluded from participation in or denied the benefits of its transit services on the basis of race, color or national origin, as protected by Title VI of the Civil Rights Act of 1964.

Toward this end, Rider Transit's objective is to:

- Ensure that the level and quality of transportation service is provided without regard to race, color, or national origin;
- Identify and address, as appropriate, disproportionately high and adverse human health and environmental effects, including social and economic effects of programs and activities on minority populations and low-income populations;
- Promote the full and fair participation of all affected populations in transportation decision making;
- Prevent the denial, reduction, or delay in benefits related to programs and activities that benefit minority populations or low-income populations;
- Ensure meaningful access to programs and activities by persons with limited English proficiency.

### **Complaint Management**

#### **Applicability**

The complaint procedures apply to the beneficiaries of Rider Transit programs and activities. Beneficiaries may include but are not limited to the public, contractors, sub-contractors, consultants, employees, and other sub-recipients of federal and state funds.

#### **Eligibility**

If any individual, group of individuals, or entity believes that they or any other program beneficiaries have been subjected to discrimination prohibited by the Title VI nondiscrimination provision, they may exercise the right to file a complaint with Rider Transit. Every effort will be made to resolve complaints at the agency, recipient, and/or contractor level.

#### **Time Limitation on Filing Complaints**

Title VI complaints may be filed with:

- Rider Transit
- The City of Concord
- North Carolina Department of Transportation
- Federal Transit Administration
- Federal Highway Administration

- U.S. Department of Transportation

Complaints must be filed ***not later than 180 days after:***

- The date of the alleged act of discrimination; or
- The date the person became aware of the alleged discrimination; or
- Where there has been a continuing course of discriminatory conduct, the date on which the conduct was discontinued.

Complaints must be in writing and must be signed by the complainant and/or the complainant's representative. The complaint must set forth as fully as possible the facts and circumstances surrounding the claimed discrimination. A Title VI complaint form is available on the Concord Kannapolis Area Transit (Rider) website at <https://ckrider.com/about/#civil-rights-act>, and during normal business hours at the Rider Transit Center:

- Rider Transit Center, 45 Transit Court, Northwest, Concord, NC 28025

### **Submitting Complaints**

All complaints shall be accepted— written or verbal. Should a complainant present allegations of Title VI discrimination verbally and refuse to reduce the complaint to writing, the Rider Transit Customer Service Agent or the Transit Director will reduce the elements of the complaint to written form. The complainant will be required to read the staff-prepared complaint and sign and date the transcript of the verbal complaint. Refusal to sign the complaint will provide basis for administrative closure of the complaint. No unsigned, undated complaint will be considered. Complaint information shall minimally include the following items:

- Name, address, and phone number of the complainant;
- Name and location of the city entity delivering the service;
- A description of the incident that led the complainant to feel discrimination occurred;
- The basis of the complaint (race, color, or national origin) must be stated;
- Names, addresses, and phone numbers of other persons who may have knowledge of the alleged discrimination;
- The date or dates on which the alleged discrimination occurred.

The Title VI Complaint Form (see Appendix) may be used to submit the complaint information, but its use is not required. If the Complaint Form is not used, the Rider Transit Director may request that the complainant provide any additional details that may be included on the Complaint Form to ensure information needs are satisfied. Rider Transit shall respond to, record, investigate, and maintain records of all complaints.

### **Complaint Processing**

When a complaint is received, the Rider Transit Director will assign a case number and

construct a case file. The Rider Transit Director will review the complaint information and prepare a letter to the complainant acknowledging the complaint (requesting additional information if necessary). The complaint will be investigated by the Rider Transit Director. Interviews with complainant, other persons with personal knowledge of the allegations, and affected city entities will be conducted. Parties may be accompanied by other persons of their choosing during any interview session.

The Rider Transit Director will prepare a report of the finding of fact, a recommended action, and submit the report to the City Diversity, Equity and Inclusion Coordinator and the City Attorney for consideration. They will both review the case and render a finding that the alleged discrimination is either substantiated or not substantiated. This finding will be submitted to the Rider Transit Director in writing, and all case materials will be returned to the Rider Transit Director, who will then advise the complainant by certified mail of the findings of the City Attorney and the actions to follow. All complaints will be handled within 60 days of their filing with the Rider Transit Director. In the event a complaint is filed against Rider Transit, the City or a City department—and not an individual— the Rider Transit Director will close the complaint case and forward the complaint information to the appropriate state agency.

### **Public Participation Plan**

This section lays the foundation for public involvement in planning for City of Concord Capital Construction projects. Public participation is encouraged throughout the project and will be incorporated into the decision-making process. Public involvement is critical to the planning process and serves to inform the public as well as solicit public response regarding the community’s needs, values, and evaluations of proposed solutions. There may be many different types of solutions, each having advantages and disadvantages. These alternative solutions can be discussed with the public to receive input and ultimately reach a solution that will best meet the City’s needs.

### **Situation Analysis**

The City will carefully identify the needs and interests of the constituency it serves focusing on human health and safety, protection of property values, the economic vitality of the area, and environmental considerations in the process of identifying, prioritizing, designing, and implementing capital construction projects.

### **Public Involvement Objectives**

- To create an open and visible decision-making process in which stakeholders have equal access and input;
- To provide a mechanism by which stakeholders are informed and have an understanding of the process, issues, and possible solutions from the perspectives of various interests;
- To incorporate public comments throughout the decision-making process.

## **Public Involvement Tools and Tactics**

The following provides a partial list of community outreach and media relations tools and tactics that may be used to disseminate information about the program and provide an opportunity to solicit and incorporate public input throughout the process. These tools may be used singly or in combination, as each situation merits.

### Community Outreach and Media Relations Tools

- Broadcast coverage
- Calendar releases
- Community presentations
- Fact sheets
- News releases
- Newspaper articles
- Public meeting comment cards
- Public meeting notice fliers
- Public meetings
- Public service announcements
- Website

### Example of Process

- Public notification
- Public meeting notice advertisements
- Public meetings
- Notice on web site
- Media coverage (news releases, calendar releases, articles, radio PSAs, etc.)
- Solicitation of comments from stakeholders
- Comment cards
- Website
- Questionnaires/surveys
- Incorporate public comments and respond to inquiries

As of Rider Transit's 2016 Title VI Program submission, public input sessions were hosted prior to the launch of the CCX multi-county service connecting Cabarrus County with Mecklenburg County's Lynx light rail system. Public input sessions were also hosted for the Cabarrus County Long Range Public Transit Plan. These sessions occurred in March 2018. Flyers were posted on buses and in the Transit Center, and posts were made to [ckrider.com](http://ckrider.com), social media, and newspapers (including *La Noticia*, the local Spanish language newspaper). Emails were sent out two weeks in advance of the meetings per Riders Transit's Policy Manual, in both English and Spanish, in order to make the forums known to the public. Electronic Fare Collection posters and flyers were posted to social media and placed in the Rider Transit Center



and on Fixed Route vehicles in English and in Spanish. The 2021 design of [www.ckrider.com](http://www.ckrider.com) is translatable into over 75 languages including Spanish. Voiance Translation service is available for video (by tablet) and phone translation for all meetings, phone calls, or customer service interactions.

### **Language Assistance Plan**

The intent of this plan is to ensure that where substantial numbers of residents of the cities of Concord and Kannapolis exist, who do not speak or read English proficiently, these individuals have access to the planning process and published information, and that public notification is provided in other languages. The production of multilingual publications and documents and/or interpretation at meetings/events will be provided to the degree that funding permits based on current laws and regulations.

### **Background**

Individuals with Limited English Proficiency (LEP) are those who do not speak English as their primary language AND who have a limited ability to read, speak, write or understand English. Title VI of the Civil Rights Act of 1964 - National Origin Discrimination Against Persons with Limited English Proficiency, and (Presidential) Executive Order 13166 require that Federal departments and agencies develop and make available guidance on how recipients of Federal funds should assess and address the needs of LEP individuals seeking assistance.

The US Department of Transportation (US DOT) developed guidance entitled *Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient (LEP) Persons*. This guidance was issued to ensure that persons in the United States are not excluded from participation in DOT-assisted programs and activities simply because they face challenges communicating in English.

### **Determining the Need**

As a recipient of federal funding, Rider Transit must take reasonable steps to ensure meaningful access to the information and services it provides.

### **Four Factor Analysis**

In determining “reasonable steps” there are four factors to be considered:

1. The number and proportion of LEP persons in the eligible service area;
2. The frequency with which LEP persons come in contact with the program;
3. The importance of the service provided by the program; and
4. The resources available to the recipient.

The US DOT Policy Guidance gives recipients substantial flexibility in determining what language assistance is appropriate based on a local assessment of the four factors listed above. The following is an assessment of need for Rider Transit’s service area in relation to the transportation planning process.

### **1. The Number and Proportion of LEP Persons in the Eligible Service Area**

The first step towards understanding the profile of individuals that compose Rider Transit’s service area is a review of Census data. The table below displays the primary language spoken at home in the cities of Concord, NC and Kannapolis, NC, the number of individuals (age five and over) and the percentage of the overall population. At this time, Spanish represents the highest percentage of the region’s LEP population. Source: US Census Bureau 2016-2020 American Community Survey 5-Year Estimate Subject Table.

<https://data.census.gov/cedsci/table?q=Concord,%20NC%20and%20Kannapolis,%20NC&t=L%20language%20Spoken%20at%20Home&tid=ACSST5Y2020.S1601>

	Population 5 years and over	Percentage
Concord and Kannapolis	133,484	100%
English	113,233	84.83%
Spanish	13,326	9.98%
Other Indo-European languages	3,047	2.28%
Asian and Pacific Islander languages	3,267	2.45%
Other languages	611	0.46%

## 2. The Frequency with which LEP Persons Come in Contact with the Program

The growing size of the population in Concord and Kannapolis increases the probability of LEP customer contact with Rider Transit. Rider Transit assesses the frequency at which staff and drivers have or could possibly have contact with LEP persons. This includes documenting phone inquiries and surveying riders and drivers. Rider Transit has assessed the need of LEP individuals since October 2009, and as of that date Rider Transit has not had requests for interpreters for any public meetings. From 2009 and earlier, Rider Transit has produced information display cards, security awareness posters, bus schedules, on board Customer comment cards, and online postings in Spanish as well as English.

Rider Transit’s experience with LEP population has been primarily with Spanish speakers. A review of Rider Transit Customer Service personnel (two employees) and the ADA Coordinator determined that calls from LEP individuals make up approximately 2 percent of total calls.

Rider Transit also conducted customer surveys at the Rider Transit Center and on all eight bus routes in March 2022. The survey included multiple choice answers and was available in English and Spanish. Surveyors reported multiple encounters with customers that spoke other languages. Of those encounters, numerous customers declined to take the survey. Of the customers who completed the survey, approximately 4 percent (7 of 170) of the surveys were the Spanish version. We included the option of “English is my secondary language, but I am fluent in English” as LEP due to no responses of “I do not speak any English.” Of the 7 completed Spanish version surveys, the following answers regarding language were received:

- One Respondent: English is my primary language
- Two respondents: English is my secondary language, but I am fluent in English

- Four respondents: I find it difficult to speak and/or understand English.

### 3. The Importance of the Service Provided by the Program

The survey conducted by Rider Transit asked riders questions to determine how important public transportation is to them. Examining the trip purpose distribution confirmed the importance of transit services to the community. Rider Transit bears in mind that transportation is considered an essential service to the welfare of society. Of the 193 surveys collected, 22 surveys were duplicates from respondents who had already submitted a survey and 1 survey was incomplete and all 23 were omitted from the pool. The following results were compiled from the 170 completed surveys collected from riders:

- 72% ride the bus daily
- 68% ride the bus because public transit is their only mode of transportation
- 55% do not have a car at home
- 67% were going to work
- 42% were going shopping/laundry
- 35% were going to a medical/dental appointment
- 24% were going to a social/entertainment activity
- 8% were going to school
- 64% reported a household income of less than \$20,000 per year
- 29% reported a household income of \$20,000-40,000 per year
- 7% reported a household income of more than \$40,000 per year
- Riders of ages 36 to 55 were the most common age range at 32%

Ethnicity of survey respondents breaks down as follows:

- African American (not of Hispanic origin): 44%
- Caucasian (not of Hispanic origin): 42%
- Hispanic: 9%
- Native American of Alaskan Native: 2%
- Asian or Pacific Islander: 1%
- No Answer: 1%

Of the 170 riders who completed surveys, 6.5% (11 of 170) were identified as LEP riders. As reported across the country, public transportation is of great importance to LEP riders. Of the 8 identified LEP riders:

- 54.5% (6 of 11) use public transit daily
- 72.3% (8 of 11) reported that public transit is their only mode of transportation
- 18.2% (2 of 11) do not have a car at home
- 81.8% (9 of 11) reported a household income of less than \$20,000 per year

### 4. The Resources Available to the Recipient

Rider Transit uses Voiance Language Translation Services, Dosmono Language Translation Devices and Google Translation Applications as the primary resource for LEP assistance.

Materials available to the public are provided in English and Spanish. Document translations

are completed by Rider Transit staff and contracted services.

### **Meeting the Requirements: Rider Transit Limited English Proficiency Plan**

Based on current population levels of Limited English Proficiency residents within the Rider Transit service area, Rider Transit is committed to providing meaningful access to its services for LEP persons. All language access activities detailed below will be coordinated by the Transit Director, Customer Service Agent(s) and Transit Staff as needed.

### **Providing Notice to LEP Persons**

Based on current population levels of Limited English Proficiency residents within the Rider Transit service area, languages in addition to English, where possible and practical, should be used in notices and publications that refer to public transportation services. Potential notification opportunities include:

- Posting signs in areas where the public is likely to read them;
- Stating in outreach documents that language services are available;
- Working with community-based organizations to inform LEP persons of available language assistance;
- Using a telephone voice mail menu in the most common languages encountered;
- Including notices in local newspapers in languages other than English;
- Providing notices to non-English language radio and television stations about the availability of language assistance services for important events;
- Presentations and/or notices at schools and religious organizations for important events or where community involvement is critical.

Rider Transit will continue this assessment with demographic analysis for Title VI, and this information will be revised every three years.

### **Language Assistance Measures**

Language assistance will be provided for LEP individuals through the translation of key material, as well as through video and oral language interpretation via Voiance Interpretation Service when necessary and possible.

### **Translation of Written Material**

Rider Transit currently provides some publications with translations in Spanish. The continued assessment of LEP population will determine if additional languages will need to be added.

### **Staff Training**

In order to establish meaningful access to information and services for LEP individuals, employees in public contact positions and those who will serve as translators or interpreters have been and will continue to be properly trained (see Appendix). Such training will be

developed to ensure that staff and service providers are fully aware of LEP policies and procedures and are effectively able to work in person and/or by telephone with LEP individuals. Rider Transit management staff have been and will continue to be properly trained included in this training to ensure full awareness and understanding of the Plan. Rider Transit management staff should also maintain the ability to reinforce the importance of the Plan, ensuring its implementation by staff.

### **Procedure for Rider Transit Staff and Contractors to Follow When Attempting to Communicate with Limited English Proficiency Individuals**

In the event that a person with Limited English Proficiency initiates contact with a Rider Transit Bus Operator, it is imperative that Rider Transit provide the best services, information, or response possible, just the same as would be provided to persons who have no language barrier. The sequence of attempts to communicate should be:

1. The Bus Operator should ask the customer if he/she can speak English. If the customer cannot understand English, proceed to the next step.
2. As necessary, the Bus Operator should verify the language needed by asking the customer to identify the language using the “Rider Transit Language Assistance Sheet”.
3. Once the language is determined, the Bus Operator should utilize the on-board language translation device to communicate with the customer.
4. If the language device is inoperable, the Bus Operator should provide the customer instructions directing them to the Rider Transit Center for translation service. These instructions will be on a laminated card in Spanish. If the language is other than Spanish, the Bus Operator should use a Rider Transit System Map or Schedule to point out the Rider Transit Center address. The Bus Operator should alert Dispatch that a person needing translation services will be arriving at the Rider Transit Center. Dispatch should alert Customer Service. Once the bus reaches the Rider Transit Center, a Supervisor should direct the customer to Customer Service.
5. Customer Service should use the “Rider Transit Language Assistance Sheet” in attempt to determine the primary language of the individual. The “Rider Transit Language Assistance Sheet” will be available at all times in the Rider Transit Center Customer Service office.
6. Customer Service staff should use the services of an online translation service (Google Translate has been successful in the past) in attempt to communicate with the individual.
7. As a final method of communicating, Customer Service staff may use the services of an over-the-phone interpretation service. Rider Transit will maintain current information in the Customer Service office for Voiance Language Translation Services, including telephone number and access code.

**At all times, maintain a gracious and friendly attitude, indicating Rider Transit’s attempt to be helpful and put the individual at ease.**

**Membership of Non-Elected Committees and Councils**

Rider Transit does not currently have any non-elected committees and councils.

**Monitoring of Sub-Recipients**

Rider Transit does not currently have any sub-recipients.

**Title VI Facility Equity Analysis**

Rider Transit did not have any projects requiring a Title VI Equity Analysis during the last three years.

**Concord Kannapolis Transit Commission Meeting Minutes Excerpt**

## Requirements of Transit Providers (Chapter IV)

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### Service Standards

Rider Transit, though located in an Urbanized Area (UZA) of 200,000 or more in population, does not operate fifty or more fixed route vehicles in peak service. Therefore, Rider Transit is only required to set system-wide standards and policies, as outlined below.

Rider Transit identifies three primary areas of focus for monitoring the quality of service delivery, which is an essential element of prevailing Title VI requirements. Focus areas include Capital Investments, Bus Service Delivery Standards, and Transit Amenities. Application of these Service Standards provides assistance in achieving a balance between quality, equity and the cost-effective use of limited resources. The availability of financial resources, represented by the annual budget, is the bottom line for these standards. Service expansion may occur when funds are available. Service reduction may occur on an on-going basis, as appropriate, and/or in times of fiscal constraint, as determined by the Transit Director in consultation with the Concord Kannapolis Transit Commission.

The primary area of focus for monitoring the quality of service delivery is capital investments. Capital investments will be based on Rider Transit's Capital Improvement Program (CIP). The CIP supports the maintenance of assets including facilities, revenue rolling stock, and a vast array of tools and equipment. Rider Transit develops its CIP with full consideration of how capital investments have to be equitably distributed throughout the service area. In addition, capital investments are reviewed to determine how they will facilitate equal access and equitable delivery of transit services to minority, low income, and transit-dependent and choice-rider areas. Both regional and short-range activities are addressed.

Rider Transit's capital investment projects are accordingly programmed into the annual update of the budget and the MPO's Transportation Improvement Program. The MPO, which is also governed by Title VI, provides a process for early consultation and public involvement to citizens, affected public agencies, transportation agency representatives, private transportation providers, other interested parties, and local jurisdiction concerns. The MPO presents all key issues to its technical committees. This process provides Rider Transit with an opportunity to acquire additional information that can be used to address Title VI considerations during the planning process going forward, which is continuous, coordinated, and cooperative.

In addition, public hearings are also held on the Long-Range Transportation Plan and the Transportation Improvement Program prior to adoption by the MPO. The public involvement process is as follows:

- Once annually, Rider Transit will develop a Program of Projects proposed to be funded with federal funding. This Program of Projects will be advertised for public



comment by the MPO. Any comments received will be incorporated into the Program of Projects.

- The Program of Projects will then be incorporated into the Transportation Improvement Program.
- The MPO then completes a public involvement process that includes consulting with technical and citizen committees, holding a public hearing and final adoption.
- Public comments received regarding the Program of Projects or Transportation Improvement Program will be considered by Rider Transit throughout the adoption process and incorporated into final programs.

### **Vehicle Load Standards**

The average of all loads during the peak operating period (6:30-10:30 AM, 2:30-6:30 PM) should not exceed vehicle achievable capacity, which is 48 passengers for low-floor 35' buses. Bus Load Factor is defined as the acceptable ratio of passengers on board a bus to the number of seats available. The standard acceptable load factor for bus service is 1.25, not to exceed 1.50. Rider Transit will investigate service that exceeds this standard for possible modification. In the event of vehicle overload, backup/tripper vehicles will be run on overloaded routes.

### **Vehicle Headway Standards**

Vehicle headway is defined as the interval of time/frequency between buses traveling in any given direction (inbound/outbound) on any given route. On weekdays, service operates on eight routes every 60 minutes from 5:30 AM to 12:30 PM, and 5:30 PM to 8:30 PM, and every 75 minutes from 12:30 PM to 5:30 PM. On weekends, service operates on seven routes every 60 minutes from 8:30 AM to 12:30 PM, and 5:30 PM to 8:30 PM, and every 75 minutes from 12:30 PM to 5:30 PM. There is no service offered on six recognized holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day).

Scheduling involves the consideration of a number of factors including ridership, transit/pedestrian friendly streets, density of transit-dependent population and activities, relationship to the Regional Transportation Plan, relationship to major transportation developments, land use connectivity, access to employment and medical facilities, and transportation demand management.

Rider Transit must balance the level of service provided with available funding. The current configuration of service best meets the service demands generated by the community at large, particularly as to the span, frequency, and location of service needs. Rider Transit will address additional service needs as funding becomes available.

The following factors are examined if and when adjusting headways needs to be considered:

- Load factor
- Availability of funding

- Passenger demand
- Route length
- Running time
- Passenger volume
- Regional connectivity
- Equipment/resource allocation

### **On-Time Performance Standards**

A vehicle is considered on time if it departs the Rider Transit Center no more than five minutes late of the published departure time. A standard of 75 percent of Rider Transit’s vehicles will complete their established runs no more than five minutes late in comparison to the established schedule/published timetables.

### **Service Availability Standards**

Bus stop placement will be examined to determine if it optimizes service delivery, while minimizing the required walking distance between stops. Areas that Rider Transit evaluates for these standards include bus stop spacing (the average distance between stops should not exceed 0.5 miles within local routes, excluding interstate/express service), special considerations (destinations/points of interest, sidewalk availability, safety and convenience), and schedule adherence. To effectuate the requirements of Title VI (as well as ADA), Rider Transit takes into consideration the placement of bus stops near schools, facilities for seniors and individuals with disabilities, public facilities and government offices, and major ridership generators (such as apartment complexes, shopping centers, and major tourist attractions).

## **Service Policies**

### **Transit Amenities Policy**

Rider Transit’s process of site selection and prioritization of transit amenities along bus routes is based predominantly on the number of passengers boarding at stops along those routes. Based on current data, a seat should be installed when the average ridership at a stop reaches six or more persons per day. A shelter should be installed when the average ridership at a stop reaches ten or more persons per day. Stop usage data is used in conjunction with a visual analysis/feasibility study of the site and an assessment of available existing amenities at the site (such as pads, seats, shelters, sidewalk, shade, etc.) to prioritize the installation of new amenities. As possible, equal distribution of amenities will occur among routes and communities.

### **Vehicle Assignment Policy**

Vehicles will be assigned to routes in a rotating schedule, such that each vehicle will run a different route each day. Each vehicle deployed on each of the seven routes is a low-floor bus. All low-floor buses are ADA-accessible, equipped with air conditioning and automated auditory and visual stop announcement systems. Currently, Rider Transit has eight buses (plus two

spares) that operate along eight fixed routes. The buses are rotated through the system to ensure that mileage is evenly distributed on each vehicle.

## **Appendix**

Page 23—Title VI Investigations, Complaints, and Lawsuits

Page 24—Title VI Poster

Page 25—Customer Survey (English version)

Page 26—Customer Survey (Spanish version)

Page 27—2022 Customer Survey Results

Page 29—Customer Survey Results Comparison Summary

Page 30—Customer Survey Results Cumulative Comparison

Page 31—Title VI Complaint Form (English version)

Page 32—Title VI Complaint Form (Spanish version)

Page 33—Certificate of Recording Officer for City of Concord Meeting Minutes

Page 34—Rider Transit Title VI Training: Language Assistance Program

Page 36—Rider Transit Language Assistance Sheet

**Title VI Investigations, Complaints, and Lawsuits**

No complaints alleging discrimination on the basis of race, color, or national origin with respect to service or other transit benefits occurred against Rider Transit since the 2019 Title VI submission. No lawsuits alleging discrimination on the basis of race, color, or national origin with respect to service or other transit benefits have occurred.

	<b>Date</b>	<b>Summary (includes basis of</b>	<b>Status</b>	<b>Actions Taken</b>
<b>Lawsuits</b>				
1.				
2.				
<b>Complaints</b>				
1.				
2.				
<b>Investigations</b>				
1.				
2.				

## **Title VI Poster**

### **DO NOT REMOVE**

### **TITLE VI POLICY STATEMENT**

### **PERMANENT SIGN**

#### **Rider Complies with Title VI**

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance. Specifically, Title VI provides that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” (42 U.S. Code Section 2000d).

The Federal Transit Administration works to ensure non-discriminatory transportation in support of our mission to enhance the social and economic quality of life for all Americans. The FTA Office of Civil Rights is responsible for civil rights compliance and monitoring to ensure non-discriminatory provision of transit services.

For more information, go to: [www.fta.dot.gov/civilrights/civil\\_rights\\_5088.html](http://www.fta.dot.gov/civilrights/civil_rights_5088.html)

#### **Rider Transit Policy Statement of the Civil Rights Act of 1964**

Rider Transit is committed to ensuring that no person is excluded from participation in or denied the benefits of its transit services on the basis of race, color, or national origin, as protected by Title VI of the Civil Rights Act of 1964.

If you believe you have been subjected to discrimination under Title VI, you may file a written complaint with the Rider Transit System Office at 45 Transit Court, Northwest, Concord, NC 28025; or call Rider Customer Care at 704.920.7433; or by e-mail to [weslowlj@concordnc.gov](mailto:weslowlj@concordnc.gov).

#### **How to File a Title VI Complaint**

You may file a signed, written complaint **not later than 180 days after** the alleged discrimination. The complaint should include the following information:

Your name, address, and contact information (telephone number or e-mail address);

How, why, when, and where you believe you were discriminated against. (Include the location and names and contact information of any witnesses. If the alleged incident occurred on the bus, give date, time of day, and bus number.);

Your signature.

#### **Rider cumple con el Título VI**

El Título VI de la Ley de Derechos Civiles de 1964 prohíbe la discriminación en base a raza, color o nacionalidad en los programas y actividades que reciben asistencia financiera federal. Específicamente, el Título VI sostiene que “ninguna persona en los Estados Unidos debe, en base a raza, color o nacionalidad, ser excluida de participar, negársele los beneficios de o ser sujeto de discriminación en cualquier programa o actividad que reciba asistencia financiera federal.” (42 U.S.C. Sección 2000d).

La Administración Federal de Transporte (Federal Transit Administración, FTA) trabaja para asegurar un transporte no discriminatorio en apoyo de nuestra misión de ampliar la calidad de vida social y económica para todos los estadounidenses. La Oficina de Derechos Civiles de la FTA es responsable de la supervisión y el cumplimiento de los derechos civiles para asegurar la provisión sin discriminación de los servicios de transporte.

Para obtener más información, visite: [www.fta.dot.gov/civilrights/civil\\_rights\\_5088.html](http://www.fta.dot.gov/civilrights/civil_rights_5088.html)

#### **Declaración de políticas de Rider de la Ley de Derechos Civiles de 1964**

Rider está comprometido con asegurar que ninguna persona sea excluida de participar o se le nieguen los beneficios de sus servicios de transporte en base a raza, color o nacionalidad, tal como lo protege el Título VI de la Ley de Derechos Civiles de 1964.

Si piensa que ha sido sujeto de discriminación según el Título VI, puede presentar una queja por escrito en la Oficina del Sistema de Transporte Rider en 3600 South Ridge Avenue, Concord, NC 28025; o llamando a Rider Customer Care al 704.920.7433; o por correo electrónico a [weslowlj@concordnc.gov](mailto:weslowlj@concordnc.gov).

#### **Cómo presentar una queja del Título VI**

Puede presentar una queja por escrito firmada **hasta 180 días** después de la alegada discriminación. La queja debe incluir la siguiente información:

Su nombre, dirección y forma de contactarlo (número telefónico o dirección de correo electrónico);

Cómo, por qué, cuándo y dónde considera usted que fue discriminado(a). (Incluya la ubicación y los nombres e información de contacto de cualquier testigo. Si el alegado incidente ocurrió en el autobús, brinde la fecha, hora del día y el número del autobús.);

Debe firmar la carta de queja.

**If information is needed in another language, then contact 704-920-7433.**

**Si se necesita información en otro idioma, comuníquese al 704-920-7433.**



# Concord Kannapolis Area Transit

(Este cuestionario está disponible en español.)

**As recipients of federal funding to provide public transportation service, Concord Kannapolis Area Transit is required to gather information regarding the level of use, demographics, and income level of our riders. Please assist us by providing the information requested in this survey. Thank you for your cooperation.**

## 1. How often do you use public transit?

- a. Once in a while
- b. Once or twice in the week
- c. Daily
- d. This is my first time using public transit

## 2. Why do you choose to use public transit?

(circle **all** that apply)

- a. It is my only mode of transportation
- b. It is convenient
- c. Gas prices are getting too high
- d. I'm trying to be environmentally responsible
- e. I don't have a car at home.
- f. Other: \_\_\_\_\_

## 3. What is your primary purpose of using public transit today? (circle **all** that apply)

- a. To/from work
- b. To/from school
- c. To/from a medical/dental appointment
- d. To/from social/entertainment activity
- e. Shopping/laundry
- f. Other \_\_\_\_\_

## 4. Household Income (circle only **one** answer)

- a. Less than \$20,000 per year
- b. \$20,000 - \$40,000 per year
- c. \$40,000 - \$50,000 per year
- d. \$50,000 - \$70,000 per year
- e. Over \$70,000 per year

## 5. Age (circle only **one** answer)

- a. Less than 21 years of age
- b. 21 to 25 years of age
- c. 26 to 35 years of age
- d. 36 to 55 years of age
- e. Over 55 years of age

## 6. Language (circle only **one** answer)

- a. English is my primary language
- b. English is my secondary language, but I am fluent in English
- c. I find it difficult to speak and/or understand English

## 7. Ethnicity (Place an **X** in the appropriate box)

- **(A) Asian or Pacific Islander:** Persons having origins in any of the peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands and Samoa.
- **(B) African American (not of Hispanic origin):**
- Person having origins in any of the black ethnic groups.
- **(H) Hispanic:** Persons having origins in any of the Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Cultures, regardless of ethnicity.
- **(I) Native American or Alaskan Native:** Persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.
- **(W) Caucasian (not of Hispanic origin):** Persons having origins in any of the original peoples of Europe, North Africa or the Middle East.

**City of residence:** \_\_\_\_\_

**City of work/destination:** \_\_\_\_\_

**Optional:** Enter your name and phone number to be included in a drawing to win a free 10-ride or 30-day pass.

**Name:** \_\_\_\_\_

**Phone:** \_\_\_\_\_



# Concord Kannapolis Area Transit

(This survey is available in English.)

**Concord Kannapolis Area Transit recibe fondos federales para proveer este servicio de transporte público y es requerido obtener información sobre el nivel de uso, composición demográfica, y nivel de ingresos de nuestros pasajeros. Por favor asístanos completando este cuestionario. Gracias por su cooperación.**

**1. ¿Con que frecuencia usa usted el transporte público?**

- a. De vez en cuando
- b. Una o Dos veces a la semana
- c. Todos los días
- d. Esta es mi primera vez usando el servicio

**2. ¿Porque decidió usar el transporte público?** (marque **TODAS las** respuestas correctas)

- a. Es mi único medio de transporte
- b. Es conveniente
- c. El precio de la gasolina está muy alto
- d. Trato de ser responsable con el ambiente
- e. No tengo carro en mi casa
- f. Otra: \_\_\_\_\_

**3. ¿Cuál es el propósito principal de su viaje hoy?** (marque **TODAS las** respuestas correctas)

- a. Voy/vengo del trabajo
- b. Voy/vengo de Estudiar
- c. Voy/vengo de una cita médica o dental
- d. Voy/vengo de actividad Social o diversión.
- e. Voy/vengo de compras o diligencia
- f. Otra: \_\_\_\_\_

**4. Ingresos del Hogar** (marque **UNA SOLA** respuesta)

- a. Menos de \$20,000 al año
- b. \$20,000 - \$40,000 al año
- c. \$40,000 - \$50,000 al año
- d. \$50,000 - \$70,000 al año
- e. Más de \$70,000 al año

**5. Su Edad** (marque **UNA SOLA** respuesta)

- a. Menos de 21 años de edad
- b. 21 a 25 años de edad
- c. 26 a 35 años de edad
- d. 36 a 55 años de edad
- e. Más de 55 años de edad

**6. Su Idioma** (marque **UNA SOLA** respuesta)

- a. Inglés es mi idioma principal
- b. Inglés es mi segundo idioma, pero yo domino el Inglés
- c. Me es difícil hablar y/o entender Inglés
- d. No hablo ni entiendo Inglés

**7. Raza** (marque una **X** en la caja apropiada)

- (A) Asiático o Islas de Pacífico:** Personas de origen del lejano oriente, del sureste de Asia, el subcontinente de India, o las islas pacificas incluyendo China, Japón, Corea, las islas Filipinas y Samoa.
- (B) Afro Americano (pero NO de origen Hispano):** Personas de origen de los grupos étnicos de raza negra.
- (H) Hispano:** Personas originarias de México, Puerto Rico, Cuba, Centro y Sur América y otras culturas Hispanas sin importar la raza étnica.
- (I) Nativo Americano o Nativo de Alaska:** Personas de origen indígena americano, y que mantienen identificación cultural por medio de afiliación a una tribu o reconocimiento de la comunidad.
- (W) Blanco (pero NO de origen Hispano):** Personas con sus orígenes en Europa, Norte del África o del Medio Oriente.

**Ciudad donde vive:** \_\_\_\_\_

**Ciudad de destino:** \_\_\_\_\_

**Opcional:** Escriba su nombre y número teléfono para ser incluidos en un sorteo para ganar un pase 10 viajes o 30 días gratis.

**Su nombre:** \_\_\_\_\_

**Su número de teléfono:** \_\_\_\_\_





# Concord Kannapolis Area Transit

## March 2022 Customer Survey Results

### 1. How often do you use public transit?

- a. Once in a while **18**
- b. Once or twice in the week **28**
- c. Daily **122**
- d. This is my first time using public transit **2**

**TOTAL: 170**

### 2. Why do you choose to use public transit? (circle all that apply)

- a. It is my only mode of transportation **116**
- b. It is convenient **56**
- c. Gas prices are getting too high **26**
- d. I'm trying to be environmentally responsible **21**
- e. I don't have a car at home **94**
- f. Other: **16**

**TOTAL: 329**

### 3. What is your primary purpose of using public transit today? (circle all that apply)

- a. To/from work **114**
- b. To/from school **13**
- c. To/from a medical/dental appointment **60**
- d. To/from social/entertainment activity **40**
- e. Shopping/laundry **72**
- f. Other **17**

**TOTAL: 316**

### 4. Household Income (circle only one answer)

- a. Less than \$20,000 per year **108**
- b. \$20,000 - \$40,000 per year **50**
- c. \$40,000 - \$50,000 per year **7**
- d. \$50,000 - \$70,000 per year **4**
- e. Over \$70,000 per year **1**

**TOTAL: 170**

### 5. Age (circle only one answer)

- a. Less than 21 years of age **11**
- b. 21 to 25 years of age **22**
- c. 26 to 35 years of age **45**
- d. 36 to 55 years of age **55**
- e. Over 55 years of age **37**

**TOTAL: 170**

### 6. Language (circle only one answer)

- a. English is my primary language **149**
- b. English is my secondary language, but I am fluent in English **8**
- c. I find it difficult to speak and/or understand English **4**
- d. I do not speak or understand English **0**

**TOTAL: 170**

**7. Ethnicity**

**(A) Asian or Pacific Islander:** Persons having origins in any of the peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands and Samoa. **2**

**(B) African American (not of Hispanic origin):** Person having origins in any of the black ethnic groups. **75**

**(H) Hispanic:** Persons having origins in any of the Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Cultures, regardless of ethnicity. **16**

**(I) Native American or Alaskan Native:** Persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition. **3**

**(W) Caucasian (not of Hispanic origin):** Persons having origins in any of the original peoples of Europe, North Africa or the Middle East. **72**

**TOTAL: 168 (2 were left unanswered)**

**City of residence:**

Concord	80
Kannapolis	77
Matthews	1
China Grove	1
Charlotte	3
Cabarrus	5

**City of work/destination:**

Concord	97
Kannapolis	66
Matthews	0
China Grove	0
Charlotte	8
Cabarrus	1
Salisbury	1
Huntersville	2

## Customer Survey Results Cumulative Comparison

Survey Date	November 2012	March 2016	March 2019	March 2022
<b>Total Surveys Completed</b>	185	200	200	170
	<b>Percent of Total</b>	<b>Percent of Total</b>	<b>Percent of Total</b>	<b>Percent of Total</b>
<b>How often do you use public transit?</b>				
a. Once in a while	5%	12%	7%	11%
b. Once or twice in the week	24%	23%	23%	16%
c. Daily	68%	64%	71%	72%
d. This is my first time using public transit	3%	3%	1%	1%
<b>Why do you choose to use public transit?</b>				
a. It is my only mode of transportation	60%	60%	61%	68%
b. It is convenient	39%	36%	29%	33%
c. Gas prices are getting too high	19%	11%	11%	15%
d. I'm trying to be environmentally responsible	16%	7%	12%	12%
e. I don't have a car at home	43%	41%	40%	55%
f. Other	6%	6%	8%	9%
<b>What is your primary purpose of using public transit today?</b>				
a. To/from work	51%	59%	60%	67%
b. To/from school	28%	17%	11%	8%
c. To/from a medical/dental appointment	37%	35%	28%	35%
d. To/from social/entertainment activity	24%	21%	23%	24%
e. Shopping/laundry	36%	34%	35%	42%
f. Other	14%	10%	13%	10%
<b>Household Income</b>				
a. Less than \$20,000 per year	75%	72%	65%	64%
b. \$20,000 - \$40,000 per year	20%	24%	27%	29%
c. \$40,000 - \$50,000 per year	2%	3%	4%	4%
d. \$50,000 - \$70,000 per year	2%	2%	2%	2%
e. Over \$70,000 per year	1%	1%	3%	1%
<b>Age</b>				
a. Less than 21 years of age	7%	5%	7%	6%
b. 21 to 25 years of age	16%	20%	13%	13%
c. 26 to 35 years of age	21%	23%	21%	26%
d. 36 to 55 years of age	40%	35%	40%	32%
e. Over 55 years of age	16%	19%	20%	22%
<b>Language</b>				
a. English is my primary language	93%	92%	94%	94%
b. English is my secondary language, but I am fluent in English	5%	3%	3%	4%
c. I find it difficult to speak and/or understand English	1%	5%	3%	2%
d. I do not speak any English	1%	1%	2%	0%
<b>Ethnicity</b>				
(A) Asian or Pacific Islander	1%	1%	1%	1%
(B) African American	52%	59%	59%	44%
(H) Hispanic	9%	6%	6%	9%
(I) Native American or Alaskan Native	2%	4%	3%	2%
(W) Caucasian	37%	25%	31%	42%

# Customer Survey Results Cumulative Comparison

Survey Date	November 2012				March 2016				March 2019				March 2022			
Total Surveys Completed	185				200				200				170			
	Total from All Surveys	Percent of Total	Total from 4 Spanish Surveys	Total from 2 LEP Respondents	Total from All Surveys	Percent of Total	Total from 12 Spanish Surveys	Total from 11 LEP Respondents	Total from All Surveys	Percent of Total	Total from 7 Spanish Surveys	Total from 8 LEP Respondents	Total from All Surveys	Percent of Total	Total from 7 Spanish Surveys	Total from 11 LEP Respondents
<b>How often do you use public transit?</b>																
a. Once in a while	10	5%	0	0	23	12%	2	2	13	7%	1	2	18	11%	1	1
b. Once or twice in the week	44	24%	0	0	45	23%	0	0	45	23%	2	2	28	16%	1	4
c. Daily	126	68%	4	2	127	64%	10	9	141	71%	4	4	122	72%	5	6
d. This is my first time using public transit	5	3%	0	0	5	3%	0	0	1	1%	0	0	2	1%	0	0
<b>Why do you choose to use public transit?</b>																
a. It is my only mode of transportation	111	60%	3	2	119	60%	9	8	122	61%	4	4	116	68%	4	8
b. It is convenient	73	39%	2	0	71	36%	4	4	58	29%	0	0	56	33%	2	1
c. Gas prices are getting too high	36	19%	2	0	22	11%	1	1	22	11%	0	0	26	15%	0	0
d. I'm trying to be environmentally responsible	29	16%	1	0	13	7%	1	1	23	12%	0	0	21	12%	1	1
e. I don't have a car at home	80	43%	2	2	81	41%	4	4	79	40%	2	2	94	55%	2	2
f. Other	12	6%	0	0	11	6%	2	2	15	8%	1	2	16	9%	0	1
<b>What is your primary purpose of using public transit today?</b>																
a. To/from work	94	51%	3	-	117	59%	10	9	120	60%	4	4	114	67%	4	8
b. To/from school	51	28%	1	-	34	17%	1	1	22	11%	0	0	13	8%	0	1
c. To/from a medical/dental appointment	69	37%	3	-	69	35%	4	3	55	28%	2	2	60	35%	2	3
d. To/from social/entertainment activity	44	24%	1	-	41	21%	0	0	46	23%	1	1	40	24%	0	1
e. Shopping/laundry	66	36%	2	-	68	34%	3	2	69	35%	3	3	72	42%	1	1
f. Other	25	14%	1	-	19	10%	0	0	25	13%	1	2	17	10%	0	1
<b>Household Income</b>																
a. Less than \$20,000 per year	138	75%	2	2	144	72%	12	11	129	65%	6	7	108	64%	6	9
b. \$20,000 - \$40,000 per year	37	20%	1	0	47	24%	0	0	54	27%	0	0	50	29%	0	1
c. \$40,000 - \$50,000 per year	4	2%	0	0	5	3%	0	0	7	4%	0	0	7	4%	0	1
d. \$50,000 - \$70,000 per year	3	2%	0	0	3	2%	0	0	4	2%	1	1	4	2%	0	0
e. Over \$70,000 per year	1	1%	0	0	1	1%	0	0	6	3%	0	0	1	1%	0	0
<b>Age</b>																
a. Less than 21 years of age	13	7%	0	-	9	5%	0	0	14	7%	0	0	11	6%	0	2
b. 21 to 25 years of age	29	16%	0	-	39	20%	1	1	25	13%	2	2	22	13%	1	1
c. 26 to 35 years of age	38	21%	2	-	45	23%	4	4	41	21%	2	3	45	26%	1	2
d. 36 to 55 years of age	74	40%	1	-	70	35%	7	6	80	40%	3	3	55	32%	3	4
e. Over 55 years of age	29	16%	1	-	37	19%	0	0	40	20%	0	0	37	22%	1	2
<b>Language</b>																
a. English is my primary language	172	93%	1	0	184	92%	0	0	187	94%	0	0	160	94%	1	0
b. English is my secondary language, but I am fluent in English	9	5%	1	0	5	3%	1	0	5	3%	0	0	6	4%	2	7
c. I find it difficult to speak and/or understand English	1	1%	1	1	9	5%	9	9	5	3%	4	5	4	2%	4	4
d. I do not speak any English	1	1%	1	1	2	1%	2	2	3	2%	3	3	0	0%	0	0
<b>Ethnicity</b>																
(A) Asian or Pacific Islander	1	1%	0	0	2	1%	0	0	2	1%	1	1	2	1%	0	1
(B) African American	96	52%	0	0	118	59%	0	0	118	59%	0	0	75	44%	1	0
(H) Hispanic	16	9%	4	2	12	6%	12	11	11	6%	6	7	16	9%	6	10
(I) Native American or Alaskan Native	4	2%	0	0	7	4%	0	0	5	3%	0	0	3	2%	0	0
(W) Caucasian	68	37%	0	0	49	25%	0	0	61	31%	0	0	72	42%	0	0





**Certificate of Recording Officer for City of Concord Meeting Minutes**

# Rider Transit Staff and Contractor Training

## Title VI Language Assistance Program

Rider Transit is committed to ensuring that no person is excluded from participation in or denied the benefits of its transit services on the basis of race, color or national origin, as protected by Title VI of the Civil Rights Act of 1964. Individuals with Limited English Proficiency (LEP) are those who do not speak English as their primary language and who have a limited ability to read, speak, write or understand English. Spanish has been identified as the most common language in the Rider Transit service area used by LEP individuals. In order to establish meaningful access to information and services for LEP individuals, employees in Rider Transit's public contact positions will be properly trained.

### **Procedure for Rider Transit Staff and Contractors to Follow When Attempting to Communicate with Limited English Proficiency Individuals:**

In the event that a person with Limited English Proficiency initiates contact with a Rider Transit Bus Operator, it is imperative that Rider Transit provide the best services, information, or response possible, just the same as would be provided to persons who have no language barrier. The sequence of attempts to communicate should be:

1. The Bus Operator should ask the customer if he/she can speak English. If the customer cannot understand English, proceed to the next step.
2. The Bus Operator will verify the language needed by asking the customer to identify the language using the "Rider Transit Language Assistance Sheet".
3. Once the language is determined, the Bus Operator will utilize the on-board language translation device to communicate with the customer.
4. If the language device is inoperable, the Bus Operator should provide the customer instructions directing them to the Rider Transit Center for translation service. These instructions will be on a laminated card in Spanish. If the language is other than Spanish, the Bus Operator should use a Rider Transit System Map or Schedule to point out the Rider Transit Center address. The Bus Operator should alert Dispatch that a person needing translation services will be arriving at the Rider Transit Center. Dispatch should alert Customer Service. Once the bus reaches the Rider Transit Center, a Supervisor should direct the customer to Customer Service.
5. Customer Service should use the "Rider Transit Language Assistance Sheet" in an attempt to determine the primary language of the individual. The "Rider Transit Language Assistance Sheet" will be available at all times in the Rider Transit Center Customer Service office.
6. Customer Service staff should use the services of an online translation service (Google Translate has been successful in the past) in attempt to communicate with the individual.



7. As a final method of communicating, Customer Service staff may use the services of an over-the-phone interpretation service. Rider Transit will maintain current information in the Customer Service office for Voiance Language Translation Services, including telephone number, and access code.

**Please remember, at all times, to maintain a gracious and friendly attitude, indicating Rider Transit's attempt to be helpful and put the individual at ease. Thank you!**

*I acknowledge that I have received training on Rider Transit's Title VI Language Assistance Plan and how to communicate with Limited English Proficiency individuals.*

**Printed Name:** \_\_\_\_\_

**Position:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_



# Rider Transit Language Assistance Sheet

- |                          |  |                        |
|--------------------------|--|------------------------|
| <input type="checkbox"/> | ضع علامة في هذا المربع إذا كنت تقرأ أو تتحدث العربية.  | 1. Arabic              |
| D                        | 1''1..'l-rnuf' b't, 'l2_nu f 4.LUU'ILUrb LUJU LUnLU4.nLUnLa.f, b b (ununLa.f 4.LU.r 4.LUr11-nLa.f b f,LUJbrb't,; | 2. Armenian            |
| <input type="checkbox"/> | যদি আপনি বাংলা পড়েন বা বলেন তা হলে এই বাক্সে দাগ দিন।   | 3. Bengali             |
| D                        | lly}t:H:lJingilUmms m mns sUJ1UJmw1 tt '1  | 4. Cambodian           |
| D                        | Motka i kaWlon ya yangin Gntungnu' manaitai pat Gntungnu' kumentos Chamorro.                                     | 5. Chamorro            |
| D                        | 如果你能读中文或讲中文，请选择此框。   | 6. Simplified Chinese  |
| D                        | 如果你能讀中文或講中文，請選擇此框。   | 7. Traditional Chinese |
| D                        | Oznacite ovaj kvadratic ako citate ili govorite hrvatskj jezik.  | 8. Croatian            |
| D                        | Zaskrtnete tuto kolonku, pokud ctete a hovoríte cesky.   | 9. Czech               |
| D                        | Kruis dit vakje aan als u Nederlands kunt lezen of spreken.  | 10. Dutch              |
| D                        | Mark this box if you read or speak English.  | 11. English            |
| <input type="checkbox"/> | اگر خواندن و نوشتن فارسي بلد هستيد، اين مربع را علامت بنيد.  | 12. Farsi              |

D

Cocher ici si vous lisez ou parlez le français .

13. French

D

Kreuzen Sie dieses Kästchen an, wenn Sie Deutsch lesen oder sprechen.

14. German

D

LT]μ&LWCJT& UUTO TOn::\a[mo av Ota a(£T& μLAUT& EAAT]VlK<l.

15. Greek

D

Make kazyé sa a si ou li oswa ou pale kreyol ayisyen.

16. Haitian  
Creole

11

अगर आप हिन्दी बोलते या पढ़ सकते हैं तो इस बक्स पर चिह्न लगाएँ।

17. Hindi

D

Kos lub voj no yog koj paub twm thiab hais lus Hmoob .

18. Hmong

D

Jelölje meg ezt a kockat, ha megerti vagy beszeli a magyar nyelvet.

19. Hungarian

D

Markaam daytoy nga kahon no makabasa wenno makasaoka iti Ilocano.

20. Ilocano

D

Marchi questa casella se legge o parla italiano.

21. Italian

D

日本語を読んだり、話せる場合はここに印を付けてください。

22. Japanese

D

한국어를 읽거나 말할 수 있으면 이 칸에 표시하십시오.

23. Korean

D

ໃຫ້ໝາຍໃສ່ຊ່ອງນີ້ ຖ້າທ່ານອ່ານຫຼືປາກພາສາລາວ.

24. Laotian

D

Prosimy oznaczenie tego kwadratu, jeżeli posługuje się Pan/ Pani językiem polskim.

25. Polish

D	Assinale este quadrado se voce le ou fala portugues.	26. Portuguese
D	insemnati aceasta casuta daca cititi sau vorbiti romane te.	27. Romanian
D	Il oMeThT@TOT KBa,DJJaTHK, ec.rn Bbt 0TaeTel1.rm rosop11Te no-pyccKl1.	28. Russian
D	06eJJe)l(MTe osaj KBap;pandi yKOJMKO 'rnTaTe mm roaop h e cpncKM je3HK.	29. Serbian
D	Oznacte tento stvorcek, ak viete cftat ' alebo hovorit'po slovensky.	30. Slovak
D	Marque esta casilla si lee o habla espaniol.	31. Spanish
D	Markahan itong kuwadrado kung kayo ay marunong magbasa o magsalita ng Tagalog.	32. Tagalog
D	'1.-um tfffo -IIU.J1 tJA-1'tU'!!0 -lth vh u 1 U.VIIOJfii11'ti'IVitl .	33. Thai
D	Maaka 'i he puha ni kapau 'oku ke lau pe lea fakatonga.	34. Tongan
D	BiAMiTbTe ll,10KnITHHKy,5IK.lll,0811'Il1TaeTea6orosop.0Te yKpa"iHCbKOfOMOB010.	35. Ukranian
D	اگر آپ اردو پڑھتے یا بولتے ہیں تو اس خانے میں نشان لگائیں۔	36. Urdu
D	Xin danh dau vao 6 nay ne'u guy vt bie'td9c va n6i du'<;lC Vi t NgG'.	37. Vietnamese
D	באצייכנט דעם קעסטל אויב איר לייענט אדער רעדט אידיש.	38. Yiddish

GL Account Type	Description	2024	2025
Expenses / Expenditure	Base Wage	43,887.27	45,767.84
Expenses / Expenditure	Dental Emp Only	90.36	90.36
Expenses / Expenditure	HRA Employee + Family	14,267.76	14,267.76
Expenses / Expenditure	COLA	658.31	686.52
Expenses / Expenditure	Dental Plan - Wellness	240.00	240.00
Expenses / Expenditure	Health Insurance - Wellness	600.00	600.00
Expenses / Expenditure	Medicare	630.19	630.19
Expenses / Expenditure	Social Security	2,694.59	2,694.59
Expenses / Expenditure	Life Insurance	169.50	169.50
Expenses / Expenditure	STD (Short Term Disability)	79.20	79.20
Expenses / Expenditure	Retirement - LEO 13.10 %	5,693.41	5,693.41
Expenses / Expenditure	401K - 5.0 %	2,173.06	2,173.06
Expenses / Expenditure	Career Development	493.73	514.89
Expenses / Expenditure	Performance Increases (budget use	728.53	759.75
		72,405.91	74,367.06



# Fact Sheet

[cops.usdoj.gov](http://cops.usdoj.gov)

## 2022 COPS Hiring Program

### *Strengthening Community Policing by Hiring Officers*

The FY 2022 COPS Hiring Program (CHP) is designed to advance public safety through community policing by addressing the full-time sworn officer needs of state, local, and tribal law enforcement agencies nationwide. CHP provides funds directly to law enforcement agencies to hire new or rehire additional career law enforcement officers and to increase their community policing capacity and crime-prevention efforts.

The FY 2022 CHP award program is an open solicitation. All local, state, and tribal law enforcement agencies that have primary law enforcement authority are eligible to apply. All awards are subject to the availability of appropriated funds and to any modifications or additional requirements that may be imposed by law.

**WHEN:** Deadline for first part of application in Grants.gov is **June 9, 2022**, at 7:59 p.m. ET. Deadline for completed application in JustGrants is **June 16, 2022**, at 7:59 p.m. ET.

**Start EARLY.** This is more than a one-day process.

**WHERE:** **1.** Register at [www.grants.gov](http://www.grants.gov).  
**2.** Complete the application in <https://justicegrants.usdoj.gov>.

**HOW:** Online only. No hard copies sent by U.S. Mail or electronic copies sent via email.

### **Supporting Local Law Enforcement in Advancing Community Policing so Communities can Thrive**

More than 25 years after its establishment by the Violent Crime Control and Law Enforcement Act of 1994, the COPS Office continues to support the efforts of law enforcement agencies across the country to develop creative and innovative ways to meet long-standing challenges in their communities. To date, the COPS Office has funded the addition of more than 13,000 state, local, and tribal law enforcement agencies to fund the hiring and redeployment of more than 134,000 officers.

COPS Office hiring programs like CHP assist law enforcement agencies in advancing public safety by enhancing their community policing efforts. In a changing economic climate, these programs help state, local, and tribal law enforcement agencies maintain sufficient sworn personnel levels to keep their communities safe.

### **Funding Provisions**

FY 2022 CHP awards will provide up to 75 percent of the entry-level salary and fringe benefits for each approved position for a three-year period. There is a minimum 25 percent local cash match (cost share) requirement unless a waiver is

approved. The maximum federal share per officer position is \$125,000 over the three-year period unless a local match waiver is approved. Any additional costs for higher than entry-level salaries and fringe benefits will be the responsibility of the recipient agency.

CHP awards provide funding for three years (36 months) of entry-level salary for each position awarded. The award period of performance is five years (60 months) to accommodate the hiring process. Agencies must retain each CHP-funded position for 12 months following the three years of funding for that position. The additional officer positions should be added to your agency's law enforcement budget with state or local funds (or both) over and above the number of locally funded officer positions that would have existed in the absence of the award. Absorbing CHP-funded positions through attrition (rather than adding the extra positions to your budget with additional funding) does not meet the retention requirement.

Funding under this program may be used to do the following: (1) hire new officers (including filling existing officer vacancies that are no longer funded in an agency's budget); (2) rehire officers already laid off (at the time of application) as a result of state, local, or Bureau of Indian Affairs (BIA) budget reductions unrelated to the receipt of award funding; or (3) rehire officers scheduled to be laid off (at the time of application) on a specific future date as a result of state, local, or BIA budget reductions unrelated to the receipt of award funding. CHP applicants may request funding in one or more of these three hiring categories.

The COPS Office may grant a waiver of some or all of an applicant's local match requirement. During the application review process, waiver requests will be evaluated based on a demonstration of severe fiscal distress.

The COPS Office statutory nonsupplanting requirement mandates that CHP funds must be used to supplement (increase) state, local, or BIA funds that would have been dedicated toward sworn officer positions if federal funding had not been awarded. CHP award funds must not be used to supplant (replace) local funds that agencies otherwise would have devoted to sworn officer hiring. The hiring or rehiring of officers under CHP must be in addition to, and not in lieu of, officers who otherwise would have been hired or rehired with state, local, or BIA funds.

Applicants are required to affirm in their CHP award application that their agency plans to retain any additional officer positions funded following the expiration of the award and identify their planned sources of retention funding.

### Highlights of FY 2022 CHP

Additional consideration in the application review process will be given to applicants that propose a community-based approach to the following problem/focus areas: Building Legitimacy and Trust, Violent Crime (particularly gun violence), Police-Based Response to Persons in Crisis, and Combating Hate and Domestic Extremism. If awarded CHP funding, recipients that chose any of these specific community policing problem areas will not be allowed to change the problem area post-award.

Additional consideration will also be given to applicants that meet any of the following criteria:

- **Persistent Poverty.** Applicants in an area with persistent poverty
- **Preventing Radicalization of Personnel.** Applicants seeking support for screening and counseling programs to identify and prevent the radicalization of applicants and personnel who endorse violent and hateful extremist movements
- **Community-based Hires.** Applicants that commit to recruiting officers from the community in which they will serve
- **Community-based Officer Relocation.** Applicants that commit to recruiting officers who are willing to relocate to areas characterized by fragmented relations between police and community residents or to areas of high crime
- **Diversity Training.** Agencies that require evidence-based cultural sensitivity training for officers
- **Safe Harbor.** Applicants in states with certain anti-human trafficking laws that treat minors engaged in commercial sex as victims (referred to as "safe harbor" laws) and permit individuals to vacate arrest or prosecution records for nonviolent offenses as a result of being trafficked
- **Catastrophic Incident.** Applicants that experienced an unanticipated catastrophic event or Attorney General-declared area in crime-related crisis

- **Hiring Veterans.** Applicants that commit to hiring at least one military veteran
- **Rural Designation.** Applicants from rural areas
- **Agency Not Funded in FY21.** Applicants that did not receive a CHP award in FY 2021

CHP recipients who use CHP funding to deploy school resource officers (SRO) will be required to submit a memorandum of understanding (MOU) between the law enforcement agency and the school partners. In addition, all applicants who receive FY 2022 CHP funding for SROs will be required to send each awarded SRO position to a training sponsored and subsidized by the COPS Office. Additional information about this training requirement will be provided to recipients at the time of award.

### Contact the COPS Office

For more information about COPS Office programs and resources, please call the COPS Office Response Center at 800-421-6770 or visit the COPS Office website at <https://cops.usdoj.gov>.

### How to Apply

**Step 1.** Register with the SAM (System of Award Management) database or confirm or renew your existing SAM registration.

**Step 2.** Confirm your entity's electronic business point of contact (E-Biz POC) in SAM is accurate.

**Step 3.** Register with Grants.gov or confirm your existing registration.

**Step 4.** Submit the first part of your application in Grants.gov. **Deadline to complete this step is June 9, 2022, at 7:59 p.m.**

**Step 5.** Onboard your agency to the JustGrants Justice Grants System.

**Step 6.** Complete and submit the second part of your application in JustGrants (<https://www.justicegrants.usdoj.gov>).

Further instructions and explanations of the application process can be found on the COPS Office website at <https://cops.usdoj.gov>.

Complete application packages for the FY 2022 CHP solicitation are due by **June 16, 2022, at 7:59 p.m. ET.**



**STORMWATER CONTROL MEASURES (SCMs), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT**

THIS STORMWATER CONTROL MEASURES (SCMs), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT (“Agreement”), made this \_\_\_\_\_ day of \_\_\_\_\_, 2022, by  
Lowan-Cabarrus Young Men’s Christian Association, a North Carolina non-profit corporation successor to  
Cannon Memorial Young Men’s Christian Association, whose principal address is 215 Guffy Street  
Salisbury, NC 28147 (hereinafter “Grantor”), with, to, and for the benefit of the City of Concord, a municipal  
corporation of the State of North Carolina, whose address is P.O. Box 308, Concord North Carolina 2802  
308, (hereinafter “Grantee” or “City”).

**WITNESSETH:**

**WHEREAS,** THE CITY COUNCIL ACCEPTED THIS STORMWATER CONTROL  
MEASURES (SCMs), ACCESS EASEMENT AND MAINTENANCE AGREEMENT ON \_\_\_\_\_  
\_\_\_\_\_, 2022.

**WHEREAS,** Grantor is the owner in fee simple of certain real property situated in the City of  
Concord, County of Cabarrus, North Carolina and more particularly described as follows: 5325 Langford  
Ave. and 5350 Vining St., Concord, NC, Cabarrus County Property Identification Number (PIN): 5601-20-  
0578. Being lands being conveyed to Grantor by deeds recorded in Book and Page 3479/222 in the Office  
of the Register of Deeds for Cabarrus County (hereinafter referred to as the “Property”); and

**WHEREAS,** Grantor desires to develop or redevelop all or portions of the Property; and

**WHEREAS,** the Property is located within the planning jurisdiction of the City of Concord, and  
subject to certain requirements set forth in the City of Concord Code of Ordinances Chapter 60, the Concord  
Development Ordinance, (hereafter “CCDO”), and the Concord Technical Standards Manual (hereafter  
“Concord Manual”); and

**WHEREAS,** conditions for development and/or redevelopment of the Property includes (i) the  
construction, operation and maintenance of two (2) engineered stormwater control structures, namely a  
Underground Detention and a Sand Filter, as provided in the CCDO and the Concord Manual (the  
“Stormwater Control Measures” or “SCMs”), (ii) Grantor’s dedication of a non-exclusive access easement

the City, as described in this Agreement, for inspection and maintenance of the Stormwater Control Measures; and (iii) the assumption by Grantor of certain specified maintenance and repair responsibilities and

**WHEREAS**, this Agreement and the easements created herein are established in accordance with the requirements of N.C.G.S. Sec 143-211 *et. seq.*, Article 4 of the CCDO and Article I of the Concord Manual; and

**WHEREAS**, Grantor has full authority to execute this Agreement so as to bind the Property and its present and future owners and/or assigns.

**NOW, THEREFORE**, for valuable consideration, including the benefits Grantor may derive therefrom, the receipt and sufficiency of which is hereby acknowledged, Grantor hereby dedicates, bargains, grants and conveys unto Grantee, and its successors and assigns, a perpetual, and irrevocable right and non-exclusive easement in gross (of the nature and character and to the extent hereinafter set forth) in, on, over, under, through and across those portions of the Property shown on the attached **Exhibit "A" titled "Exhibit for SCM Maintenance & Access Easement Property of Rowan-Cabarrus YMCA & Afton Development Co LLC (Sheet 1 of 2 and Sheet 2 of 2)"** and labeled **"30' SCM Maintenance and Access Easement 38,504 SF or 0.884 AC"**, for the purpose of inspection and maintenance of the Stormwater Control Measures (hereinafter referred to as "SCM Easements"). Within the SCM Easements Grantor shall conduct best management practices as more fully set forth herein and in the CCDO and Concord Manual. Also within the SCM Easements, Grantor shall construct, maintain, repair and reconstruct the Stormwater Control Measures or SCMs, which include (i) the SCMs and any other stormwater quantity and/or quality control devices and/or structures, described on the plans approved by the City of Concord and filed at the P.M. Brown Operations Center, 850 Warren Coleman Blvd., Concord, NC 28025; and (ii) access to the aforesaid SCMs across that portion of the Property from **George W. Lyles Boulevard Variable Width Right-of-Way** as shown on the attached **Exhibit "A" titled Exhibit for SCM Maintenance & Access Easement Property of Rowan-Cabarrus YMCA & Afton Development Co LLC (Sheet 1 of 2 and Sheet 2 of 2)"** and labeled **"30' SCM Maintenance and Access Easement 38,504 SF or 0.884 AC"**, for the purpose of permitting utility access, inspection and, in accordance with the terms of paragraph 4 of this Agreement, maintenance and repair of the SCMs, as more fully set forth herein and in the CCDO and Concord Manual. Except as set forth herein, nothing contained in this Agreement shall be deemed to be a gift or dedication of any portion of Grantor's Property to the general public or for any public use or purpose whatsoever, and further except as specifically provided herein for the benefit of the City, no rights, privileges or immunities of Grantor shall inure to the benefit of any third-party, nor shall any third-party be deemed to be a beneficiary of any of the provisions contained herein.

The additional terms, conditions, and restrictions of this Agreement are:

1. The requirements pertaining to the SCM Easements are more fully set forth in the current adopted and published editions of the following four (4) documents: (i) Article 4 of the CCDO, (ii) Article I, Section 1 of the Concord Manual, (iii) the Inspection and Maintenance Plans attached as **Exhibit "B"** and (iv) as provided in the N.C. Dept. of Environment and Natural Resources (DENR) Stormwater Best Management Practices (BMP) Manual (the "NCDENR Manual"), all of which are incorporated herein by reference as set forth in their entireties below. Grantor agrees to abide by all applicable codes including, but not limited to, those set forth above. All provisions required by the CCDO Section 4.4.6.B.1 are incorporated herein by reference, and Grantor agrees to abide by said provisions. Grantor further agrees that Grantor shall perform the following, all at its sole cost and expense:

a. All components of the SCMs and related improvements within the SCM Easements are to be kept in good working order.

b. The components of the SCMs and related improvements within the SCM Easements shall be maintained by Grantor as described in "Exhibit B", the Inspection and Maintenance Plans.

2. Upon completion of the construction of the SCMs, Grantor's N.C. registered professional engineer shall certify in writing to the Concord Director of Water Services that the SCMs and all components are constructed and initially functioning as designed. Annual inspection reports (hereinafter referred to as "Annual Report(s)") are required each year and shall be made by Grantor on the written schedule provided to Grantor in advance by the City. The Annual Report(s) shall describe the condition and functionality of the SCMs, and shall describe any maintenance performed thereon during the preceding year. The Annual Report(s) shall be submitted with the signature and seal of Grantor's N.C. registered professional engineer conducting the inspection. If necessary, the City will provide a letter describing the maintenance necessary to keep the SCMs and all components and structures related to the SCMs functioning as designed and within reasonable timeframes in which to complete the maintenance. If the Annual Report(s) recommend maintenance actions, the repairs shall be made within a reasonable time as defined by the City.

Grantor and Grantee understand, acknowledge and agree that the attached Inspection and Maintenance Plans describe the specific actions needed to maintain the SCMs.

3. Grantor represents and warrants that Grantor are financially responsible for construction, maintenance, repair and replacement of the SCMs, its appurtenances and vegetation, including impoundment(s), if any. Grantor agrees to perform or cause to be performed the maintenance as outlined in the attached Inspection and Maintenance Plan and as provided in the NCDENR Manual. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall give the City written notice of the transfer of a fee or possessory interest in the Property listing the transferee's name, address of the property, transferee's mailing address and other contact information. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall not be responsible for errors or omissions in the information about the transferee provided to the City caused by acts or omissions of the transferee. The transferee shall give the City written notice of the acceptance and any future transfer of an interest in the property listing the transferee's name, address of the Property; transferee's mailing address and other contact information. Upon the conveyance of the Property by Grantor to any transferee acquiring the Property by means of a conveyance document containing the language set forth in paragraph 9 below, Grantor is released from any further covenants or other obligations set forth in this Agreement.

4. If Grantor fails to comply with these requirements, or any other obligations imposed herein, the City of Concord Code of Ordinances, CCDO, the Concord Manual or approved Inspection and Maintenance Plan, the City of Concord may perform (but is not obligated to perform) such work as Grantor is responsible for and recover the costs thereof from Grantor.

5. This Agreement gives Grantee the following affirmative rights:

Grantee, its officers, employees, and agents may, but is not obligated, to enter the SCM Easement whenever reasonably necessary for the purpose of inspecting same to determine compliance herewith, maintain same and make repairs or replacements to the SCMs, its appurtenances and condition(s) as may be necessary or convenient thereto in the event Grantor defaults in its obligations and to recover from Grantor

the cost thereof, and in addition to other rights and remedies available to it, to enforce by proceedings at law or in equity the rights, covenants, duties, and other obligations herein imposed in this Agreement.

6. Grantor shall neither obstruct nor hinder the passage of vehicular traffic and pedestrians within the paved portion of the access easement granted herein by Grantor to Grantee.

7. Grantor shall, in all other respects, remain the fee owners of the Property and areas subject to the SCM Easements, and may make all lawful uses of the Property not inconsistent with this Agreement and the easements granted herein.

8. Grantee neither waives nor forfeits the right to act to ensure compliance with the terms, conditions and purposes of the SCM Easements and this Agreement by a prior failure to act.

9. Grantor agrees:

a. That a reference to the deed book and page number of this document in a form substantially similar to the following statement in at least a 12 point bold face font on the first page of the document: **“Notice: The Property is subject to a Stormwater Control Measures (SCMs), Access Easement and Maintenance Agreement enforced by the City of Concord and State of North Carolina recorded in the Cabarrus County Registry at DB \_\_\_\_\_ PG \_\_\_\_.”** shall be inserted by Grantor in any subsequent deed or other legal instrument by which Grantor may be divested of either the fee simple title to or possessory interests in the subject Property. The designation Grantor and Grantee shall include the parties, their heirs, successors and assigns; and

b. That the following statement shall be inserted in any deed or other document of conveyance:

“Title to the property hereinabove described is subject to the following exceptions:

That certain Stormwater Control Measures (SCMs), Access Easement and Maintenance Agreement dated \_\_\_\_\_, 2022 with and for the benefit of the City of Concord recorded in Book \_\_\_\_\_, Page \_\_\_\_\_ in the Cabarrus County Registry, North Carolina, creating obligations of payment and performance on the part of Grantor which Grantee hereby assumes and agrees to perform and pay as part of the consideration of this conveyance and except further that this conveyance is made subject to any and all enforceable restrictions and easements of record (if applicable).”

In the event that such conveyance is other than by deed, the above terms of “grantor/grantee” may be substituted by equivalent terms such as “landlord/tenant.”

TO HAVE AND TO HOLD the aforesaid rights, privileges, and easements herein granted to Grantee and its successors and assigns forever and Grantor do covenant that Grantor is seized of said premises in fee and has the right to convey the same, that except as set forth below the same are free from encumbrances and that Grantor will warrant and defend the said title to the same against claims of all persons whatsoever.

Title to the Property hereinabove described is subject to all enforceable deeds of trust, liens, easements, covenants and restrictions of record.

The covenants agreed hereto and the conditions imposed herein shall be binding upon Grantor and its agents, personal representatives, heirs and assigns and all other successors in interest to Grantor and shall continue as a servitude running in perpetuity with the above-described land.

THE CONCORD CITY COUNCIL APPROVED THIS AGREEMENT AND SCM ACCESS EASEMENTS AND ACCEPTED THE SCM ACCESS EASEMENTS AT THEIR MEETING OF \_\_\_\_\_, 2021 AS ATTESTED TO BELOW BY THE CITY CLERK. CONCORD CITY COUNCIL APPROVAL OF THIS AGREEMENT AND EASEMENT IS A CONDITION PRECEDENT TO ACCEPTANCE BY THE CITY.

IN WITNESS WHEREOF, the parties have caused this instrument to be duly executed day and year first above written.

**GRANTOR:**

Rowan-Cabarrus Young Men's Christian Association,  
North Carolina non-profit corporation successor by merger  
Cannon Memorial Young Men's Christian Association

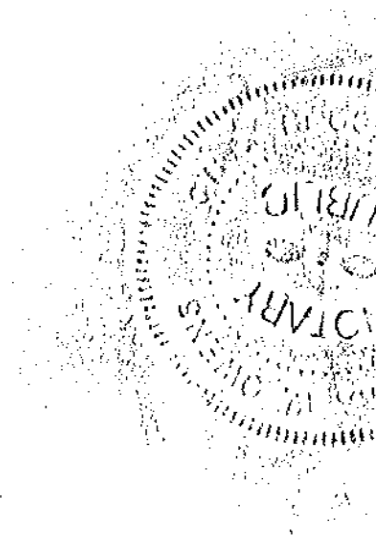
By: Jamie E. Morgan  
Name: Jamie E. Morgan, President/CEO  
Title

STATE OF North Carolina  
COUNTY OF Cabarrus

I, Debra Owens, a Notary Public of the aforesaid County and State, do hereby certify that Jamie E. Morgan personally appeared before me this day and acknowledged that he/she is the President/CEO of Rowan-Cabarrus Young Men's Christian Association, a North Carolina non-profit corporation successor by merger to Cannon Memorial Young Men's Christian Association and that he/she as President/CEO being authorized to do so, executed the foregoing instrument on behalf of the company.

WITNESS my hand and Notarial Seal this the 6 day of April, 2022.

Debra A Owens  
Notary Public  
My commission expires: 10/24/2024



**GRANTEE:**

City of Concord, a municipal corporation

By: \_\_\_\_\_  
Lloyd Wm. Payne, Jr., City Manager

TEST:

\_\_\_\_\_  
Kim J. Deason, City Clerk  
[SEAL]

APPROVED AS TO FORM

\_\_\_\_\_  
Lerie Kolczynski, City Attorney

**STATE OF NORTH CAROLINA  
COUNTY OF CABARRUS**

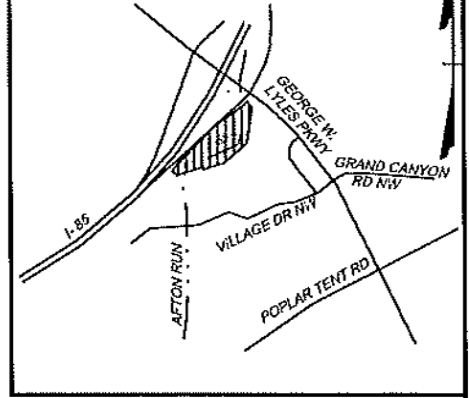
I, \_\_\_\_\_, a Notary Public of the aforesaid County and State, do hereby certify that Kim J. Deason personally appeared before me this day and acknowledged that she is the City Clerk of the City of Concord and that by authority duly given and as the act of the municipal corporation the foregoing STORMWATER CONTROL MEASURES (SCMs), ACCESS EASEMENT AND MAINTENANCE AGREEMENT was approved by the Concord City Council at its meeting held on \_\_\_\_\_, 2022 and was signed in its name by its City Manager, sealed with its corporate seal and attested by her as its City Clerk.

WITNESS my hand and notarial seal, this the \_\_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires: \_\_\_\_\_



CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD BEARING	CHORD
EC1	138.00'	33.83'	17.00'	14°02'51"	S60°40'09"W	33.75'
EC2	250.00'	100.39'	50.88'	23°00'28"	N65°08'58"E	99.72'
EC3	54.00'	47.48'	25.40'	50°22'27"	S42°25'08"E	45.96'
EC4	40.00'	62.83'	40.00'	90°00'00"	S27°46'06"W	56.57'
EC5	10.00'	15.71'	10.00'	90°00'00"	S27°46'06"W	14.14'
EC6	24.00'	21.10'	11.29'	50°22'27"	S42°25'08"E	20.43'
EC7	220.00'	88.34'	44.78'	23°00'28"	N65°08'58"E	87.75'
EC8	168.00'	36.85'	18.50'	12°34'03"	S59°55'45"W	36.78'



VICINITY MAP - MAP NOT TO SCALE

LINE TABLE		
LINE	BEARING	LENGTH
E1	N67°36'21"W	56.75'
E2	N17°13'54"W	66.31'
E3	N72°46'06"E	98.54'
E4	N17°13'54"W	24.00'
E5	N72°46'06"E	2.18'
E6	N23°25'38"W	32.04'
E7	N66°34'22"E	30.00'
E8	S23°25'38"E	35.30'
E9	N72°46'06"E	77.11'
E10	S17°13'54"E	68.75'
E11	S72°46'06"W	78.67'
E12	N17°13'54"W	8.48'
E13	S72°46'06"W	30.79'
E14	N17°13'54"W	6.27'
E15	S72°46'06"W	98.54'
E16	S17°13'54"E	66.31'
E17	S67°36'21"E	47.08'
E18	S30°33'10"E	30.26'

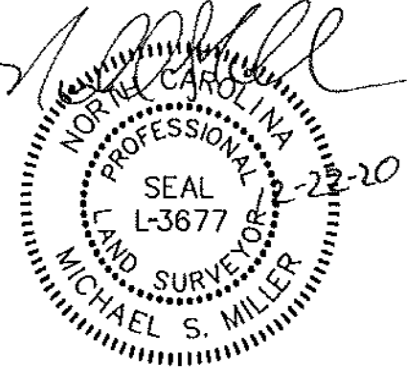
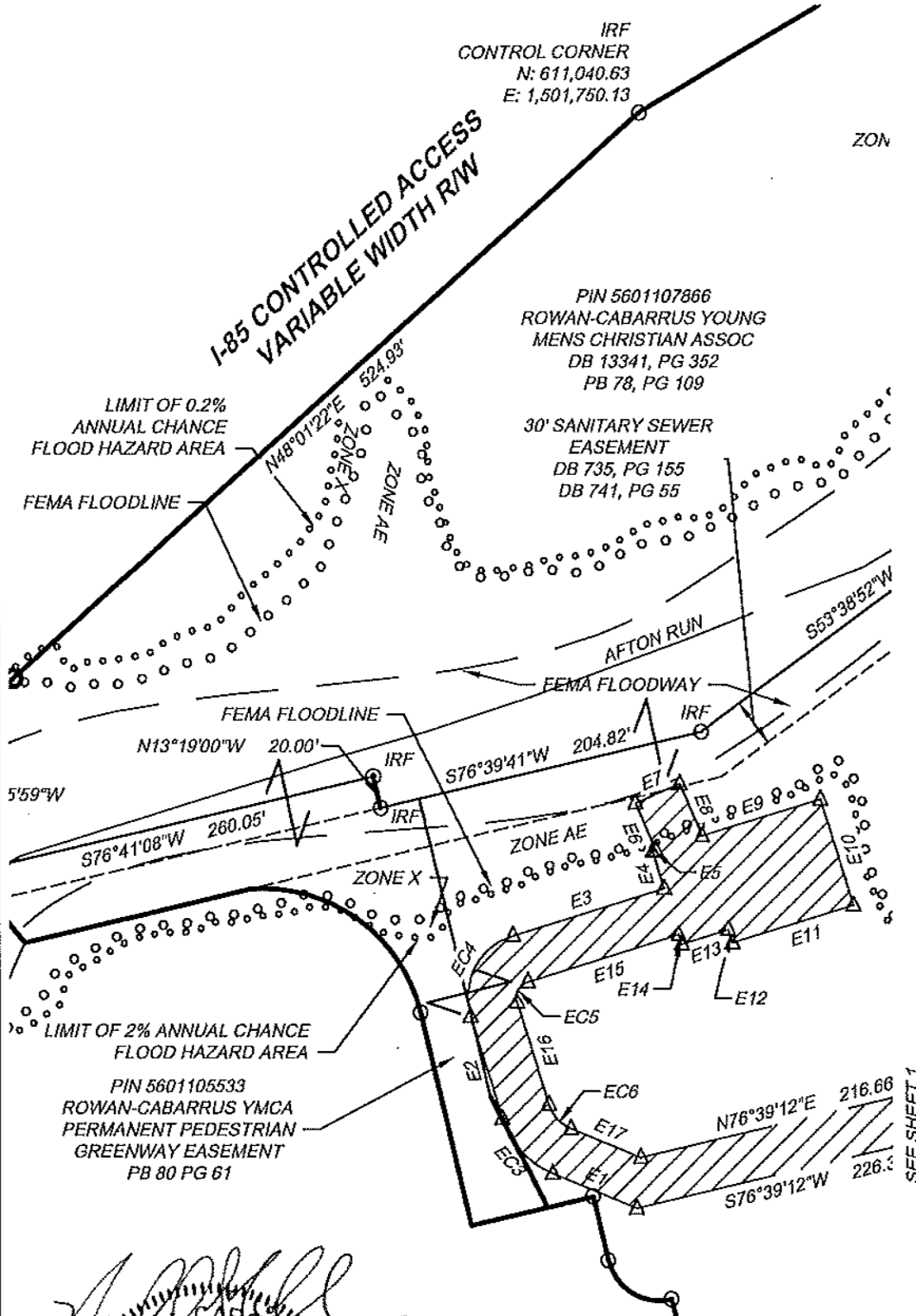


EXHIBIT FOR SCM MAINTENANCE & ACCESS EASEMENT  
PROPERTY OF ROWAN-CABARRUS YMCA

CITY OF CONCORD	CABARRUS COUNTY, NC
Date: 12-21-2020	Scale: 1" = 100'
Sheet 2 of 2	J.N.: 40686
Drawn by: TEJ	Checked by: MSM



## Exhibit B



### Sand Filter Inspection and Maintenance Plan

Grantor agrees to keep a maintenance record on this SCM. This maintenance record will be kept in a log in a known set location. Any deficient SCM elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the SCM.

Important maintenance procedures:

- The drainage area will be carefully managed to reduce the sediment load to the sand filter.
- Once a year, sand media will be skimmed.
- The sand filter media will be replaced whenever it fails to function properly after vacuuming.

The sand filter will be inspected **quarterly and within 24 hours after every storm event greater than 1.0 inches**. Records of inspection and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How I will remediate the problem:
The entire SCM	Trash/debris is present.	Remove the trash/debris.
The adjacent pavement (if applicable)	Sediment is present on the pavement surface.	Sweep or vacuum the sediment as soon as possible.
The perimeter of the sand filter	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six inches.
The flow diversion structure	The structure is clogged.	Unclog the conveyance and dispose of any sediment off-site.
	The structure is damaged.	Make any necessary repairs or replace if damage is too large for repair.

<b>The pretreatment area</b>	Sediment has accumulated to a depth of greater than six inches.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If a pesticide is used, wipe it on the plants rather than spraying.

<b>SCM element:</b>	<b>Potential problem:</b>	<b>How I will remediate the problem:</b>
<b>The filter bed and underdrain collection system</b>	Water is ponding on the surface for more than 24 hours after a storm.	Check to see if the collector system is clogged and flush if necessary. If water still ponds, remove the top few inches of filter bed media and replace. If water still ponds, then consult an expert.
<b>The outflow spillway and pipe</b>	Shrubs or trees have started to grow on the embankment.	Remove shrubs and trees immediately.
	The outflow pipe is clogged.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	The outflow pipe is damaged.	Repair or replace the pipe.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact Stormwater Services at 704-920-5360.



## Underground Detention Inspection and Maintenance Plan

Grantor agrees to keep a maintenance record on this SCM. This maintenance record will be kept in a log in a known set location. Any deficient SCM elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the SCM.

Important maintenance procedures:

- The drainage area will be carefully managed to reduce the sediment load to the Underground Storage.
- Once a year, the tank will be cleaned of all sediment and debris.

The underground detention system will be inspected **quarterly and within 24 hours after every storm event greater than 1.0 inches**. Records of inspection and maintenance will be kept in a known set location and will be available upon request.


Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How I will remediate the problem:
The entire SCM	Trash/debris is present.	Remove the trash/debris.
The adjacent pavement (if applicable)	Sediment is present on the pavement surface.	Sweep or vacuum the sediment as soon as possible.
The flow diversion structure	The structure is clogged.	Unclog the conveyance and dispose of any sediment offsite.
	The structure is damaged.	Make any necessary repairs or replace if damage is too large for repair.
The Storage area	Sediment has accumulated to a depth of greater than six inches.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Trash has accumulated.	Remove trash and debris. If access to storage area is necessary for removal, use appropriate safety precautions such as confined entry rules
SCM element:	Potential problem:	How I will remediate the problem:
The outflow spillway and pipe	The pipe is clogged.	Inspect and remove blockage. Inspect storage are for other potential debris.
	The outflow pipe is damaged.	Repair or replace the pipe.
The receiving water	Erosion or other signs of damage have occurred at the outlet.	Contact Stormwater Services at 7049205360.

**Consent of Lienholder**

Truist Bank, as successor by merger to SunTrust Bank ("Lienholder"), hereby consents to the grant of the foregoing Stormwater Control Measures (SCMs), Access Easement and Maintenance Agreement by Rowan-Cabarrus Young Men's Christian Association, a North Carolina non-profit corporation successor by merger to Cannon Memorial Young Men's Christian Association, filed in Deed Book \_\_\_\_\_ at Page \_\_\_\_\_, and joins in the execution hereof solely as Lienholder and hereby does agree that in the event of the foreclosure of the Deed of Trust and any amendments thereto recorded in Deed Book 10542, Page 167, the Assignment of Rents, Profits and Leases recorded in Deed Book 10542, Page 167 and the UCC Financing Statement filed in Deed Book 10542, Page 184 all of the Cabarrus County Register of Deeds Office or other sale of said property described in the aforesaid documents under judicial or non-judicial proceedings, the same shall be sold subject to said Agreement and Easement.

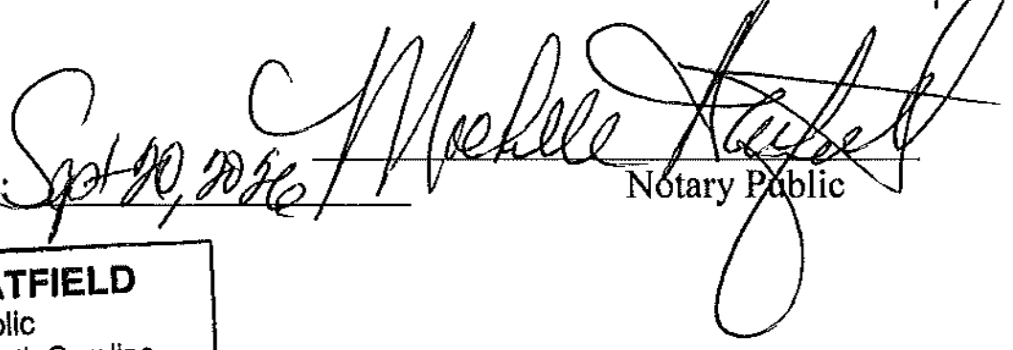
SIGNED AND EXECUTED this 26 day of January, ~~2021~~ 2022

Truist Bank  
By:   
Name: Robert Garofalo  
Title: Senior Vice President

STATE OF NC  
COUNTY OF Mecklenburg

I, Michelle Hatfield, a Notary Public in and for Mecklenburg County and State of NC, do hereby certify that Robert Garofalo, as SVP of Truist Bank personally appeared before me this day and acknowledged to me voluntarily signed the foregoing document for the purpose stated therein.

WITNESS my hand and Notarial Seal this the 26<sup>th</sup> day of January, ~~2021~~ 2022.

My Commission Expires: Sept 20, 2026  Notary Public

**MICHELLE HATFIELD**  
Notary Public  
Mecklenburg Co., North Carolina  
My Commission Expires Sept. 20, 2026

NORTH CAROLINA  
CABARRUS COUNTY

**STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT**

THIS STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT (“Agreement”), made this \_\_\_\_\_ day of \_\_\_\_\_, 2022,  
M/I Homes of Charlotte, LLC, a Delaware limited liability company, whose principal address is 4131 Wor  
Avenue, Suite 500, Columbus, OH 43219 (hereinafter referred to as “Grantor”), with, to, and for the benefit  
the City of Concord, a municipal corporation of the State of North Carolina, whose address is P.O. Box 30  
Concord North Carolina 28026-0308, (hereinafter “Grantee” or “City”).

**WITNESSETH:**

**WHEREAS,** THE CITY COUNCIL ACCEPTED THIS STORMWATER CONTROL  
MEASURES (SCMs), ACCESS EASEMENT AND MAINTENANCE AGREEMENT ON \_\_\_\_\_  
\_\_\_\_\_.

**WHEREAS,** Grantor is the owner in fee simple of certain real property situated in the City  
Concord, County of Cabarrus, North Carolina and more particularly described as follows: 345 Odell Sche  
Road, Concord, NC, Cabarrus County Property Identification Number (PIN): 4681-82-0317 “(t  
Property”). It being the land conveyed to Grantor by deed recorded in Book 15295 and Page 1 in the Offi  
of the Register of Deeds for Cabarrus County; and

**WHEREAS,** Grantor desires to develop or redevelop all or portions of the Property; and

**WHEREAS,** the Property is located within the planning jurisdiction of the City of Concord, and  
subject to certain requirements set forth in the City of Concord Code of Ordinances Chapter 60, the Conco  
Development Ordinance, (hereafter “CCDO”), and the Concord Technical Standards Manual (hereaft  
“Concord Manual”); and

**WHEREAS,** conditions for development and/or redevelopment of the Property includes (i) t  
construction, operation and maintenance of an engineered stormwater control structure, namely a W  
Detention Basin, as provided in the CCDO and the Concord Manual (the “Stormwater Control Measures”  
“SCM”), (ii) Grantor’s dedication of a non-exclusive access easement to the City, as described in th

agreement, for inspection and maintenance of the Stormwater Control Measure; and (iii) the assumption by Grantor of certain specified maintenance and repair responsibilities; and

**WHEREAS**, this Agreement and the easements created herein are established in accordance with the requirements of N.C.G.S. Sec 143-211 *et. seq.*, Article 4 of the CCDO and Article I of the Concord Manual; and

**WHEREAS**, Grantor has the full authority to execute this Agreement so as to bind the Property and all current and future owners and/or assigns.

**NOW, THEREFORE**, for valuable consideration, including the benefits Grantor may derive therefrom, the receipt and sufficiency of which is hereby acknowledged, Grantor hereby dedicates, bargains, grants and conveys unto Grantee, and its successors and assigns, a perpetual, and irrevocable right and non-exclusive easement in gross (of the nature and character and to the extent hereinafter set forth) in, on, over, under, through and across those portions of the Property shown on the attached **Exhibit "A" titled "SCM Maintenance and Access Easement, Annsborough Park Subdivision Property of M/I Homes of Charlotte LLC" (Sheet 1 of 4, Sheet 2 of 4, Sheet 3 of 4 and Sheet 4 of 4)"** and labeled on Sheet 1 of 4 **"SCM Access Easement and Maintenance Easement 2.074 AC."** for the purpose of inspection and maintenance of the Stormwater Control Measure (hereinafter referred to as "SCM Easement"). Within the SCM Easement Grantor shall conduct best management practices as more fully set forth herein and in the CCDO and Concord Manual. Also within the SCM Easement, Grantor shall construct, maintain, repair and reconstruct the Stormwater Control Measure or SCM, which include (i) the SCM and any other stormwater quantity and/or quality control devices and/or structures, described on the plans approved by the City of Concord and filed at the A.M. Brown Operations Center, 850 Warren Coleman Blvd., Concord, NC 28027 and (ii) access to the aforesaid SCM as shown on the attached **Exhibit "A" titled "SCM Maintenance and Access Easement, Annsborough Park Subdivision Property of M/I Homes of Charlotte LLC" (Sheet 1 of 4, Sheet 2 of 4, Sheet 3 of 4 and Sheet 4 of 4)"** and labeled on Sheet 1 of 4 **"SCM Access Easement and Maintenance Easement 2.074 AC."** and labeled on Sheet 1 of 4, Sheet 2 of 4 and Sheet 3 of 4 **"Variable Width Access Easement 1.970 AC. (Not Including SCM & Maintenance Area)"** **Proposed Annsborough Drive NW 60' Public R/W"** for the purpose of permitting City access, inspection and, in accordance with the terms of paragraph 4 of this Agreement, maintenance and repair of the SCM, more fully set forth herein and in the CCDO and Concord Manual. Except as set forth herein, nothing contained in this Agreement shall be deemed to be a gift or dedication of any portion of Grantor's Property to the general public or for any public use or purpose whatsoever, and further except as specifically provided herein for the benefit of the City, no rights, privileges or immunities of Grantor shall inure to the benefit of any third-party, nor shall any third-party be deemed to be a beneficiary of any of the provisions contained herein.

The additional terms, conditions, and restrictions of this Agreement are:

1. The requirements pertaining to the SCM Easements are more fully set forth in the current adopted and published editions of the following four (4) documents: (i) Article 4 of the CCDO, (ii) Article I, Section 1 of the Concord Manual, (iii) the Wet Detention Basin Inspection and Maintenance Plan attached as **Exhibit "B"** and (iv) as provided in the N.C. Dept. of Environment and Natural Resources (DENR) Stormwater Best Management Practices (BMP) Manual (the "NCDENR Manual"), all of which are incorporated herein by reference as if set forth in their entireties below. Grantor agrees to abide by all applicable codes including but not limited to, those set forth above. All provisions required by the CCDO Section 4.4.6.B.1 are incorporated herein by reference, and Grantor agrees to abide by said provisions. Grantor further agrees that Grantor shall perform the following, all at its sole cost and expense:

a. All components of the SCM and related improvements within the SCM Easements are to be kept in good working order.

b. The components of the SCM and related improvements within the SCM Easements shall be maintained by Grantor as described in “**Exhibit B**”, the Wet Detention Basin Inspection and Maintenance Plan.

2. Upon completion of the construction of the SCM, Grantor’s N.C. registered professional engineer shall certify in writing to the Concord Director of Water Services that the SCM and all components are constructed and initially functioning as designed. Annual inspection reports (hereinafter referred to as “Annual Report(s)”) are required each year and shall be made by Grantor on the written schedule provided to Grantor in advance by the City. The Annual Report(s) shall describe the condition and functionality of the SCM, and shall describe any maintenance performed thereon during the preceding year. The Annual Report(s) shall be submitted with the signature and seal of Grantor’s N.C. registered professional engineer conducting the inspection. If necessary, the City will provide a letter describing the maintenance necessary to keep the SCM and all components and structures related to the SCM functioning as designed and within reasonable timeframes in which to complete the maintenance. If the Annual Report(s) recommend maintenance actions, the repairs shall be made within a reasonable time as defined by the City.

Grantor and Grantee understand, acknowledge and agree that the attached Inspection and Maintenance Plan describes the specific actions needed to maintain the SCM.

3. Grantor represents and warrants that Grantor is financially responsible for construction, maintenance, repair and replacement of the SCM, its appurtenances and vegetation, including impoundment(s), if any. Grantor agrees to perform or cause to be performed the maintenance as outlined in the attached Inspection and Maintenance Plan and as provided in the NCDENR Manual. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall give the City written notice of the transfer of a fee or possessory interest in the Property listing the transferee’s name, address of the property, transferee’s mailing address and other contact information. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall not be responsible for errors or omissions in the information about the transferee provided to the City caused by acts or omissions of the transferee. The transferee shall give the City written notice of the acceptance and any future transfer of an interest in the property listing the transferee’s name, address of the Property; transferee’s mailing address and other contact information. Upon the conveyance of the Property by Grantor to any transferee acquiring the Property by means of a conveyance document containing the language set forth in paragraph 9 below, Grantor is released from any further covenants or other obligations set forth in this Agreement.

4. If Grantor fails to comply with these requirements, or any other obligations imposed herein, the City of Concord Code of Ordinances, CCDO, the Concord Manual or approved Inspection and Maintenance Plan, the City of Concord may perform (but is not obligated to perform) such work as Grantor is responsible for and recover the costs thereof from Grantor.

5. This Agreement gives Grantee the following affirmative rights:

Grantee, its officers, employees, and agents may, but is not obligated, to enter the SCM Easement whenever reasonably necessary for the purpose of inspecting same to determine compliance herewith, maintain same and make repairs or replacements to the SCM, their appurtenances and condition(s) as may be necessary or convenient thereto in the event Grantor defaults in its obligations and to recover from Grantor

the cost thereof, and in addition to other rights and remedies available to it, to enforce by proceedings at law or in equity the rights, covenants, duties, and other obligations herein imposed in this Agreement.

6. Grantor shall neither obstruct nor hinder the passage of vehicular traffic and pedestrians with the paved portion of the access easement granted herein by Grantor to Grantee.

7. Grantor shall, in all other respects, remain the fee owners of their respective Property and area subject to the SCM Easements, and may make all lawful uses of the Property not inconsistent with this Agreement and the Easements granted herein.

8. Grantee neither waives nor forfeits the right to act to ensure compliance with the terms, conditions and purposes of the SCM Easements and this Agreement by a prior failure to act.

9. Grantor agrees:

a. That a reference to the deed book and page number of this document in a form substantially similar to the following statement in at least a 12 point bold face font on the first page of the document: **“Notice: The Property is subject to a Stormwater Control Measure (SCM), Access Easement and Maintenance Agreement enforced by the City of Concord and State of North Carolina recorded in the Cabarrus County Registry at DB \_\_\_\_\_ PG \_\_\_\_\_.”** shall be inserted by Grantor in any subsequent deed or other legal instrument by which Grantor may be divested of either the fee simple title to or possessory interests in the subject Property. The designation Grantor and Grantee shall include the parties, their heirs, successors and assigns; and

b. That the following statement shall be inserted in any deed or other document of conveyance:

“Title to the property hereinabove described is subject to the following exceptions:

That certain Stormwater Control Measure (SCM), Access Easement and Maintenance Agreement dated \_\_\_\_\_, 2022 with and for the benefit of the City of Concord recorded in Book \_\_\_\_\_, Page \_\_\_\_\_ in the Cabarrus County Registry, North Carolina, creating obligations of payment and performance on the part of Grantor which Grantee hereby assumes and agrees to perform and pay as part of the consideration of this conveyance and except further that this conveyance is made subject to any and all enforceable restrictions and easements of record (if applicable).”

In the event that such conveyance is other than by deed, the above terms of “grantor/grantee” may be substituted by equivalent terms such as “landlord/tenant.”

TO HAVE AND TO HOLD the aforesaid rights, privileges, and easements herein granted to Grantee and its successors and assigns forever and Grantor do covenant that Grantor is seized of said premises in fee and has the right to convey the same, that except as set forth below the same are free from encumbrances and that Grantor will warrant and defend the said title to the same against claims of all persons whatsoever.

Title to the Property hereinabove described is subject to all enforceable deeds of trust, liens, easements, covenants and restrictions of record.



The covenants agreed hereto and the conditions imposed herein shall be binding upon Grantor and its agents, personal representatives, heirs and assigns and all other successors in interest to Grantor and shall continue as a servitude running in perpetuity with the above-described land.

THE CONCORD CITY COUNCIL APPROVED THIS AGREEMENT AND SCM ACCESS EASEMENTS AND ACCEPTED THE SCM ACCESS EASEMENTS AT THEIR MEETING OF \_\_\_\_\_, 2022 AS ATTESTED TO BELOW BY THE CITY CLERK. CONCORD CITY COUNCIL APPROVAL OF THIS AGREEMENT AND EASEMENT IS A CONDITION PRECEDENT TO ACCEPTANCE BY THE CITY.

IN WITNESS WHEREOF, the parties have caused this instrument to be duly executed day and year first above written.

**GRANTOR:**

M/I Homes of Charlotte, LLC, a Delaware limited liability company

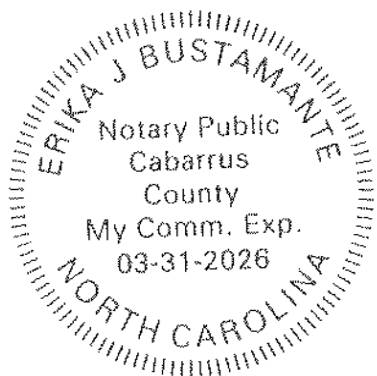
By: Cody Simmeaux  
Name: Cody Simmeaux  
Title: VP of Land

STATE OF North Carolina  
COUNTY OF Cabarrus

I, Erika Bustamante, a Notary Public of the aforesaid County and State, do hereby certify that Cody Simmeaux personally appeared before me this day and acknowledged that he/she is the VP of Land of M/I Homes of Charlotte, LLC, a Delaware limited liability company, and that he/she being authorized to do so, executed the foregoing on behalf of the company.

WITNESS my hand and Notarial Seal this the 7<sup>th</sup> day of April, 2022

Erika Bustamante  
Notary Public  
My commission expires: 03.31.2026



**GRANTEE:**

City of Concord, a municipal corporation

By: \_\_\_\_\_  
Lloyd Wm. Payne, Jr., City Manager

ATTEST:

\_\_\_\_\_  
Kim J. Deason, City Clerk  
[SEAL]

APPROVED AS TO FORM

\_\_\_\_\_  
Valerie Kolczynski, City Attorney

**STATE OF NORTH CAROLINA  
COUNTY OF CABARRUS**

I, \_\_\_\_\_, a Notary Public of the aforesaid County and State, hereby certify that Kim J. Deason personally appeared before me this day and acknowledged that she is the City Clerk of the City of Concord and that by authority duly given and as the act of the municipal corporation the foregoing STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND MAINTENANCE AGREEMENT was approved by the Concord City Council at its meeting held on \_\_\_\_\_ and was signed in its name by its City Manager, sealed with its corporate seal and attested by her as its City Clerk.

WITNESS my hand and notarial seal, this the \_\_\_\_\_ day of \_\_\_\_\_, 2022.

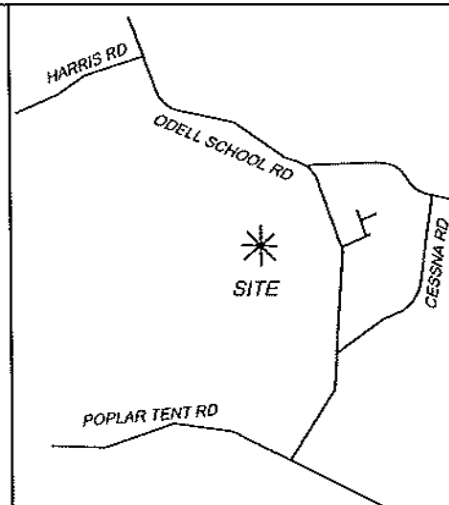
\_\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires: \_\_\_\_\_

THE FOLLOWING INFORMATION WAS USED TO PERFORM GPS SURVEY:

- (1) CLASS OF SURVEY: "CLASS A"
- (2) POSITIONAL ACCURACY: 0.04"
- (3) TYPE OF GPS FIELD PROCEDURE: NCVRS
- (4) DATE OF SURVEY: 08-15-19
- (5) DATUM/EPOCH: NAD83 (2011) - EPOCH 2010.00
- (6) PUBLISHED/FIXED-CONTROL USE: NCVRS
- (7) GEOID MODEL: 2012 (CONUS)
- (8) COMBINED GRID FACTOR(S): 0.99984656
- (9) UNITS: US SURVEY FEET

NOTES:

- 1) AREAS COMPUTED BY COORDINATE METHOD.
- 2) ALL DISTANCES SHOWN ON SURVEY ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
- 3) THIS MAP MAY NOT BE A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS AND HAS NOT BEEN REVIEWED FOR COMPLIANCE WITH RECORDING REQUIREMENTS FOR PLATS.
- 4) THIS SITE LIES IN ZONE X, AREA OF MINIMAL FLOODING ACCORDING TO FLOOD INSURANCE RATE MAP 3710468100K, EFFECTIVE DATE NOVEMBER 16, 2018 & FLOOD INSURANCE RATE MAP 3710469100K, EFFECTIVE DATE NOVEMBER 16, 2018.



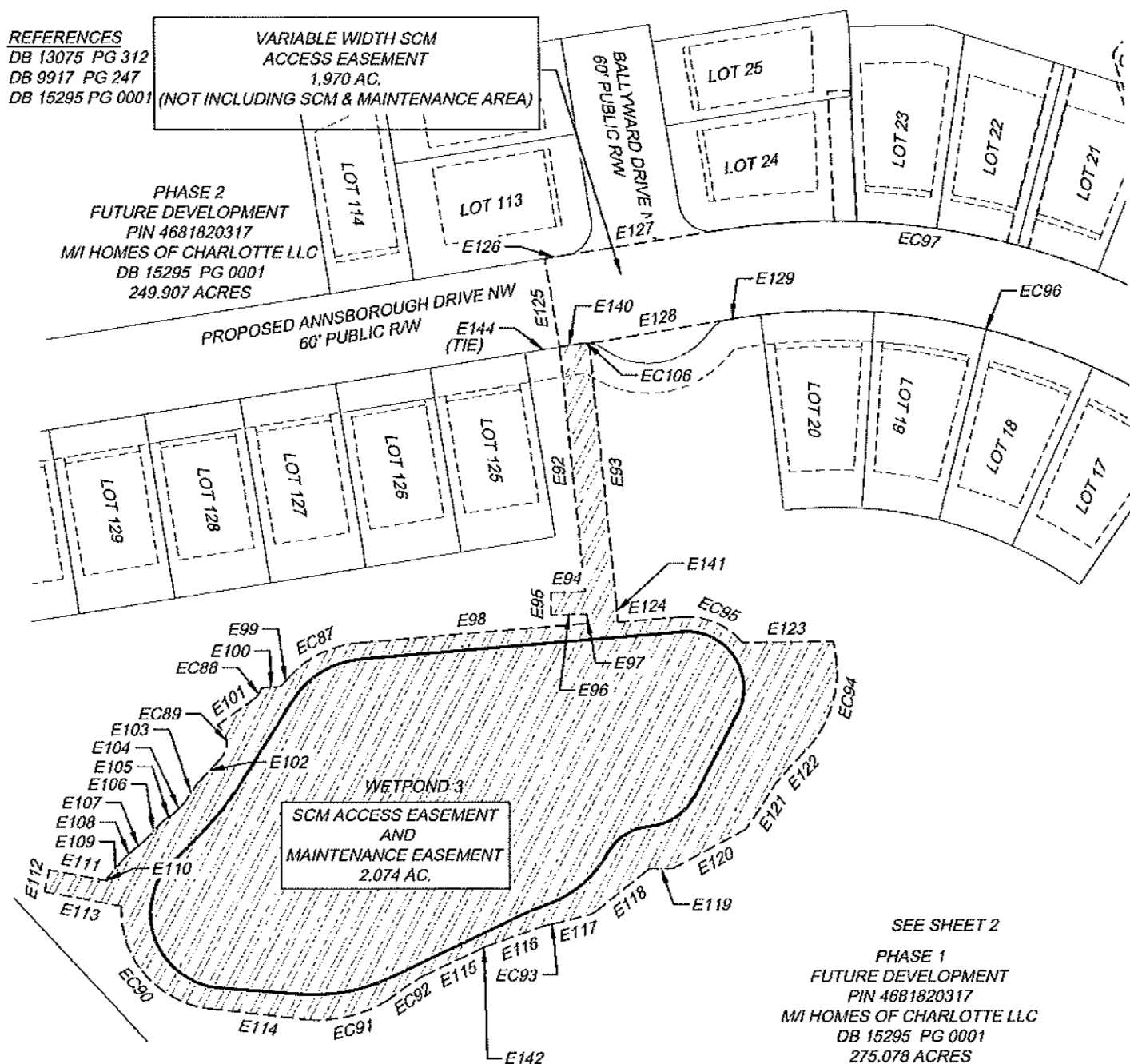
VICINITY MAP - MAP NOT TO SCALE

REFERENCES

- DB 13075 PG 312
- DB 9917 PG 247
- DB 15295 PG 0001

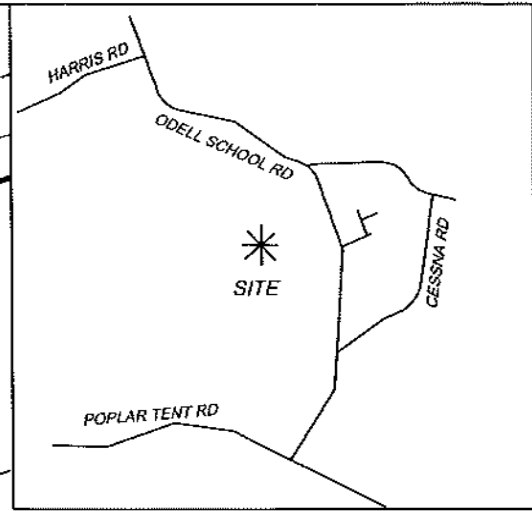
VARIABLE WIDTH SCM ACCESS EASEMENT  
1.970 AC.  
(NOT INCLUDING SCM & MAINTENANCE AREA)

PHASE 2  
FUTURE DEVELOPMENT  
PIN 4681820317  
M/I HOMES OF CHARLOTTE LLC  
DB 15295 PG 0001  
249.907 ACRES

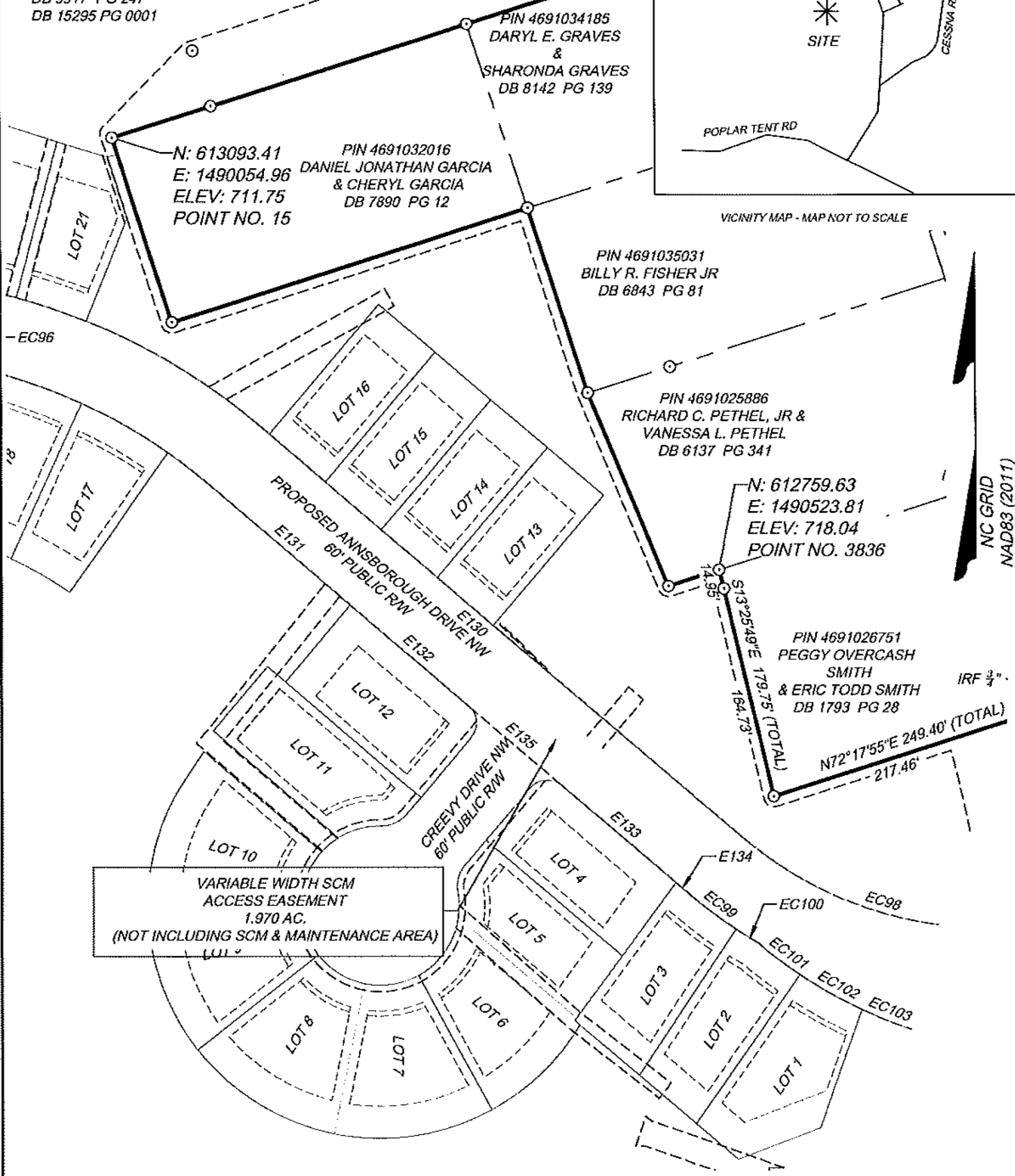


SEE SHEET 1

**REFERENCES**  
 DB 13075 PG 312  
 DB 9917 PG 247  
 DB 15295 PG 0001



VICINITY MAP - MAP NOT TO SCALE



NC GRID  
 NAD83 (2011)

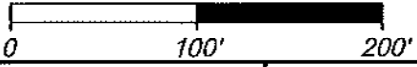
**LEGEND**

- ⊙ IPF - IRON PIPE FOUND
- ⊙ IRF - IRON ROD FOUND
- IRS - IRON ROD SET
- CMF - CONCRETE MONUMENT
- CP - COMPUTED POINT
- POB - POINT OF BEGINNING
- POC - POINT OF COMMENCEMENT
- SCM ACCESS & MAINTENANCE EASEMENT AREA

SEE SHEET 3

SCM MAINTENCE AND ACCESS EASEMENT,  
 ANNSBOROUGH PARK SUBDIVISION  
 PROPERTY OF M/I HOMES OF CHARLOTTE  
 LLC

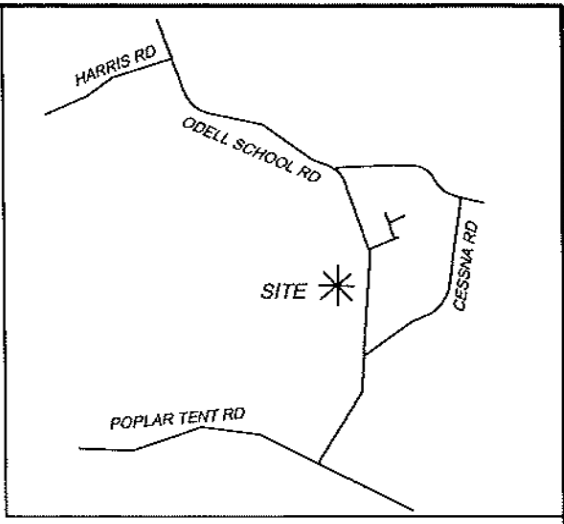
SCALE 1"=100'



CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 2 of 4	J.N.: 42966
Drawn by: DAW	Checked by: MSM

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 610 E. MOREHEAD ST., SUITE 250 | CHARLOTTE, NC 28202  
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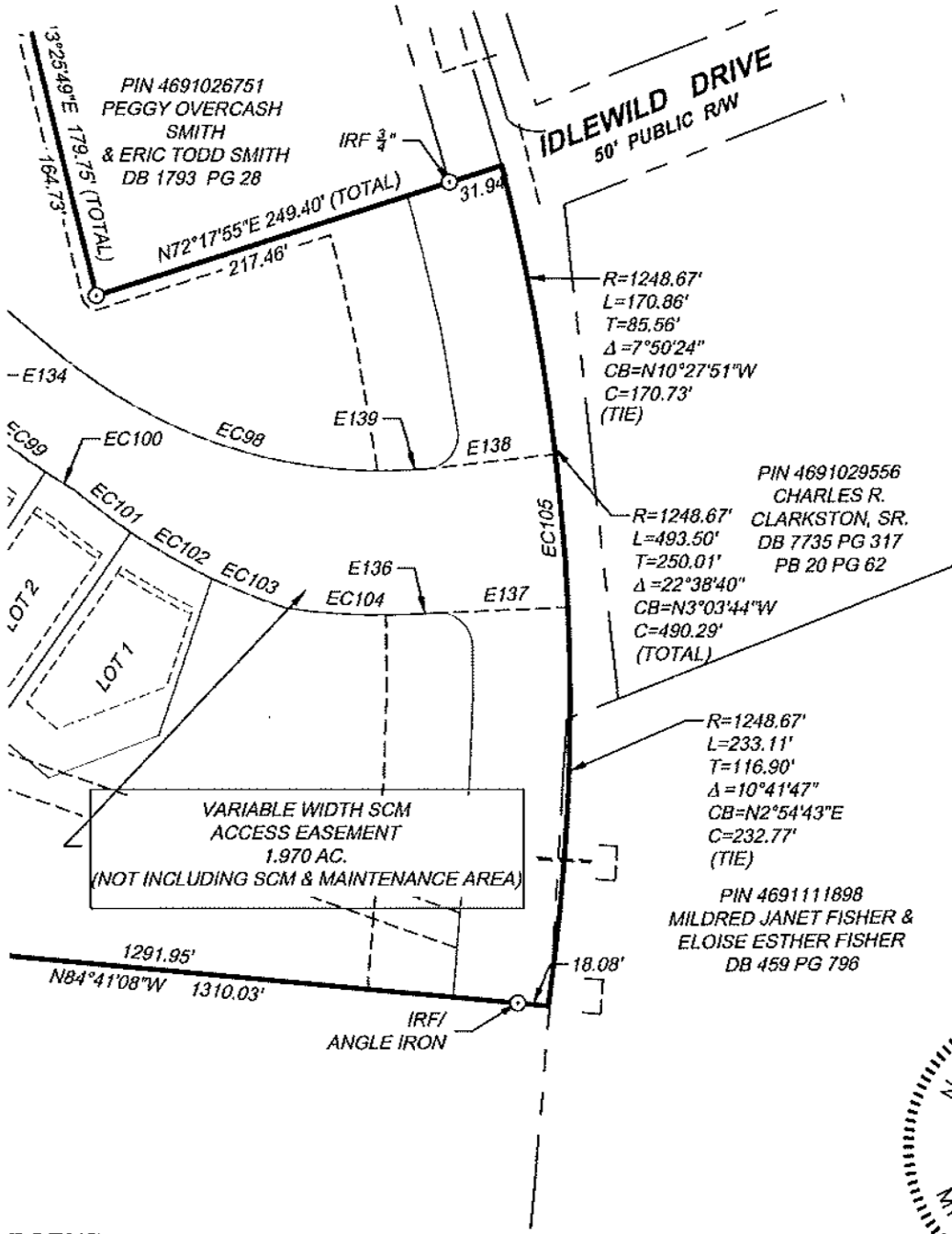


VICINITY MAP - MAP NOT TO SCALE

**REFERENCES**  
 DB 13075 PG 312  
 DB 9917 PG 247  
 DB 15295 PG 0001

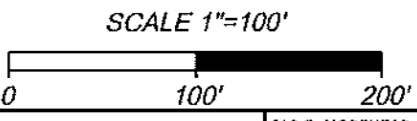
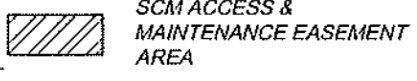


SEE SHEET 2



SCM MAINTENCE AND ACCESS EASEMENT,  
 ANNSBOROUGH PARK SUBDIVISION  
 PROPERTY OF M/I HOMES OF CHARLOTTE  
 LLC

- LEGEND**
- ⊙ IPF - IRON PIPE FOUND
  - ⊙ IRF - IRON ROD FOUND
  - IRS - IRON ROD SET
  - CMF - CONCRETE MONUMENT
  - CP - COMPUTED POINT
  - POB - POINT OF BEGINNING
  - POC - POINT OF COMMENCEMENT



CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 3 of 4	J.N.: 42966
Drawn by: DAW	Checked by: MSM

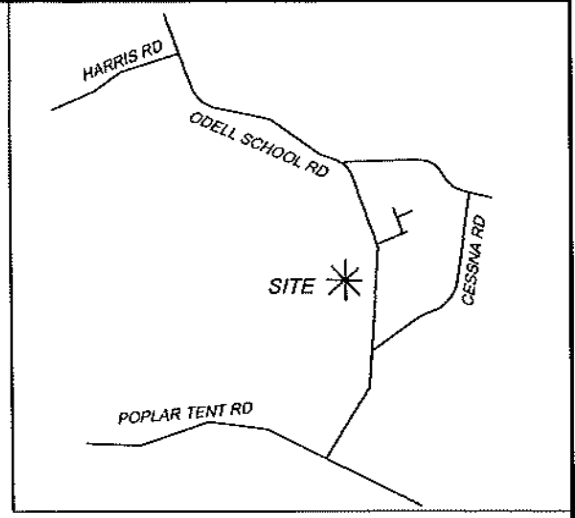
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LINE TABLE		
LINE	BEARING	LENGTH
E92	S5°38'54"E	165.21'
E93	S5°38'54"E	175.20'
E94	N89°46'12"E	22.95'
E95	S0°13'48"E	15.00'
E96	N89°46'12"E	24.29'
E97	S4°46'25"E	5.95'
E98	N85°13'35"E	155.67'
E99	N42°10'45"E	10.24'
E100	N85°12'47"E	12.97'
E101	N54°30'24"E	30.47'
E102	N43°26'18"E	22.90'
E103	N34°07'23"E	15.45'
E104	N45°22'15"E	11.44'
E105	N55°00'27"E	6.80'
E106	N44°27'16"E	20.56'
E107	N49°04'07"E	7.84'
E108	N49°09'10"E	8.78'
E109	N41°19'14"E	18.82'
E110	S42°17'25"E	1.36'
E111	S79°20'24"E	39.79'

LINE TABLE		
LINE	BEARING	LENGTH
E112	N10°39'36"E	15.00'
E113	S79°20'24"E	52.25'
E114	S83°18'58"E	62.76'
E115	N64°46'41"E	44.75'
E116	N70°26'44"E	45.27'
E117	N75°16'13"E	25.00'
E118	N51°02'27"E	47.97'
E119	N90°00'00"E	16.06'
E120	N61°37'54"E	55.89'
E121	N32°38'10"E	36.66'
E122	N42°37'46"E	36.56'
E123	N89°41'50"E	61.05'
E124	N85°13'24"E	42.49'
E125	N9°07'19"W	60.00'
E126	N80°52'41"E	14.79'
E127	N80°52'41"E	100.00'
E128	N80°23'45"E	95.22'
E129	S80°52'41"W	3.66'
E130	S49°35'29"E	490.60'
E131	N49°35'29"W	144.08'

LINE TABLE		
LINE	BEARING	LENGTH
E132	N49°35'29"W	122.68'
E133	S49°35'29"E	117.56'
E134	S49°35'29"E	16.28'
E135	S49°35'29"E	90.00'
E136	N86°53'07"E	11.72'
E137	N87°33'49"E	76.88'
E138	N83°27'21"E	76.34'
E139	N86°52'31"E	10.26'
E140	N80°52'41"E	14.38'
E141	S4°46'25"E	12.81'
E142	N67°36'42"E	0.92'
E144	N80°52'41"E	23.74'



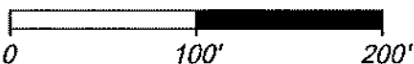
VICINITY MAP - MAP NOT TO SCALE

CURVE TABLE				
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD
EC87	70.00'	51.88'	S64°30'07"W	50.70'
EC88	19.06'	8.56'	N32°49'58"E	8.49'
EC89	15.00'	25.29'	N5°12'48"W	22.40'
EC90	66.72'	103.11'	S41°47'38"E	93.15'
EC91	93.77'	57.38'	N76°26'18"E	56.49'
EC92	179.97'	28.70'	S55°52'36"W	28.67'
EC93	108.07'	7.11'	N81°13'52"E	7.11'
EC94	77.93'	72.01'	N11°43'37"E	69.48'
EC95	48.00'	45.98'	N67°21'10"W	44.24'
EC96	420.00'	363.08'	N74°21'24"W	351.88'
EC97	480.00'	414.95'	N74°21'24"W	402.15'
EC98	295.00'	224.14'	S71°21'29"E	218.79'
EC99	355.00'	42.69'	S53°01'44"E	42.67'
EC100	355.00'	19.94'	S58°04'31"E	19.94'
EC101	364.24'	40.92'	S53°06'29"E	40.90'
EC102	364.24'	54.90'	S60°38'40"E	54.85'
EC103	364.24'	47.05'	S68°39'46"E	47.02'
EC104	379.00'	75.74'	S87°23'58"E	75.62'
EC105	1248.53'	89.52'	N4°29'25"W	89.50'
EC106	20.00'	5.68'	S89°00'55"W	5.66'

SCM MAINTENCE AND ACCESS EASEMENT,  
ANNBOROUGH PARK SUBDIVISION  
PROPERTY OF M/I HOMES OF CHARLOTTE  
LLC

CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 4 of 4	J.N.: 42966
Drawn by: DAW	Checked by: MSM

SCALE 1"=100'



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**TIMMONS GROUP**



### Wet Detention Basin Inspection and Maintenance Plan

Grantor agrees to keep a maintenance record on this SCM. This maintenance record will be kept in a log in a known set location. Any deficient SCM elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the SCM.

The wet detention basin system is defined as the wet detention basin, pretreatment including forebays and the vegetated filter if one is provided.

**This system (check one):**

does  does not incorporate a vegetated filter at the outlet.

**This system (check one):**

does  does not incorporate pretreatment other than a forebay.

Important maintenance procedures:

- Immediately after the wet detention basin is established, the plants on the vegetated shelf and perimeter of the basin should be watered twice weekly if needed, until the plants become established (commonly six weeks).
- No portion of the wet detention pond should be fertilized after the first initial fertilization that is required to establish the plants on the vegetated shelf.
- Stable groundcover should be maintained in the drainage area to reduce the sediment load to the wet detention basin.
- If the basin must be drained for an emergency or to perform maintenance, the flushing of sediment through the emergency drain should be minimized to the maximum extent practical.
- Once a year, a dam safety expert should inspect the embankment.

After the wet detention pond is established, it should be inspected **once a month and within 24 hours after every storm event greater than 1.0 inches**. Records of inspection and maintenance should be kept in a known set location and must be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How I will remediate the problem:
<b>The entire SCM</b>	Trash/debris is present.	Remove the trash/debris.
<b>The perimeter of the wet detention basin</b>	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six inches.

<b>SCM element:</b>	<b>Potential problem:</b>	<b>How I will remediate the problem:</b>
<b>The inlet device: pipe or swale</b>	The pipe is clogged.	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged.	Replace the pipe.
	Erosion is occurring in the swale.	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
<b>The forebay</b>	Sediment has accumulated to a depth greater than the original design depth for sediment storage.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The vegetated shelf</b>	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The main treatment area</b>	Sediment has accumulated to a depth greater than the original design sediment storage depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Algal growth covers over 50% of the area.	Consult a professional to remove and control the algal growth.
	Cattails, phragmites or other invasive plants cover 50% of the basin surface.	Remove the plants by wiping them with pesticide (do not spray).



SCM element:	Potential problem:	How I will remediate the problem:
<b>The embankment</b>	Shrubs have started to grow on the embankment.	Remove shrubs immediately.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	A tree has started to grow on the embankment.	Consult a dam safety specialist to remove the tree.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
<b>The outlet device</b>	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the local NC Division of Water Quality Regional Office, or the 401 Oversight Unit at 919-733-1786.

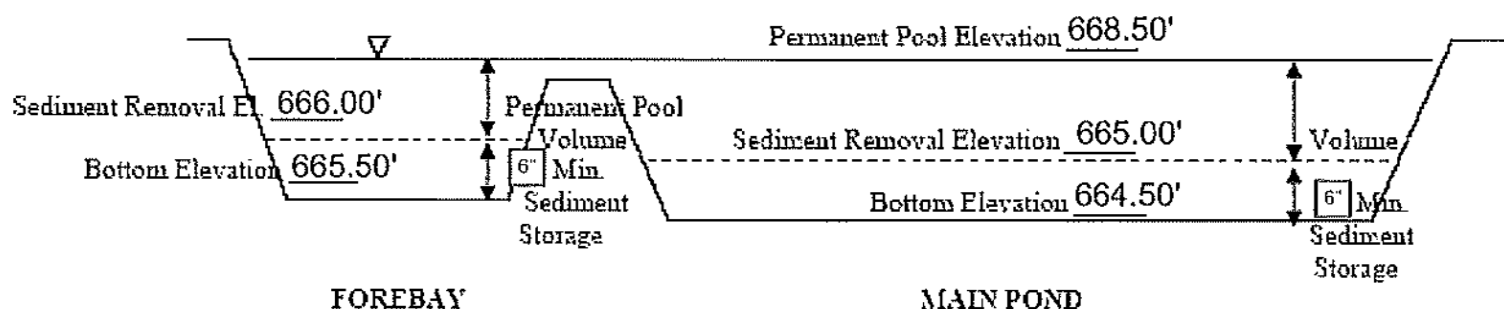
The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

**Elevations used are approved design or equivalent as-built elevations.( Indicate which is being indicated in this document.)**

When the permanent pool depth reads 3.5 feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads 2.5 feet in the forebay, the sediment shall be removed.

**BASIN DIAGRAM**  
(fill in the blanks)



Wet Pond #3  
 Permanent Pool Elev.: 668.50'  
 Forebay Bottom Elev.: 666.00'  
 Forebay Sediment Removal Elev.: 666.50'  
 Main Pond Bottom Elev.: 665.00'  
 Main Pond Sediment Removal Elev.: 665.50'  
 -When the permanent pool depth reads 3 ft in the main pond, the sediment shall be removed.  
 -When the permanent pool depth reads 2 ft in the forebay, the sediment shall be removed.

NORTH CAROLINA  
CABARRUS COUNTY

**STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT**

THIS STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND  
MAINTENANCE AGREEMENT (“Agreement”), made this \_\_\_\_\_ day of \_\_\_\_\_, 2022, by  
M/I Homes of Charlotte, LLC, a Delaware limited liability company, whose principal address is 4131 Wor  
Avenue, Suite 500, Columbus, OH 43219 (hereinafter referred to as “Grantor”), with, to, and for the benefit  
of the City of Concord, a municipal corporation of the State of North Carolina, whose address is P.O. Box 30  
Concord North Carolina 28026-0308, (hereinafter “Grantee” or “City”).

**WITNESSETH:**

**WHEREAS,** THE CITY COUNCIL ACCEPTED THIS STORMWATER CONTROL  
MEASURES (SCMs), ACCESS EASEMENT AND MAINTENANCE AGREEMENT ON \_\_\_\_\_  
\_\_\_\_\_.

**WHEREAS,** Grantor is the owner in fee simple of certain real property situated in the City  
of Concord, County of Cabarrus, North Carolina and more particularly described as follows: 2850 Rock H  
Church Road, Concord, NC, Cabarrus County Property Identification Number (PIN): 5610-65-7205 (t  
“Property”). It being the land conveyed to Grantor by deed recorded in Book 15057 and Page 166 in t  
Office of the Register of Deeds for Cabarrus County; and

**WHEREAS,** Grantor desires to develop or redevelop all or portions of the Property; and

**WHEREAS,** the Property is located within the planning jurisdiction of the City of Concord, and  
subject to certain requirements set forth in the City of Concord Code of Ordinances Chapter 60, the Conco  
Development Ordinance, (hereafter “CCDO”), and the Concord Technical Standards Manual (hereaft  
“Concord Manual”); and

**WHEREAS,** conditions for development and/or redevelopment of the Property includes (i) t  
construction, operation and maintenance of an engineered stormwater control structure, namely a W  
Detention Basin, as provided in the CCDO and the Concord Manual (the “Stormwater Control Measures”  
“SCM”), (ii) Grantor’s dedication of a non-exclusive access easement to the City, as described in th

agreement, for inspection and maintenance of the Stormwater Control Measure; and (iii) the assumption by Grantor of certain specified maintenance and repair responsibilities; and

**WHEREAS**, this Agreement and the easements created herein are established in accordance with the requirements of N.C.G.S. Sec 143-211 *et. seq.*, Article 4 of the CCDO and Article I of the Concord Manual; and

**WHEREAS**, Grantor has the full authority to execute this Agreement so as to bind the Property and all current and future owners and/or assigns.

**NOW, THEREFORE**, for valuable consideration, including the benefits Grantor may derive therefrom, the receipt and sufficiency of which is hereby acknowledged, Grantor hereby dedicates, bargains, grants and conveys unto Grantee, and its successors and assigns, a perpetual, and irrevocable right and non-exclusive easement in gross (of the nature and character and to the extent hereinafter set forth) in, on, over, under, through and across those portions of the Property shown on the attached **Exhibit "A" titled "SCM Maintenance and Access Easement, Piper Landing Subdivision Property of M/I Homes of Charlotte, LLC" (Sheet 1 of 3, Sheet 2 of 3 and Sheet 3 of 3)"** and labeled on Sheet 1 of 3 and Sheet 2 of 3 **"SCM Access Easement and Maintenance Easement 2.40 AC."** for the purpose of inspection and maintenance of the Stormwater Control Measure (hereinafter referred to as "SCM Easement"). Within the SCM Easement Grantor shall conduct best management practices as more fully set forth herein and in the CCDO and Concord Manual. Also within the SCM Easement, Grantor shall construct, maintain, repair and reconstruct the Stormwater Control Measure or SCM, which include (i) the SCM and any other stormwater quantity and/or quality control devices and/or structures, described on the plans approved by the City of Concord and filed at the A.M. Brown Operations Center, 850 Warren Coleman Blvd., Concord, NC 28025; and (ii) access to the aforesaid SCM as shown on the attached **Exhibit "A" titled "SCM Maintenance and Access Easement, Piper Landing Subdivision Property of M/I Homes of Charlotte, LLC" (Sheet 1 of 3, Sheet 2 of 3 and Sheet 3 of 3)"** and labeled on Sheet 1 of 3 and Sheet 2 of 3 **"SCM Access Easement and Maintenance Easement 2.40 AC."** and labeled on Sheet 2 of 3 **"Variable Width SCM Access Easement 0.96 AC."** to **"Proposed Yeager Drive NW 50' Public R/W"**, for the purpose of permitting City access for inspection and, in accordance with the terms of paragraph 4 of this Agreement, maintenance and repair of the SCM, as more fully set forth herein and in the CCDO and Concord Manual. Except as set forth herein nothing contained in this Agreement shall be deemed to be a gift or dedication of any portion of Grantor's property to the general public or for any public use or purpose whatsoever, and further except as specifically provided herein for the benefit of the City, no rights, privileges or immunities of Grantor shall inure to the benefit of any third-party, nor shall any third-party be deemed to be a beneficiary of any of the provisions contained herein.

The additional terms, conditions, and restrictions of this Agreement are:

1. The requirements pertaining to the SCM Easements are more fully set forth in the current adopted and published editions of the following four (4) documents: (i) Article 4 of the CCDO, (ii) Article I, Section 4.4.6.B of the Concord Manual, (iii) the Wet Detention Basin Inspection and Maintenance Plan attached as **Exhibit "B"** and (iv) as provided in the N.C. Dept. of Environment and Natural Resources (DENR) Stormwater Best Management Practices (BMP) Manual (the "NCDENR Manual"), all of which are incorporated herein by reference as if set forth in their entireties below. Grantor agrees to abide by all applicable codes including but not limited to, those set forth above. All provisions required by the CCDO Section 4.4.6.B.1 are incorporated herein by reference, and Grantor agrees to abide by said provisions. Grantor further agrees that Grantor shall perform the following, all at its sole cost and expense:

- a. All components of the SCM and related improvements within the SCM Easements are to be kept in good working order.
- b. The components of the SCM and related improvements within the SCM Easements shall be maintained by Grantor as described in "Exhibit B", the Wet Detention Basin Inspection and Maintenance Plan.

2. Upon completion of the construction of the SCM, Grantor's N.C. registered professional engineer shall certify in writing to the Concord Director of Water Services that the SCM and all components are constructed and initially functioning as designed. Annual inspection reports (hereinafter referred to as "Annual Report(s)") are required each year and shall be made by Grantor on the written schedule provided to Grantor in advance by the City. The Annual Report(s) shall describe the condition and functionality of the SCM, and shall describe any maintenance performed thereon during the preceding year. The Annual Report(s) shall be submitted with the signature and seal of Grantor's N.C. registered professional engineer conducting the inspection. If necessary, the City will provide a letter describing the maintenance necessary to keep the SCM and all components and structures related to the SCM functioning as designed and with reasonable timeframes in which to complete the maintenance. If the Annual Report(s) recommend maintenance actions, the repairs shall be made within a reasonable time as defined by the City.

Grantor and Grantee understand, acknowledge and agree that the attached Inspection and Maintenance Plan describes the specific actions needed to maintain the SCM.

3. Grantor represents and warrants that Grantor is financially responsible for construction, maintenance, repair and replacement of the SCM, its appurtenances and vegetation, including impoundment(s), if any. Grantor agrees to perform or cause to be performed the maintenance as outlined in the attached Inspection and Maintenance Plan and as provided in the NCDENR Manual. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall give the City written notice of the transfer of a fee or possessory interest in the Property listing the transferee's name, address of the property, transferee's mailing address and other contact information. Grantor and any subsequent transferee of Grantor or succeeding owner of the Property shall not be responsible for errors or omissions in the information about the transferee provided to the City caused by acts or omissions of the transferee. The transferee shall give the City written notice of the acceptance and any future transfer of an interest in the property listing the transferee's name, address of the Property; transferee's mailing address and other contact information. Upon the conveyance of the Property by Grantor to any transferee acquiring the Property by means of a conveyance document containing the language set forth in paragraph 9 below, Grantor is released from any further covenants or other obligations set forth in this Agreement.

4. If Grantor fails to comply with these requirements, or any other obligations imposed herein, the City of Concord Code of Ordinances, CCDO, the Concord Manual or approved Inspection and Maintenance Plan, the City of Concord may perform (but is not obligated to perform) such work as Grantor is responsible for and recover the costs thereof from Grantor.

5. This Agreement gives Grantee the following affirmative rights:

Grantee, its officers, employees, and agents may, but is not obligated, to enter the SCM Easement whenever reasonably necessary for the purpose of inspecting same to determine compliance herewith, maintain same and make repairs or replacements to the SCM, their appurtenances and condition(s) as may be necessary or convenient thereto in the event Grantor defaults in its obligations and to recover from Grantor

at the cost thereof, and in addition to other rights and remedies available to it, to enforce by proceedings at law or in equity the rights, covenants, duties, and other obligations herein imposed in this Agreement.

6. Grantor shall neither obstruct nor hinder the passage of vehicular traffic and pedestrians within the paved portion of the access easement granted herein by Grantor to Grantee.

7. Grantor shall, in all other respects, remain the fee owners of their respective Property and area subject to the SCM Easements, and may make all lawful uses of the Property not inconsistent with this Agreement and the Easements granted herein.

8. Grantee neither waives nor forfeits the right to act to ensure compliance with the terms, conditions and purposes of the SCM Easements and this Agreement by a prior failure to act.

9. Grantor agrees:

a. That a reference to the deed book and page number of this document in a form substantially similar to the following statement in at least a 12 point bold face font on the first page of the document: **“Notice: The Property is subject to a Stormwater Control Measure (SCM), Access Easement and Maintenance Agreement enforced by the City of Concord and State of North Carolina, recorded in the Cabarrus County Registry at DB \_\_\_\_\_ PG \_\_\_\_\_.”** shall be inserted by Grantor in any subsequent deed or other legal instrument by which Grantor may be divested of either the fee simple title to or possessory interests in the subject Property. The designation Grantor and Grantee shall include the parties, their heirs, successors and assigns; and

b. That the following statement shall be inserted in any deed or other document of conveyance:

“Title to the property hereinabove described is subject to the following exceptions:

That certain Stormwater Control Measure (SCM), Access Easement and Maintenance Agreement dated \_\_\_\_\_, 2022 with and for the benefit of the City of Concord recorded in Book \_\_\_\_\_, Page \_\_\_\_\_ in the Cabarrus County Registry, North Carolina, creating obligations of payment and performance on the part of Grantor which Grantee hereby assumes and agrees to perform and pay as part of the consideration of this conveyance and except further that this conveyance is made subject to any and all enforceable restrictions and easements of record (if applicable).”

In the event that such conveyance is other than by deed, the above terms of “grantor/grantee” may be substituted by equivalent terms such as “landlord/tenant.”

TO HAVE AND TO HOLD the aforesaid rights, privileges, and easements herein granted to Grantee to Grantee's successors and assigns forever and Grantor do covenant that Grantor is seized of said premises in fee and has the right to convey the same, that except as set forth below the same are free from encumbrances and that Grantor will warrant and defend the said title to the same against claims of all persons whatsoever.

Title to the Property hereinabove described is subject to all enforceable deeds of trust, liens, easements, covenants and restrictions of record.

The covenants agreed hereto and the conditions imposed herein shall be binding upon Grantor and its agents, personal representatives, heirs and assigns and all other successors in interest to Grantor and shall continue as a servitude running in perpetuity with the above-described land.

THE CONCORD CITY COUNCIL APPROVED THIS AGREEMENT AND SCM ACCESS EASEMENTS AND ACCEPTED THE SCM ACCESS EASEMENTS AT THEIR MEETING OF \_\_\_\_\_, 2022 AS ATTESTED TO BELOW BY THE CITY CLERK. CONCORD CITY COUNCIL APPROVAL OF THIS AGREEMENT AND EASEMENT IS A CONDITION PRECEDENT TO ACCEPTANCE BY THE CITY.

IN WITNESS WHEREOF, the parties have caused this instrument to be duly executed day and year first above written.

**GRANTOR:**

**M/I Homes of Charlotte, LLC, a Delaware limited liability company**

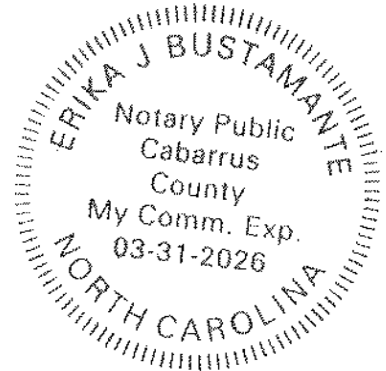
By: Cody Simoneaux  
Name: Cody Simoneaux  
Title: VP of Land

STATE OF North Carolina  
COUNTY OF Cabarrus

I, Erika Bustamante, Notary Public of the aforesaid County and State, do hereby certify that Cody Simoneaux personally appeared before me this day and acknowledged that he/she is the VP of Land of M/I Homes of Charlotte, LLC, a Delaware limited liability company, and that he/she being authorized to do so, executed the foregoing on behalf of the company.

WITNESS my hand and Notarial Seal this the 17<sup>th</sup> day of April, 2022

Erika Bustamante  
Notary Public  
My commission expires: 03.31.2026



**GRANTEE:**

City of Concord, a municipal corporation

By: \_\_\_\_\_  
Lloyd Wm. Payne, Jr., City Manager

ATTEST:

\_\_\_\_\_  
Kim J. Deason, City Clerk  
[SEAL]

APPROVED AS TO FORM

\_\_\_\_\_  
Valerie Kolczynski, City Attorney

**STATE OF NORTH CAROLINA  
COUNTY OF CABARRUS**

I, \_\_\_\_\_, a Notary Public of the aforesaid County and State, do hereby certify that Kim J. Deason personally appeared before me this day and acknowledged that she is the City Clerk of the City of Concord and that by authority duly given and as the act of the municipal corporation the foregoing STORMWATER CONTROL MEASURE (SCM), ACCESS EASEMENT AND MAINTENANCE AGREEMENT was approved by the Concord City Council at its meeting held on \_\_\_\_\_ and was signed in its name by its City Manager, sealed with its corporate seal and attested by her as its City Clerk.

WITNESS my hand and notarial seal, this the \_\_\_\_\_ day of \_\_\_\_\_, 2022.

\_\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires: \_\_\_\_\_

Exhibit A

THE FOLLOWING INFORMATION WAS USED TO PERFORM GPS SURVEY:

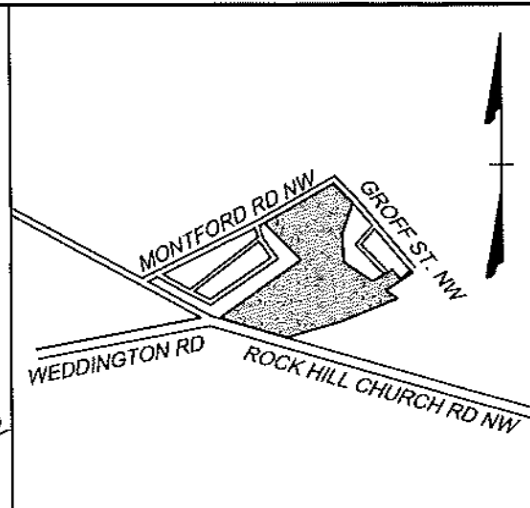
- (1) CLASS OF SURVEY: "CLASS A"
- (2) POSITIONAL ACCURACY: 0.04'
- (3) TYPE OF GPS FIELD PROCEDURE: NCVRS
- (4) DATE OF SURVEY: 01-10-19
- (5) DATUM/EPOCH: NAD83 (2011) - EPOCH 2010.00
- (6) PUBLISHED/FIXED-CONTROL USE: NCVRS
- (7) GEOID MODEL: 2012 (CONUS)
- (8) COMBINED GRID FACTOR(S): 0.99984578
- (9) UNITS: US SURVEY FEET

NOTES:

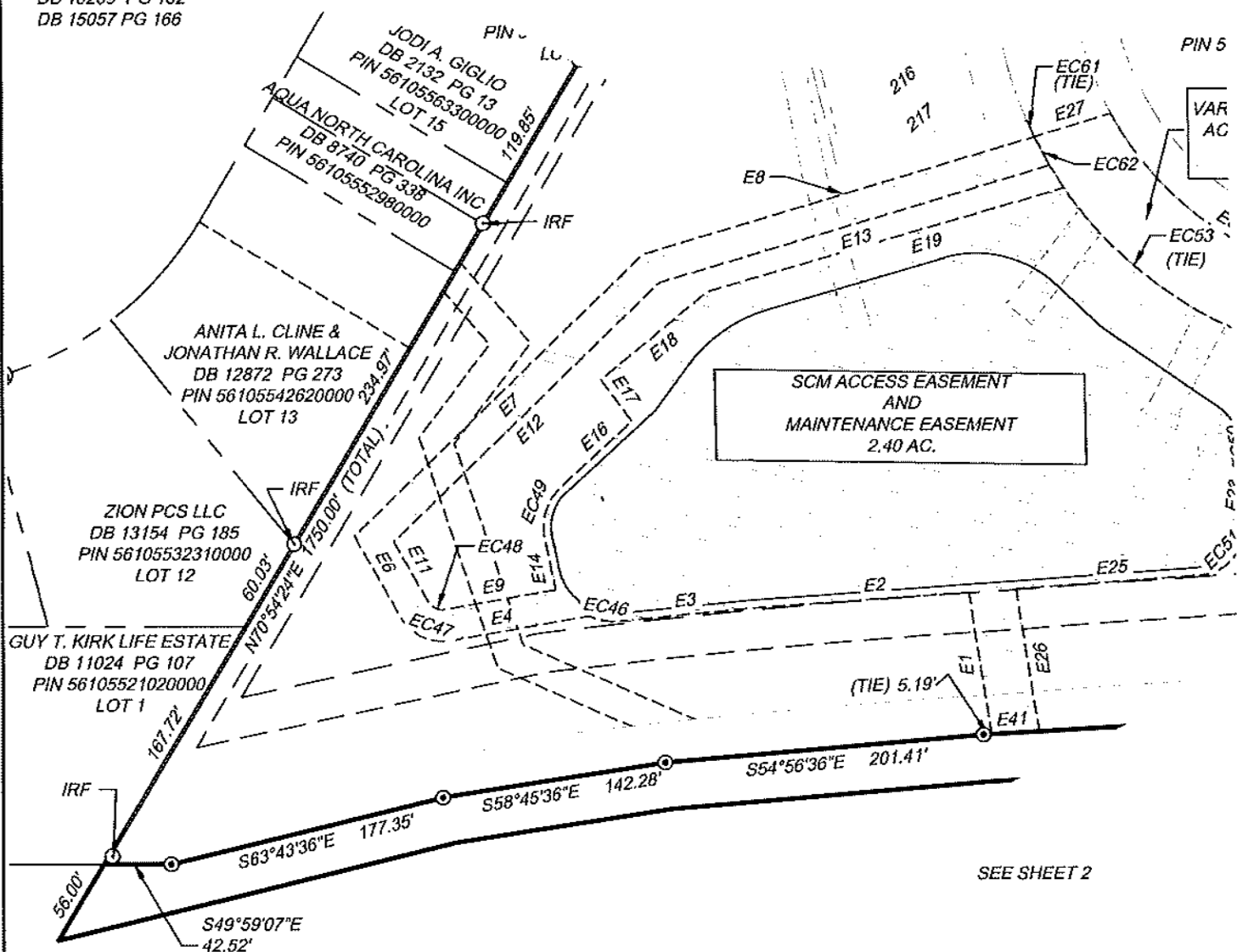
- 1) AREAS COMPUTED BY COORDINATE METHOD.
- 2) ALL DISTANCES SHOWN ON SURVEY ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
- 3) THIS MAP MAY NOT BE A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS AND HAS NOT BEEN REVIEWED FOR COMPLIANCE WITH RECORDING REQUIREMENTS FOR PLATS.
- 4) THIS SITE LIES IN ZONE X, AREA OF MINIMAL FLOODING ACCORDING TO FLOOD INSURANCE RATE MAP 3710561000K ,EFFECTIVE DATE NOVEMBER 16, 2018.

REFERENCES

- DB 532 PG 722
- DB 759 PG 55
- DB 10209 PG 102
- DB 15057 PG 166



VICINITY MAP - MAP NOT TO SCALE



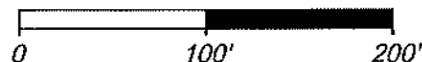
SEE SHEET 2

LEGEND

- ⊙ IPF - IRON PIPE FOUND
- ⊙ IRF - IRON ROD FOUND
- IRS - IRON ROD SET
- CMF - CONCRETE MONUMENT
- CP - COMPUTED POINT
- POB - POINT OF BEGINNING
- POC - POINT OF COMMENCEMENT
- SCM ACCESS & MAINTENANCE EASEMENT AREA

SCM MAINTENANCE AND ACCESS EASEMENT, PIPER LANDING SUBDIVISION  
PROPERTY OF M/I HOMES OF CHARLOTTE LLC

SCALE 1"=100'



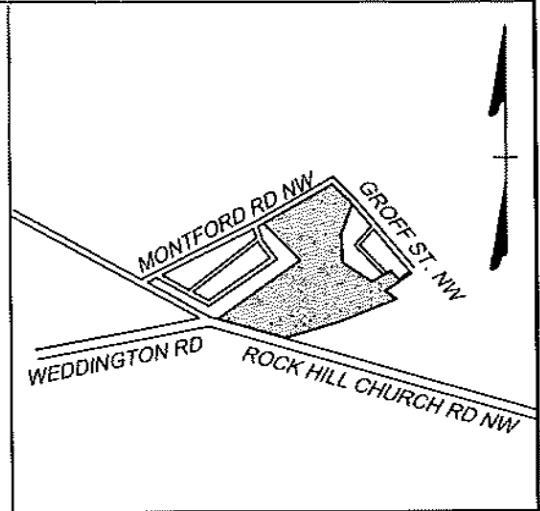
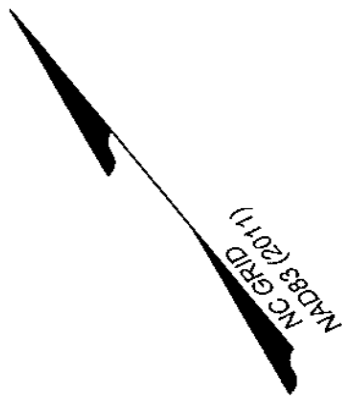
CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 1 of 3	J.N.: 44116
Drawn by: DAW	Checked by: MSM

THIS DRAWING PREPARED AT THE CHARLOTTE OFFICE

610 E. MOREHEAD ST., SUITE 250 | CHARLOTTE, NC 28202  
TEL 704.376-1073 FAX 704.376-1076 www.timmons.com  
North Carolina License Number C-1652  
YOUR VISION ACHIEVED THROUGH OURS

**TIMMONS GROUP**

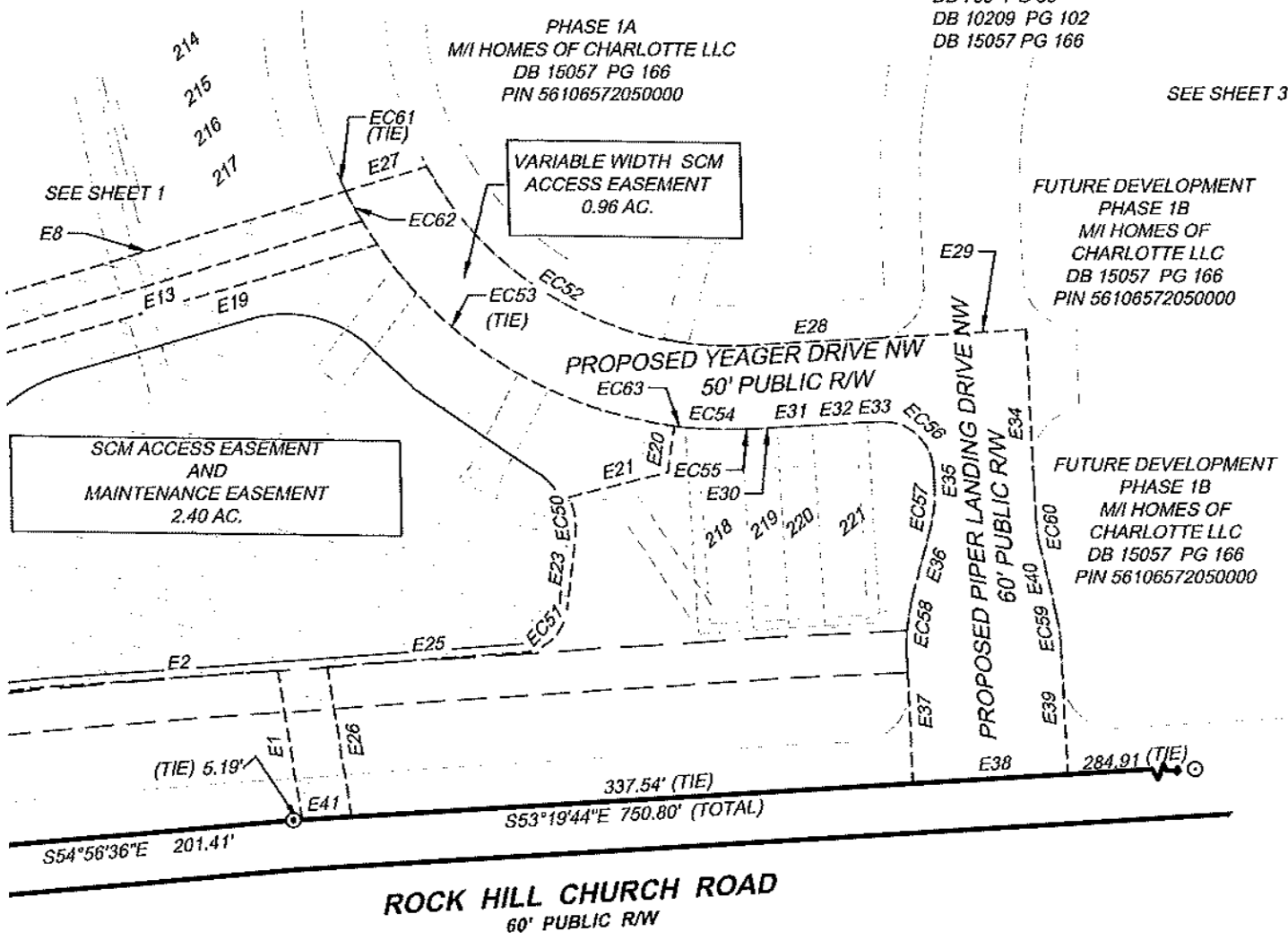




VICINITY MAP - MAP NOT TO SCALE

- REFERENCES**  
 DB 532 PG 722  
 DB 759 PG 55  
 DB 10209 PG 102  
 DB 15057 PG 166

SEE SHEET 3



S54°56'36"E 201.41'

337.54' (TIE)  
 S53°19'44"E 750.80' (TOTAL)

**ROCK HILL CHURCH ROAD**  
 60' PUBLIC R/W

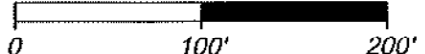
**LEGEND**

- ⊙ IPF - IRON PIPE FOUND
- ⊙ IRF - IRON ROD FOUND
- IRS - IRON ROD SET
- CMF - CONCRETE MONUMENT
- CP - COMPUTED POINT
- POB - POINT OF BEGINNING
- POC - POINT OF COMMENCEMENT
- SCM ACCESS & MAINTENANCE EASEMENT AREA

**SCM MAINTENANCE AND ACCESS EASEMENT, PIPER LANDING SUBDIVISION**  
 PROPERTY OF M/I HOMES OF CHARLOTTE LLC

CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 2 of 3	J.N.: 44116
Drawn by: DAW	Checked by: MSM

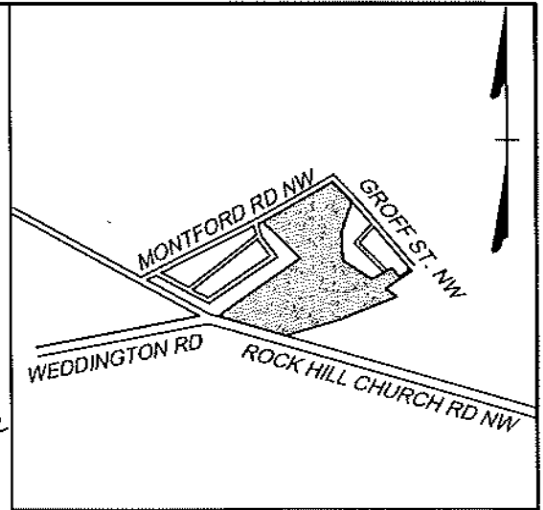
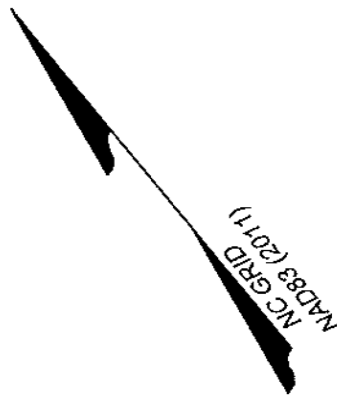
SCALE 1"=100'



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 YOUR VISION ACHIEVED THROUGH OURS





VICINITY MAP - MAP NOT TO SCALE

**REFERENCES**  
 DB 532 PG 722  
 DB 759 PG 55  
 DB 10209 PG 102

LINE TABLE		
LINE	BEARING	LENGTH
E1	S30°55'18"W	90.72'
E2	S54°04'42"E	136.88'
E3	S55°40'37"E	83.85'
E4	S59°54'16"E	88.57'
E6	S10°12'35"W	59.08'
E7	S86°00'24"W	254.80'
E8	N66°36'59"W	258.37'
E9	S59°54'16"E	71.21'
E11	S10°12'35"W	43.51'
E12	S86°00'24"W	234.36'
E13	N66°36'59"W	257.65'
E14	S28°16'16"W	33.44'
E16	S87°32'05"W	60.31'
E17	S3°43'25"W	32.69'
E18	N89°18'24"W	87.68'
E19	N66°05'30"W	234.40'
E20	N48°31'53"E	28.05'
E21	S64°03'16"E	61.18'
E23	N46°37'18"E	42.72'
E25	S54°04'42"E	116.94'

LINE TABLE		
LINE	BEARING	LENGTH
E26	S30°55'18"W	91.12'
E27	S66°36'59"E	50.86'
E28	S53°09'57"E	77.74'
E29	S53°09'57"E	89.72'
E30	S53°09'57"E	14.38'
E31	S53°09'57"E	21.36'
E32	S53°09'57"E	33.14'
E33	S53°09'57"E	7.88'
E34	N37°22'15"E	112.33'
E35	S37°36'13"W	10.95'
E36	S54°49'00"W	41.03'
E37	S37°22'15"W	76.86'
E38	S53°19'44"E	93.01'
E39	N37°22'15"E	75.07'
E40	N26°36'46"E	42.59'
E41	S53°19'44"E	30.15'

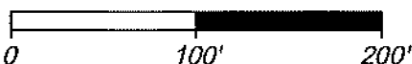
CURVE TABLE				
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD
EC46	40.00'	20.57'	S40°56'51"E	20.34'
EC47	30.00'	36.84'	S24°58'10"E	34.57'
EC48	10.00'	12.31'	S25°03'32"E	11.55'
EC49	35.00'	35.63'	S58°37'41"W	34.11'
EC50	44.47'	24.51'	N31°14'39"E	24.20'
EC51	29.59'	41.64'	N86°16'18"E	38.29'
EC52	205.00'	231.73'	S20°46'57"E	219.59'
EC53	255.00'	231.15'	S16°37'27"E	223.31'
EC54	255.00'	33.33'	S47°51'30"E	33.31'
EC55	255.00'	6.96'	S52°23'04"E	6.96'
EC56	30.00'	47.73'	N7°35'16"W	42.85'
EC57	82.00'	24.97'	N46°05'38"E	24.87'
EC58	118.00'	35.93'	S46°05'38"W	35.79'
EC59	120.00'	22.53'	N31°59'31"E	22.50'
EC60	82.00'	15.40'	S31°59'31"W	15.37'
EC61	255.00'	11.23'	S15°11'50"W	11.23'
EC62	255.00'	20.43'	S11°38'22"W	20.43'
EC63	255.00'	6.77'	S43°21'10"E	6.77'

SCM MAINTENANCE AND ACCESS  
 EASEMENT, PIPER LANDING SUBDIVISION  
 PROPERTY OF M/I HOMES OF CHARLOTTE LLC

CONCORD	CABARRUS, CO., NC
Date: 04/04/2022	Scale: 1" = 100'
Sheet 3 of 3	J.N.: 44116
Drawn by: DAW	Checked by: MSM



SCALE 1"=100'



THIS DRAWING PREPARED AT THE  
 CHARLOTTE OFFICE

610 E. MOREHEAD ST., SUITE 250 | CHARLOTTE, NC 28202  
 TEL 704.376-1073 FAX 704.376-1076 www.timmons.com  
 North Carolina License Number C-1652  
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**TIMMONS GROUP**

## Exhibit B



### Wet Detention Basin Inspection and Maintenance Plan

Grantor agrees to keep a maintenance record on this SCM. This maintenance record will be kept in a log in a known set location. Any deficient SCM elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the SCM.

The wet detention basin system is defined as the wet detention basin, pretreatment including forebays and the vegetated filter if one is provided.

**This system (check one):**

does  does not **incorporate a vegetated filter at the outlet.**

**This system (check one):**

does  does not **incorporate pretreatment other than a forebay.**

Important maintenance procedures:

- Immediately after the wet detention basin is established, the plants on the vegetated shelf and perimeter of the basin should be watered twice weekly if needed, until the plants become established (commonly six weeks).
- No portion of the wet detention pond should be fertilized after the first initial fertilization that is required to establish the plants on the vegetated shelf.
- Stable groundcover should be maintained in the drainage area to reduce the sediment load to the wet detention basin.
- If the basin must be drained for an emergency or to perform maintenance, the flushing of sediment through the emergency drain should be minimized to the maximum extent practical.
- Once a year, a dam safety expert should inspect the embankment.

After the wet detention pond is established, it should be inspected **once a month and within 24 hours after every storm event greater than 1.0 inches**. Records of inspection and maintenance should be kept in a known set location and must be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How I will remediate the problem:
<b>The entire SCM</b>	Trash/debris is present.	Remove the trash/debris.
<b>The perimeter of the wet detention basin</b>	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six inches.

<b>SCM element:</b>	<b>Potential problem:</b>	<b>How I will remediate the problem:</b>
<b>The inlet device: pipe or swale</b>	The pipe is clogged.	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged.	Replace the pipe.
	Erosion is occurring in the swale.	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
<b>The forebay</b>	Sediment has accumulated to a depth greater than the original design depth for sediment storage.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The vegetated shelf</b>	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The main treatment area</b>	Sediment has accumulated to a depth greater than the original design sediment storage depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Algal growth covers over 50% of the area.	Consult a professional to remove and control the algal growth.
	Cattails, phragmites or other invasive plants cover 50% of the basin surface.	Remove the plants by wiping them with pesticide (do not spray).

SCM element:	Potential problem:	How I will remediate the problem:
<b>The embankment</b>	Shrubs have started to grow on the embankment.	Remove shrubs immediately.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	A tree has started to grow on the embankment.	Consult a dam safety specialist to remove the tree.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
<b>The outlet device</b>	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the local NC Division of Water Quality Regional Office, or the 401 Oversight Unit at 919-733-1786.

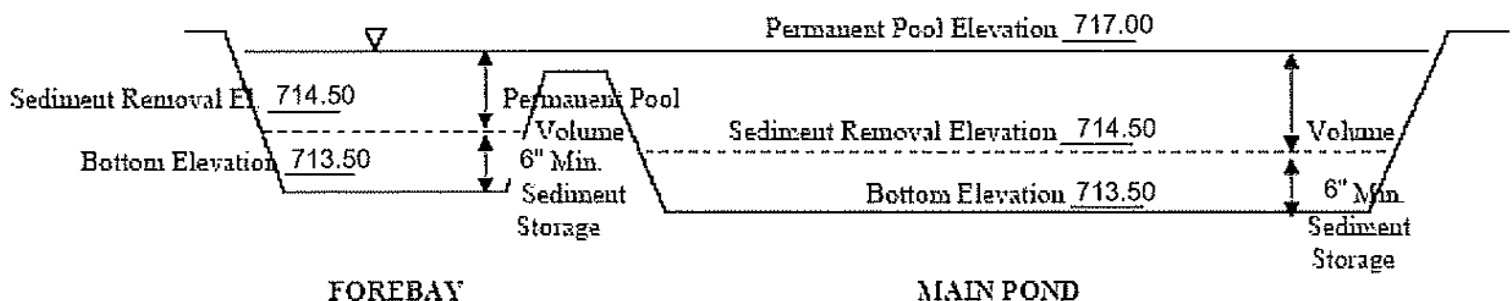
The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

Elevations used are approved design or equivalent as-built elevations. (Indicate which is being indicated in this document.)

When the permanent pool depth reads 714.50 feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads 714.50 feet in the forebay, the sediment shall be removed.

**BASIN DIAGRAM**  
(fill in the blanks)





**MEMORADUM**

DATE: Thursday, April 28, 2022  
 TO: Sue Hyde, Director of Engineering  
 FROM: Gary Stansbury, Construction Manager  
 SUBJECT: Infrastructure Acceptance  
 PROJECT NAME: Sealand Office PH N/A Site Plan MP N/A Site Plan  
 PROJECT NUMBER: 2019-031  
 DEVELOPER: Bree Properties, LLC  
 FINAL CERTIFICATION - LOT NUMBERS: Commercial Site  
 INFRASTRUCTURE TYPE: Water and Sewer  
 COUNCIL ACCEPTANCE DATE: Thursday, May 12, 2022  
 ONE-YEAR WARRANTY DATE: Friday, May 12, 2023

Water Infrastructure	Quantity
2-inch Valves	1
8-inch in LF	895.00
8-inch Valves	6
Hydrants	3

AN ORDINANCE TO AMEND FY 2021-2022 BUDGET ORDINANCE

WHEREAS, the City Council of the City of Concord, North Carolina did on the 10<sup>th</sup> day of June, 2021, adopt a City budget for the fiscal year beginning July 1, 2021 and ending on June 30, 2022, as amended; and

WHEREAS, it is appropriate to amend the expense/expenditures and the revenue accounts in the funds listed for the reason stated;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord that in accordance with the authority contained in G.S. 159-15, the following accounts are hereby amended as follows:

Account	Title	<u>Revenues</u>		(Decrease) Increase
		Current Budget	Amended Budget	
100-4370000	Fund Balance Approp	\$9,170,409	\$9,171,909	\$1,500
<b>Total</b>				<b>\$1,500</b>

Account	Title	<u>Expenses/Expenditures</u>		(Decrease) Increase
		Current Budget	Amended Budget	
4190-5470043	Golf Tournaments	\$1,500	\$3,000	\$1,500
<b>Total</b>				<b>\$1,500</b>

Reason: To appropriate reserves from the Mayor's Golf Tournament to Run Cabarrus for support of youth athletics.

Adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

ORD. #

AN ORDINANCE TO AMEND FY 2021-2022 BUDGET ORDINANCE

WHEREAS, the City Council of the City of Concord, North Carolina did on the 10<sup>th</sup> day of June, 2021, adopt a City budget for the fiscal year beginning July 1, 2021 and ending on June 30, 2022, as amended; and

WHEREAS, it is appropriate to amend the expense/expenditures and the revenue accounts in the funds listed for the reason stated;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord that in accordance with the authority contained in G.S. 159-15, the following accounts are hereby amended as follows:

<b>Account</b>	<b>Title</b>	<b><u>Revenues</u></b>		<b>(Decrease) Increase</b>
		<b>Current Budget</b>	<b>Amended Budget</b>	
100-4370000	Fund Balance Approp	\$9,168,909	\$9,171,409	\$2,500
<b>Total</b>				<b><u>\$2,500</u></b>

<b>Account</b>	<b>Title</b>	<b><u>Expenses/Expenditures</u></b>		<b>(Decrease) Increase</b>
		<b>Current Budget</b>	<b>Amended Budget</b>	
4190-5470043	Golf Tournaments	\$0	\$2,500	\$2,500
<b>Total</b>				<b><u>\$2,500</u></b>

Reason: To appropriate reserves from the Mayor's Golf Tournament to The Officer Jason Shuping Memorial Public Safety Endowed Scholarship.

Adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney



**CAPITAL PROJECT ORDINANCE  
Airport Rescue Grant**

BE IT ORDAINED by the City Council of the City of Concord, North Carolina that pursuant to Section 13.2 Chapter 159 of the General Statutes of North Carolina, the following project ordinance is hereby ordained:

SECTION 1. The project authorized and amended is the Airport Rescue Grant.

SECTION 2. The City Manager is hereby authorized to proceed with the implementation and amendments of the projects within the terms of the plans and specifications for the projects.

SECTION 3. The following revenues are anticipated to be available to the City of Concord for the project:

<u>Revenues</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
451-4357300				
451-4357300	Federal Aid	8,250,893	10,853,921	2,603,028
<b>Total</b>				<b>2,603,028</b>

SECTION 4. The following amounts are appropriated for the project:

<u>Expenses/Expenditures</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
6308-5986000				
6308-5986000	Transfer to Aviation	0	2,603,028	2,603,028
<b>Total</b>				<b>2,603,028</b>

SECTION 5. Accounting records are to be maintained by the Finance Department of the City of Concord in such manner as (1) to provide all information required by the grant agreement and other agreements executed or to be executed with the various parties involved with the project; and (2) to comply with the Local Government Budget and Fiscal Control Act of the State of North Carolina.

SECTION 6. Within five (5) days after adopted, copies of this grant project amendment shall be filed with the City Manager, Finance Director, and City Clerk for direction in carrying out this project.

SECTION 7. The Finance Director is directed to report on the financial status of this project in accordance with the existing City policy. She shall also report to the City Manager any unusual occurrences.

Duly adopted by the City Council of the City of Concord, North Carolina this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

ORD. #

AN ORDINANCE TO AMEND FY 2021-2022 BUDGET ORDINANCE

WHEREAS, the City Council of the City of Concord, North Carolina did on the 10<sup>th</sup> day of June, 2021, adopt a City budget for the fiscal year beginning July 1, 2021 and ending on June 30, 2022, as amended; and

WHEREAS, it is appropriate to amend the expense/expenditures and the revenue accounts in the funds listed for the reason stated;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord that in accordance with the authority contained in G.S. 159-15, the following accounts are hereby amended as follows:

<b>Account</b>	<b>Title</b>	<b><u>Revenues</u></b>		<b>(Decrease) Increase</b>
		<b>Current Budget</b>	<b>Amended Budget</b>	
100-4370000	Fund Balance Appropriated	9,168,909	12,168,909	3,000,000
<b>Total</b>				<b><u>3,000,000</u></b>

<b>Account</b>	<b>Title</b>	<b><u>Expenses/Expenditures</u></b>		<b>(Decrease) Increase</b>
		<b>Current Budget</b>	<b>Amended Budget</b>	
4190-5981500	Transfer to Cap Reserve	0	3,000,000	3,000,000
<b>Total</b>				<b><u>3,000,000</u></b>

Reason: To transfer reserves from FYE2021 to the General Capital Reserve to fund capital projects.

Adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

CAPITAL RESERVE FUND ORDINANCE

BE IT ORDAINED by the City Council of the City of Concord, North Carolina that pursuant to Section 18-22 Chapter 159 of the General Statutes of North Carolina, the following Capital Reserve Fund ordinance is hereby adopted/amended:

SECTION 1. The purpose authorized is to accumulate funds for future projects and capital outlay as listed in the City’s Capital Improvement Plan. Funds will be accumulated until such time the City Council designates the funds for projects. The General Fund will serve as the funding source for the Capital Reserve Fund upon City Council approval and withdrawals must be approved by City Council through an ordinance.

SECTION 2. The City Manager is hereby authorized to proceed with the implementation and amendments of the fund.

SECTION 3. The following revenues are anticipated to be available/expenditures anticipated to be expended to the City of Concord for this fund & the following amounts are appropriated for the project:

*Fund 285 General Capital Reserve Fund*

		<u>Budget</u>	<u>Amended Budget</u>	<u>Inc(Dec)</u>
285-4501100	From			
285-4501100	General			
	Fund	\$28,031,178	\$31,031,178	\$3,000,000
8150-5811082	Future	\$18,788,387	\$21,788,387	\$3,000,000
8150-5811082	Projects			

SECTION 4. Accounting records are to be maintained by the Finance Department of the City of Concord in such manner as (1) to provide all information required by the capital reserve fund and (2) to comply with the Local Government Budget and Fiscal Control Act of the State of North Carolina.

SECTION 5. Within five (5) days after adopted, copies of this capital reserve fund amendments/adoption shall be filed with the City Manager, Finance Director, and City Clerk for direction in carrying out the purpose of this fund.

SECTION 6. The Finance Director is directed to report on the financial status of this fund in accordance with the existing City policy. She shall also report to the City Manager any unusual occurrences.

Duly adopted by the City Council of the City of Concord, North Carolina this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLarie Kolczynski, City Attorney

**GRANT PROJECT ORDINANCE  
American Rescue Plan Fund**

BE IT ORDAINED by the City Council of the City of Concord, North Carolina that pursuant to Section 13.2 Chapter 159 of the General Statutes of North Carolina, the following grant project ordinance is hereby amended:

SECTION 1. The project authorized is various projects funded by the American Rescue Plan Funds.

SECTION 2. The City Manager is hereby authorized to proceed with the implementation and amendments of the projects within the terms of the plans and specifications for the projects.

SECTION 3. The following revenues are anticipated to be available to the City of Concord for the completion of the projects:

		<u>Revenues</u>		
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>

SECTION 4. The following amounts are appropriated for the project:

		<u>Expenses/Expenditures</u>		
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
3300-5811082	Future Projects	10,000,000	2,000,000	(8,000,000)
3300-5987000	Transfer to Project Fund	0	8,000,000	8,000,000
<b>Total</b>				<b>\$0</b>

SECTION 5. Accounting records are to be maintained by the Finance Department of the City of Concord in such manner as (1) to provide all information required by the grant agreement and other agreements executed or to be executed with the various parties involved with the project; and (2) to comply with the Local Government Budget and Fiscal Control Act of the State of North Carolina.

SECTION 6. Within five (5) days after adoption, copies of this grant projects ordinance shall be filed with the City Manager, Finance Director, and City Clerk for direction in carrying out this project.

SECTION 7. The Finance Director is directed to report on the financial status of this project in accordance with the existing City policy. She shall also report to the City Manager any unusual occurrences.

Duly adopted by the City Council of the City of Concord, North Carolina this 12<sup>th</sup> day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

**CAPITAL PROJECT ORDINANCE  
General Capital Projects**

BE IT ORDAINED by the City Council of the City of Concord, North Carolina that pursuant to Section 13.2 Chapter 159 of the General Statutes of North Carolina, the following project ordinance is hereby ordained:

SECTION 1. The projects authorized are General Capital Projects for Equipment-Capital.

SECTION 2. The City Manager is hereby authorized to proceed with the implementation and amendments of the projects within the terms of the plans and specifications for the projects.

SECTION 3. The following revenues are anticipated to be available to the City of Concord for the project:

<u>Revenues</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
430-4501330				
430-4501330	From Amer Res Plan	0	8,000,000	8,000,000
<b>Total</b>				<b>8,000,000</b>

SECTION 4. The following amounts are appropriated for the project:

<u>Expenses/Expenditures</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
8800-5811285				
8800-5811285	Fleet Srvcs Facility	810,100	8,810,100	8,000,000
<b>Total</b>				<b>8,000,000</b>

SECTION 5. Accounting records are to be maintained by the Finance Department of the City of Concord in such manner as (1) to provide all information required by the grant agreement and other agreements executed or to be executed with the various parties involved with the project; and (2) to comply with the Local Government Budget and Fiscal Control Act of the State of North Carolina.

SECTION 6. Within five (5) days after adopted, copies of this project amendment shall be filed with the City Manager, Finance Director, and City Clerk for direction in carrying out this project.

SECTION 7. The Finance Director is directed to report on the financial status of this project in accordance with the existing City policy. She shall also report to the City Manager any unusual occurrences.

Duly adopted by the City Council of the City of Concord, North Carolina this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

AN ORDINANCE TO AMEND FY 2021-2022 BUDGET ORDINANCE

WHEREAS, the City Council of the City of Concord, North Carolina did on the 10<sup>th</sup> day of June, 2021, adopt a City budget for the fiscal year beginning July 1, 2021 and ending on June 30, 2022, as amended; and

WHEREAS, it is appropriate to amend the expense/expenditures and the revenue accounts in the funds listed for the reason stated;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Concord that in accordance with the authority contained in G.S. 159-15, the following accounts are hereby amended as follows:

Account	Title	<u>Revenues</u>		(Decrease) Increase
		Current Budget	Amended Budget	
100-4353100	Insurance Reimbursement	\$112,903	\$146,336	\$33,433
<b>Total</b>				<b>\$33,433</b>

Account	Title	<u>Expenses/Expenditures</u>		(Decrease) Increase
		Current Budget	Amended Budget	
4310-5540000	Vehicles - Capital	\$1,370,944	\$1,385,952	\$15,008
4340-5351000	Maintenance – Buildings	\$281,859	\$298,058	\$16,199
4540-5351000	Equipment – Capital	\$51,365	\$53,631	\$2,226
<b>Total</b>				<b>\$33,433</b>

Reason: To appropriate insurance proceeds received.

Adopted this 12th day of May, 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney

GRANT PROJECT ORDINANCE

BE IT ORDAINED by the City Council of the City of Concord, North Carolina that pursuant to Section 13.2 Chapter 159 of the General Statutes of North Carolina, the following grant project ordinance is hereby ordained:

SECTION 1. The project authorized are projects included in the HOME American Rescue Plan Grant.

SECTION 2. The City Manager is hereby authorized to proceed with the implementation of the project within terms of a grant agreement with the United States Department of Housing and Urban Development Office of Public and Indian Housing.

SECTION 3. The following revenues are anticipated to be available to the City of Concord for the project:

<u>Revenues</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
329-4334640				
329-4334640	Home ARP Revenue	\$0	\$4,772,338	\$4,772,338
<b>Total</b>				<b><u>\$4,772,338</u></b>

SECTION 4. The following amounts are appropriated to the project:

<u>Expenses/Expenditures</u>				
<u>Account</u>	<u>Title</u>	<u>Current Budget</u>	<u>Amended Budget</u>	<u>(Decrease) Increase</u>
3290-5121000				
3290-5121000	Regular	\$0	\$112,716	\$112,716
3290-5181000				
3290-5181000	FICA	\$0	\$8,228	\$8,228
3290-5182000				
3290-5182000	Retirement-General	\$0	\$13,016	\$13,016
3290-5183000				
3290-5183000	Group Insurance	\$0	\$11,736	\$11,736
3290-5187000				
3290-5187000	401K Contribution	\$0	\$4,304	\$4,304
3290-5191000				
3290-5191000	Accounting/Audit	\$0	\$2,720	\$2,720
3290-5194000				
3290-5194000	Contract Services	\$0	\$279,000	\$279,000
3290-5299000				
3290-5299000	Supplies-Departmental	\$0	\$15,000	\$15,000
3290-5312000				
3290-5312000	Travel & Training	\$0	\$2,500	\$2,500
3290-5370000				
3290-5370000	Advertising	\$0	\$3,000	\$3,000
3290-5484100				
3290-5484100	Consortium Admin Exp	\$0	\$263,630	\$263,630
3291-5480011				
3291-5480011	New Construction	\$0	\$736,698	\$736,698
3291-5484200				
3291-5484200	Consortium Project Exp	\$0	\$3,319,790	<u>\$3,319,790</u>
<b>Total</b>				<b><u>\$4,772,338</u></b>



SECTION 5. Accounting records are to be maintained by the Finance Department of the City of Concord in such manner as (1) to provide all information required by the grant agreement and other agreements executed or to be executed with the various parties involved with the project; and (2) to comply with the Local Government Budget and Fiscal Control Act of the State of North Carolina.

SECTION 6. Within five (5) days after adopted, copies of this grant project amendment shall be filed with the City Manager, Finance Director, and City Clerk for direction in carrying out this project.

SECTION 7. The Finance Director is directed to report on the financial status of this project in accordance with the existing City policy. She shall also report to the City Manager any unusual occurrences.

Duly adopted by the City Council of the City of Concord, North Carolina this 12th day of May 2022.

CITY COUNCIL  
CITY OF CONCORD  
NORTH CAROLINA

\_\_\_\_\_  
William C. Dusch, Mayor

ATTEST: \_\_\_\_\_  
Kim Deason, City Clerk

\_\_\_\_\_  
VaLerie Kolczynski, City Attorney



# Quarterly Council Report

**UTILITY EXTENSIONS/ADDITIONS PERMITTED**

January 1- March 31, 2022

## SUMMARY

During the past quarter, the City of Concord Engineering Department's local permitting programs have authorized the expansion of the City of Concord's water distribution system and wastewater collection system to areas that have been recently annexed, developed or to portions of the countywide service area, where infrastructure is lacking, deficient or overloaded.

In summary, the water distribution and wastewater collection expansion projects, as permitted by the City of Concord's delegated permitting program during the quarter of **January 1- March 31, 2022**, are as follows:

**WATER-** *The City of Concord initiated water distribution system extensions permitted by the City of Concord's delegated permitting 1,600 linear feet of 16-inch water lines, 50 linear feet of 12-inch water lines, 20 linear feet of 10-inch water lines, 70 linear feet of 8-inch water lines, 50 linear feet of 6-inch water lines, with valves, hydrants and other appurtenances to provide services to existing customers located off of Union Street, with zero increase to the existing water demand.*

*The Developer initiated PUBLIC water distribution system extensions permitted by the City of Concord's delegated permitting program consisted of approximately 4,590 linear feet of 12-inch water main, 11,755 linear feet of 8-inch water main, 510 linear feet of 6-inch water main, 2,384 linear feet of 2-inch water main, with valves, hydrants and other appurtenances to serve 339 single family lots (127 3-bedroom, 202 4-bedroom, & 10 5-bedroom lots), 2 industrial buildings with total 203,706 sq. ft. speculative warehouse space, 7,200 sq. ft. vehicle storage industrial facility, 35,000 sq. ft. industrial building with a factory warehouse and office, with an average domestic water demand of 178,875 GPD, of treated water from the City of Concord's existing potable water distribution system.*

**SEWER** – *The City of Concord initiated wastewater collection system extensions permitted by the City of Concord's delegated permitting program consisted of approximately 1,059 linear feet of 12-inch sanitary sewer, 324 linear feet of 8-inch sanitary sewer, with manholes and other appurtenances to serve future development located off of George W. Liles Pkwy, to serve existing customers located off of Union Street, with zero increase to the existing wastewater discharge.*

*The Developer initiated PUBLIC wastewater collection system extensions permitted by the City of Concord's delegated permitting program consisted of approximately 44 linear feet of 12-inch sanitary sewer, 18,565 linear feet of 8-inch sanitary sewer, with manholes and other appurtenances to serve 339 single family lots (127 3-bedroom, 202 4-bedroom, & 10 5-bedroom lots), 9 3-bedroom townhome units, 240 sq. ft. Fuel Center with a total average wastewater discharge of 134,720 GPD.*

*Please reference the following pages for more information concerning the authorized expansion and the associated particulars of each project permitted by the City from **1st of January to the 31st of March, 2022**:*

# Water Distribution System Extensions: January 1- March 31, 2022

Date Issued: January 6, 2022  
Project Title: **Piper Landing Subdivision**  
Project #: 2020-017 Mod 1  
Developer: M/I Homes of Charlotte, LLC  
Cody Simoneaux, VP of Land Development  
5350 77 Center Drive, Suite 100  
Charlotte, NC 28217  
P)704-597-4538  
E) [csimoneaux@mihomes.com](mailto:csimoneaux@mihomes.com)

Description: Modification to original permit to include additional 203 linear feet of 12-inch water lines to the project.  
Resulting in the construction approximately 203 linear feet of 12-inch water lines with 1 in-line valve, 10,016 linear feet of 8-inch water lines with 21 in-line valves, 1,353 linear feet of 6-inch water lines with 3 in-line valves, 119 linear feet of 2-inch water lines with 1 in-line valve, and other appurtenances to provide potable water to 81 single family lots and 221 single family townhome units, and a swimming pool located off/on of Rock Hill Church Road with an average domestic water demand of 122,270 GPD a provide potable water to 81 single family lots and 221 single family townhome units, and a swimming pool located off of Rock Hill Church Rd with an average domestic water demand of 122,270 GPD \*  
\*GPD previously allocated in original permit and noted as zero in total summary.

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Date Issued: January 12, 2022  
Project Title: **Cannon Run**  
Project #: 2019-045  
Developer: Pulte Home Company, LLC  
Jeremy Huntsman, Director of Land Dev.  
11121 Carmel Commons Blvd. #450  
Charlotte, NC 28226  
P) 704-972-0752  
E) [jeremy.huntsman@pultegroup.com](mailto:jeremy.huntsman@pultegroup.com)

Description: Construction of approximately 3,963 linear feet of 12-inch water lines with 14 in-line valves, 5,546 linear feet of 8-inch water lines with 13 in-line valves, 510 linear feet of 6-inch water lines with 4 in-line valves, 1,034 linear feet of 2-inch water lines with 8 in-line valves, 20 hydrants, and other appurtenances to provide potable water to 210 Single Family lots (41 3-Bedroom, 159 4-Bedroom, & 10 5-bedroom) lots located off of Davidson Hwy (NC-73) and Odell School Road with an average domestic water demand of 84,000 GPD.

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Date Issued: January 20, 2022  
Project Title: **Aviation Industrial**  
Project #: 2021-049  
Developer: SL Aviation Corner, LLC  
Jimmy Constantakis, VP  
195 Morristown Road  
Basking Ridge, NJ 07920  
P) 971-765-0100  
Email) [jimmyc@silvermangroup.net](mailto:jimmyc@silvermangroup.net)

Description: Construction of approximately 48 linear feet of 8-inch water lines with 1 in-line valve, and other appurtenances to provide potable water to 2 industrial buildings with total 203,706 sq. ft. speculative warehouse space located off of the intersection of Aviation Blvd. N. and Derita Road with an average industrial water demand of 1,200 GPD.

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Date Issued: March 2, 2022  
Project Title: **Copart, Inc-Concord Speedway**  
Project #: 2020-081  
Developer: COPART, INC.  
Eric Trumbach, Property Manager  
14185 Dallas Parkway, Suite 400  
Dallas, TX 75254  
P) 469-344-8612  
Email) [eric.trumbach@copart.com](mailto:eric.trumbach@copart.com)

Description: Construction of approximately of approximately 423.83 linear feet of 12-inch water lines with 3 in-line valves, 5 linear feet of 8-inch water lines with 1 in-line valve, 1 hydrant, and other appurtenances, to provide potable water to a 7,200 sq. ft. vehicle storage industrial facility located off of US 601 South, with an average domestic & commercial water demand of 2,000 GPD.

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Date Issued: March 4, 2022  
Project Title: **Steris-Charlotte Offsite Reprocessing Center**  
Project #: 2021-070  
Developer: Oakmont Business Partners II, LLC  
Curtis Trenkelbach  
PO Box 34443  
Charlotte, NC 28207  
P) 704-522-1140  
Email) [curtist@interconbuildingcorp.com](mailto:curtist@interconbuildingcorp.com)

Description: Construction of approximately 116 linear feet of 8-inch water lines, 1 hydrant, and other appurtenances to provide potable water to a 35,000 sq. ft. industrial building with a Factory warehouse and office located off of the intersection of Derita and Poplar Tent Road with an average industrial water demand of 40,075 GPD.

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Date Issued: March 29, 2022  
Project Title: **Union Street Improvements**  
Project # 2020-009  
Developer: City of Concord- Water Resources  
Attn: Rusty Campbell, Deputy Director  
PO Box 308  
Concord, NC 28026  
P) 704-920-5344  
Email) [campbellr@concordnc.gov](mailto:campbellr@concordnc.gov)

Description: Construction of approximately 1,600 linear feet of 16-inch water lines with 13 in-line valves, 50 linear feet of 12-inch water lines with 2 in-line valves, 20 linear feet of 10-inch water lines, 70 linear feet of 8-inch water lines with 1 in-line valves, 50 linear feet of 6-inch water lines with 2 in-line valves, 9 hydrants, and other appurtenances to provide potable water to serve the existing customers located off of Union Street, with zero increase to the commercial water demand.

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Date Issued: March 31, 2022  
Project Title: **Midland Crossings Subdivision**  
Project # 2020-089 & Accela PRS2020-03112  
Developer: KB Home Charlotte, Inc.  
William Kiselick, Division President  
2626 Glenwood Avenue, Suite 550  
Raleigh, NC 27608  
P) 704-400-4536  
Email) [wskiselick@kbhome.com](mailto:wskiselick@kbhome.com)

Description: Construction of approximately 6,040 linear feet of 8-inch water lines with 28 in-line valves, 1,350 linear feet of 2-inch water lines with 11 in-line valves, 13 hydrants, and other appurtenances to provide potable water to 86 3-bedroom and 43 4-bedroom single family lots located off/on of Hwy 24/27 & Riceland Way, with an average domestic water demand of 51,600 GPD.

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# Wastewater Distribution System Extensions: January 1- March 31, 2022

Date Issued: January 12, 2022  
Project Title: **Cannon Run**  
Project #: 2019-045  
Developer: Pulte Home Company, LLC  
Jeremy Huntsman, Director of Land Dev.  
11121 Carmel Commons Blvd. #450  
Charlotte, NC 28226  
P) 704-972-0752  
E) [jeremy.huntsman@pultegroup.com](mailto:jeremy.huntsman@pultegroup.com)

Description: Construction of approximately 11,202 linear feet of 8-inch sanitary sewer with 69 manholes and other appurtenances to serve 210 Single Family (41 3-Bedroom, 159 4-Bedroom, & 10 5-bedroom) lots located off of Davidson Hwy (NC-73) and Odell School Road, with a domestic wastewater discharge of 97,080 GPD.

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Date Issued: January 25, 2022  
Project Title: **12" Public Sewer Extension Phase 1**  
Project #: 2020-007  
Developer: City of Concord  
Enrique Alberto Blat, Deputy City Engineer  
635 Alfred Brown Jr. Ct. SW  
Concord, NC 28025  
P) 704-920-5403  
Email) [blatr@concordnc.gov](mailto:blatr@concordnc.gov)

Description: Construction of approximately 952 linear feet of 12-inch sanitary sewer, 77 linear feet of 8-inch sanitary sewer with 7 manholes and other appurtenances to serve future development located off of George W. Liles Pkwy at NW corner of The Grounds and cross Roberta Church Rd, with a wastewater discharge to be allocated with future tributary projects.

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Date Issued: February 2, 2022  
Project Title: **Kathryn Drive Subdivision**  
Project #: 2021-033  
Developer: Red Dirt Properties of NC, LLC  
Terrell Lambert, Member  
1190 Millbridge Road  
China Grove, NC 28923  
P) 704-425-6655  
Email) [terrelllambert@earthlink.net](mailto:terrelllambert@earthlink.net)

Description: Construction of approximately 200 linear feet of 8-inch sanitary sewer with 4 manholes and other appurtenances to serve 9 3-Bedroom townhome units located off/on of Kathryn Dr. and Accent Ave., with a domestic wastewater discharge of 3,240 GPD.

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Date Issued: March 1, 2022  
Project Title: **Harris Teeter Fuel- Store #68 Poplar Tent**  
Project #: 2021-084  
Developer: CRE-CODDLE, LLC  
Larry L. Raley, Vice President  
10815 Sikes Place, Ste. 300  
Charlotte, NC 28277  
P) 704-246-1496  
Email) [larry@raleymiller.com](mailto:larry@raleymiller.com)

Description: Construction of approximately 258 linear feet of 8-inch sanitary sewer with 4 manholes and other appurtenances to serve a 240 sq. ft. Fuel Center located off/on of George W. Liles and Poplar Tent Rd, with a zero increase to the existing wastewater discharge. Project to replace a previously served existing building.

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Date Issued: March 29, 2022  
Project Title: **Union Street Improvements**  
Project #: 2020-009  
Developer: City of Concord- Water Resources  
Attn: Rusty Campbell, Deputy Director  
PO Box 308  
Concord, NC 28026  
P) 704-920-5344  
Email) [campbellr@concordnc.gov](mailto:campbellr@concordnc.gov)

Description: Construction of approximately 107 linear feet of 12-inch DI sewer main and 247 linear feet of 8-inch PVC sewer main with 2 manholes, to serve the existing customers located off of Union Street, with zero increase to the commercial wastewater discharge.

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Date Issued: March 31, 2022  
Project Title: **Midland Crossings Subdivision**  
Project #: 2020-089 & Accela PRS2020-03112  
Developer: KB Home Charlotte, Inc.  
William Kiselick, Division President  
2626 Glenwood Avenue, Suite 550  
Raleigh, NC 27608  
P) 704-400-4536  
Email) [wskiselick@kbhome.com](mailto:wskiselick@kbhome.com)

Description: Construction of approximately 44 linear feet of 12-inch sanitary sewer and 6,905 linear feet of 8-inch sanitary sewer with 43 manholes and other appurtenances to serve 86 3-bedroom and 43 4-bedroom single family lots located off/on of Hwy 24/27 & Riceland Way, with a domestic wastewater discharge of 34,400 GPD.

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**Tax Report for Fiscal Year 2021-2022****FINAL REPORT****March****Property Tax Receipts- Munis**

2021 BUDGET YEAR	494,564.92
2020	21,888.39
2019	3,414.25
2018	901.67
2017	366.86
2016	332.25
2015	351.17
2014	397.49
2013	353.80
2012	115.44
Prior Years	1,666.10
Interest	21,410.93
Refunds	
	<hr/>
	545,763.27

**Vehicle Tax Receipts- County**

2021 BUDGET YEAR	521,280.80
2020	
2019	
2018	
2017	
2016	
2015	
Prior Years	
Penalty & Interest	6,325.75
Refunds	
	<hr/>
	527,606.55

**Fire District Tax - County**

2021 BUDGET YEAR	6,830.47
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Less: Collection Fee from County

<b>Net Ad Valorem Collections</b>	<hr/>
	1,080,200.29

423:Vehicle Tag Fee-Transportation Impr Fund	40,273.20
100:Vehicle Tag Fee	163,533.60
292:Vehicle Tag Fee-Transportation Fund	40,273.20
Less Collection Fee - Transit	
<b>Net Vehicle Tag Collection</b>	<hr/>
	244,080.00

Privilege License	255.00
Prepaid Privilege Licenses	
Privilege License interest	15.00
<b>Total Privilege License</b>	<hr/>
	270.00

Oakwood Cemetery current	3,950.00
Oakwood Cemetery endowment	-
Rutherford Cemetery current	4,383.35
Rutherford Cemetery endowment	1,166.65
West Concord Cemetery current	2,975.00
West Concord Cemetery endowment	-
<b>Total Cemetery Collections</b>	<hr/>
	12,475.00

<b>Total Collections</b>	<hr/>
	\$ 1,337,025.29

<b>Current Year</b>	
<b>Original Scroll</b>	
Levy	
Penalty	
Adjustments	
Public Service	
Levy	
Penalty	
Discoveries/Annex	7,152.22
Discovery Penalty	1,162.26
<b>Total Amount Invoiced - Monthly</b>	<u>8,314.48</u>
<b>Total Amount Invoiced - YTD</b>	65,486,058.75

<b>Current Year</b>	
<b>Less Abatements (Releases)</b>	
Real	2,511.41
Personal	
Discovery	
Penalty - all	
<b>Total Abatements</b>	<u>2,511.41</u>

<b>Adjusted Amount Invoiced - monthly</b>	5,803.07
<b>Adjusted Amount Invoiced - YTD</b>	65,378,275.67

Current Levy Collected	494,564.92
Levy Collected from previous years	29,787.42
Penalties & Interest Collected	21,410.93
Current Month Write Off - Debit/Credit	-
<b>Total Monthly Collected</b>	<u>545,763.27</u>
<b>Total Collected - YTD</b>	65,059,605.29

**Total Collected - net current levy -YTD** 64,661,742.46

Percentage of Collected -current levy 98.90%

Amount Uncollected - current year levy 716,533.21

Percentage of Uncollected - current levy 1.10%

100.00%

**CITY OF CONCORD**

**Summary of Releases, Refunds and Discoveries for the Month of March 2022**

<b>RELEASES</b>		
CITY OF CONCORD	\$	<b>2,511.41</b>
CONCORD DOWNTOWN	\$	-

<b>REFUNDS</b>		
CITY OF CONCORD	\$	<b>4,499.19</b>
CONCORD DOWNTOWN	\$	-

<b>DISCOVERIES</b>							
CITY OF CONCORD							
TaxYear	Real	Personal	Total	Rate	Calculated	Penalties	
2017	0	0	0	0.0048	0.00	0.00	
2018	0	37,306	37,306	0.0048	179.07	89.54	
2019	0	128,188	128,188	0.0048	615.30	246.12	
2020	0	145,976	145,976	0.0048	700.68	210.21	
2021	49,498	1,066,855	1,116,353	0.0048	5,358.49	616.39	
2022	0	62,223	62,223	0.0048	298.67	0.00	
<b>Total</b>	<b>49,498</b>	<b>1,440,548</b>	<b>1,490,046</b>		<b>\$ 7,152.22</b>	<b>\$ 1,162.26</b>	
DOWNTOWN							
TaxYear	Real	Personal	Total	Rate	Calculated	Penalties	
2017	0	0	0	0.0023	0.00	0.00	
2018	0	0	0	0.0023	0.00	0.00	
2019	0	0	0	0.0023	0.00	0.00	
2020	0	0	0	0.0023	0.00	0.00	
2021	0	0	0	0.0023	0.00	0.00	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>\$ -</b>	<b>\$ -</b>	

City of Concord  
Portfolio Holdings  
Monthly Investments to Council  
Report Format: By CUSIP / Ticker  
Group By: Security Type  
Average By: Cost Value  
Portfolio / Report Group: All Portfolios  
As of 3/31/2022

Description	CUSIP/Ticker	Face Amount/Shares	Cost Value	Maturity Date	YTM @ Cost	% of Portfolio	Settlement Date	Cost Price	Days To Maturity
<b>Commercial Paper</b>									
CP ICBC LTD 0 4/8/2022	45581CD85	5,000,000.00	4,995,895.83	4/8/2022	0.150	1.25	N/A	99.917917	8
CP CROWN PT CAP CO LLC 0 4/18/2022	2284K1DJ9	5,000,000.00	4,994,970.85	4/18/2022	0.170	1.25	N/A	99.899417	18
CP BAQUE ET CAISSE EPARGNE 0 5/2/2022	0667K1E23	5,000,000.00	4,995,955.56	5/2/2022	0.130	1.25	N/A	99.919111	32
CP SSM HEALTH CARE CORP 0 5/23/2022	78470XEP5	5,000,000.00	4,994,361.10	5/23/2022	0.581	1.25	N/A	99.887222	53
CP NANTIXIS 0 5/24/2022	63873KEQ6	5,000,000.00	4,994,923.60	5/24/2022	0.170	1.25	N/A	99.898472	54
CP LLOYDS BANK CORP 0 5/31/2022	53948BEX3	5,000,000.00	4,994,422.22	5/31/2022	0.160	1.25	N/A	99.888444	61
CP BANCO DE CHILE 0 6/1/2022	05952TF16	5,000,000.00	4,993,369.44	6/1/2022	0.220	1.25	N/A	99.867389	62
CP ING US FUNDING LLC 0 6/10/2022	4497W1FA9	5,000,000.00	4,993,427.78	6/10/2022	0.260	1.25	N/A	99.868556	71
CP CHARLOTTE MECK HOSP 0 6/22/2022	16085KFN4	5,000,000.00	4,995,550.00	6/22/2022	0.120	1.25	N/A	99.911	83
CP LMA S A DISC CP 0 7/11/2022	53944RGB8	5,000,000.00	4,990,605.56	7/11/2022	0.381	1.25	N/A	99.812111	102
CP TORONTO DOM BK0 7/19/2022	89119BGK6	5,000,000.00	4,983,727.78	7/19/2022	1.013	1.25	N/A	99.674556	110
CP MOUNTCLIFF 0 7/20/2022	62455BGL3	5,000,000.00	4,990,200.00	7/20/2022	0.281	1.25	N/A	99.804	111
CP CREDIT SUISSE 0 8/19/2022	2254EBHK0	5,000,000.00	4,988,000.00	8/19/2022	0.321	1.25	N/A	99.76	141
CP NANTIXIS 0 8/31/2022	63873KHX8	5,000,000.00	4,987,020.83	8/31/2022	0.351	1.25	N/A	99.740417	153
CP SALVATION ARMY 0 9/2/2022	79583TJ22	5,000,000.00	4,990,286.11	9/2/2022	0.261	1.25	N/A	99.805722	155
CP ING US FUNDING LLC 0 9/21/2022	4497W1JM9	5,000,000.00	4,981,743.06	9/21/2022	0.552	1.25	N/A	99.634861	174
CP JP MORGAN SECURITIES 0 10/25/2022	46640QKR1	5,000,000.00	4,965,912.50	10/25/2022	1.017	1.25	N/A	99.31825	208
CP TOYOTA MTR CR CORP 0 11/10/2022	89233HLA0	5,000,000.00	4,959,950.00	11/10/2022	1.089	1.25	N/A	99.199	224
Sub Total / Average Commercial Paper		90,000,000.00	89,790,322.22		0.401	22.56		99.767418	101
<b>FFCB Bond</b>									
FFCB 0.14 5/18/2023-21	3133EMZP0	5,000,000.00	4,997,000.00	5/18/2023	0.170	1.26	N/A	99.94	413
FFCB 0.32 8/10/2023-21	3133EL3E2	5,000,000.00	5,000,000.00	8/10/2023	0.320	1.26	N/A	100	497
FFCB 0.19 9/22/2023-21	3133EMLE0	5,000,000.00	5,000,000.00	9/22/2023	0.190	1.26	N/A	100	540
FFCB 0.31 11/30/2023-21	3133EMHL9	5,000,000.00	5,000,000.00	11/30/2023	0.310	1.26	N/A	100	609
FFCB 0.23 1/19/2024	3133EMNG3	5,000,000.00	4,997,850.00	1/19/2024	0.244	1.26	N/A	99.957	659
FFCB 0.25 3/1/2024-21	3133EMSD5	5,000,000.00	4,990,000.00	3/1/2024	0.317	1.25	N/A	99.8	701
FFCB 0.33 4/5/2024-22	3133EMVD1	3,470,000.00	3,467,918.00	4/5/2024	0.354	0.87	N/A	99.94	736
FFCB 0.46 8/19/2024-21	3133EM2U5	5,000,000.00	5,000,000.00	8/19/2024	0.460	1.26	N/A	100	872
FFCB 0.43 9/10/2024-20	3133EL6V1	5,000,000.00	5,000,000.00	9/10/2024	0.430	1.26	N/A	100	894
FFCB 0.63 10/21/2024-22	3133ENBM1	4,189,000.00	4,172,244.00	10/21/2024	0.768	1.05	N/A	99.6	935
FFCB 0.97 12/9/2024-22	3133ENGN4	5,000,000.00	5,000,000.00	12/9/2024	0.970	1.26	N/A	100	984
FFCB 0.71 4/21/2025-22	3133EMWH1	5,000,000.00	5,000,000.00	4/21/2025	0.710	1.26	N/A	100	1,117
FFCB 0.53 9/29/2025-21	3133EMBH4	5,000,000.00	5,000,000.00	9/29/2025	0.530	1.26	N/A	100	1,278
FFCB 1.21 12/22/2025-22	3133ENHU7	5,000,000.00	5,000,000.00	12/22/2025	1.210	1.26	N/A	100	1,362
FFCB 0.625 6/16/2026-21	3133EMKV3	5,000,000.00	5,000,000.00	6/16/2026	0.625	1.26	N/A	100	1,538
FFCB 0.94 9/28/2026-22	3133EM6E7	5,000,000.00	5,000,000.00	9/28/2026	0.940	1.26	N/A	100	1,642
FFCB 1.55 3/30/2027-23	3133ELUN2	5,000,000.00	5,000,000.00	3/30/2027	1.550	1.26	N/A	100	1,825
FFCB 1.4 3/10/2028-22	3133EMSW3	5,000,000.00	5,000,000.00	3/10/2028	1.400	1.26	N/A	100	2,171
FFCB 1.5 3/23/2028-22	3133EMUB6	5,000,000.00	5,000,000.00	3/23/2028	1.500	1.26	N/A	100	2,184
FFCB 1.04 1/25/2029-22	3133EMNL2	5,000,000.00	4,986,250.00	1/25/2029	1.076	1.25	N/A	99.725	2,492
FFCB 1.55 3/15/2029-22	3133EMSX1	5,000,000.00	4,960,000.00	3/15/2029	1.658	1.25	N/A	99.2	2,541
Sub Total / Average FFCB Bond		102,659,000.00	102,571,262.00		0.755	25.77		99.914899	1,247
<b>FHLB Bond</b>									
FHLB 0.3 9/29/2023-21	3130AK3S3	5,000,000.00	5,000,000.00	9/29/2023	0.300	1.26	N/A	100	547
FHLB 0.22 10/5/2023-21	3130AKAF3	5,000,000.00	4,992,500.00	10/5/2023	0.270	1.25	N/A	99.85	553
FHLB 0.3 11/27/2023-21	3130AKGL4	5,000,000.00	5,000,000.00	11/27/2023	0.300	1.26	N/A	100	606

FHLB 0.3 2/9/2024-21	3130AMHP0	5,000,000.00	5,000,000.00	2/9/2024	0.300	1.26	N/A	100	680
FHLB 2.5 2/13/2024	3130AFW94	520,000.00	554,662.30	2/13/2024	0.225	0.14	N/A	106.665827	684
FHLB 0.45 4/29/2024-21	3130ALYE8	5,000,000.00	5,000,000.00	4/29/2024	0.450	1.26	N/A	100	760
FHLB 0.375 5/24/2024-21	3130AMPB2	5,000,000.00	5,000,000.00	5/24/2024	0.375	1.26	N/A	100	785
FHLB 0.4 5/24/2024-21	3130AMEP3	5,000,000.00	5,000,000.00	5/24/2024	0.400	1.26	N/A	100	785
FHLB 0.4 6/7/2024-21	3130AMKX9	5,000,000.00	5,000,000.00	6/7/2024	0.400	1.26	N/A	100	799
FHLB 0.5 7/15/2024-21	3130AMXL1	5,000,000.00	5,000,000.00	7/15/2024	0.500	1.26	N/A	100	837
FHLB 0.5 7/29/2024-21	3130ANCU2	5,000,000.00	5,000,000.00	7/29/2024	0.500	1.26	N/A	100	851
FHLB 0.45 8/27/2024-20	3130AJZH5	5,000,000.00	5,000,000.00	8/27/2024	0.450	1.26	N/A	100	880
FHLB 1.27 1/27/2025-23	3130AQMJ9	5,000,000.00	5,000,000.00	1/27/2025	1.270	1.26	N/A	100	1,033
FHLB 0.4 7/15/2025-21	3130AKM29	5,000,000.00	4,999,000.00	7/15/2025	0.405	1.26	N/A	99.98	1,202
FHLB 0.5 10/20/2025-21	3130AKNK8	5,000,000.00	4,999,000.00	10/20/2025	0.504	1.26	N/A	99.98	1,299
FHLB Step 12/30/2025-21	3130AKLH7	5,000,000.00	5,000,000.00	12/30/2025	0.636	1.26	N/A	100	1,370
FHLB Step 1/29/2026-21	3130AKRA6	5,000,000.00	5,000,000.00	1/29/2026	1.002	1.26	N/A	100	1,400
FHLB 0.53 2/17/2026-21	3130AKWS1	5,000,000.00	4,995,000.00	2/17/2026	0.550	1.25	N/A	99.9	1,419
FHLB 0.8 3/10/2026-21	3130ALF58	5,000,000.00	5,000,000.00	3/10/2026	0.800	1.26	N/A	100	1,440
FHLB Step 4/29/2026-21	3130ALZA5	5,000,000.00	5,000,000.00	4/29/2026	1.432	1.26	N/A	100	1,490
FHLB 0.825 8/17/2027-21	3130AJXH7	5,000,000.00	4,986,250.00	8/17/2027	0.866	1.25	N/A	99.725	1,965
FHLB 2.32 11/1/2029-22	3130AHEU3	5,000,000.00	5,000,000.00	11/1/2029	2.320	1.26	N/A	100	2,772
Sub Total / Average FHLB Bond		105,520,000.00	105,526,412.30		0.666	26.51		100.008318	1,115
FHLMC Bond									
FHLMC 0.375 4/20/2023	3137EAEQ8	1,290,000.00	1,291,301.24	4/20/2023	0.341	0.32	N/A	100.100871	385
FHLMC 2.75 6/19/2023	3137EAEN5	1,225,000.00	1,317,965.25	6/19/2023	0.244	0.33	N/A	107.589	445
FHLMC 0.25 6/26/2023	3137EAES4	3,220,000.00	3,219,567.60	6/26/2023	0.254	0.81	N/A	99.986726	452
FHLMC 0.25 9/8/2023	3137EAEW5	2,120,000.00	2,120,844.05	9/8/2023	0.236	0.53	N/A	100.039854	526
FHLMC 0.3 12/14/2023-21	3134GXEW0	5,000,000.00	5,000,000.00	12/14/2023	0.300	1.26	N/A	100	623
FHLMC 0.45 7/29/2024-22	3134GWFS0	2,250,000.00	2,250,000.00	7/29/2024	0.450	0.57	N/A	100	851
FHLMC 1.5 2/12/2025	3137EAEP0	1,305,000.00	1,296,987.51	2/12/2025	1.715	0.33	N/A	99.386016	1,049
FHLMC 0.8 7/14/2026-21	3134GV5T1	5,000,000.00	5,000,000.00	7/14/2026	0.800	1.26	N/A	100	1,566
Sub Total / Average FHLMC Bond		21,410,000.00	21,496,665.65		0.503	5.40		100.436242	832
FNMA Bond									
FNMA 2 10/5/2022	3135G0T78	305,000.00	308,721.00	10/5/2022	1.543	0.08	N/A	101.22	188
FNMA 2.375 1/19/2023	3135G0T94	1,820,000.00	1,884,180.01	1/19/2023	1.134	0.47	N/A	103.531596	294
FNMA 0.3 8/10/2023-22	3135G05R0	4,000,000.00	3,973,000.00	8/10/2023	0.731	1.00	N/A	99.325	497
FNMA 0.31 8/17/2023-22	3136G4K51	5,000,000.00	5,000,000.00	8/17/2023	0.310	1.26	N/A	100	504
FNMA 2.875 9/12/2023	3135G0U43	1,170,000.00	1,263,483.00	9/12/2023	0.221	0.32	N/A	107.99	530
FNMA 0.3 10/27/2023-21	3136G46A6	5,000,000.00	5,000,000.00	10/27/2023	0.300	1.26	N/A	100	575
FNMA 0.25 11/27/2023	3135G06H1	3,705,000.00	3,707,833.90	11/27/2023	0.223	0.93	N/A	100.076557	606
FNMA 0.28 12/29/2023-21	3135GABN0	5,000,000.00	5,000,000.00	12/29/2023	0.280	1.26	N/A	100	638
FNMA 2.5 2/5/2024	3135G0V34	1,500,000.00	1,590,870.00	2/5/2024	0.225	0.40	N/A	106.058	676
FNMA 1.75 7/2/2024	3135G0V75	1,510,000.00	1,571,618.47	7/2/2024	0.361	0.39	N/A	104.080727	824
FNMA 0.455 8/27/2024-21	3136G4Y72	5,000,000.00	5,000,000.00	8/27/2024	0.455	1.26	N/A	100	880
FNMA 1.625 10/15/2024	3135G0W66	2,380,000.00	2,454,218.36	10/15/2024	0.577	0.62	N/A	103.119202	929
FNMA 0.5 12/16/2024-21	3135G06M0	5,000,000.00	4,989,850.00	12/16/2024	0.560	1.25	N/A	99.797	991
FNMA 1.625 1/7/2025	3135G0X24	1,055,000.00	1,072,574.78	1/7/2025	1.060	0.27	N/A	101.665856	1,013
FNMA 0.7 7/14/2025-21	3136G4YH0	5,000,000.00	5,000,000.00	7/14/2025	0.700	1.26	N/A	100	1,201
FNMA 0.55 8/19/2025-22	3136G4H63	5,000,000.00	5,000,000.00	8/19/2025	0.550	1.26	N/A	100	1,237
FNMA 0.58 8/25/2025-22	3136G4J20	5,000,000.00	5,000,000.00	8/25/2025	0.580	1.26	N/A	100	1,243
FNMA 0.73 10/29/2026-21	3136G46F5	5,000,000.00	5,000,000.00	10/29/2026	0.730	1.26	N/A	100	1,673
FNMA 0.8 11/4/2027-22	3135GA2L4	5,000,000.00	5,000,000.00	11/4/2027	0.800	1.26	N/A	100	2,044
Sub Total / Average FNMA Bond		67,445,000.00	67,816,349.52		0.537	17.04		100.578149	976
Local Government Investment Pool									
NCCMT LGIP	NCCMT599	71,480.03	71,480.03	N/A	0.170	0.02	N/A	100	1
NCCMT LGIP	NCCMT481	545,368.30	545,368.30	N/A	0.170	0.14	N/A	100	1
NCCMT LGIP	NCCMT271	118,454.36	118,454.36	N/A	0.170	0.03	N/A	100	1
Sub Total / Average Local Government Investment Pool		735,302.69	735,302.69		0.170	0.18		100	1
Money Market									

PINNACLE BANK MM	PINNACLE	10,155,476.09	10,155,476.09	N/A	0.080	2.55	N/A	100	1
Sub Total / Average Money Market		10,155,476.09	10,155,476.09		0.080	2.55		100	1
Total / Average		397,924,778.78	398,091,790.47		0.582	100		100.049865	851