

ADDENDUM NO. 4

TO: Prospective Bidders

FROM: Donna Johnson, Contracts Administrator

DATE: December 14, 2023

PROJECT: I-85 North Bridge (RE-BID)
Project No.: 512-15-003
Bid Number: 269-2024-023

The following items are being issued herein for modification and clarification to the Bid Requirements for the project referenced above.

MODIFICATIONS TO PROJECT MANUAL

The following sections have been revised by this addendum:

- 1) After Section 00 75 00 – **ARTICLE 4: REAL ESTATE SPECIAL PROVISIONS**, SP-84, REAL ESTATE SPECIAL PROVISIONS, add the attached **ARTICLE 5: NCDOT ENCROACHMENT AGREEMENT**.

MODIFICATIONS TO PROJECT DRAWINGS

- 1) On the DRAWINGS, replace each drawing sheet indicated below with the revised drawing sheets included as part of this Addendum No. 4. Revised drawing sheets will be published on the **Bonfire Procurement Portal**.

SHEET NO	DRAWING TITLE
2V	Guardrail Along I-85 Location Detail
B-17	2 Bar Metal Rail with Concrete Parapet Sheet 1 of 8
B-23	2 Bar Metal Rail with Concrete Parapet Sheet 7 of 8
B-37	MSE Wall Sheet 1 of 7
B-55	2 Bar Metal Rail Sheet 2 of 4

QUESTIONS AND ANSWERS

1. (RFI# 4) The project proposal mentions that the Aluminum rail is to be powder coated. We can find no suppliers that provide powder coated aluminum rail, can Painted or Anodized rail be substituted?

Answer: The bridge plans have been updated to allow for an equivalent approved method to the black powder coating. Anodized aluminum rail would be an equivalent substitute that the Contractor could submit specifications to the City for approval.

2. (RFI# 5) The most economical temporary shoring required for the installation of the stormwater vault between stations -L- 24+73 - 25+79 would need to temporarily encroach underneath the existing parking lot of the

Oasis Shriners parking lot. Once construction is complete the temporary shoring will be removed, and all conditions restored back to original conditions.

Answer: The Erosion Control plans show all area that is covered by the project Erosion Control permit. The Contractor would have to get their own EC permit for any disturbance outside of the limit of disturbance shown on the plans. The City cannot grant permission for use of property outside of the proposed right of way and easements that are shown on the plans. The Oasis Shriners parking lot is not owned or maintained by the City of Charlotte and the project did not acquire any additional easement outside what is shown on the plans. The Contractor would need to get their own permit for any access route or disturbances that are not covered within the limits of the Erosion Control plans.

3. (RFI# 7) How are the bridge lighting luminaries and poles measured and paid? In the prior bid cycle, there were specific bid items for the luminaries. Those bid items are no longer on the new bid form.

Answer: As noted on the plans, the light poles are to be installed by others. The Contractor will not be responsible for the poles, fixtures, or the cable in the conduit for the lights. After construction everything should be in place for them to be installed by others. The Duke Lighting Engineer should have the opportunity to inspect all conduit before the concrete is poured.

4. (RFI# 8) Section 00-70-00 Section 2.3 Existing Utilities identifies nine (9) utilities that have facilities requiring relocations as part of this project. The RFP provides no anticipated dates by which these utilities are expected to be relocated, or durations for their work. We understand we are responsible for the coordination of these utility relocations, however, we have no way of knowing what commitments were made by these utilities to have these facilities relocated. If the identified utilities are on the critical path to project completion and cause a delay to the project, there may be additional costs charged to the Owner for project delays. For bidding purposes please provide timeframes for when these utilities will be relocated, or durations for their work.

Answer: Utility relocations along Doby Creek are complete. PNG and AT&T relocations on the east side of I-85, along Doug Mayes Place, have been completed. Utility relocations into the newly constructed duct bank, on the project's west side of I-85 (Research Drive and David Taylor Drive), are underway and anticipated to be complete by the end of 2024. Duct bank utility relocations are being sequentially scheduled over the next 8 to 12 months. There are multiple utility companies to relocate into the duct bank and tie into the existing businesses along Research Drive and David Taylor Drive. Some cut overs, which splice the new lines to the existing lines, cannot be scheduled at this time due to various reasons such as coordination with businesses dictated by proprietary redundancies related to the businesses' services, and emergency responder (911) fiber line main hub. These factors make scheduling and timeframes difficult to obtain at this time. Please note that City staff will provide the coordination with the utility companies regarding scheduling of the utility relocations into the duct bank.

ACKNOWLEDGEMENT BY BIDDER:

Please recognize receipt of this addendum in the acknowledgment addenda section on the **ACKNOWLEDGEMENT OF ADDENDA** page.

END OF ADDENDUM NO. 4

ARTICLE 5: NCDOT ENCROACHMENT AGREEMENT



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JOEY HOPKINS
SECRETARY

December 8, 2023

Division 10

City of Charlotte
600 East Fourth Street
Charlotte, NC 28202

SUBJECT: Non-Utility Encroachment Contract – City of Charlotte – Aesthetic Components for the New I-85 Bridge North of W. T. Harris Blvd (NC-24) in Mecklenburg County.

Encroachment Number: E102-060-23-01040

To Whom It May Concern:

A review of the subject encroachment has been completed by the appropriate staff agencies of the Division of Highways. Plans for the aesthetic components associated with the new bridge crossing I-85 north of W.T. Harris Blvd (NC-24) to include architectural betterments and lighting have been approved as noted and are subject to the attached special provisions.

Additionally, the City must meet all other required conditions contained in the Department's Public Art in the right of Way Policy including but not limited to:

- The Department has the right to “mute” or stop the use of certain colors if those colors prove to be confusing to motorists.
- Indemnification of the Department from liability for personal injury and property damage including highway related damage.
- NCDOT's right to remove art from the right of way due to safety/maintenance concerns, or conflict with future road maintenance/construction at no cost to DOT.
- NCDOT reserves the right to reproduce Art for promotional purposes without paying compensation, regardless of copyright status.
- NCDOT reserves the right to alter infrastructure, landscape, and other transportation related elements near and adjacent to the Art when required for maintenance and operation of the transportation facility.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION 10 DISTRICT 2 OFFICE
7605 DISTRICT DRIVE
CHARLOTTE, NC 28213

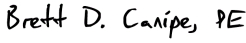
Telephone: (980) 523-0000
Fax: (704) 598-1758
Customer Service: 1-877-368-4968

Location:
7605 DISTRICT DRIVE
CHARLOTTE, NC 28213

Website: www.ncdot.gov

Please contact our District Office at (980) 523-0000 should additional information be needed.

Cordially,

DocuSigned by:

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Brett D. Canipe, PE
Division Engineer

BDC/KHB
Enclosure
cc: File

ROUTE Interstate 85 STATE PROJECT U-5874 STATE OF NORTH CAROLINA
FEDERAL PROJECT Charlotte I-85 North Bridge COUNTY Mecklenburg

DEPARTMENT OF TRANSPORTATION
-AND-
City of Charlotte
600 East 4th Street
Charlotte, NC 28202

RIGHT OF WAY
ENCROACHMENT AGREEMENT
INTERSTATE AND OTHER CONTROLLED
ACCESS HIGHWAYS

THIS AGREEMENT, made and entered into this the 8th day of DEC, 20 23, by and between the Department of Transportation, party of the first part; and City of Charlotte party of the second part,

WITNESSETH

THAT WHEREAS, the party of the second part desires to encroach on the right of way of the public road designated as Route(s) Interstate 85, located Approximately 2000 feet north of the NC 24 W.W.T. Harris Boulevard Interchange

with the construction and/or erection of: Aesthetic components associated with the new bridge crossing I-85 to include lettering and crown logos to be placed on the exterior bridge barrier with back lighting and pedestrian lights on the bridge. The City shall assume all cost associated with the maintenance of the aesthetic components.

WHEREAS, it is to the material advantage of the party of the second part to effect this encroachment, and the party of the first part in the exercise of authority conferred upon it by statute, is willing to permit the encroachment within the limits of the right of way as indicated, subject to the conditions of this agreement;

NOW, THEREFORE, IT IS AGREED that the party of the first part hereby grants to the party of the second part the right and privilege to make this encroachment as shown on attached plan sheet(s), specifications and special provisions which are made a part hereof upon the following conditions, to wit:

That the installation, operation, and maintenance of the above described facility will be accomplished in accordance with the party of the first part's latest UTILITIES ACCOMMODATIONS MANUAL, and such revisions and amendments thereto as may be in effect at the date of this agreement. Information as to these policies and procedures may be obtained from the Division Engineer or State Utilities Manager of the party of the first part.

That the said party of the second part hereby agrees that access for servicing its facilities will be limited to access via (a) frontage roads where provided, (b) nearby or adjacent public roads and street, or (c) trails along or near the highway right of way lines, connecting only to an intersecting road; from any one or all of which entry may be made to the outer portion of the highway right of way. The party of the second part's rights of access to the through-traffic roadways and ramps shall be subject to the same rules and regulations as apply to the general public, except if an emergency situation occurs, and the usual means of access for service operation as herein provided will not permit the immediate action required by the party of the second part in making emergency repairs as required for the safety and welfare of the public, the party of the second part shall have a temporary right of access to and from the through-traffic roadways and ramps as necessary to accomplish the required emergency repairs, provided that the party of the second part complies with the regulations established by the party of the first part for policing and control to protect the highway users.

That the said party of the second part binds and obligates himself to install and maintain the encroaching facility in such safe and proper condition that it will not interfere with or endanger travel upon said highway, nor obstruct nor interfere with the proper maintenance thereof, to reimburse the party of the first part for the cost incurred for any repairs or maintenance to its roadways and structures necessary due to the installation and existence of the facilities of the party of the second part, and if at any time the party of the first part shall require the removal of or changes in the location of the said facilities, that the said party of the second part binds himself, his successors and assigns, to promptly remove or alter the said facilities, in order to conform to the said requirement, without any cost to the party of the first part.

That the party of the second part agrees to provide during construction and any subsequent maintenance proper signs, signal lights, flagmen and other warning devices for the protection of traffic in conformance with the latest Manual on Uniform Traffic Control Devices for Streets and Highways and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the Division Engineer of the party of the first part.

That the party of the second part hereby agrees to indemnify and save harmless the party of the first part from all damages and claims for damage that may arise by reason of the installation and maintenance of this encroachment.

That the party of the second part agrees to restore all areas disturbed during installation and maintenance to the satisfaction of the Division Engineer of the party of the first part. The party of the second part agrees to exercise every reasonable precaution during construction and maintenance to prevent eroding of soil; silting or pollution of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces or other property; or pollution of the air. There shall be compliance with applicable rules and regulations of the North Carolina Division of Environmental Management, North Carolina Sedimentation Control Commission, and with ordinances and regulations of various counties, municipalities and other official agencies relating to pollution prevention and control. When any installation or maintenance operation disturbs the ground surface and existing ground cover, the party of the second part agrees to remove and replace the sod or otherwise reestablish the grass cover to meet the satisfaction of the Division Engineer of the party of the first part.

That the party of the second part agrees to assume the actual cost of any inspection of the work considered to be necessary by the Division Engineer of the party of the first part.

That the party of the second part agrees to have available at the construction site, at all times during construction, a copy of this agreement showing evidence of approval by the party of the first part. The party of the first part reserves the right to stop all work unless evidence of approval can be shown.

Provided the work contained in this agreement is being performed on a completed highway open to traffic; the party of the second part agrees to give written notice to the Division Engineer of the party of the first part when all work contained herein has been completed. Unless specifically requested by the party of the first part, written notice of completion of work on highway projects under construction will not be required.

That in the case of noncompliance with the terms of this agreement by the party of the second part, the party of the first part reserves the right to stop all work until the facility has been brought into compliance or removed from the right of way at no cost to the party of the first part.

That it is agreed by both parties that this agreement shall become void if actual construction of the work contemplated herein is not begun within one (1) year from the date of authorization by the party of the first part unless written waiver is secured by the party of the second part from the party of the first part.

During the performance of this contract, the second party, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor"), agrees as follows:

- a. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the U. S. Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- b. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- c. Solicitations for Subcontracts, including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- d. Information and Reports: The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
- e. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to,
 - (1) withholding of payments to the contractor under the contract until the contractor complies, and/or
 - (2) cancellation, termination or suspension of the contract, in whole or in part.
- f. Incorporation of Provisions: The contractor shall include the provisions of paragraphs "a" through "f" in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Department of Transportation to enter into such litigation to protect the interests of the State, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

R/W (162) : Party of the Second Part certifies that this agreement is true and accurate copy of the form R/W (162) incorporating all revisions to date.

IN WITNESS WHEREOF, each of the parties to this agreement has caused the same to be executed the day and year first above written.

ATTEST OR WITNESS:

DocuSigned by:
Leslie Bing
7DE53B012F80463...

Leslie Bing

Senior Project Manager

DEPARTMENT OF TRANSPORTATION

DocuSigned by:
BY: *Larry Sanders* STATE ENCROACHMENTS ENGINEER
STATE UTILITIES MANAGER

DocuSigned by:
Keith Bryant
6DD7BF67C50848D...

Keith Bryant, P.E.

Engineering Services Division Manager
Second Party

INSTRUCTIONS

When the applicant is a corporation or a municipality, this agreement must have the corporate seal and be attested by the corporation secretary or by the empowered city official, unless a waiver of corporate seal and attestation by the secretary or by the empowered City official is on file in the Raleigh office of the State Utilities Manager. In the space provided in this agreement for execution, the name of the corporation or municipality shall be typed above the name, and title of all persons signing the agreement should be typed directly below their signature.

When the applicant is not a corporation, then his signature must be witnessed by one person. The address should be included in this agreement and the names of all persons signing the agreement should be typed directly below their signature.

GENERAL REQUIREMENTS

1. Wherever possible, freeway crossing should be parallel to and within the prevailing right of way of intersecting roads.
2. Crossings should be as near as possible normal to the center line of the freeway.
3. Parallel encroachments will not be permitted except outside of control of access lines.
4. The Department's Division Engineer should be given notice by the applicant prior to actual starting of installations included in this agreement.

For Overhead Wire Lines

1. Minimum vertical clearances of overhead wires above all roadways must conform to clearances set out in the National Electric Safety Code.
2. Supporting poles or structures must be clear of control of access lines, and be at least 30 feet clear of the edge of shoulders of through lanes and 20 feet clear of the shoulders of interchange ramps.

For Underground Utilities

1. Open-cut installation for crossings will be permitted only when a highway project is in rough grading stage prior to paving. Generally, on rough grading projects, open-cut will not be permitted in fills of over 10 feet in depth and back filled material must be compacted to maximum density meeting Department requirements.
2. Encasements under an existing freeway must be installed by means of tunneling, jacking, or boring and any voids outside the encasement must be filled with lean concrete grout and the ends of encasements be satisfactorily closed.
3. In cut section, encasement must extend continuously from ditch line to ditch line and in fill section, encasement must extend continuously five feet beyond toe to slopes.
4. Vents for encasement should be extended to the right of way line or as otherwise required by the Department.
5. All pipe encasements as to material and strength shall meet the standards and specifications of the Department.
6. When trenching is carried down cut slopes, excavation must be backfilled to maximum density and the disturbed portion of the slope be stabilized and sodded to the satisfaction of the Department's Engineer.

Plans

This Encroachment agreement must be accompanied, in the form of an attachment, by a plan showing the following:

1. All roadways and ramps
2. Right of way and control of access lines
3. Drainage structures or bridges if affected by encroachment
4. Location of the proposed encroachment
5. Length, size and type of encroachment
6. Dimensions, showing the distance from the encroachment to roadways, shoulders, structures, etc.
7. Location by highway survey station number. If station number cannot be obtained, location should be shown by distance from some identifiable point, such as a bridge, road intersection, etc. (To assist in preparation of the encroachment plan, Department roadway plans may be seen at the various Highway Division Offices or at the Raleigh Office.)

All encroachment agreements involving the crossing of the right of way, roadways and/or ramps of a freeway, must be accompanied, in the form of an attachment, by a profile showing the following information:

1. The profile should extend from right of way line to right of way line and show all slopes (cut or fill), ditches, shoulders, pavements, medians, etc.
2. A vertical dimension from bottom of road ditches and from surface of pavement to encroaching structures.
3. Length, size, and type of encasement where required.
4. Notation of portion to be installed by open-cut.
5. For underground encroachments involving encasements that must be vented, the location of vents must be shown.
6. Method of installation must be shown in detail on either the plan or profile.
7. Any attachment to a bridge or other drainage structure must be approved by the Department's Bridge Design Unit.
8. Where profile is required, it should be on same sheet with the plan.

SPECIAL PROVISIONS OR SPECIFICATIONS

Any special provisions or specifications as to the performance of the work or the method of construction that may be required by the Department must be shown on a separate sheet attached to encroachment, provided that such information cannot be shown on the plan and profile sheet.

NCDOT PRECONSTRUCTION MEETING REQUEST FORM

Date: _____

Prior to beginning any work inside NCDOT ROW, this form must be completed and submitted to the inspectors listed below. Please allow 2-3 business days for a response by the appropriate inspector. Please note that this form must be completed and submitted to NCDOT prior to the pre-construction meeting.

Please submit this form to the following NCDOT Inspectors:

Elijah Hager- (980)250-08680 (ebhager1@ncdot.gov)

Carl Valente- (980) 323-0614 (cvalente@ncdot.gov)

Permit number: E102-060-23-01040

Project Name: I-85 N Bridge Aesthetics

Construction start date: _____

Approximate ending date: _____

Requested Date & time: _____

Contractor's Information:

- **Name:** _____
- **Email:** _____
- **Phone Number:** _____

City/Town Inspector's Information:

- **Name:** _____
- **Email:** _____
- **Phone Number:** _____
- **City/Town:** _____

SPECIAL PROVISIONS

R/W 16.2

ENCROACHING PARTY

E102-060-23-01040

Pre-Construction

Contact Offices & Outside Agency issues/contacts/info

1. Approval may be rescinded upon failure to follow any of the provisions in this permit and may be considered a violation of the encroachment agreement.
2. The encroachment applicant shall have one (1) year from the approval date as shown on the cover letter to begin construction. If work is not started within this one (1) year time period, the Encroachment Contract will become VOID, thus requiring written authorization from the District Engineer's office to proceed with construction.
3. The Encroaching party or their contractor shall provide the following notices prior to construction activity within the NCDOT Right of Way:
 - Three (3) business days advance phone call at telephone (980) 523-0000 or email to ebhager1@ncdot.gov and cvalente@ncdot.gov to the District Engineer's office.
 - If the construction falls within the limits of an NCDOT managed construction project, five (5) business days advance phone call to the Resident Engineer, Mr. Jon Hinson at (980) 523-0160 or email to jchinson@ncdot.gov.

Failure to provide these notifications prior to beginning construction is subject to the Division Engineer's discretion to cease construction activity for this encroachment. NCDOT reserves the right to cease any construction or maintenance work associated with this installation by the encroaching party until the construction or maintenance meets the satisfaction of the Division Engineer or their representative.

4. The approval is subject to the project being constructed as shown on the approved plan and any attached revisions to the approved plans must be approved through **Kimberly Boik or Hassan Malik** with the NCDOT District Office.
5. Prior to beginning work, it is the requirement of the Encroaching Party to contact the appropriate Utility Companies involved and make arrangements to adjust or relocate any utilities that conflict with the proposed work.
6. It shall be the responsibility of the encroaching party to determine the location of utilities within the encroachment area. NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act requires underground utilities to be located by calling 811 prior to construction. The encroaching party shall be responsible for notifying other utility owners and providing protection and safeguards to prevent damage or interruption to existing facilities and maintain access to them.
7. The encroaching party shall notify the appropriate municipal office prior to beginning any work within the municipality's limits of jurisdiction.

8. Excavation within 1000 feet of a signalized intersection will require notification by the encroaching party to NC-811 at telephone number 811 no less than one week prior to beginning work. All traffic signal or detection cables must be located prior to excavation by calling 811. Cost to replace or repair NCDOT signs, signals, pavement markings or associated equipment and facilities shall be the responsibility of the encroaching party.
9. This agreement does not authorize installations within nor encroachment onto railroad rights of way. Permits for installations within railroad right of way must be obtained from the railroad and are the responsibility of the encroaching party.
10. At the option of the District Engineer, a preconstruction meeting including representatives of NCDOT, the encroaching party, contractors, and municipality, if applicable, shall be required. A pre-construction conference held between a municipality (or other facility owner) and a contractor without the presence of NCDOT personnel with subsequent construction commencing may be subject to NCDOT personnel ceasing any work on NCDOT right-of-way related to this encroachment until such meeting is held. Contact the District office to schedule.
11. At the discretion of the District Engineer, a NOTIFICATION FOR UTILITY / NON-UTILITY ENCROACHMENT WITHIN NCDOT R/W form (See corresponding attachment) with the scheduled pre-construction meeting and associated construction schedule details must be completed and submitted to the District Engineer's office a minimum of one week prior to construction.
12. At the discretion of the District Engineer, the encroaching party (not the utility contractor) shall make arrangements to have a qualified inspector, under the supervision of a Professional Engineer registered in North Carolina, on site at all times during construction. The registered Professional Engineer shall be required to submit a signed and PE sealed certification that the utility was installed in accordance with the encroachment agreement.

Legal & Right-of-Way Issues

13. This approval and associated plans and supporting documents shall not be interpreted to allow any design change or change in the intent of the design by the Owner, Design Engineer, or any of their representatives. Any revisions or changes to these approved plans or intent for construction must be obtained in writing from the Division Engineer's office or their representative prior to construction or during construction if an issue arises during construction to warrant changes.
14. NCDOT does not guarantee the right of way on this road, nor will it be responsible for any claim for damages brought about by any property owner by reason of this installation. It is the responsibility of the encroaching party to verify the right of way.
15. Encroaching party shall be responsible for obtaining all necessary permanent and/or temporary construction, drainage, utility and/or sight distance easements.
16. All Right of Way and easements necessary for construction and maintenance shall be dedicated to NCDOT with proof of dedication furnished to the District Engineer prior to beginning work.
17. No commercial advertising shall be allowed within NCDOT Right of Way.
18. The encroaching party shall obtain proper approval from all affected pole owners prior to attachment to any pole.
19. The installation within the Control of Access fence shall not adversely affect the design, construction, maintenance, stability, traffic safety or operation of the controlled access highway, and the utility must be serviced without access from the through-traffic roadways or ramps.
20. No permission is given through the NCDOT permitting process to install items on NON-NCDOT maintained streets, private property, or railroad property.

21. Prior to the approval of any privately maintained facility within NCDOT right of way which the State of North Carolina is not the fee simple owner, written permission that each and every property owner affected by the installation shall be provided to NCDOT by the encroaching party.

Work Zone Traffic

22. WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM

All personnel performing any activity inside the highway right of way are required to be familiar with the NCDOT Maintenance / Utility Traffic Control Guidelines (MUTCG). No specific training course or test is required for qualification in the Maintenance /Utility Traffic Control Guidelines (MUTCG).

All flagging, spotting, or operating Automated Flagger Assist Devices (AFAD) inside the highway right of way requires qualified and trained Work Zone Flaggers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel involved with the installation of Work Zone Traffic Control devices inside the highway right of way are required to be qualified and trained Work Zone Installers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel in charge of overseeing work zone Temporary Traffic Control operations and installations inside the highway right of way are required to be qualified and trained Work Zone Supervisors. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

For questions and/or additional information regarding this training program please refer to <https://connect.ncdot.gov/projects/WZTC/Pages/Training.aspx> or call the NCDOT Work Zone Traffic Control Section (919) 814-5000.

23. The party of the second part shall employ traffic control measures that are in accordance with the prevailing federal, state, local, and NCDOT policies, standards, and procedures. These policies, standards, and procedures include, but are not limited to the following:
- Manual on Uniform Traffic Control Devices (MUTCD) – North Carolina has adopted the MUTCD to provide basic principles and guidelines for traffic control device design, application, installation, and maintenance. North Carolina uses the MUTCD as a minimum requirement where higher supplemental standards specific to North Carolina are not established. Use fundamental principles and best practices of MUTCD (Part 6, Temporary Traffic Control).
 - NCDOT Maintenance / Utility Traffic Control Guidelines – This document enhances the fundamental principles and best practices established in MUTCD Part 6, Temporary Traffic Control, incorporating NCDOT-specific standards and details. It also covers important safety knowledge for a wide range of work zone job responsibilities.
 - *NCDOT Roadway Standard Drawings and Standard Specifications for Roads and Structures* and amendments or supplements thereto. When there is no guidance provided in the *NCDOT Roadway Standard Drawings and Standard Specifications for Roads and Structures*, comply with the *Manual on Uniform Traffic Control Devices for Streets and Highways* and amendments or supplements thereto. Information as to the above rules and regulations may be obtained from the NCDOT Division Engineer.
24. If the Traffic Control Supervisor determines that portable concrete barrier (PCB) is required to shield a hazard within the clear zone, then PCB shall be designed and sealed by a licensed North Carolina Professional Engineer. PCB plans and design calculations shall be submitted to the District Engineer for review and approval prior to installation.
25. Ingress and egress shall be maintained to all businesses and dwellings affected by the project. Special attention shall be paid to police, EMS and fire stations, fire hydrants, secondary schools, and hospitals.

26. If the construction is within 1000 feet of a school location or on a designated bus route, the construction shall be coordinated with the school start and end times to avoid traffic delays.
27. Work hours may be modified by the District Engineer or designee if installation causes traffic problems. If nighttime or weekend work is allowed or required, all signs must be retro-reflective, and a work zone lighting plan must be submitted for approval prior to construction.

Roadside Environmental

28. The encroaching party shall comply with all applicable Federal, State and local environmental regulations and shall obtain all necessary Federal, State and local environmental permits, including but not limited to, those related to sediment control, stormwater, wetland, streams, endangered species and historical sites. Additional information can be obtained by contacting the NCDOT Roadside Environmental Engineer regarding the North Carolina Natural Heritage Program or the United States Fish and Wildlife Services. Contact the Division Roadside Environmental Engineer's Office at (704) 244-8260.
29. It is the responsibility of the encroaching party to secure any needed environmental permits and/or authorizations prior to beginning construction. Permit authorizations from the US Army Corps of Engineers Asheville Regulatory Field Office, (828) 271-7980, and the NC Division of Water Quality Mooresville Regional Office, (704) 663-1699, are required for any stream or wetland impacts. If you, or your representative, determine that no permits or authorizations are needed, attach a letter of verification to the encroachment application stating such.
30. When surface area in excess of one acre will be disturbed, the Encroacher shall submit a Sediment and Erosion Control Plan which has been approved by the appropriate regulatory agency or authority prior to beginning any work on the Right of Way. Failure to provide this information shall be grounds for suspension of operations. Proper temporary and permanent measures shall be used to control erosion and sedimentation in accordance with the approved sediment and erosion control plan.
31. The Verification of Compliance with Environmental Regulations (VCER-1) form is required for all non-utility encroachment agreements or any utility encroachments when land disturbance within NCDOT right of way exceeds 1 acre. The VCER-1 form must be PE sealed by a NC registered professional engineer who has verified that all appropriate environmental permits (if applicable) have been obtained and all applicable environmental regulations have been followed.
32. All erosion control devices and measures shall be constructed, installed, maintained, and removed by the Encroacher in accordance with all applicable Federal, State, and Local laws, regulations, ordinances, and policies. Permanent vegetation shall be established on all disturbed areas in accordance with the recommendations of the Division Roadside Environmental Engineer. All areas disturbed (shoulders, ditches, removed accesses, etc.) shall be graded and seeded in accordance with the latest *NCDOT Standards Specifications for Roads and Structures* and within 15 calendar days with an approved NCDOT seed mixture (all lawn type areas shall be maintained and reseeded as such). Seeding rates per acre shall be applied according to the Division Roadside Environmental Engineer. Any plant or vegetation in the NCDOT planted sites that is destroyed or damaged as a result of this encroachment shall be replaced with plants of like kind or similar shape.
33. No trees within NCDOT shall be cut without authorization from the Division Roadside Environmental Engineer. An inventory of trees measuring greater than 4 caliper inches (measured 6" above the ground) is required when trees within C/A right of way will be impacted by the encroachment installation. Mitigation is required and will be determined by the Division Roadside Environmental Engineer's Office.
34. Prior to installation, the Encroaching Party shall contact the District Engineer to discuss any environmental issues associated with the installation to address concerns related to the root system of trees impacted by boring or non-utility construction of sidewalk, roadway widening, etc.

35. The applicant is responsible for identifying project impacts to waters of the United States (wetlands, intermittent streams, perennial streams and ponds) located within the NCDOT right-of-way. The discharge of dredged or fill material into waters of the United States requires authorization from the United States Army Corps of Engineers (USACE) and certification from the North Carolina Division of Water Quality (NCDWQ). The applicant is required to obtain pertinent permits or certification from these regulatory agencies if construction of the project impacts waters of the United States within the NCDOT right-of-way. The applicant is responsible for complying with any river or stream Riparian Buffer Rule as regulated by the NCDWQ. The Rule regulates activity within a 50-foot buffer along perennial streams, intermittent streams and ponds. Additional information can be obtained by contacting the NCDWQ or the USACE.
36. The contractor shall not begin the construction until after the traffic control and erosion control devices have been installed to the satisfaction of the Division Engineer or their agent.
37. The contractor shall perform all monitoring and record keeping and any required maintenance of erosion and sediment control measures to maintain compliance with stormwater regulations.
38. It should be noted that there are federally protected plant species found within the Department of Transportation rights of way. While the department makes every effort to assure that these roadside populations are identified by posting "Do Not Mow" signs, it is the responsibility of the encroaching party to assure that these populations remain undisturbed. Assistance with threatened and endangered species issues can be obtained through the US Fish and Wildlife Service Asheville Field Office, (828) 258-3939.

Construction

General

39. An executed copy of the encroachment agreement, provisions and approved plans shall be present at the construction site at all times. If safety or traffic conditions warrant such an action, NCDOT reserves the right to further limit, restrict or suspend operations within the right of way.
40. The Encroaching Party and/or their Contractor shall comply with all OSHA requirements. If OSHA visits the work area associated with this encroachment, the District Office shall be notified by the encroaching party immediately if any violations are cited.
41. All materials and workmanship shall conform to the NCDOT Standards and Specifications for Roads and Structures.
42. Strict compliance with the Policies and Procedures for Accommodating Utilities on Highway Rights of Way manual shall be required.
43. Any REVISIONS marked in RED on the attached non-PE sealed plans shall be incorporated into and made part of the approved encroachment agreement.
44. The attached plans reflect the corrections and revisions as coordinated with the NCDOT Encroachment Review Unit of the District Office.
45. All disturbed areas are to be fully restored to current NCDOT minimum roadway standards or as directed by the Division Engineer or their representative. Disturbed areas within NCDOT Right-of-Way include, but not limited to, any excavation areas, pavement removal, drainage or other features.
46. Any pavement, curb and gutter, handicap ramps, or concrete sidewalk replacement/repair required due to this installation shall be the responsibility of the encroaching party and shall be completely restored within 7-days of final construction. All repairs or replacements shall be in accordance with the requirements of and to the satisfaction

of the District Engineer.

47. The encroaching party shall notify the Division Engineer or their representative immediately in the event any drainage structure is blocked, disturbed or damaged. All drainage structures disturbed, damaged or blocked shall be restored to its original condition as directed by the Division Engineer or their representative.
48. Unless specified otherwise, during non-working hours, equipment shall be located away from the job site or parked as close to the right of way line as possible and be properly barricaded in order not to have any equipment obstruction within the Clear Recovery Area. Also, during non-working hours, no parking or material storage shall be allowed along the shoulders of any state-maintained roadway.
49. Guardrail removed or damaged during construction shall be replaced or repaired to its original condition, meeting current NCDOT standards or as directed by the Division Engineer or their representative.
50. The resetting of the Control of Access fence shall be in accordance with the applicable NCDOT standard and as directed by the Division Engineer or their representative.
51. Right of Way monuments disturbed during construction shall be referenced by a registered Land Surveyor and reset after construction.
52. All Traffic signs moved during construction shall be reinstalled as soon as possible to the satisfaction of the Division Engineer or their representative.
53. Any utility markers, cabinets, pedestals, meter bases and services for meter reading required shall be as close to the Right of Way line as possible. If it is not feasible to install at or near Right of Way line, then written approval shall be obtained from NCDOT prior to installation.
54. All driveways disturbed during construction shall be returned to a state comparable with the condition of the driveways prior to construction.
55. If the approved method of construction is unsuccessful and other means are required, prior approval must be obtained through the District Engineer before construction may continue.

Engineering

56. All traffic control, asphalt mixes, structures, construction, workmanship and construction methods, and materials shall be in compliance with the most-recent versions of the following resources: *ASTM Standards*, *Manual on Uniform Traffic Control Devices*, *NCDOT Utilities Accommodations Manual*, *NCDOT Standard Specifications for Roads and Structures*, *NCDOT Roadway Standard Drawings*, *NCDOT Asphalt Quality Management System* manual, **and the approved plans.**
57. Prior approval for any blasting must be obtained from the Division Engineer or their representative.

Location within R/W

58. All utility access points, such as manholes, vaults, handholes, splice boxes and junction boxes shall be located as close to the right of way line as possible and shall not be placed in the ditch line, side slopes of the ditches or in the pavement. All manholes, handholes, splice boxes, junction boxes and vaults and covers shall be flush with the ground when located within the vehicle clear zone. Slack loops for telecommunications in industry standard housing units shall be buried a minimum of 18 inches when buried or meet minimum NCDOT vertical and horizontal clearances when installed aerially.

59. Fire Hydrants shall be of the breakaway type. Hydrants shall be placed near the right of way line. In curb and gutter sections with written approval from the District, the hydrants may be placed at 6' behind the back of the curb or minimum 2' back of sidewalk.
60. Luminaire and/or utility poles and guy wires shall be set as close to the Right of Way line as practical and outside the Clear Zone in accordance with the latest version of the AASHTO Roadside Design Guide (See corresponding attachment) or made breakaway in accordance with the requirements of NCHRP Report 350. Any relocation of the utility poles from the original design due to Clear Zone requirements shall require a re-submittal for the utility design.
61. Luminaire and/or utility poles shall be set a minimum of 5'-6" behind face of any guardrail or otherwise sufficiently protected. However, standard placement may be reduced to 3'-6" behind face of guardrail when posts are spaced 3'-1 1/2", or where speed limit is less than 55 MPH..

Excavation

62. Excavation material shall not be placed on pavement.
63. Trenching, bore pits and/or other excavations shall not be left open or unsafe overnight.
64. It is the responsibility of the encroaching party or their contractor to prevent any mud/dirt from tracking onto the roadway. Any dirt which may collect on the roadway pavement from equipment and/or truck traffic on site shall be immediately removed to avoid any unsafe traffic conditions.

Post Construction

Close out/ Inspection

65. The Encroaching party shall notify the District Engineer's office within 2 business days after construction is complete. The District Engineer may perform a construction inspection. Any deficiencies may be noted and reported to the encroaching party to make immediate repairs or resolve any issues to restore the right-of-way to a similar condition prior to construction, including pavement, signage, traffic signals, pavement markings, drainage, structures/pipes, or other highway design features.
66. At the discretion of the District Engineer, a final inspection report may be provided to the encroaching party upon satisfactory completion of the work.
67. A written acknowledgement of the completed work by the District Engineer's office begins the one-year warranty period associated with the performance bond.
68. If the actual construction differs from the approved plans associated with this encroachment, a copy of "as-built" plans shall be submitted to the District Engineer's office in a PDF format and in a current ESRI GIS format within 4 weeks of construction.

TABLE 3.1 (Cont'd)

[U.S. Customary Units]

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		1V:6H or flatter	1V:5H TO 1V:4H	1V:3H	1V:3H	1V:5H TO 1V:4H	1V:6H or flatter
40 mph or less	UNDER 750	7 - 10	7 - 10	**	7 - 10	7 - 10	7 - 10
	750 - 1500	10 - 12	12 - 14	**	10 - 12	10 - 12	10 - 12
	1500 - 6000	12 - 14	14 - 16	**	12 - 14	12 - 14	12 - 14
	OVER 6000	14 - 16	16 - 18	**	14 - 16	14 - 16	14 - 16
45-50 mph	UNDER 750	10 - 12	12 - 14	**	8 - 10	8 - 10	10 - 12
	750 - 1500	14 - 16	16 - 20	**	10 - 12	12 - 14	14 - 16
	1500 - 6000	16 - 18	20 - 26	**	12 - 14	14 - 16	16 - 18
	OVER 6000	20 - 22	24 - 28	**	14 - 16	18 - 20	20 - 22
55 mph	UNDER 750	12 - 14	14 - 18	**	8 - 10	10 - 12	10 - 12
	750 - 1500	16 - 18	20 - 24	**	10 - 12	14 - 16	16 - 18
	1500 - 6000	20 - 22	24 - 30	**	14 - 16	16 - 18	20 - 22
	OVER 6000	22 - 24	26 - 32 *	**	16 - 18	20 - 22	22 - 24
60 mph	UNDER 750	16 - 18	20 - 24	**	10 - 12	12 - 14	14 - 16
	750 - 1500	20 - 24	26 - 32 *	**	12 - 14	16 - 18	20 - 22
	1500 - 6000	26 - 30	32 - 40 *	**	14 - 18	18 - 22	24 - 26
	OVER 6000	30 - 32 *	36 - 44 *	**	20 - 22	24 - 26	26 - 28
65-70 mph	UNDER 750	18 - 20	20 - 26	**	10 - 12	14 - 16	14 - 16
	750 - 1500	24 - 26	28 - 36 *	**	12 - 16	18 - 20	20 - 22
	1500 - 6000	28 - 32 *	34 - 42 *	**	16 - 20	22 - 24	26 - 28
	OVER 6000	30 - 34 *	38 - 46 *	**	22 - 24	26 - 30	28 - 30

* Where a site specific investigation indicates a high probability of continuing crashes, or such occurrences are indicated by crash history, the designer may provide clear-zone distances greater than the clear-zone shown in Table 3.1. Clear zones may be limited to 30 ft for practicality and to provide a consistent roadway template if previous experience with similar projects or designs indicates satisfactory performance.

** Since recovery is less likely on the unshielded, traversable 1V:3H slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high-speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of slope. Determination of the width of the recovery area at the toe of slope should take into consideration right-of-way availability, environmental concerns, economic factors, safety needs, and crash histories. Also, the distance between the edge of the through traveled lane and the beginning of the 1V:3H slope should influence the recovery area provided at the toe of slope. While the application may be limited by several factors, the foreslope parameters which may enter into determining a maximum desirable recovery area are illustrated in Figure 3.2.

INDEX OF SHEETS

Title Sheet 1
 General Notes & Details..... 2 - 2V
 Typical Sections & Summary Sheets..... 3 - 3K
 Plan Sheets 4-14
 Roadway Profile Sheets 15-28
 Retaining Wall Profiles 29
 Traffic Control Plans TCP-1 - TCP-35
 Pavement Marking Plans PM-1 - PM-5
 Signing Plans SIGN-1 - SIGN-10
 ITS Plans ITS-1 - ITS-3
 Erosion Control Plans EC-1 - EC-27
 Utility Construction Plans UC-1 - UC-16
 Utility by Others Plans UBO-1 - UBO-13
 Bridge Plans B-1 - B-69
 Electrical Plans E-1 - E-5
 Cross Sections X-1 - X-36
 Signal Plans SG-1 - SG-2
TOTAL SHEETS 291

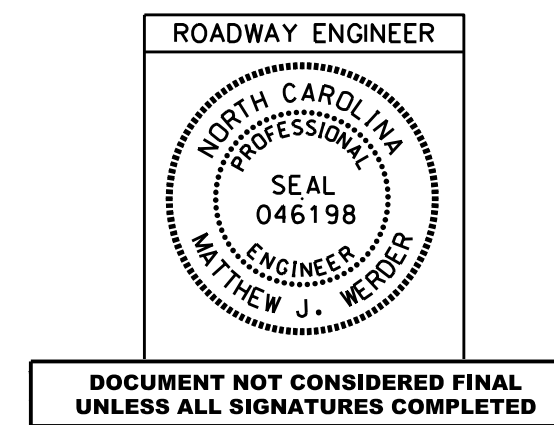


100% PLANS
FOR NCDOT REVIEW
10/23/2023

North Carolina Department of Transportation (NCDOT)
APPROVED FOR CONSTRUCTION
Date: 12-08-23
By: Kimberly Boik, PE
Telephone: (980) 523-0000

Only NCDOT approved materials may be used within NCDOT Right-of-Way

PE SEAL



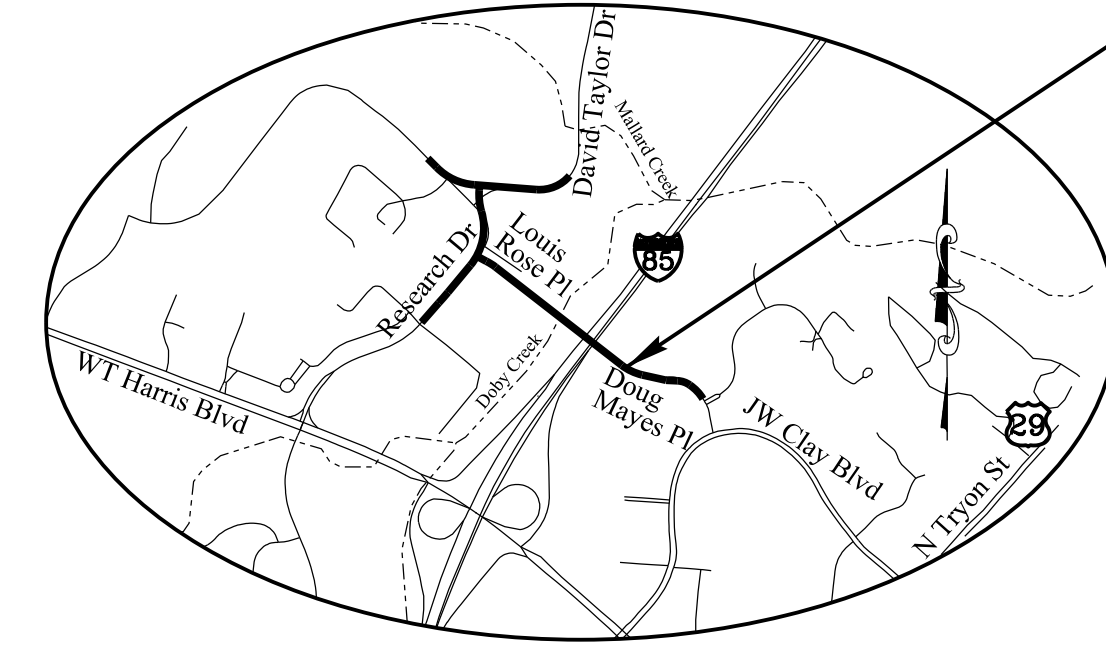
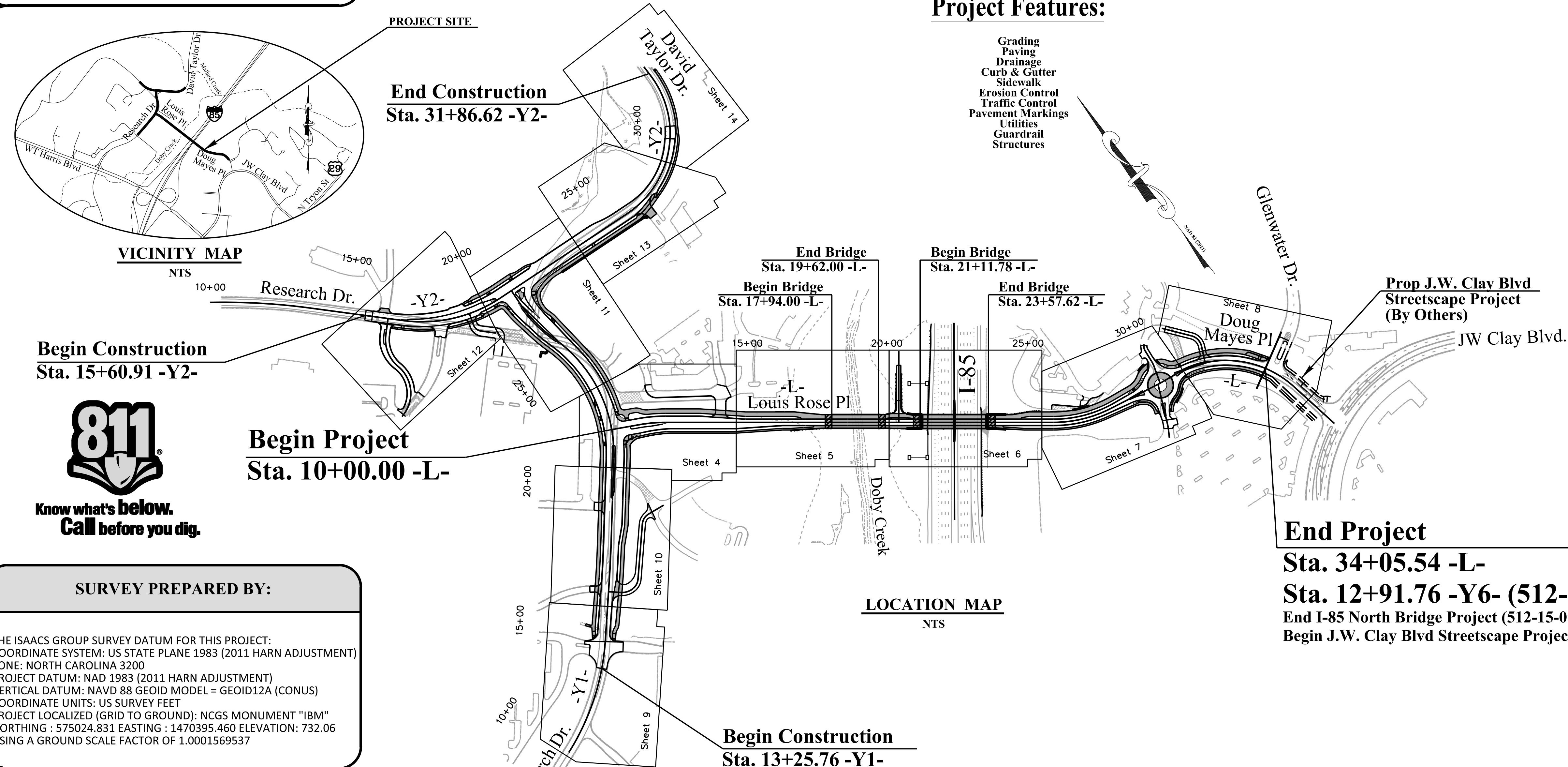
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Record Drawings

**Construction Plans of Proposed
I-85 North Bridge
Project No. 512-15-003**

Project Features:

- Grading
- Paving
- Drainage
- Curb & Gutter
- Sidewalk
- Erosion Control
- Traffic Control
- Pavement Markings
- Utilities
- Guardrail Structures



LOCATION MAP
NTS

Begin Construction
Sta. 15+60.91 -Y2-

Begin Project
Sta. 10+00.00 -L-

End Construction
Sta. 31+86.62 -Y2-

End Project
Sta. 34+05.54 -L-

Sta. 12+91.76 -Y6- (512-15-019)
End I-85 North Bridge Project (512-15-003)
Begin J.W. Clay Blvd Streetscape Project (512-15-019)

Begin Construction
Sta. 13+25.76 -Y1-

811
Know what's below.
Call before you dig.

SURVEY PREPARED BY:

THE ISAACS GROUP SURVEY DATUM FOR THIS PROJECT:
 COORDINATE SYSTEM: US STATE PLANE 1983 (2011 HARN ADJUSTMENT)
 ZONE: NORTH CAROLINA 3200
 PROJECT DATUM: NAD 1983 (2011 HARN ADJUSTMENT)
 VERTICAL DATUM: NAVD 88 GEOID MODEL = GEOID12A (CONUS)
 COORDINATE UNITS: US SURVEY FEET
 PROJECT LOCALIZED (GRID TO GROUND): NCGS MONUMENT "IBM"
 NORTHING : 575024.831 EASTING : 1470395.460 ELEVATION: 732.06
 USING A GROUND SCALE FACTOR OF 1.0001569537

PLANS PREPARED BY:

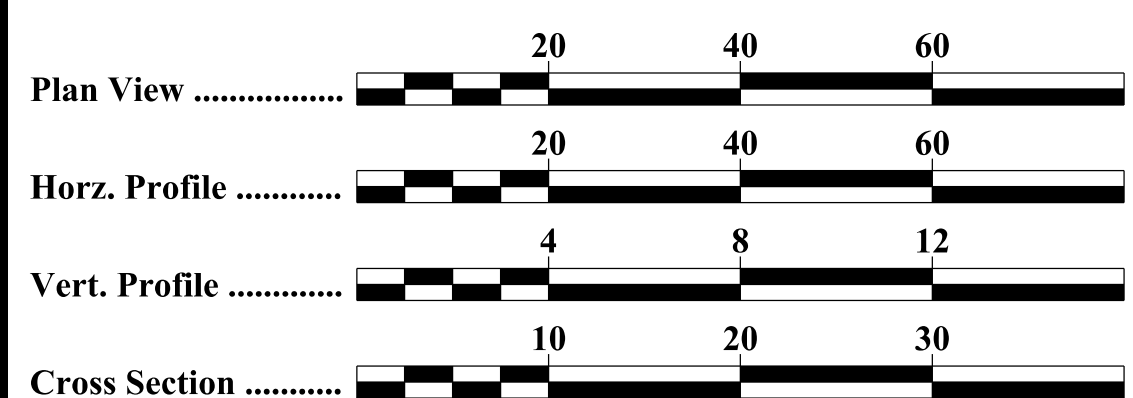
HDR HDR Engineering, Inc. of the Carolinas
 440 S. Church Street, Suite 1200
 Charlotte, NC 28202
 N.C.B.E.L.S. License Number: F-0116

	-L- North Bridge Connector	-Y1- Research Drive	-Y2- David Taylor Drive/ Research Drive	TOTAL	
NET LENGTH OF IMPROVEMENTS	0.370	0.264	0.308	0.942	MILE
NET LENGTH OF STRUCTURES	0.078	0	0	0.078	MILE
NET LENGTH OF PROJECT	0.448	0.264	0.308	1.020	MILES

	-L- North Bridge Connector	-Y1- Research Drive	-Y2- David Taylor Drive
2015 ADT	N/A	10,300	9,500
2040 ADT	6,500	15,400	12,400
V	30 MPH	35 MPH	35 MPH

2018 STANDARD SPECIFICATIONS

GRAPHIC SCALES



RECOMMENDED FOR CONSTRUCTION

CDOT - Design	
CDOT - Implementation	
CLT Water	
Construction Administration	
Contract Administration	
Engineering Services	
Landscape Management	
Planning, Design & Development	
Storm Water Services	
Utility Coordination	



Bid Set No.

APPROVED _____
FOR CITY ENGINEER DATE

GENERAL NOTES

PROPOSED CURB ELEVATIONS:

THE CONTRACTOR SHALL SET AND ADJUST PROPOSED CURB ELEVATIONS AS NECESSARY TO ENSURE PROPER LONGITUDINAL GRADE FOR DRAINAGE. THE CONTRACTOR SHALL RETAIN EXISTING PAVEMENT, UNLESS OTHERWISE NOTED.

DRIVEWAYS AND SIDEWALKS:

PROPOSED DRIVEWAY ENTRANCE DIMENSIONS ARE FROM EXPANSION JOINT TO EXPANSION JOINT, UNLESS OTHERWISE NOTED ON PLANS, MATCH REPLACEMENT MATERIALS TO THE EXISTING SURFACE ACCORDINGLY:

- o CONCRETE - SIX INCH PORTLAND CEMENT CONCRETE (3600 PSI, UNLESS OTHERWISE NOTED ON PLANS)
o ASPHALT - (COMMERCIAL) TWO INCH S9.5C COURSE AND FOUR INCH I19.0C INTERMEDIATE COURSE UNLESS OTHERWISE SHOWN IN THE TYPICAL SECTIONS. (RESIDENTIAL) TWO INCH S9.5C COURSE AND FOUR INCH AGGREGATE BASE (ABC) COURSE.
o GRAVEL - SIX INCH INCIDENTAL STONE

SIDEWALK SHALL BE FOUR INCHES THICK, AND SIX INCHES THICK AT DRIVEWAY CROSSINGS, PER CITY STD. NO. 10.22.

CROSS SLOPES ON SIDEWALKS SHALL NOT EXCEED 2.0%. RUNNING SLOPES ALONG SIDEWALKS SHALL NOT EXCEED 5.0%, OR THE ADJACENT ROADWAY SLOPE AS MEASURED AT THE GUTTER PAN, WHICHEVER IS GREATER.

A TURNING SPACE (LANDING) SHALL BE PROVIDED AT ALL LOCATIONS WHERE A PEDESTRIAN MIGHT TURN TO CHANGE DIRECTION OF TRAVEL. THE LANDING SHALL BE A MINIMUM OF 4 FEET BY 4 FEET, UNLESS NOTED BY THE ENGINEER. TYPICALLY LANDING DIMENSIONS WILL MATCH SIDEWALK WIDTH. THE LANDING ALSO SHALL NOT EXCEED 2.0% SLOPE MEASURED PERPENDICULAR TO THE ROADWAY. THE LANDING ALSO SHALL NOT EXCEED 2.0% OR ADJACENT ROADWAY SLOPE, WHICHEVER IS GREATER, MEASURED PARALLEL TO THE ROADWAY.

A CROSS SLOPE TRANSITION PANEL MAY BE REQUIRED WHERE PROPOSED SIDEWALK MEETS EXISTING SIDEWALK WITH A CROSS SLOPE GREATER THAN 2.0%. THE TRANSITION PANEL SHALL NOT EXCEED 2.0% ON THE SIDE OF THE PROPOSED SIDEWALK AND/OR RAMP, AND SHALL MATCH THE EXISTING CROSS SLOPE ON THE SIDE OF THE EXISTING SIDEWALK.

DRAINAGE STRUCTURES:

GRADES, ELEVATIONS AND LOCATIONS SHOWN ARE APPROXIMATE. AS DIRECTED BY THE ENGINEER, THEY MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN CONDITIONS. STATIONS, OFFSETS AND ELEVATIONS REFER TO THE CENTER OF DROP INLETS, MANHOLES AND JUNCTION BOXES, THE MIDPOINT OF THE LIP FOR CATCH BASINS AND THE MIDPOINT AT THE EDGE OF THE TRAVEL LANE FOR TRAFFIC BEARING DROP INLETS. PIPE AND BOX CULVERT LENGTHS ARE REPORTED IN THE CONSTRUCTION DOCUMENTS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, INCLUDING TRANSITIONS, HORIZONTAL AND VERTICAL BENDS. ALL PIPES SHALL BE RCP CLASS III, UNLESS OTHERWISE NOTED. WEEP HOLES ARE TO BE CONSTRUCTED AS DIRECTED BY THE ENGINEER. IF REQUIRED, WEEP HOLES ARE TO BE CONSTRUCTED IN THE BOTTOM 1/3 OF THE STRUCTURE. ATTACH HARDWARE CLOTH (ALUMINUM OR GALVANIZED STEEL NO. 4 WIRE REINFORCEMENT) TO THE OUTSIDE OF THE STRUCTURE WITH HEAVY DUTY CONSTRUCTION ADHESIVE OVER THE WEEP HOLE. PLACE A POROUS FABRIC BAG FILLED WITH ONE CUBIC FOOT OF NO. 78M STONE AT EACH WEEP HOLE AGAINST THE HARDWARE CLOTH. THERE WILL BE NO SEPARATE PAYMENT FOR THIS WORK.

THE CONTRACTOR SHALL OBTAIN THE ENGINEER'S VERIFICATION OF PIPE REMOVAL LENGTHS PRIOR TO REMOVAL.

UTILITIES:

UTILITIES ARE ILLUSTRATED FOR INFORMATION PURPOSES ONLY. THE CITY WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF UTILITY LOCATIONS, SIZES, DEPTHS, OR FOR COMPLETENESS OF UTILITY INFORMATION. PRIOR TO CONSTRUCTION AND VIA THE CITY UTILITY COORDINATOR AND CITY INSPECTOR, THE CONTRACTOR SHALL NOTIFY AND MEET WITH ALL UTILITIES AFFECTED TO DETERMINE UTILITY LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD THE CITY HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS. ANY DAMAGES INCURRED SHALL BE THE CONTRACTOR'S FINANCIAL RESPONSIBILITY. AS NEEDED, THE CONTRACTOR SHALL ADJUST/RELOCATE THE SANITARY SEWER AND WATER LINES ONLY. ALL OTHER ADJUSTMENTS/RELOCATIONS WILL BE PERFORMED BY THE VARIOUS UTILITY OWNERS. VIA THE CITY UTILITY COORDINATOR AND CITY INSPECTOR, THE CONTRACTOR SHALL COORDINATE WORK WITH UTILITY OWNERS SO AS NOT TO ADVERSELY AFFECT THE PROJECT SCHEDULE. THE CITY WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR DISRUPTIONS TO THE WORK SCHEDULE OF OTHER UTILITY OWNERS. THE CONTRACTOR SHALL STAY A MINIMUM OF 5 FEET AWAY FROM ALL UTILITY POLES.

FOR UTILITY LOCATES CALL NORTH CAROLINA ONE-CALL @ 1-800-632-4949.

WARNING: OVERHEAD UTILITIES. UNLESS OTHERWISE NOTED FOR RELOCATION, THE CONTRACTOR IS TO WORK UNDER ALL EXISTING OVERHEAD UTILITIES.

THE CONTRACTOR SHALL ADJUST ALL WATER VALVES, WATER METER BOXES AND WATER VAULTS TO FINISHED GRADE. WATER METERS LOCATED IN SIDEWALKS OR CONCRETE DRIVEWAYS SHALL BE INSTALLED WITHIN CONCRETE BOXES.

GAS LINES WILL BE ADJUSTED/RELOCATED AS NEEDED BY PIEDMONT NATURAL GAS. VIA THE CITY UTILITY COORDINATOR AND CITY INSPECTOR, THE CONTRACTOR SHALL CONTACT PIEDMONT NATURAL GAS AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.

EXISTING SANITARY SEWER AND WATER LINE:

THE CONTRACTOR SHALL USE CARE WHEN WORKING AROUND SANITARY SEWERS AND WATER LINES. SHOULD THE CONTRACTOR DAMAGE EXISTING SEWER OR WATER LINES, HE SHALL IMMEDIATELY REPLACE THE LINE AT HIS EXPENSE WITH DUCTILE IRON PIPE. THE CONTRACTOR SHALL REPLACE SANITARY SEWER AND/OR WATER LINE, WITH A MINIMUM TEN FOOT SECTION OF DUCTILE IRON PIPE WHEN DRAINAGE PIPE COMES WITHIN TWO FEET OF SAID LINES, VERTICALLY OR HORIZONTALLY.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT, BUT A GEOTECHNICAL REPORT PROVIDING DATA FROM THE GEOTECHNICAL INVESTIGATION AND GEOTECHNICAL RECOMMENDATIONS WILL BE PROVIDED.

MAIL BOXES:

THE CONTRACTOR SHALL RELOCATE ALL MAIL BOXES AS REQUIRED BY SECTION 107-11 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COORDINATE THIS WORK WITH THE U.S. POSTAL SERVICE.

GENERAL NOTES

FENCES:

THE CONTRACTOR SHALL REMOVE AND RESET FENCES AS NOTED ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

TREES, SHRUBS, AND HEDGES:

THE CONTRACTOR IS REQUIRED TO REMOVE TREES, SHRUBS, AND HEDGES WITHIN THE EASEMENT LINES UNLESS SHOWN ON THE PLANS TO BE PROTECTED. NO CLEARING OR TREE REMOVAL SHALL OCCUR WITHIN THE WETLANDS LOCATED IN THE VICINITY OF -Y2- ON THE LEFT SIDE. WHEN ROOT PRUNING IS NECESSARY, CUT ROOTS CLEANLY USING A DISC TRENCHER IN ACCORDANCE WITH SECTION 01000 OF THE CITY OF CHARLOTTE LANDSCAPE CONSTRUCTION STANDARDS. PRUNING SHALL BE PER THE LATEST STANDARD OF THE LANDSCAPE CONSTRUCTION STANDARDS MANUAL (TYP.) USE PLYWOOD FORMS WHEN TREE ROOTS ARE ADJACENT TO PROPOSED CURB & GUTTER OR SIDEWALK. USE CLD STD. 40.11 FOR BRIDGING TREE ROOTS. TREES SPECIFIED BY THE PLANS TO HAVE ASPHALT CURBING MUST USE CLD STD. 40.13. TREE PROTECTION SHALL BE IN ACCORDANCE WITH CLD STD. 40.02. WHEN THE TREE IS CLOSE TO THE WORK AREA TREE PROTECTION CLD STD. 40.12 SHALL BE USED.

SIDE SLOPES:

LIMITS OF PROPOSED SLOPES ARE INDICATED IN THE PLANS, DETAILS AND STANDARD DRAWINGS. THE MAXIMUM SLOPE SHALL NOT EXCEED A 3:1 (HORIZONTAL TO VERTICAL) UNLESS DESIGNATED BY THE ENGINEER. A CUT SLOPE OF 2:1 MAXIMUM WILL BE USED ONLY AS DIRECTED BY THE ENGINEER.

EROSION CONTROL:

THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES IN ACCORDANCE WITH THE APPROPRIATE CITY AND STATE EROSION AND SEDIMENT CONTROL ORDINANCES. THE CONTRACTOR SHALL PREVENT STANDING WATER DUE TO CONSTRUCTION. DISTURBED AREAS SHALL BE SEEDED AND MULCHED AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR SHALL FOLLOW THE EROSION CONTROL MEASURES SHOWN ON SHEETS EC-1 THROUGH EC-27.

SEEDING AND MULCHING:

ALL TEMPORARY AND PERMANENT SEEDING AND MULCHING REQUIRED TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE CITY'S "LANDSCAPE CONSTRUCTION STANDARDS" SEEDING AND SODDING TURFGRASS SECTION 04200.

ACCESSIBLE RAMPS AND DEPRESSED CURB:

THE CONTRACTOR SHALL CONSTRUCT 6-INCH THICK CONCRETE ACCESSIBLE CURB RAMPS AT INTERSECTIONS IN ACCORDANCE WITH THE LATEST REVISIONS FOR ACCESSIBLE CURB RAMPS DETAILS. "PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY" (FROWAG), CONSTRUCTION PLANS & NCDOT STANDARD DRAWINGS. RUNNING SLOPES ALONG CURB RAMPS SHALL NOT EXCEED 8.3%, BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ALL PANELS OF THE RAMP MUST EQUAL THE SAME PERCENTAGE.

FLARES SHALL BE 10.0% MAXIMUM SLOPE (WHERE APPLICABLE), UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

RAMP CROSS SLOPE SHALL NOT EXCEED 2.0% OR THE ADJACENT ROADWAY SLOPE AS MEASURED AT THE GUTTER PAN, WHICHEVER IS GREATER.

A TURNING SPACE (LANDING) SHALL BE PROVIDED AT ALL LOCATIONS WHERE A PEDESTRIAN MIGHT TURN TO CHANGE DIRECTION OF TRAVEL. THE LANDING SHALL BE A MINIMUM OF 4 FEET BY 4 FEET, UNLESS NOTED BY THE ENGINEER. TYPICALLY LANDING DIMENSIONS WILL MATCH SIDEWALK WIDTH. THE LANDING SHALL NOT EXCEED 2.0% SLOPE MEASURED PERPENDICULAR TO THE ROADWAY. THE LANDING ALSO SHALL NOT EXCEED 2.0% OR ADJACENT ROADWAY SLOPE, WHICHEVER IS GREATER, MEASURED PARALLEL TO THE ROADWAY.

SAWCUTS:

THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAW CUT WIDTH SHALL BE 1 FOOT MINIMUM FROM THE EXISTING EDGE OF PAVEMENT. SAW CUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF PROPOSED CURB AND GUTTER.

TRAFFIC CONTROL:

TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE "WORK AREA TRAFFIC CONTROL HANDBOOK" (WATCH) AND THE TRAFFIC CONTROL PLANS ON SHEETS TCP-1 THROUGH TCP-32.

CHARLOTTE:

Table with 2 columns: STD. NO. and TITLE. Lists various standards for curbs, gutters, ramps, and sidewalks.

ABBREVIATIONS

Table with 2 columns: ABBREVIATION and DESCRIPTION. Lists terms like ABAND, ASPH, APPROX, B/C, BIT, BM, BRG, CB, C&G, CL, C/L FENCE, CMP, CONC, CONST, DB, DCB, DI, DIA, DW, DIM, E, EA, ELEV, EOP, ESMT, EXIST, F/C, FES, FH, FOC, GV, HORIZ, INT, INV, IP, L, LF, LP, MAX, MIN, MONO, mph, MT, N, etc.

STANDARDS

THE FOLLOWING STANDARDS AND THE LATEST REVISION THERETO ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE ARE CONSIDERED A PART OF THESE PLANS. NCDOT STANDARDS SHALL BE USED. CHARLOTTE LAND DEVELOPMENT STANDARDS MAY BE USED IF THERE IS NOT AN APPLICABLE NCDOT STANDARD.

NCDOT:

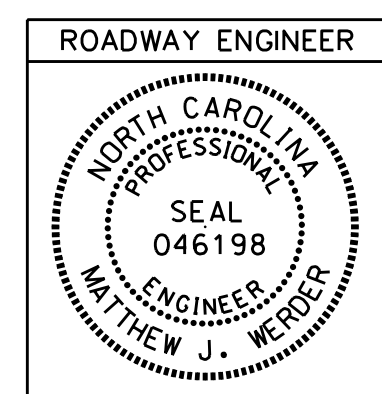
Table with 2 columns: STD. NO. and TITLE. Lists NCDOT standards for grading, bridge approaches, pavement repairs, catch basins, frames, gratings, drop inlets, manholes, traffic bearing, precast manholes, manhole frames, drainage steps, concrete and brick pipe plugs, pipe collars, concrete islands, drop inlets in grassed median, concrete median transition barriers, guardrail placement, guardrail installation, structure anchor units, pavement markings, intersections, turn lanes, lane drops, symbols and word messages, painted islands, bridges, standard foundation, and light standard luminaries.

CHARLOTTE:

Table with 2 columns: STD. NO. and TITLE. Lists Charlotte standards for temporary silt fence, silt fence outlet, hardware cloth, temporary rock check dam, tree protection detail, median excavation, temporary tree protection detail, safety rail, safety rail warrants, street name sign, street sign installation locations, and piano-style crosswalk.

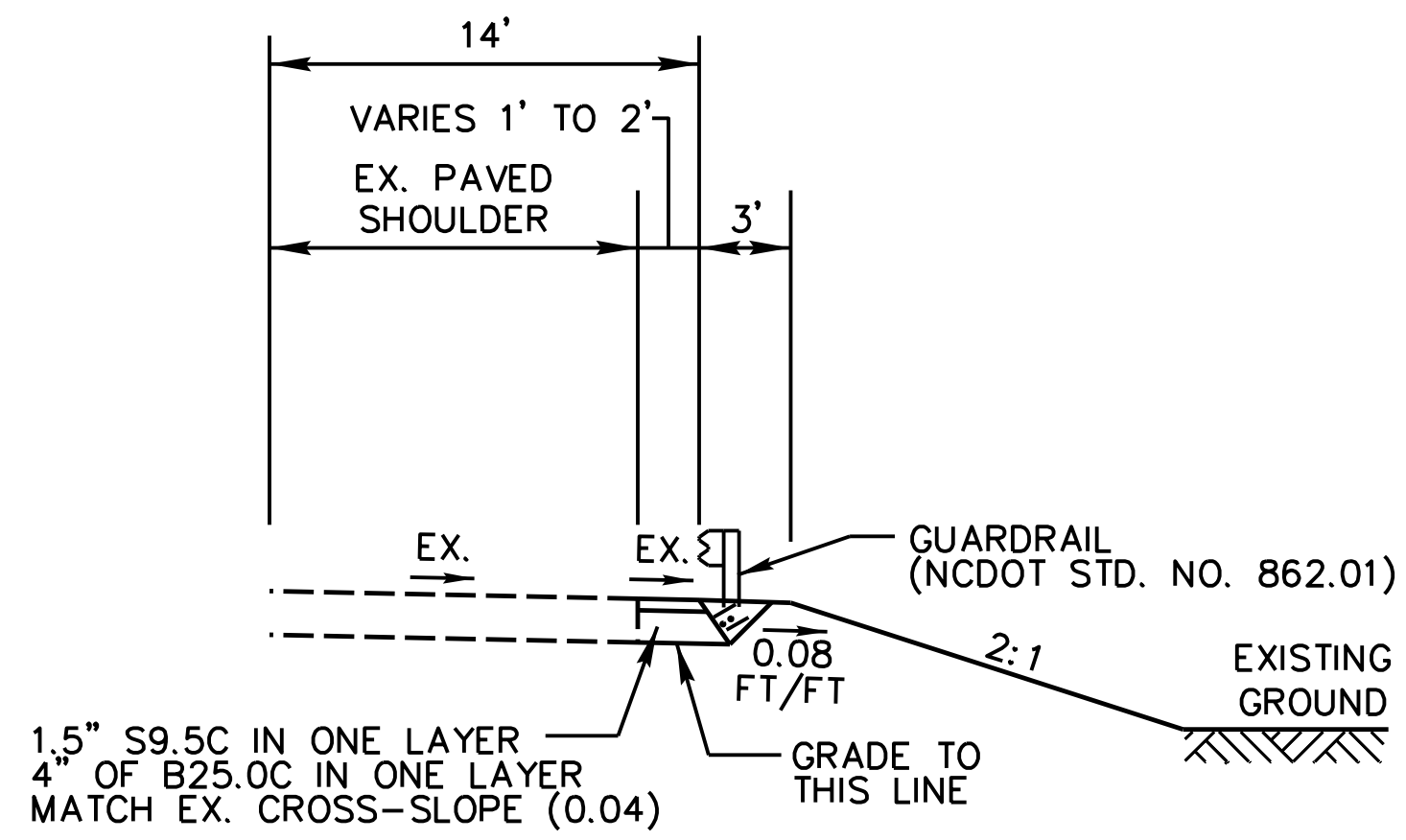
CONVENTIONAL SIGNS

Table of conventional signs including New Property Line, Existing Property Line, Maintained as R/W Line, Right of Way Easement Line, Retaining Wall Easement Line, Access Easement Line, Slope Easement Line, Sidewalk/Utility Easement, Storm Drainage Easement, Post Construction Controls Easement, Existing Structures, Proposed Edge of Pavement, Fence, Slope Stake Line, Temporary Construction Easement, Existing Gas Line, Existing Water Line, Existing Sanitary Sewer, Existing Underground Telecommunications, Existing Underground Electric, Existing Storm Drainage, Proposed Storm Drainage, Existing Tree, Existing Water Meter, Existing Water Valve, Existing Gas Valve, Existing Sanitary Sewer Manhole, Proposed Sanitary Sewer Manhole, Existing Storm Drain Manhole, Proposed Storm Drain Manhole, Existing Telephone Manhole, Proposed Telephone Manhole, Existing Electric Manhole, Proposed Electric Manhole, Existing Catch Basin, Proposed Catch Basin, Existing Light Pole, Proposed Light Pole, Guy Wire, Proposed Utility Pole, Iron Pin, Existing Fire Hydrant, Proposed Fire Hydrant, Existing Drop Inlet, Proposed Drop Inlet, Accessible Ramp, Tree Protection, Proposed Guardrail, Silt Fence, Proposed Curb & Gutter, Conc. Drive, Sidewalk, Proposed Rip Rap Ditch, Proposed Gravel, Proposed Pavement Removal, Proposed Sidewalk Bridging Tree Roots, Sidewalk Cross Slope Transition, Asphalt Milling.



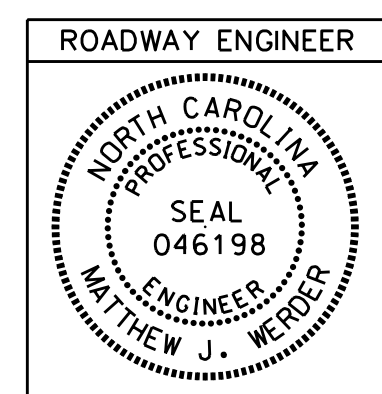
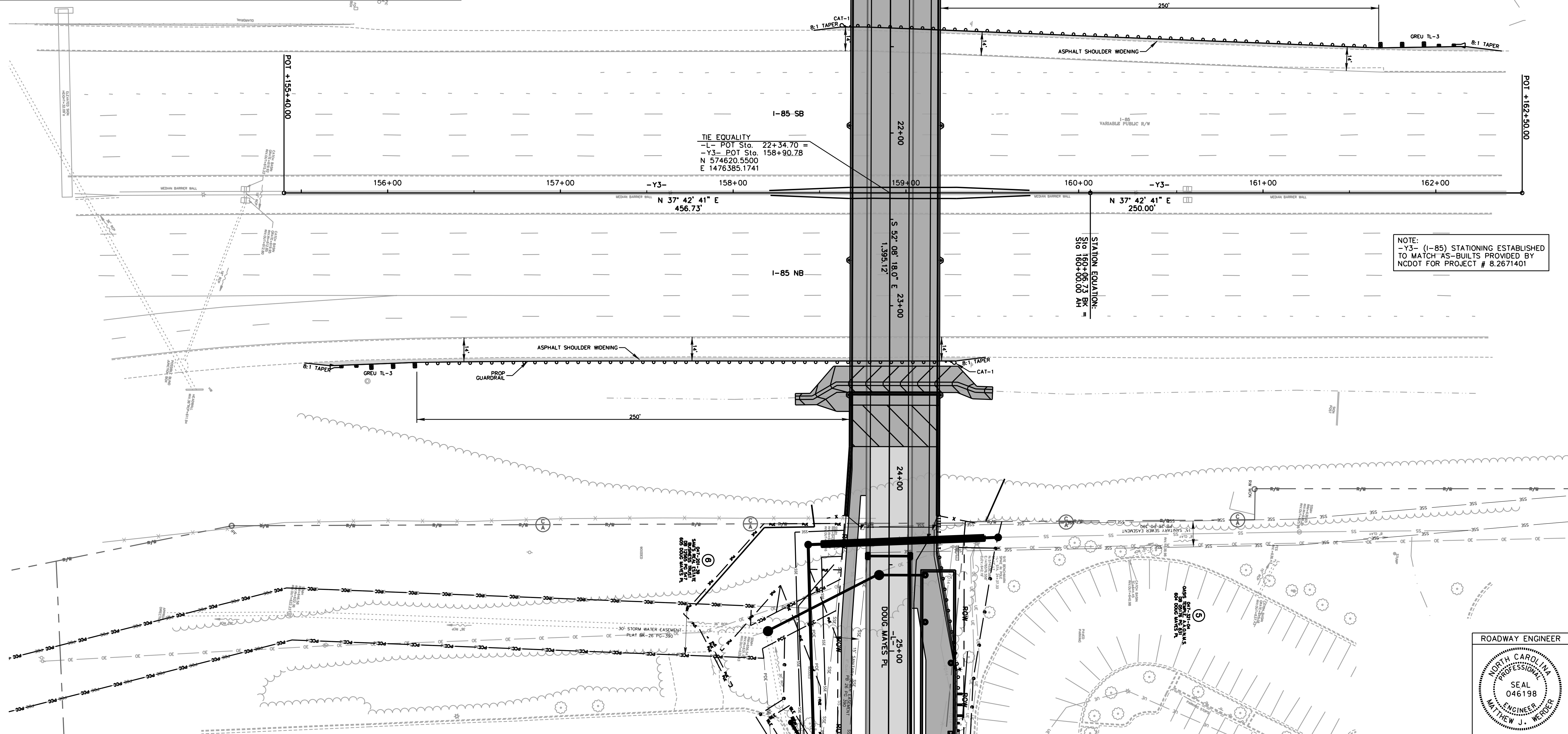
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Vertical sidebar containing logos for CHARLOTTE, BUILDING, and FDR, along with project information: 1-85 NORTH BRIDGE, GENERAL NOTES & STANDARD DRAWINGS, SHEET 2 OF 2U, and dates: 5/12-15-003, OCTOBER 2023.



TYPICAL SECTION

- Y3- (I-85 SHOULDER WIDENING) STATION 155+52 TO 159+46 RT
- Y3- (I-85 SHOULDER WIDENING) STATION 158+47 TO 162+38 LT



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Plans Prepared For:
BUILDING FOR CHARLOTTE
GENERAL SERVICES

600 East Fourth Street
Charlotte, North Carolina 28202
Phone: (704) 336-2291
Fax: (704) 336-6566

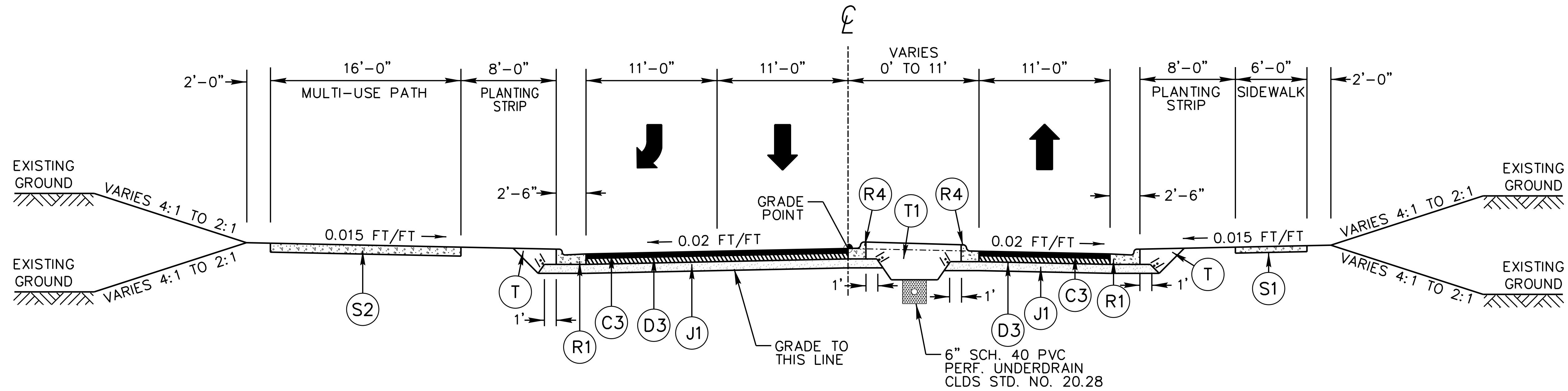
NO.	DATE	BY	DESCRIPTION

Plans Prepared By:
FDR
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Raleigh, NC 27602
NCDOT License Number: F-0116

512-15-003	1" = 30'	SCALE
BEP/KPB	DBT	CHECKED BY
PREPARED BY	DATE	OCTOBER 2023
MJW	APPROVED BY	

SHEET 2V OF 29

I-85 NORTH BRIDGE
GUARDRAIL ALONG I-85
LOCATION DETAIL

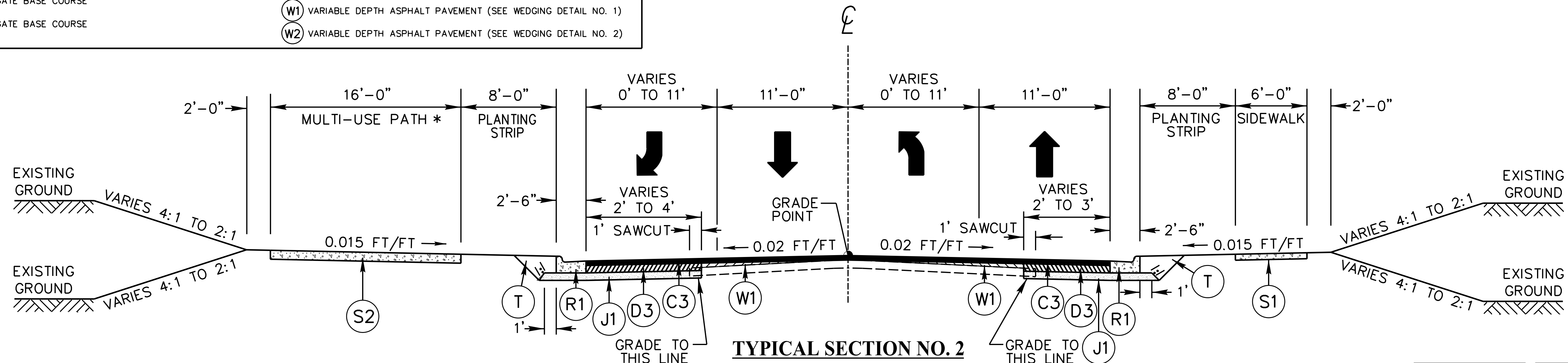
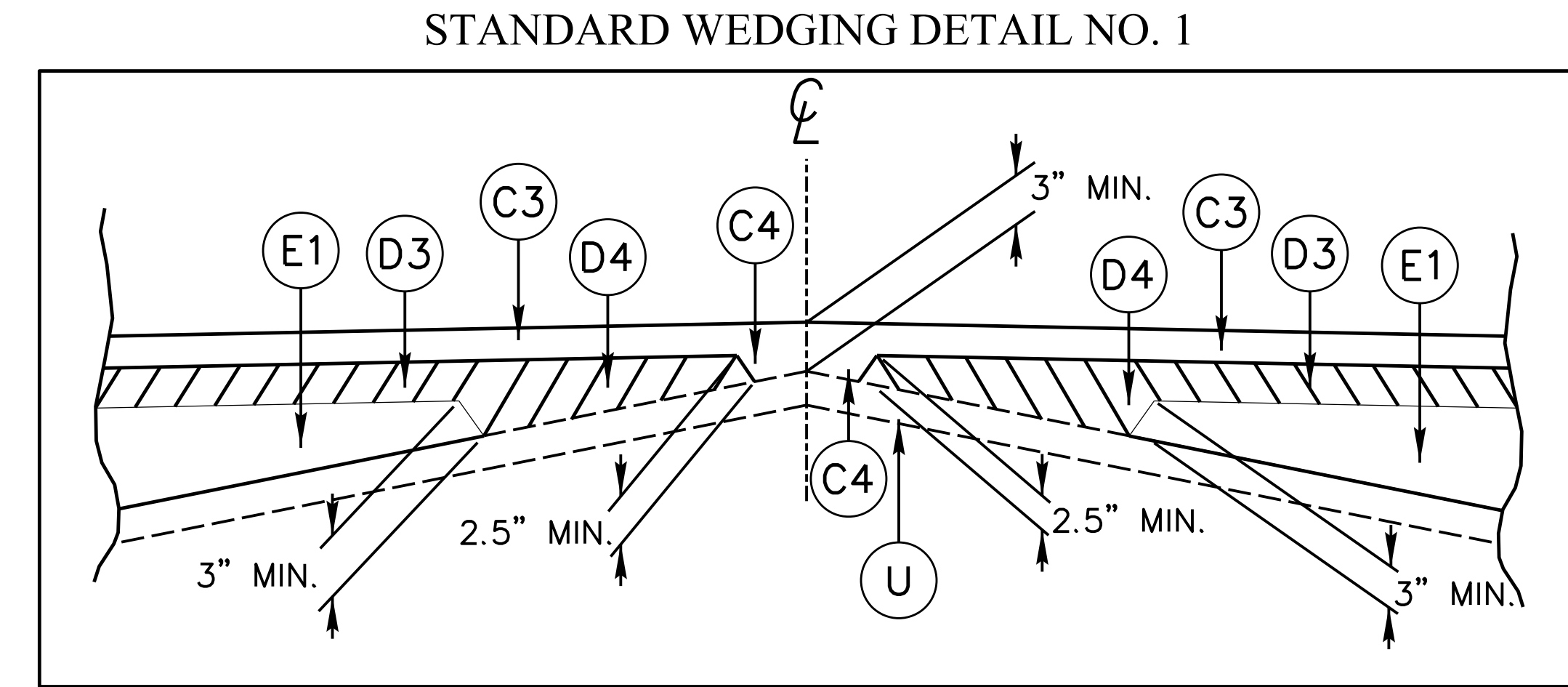


TYPICAL SECTION NO. 1

LOUIS ROSE PLACE

-L- STA. 10+36.50 TO STA. 12+20.28

LEGEND	
(A) 12" STAMPED PORTLAND CEMENT CONCRETE PAVEMENT REINFORCED WITH 6X6 EPOXY COATED WWM (5000 PSI)	(R1) PROPOSED 2'-6" CURB & GUTTER
(C1) PROPOSED 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ YD	(R2) PROPOSED 18" VERTICAL CURB
(C2) PROPOSED 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS PER SQ YD	(R3) 1'-6" CURB & GUTTER
(C3) PROPOSED 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH	(R4) PROPOSED MODIFIED 1'-6" MEDIAN CURB & GUTTER (SEE SHEET 3D)
(C4) PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH	(R5) PROPOSED 1'-6" MOUNTABLE CURB & GUTTER (SEE SHEET 3D)
(D1) PROPOSED 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS PER SQ YD	(R6) 5" MODIFIED MONOLITHIC CONCRETE ISLAND
(D2) PROPOSED 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS PER SQ YD	(S1) PROPOSED 4" CONCRETE SIDEWALK
(D3) PROPOSED 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ YD	(S2) PROPOSED 6" CONCRETE MULTI-USE PATH/CYCLE TRACK ALL JOINTS TO BE SAWCUT AND NOT TOOLED. SAWCUTS TO EXTEND BETWEEN 1.5" AND 2" DEEP
(D4) PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	(T) EARTH MATERIAL
(E1) PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	(T1) PLANTABLE EARTH MATERIAL (SEE CLDS 40.08B)
(J1) PROPOSED 6" AGGREGATE BASE COURSE	(U) EXISTING PAVEMENT
(J2) PROPOSED 8" AGGREGATE BASE COURSE	(V) VARIABLE MILLING 0" TO 2"
	(W1) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 1)
	(W2) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 2)



TYPICAL SECTION NO. 2

LOUIS ROSE PLACE / DOUG MAYES PLACE

-L- STA. 12+20.28 TO STA. 16+16.67

*REFER TO DRIVEWAY TYPICAL SECTIONS AND DETAILS FOR PAVEMENT SECTION ACROSS DRIVEWAYS

PAVEMENT DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038206 MATTHEW J. BUSSY	ROADWAY ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046198 MATTHEW J. WEDDER
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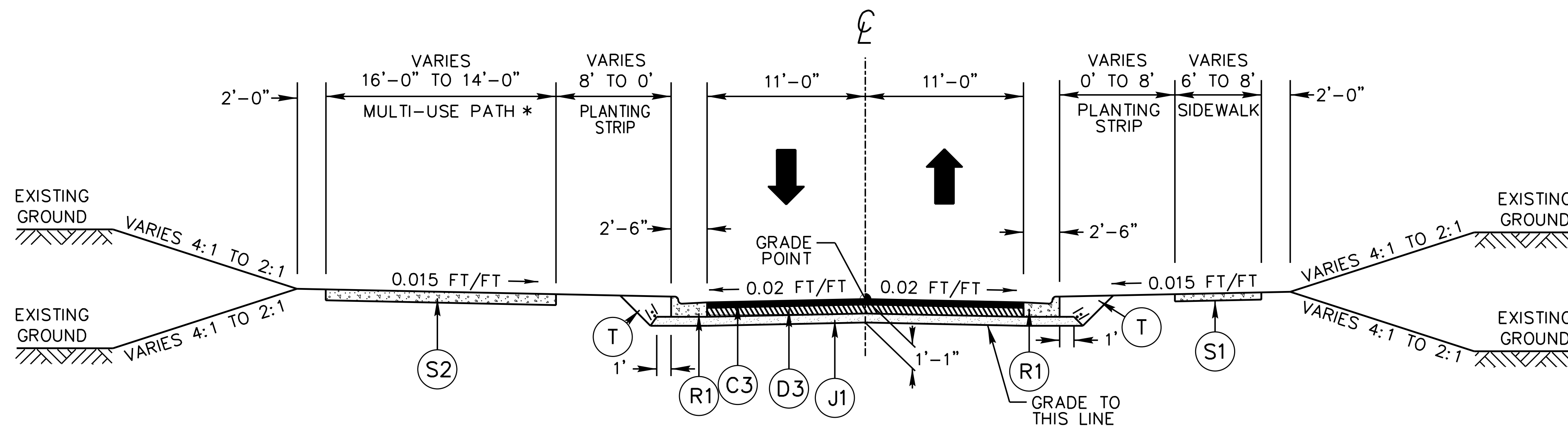
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NO.	DATE	BY	DESCRIPTION

NTS SCALE	DBT	CHECKED BY	DATE
5/2-15-003	BEP/JPB	MJW	OCTOBER 2023
JOB NO.	PREPARED BY	APPROVED BY	

NO.	DATE	BY	DESCRIPTION

NTS	SCALE	DBT	CHECKED BY	OCTOBER 2023	DATE
512-15-003	JOB NO.	BEP/JPB	PREPARED BY	M/W	APPROVED BY



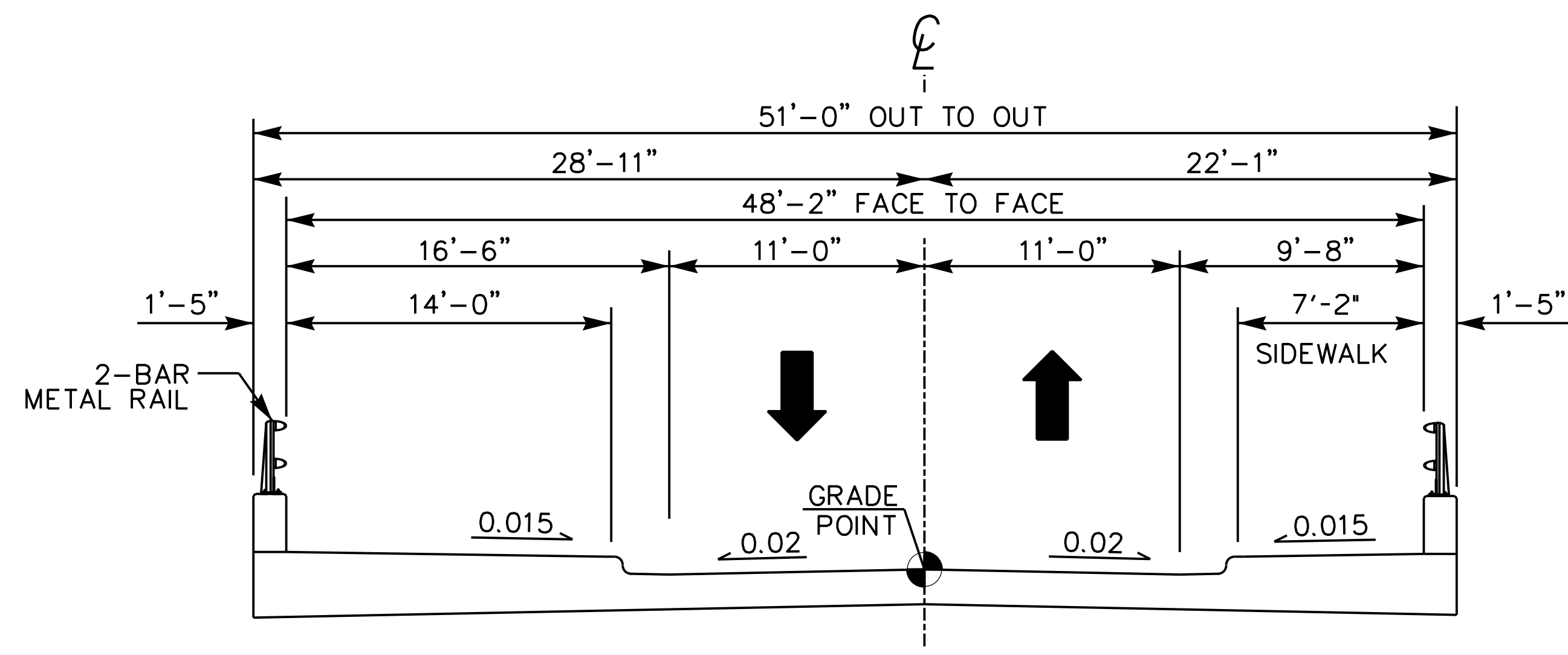
TYPICAL SECTION NO. 3

LOUIS ROSE PLACE / DOUG MAYES PLACE

- L- STA. 16+16.67 STA 17+94.00 (BEGIN BRIDGE)
- L- STA. 19+62.00 (END BRIDGE) TO 21+11.78 (BEGIN BRIDGE)
- L- STA. 23+57.62 (END BRIDGE) TO 27+97.84

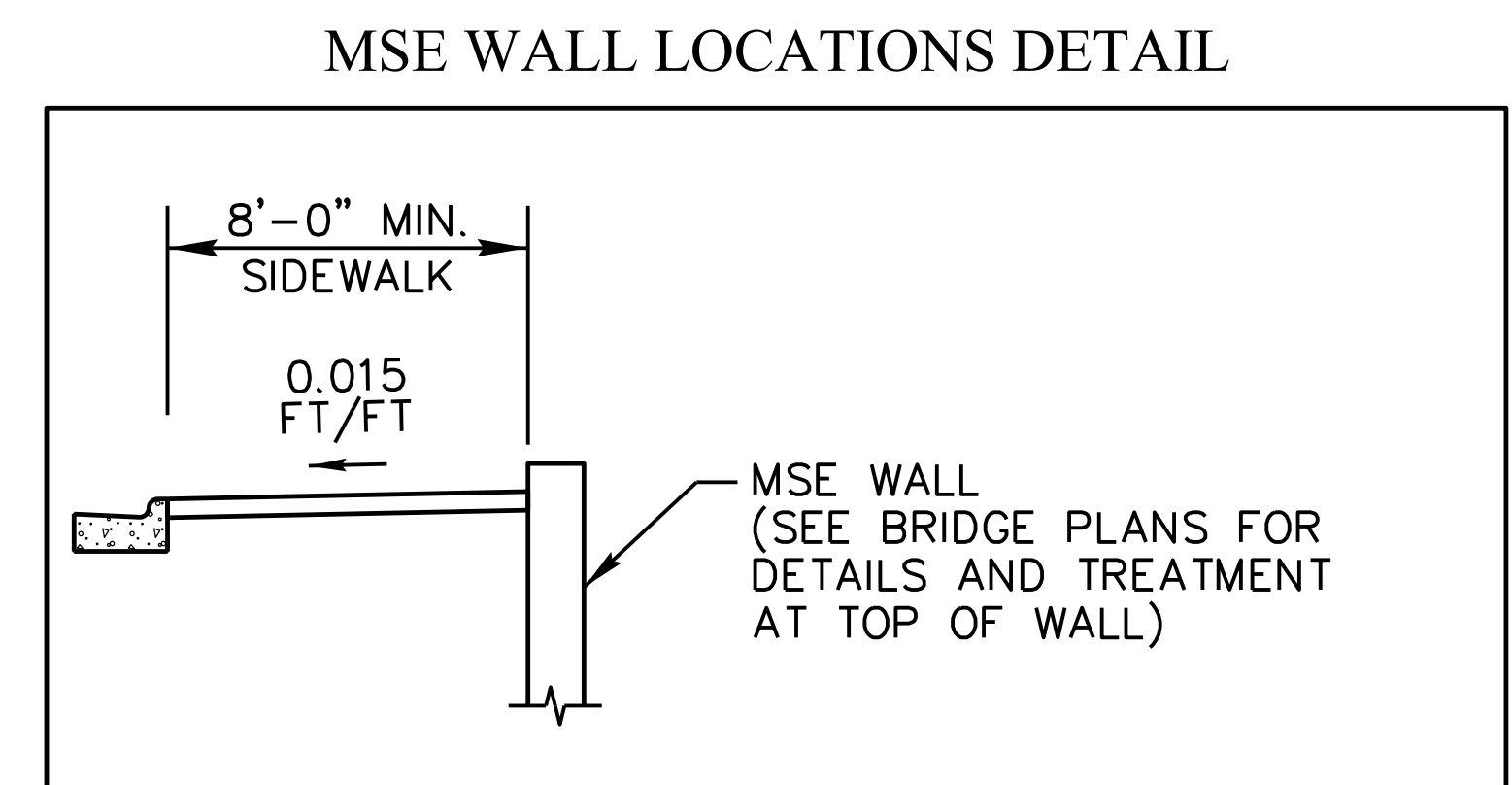
*REFER TO DRIVEWAY TYPICAL SECTIONS AND DETAILS FOR PAVEMENT SECTION ACROSS DRIVEWAYS

LEGEND	
(A) 12" STAMPED PORTLAND CEMENT CONCRETE PAVEMENT REINFORCED WITH 6X6 EPOXY COATED WWM (5000 PSI)	(R1) PROPOSED 2'-6" CURB & GUTTER
(C1) PROPOSED 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ YD	(R2) PROPOSED 18" VERTICAL CURB
(C2) PROPOSED 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS PER SQ YD	(R3) 1'-6" CURB & GUTTER
(C3) PROPOSED 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH	(R4) PROPOSED MODIFIED 1'-6" MEDIAN CURB & GUTTER (SEE SHEET 3D)
(C4) PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH	(R5) PROPOSED 1'-6" MOUNTABLE CURB & GUTTER (SEE SHEET 3D)
(D1) PROPOSED 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS PER SQ YD	(R6) 5" MODIFIED MONOLITHIC CONCRETE ISLAND
(D2) PROPOSED 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS PER SQ YD	(S1) PROPOSED 4" CONCRETE SIDEWALK
(D3) PROPOSED 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ YD	(S2) PROPOSED 6" CONCRETE MULTI-USE PATH/CYCLE TRACK ALL JOINTS TO BE SAWCUT AND NOT TOoled. SAWCUTS TO EXTEND BETWEEN 1.5" AND 2" DEEP
(D4) PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	(T) EARTH MATERIAL
(E1) PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	(T1) PLANTABLE EARTH MATERIAL (SEE CLDS 40.08B)
(J1) PROPOSED 6" AGGREGATE BASE COURSE	(U) EXISTING PAVEMENT
(J2) PROPOSED 8" AGGREGATE BASE COURSE	(V) VARIABLE MILLING 0" TO 2"
	(W1) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 1)
	(W2) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 2)



STRUCTURE TYPICAL SECTION NO. 1
LOUIS ROSE PLACE OVER DOBY CREEK

- L- STA. 17+94.00 TO STA 19+62.00

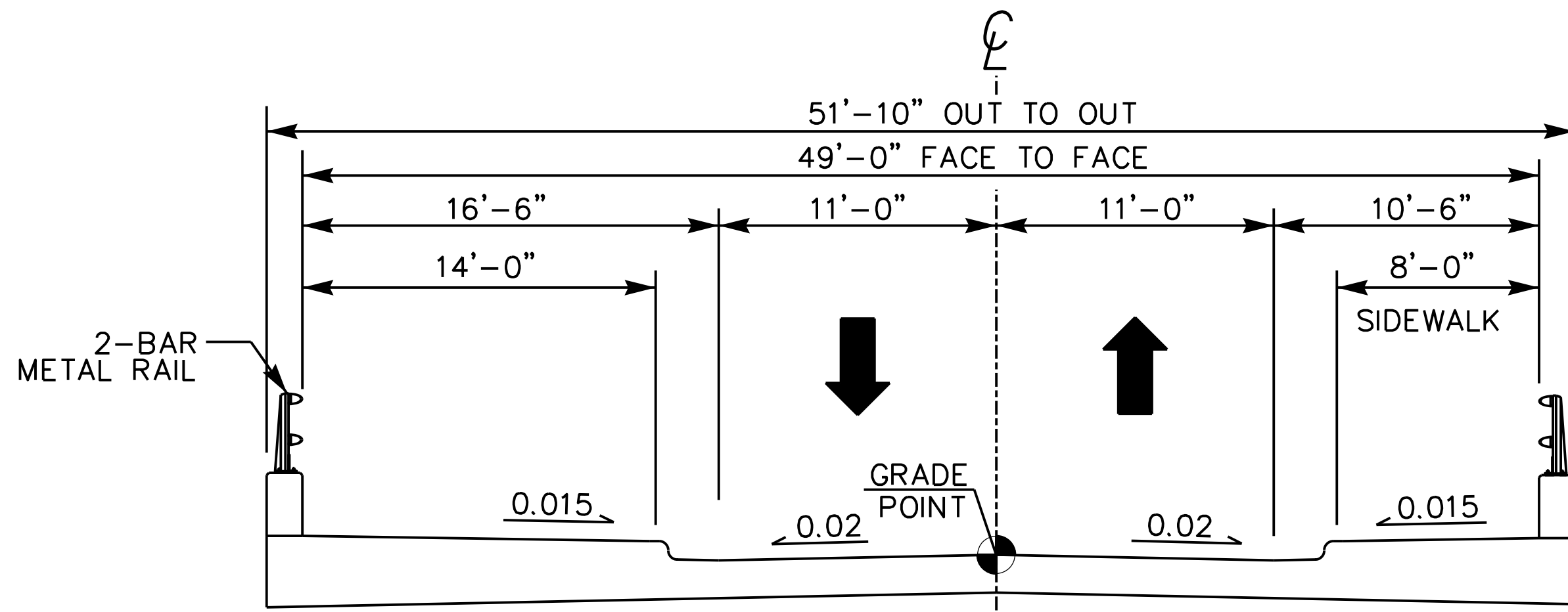


USE MSE WALL DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 3 AND 4
 -L- LEFT AND RIGHT FROM STA. 20+62.91 TO 21+11.78
 -L- LEFT AND RIGHT FROM STA. 23+57.62 TO 24+21.62

PAVEMENT DESIGN	ROADWAY ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NO.	DATE	BY	DESCRIPTION

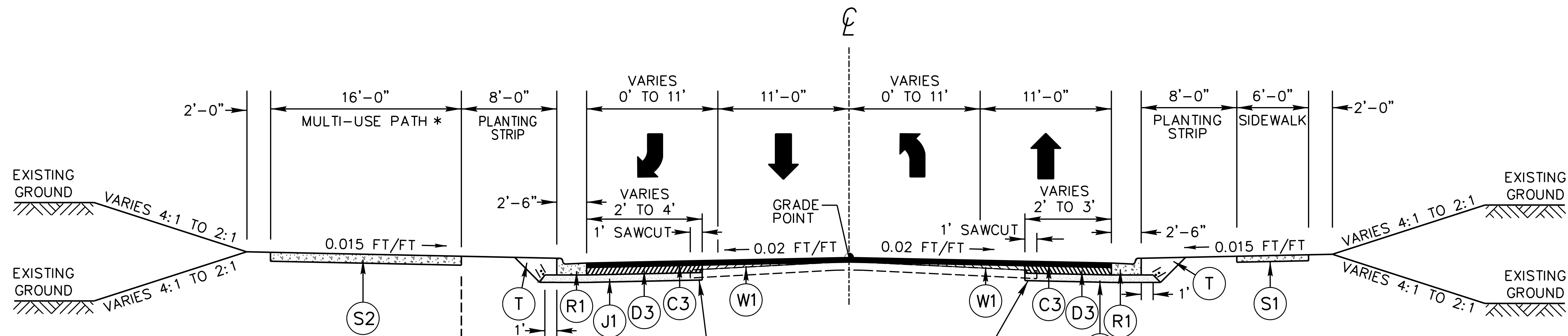
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512-15-003	JOB NO.	BEP/JPB	PREPARED BY	M/W	APPROVED BY



STRUCTURE TYPICAL SECTION NO. 2
LOUIS ROSE PLACE / DOUG MAYES PLACE OVER I-85

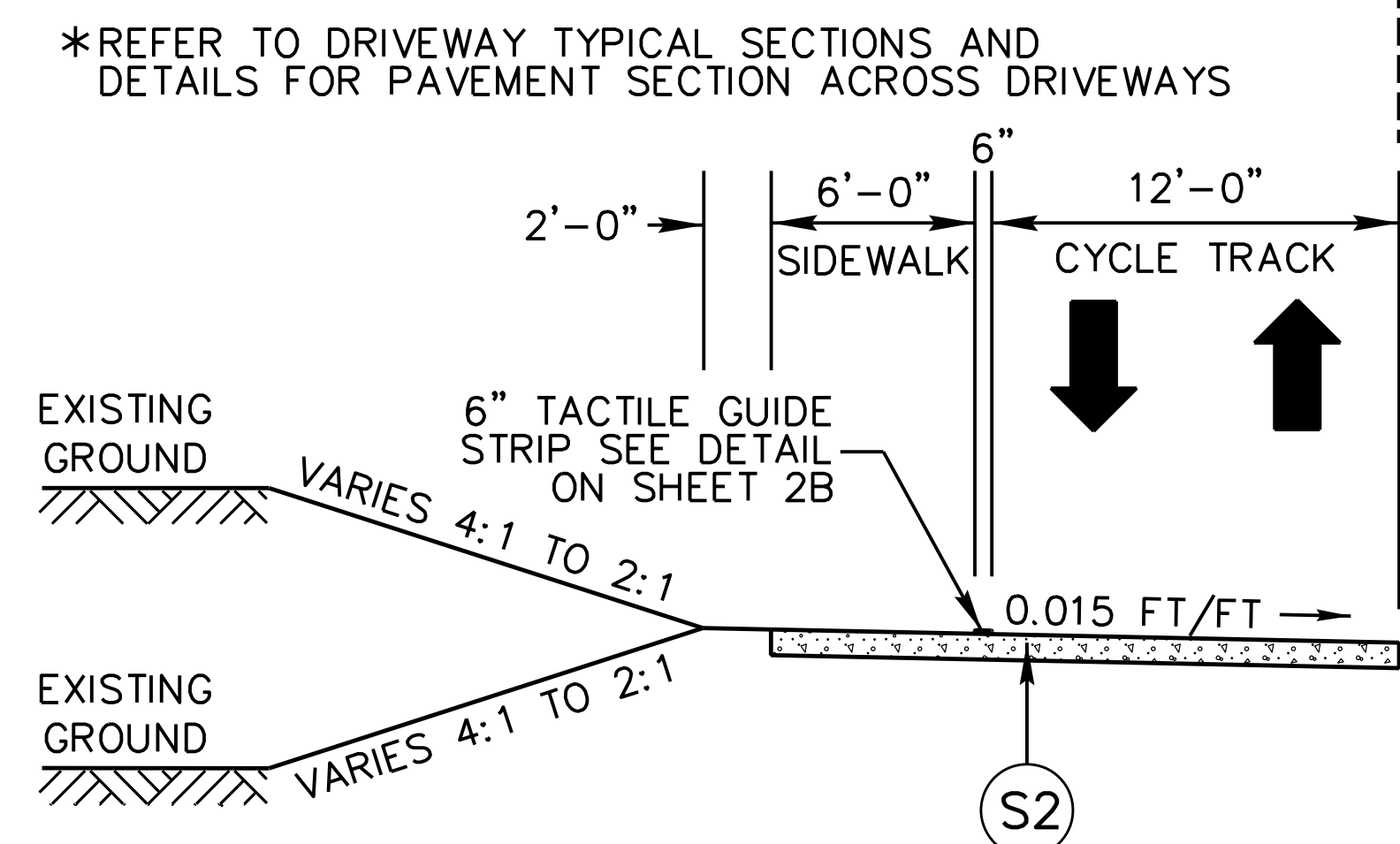
-L- STA. 21+11.78 TO STA. 23+57.62

LEGEND	
(A) 12" STAMPED PORTLAND CEMENT CONCRETE PAVEMENT REINFORCED WITH 6X6 EPOXY COATED WWM (5000 PSI)	(R1) PROPOSED 2'-6" CURB & GUTTER
(C1) PROPOSED 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ YD	(R2) PROPOSED 18" VERTICAL CURB
(C2) PROPOSED 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS PER SQ YD	(R3) 1'-6" CURB & GUTTER
(C3) PROPOSED 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH	(R4) PROPOSED MODIFIED 1'-6" MEDIAN CURB & GUTTER (SEE SHEET 3D)
(C4) PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH	(R5) PROPOSED 1'-6" MOUNTABLE CURB & GUTTER (SEE SHEET 3D)
(D1) PROPOSED 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS PER SQ YD	(R6) 5" MODIFIED MONOLITHIC CONCRETE ISLAND
(D2) PROPOSED 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS PER SQ YD	(S1) PROPOSED 4" CONCRETE SIDEWALK
(D3) PROPOSED 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ YD	(S2) PROPOSED 6" CONCRETE MULTI-USE PATH/CYCLE TRACK ALL JOINTS TO BE SAWCUT AND NOT TOoled. SAWCUTS TO EXTEND BETWEEN 1.5" AND 2" DEEP
(D4) PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	(T) EARTH MATERIAL
(E1) PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	(T1) PLANTABLE EARTH MATERIAL (SEE CLDS 40.08B)
(J1) PROPOSED 6" AGGREGATE BASE COURSE	(U) EXISTING PAVEMENT
(J2) PROPOSED 8" AGGREGATE BASE COURSE	(V) VARIABLE MILLING 0" TO 2"
	(W1) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 1)
	(W2) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 2)



TYPICAL SECTION NO. 4
LOUIS ROSE PLACE / DOUG MAYES PLACE

-L- STA. 31+32.06 TO STA. 34+05.54



TYPICAL SECTION NO. 4A

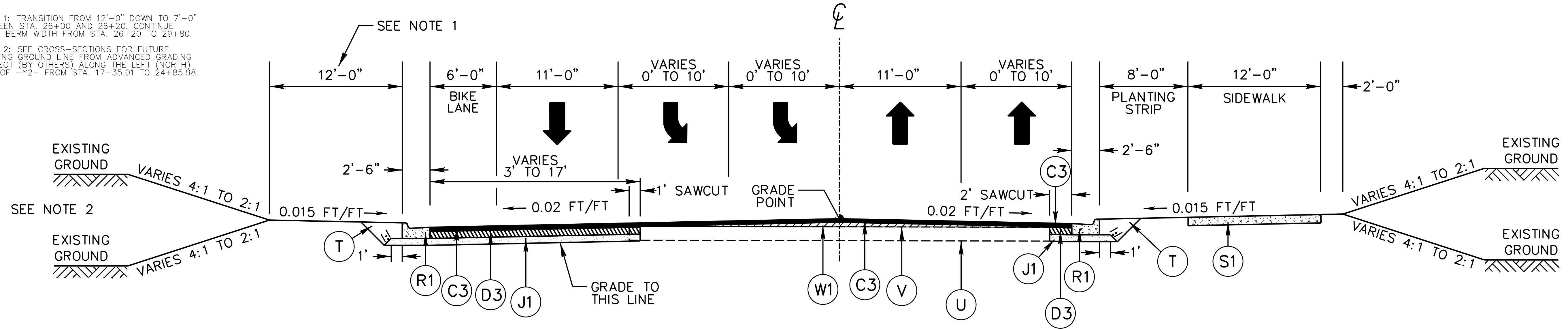
-L- STA. 33+00.00 TO STA. 34+05.54

PAVEMENT DESIGN	ROADWAY ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

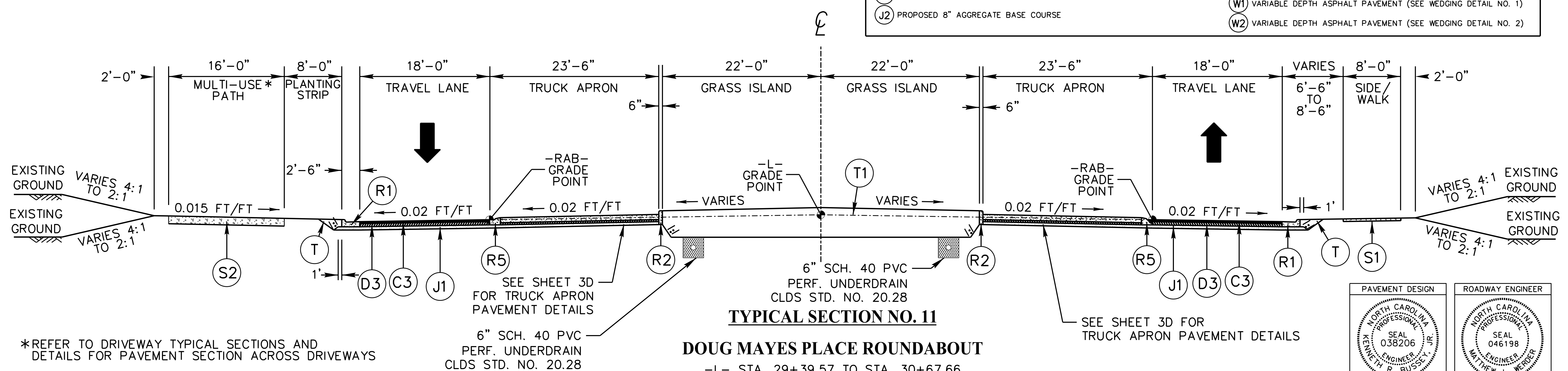
NOTE 1: TRANSITION FROM 12'-0" DOWN TO 7'-0" BETWEEN STA. 26+00 AND 26+20. CONTINUE 7'-0" BERM WIDTH FROM STA. 26+20 TO 29+80.

NOTE 2: SEE CROSS-SECTIONS FOR FUTURE EXISTING GROUND LINE FROM ADVANCED GRADING PROJECT (BY OTHERS) ALONG THE LEFT (NORTH) SIDE OF -Y2- FROM STA. 17+35.01 TO 24+85.98.



TYPICAL SECTION NO. 10
RESEARCH DRIVE / DAVID TAYLOR DRIVE
 -Y2- STA. 20+57.54 TO STA. 27+24.64

LEGEND	
(A) 12" STAMPED PORTLAND CEMENT CONCRETE PAVEMENT REINFORCED WITH 6X6 EPOXY COATED WWM (5000 PSI)	(R1) PROPOSED 2'-6" CURB & GUTTER
(C1) PROPOSED 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ YD	(R2) PROPOSED 18" VERTICAL CURB
(C2) PROPOSED 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS PER SQ YD	(R3) 1'-6" CURB & GUTTER
(C3) PROPOSED 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH	(R4) PROPOSED MODIFIED 1'-6" MEDIAN CURB & GUTTER (SEE SHEET 3D)
(C4) PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH	(R5) PROPOSED 1'-6" MOUNTABLE CURB & GUTTER (SEE SHEET 3D)
(D1) PROPOSED 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS PER SQ YD	(R6) 5" MODIFIED MONOLITHIC CONCRETE ISLAND
(D2) PROPOSED 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS PER SQ YD	(S1) PROPOSED 4" CONCRETE SIDEWALK
(D3) PROPOSED 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ YD	(S2) PROPOSED 6" CONCRETE MULTI-USE PATH/CYCLE TRACK ALL JOINTS TO BE SAWCUT AND NOT TOoled. SAWCUTS TO EXTEND BETWEEN 1.5" AND 2" DEEP
(D4) PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	(T) EARTH MATERIAL
(E1) PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	(T1) PLANTABLE EARTH MATERIAL (SEE CLDS 40.08B)
(J1) PROPOSED 6" AGGREGATE BASE COURSE	(U) EXISTING PAVEMENT
(J2) PROPOSED 8" AGGREGATE BASE COURSE	(V) VARIABLE MILLING 0" TO 2"
	(W1) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 1)
	(W2) VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL NO. 2)



TYPICAL SECTION NO. 11
DOUG MAYES PLACE ROUNDABOUT
 -L- STA. 29+39.57 TO STA. 30+67.66

*REFER TO DRIVEWAY TYPICAL SECTIONS AND DETAILS FOR PAVEMENT SECTION ACROSS DRIVEWAYS

SEE SHEET 3D FOR TRUCK APRON PAVEMENT DETAILS

6" SCH. 40 PVC PERF. UNDERDRAIN CLDS STD. NO. 20.28

SEE SHEET 3D FOR TRUCK APRON PAVEMENT DETAILS

PAVEMENT DESIGN 	ROADWAY ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

CHARLOTTE

Plans Prepared For:

BUILDING FOR CHARLOTTE
 GENERAL SERVICES

600 East Fourth Street
 Charlotte, North Carolina 28202
 Phone: (704) 336-2291
 Fax: (704) 336-6866

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:

FDR

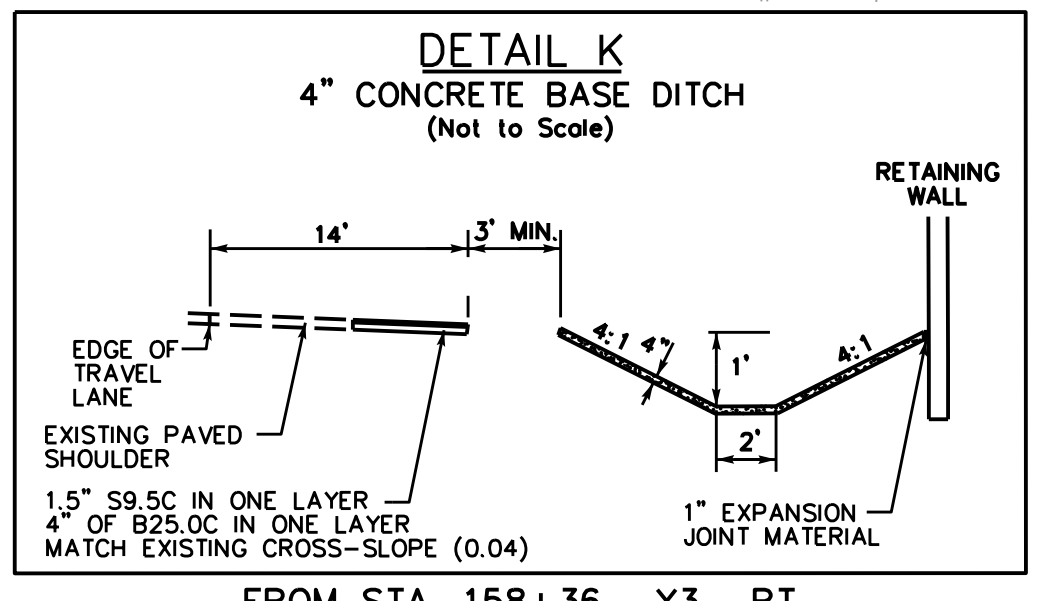
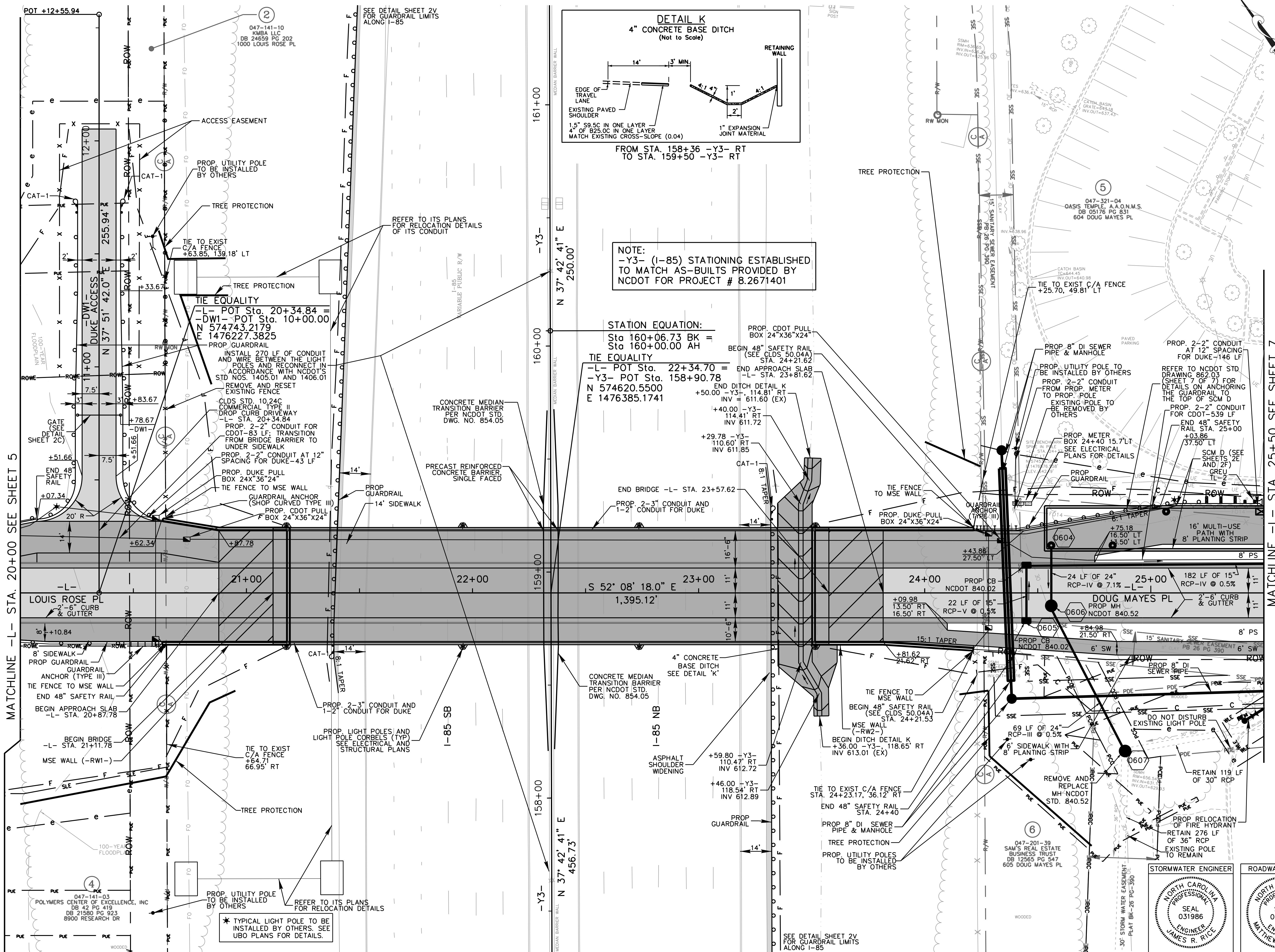
HDR Engineering, Inc. of the Carolinas
 440 S. Church Street, Suite 1200
 Raleigh, NC 27602
 NC License: License Number: F-0116

NTS	SCALE	DBT	CHECKED BY	DATE
512-15-003		BEP/JPB		OCTOBER 2023
		PREPARED BY	MJM	
		APPROVED BY		

I-85 NORTH BRIDGE

TYPICAL SECTIONS

SHEET 3F OF 3K



FROM STA. 158+36 -Y3- RT TO STA. 159+50 -Y3- RT

NOTE: -Y3- (I-85) STATIONING ESTABLISHED TO MATCH AS-BUILTS PROVIDED BY NCDOT FOR PROJECT # 8.2671401

STATION EQUATION:
Sta 160+06.73 BK =
Sta 160+00.00 AH

TIE EQUALITY
-L- POT Sta. 22+34.70 =
-Y3- POT Sta. 158+90.78
N 574620.5500
E 1476385.1741

CONCRETE MEDIAN TRANSITION BARRIER PER NCDOT STD. DWG. NO. 854.05

CONCRETE MEDIAN TRANSITION BARRIER PER NCDOT STD. DWG. NO. 854.05

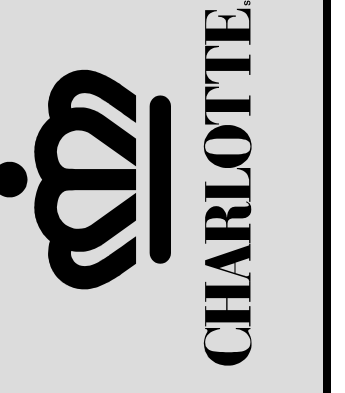
CONCRETE MEDIAN TRANSITION BARRIER PER NCDOT STD. DWG. NO. 854.05

CONCRETE MEDIAN TRANSITION BARRIER PER NCDOT STD. DWG. NO. 854.05

MATCHLINE -L- STA. 20+00 SEE SHEET 5

MATCHLINE -L- STA. 25+50 SEE SHEET 7

SEE SHEET 17 FOR -L- PROFILE

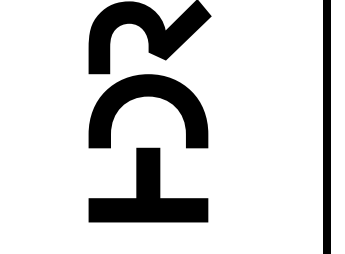


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NO.	DATE	BY	DESCRIPTION

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NCEM License Number: F-0116



1" = 20'	SCALE	DATE
512-15-003	JOB NO.	OCTOBER 2023
BEP/KPB	PREPARED BY	DATE
MJW	APPROVED BY	

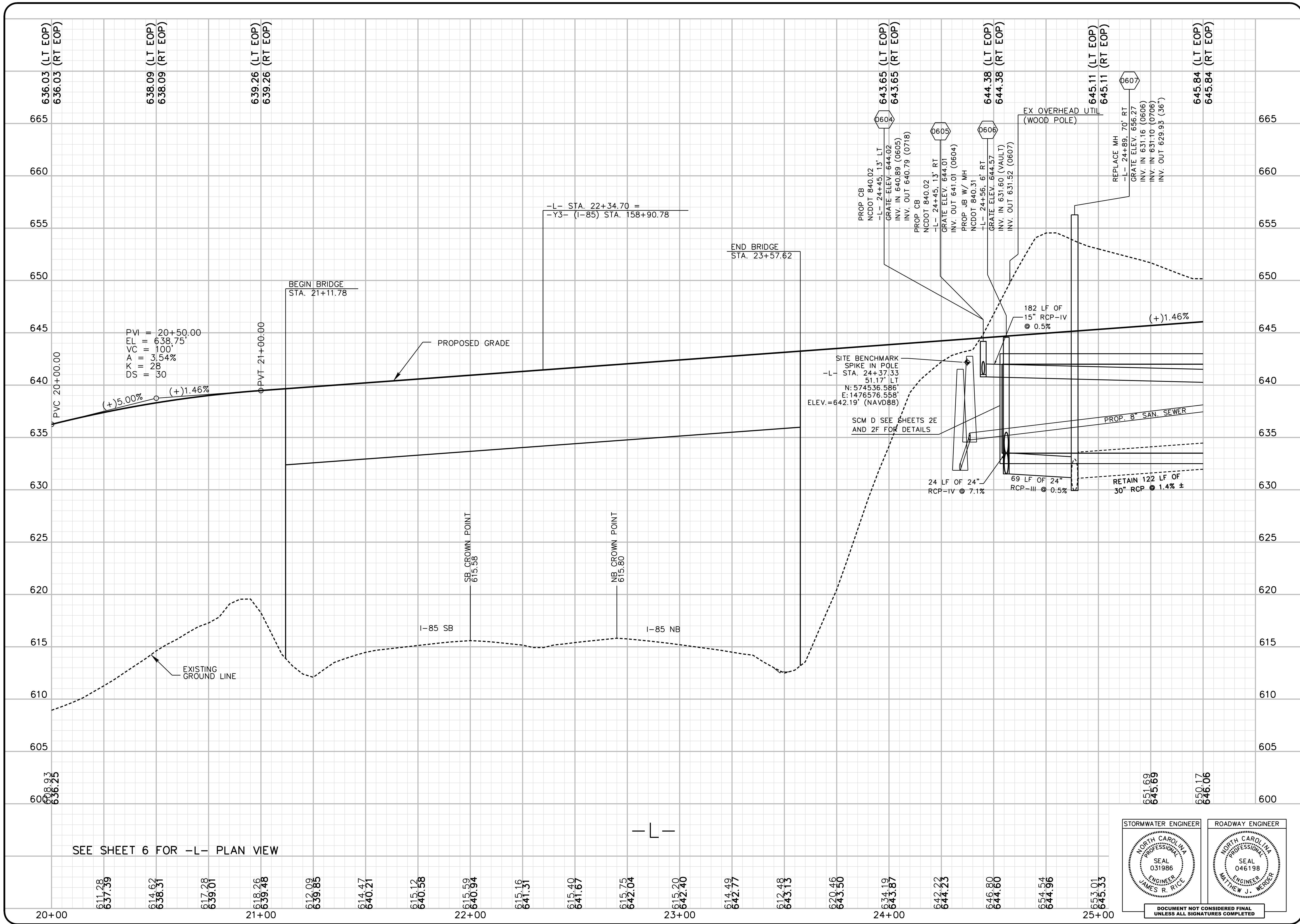
I-85 NORTH BRIDGE
-L- STA. 20+00 TO STA. 25+50

SHEET 6 OF 29

STORMWATER ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL
031986
JAMES R. RICE

ROADWAY ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL
046198
MATTHEW J. WOODRICK

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Plans Prepared For:

Plans Prepared By:

Scale: H 1" = 20' V 1" = 4'

Job No.: 512-15-003

Prepared By: BEP/JPB

Checked By: DBT

Approved By: M.W.

Date: OCTOBER 2023

Sheet: 17 OF 29

Project: I-85 NORTH BRIDGE

Location: -L- STA. 20+00 TO STA. 25+50

Professional Seals:

Stormwater Engineer: JAMES R. RICE, SEAL 031986

Roadway Engineer: MATTHEW J. WROGER, SEAL 046198

Disclaimer: DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Company Logo: BUILDING FOR CHARLOTTE GENERAL SERVICES

Contact Info: 600 East Fourth Street, Charlotte, North Carolina 28202, Phone: (704) 336-2291, Fax: (704) 336-6666

GENERAL NOTES

FOR I-85 AND RAMPS, SEE GENERAL NOTES BELOW. FOR ALL OTHER ROADS SEE GENERAL NOTES BELOW AND CHARLOTTE DEPARTMENT OF TRANSPORTATION (CDOT) WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) 2014 EDITION WITH MODIFICATIONS IN GENERAL NOTES BELOW.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS (REQUIRE INTERMEDIATE CONTRACT TIME PROJECT SPECIAL PROVISIONS)
(MODIFY WATCH PAGE 4, SECTION 6)

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-85 AND / OR RAMPS	SUNDAY THRU SATURDAY 6:00 AM THRU 9:00 PM
ALL OTHER ROADS	SUNDAY THRU SATURDAY 7:00 AM THRU 9:00 AM AND 4:30 PM THRU 6:30 PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

ANY ROAD

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 AM DECEMBER 31st TO 9:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 PM THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 9:00 PM MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 9:00 PM TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 9:00 PM THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 9:00 PM TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 9:00 PM MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR ANY NASCAR EVENT AT THE CHARLOTTE MOTOR SPEEDWAY, BETWEEN THE HOURS OF 6:00 AM ON THE WEDNESDAY BEFORE THE FIRST TRACK EVENT AND 9:00 PM ON THE DAY AFTER THE LAST TRACK EVENT.
- FOR ANY OF THE FOLLOWING SPORTING EVENTS PLAYED IN CHARLOTTE, FROM FIVE (5) HOURS BEFORE THE SCHEDULED START OF GAME TO FIVE (5) HOURS AFTER THE SCHEDULED COMPLETION OF GAME:
 - NATIONAL FOOTBALL LEAGUE (NFL)
 - MAJOR LEAGUE SOCCER (MLS)
 - FEDERATION INTERNATIONALE DE FOOTBALL ASSOCIATION (FIFA), OR ITS SUBSIDIARIES
 - UNC-CHARLOTTE FOOTBALL
 - ANY COLLEGE FOOTBALL GAME AT BANK OF AMERICA STADIUM
- FOR ANY UNC-CHARLOTTE GRADUATION CEREMONY, FROM TWO (2) HOURS BEFORE THE CEREMONY BEGINS TO TWO (2) HOURS AFTER THE CEREMONY ENDS.

GENERAL NOTES (CONTUED)

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME DAY AND TIME RESTRICTIONS

ANY ROAD (WITH DETOUR) SUNDAY THRU SATURDAY
5:00 AM THRU 11:59 PM

ANY ROAD (WITHOUT DETOUR) ANY DAY
ANY TIME

IN ADDITION, THE CONTRACTOR SHALL NOT CLOSE INTERSTATE 85 AND / OR RAMPS, DETAIN AND/OR ALTER THE TRAFFIC FLOW ON FOR ANY NASCAR EVENT AT THE CHARLOTTE MOTOR SPEEDWAY, FROM 5:00 A.M. THE DAY OF THE EVENT TO 11:59 P.M. THE DAY FOLLOWING THE EVENT.

D) DO NOT STOP TRAFFIC AS FOLLOWS:

DAY AND TIME DURATION AND
ROAD NAME RESTRICTIONS OPERATION

I-85 NB & SB SUNDAY THRU SATURDAY TRAFFIC SHIFTS
5:00 AM THRU 11:59 PM 15 MINUTES

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION. (MODIFY WATCH PAGE 3, SECTION 3)

SIGNING

I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

J) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

K) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

GENERAL NOTES (CONTINUED)

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT MINIMUM OFFSET
40 OR LESS 15 FT
45 - 50 20 FT
55 25 FT
60 MPH OR HIGHER 30 FT

TRAFFIC CONTROL DEVICES

O) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-85 NB & SB	TEMPORARY TAPE	TEMPORARY RAISED ON TAPE
ALL OTHER ROADS	PAINT	TEMPORARY RAISED

R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

S) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

T) THE ENGINEER, NCDOT ENGINEER AND/OR THEIR REPRESENTATIVES, ARE AUTHORIZED TO STOP ANY CONSTRUCTION ACTIVITY WITHIN THE I-85 CONTROLLED-ACCESS RIGHT-OF-WAY THAT IS NOT PROPERLY CONFIGURED WITH TTC DEVICES IN ACCORDANCE WITH THESE PLANS AND INCORPORATED NCDOT ROADWAY STANDARD DRAWINGS (RSD). WORK WILL BE ALLOWED TO RESUME WHEN COMPLIANCE IS ACHIEVED.

THE CITY ENGINEER, THE DIRECTOR OF CDOT, AND/OR THEIR REPRESENTATIVES, ARE AUTHORIZED TO STOP ANY CONSTRUCTION OR MAINTENANCE ACTIVITY IN THE PUBLIC RIGHTS-OF-WAY FOR ALL OTHER ROADS THAT HAS NOT BEEN APPROVED FOR CONSTRUCTION OR IS NOT PROPERLY CONFIGURED WITH TTC DEVICES IN ACCORDANCE WITH THESE PLANS, NCDOT RSD, AND/OR THE WATCH. WORK WILL BE ALLOWED TO RESUME WHEN COMPLIANCE IS ACHIEVED.

(MODIFY WATCH PAGE 2, SECTION 2)

U) SINGLE FLAGGER METHOD OF ONE-LANE, TWO-WAY TRAFFIC CONTROL SHALL NOT BE PERMITTED ON ANY ROAD TO CONTROL VEHICULAR TRAFFIC.

SINGLE FLAGGER METHOD MAY BE USED TO CONTROL PEDESTRIAN TRAFFIC, AS DIRECTED BY THE ENGINEER.
(MODIFY WATCH PAGE 16, SECTION 15)

SHEET INDEX

TCP-1	GENERAL NOTES AND SHEET INDEX
TCP-2	ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING LEGEND
TCP-3	PHASING
TCP-4	PAVEMENT MARKER DETAIL/SIGN DESIGN
TCP-5 THRU TCP-10	OFF-SITE DETOUR ROUTES
TCP-11 THRU TCP-15	AREA 1 PHASE DETAILS
TCP-16 THRU TCP-24	AREA 2 PHASE DETAILS
TCP-24 THRU TCP-27	AREA 3 PHASE DETAILS
TCP-28	THRU TCP-32 ONSITE DETOUR DETAILS



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5/2-15-003	JOB NO.	JWV	PREPARED BY	BPS
				OCTOBER 2023

SHEET
TCP-1
OF
TCP-35
TRAFFIC CONTROL
GENERAL NOTES










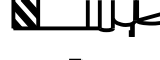



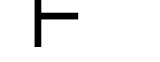






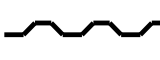
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" – N.C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

- 1101.01 WORK ZONE WARNING SIGNS
- 1101.02 TEMPORARY LANE CLOSURES
- 1101.03 TEMPORARY ROAD CLOSURES
- 1101.04 TEMPORARY SHOULDER CLOSURES
- 1101.05 WORK ZONE VEHICLE ACCESSES
- 1101.11 TRAFFIC CONTROL DESIGN TABLES
- 1110.01 STATIONARY WORK ZONE SIGNS
- 1110.02 PORTABLE WORK ZONE SIGNS
- 1115.01 FLASHING ARROW BOARDS
- 1130.01 DRUMS
- 1135.01 CONES
- 1145.01 BARRICADES
- 1150.01 FLAGGING DEVICES
- 1160.01 TEMPORARY CRASH CUSHION
- 1165.01 TRUCK MOUNTED ATTENUATOR
- 1170.01 PORTABLE CONCRETE BARRIER
- 1180.01 SKINNY – DRUMS
- 1205.01 PAVEMENT MARKINGS – LINE TYPES AND OFFSETS
- 1205.02 PAVEMENT MARKINGS – TWO LANE AND MULTILANE ROADWAYS
- 1205.04 PAVEMENT MARKINGS – INTERSECTIONS
- 1205.05 PAVEMENT MARKINGS – TURN LANES
- 1205.07 PAVEMENT MARKINGS – PEDESTRIAN CROSSWALKS
- 1205.08 PAVEMENT MARKINGS – SYMBOLS AND WORD MESSAGES
- 1205.09 PAVEMENT MARKINGS – PAINTED ISLANDS
- 1205.12 PAVEMENT MARKINGS – BRIDGES
- 1250.01 RAISED PAVEMENT MARKERS – INSTALLATION SPACING
- 1251.01 RAISED PAVEMENT MARKERS – (PERMANENT AND TEMPORARY)

FOR AREAS 2 AND 3 REFER TO THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) FOR ADDITIONAL INFORMATION

LEGEND

-  BARRICADE (TYPE III)
-  CONE
-  DRUM  SKINNY DRUM
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN
-  PORTABLE SIGN
-  STATIONARY SIGN
-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  NORTH ARROW
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA  TEMPORARY PAVEMENT
-  REMOVAL  WEDGING
-  ONGOING CONSTRUCTION


TEMPORARY PAVEMENT MARKING LEGEND

FOR PAVEMENT MARKINGS NOT LOCATED ON I-85 REFER TO CDOT PAVEMENT MARKING GUIDELINES FOR ADDITIONAL NOTES AND DETAILS

- 4" WIDTH PAINT
- (P8) 2 FT. – 6 FT./SPACING WHITE MINISKIP
- (PA) SOLID WHITE EDGELINE
- (PC) 10 FT. WHITE SKIP
- (PD) 3 FT. – 9 FT./SP. WHITE MINISKIP
- (PE) WHITE SOLID LANE LINE
- (PI) DOUBLE YELLOW LINE
- 8" WIDTH PAINT
- (PQ) WHITE CROSSWALK LINE
- (PN) WHITE GORELINE
- 24" WIDTH PAINT
- (P2) WHITE STOPBAR
- 6" WIDTH REMOVABLE TAPE
- (C6) WHITE EDGELINE
- (C7) YELLOW EDGELINE
- (CJ) 10 FT. WHITE SKIP
- (CK) 3 FT. – 9 FT./SP WHITE MINISKIP
- (CL) WHITE SOLID LANE LINE
- 12" WIDTH REMOVABLE TAPE
- (CS) WHITE GORELINE




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CHARLOTTE

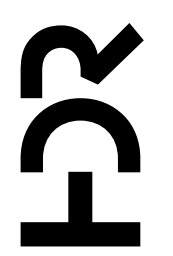
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I-85 NORTH BRIDGE	STANDARD DRAWINGS AND LEGENDS
SHEET TCP-2	OF TCP-35

CONSTRUCTION PHASING AREA 1

NOTE:
 WORK ALONG -Y1- AND -Y2- IN AREA 2 MAY NOT BEGIN UNTIL THE CITY CONFIRMS ALL UNDERGROUND PRIVATE TELECOMMUNICATION LINES ARE RELOCATED AS INTENDED. WORK ALONG -L- IN AREA 2 AND ALL WORK IN AREAS 1 AND 3 MAY BEGIN SIMULTANEOUSLY OR INDEPENDENTLY OF EACH OTHER. WORK IN ALL AREAS MUST BE COMPLETE BEFORE OPENING -L- TO TRAFFIC.

AREA 1 (I-85)

PHASE 1

- STEP 1: USING ROADWAY STANDARD DRAWING (RSD) 1101.01 SHEET 1 OF 3 INSTALL ADVANCE WORK ZONE WARNING SIGNS PRIOR TO BEGINNING ANY WORK ON I-85.
- STEP 2: USING RSD 1101.02 SHEET 4 OF 14 AND 1101.04 SHEET 1 OF 1, AS NECESSARY, INSTALL PORTABLE CONCRETE BARRIER (PCB) AND PROPOSED GUARDRAIL OUTSIDE OF EXISTING RUMBLE STRIPS AS SHOWN ON SHEET TCP-11.
- STEP 3: BEFORE BEGINNING WORK ON END BENTS AND RETAINING WALLS, RELOCATE ANY FIBER TO BE IMPACTED BY CONSTRUCTION.
- STEP 4: USE RSD 1101.02 SHEET 4 OF 14, AS NECESSARY, AND CONSTRUCT PROPOSED END BENTS AND RETAINING WALLS.
- STEP 5: UPON COMPLETION OF EACH END BENT, REMOVE PCB FROM OUTSIDE SHOULDERS.

NOTE: PHASE 2 STEP 1 AND PHASE 3 STEP 1 WILL EACH BE REPEATED FOR I-85 NB AND I-85 SB AS SEPARATE OPERATIONS WHICH MAY OR MAY NOT BE COMPLETED SIMULTANEOUSLY.

PHASE 2

- STEP 1: UPON REMOVAL OF PCB, USE RSD 1101.02 SHEET 4, 5, AND 8 OF 14, AS NECESSARY, AND MILL AND RESURFACE TO REMOVE EXISTING RUMBLE STRIPS ALONG THE OUTSIDE SHOULDERS.

INTERMEDIATE CONTRACT TIME#6: 60 DAYS OF I-85 TRAFFIC SHIFT FOR NB AND SB INSIDE LANE CLOSURE TO CONSTRUCT MEDIAN BENT

- STEP 2: USING RSD 1101.02 SHEET 4 OF 14 AND INTERMITTENT I-85 NIGHTTIME CLOSURES (PHASE 2, STEPS 5 THRU 7), AS NECESSARY, INSTALL TEMPORARY PAVEMENT MARKINGS, REMOVE SNOWPLOWABLE PAVEMENT MARKERS AND CONFLICTING PAVEMENT MARKINGS, AND SHIFT TRAFFIC TO THE PHASE 2 PATTERN THEN INSTALL PCB ALONG THE INSIDE SHOULDER AS SHOWN ON SHEETS TCP-12 TO TCP-14.
- STEP 3: CONSTRUCT THE PROPOSED INTERIOR BENT AND MEDIAN BARRIER.
- STEP 4: USE RSD 1101.02 SHEETS 4, 5, AND 8 OF 14, AS NECESSARY, REPAIR SHOULDERS, AS DIRECTED BY THE ENGINEER, REMOVE PCB, REMOVE TEMPORARY PAVEMENT MARKINGS, INSTALL RUMBLE STRIPS ALONG OUTSIDE SHOULDERS, INSTALL PAVEMENT MARKINGS.

INTERMITTENT I-85 NB OR SB OVERNIGHT CLOSURES (SEE GENERAL NOTE C & ICT #4)

- NOTE: STEPS 5 THRU 7 MAY BE REPEATED, AS NECESSARY, TO COMPLETE OVERHEAD WORK ABOVE I-85. THE CONTRACTOR MAY ELECT TO CLOSE ONE DIRECTION OF I-85 PER NIGHT AND MAY NOT CLOSE BOTH DIRECTIONS OF I-85 AT ANY TIME.
- STEP 5: UNCOVER OFFSITE DETOUR SIGNS AND INSTALL DEVICES TO CLOSE ONE (1) DIRECTION OF I-85 USING RSD 1101.02 SHEET 8 OF 14, RSD 1101.03 SHEET 7 OF 9, AND SHEETS TCP-8 AND TCP-9. USE LAW ENFORCEMENT AT INTERCHANGES.
 - STEP 6: INSTALL GIRDERS, STAY-IN PLACE FORMS AND OVERHEAD PROTECTION FOR -L- BRIDGE WORK OVER I-85.
 - STEP 7: REMOVE DEVICES AND RECOVER OFFSITE DETOUR SIGNS TO REOPEN I-85 TO TRAFFIC.

PHASE 3

- STEP 1: USING RSD 1101.02 SHEETS 4, 5, AND 8 OF 14, AND INTERMITTENT I-85 NIGHTTIME CLOSURES (PHASE 2, STEPS 5 THRU 7), AS NECESSARY, COMPLETE ANY REMAINING CONSTRUCTION.
- STEP 3: UPON COMPLETION OF ALL WORK REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

CONSTRUCTION PHASING AREA 2

AREA 2 (RESEARCH DR./DAVID TAYLOR DR.)

PHASE 1

- STEP 1: USING THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) DIAGRAMS 3 AND 9, AS NECESSARY, BEGIN CONSTRUCTION OF PROPOSED ROADWAY UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, DRAINAGE, AND TEMPORARY PAVEMENT AS SHOWN ON SHEETS TCP-16 TO TCP-17.

PHASE 2

- STEP 1: USING WATCH DIAGRAM 9 AND WEDGING, AS NECESSARY, SHIFT TRAFFIC TO THE PATTERN SHOWN ON SHEETS TCP-18 TO TCP-19. UPON COMPLETION OF THE TRAFFIC SHIFT TO THE TEMPORARY TRAFFIC PATTERN USE WATCH DIAGRAMS 3 AND 9, AS NECESSARY, AND BEGIN CONSTRUCTION OF THE PROPOSED ROADWAY, BRIDGE OVER DOBY CREEK, AND DRIVEWAY -DW1- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, SIDEWALK, AND DRAINAGE.
- STEP 2: USING FLAGGERS, AS NECESSARY, PARTIALLY OPEN PROPOSED LOUIS ROSE PLACE AND DRIVEWAY TO TRAFFIC AND CLOSE EXISTING LOUIS ROSE PLACE DRIVEWAY. USING WATCH DIAGRAMS 3 AND 9, AS NECESSARY, BEGIN CONSTRUCTION OF PROPOSED ROADWAY SHOWN ON SHEET TCP-20 AND CONTINUE CONSTRUCTION FROM PREVIOUS STEP.

PHASE 3

- STEP 1: USING WATCH DIAGRAM 9 AND WEDGING, AS NECESSARY, SHIFT TRAFFIC TO THE PATTERN SHOWN ON SHEETS TCP-21 TO TCP-22. UPON COMPLETION OF THE TRAFFIC SHIFT TO THE TEMPORARY PATTERN USE WATCH DIAGRAMS 3 AND 9, AS NECESSARY, AND BEGIN CONSTRUCTION OF THE PROPOSED ROADWAY UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, SIDEWALK, AND DRAINAGE.

PHASE 4:

- STEP 1: USING WATCH DIAGRAM 9 SHIFT TRAFFIC TO THE FINAL PATTERN AND ACTIVATE THE PROPOSED SIGNAL. WITH TRAFFIC IN THE FINAL PATTERN USE WATCH DIAGRAMS 3 AND 9, AS NECESSARY, AND COMPLETE ANY REMAINING CONSTRUCTION.
- STEP 2: USING WATCH DIAGRAM 9 PLACE THE FINAL LAYER OF SURFACE COURSE AND THE FINAL PAVEMENT MARKINGS ACCORDING TO THE PAVEMENT MARKING PLAN.
- STEP 3: REMOVE ALL TEMPORARY WORK ZONE TRAFFIC CONTROL DEVICES.

CONSTRUCTION PHASING AREA 3

AREA 3 (DOUG MAYES PL.)

PHASE 1

- STEP 1: USING THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) DIAGRAMS 3 AND 9, AS NECESSARY, INSTALL TEMPORARY SHORING AND TEMPORARY CONSTRUCTION FENCE THEN BEGIN CONSTRUCTION OF PROPOSED ROADWAY UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, DRAINAGE, AND CONSTRUCT THE PROPOSED SIDEWALK AS SHOWN ON SHEET TCP-25.

PHASE 2


- STEP 1: USING WATCH DIAGRAMS 3 AND 9, AS NECESSARY, REMOVE TEMPORARY SHORING, ADJUST TEMPORARY CONSTRUCTION FENCE, AND CLOSE THE EXISTING SIDEWALK AND DETOUR PEDESTRIANS AS SHOWN ON SHEET TCP-26. CONTINUE CONSTRUCTION OF PROPOSED ROADWAY UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, SIDEWALK AND DRAINAGE. INSTALL TEMPORARY PAVEMENT AND CONSTRUCT PAVEMENT WIDENING ADJACENT TO EXISTING CULDESAC. CONSTRUCT AND COVER DRAINAGE FEATURES ALONG TEMPORARY ALIGNMENT.
- STEP 2: PLACE PCB ALONG OUTSIDE OF TEMPORARY ALIGNMENT AND SHIFT TRAFFIC. CLOSE SHRINERS MAIN ENTRANCE AND PLACE WFB ALONG TEMPORARY ALIGNMENT. CONSTRUCT SIDEWALK AND CURB BETWEEN THE SHRINERS DRIVEWAYS, ROUNDABOUT CENTER ISLAND, AND PROPOSED SHRINERS DRIVEWAY. REMOVE EXISTING SHRINERS DRIVEWAY.

PHASE 3

- STEP 1: USING WATCH DIAGRAMS 3 AND 9, AS NECESSARY, SHIFT TRAFFIC TO THE PHASE 3 PATTERN AS SHOWN ON SHEET TCP-27 AND CONSTRUCT SOUTHEAST CORNER OF ROUNDABOUT INCLUDING SIDEWALK, CURB, AND COMPLETION OF DRAINAGE FEATURES.
- STEP 2: CONSTRUCT RAISED SEPARATOR ISLANDS FOR ROUNDABOUT. COMPLETE ANY REMAINING WORK, INCLUDING FINAL SURFACE LAYER. REMOVE ALL TEMPORARY WORK ZONE TRAFFIC CONTROL DEVICES.



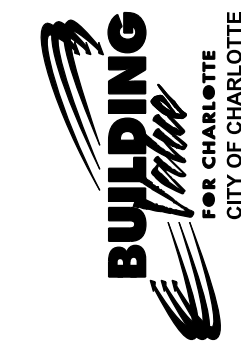
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CHARLOTTE

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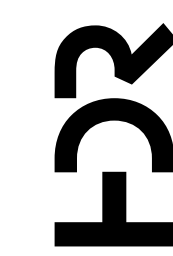
Plans Prepared For:



BUILDING
FOR CHARLOTTE
GENERAL SERVICES

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:



HDR

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Kendallville, NC 28602
NCEM License Number: F-0116

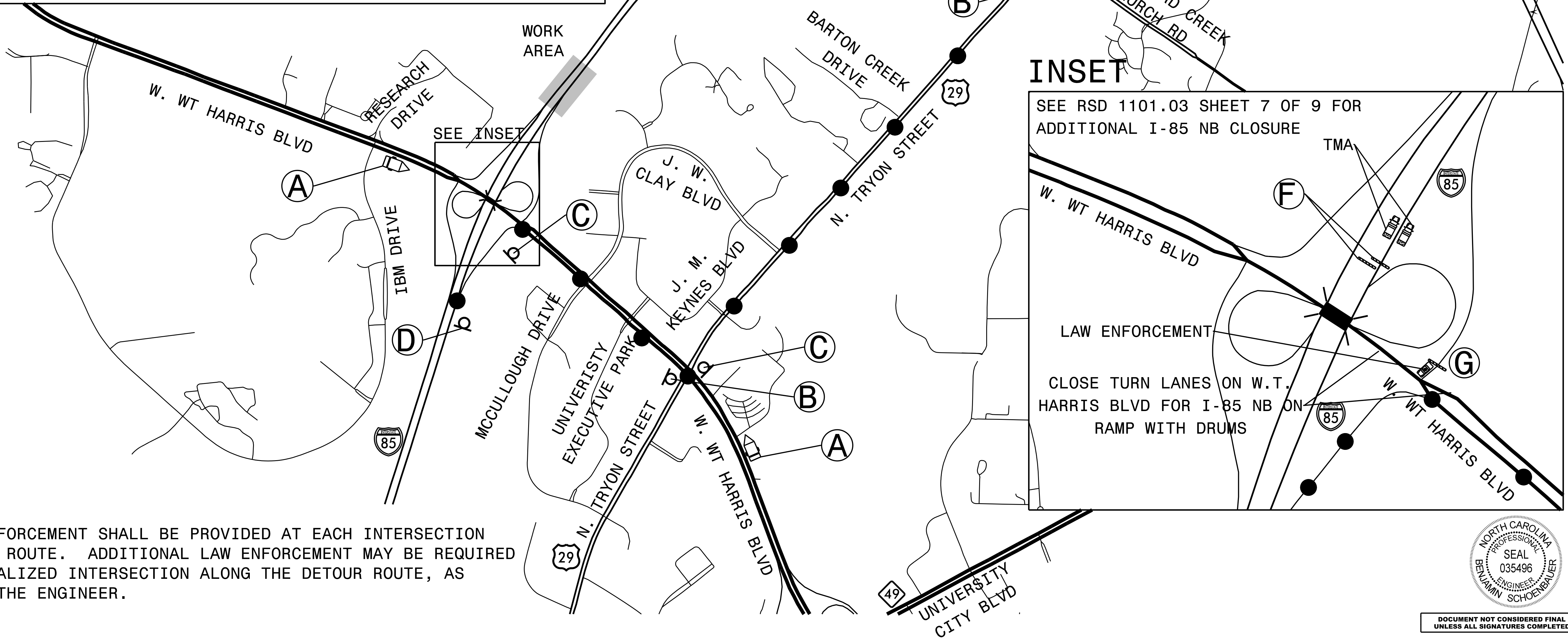
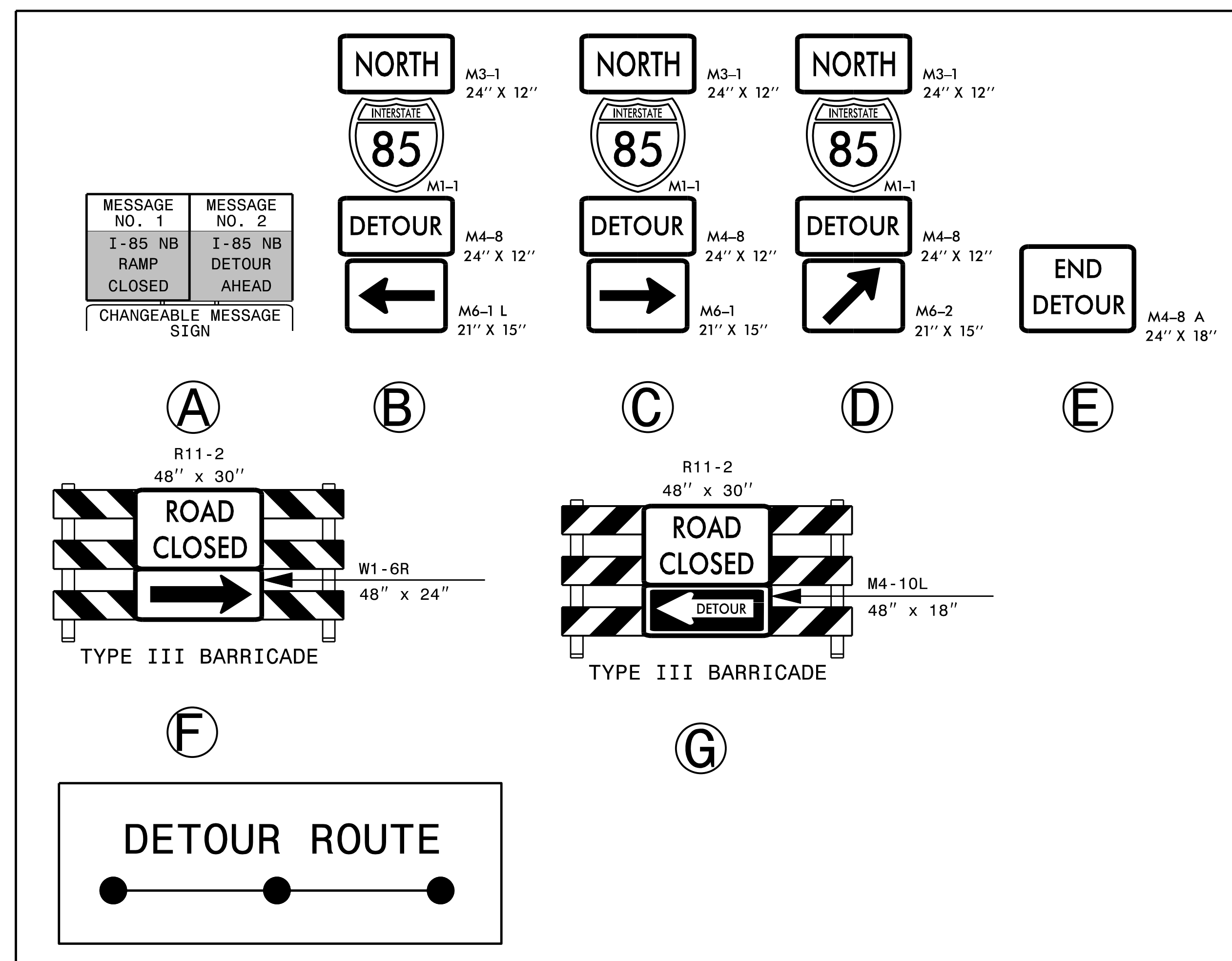
512-15-003 JOB NO.	JWW PREPARED BY	BPS APPROVED BY	OCTOBER 2023 DATE
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I-85 NORTH BRIDGE

PHASING

SHEET
TCP-3

OF
TCP-27



NOTE: LAW ENFORCEMENT SHALL BE PROVIDED AT EACH INTERSECTION ALONG DETOUR ROUTE. ADDITIONAL LAW ENFORCEMENT MAY BE REQUIRED AT EACH SIGNALIZED INTERSECTION ALONG THE DETOUR ROUTE, AS DIRECTED BY THE ENGINEER.



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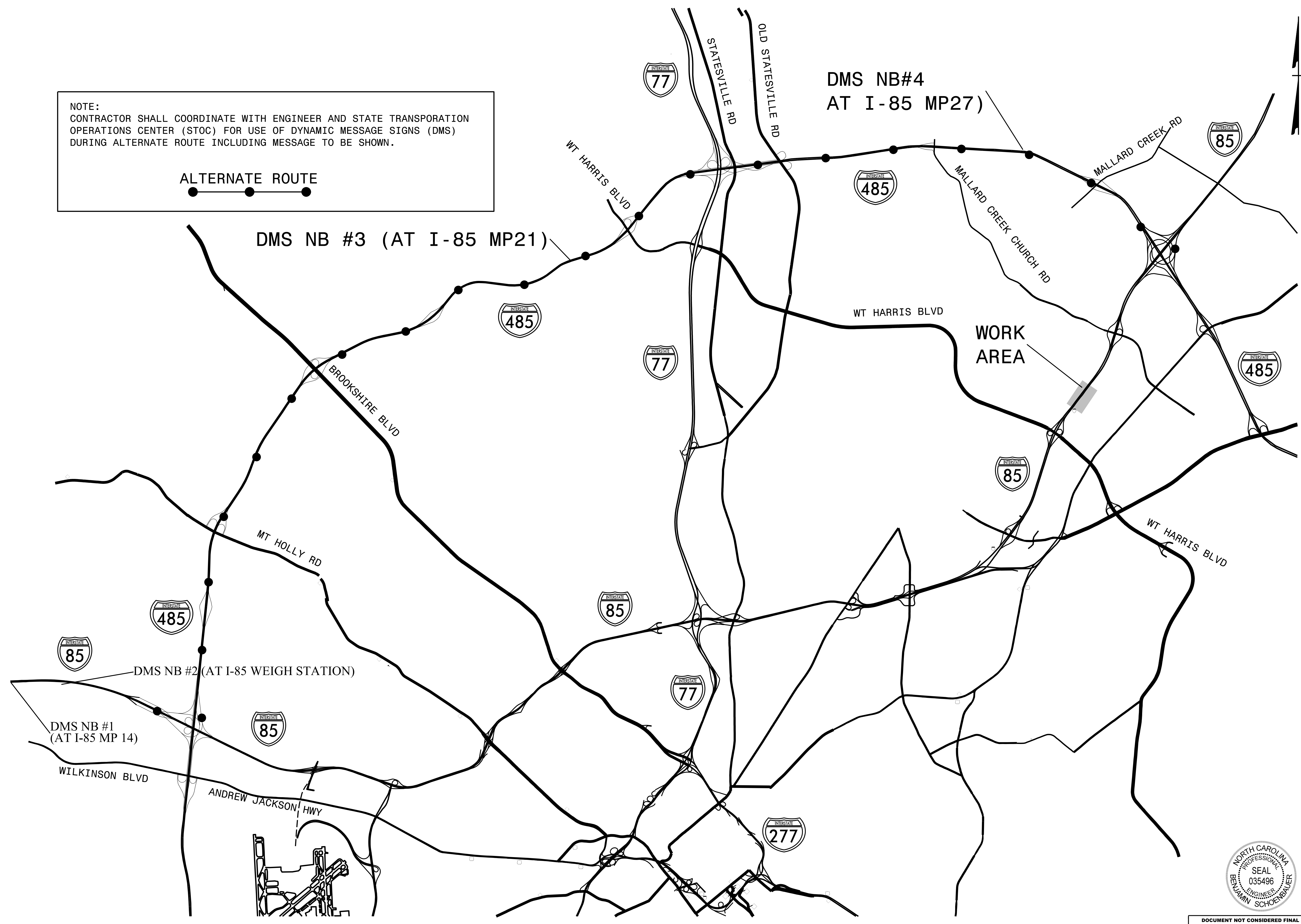
Plans Prepared By:
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 HDR Engineering, Inc. of the Carolinas
 440 S. Church Street, Suite 1200
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 NCEM License Number: F-0116

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512-15-003	JOB NO.	JWV	PREPARED BY	OCTOBER 2023
		BPS	APPROVED BY	

SHEET	TCP-5	OF	TCP-35

NOTE:
 CONTRACTOR SHALL COORDINATE WITH ENGINEER AND STATE TRANSPORTATION
 OPERATIONS CENTER (STOC) FOR USE OF DYNAMIC MESSAGE SIGNS (DMS)
 DURING ALTERNATE ROUTE INCLUDING MESSAGE TO BE SHOWN.

ALTERNATE ROUTE



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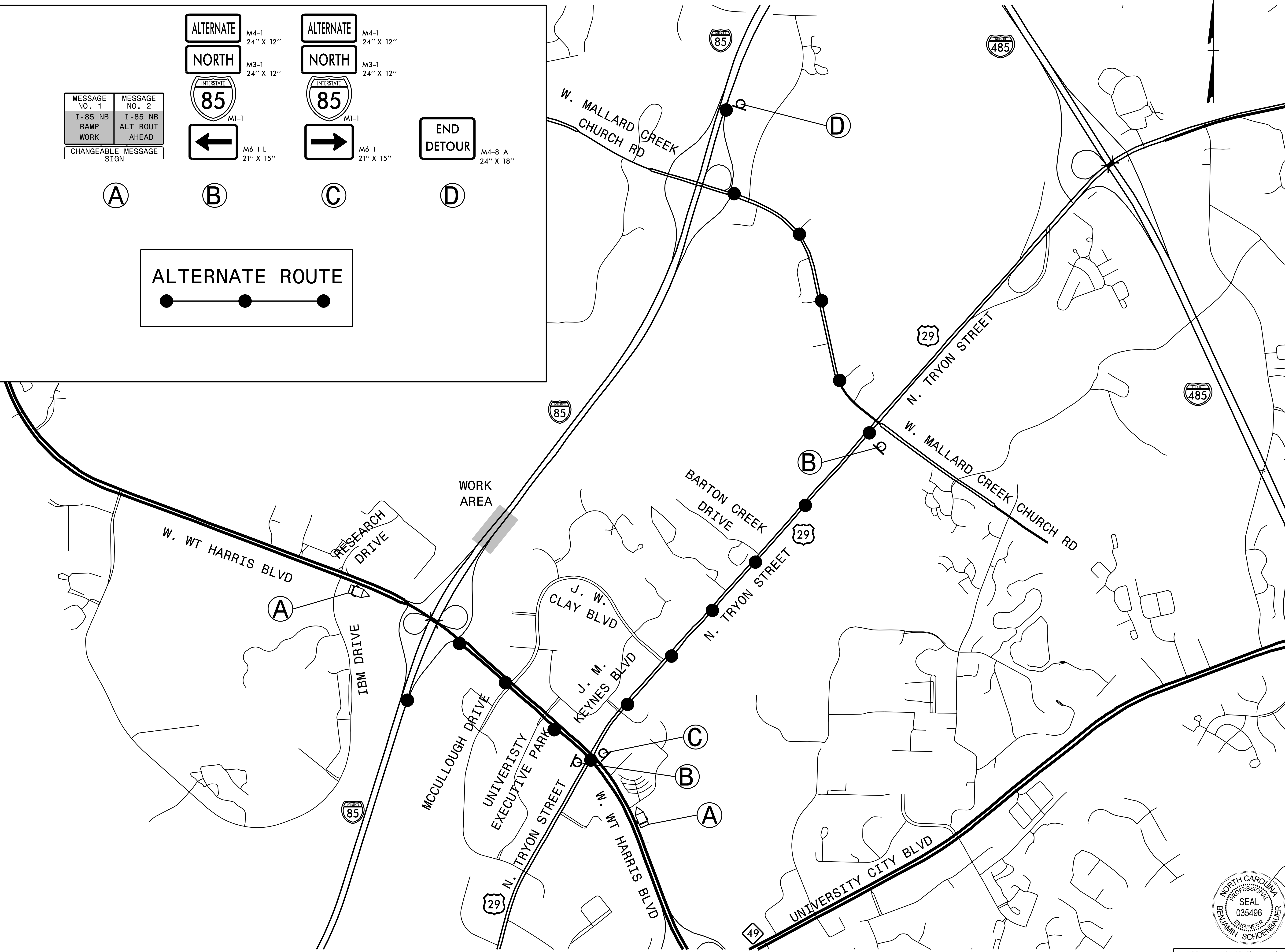
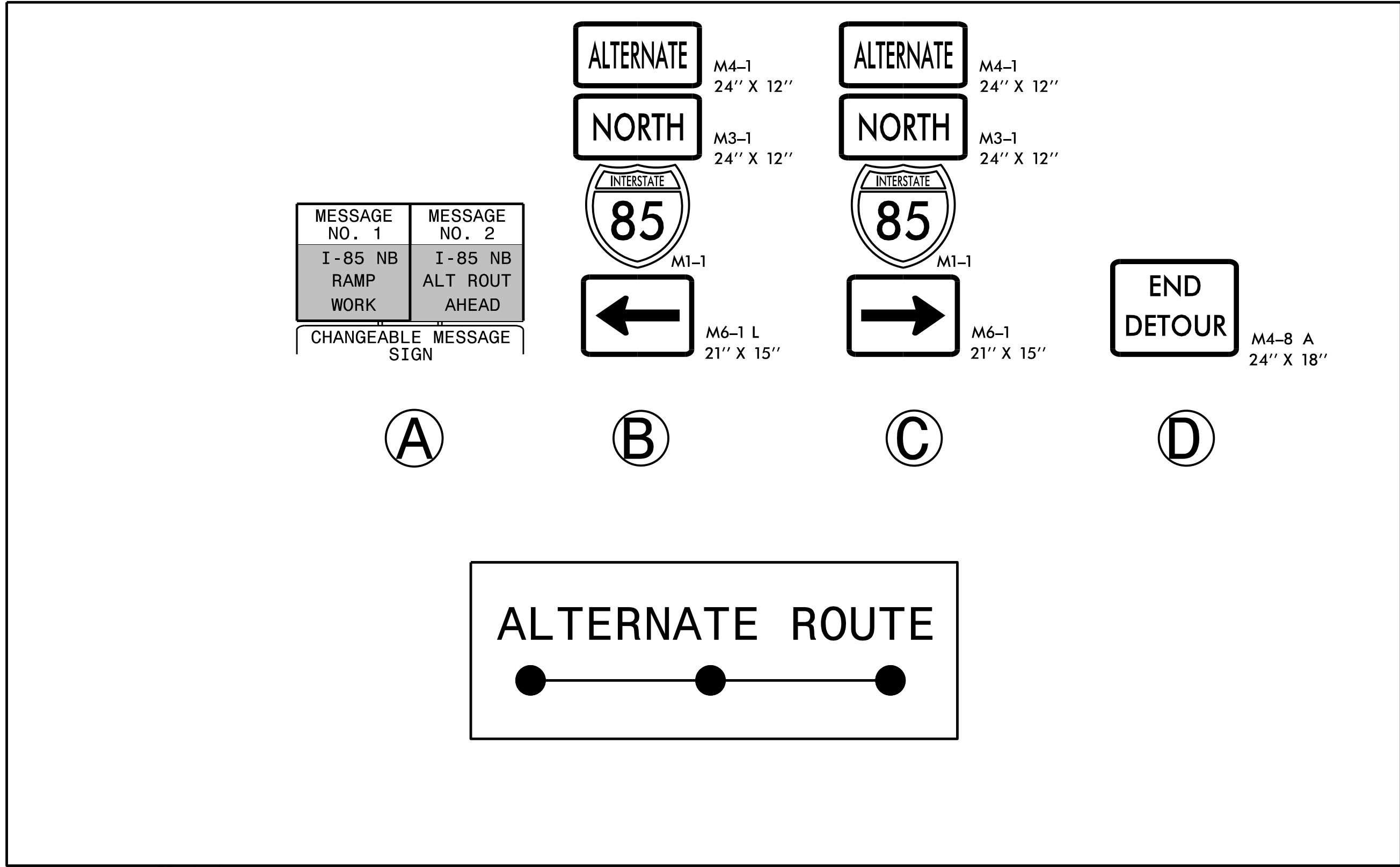
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Plans Prepared By:
FDR

HDR Engineering, Inc. of the Carolinas
 440 S. Church Street, Suite 1200
 Raleigh, NC 27602
 NCEES License Number: F-0116

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JVM	PREPARED BY	BPS	APPROVED BY			

SHEET TCP-6	OF TCP-35	I-85 NORTH BRIDGE	I-85 NORTHBOUND ALTERNATE ROUTE
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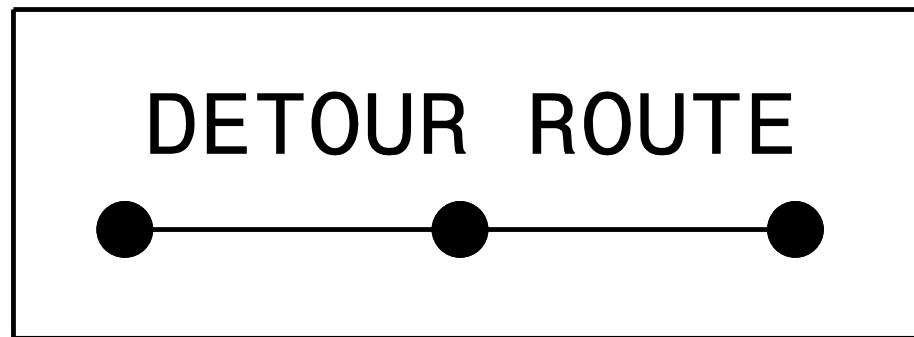
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 600 East Fourth Street
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 Phone: (704) 336-2291
 Fax: (704) 336-6866

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Plans Prepared By:
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 Charlotte, NC 28202
 NCELES License Number: F-0116

512-15-003	1" = 50'
JOB NO.	SCALE
JWV	BPS
PREPARED BY	CHECKED BY
BPS	OCTOBER 2023
APPROVED BY	DATE

SHEET TCP-6A	I-85 NORTH BRIDGE
OF TCP-35	I-85 NORTHBOUND ALTERNATE ROUTE



DETOUR ROUTE

MESSAGE NO. 1	MESSAGE NO. 2
I-85 NB RAMP CLOSED	I-85 NB DETOUR AHEAD

MESSAGE NO. 1	MESSAGE NO. 2
I-85 NORTH BOUND	ALT ROUTE AHEAD

CHANGEABLE MESSAGE SIGN

CHANGEABLE MESSAGE SIGN

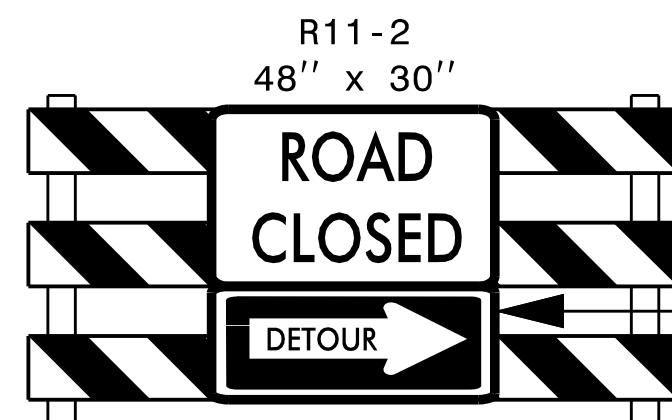
(A)

(B)

(C)

(D)

(E)



R11-2
48" x 30"

ROAD CLOSED

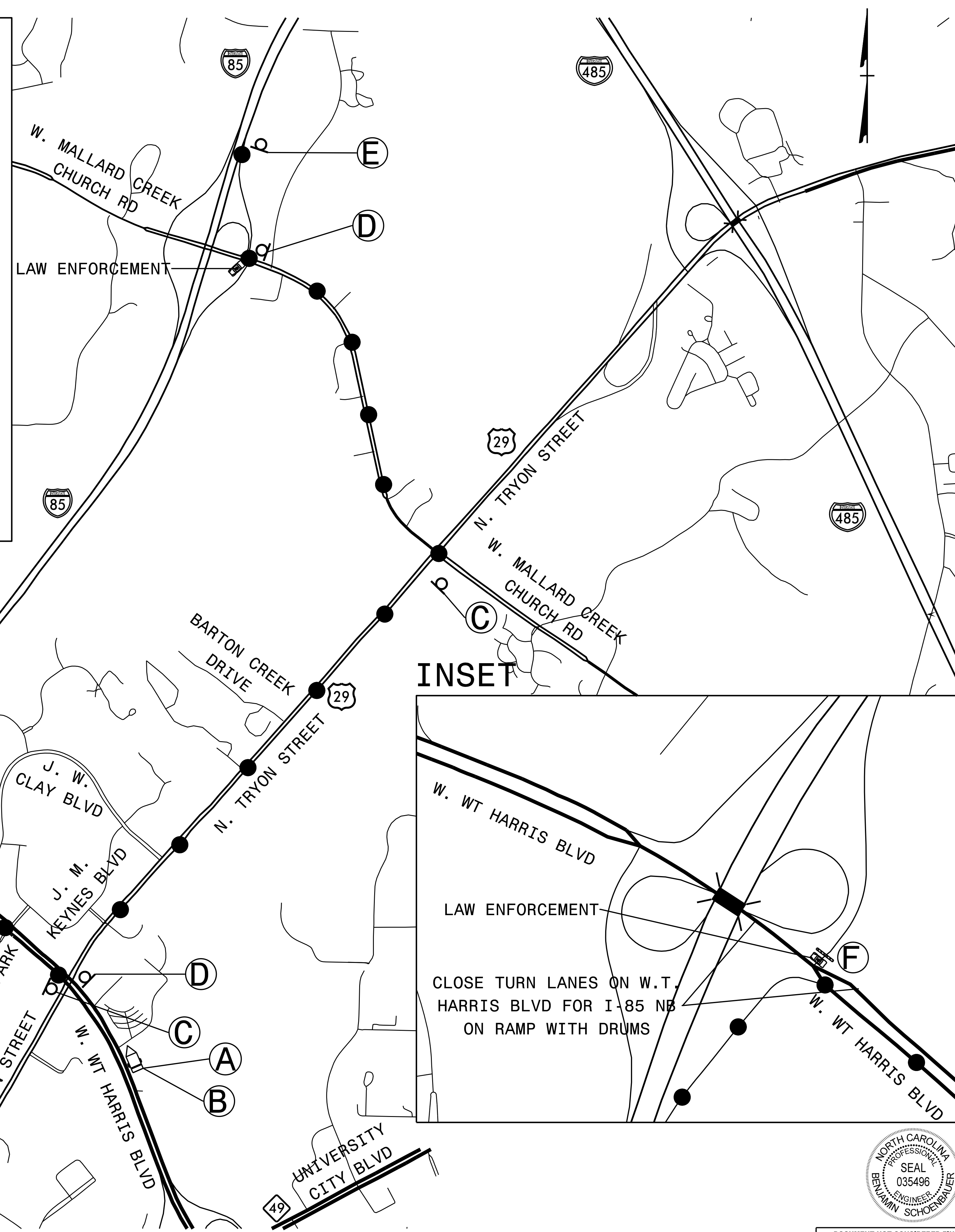
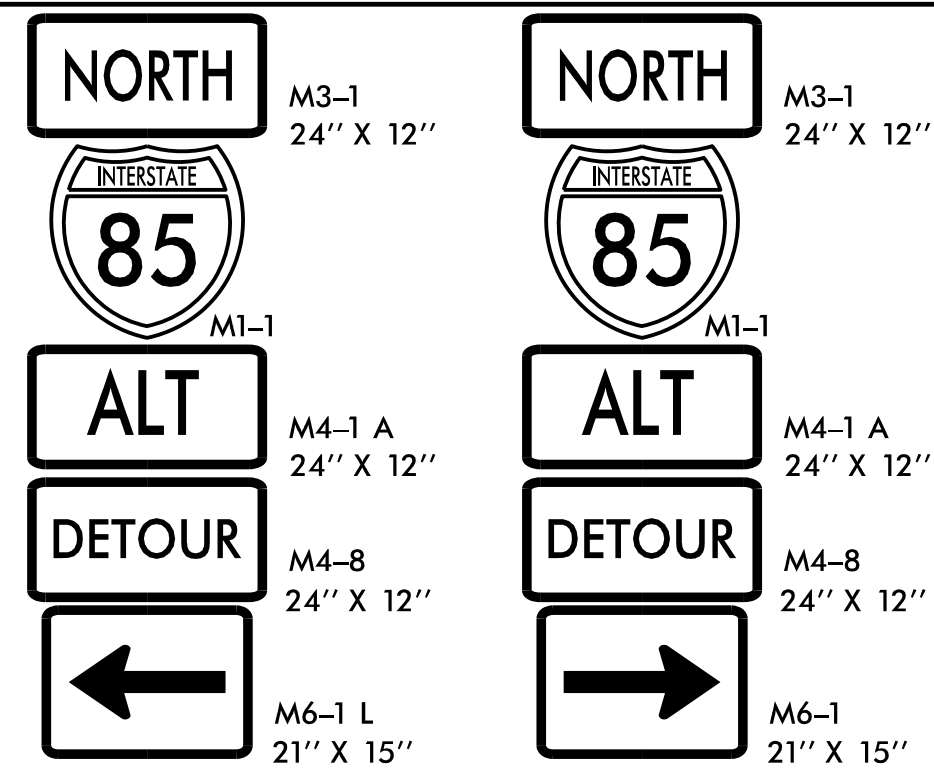
DETOUR

TYPE III BARRICADE

(F)

M4-10R
48" x 18"

NOTE: WHEN DETOUR IS IN OPERATION CMS (A) AND COVER SIGN M4-1 ON SIGNS (C) AND (D). NON DETOUR OPERATIONS USE CMS (B) AND COVER SIGN M4-8 ON SIGNS (C) AND (D).



INSET

W. WT HARRIS BLVD
LAW ENFORCEMENT

CLOSE TURN LANES ON W.T. HARRIS BLVD FOR I-85 NB ON RAMP WITH DRUMS



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NOTE: LAW ENFORCEMENT SHALL BE USED DURING RAMP CLOSURE. LAW ENFORCEMENT IS NOT REQUIRED DURING ALTERNATE ROUTE. LAW ENFORCEMENT SHALL BE PROVIDED AT EACH INTERCHANGE ALONG DETOUR ROUTE. ADDITIONAL LAW ENFORCEMENT MAY BE REQUIRED AT EACH SIGNALIZED INTERSECTION ALONG THE DETOUR ROUTE, AS DIRECTED BY THE ENGINEER.

CHARLOTTE

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BUILDING FOR CHARLOTTE
GENERAL SERVICES

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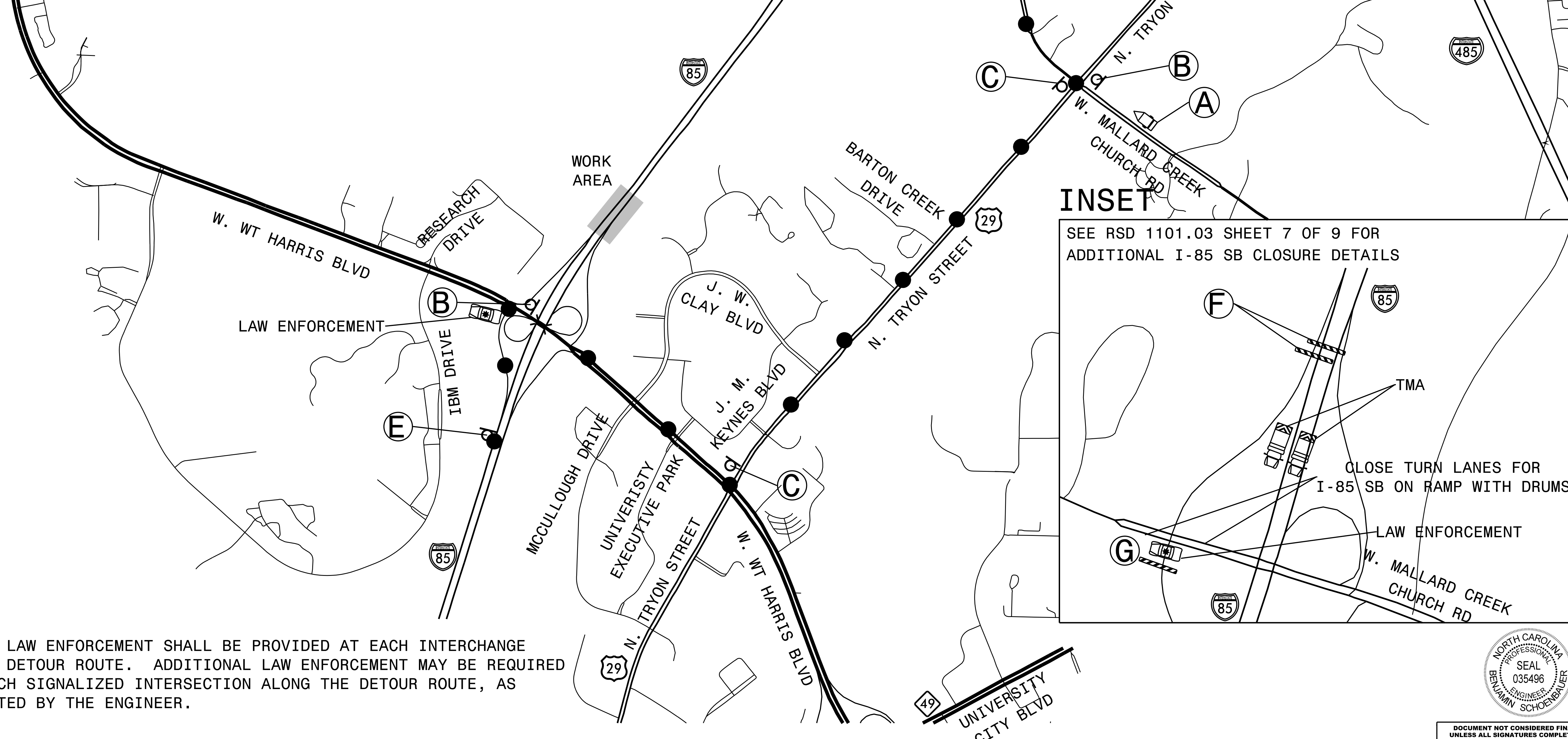
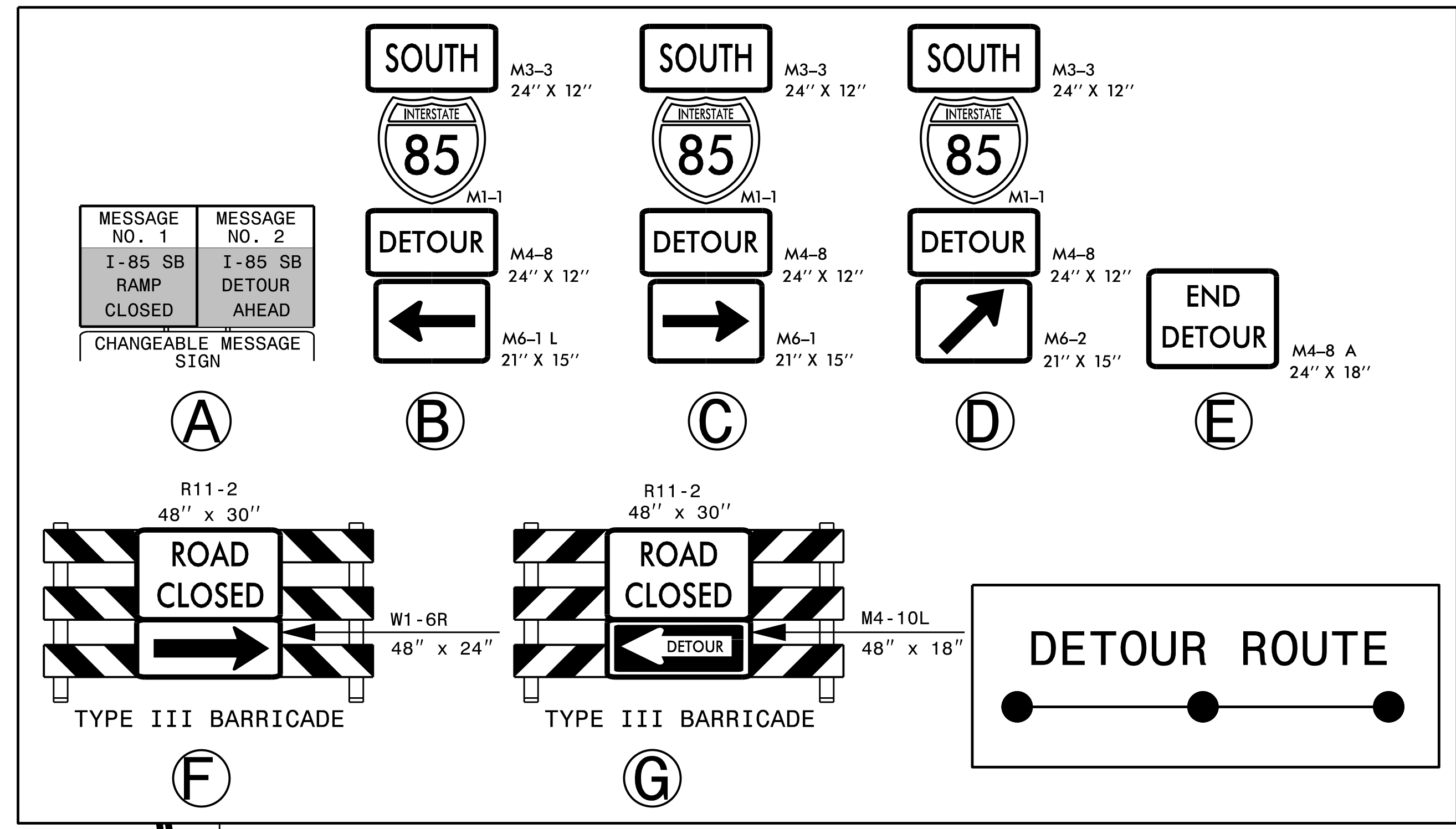
FDR

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NCEES License Number: F-0116

NTS	SCALE	BPS	CHECKED BY	DATE
5/2-15-003	JOB NO.	JWV	PREPARED BY	OCTOBER 2023
		BPS	APPROVED BY	

SHEET	TCP-7	OF	TCP-35

I-85 NORTH BRIDGE
I-85 NORTHBOUND ON RAMP DETOUR



NOTE: LAW ENFORCEMENT SHALL BE PROVIDED AT EACH INTERCHANGE ALONG DETOUR ROUTE. ADDITIONAL LAW ENFORCEMENT MAY BE REQUIRED AT EACH SIGNALIZED INTERSECTION ALONG THE DETOUR ROUTE, AS DIRECTED BY THE ENGINEER.



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NO.	DATE	BY	DESCRIPTION

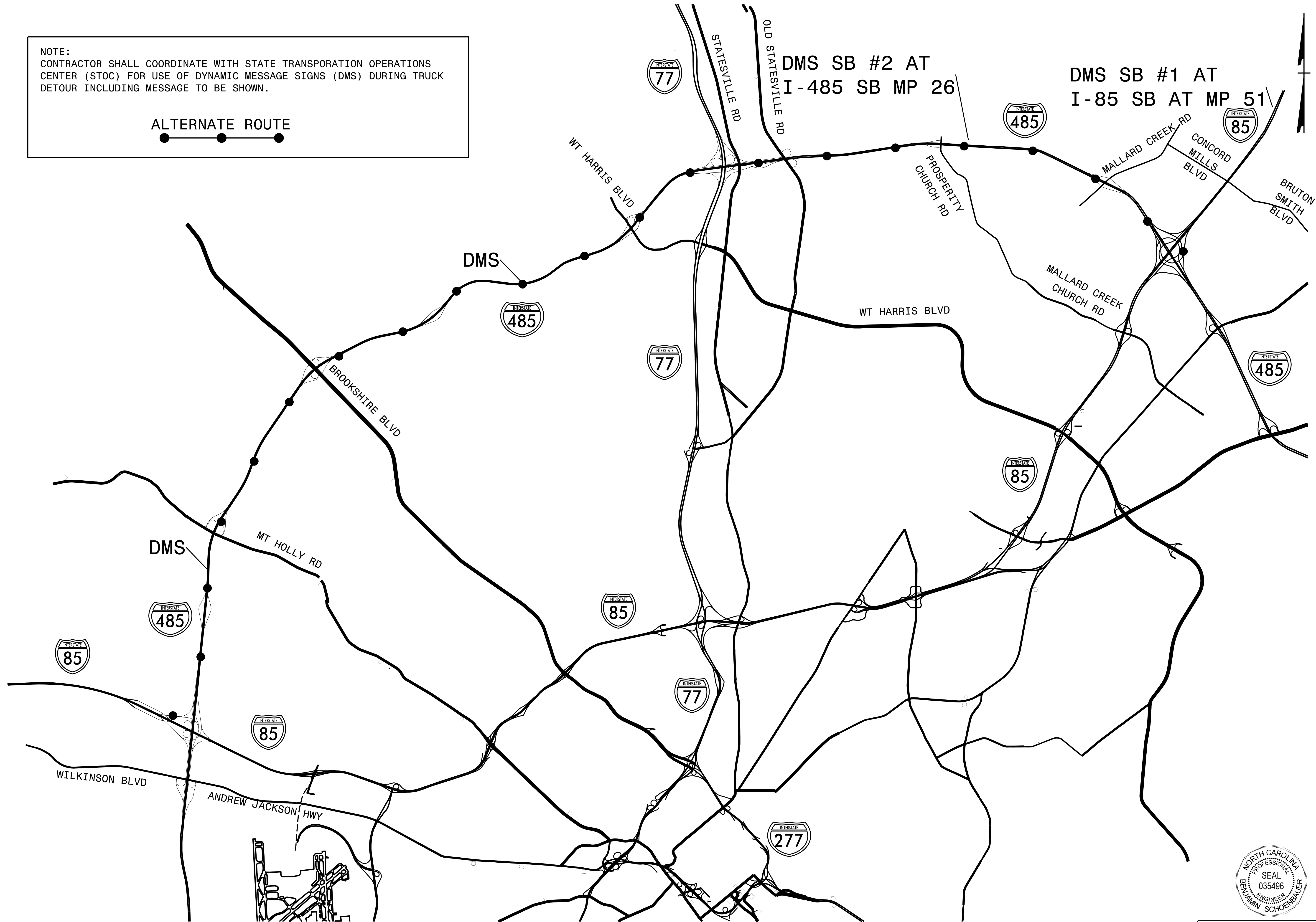
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NTS	SCALE	BPS	CHECKED BY	DATE
5/2-15-003	JOB NO.	JWV	BPS	OCTOBER 2023
PREPARED BY	APPROVED BY			

SHEET
TCP-8
 OF
TCP-35
 I-85 NORTH BRIDGE
 I-85 SOUTHBOUND
 FULL CLOSURE DETOUR

NOTE:
 CONTRACTOR SHALL COORDINATE WITH STATE TRANSPORTATION OPERATIONS CENTER (STOC) FOR USE OF DYNAMIC MESSAGE SIGNS (DMS) DURING TRUCK DETOUR INCLUDING MESSAGE TO BE SHOWN.

ALTERNATE ROUTE



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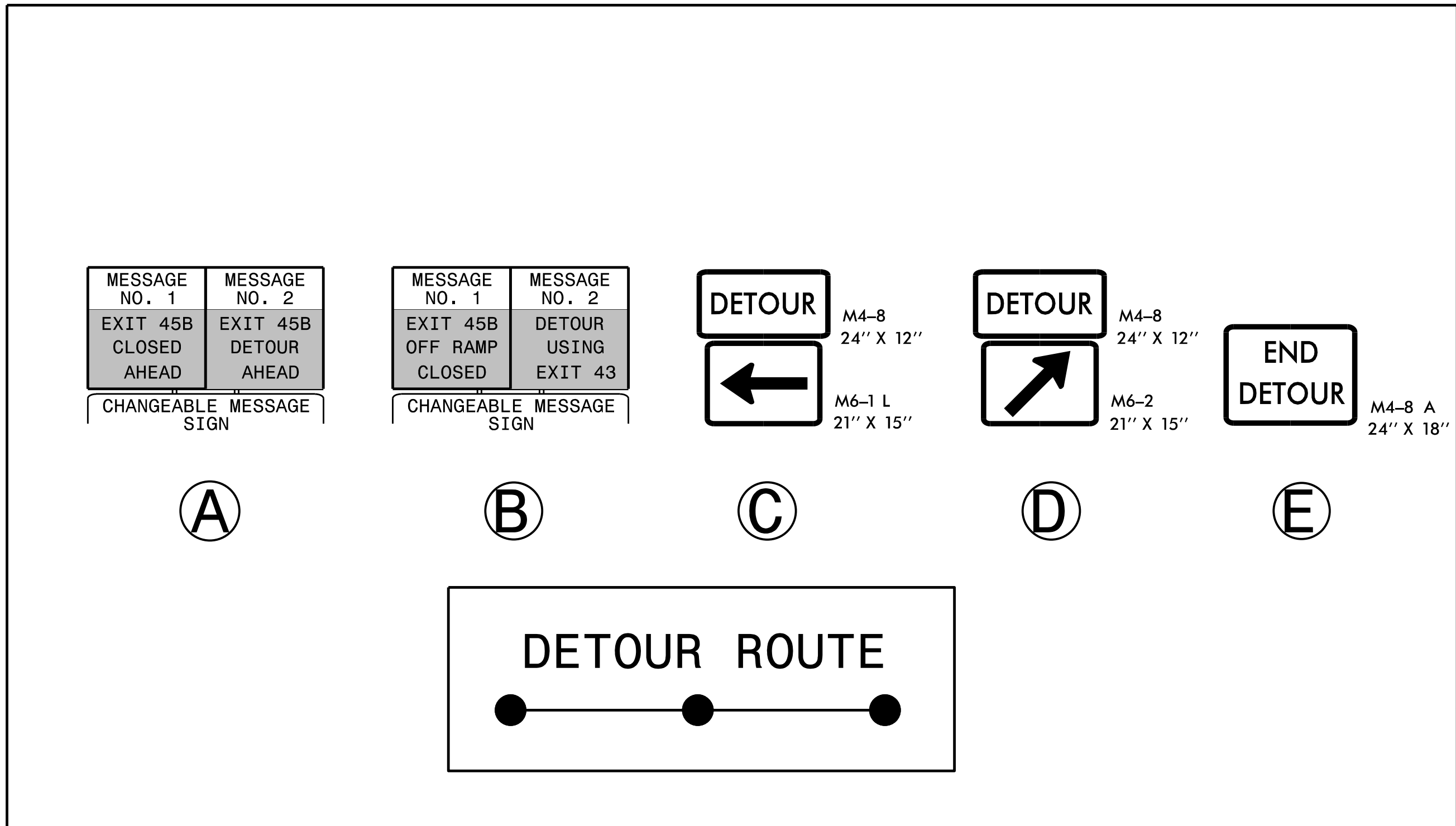
Plans Prepared For:
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 GENERAL SERVICES
 600 East Fourth Street
 Charlotte, North Carolina 28202
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 Fax: (704) 336-6566

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:
FDR
 HDR Engineering, Inc. of the Carolinas
 440 S. Church Street, Suite 1200
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 NCEP License Number: F-0116

512-15-003	NTS	SCALE	BPS	CHECKED BY	OCTOBER 2023	DATE
JWM	PREPARED BY	BPS	APPROVED BY			

SHEET
TCP-9
 OF
TCP-35
I-85 NORTH BRIDGE
I-85 SOUTHBOUND
ALTERNATE DETOUR



NOTE: LAW ENFORCEMENT MAY BE REQUIRED AT EXIT 43 INTERCHANGE, AS DIRECTED BY THE ENGINEER.



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 600 East Fourth Street
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 Fax: (704) 336-4777

BUILDING FOR CHARLOTTE GENERAL SERVICES

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Plans Prepared By:

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 440 S. Church Street, Suite 1200
 Charlotte, NC 28202
 NCEB License Number: F-0116

HDR


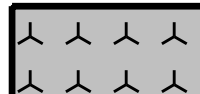
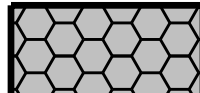

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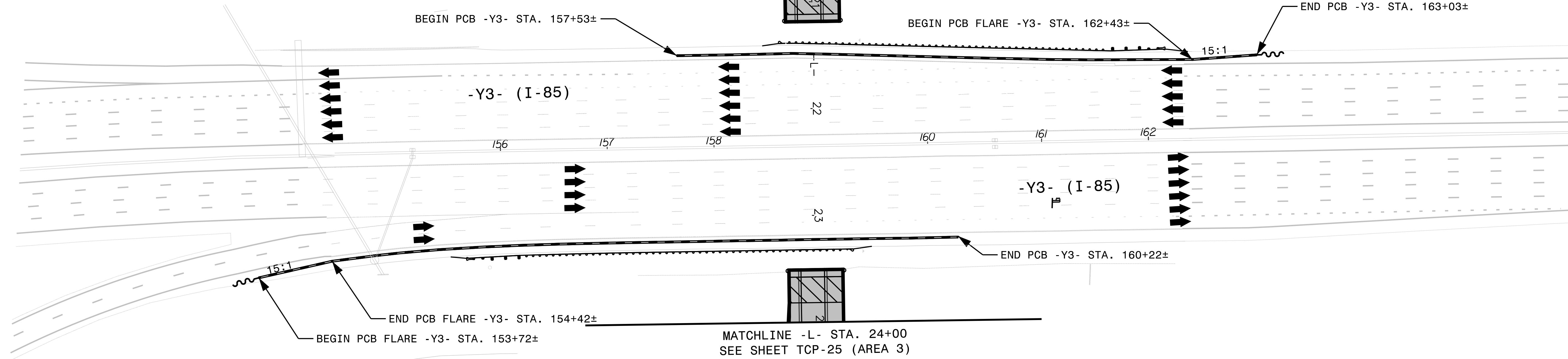
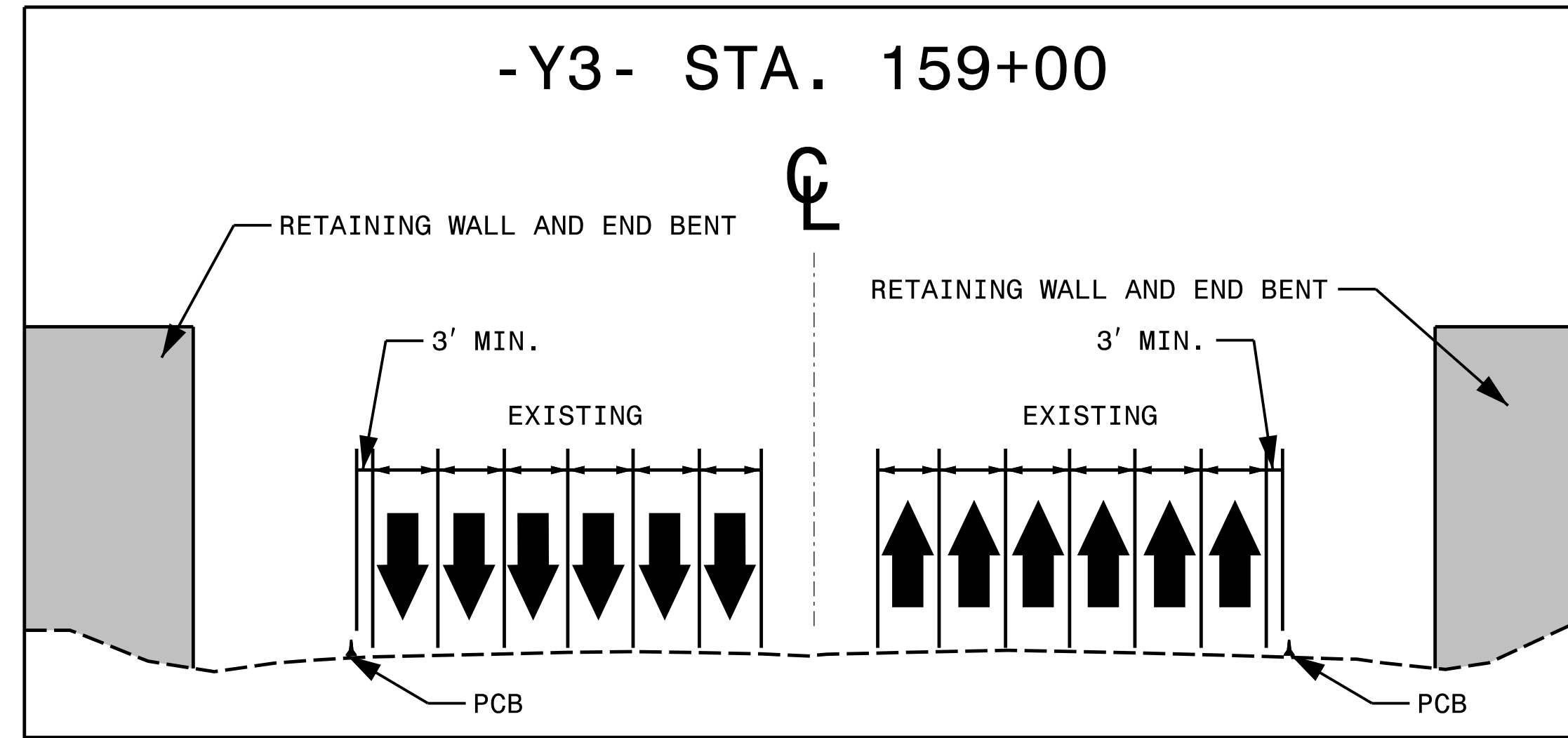
SHEET TCP-10 OF TCP-35

I-85 NORTH BRIDGE
 I-85 SOUTHBOUND OFF RAMP DETOUR

MATCHLINE -L- STA. 17+00
SEE SHEET TCP-16 (AREA 2)

LEGEND

-  CURRENT PHASE
-  ONGOING CONSTRUCTION
-  TEMPORARY PAVEMENT
-  WEDGING



NOTE: CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CITY INSPECTION STAFF, CDOT PERSONNEL, AND NCDOT PERSONNEL AT LEAST THIRTY (30) DAYS IN ADVANCE OF ANY PLANNED TRAFFIC SHIFT IN NCDOT RIGHT OF WAY

NOTE: CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING EXISTING PAVEMENT MARKINGS AND MARKERS LOCATIONS IMPACTED BY TRAFFIC CONTROL OPERATIONS.



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BUILDING FOR CHARLOTTE
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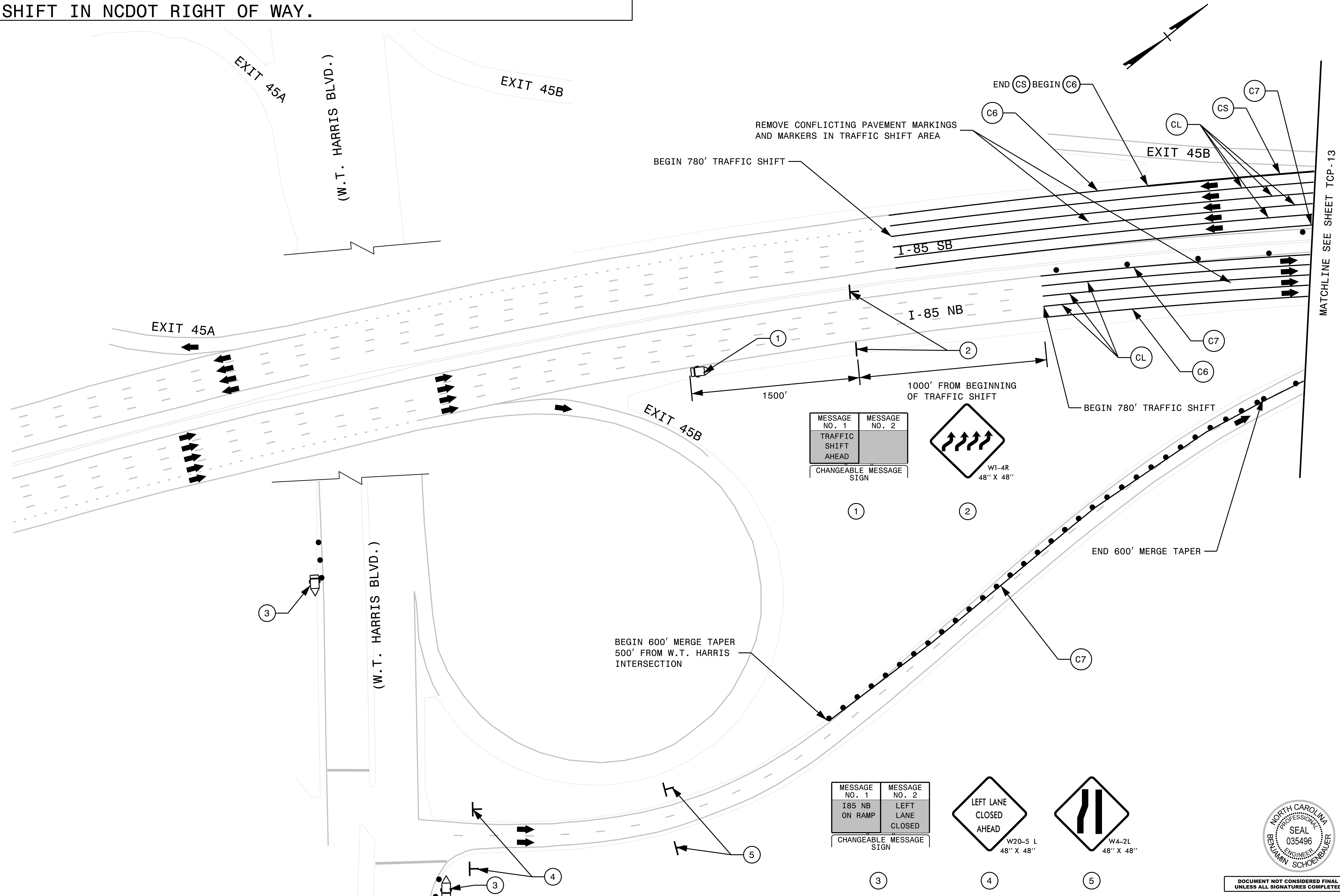
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JWW	SCALE	CHECKED BY	DATE
BPS	PREPARED BY	BPS	APPROVED BY

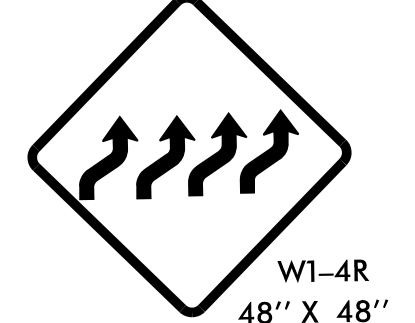
SHEET TCP-11 OF TCP-27

I-85 NORTH BRIDGE
AREA 1
PHASE 1

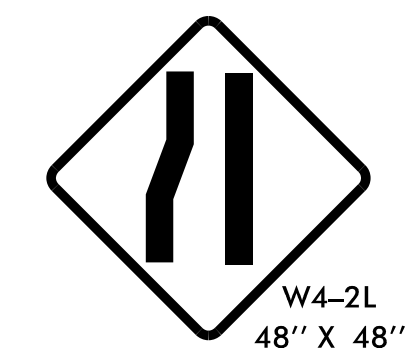
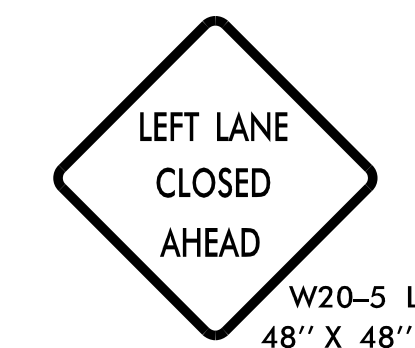
NOTES: CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CITY INSPECTION STAFF, CDOT PERSONNEL, AND NCDOT PERSONNEL AT LEAST THIRTY (30) DAYS IN ADVANCE OF ANY PLANNED TRAFFIC SHIFT IN NCDOT RIGHT OF WAY.



MESSAGE NO. 1	MESSAGE NO. 2
TRAFFIC SHIFT AHEAD	
CHANGEABLE MESSAGE SIGN	



MESSAGE NO. 1	MESSAGE NO. 2
I85 NB ON RAMP	LEFT LANE CLOSED
CHANGEABLE MESSAGE SIGN	



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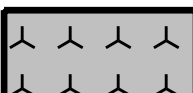
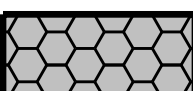
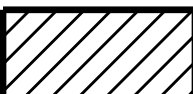
Plans Prepared By:
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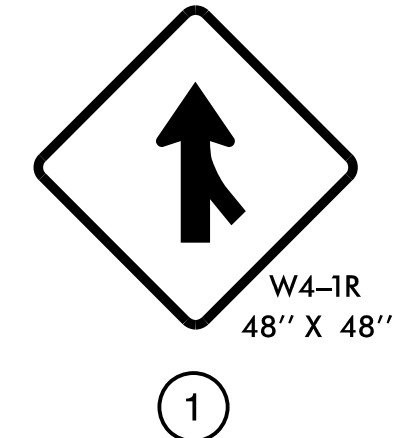
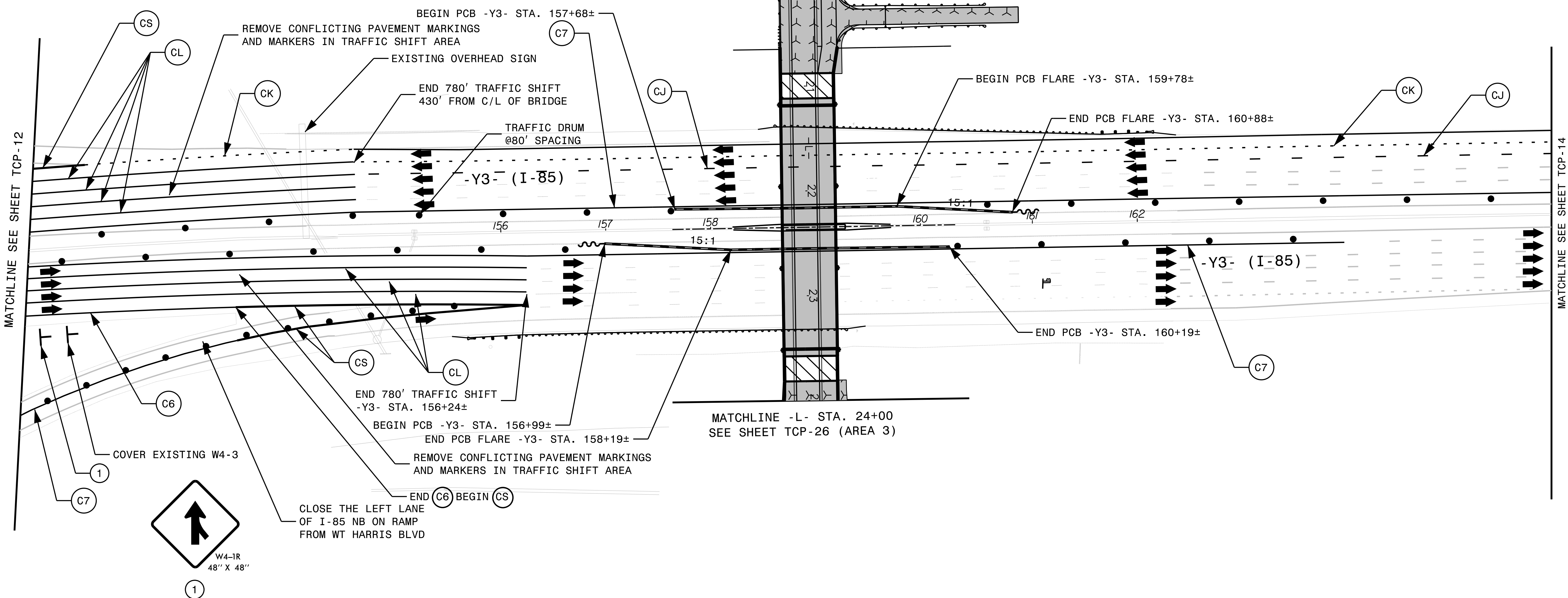
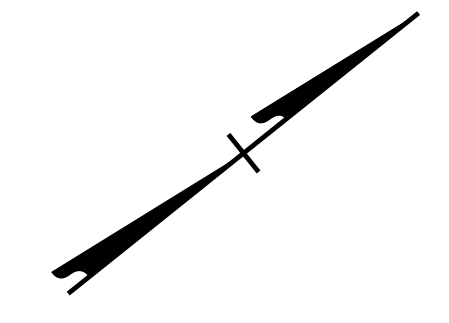
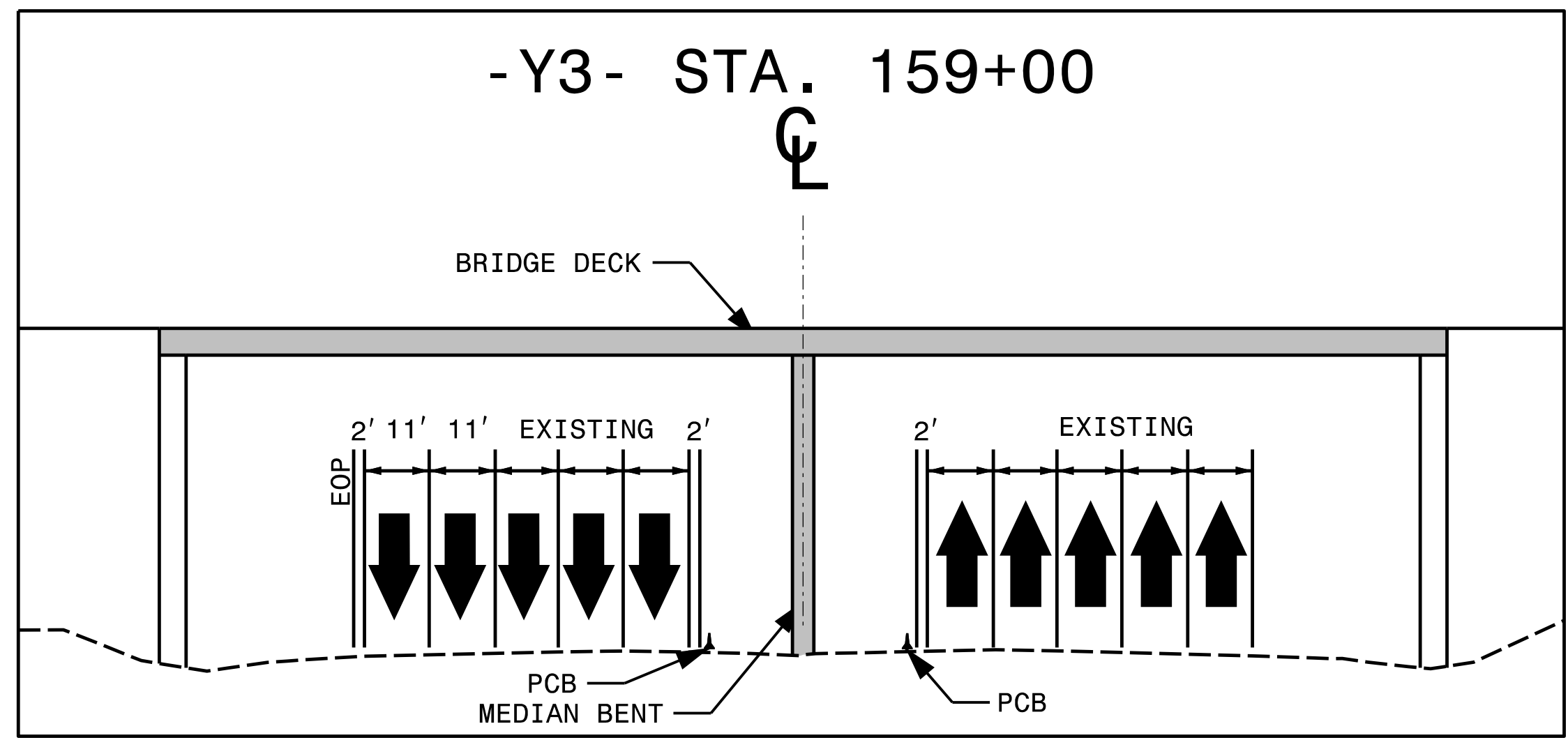
512-15-003	1" = 50'
JOB NO.	SCALE
JWW	BPS
PREPARED BY	CHECKED BY
BPS	OCTOBER 2023
APPROVED BY	DATE

SHEET TCP-12 OF TCP-35
I-85 NORTH BRIDGE
AREA 1
PHASE 2

MATCHLINE -L- STA. 17+00
SEE SHEET TCP-18 (AREA 2)

LEGEND

	CURRENT PHASE
	ONGOING CONSTRUCTION
	TEMPORARY PAVEMENT
	WEDGING



NOTE: CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CITY INSPECTION STAFF, CDOT PERSONNEL, AND NCDOT PERSONNEL AT LEAST THIRTY (30) DAYS IN ADVANCE OF ANY PLANNED TRAFFIC SHIFT IN NCDOT RIGHT OF WAY



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BUILDING FOR CHARLOTTE
GENERAL SERVICES

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NO.	DATE	BY	DESCRIPTION

Plans Prepared By:
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1" = 50'	SCALE	BPS	CHECKED BY	OCTOBER 2023	DATE
512-15-003	JOB NO.	JWW	PREPARED BY	BPS	APPROVED BY

SHEET
TCP-13
OF
TCP-27

I-85 NORTH BRIDGE
AREA 1
PHASE 2

NO.	DATE	BY	DESCRIPTION

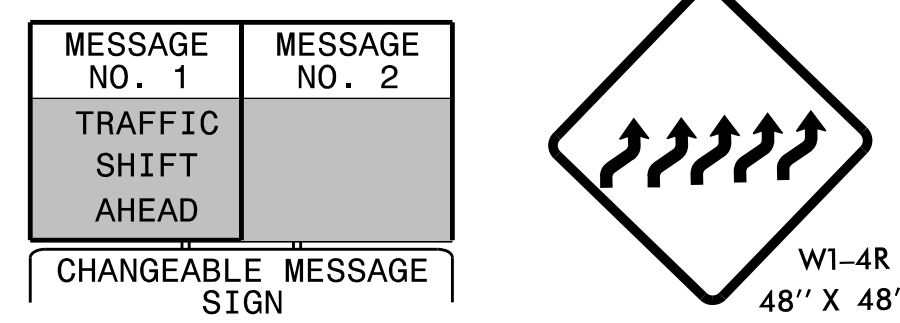
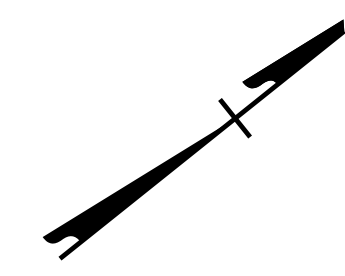
Plans Prepared By:

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Charlotte, NC 28202
NCEES License Number: F-0116

512-15-003	1" = 50'
JWW	BPS
PREPARED BY	CHECKED BY
BPS	OCTOBER 2023
APPROVED BY	DATE

SHEET
TCP-14
OF
TCP-35

1-85 NORTH BRIDGE
AREA 1
PHASE 2



①

②

①

②

REMOVE CONFLICTING PAVEMENT MARKINGS AND MARKERS IN TRAFFIC SHIFT AREA

END 780' TRAFFIC SHIFT

BEGIN 780' TRAFFIC SHIFT
745' FROM C/L OF BRIDGE

⑦

⑥

CL

1000'

1500'


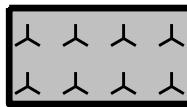
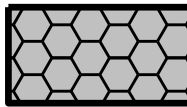
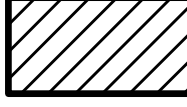
MATCHLINE SEE SHEET TCP-13

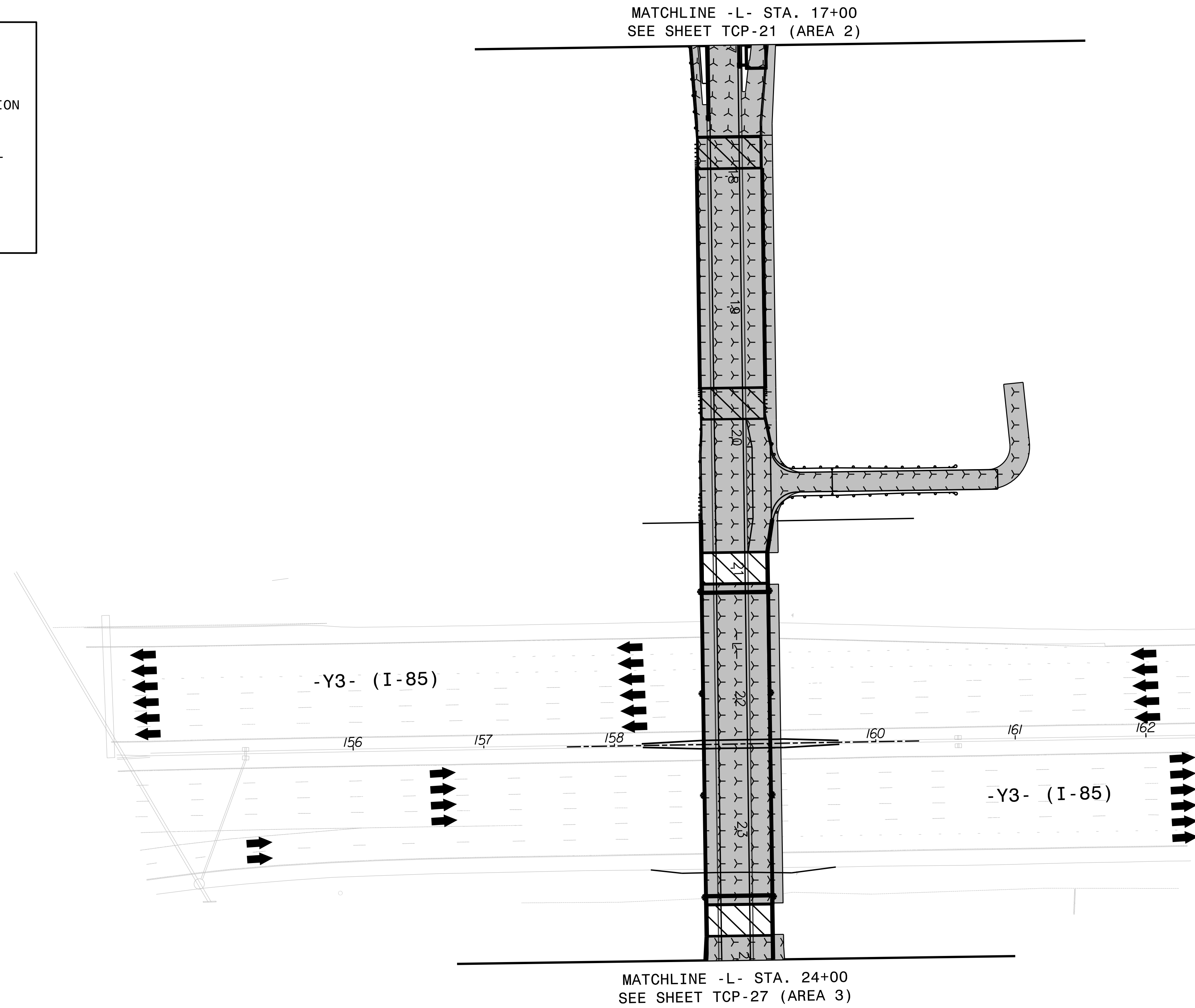
NOTE: CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CITY INSPECTION STAFF, CDOT PERSONNEL, AND NCDOT PERSONNEL AT LEAST THIRTY (30) DAYS IN ADVANCE OF ANY PLANNED TRAFFIC SHIFT IN NCDOT RIGHT OF WAY



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

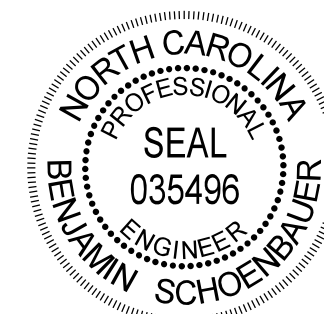
LEGEND

	CURRENT PHASE
	ONGOING CONSTRUCTION
	TEMPORARY PAVEMENT
	WEDGING



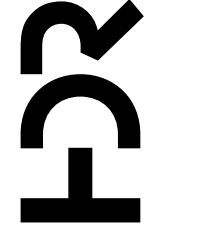


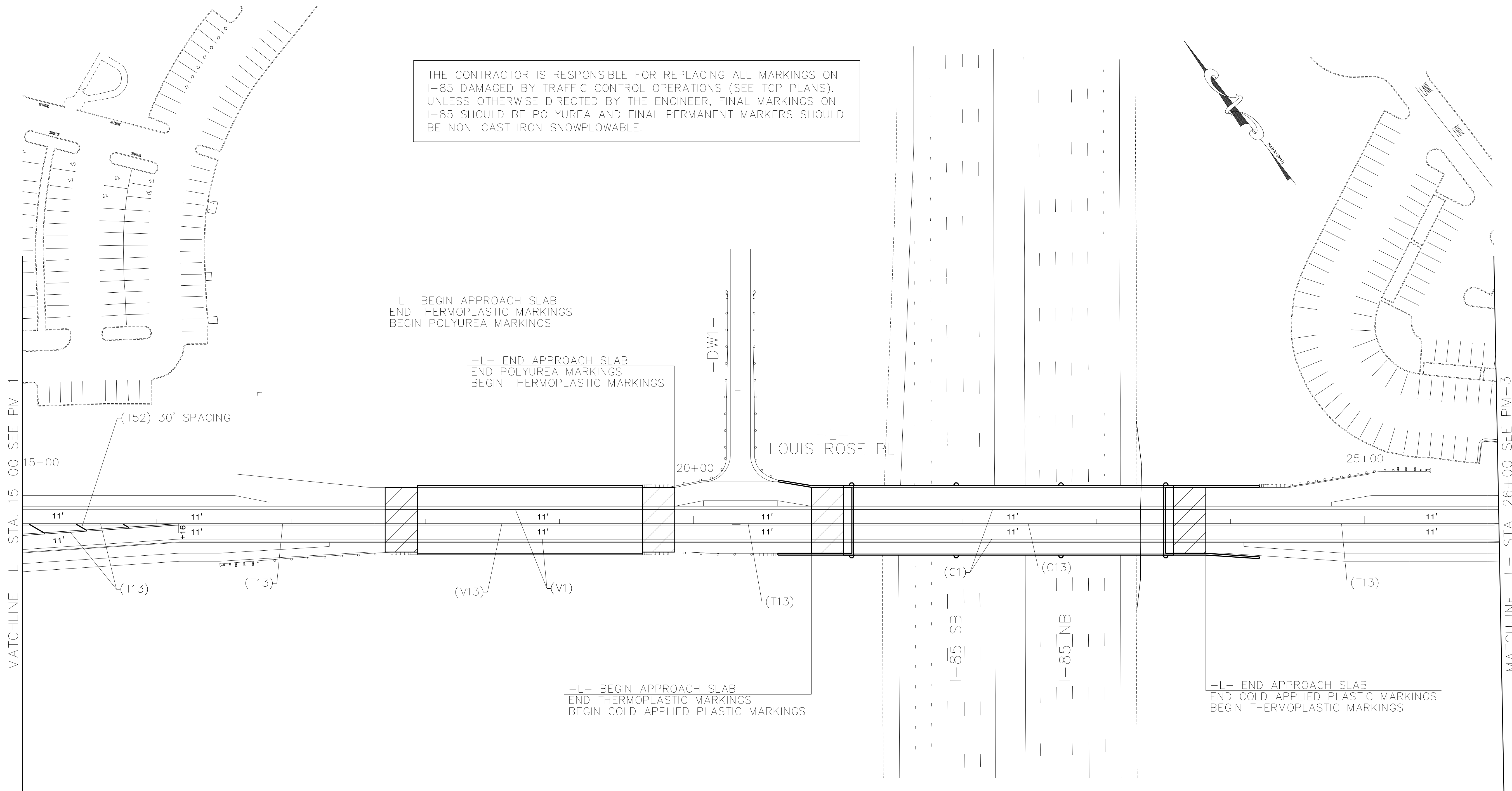
NOTE: CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CITY INSPECTION STAFF, CDOT PERSONNEL, AND NCDOT PERSONNEL AT LEAST THIRTY (30) DAYS IN ADVANCE OF ANY PLANNED TRAFFIC SHIFT IN NCDOT RIGHT OF WAY

NOTE: CONTRACTOR IS RESPONSIBLE REPLACING EXISTING PAVEMENT MARKINGS AND MARKERS IMPACTED BY TRAFFIC CONTROL OPERATIONS. SEE FINAL PAVEMENT MARKING PLANS FOR ADDITIONAL DETAILS.



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 CHARLOTTE			
Plans Prepared For:  <small>600 East Fourth Street Charlotte, North Carolina 28202 Phone: (704) 336-2291 Fax: (704) 336-6566</small>			
NO.	DATE	BY	DESCRIPTION
Plans Prepared By: <small>HDR Engineering, Inc. of the Carolinas 440 S. Church Street, Suite 1200 Raleigh, NC 27602 NCEES License Number: F-0116</small>			
512-15-003	JOB NO.	PREPARED BY	DATE
1" = 50'	SCALE	CHECKED BY	DATE
JWW	PREPARED BY	BPS	APPROVED BY
OCTOBER 2023			
DATE			
I-85 NORTH BRIDGE			
AREA 1			
PHASE 3			
SHEET	TCP-15	OF	TCP-35



THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ALL MARKINGS ON I-85 DAMAGED BY TRAFFIC CONTROL OPERATIONS (SEE TCP PLANS). UNLESS OTHERWISE DIRECTED BY THE ENGINEER, FINAL MARKINGS ON I-85 SHOULD BE POLYUREA AND FINAL PERMANENT MARKERS SHOULD BE NON-CAST IRON SNOWPLOWABLE.

-L- BEGIN APPROACH SLAB
END THERMOPLASTIC MARKINGS
BEGIN POLYUREA MARKINGS

-L- END APPROACH SLAB
END POLYUREA MARKINGS
BEGIN THERMOPLASTIC MARKINGS

-L- BEGIN APPROACH SLAB
END THERMOPLASTIC MARKINGS
BEGIN COLD APPLIED PLASTIC MARKINGS

-L- END APPROACH SLAB
END COLD APPLIED PLASTIC MARKINGS
BEGIN THERMOPLASTIC MARKINGS

PAVEMENT MARKING SCHEDULE

<u>THERMOPLASTIC (4", 120 MILS)</u>		<u>COLD APPLIED PLASTIC (4")</u>	
T13	4" YELLOW DOUBLE CENTER	C1	4" WHITE EDGELINE
		C13	4" YELLOW DOUBLE CENTER
<u>POLYUREA (4")</u>		<u>THERMOPLASTIC (12", 90 MILS)</u>	
V1	4" WHITE EDGELINE	T52	12" YELLOW DIAGONALS
V13	4" YELLOW DOUBLE CENTER	<u>RAISED PAVEMENT MARKERS</u>	
		MA	PERMANENT RAISED MARKER (YELLOW/YELLOW) (INSTALL PER NCDOT RSD 1250.01)

NOTES:
1. THE FOLLOWING ARE APPLICABLE TO THIS PROJECT AND, BY REFERENCE HEREBY, ARE CONSIDERED A PART OF THESE PLANS:
CDOT 2017 PAVEMENT MARKING DESIGN GUIDELINES



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UNLESS ALL SIGNATURES COMPLETED

NO.	DATE	BY	DESCRIPTION

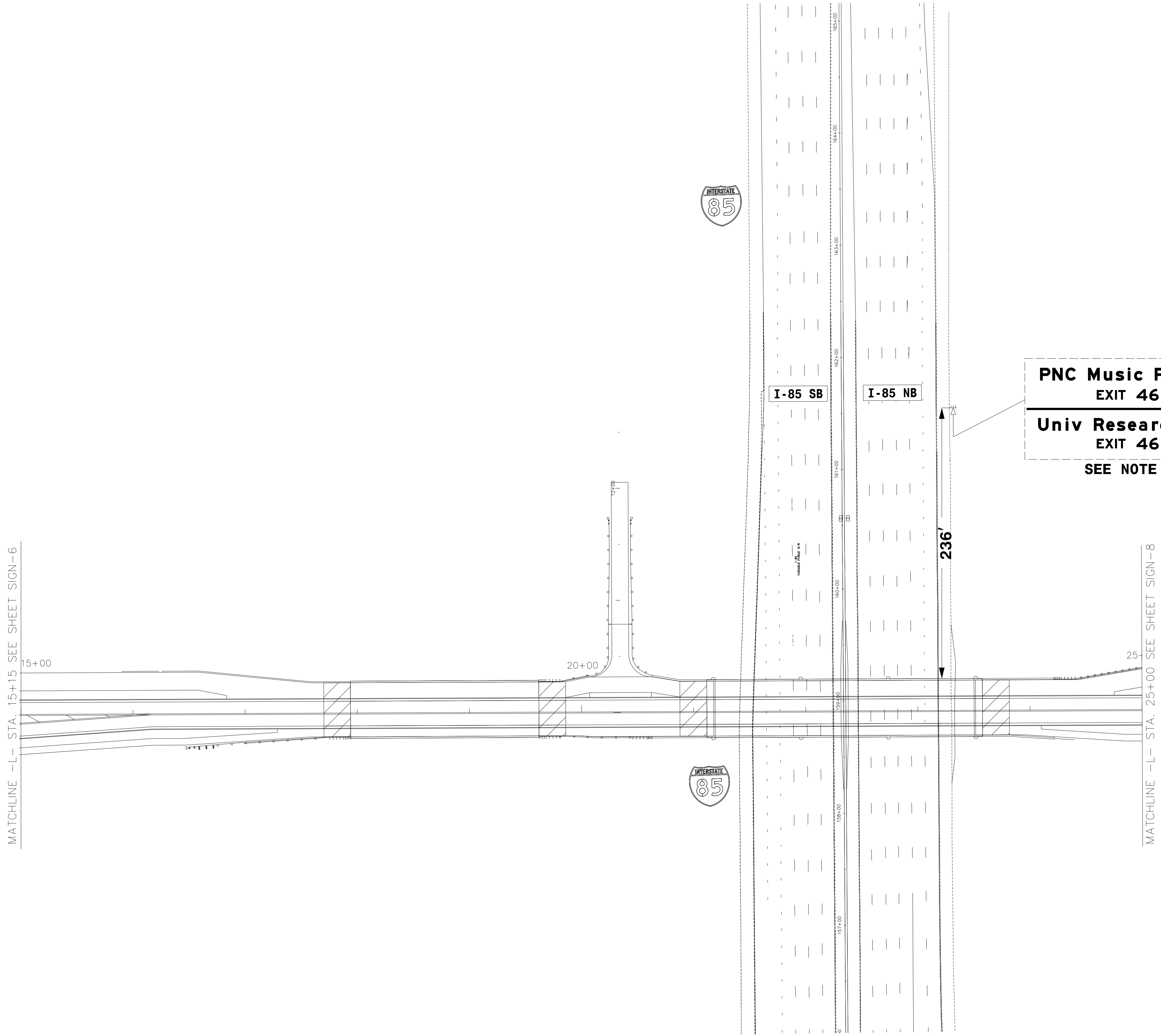
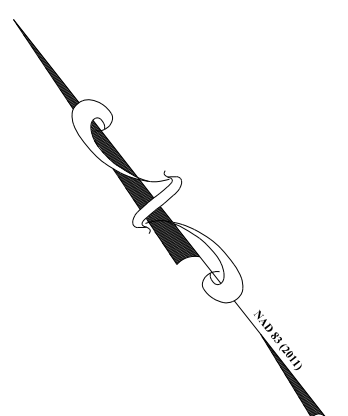
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Charlotte, NC 28202
NCEES License Number: F-0116

1" = 40' SCALE	FWK CHECKED BY	OCTOBER 2023 DATE
512-15-003 JOB NO.	CCH PREPARED BY	M/W APPROVED BY

I-85 NORTH BRIDGE

PAVEMENT MARKING PLANS

SHEET
PM-2
OF
PM-5



**PNC Music Pavilion
EXIT 46 A**
**Univ Research Park
EXIT 46 B**
SEE NOTE 1.

PROJECT NOTES

- 1 SIGN REMAIN IN PLACE



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UNLESS ALL SIGNATURES COMPLETED

SHEET SIGN - 7	OF SIGN - 10	I-85 NORTH BRIDGE		SIGNING PLANS	
		512-15-003 JOB NO.	K/H PREPARED BY	RK APPROVED BY	OCTOBER 2023 DATE
1" = 50' SCALE		Plans Prepared By: FDR <small>FDR Engineering, Inc. of the Carolinas 440 S. Church Street, Suite 1200 Charlotte, NC 28202 NCEES License Number: F-0116</small>			
NO. DATE BY DESCRIPTION		Plans Prepared For: BUILDING FOR CHARLOTTE <small>600 East Fourth Street Charlotte, North Carolina 28202 Phone: (704) 336-2291 Fax: (704) 336-6566</small>			
		CHARLOTTE			

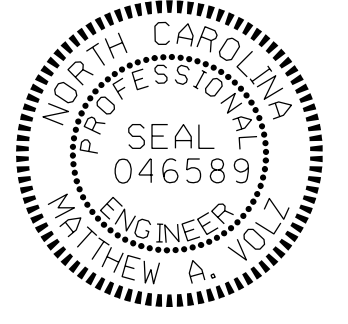
- 1 INSTALL 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
- 2 INSTALL 4-WIRE COPPER FEEDER CONDUCTORS
- 3 INSTALL 3-WIRE COPPER FEEDER CONDUCTORS
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH OR PLOW
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO NEW POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 INSTALL ETHERNET EDGE SWITCH IN CABINET
- 27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPLICE ENCLOSURE AND STORE 100 FEET OF COMMUNICATIONS CABLE
- 30 MODIFY EXISTING SPLICE ENCLOSURE
- 31 INSTALL POLE MOUNTED SPLICE CABINET
- 32 INSTALL BASE MOUNTED SPLICE CABINET
- 33 REMOVE EXISTING SPLICE CABINET

- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 INSTALL SPECIAL OVERSIZED JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 INSTALL 6" x 6" WOOD PEDESTAL
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
- 49 REMOVE EXISTING MESSENGER CABLE
- 50 INSTALL DIGITAL VIDEO ENCODER
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 20 FEET OF COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL PEDESTAL TYPE SIGN STRUCTURE FOUNDATION AND DMS ASSEMBLY
- 60 INSTALL DISCONNECT ON CCTV POLE OR DMS STRUCTURE
- 61 INTERCEPT EXISTING CONDUIT

PROPOSED	LEGEND	EXISTING
	OVERHEAD FIBER OPTIC CABLE	
	CONDUIT (TRENCH, PLOW, OR BRIDGE MOUNT)	
	DIRECTIONAL DRILLED CONDUIT	NA
	WOOD POLE	
	METAL POLE	
	STANDARD GUY ASSEMBLY	
	JUNCTION BOX	
	CONTROLLER AND CABINET	
	SPLICE ENCLOSURE	
	SPLICE CABINET	
	CCTV CAMERA ASSEMBLY	
	DMS SIGN ASSEMBLY	NA
	ELECTRICAL SERVICE	
	CCTV CAMERA / DMS NUMBER	

CONSTRUCTION NOTE SYMBOLOGY KEY

- INDICATES NUMBER OF CABLES, LOOPS, ETC.
 - INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
 - INDICATES NUMBER OF RISER(S) / CONDUIT(S)
 - INDICATES DIAMETER OF RISER(S) / CONDUIT(S) (INCH)
-
-



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CHARLOTTE

Plans Prepared For:

600 East Fourth Street
Charlotte, North Carolina 28202
Phone: (704) 336-2291
Fax: (704) 336-6866

BUILDING
FOR CHARLOTTE
GENERAL SERVICES

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:

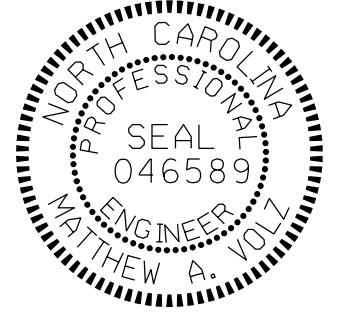
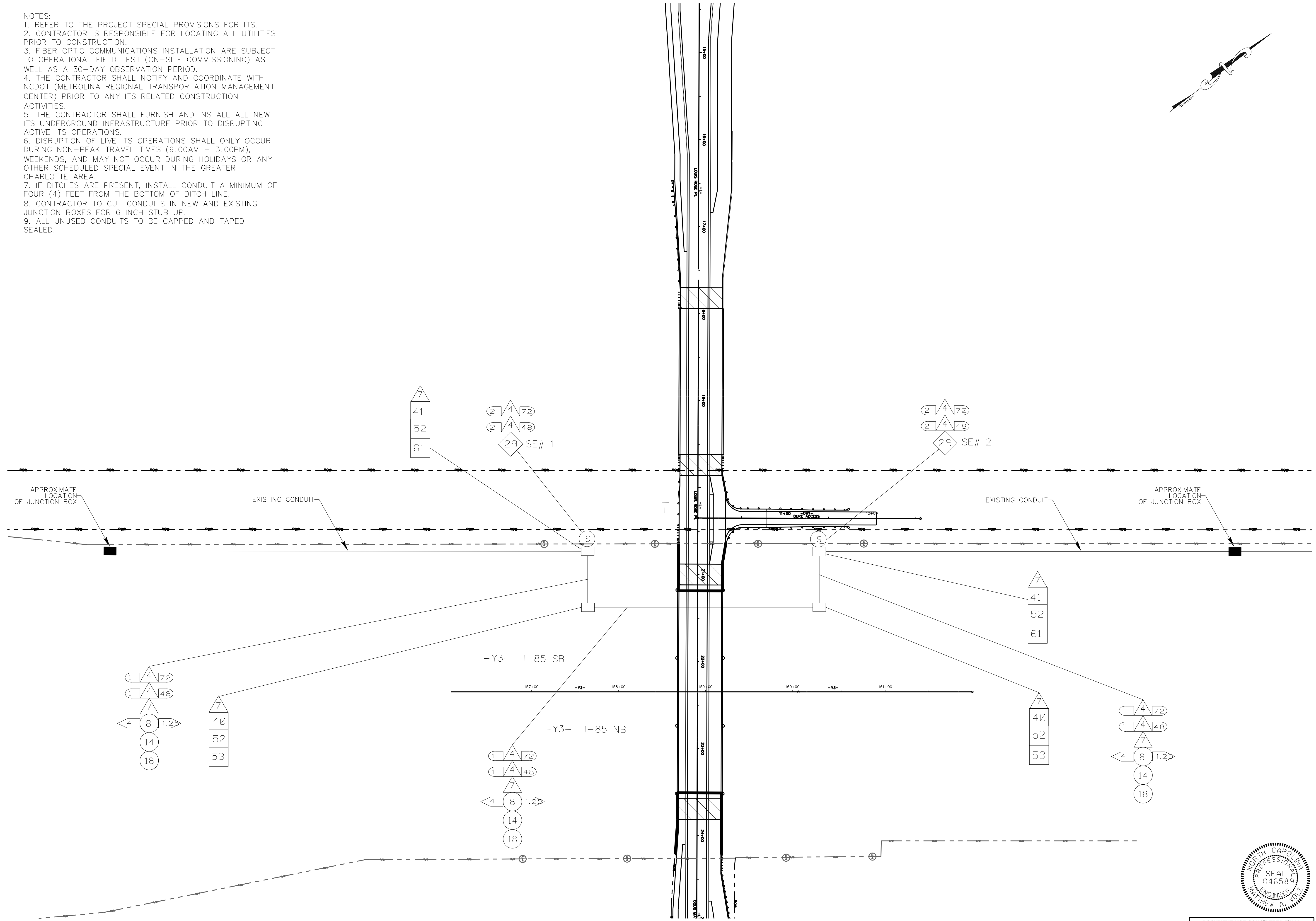
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Charlotte, NC 28202
NCEES License Number: F-0116

HDR

N/A	SCALE	MAY	CHECKED BY
512-15-003	JOB NO.	BLA	PREPARED BY
		MAY	APPROVED BY
			OCTOBER 2023
			DATE

I-85 NORTH BRIDGE	ITS LEGEND
SHEET ITS-1	OF ITS-3

- NOTES:
1. REFER TO THE PROJECT SPECIAL PROVISIONS FOR ITS.
 2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION.
 3. FIBER OPTIC COMMUNICATIONS INSTALLATION ARE SUBJECT TO OPERATIONAL FIELD TEST (ON-SITE COMMISSIONING) AS WELL AS A 30-DAY OBSERVATION PERIOD.
 4. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH NCDOT (METROLINA REGIONAL TRANSPORTATION MANAGEMENT CENTER) PRIOR TO ANY ITS RELATED CONSTRUCTION ACTIVITIES.
 5. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW ITS UNDERGROUND INFRASTRUCTURE PRIOR TO DISRUPTING ACTIVE ITS OPERATIONS.
 6. DISRUPTION OF LIVE ITS OPERATIONS SHALL ONLY OCCUR DURING NON-PEAK TRAVEL TIMES (9:00AM - 3:00PM), WEEKENDS, AND MAY NOT OCCUR DURING HOLIDAYS OR ANY OTHER SCHEDULED SPECIAL EVENT IN THE GREATER CHARLOTTE AREA.
 7. IF DITCHES ARE PRESENT, INSTALL CONDUIT A MINIMUM OF FOUR (4) FEET FROM THE BOTTOM OF DITCH LINE.
 8. CONTRACTOR TO CUT CONDUITS IN NEW AND EXISTING JUNCTION BOXES FOR 6 INCH STUB UP.
 9. ALL UNUSED CONDUITS TO BE CAPPED AND TAPED SEALED.



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BUILDING FOR CHARLOTTE
GENERAL SERVICES

600 East Fourth Street
Charlotte, North Carolina 28202
Phone: (704) 336-2291
Fax: (704) 336-6566

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Charlotte, NC 28202
NCEES License Number: F-0116

HDR

1" = 50'	SCALE	MAV	CHECKED BY	OCTOBER 2023	DATE
512-15-003	JOB NO.	BLA	PREPARED BY	MAV	APPROVED BY

SHEET
ITS-2
OF
ITS-3

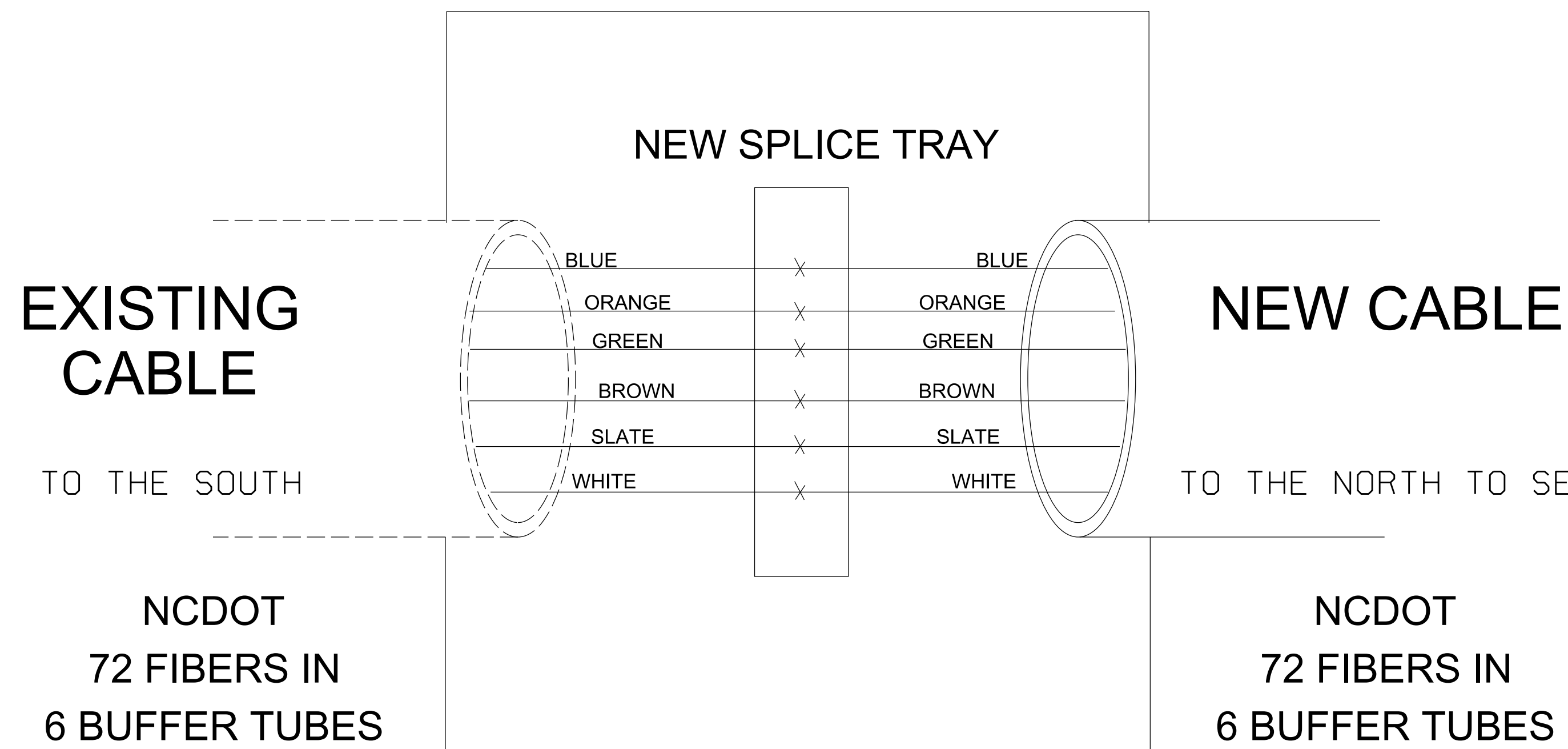
I-85 NORTH BRIDGE

FIBER LAYOUT

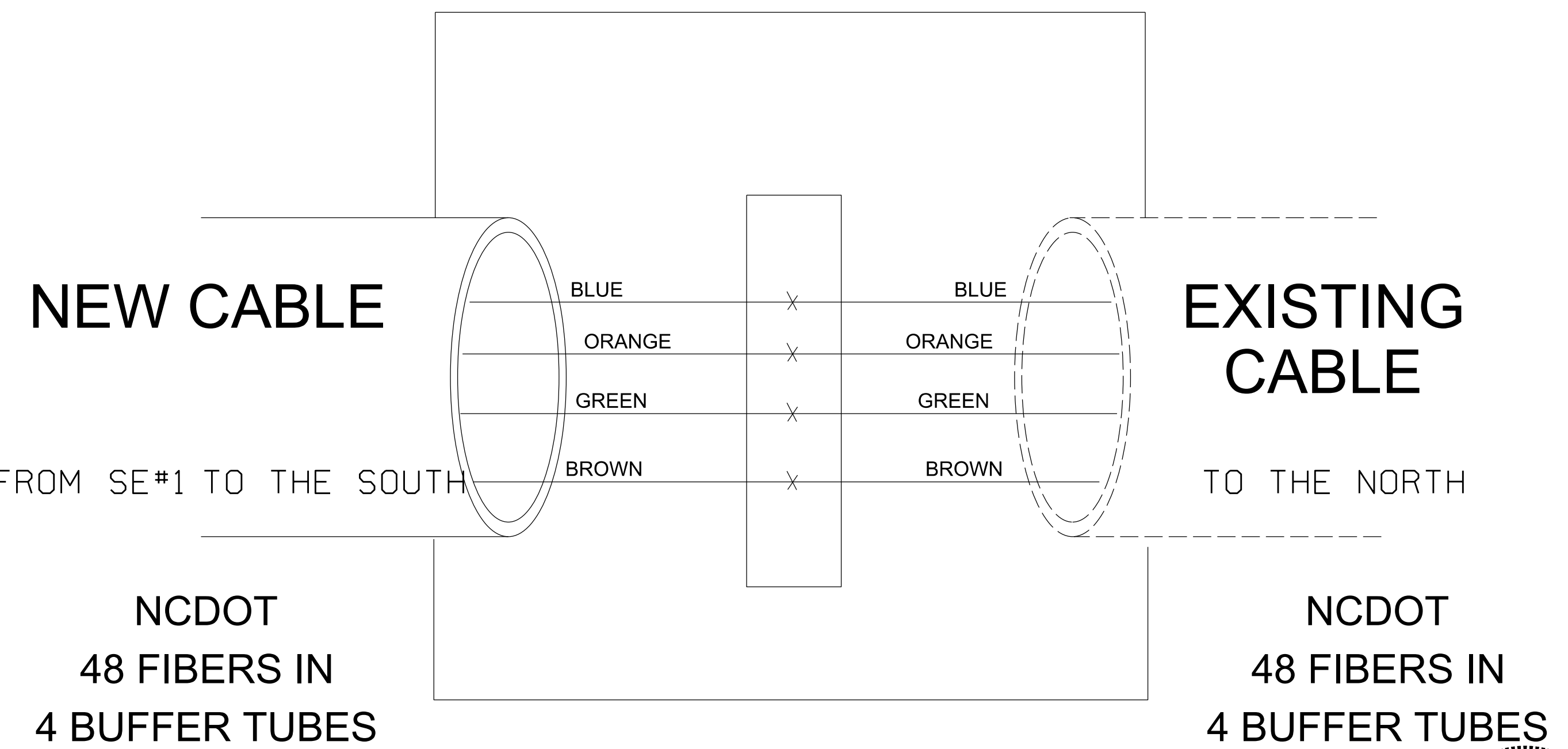
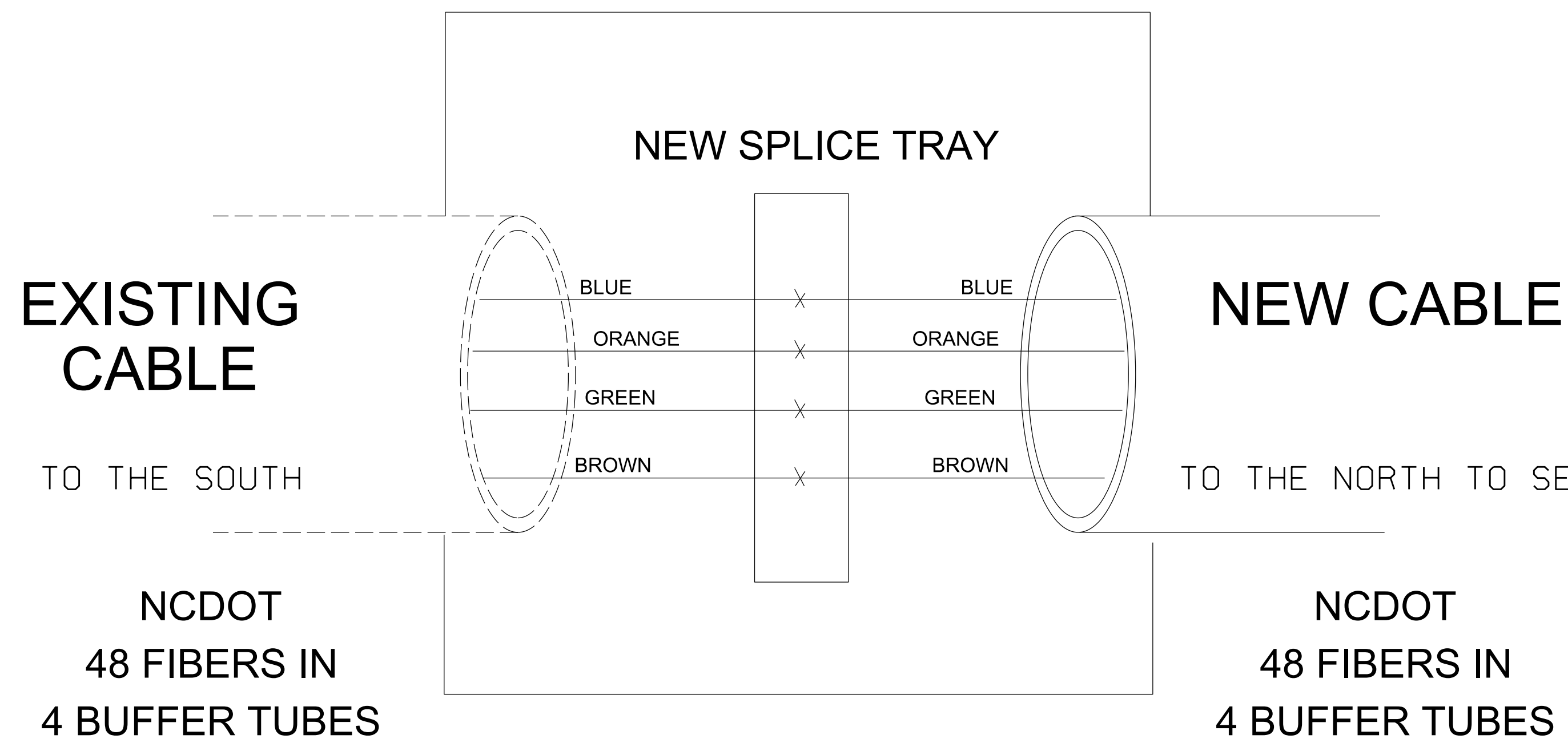
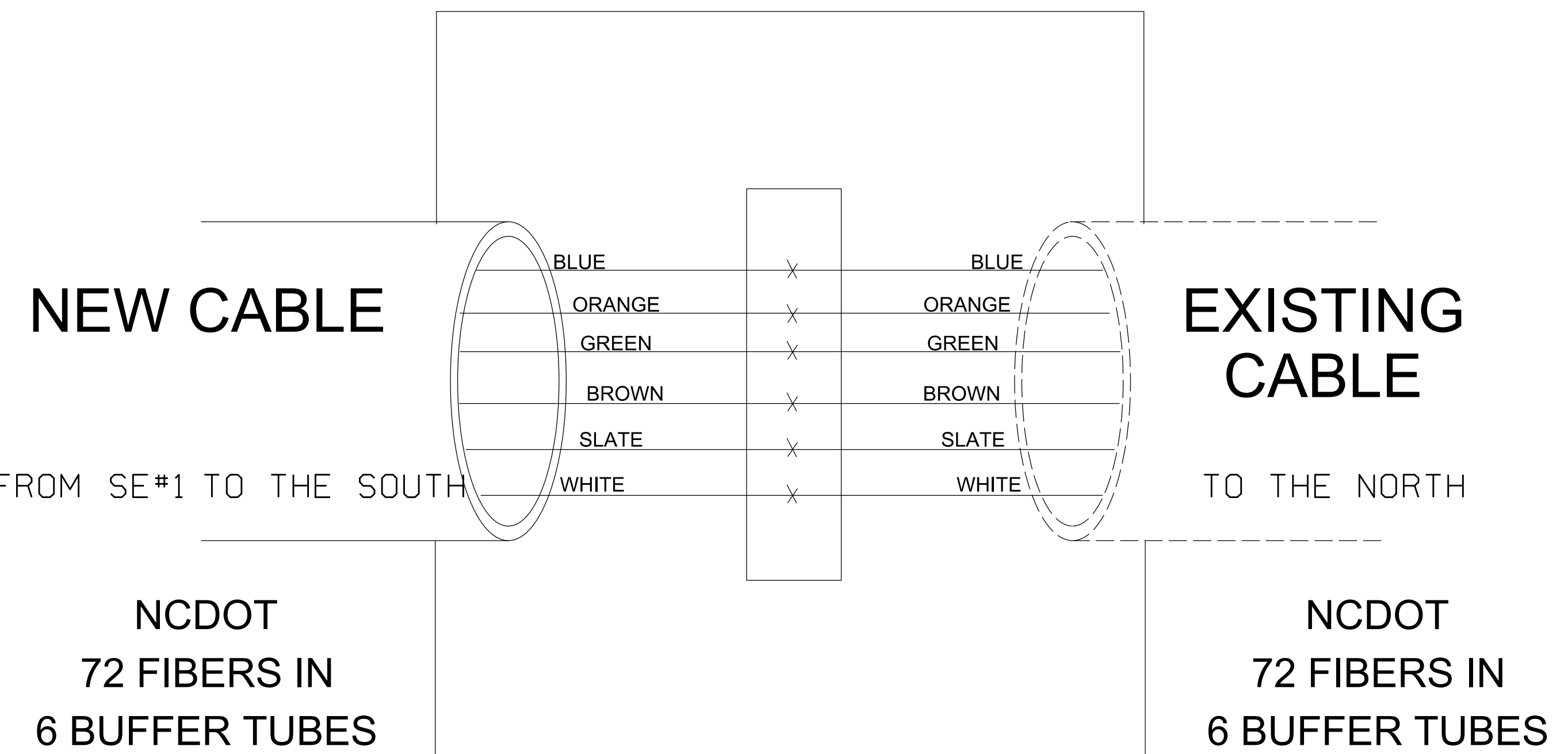
SPLICE ALL FIBERS IN ALL BUFFER TUBES

LEGEND
X = NEW FUSION SPLICE
INDIVIDUAL FIBER

SE #1



SE #2



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BUILDING
FOR CHARLOTTE
GENERAL SERVICES

600 East Fourth Street
Charlotte, North Carolina 28202
Phone: (704) 336-2291
Fax: (704) 336-6566

NO.	DATE	BY	DESCRIPTION

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HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Charlotte, NC 28202
NCEM License Number: F-0116

HDR

NOT TO SCALE	SCALE	MAV	CHECKED BY	OCTOBER 2023	DATE
512-15-003	JOB NO.	BLA	PREPARED BY	MAV	APPROVED BY

1-85 NORTH BRIDGE
SPLICE DETAILS


SHEET
ITS-3
OF
ITS-3

INDEX OF BRIDGE SHEETS		RFC DRAWING - REVISIONS				
		RFC	R1	R2	R3	CURRENT
BRIDGE OVER I-85						
B-1	INDEX OF BRIDGE SHEETS	-	-	-	-	-
B-2	GENERAL DRAWING - BRIDGE ON CONNECTOR (-L-) OVER I-85 (-Y3-) (SHEET 1 OF 5)	-	-	-	-	-
B-3	GENERAL DRAWING - AESTHETIC PLAN AND ELEVATION (SHEET 2 OF 5)	-	-	-	-	-
B-4	GENERAL DRAWING - LOCATION SKETCH (SHEET 3 OF 5)	-	-	-	-	-
B-5	GENERAL DRAWING - FOUNDATION LAYOUT (SHEET 4 OF 5)	-	-	-	-	-
B-6	GENERAL DRAWING - LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC) (SHEET 5 OF 5)	-	-	-	-	-
B-7	SUPERSTRUCTURE - TYPICAL SECTION (SHEET 1 OF 2)	-	-	-	-	-
B-8	SUPERSTRUCTURE - TYPICAL SECTION (SHEET 2 OF 2)	-	-	-	-	-
B-9	SUPERSTRUCTURE - PLAN OF SPANS (SHEET 1 OF 2)	-	-	-	-	-
B-10	SUPERSTRUCTURE - PLAN OF SPANS (SHEET 2 OF 2)	-	-	-	-	-
B-11	SUPERSTRUCTURE - FRAMING PLAN	-	-	-	-	-
B-12	SUPERSTRUCTURE - 72" PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD (SHEET 1 OF 2)	-	-	-	-	-
B-13	SUPERSTRUCTURE - 72" PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD (SHEET 2 OF 2)	-	-	-	-	-
B-14	SUPERSTRUCTURE - INTERMEDIATE STEEL DIAPHRAGMS	-	-	-	-	-
B-15	SUPERSTRUCTURE - ELASTOMERIC BEARING DETAILS	-	-	-	-	-
B-16	SUPERSTRUCTURE - SIDEWALK PLAN AND SECTIONS	-	-	-	-	-
B-17	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 1 OF 8)	-	-	-	-	-
B-18	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 2 OF 8)	-	-	-	-	-
B-19	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 3 OF 8)	-	-	-	-	-
B-20	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 4 OF 8)	-	-	-	-	-
B-21	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 5 OF 8)	-	-	-	-	-
B-22	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 6 OF 8)	-	-	-	-	-
B-23	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 7 OF 8)	-	-	-	-	-
B-24	2 BAR METAL RAIL WITH CONCRETE PARAPET (SHEET 8 OF 8)	-	-	-	-	-
B-25	SUPERSTRUCTURE - POUR SEQUENCE AND BILL OF MATERIALS	-	-	-	-	-
B-26	SUBSTRUCTURE - END BENT 1 - PLAN AND ELEVATION (SHEET 1 OF 3)	-	-	-	-	-
B-27	SUBSTRUCTURE - END BENT 1 - WINGWALL DETAILS (SHEET 2 OF 3)	-	-	-	-	-
B-28	SUBSTRUCTURE - END BENT 1 - SECTION AND DETAILS (SHEET 3 OF 3)	-	-	-	-	-
B-29	SUBSTRUCTURE - BENT 1 - PLAN AND ELEVATION (SHEET 1 OF 2)	-	-	-	-	-
B-30	SUBSTRUCTURE - BENT 1 - SECTION AND DETAILS (SHEET 2 OF 2)	-	-	-	-	-
B-31	SUBSTRUCTURE - END BENT 2 - PLAN AND ELEVATION (SHEET 1 OF 3)	-	-	-	-	-
B-32	SUBSTRUCTURE - END BENT 2 - WINGWALL DETAILS (SHEET 2 OF 3)	-	-	-	-	-
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B-34	SLOPE PROTECTION DETAILS	-	-	-	-	-
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B-36	BRIDGE APPROACH SLAB - DETAILS (SHEET 2 OF 2)	-	-	-	-	-
B-37	MSE WALL (SHEET 1 OF 7)	-	-	-	-	-
B-38	MSE WALL (SHEET 2 OF 7)	-	-	-	-	-
B-39	MSE WALL (SHEET 3 OF 7)	-	-	-	-	-
B-40	MSE WALL (SHEET 4 OF 7)	-	-	-	-	-
B-41	MSE WALL (SHEET 5 OF 7)	-	-	-	-	-
B-42	MSE WALL (SHEET 6 OF 7)	-	-	-	-	-
B-43	MSE WALL (SHEET 7 OF 7)	-	-	-	-	-
BRIDGE OVER DOBY CREEK						
B-44	GENERAL DRAWING - BRIDGE ON CONNECTOR (-L-) OVER DOBY CREEK (SHEET 1 OF 4)	-	-	-	-	-
B-45	GENERAL DRAWING - LOCATION SKETCH (SHEET 2 OF 4)	-	-	-	-	-
B-46	GENERAL DRAWING - FOUNDATION LAYOUT (SHEET 3 OF 4)	-	-	-	-	-
B-47	GENERAL DRAWING - LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC) (SHEET 4 OF 4)	-	-	-	-	-
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B-49	SUPERSTRUCTURE - PRESTRESSED CONCRETE CORED SLAB UNIT (SHEET 2 OF 5)	-	-	-	-	-
B-50	SUPERSTRUCTURE - PRESTRESSED CONCRETE CORED SLAB UNIT (SHEET 3 OF 5)	-	-	-	-	-
B-51	SUPERSTRUCTURE - PRESTRESSED CONCRETE CORED SLAB UNIT (SHEET 4 OF 5)	-	-	-	-	-
B-52	SUPERSTRUCTURE - PRESTRESSED CONCRETE CORED SLAB UNIT (SHEET 5 OF 5)	-	-	-	-	-
B-53	SUPERSTRUCTURE - CONCRETE WEARING SURFACE	-	-	-	-	-
B-54	SUPERSTRUCTURE - 2 BAR METAL RAIL (SHEET 1 OF 4)	-	-	-	-	-
B-55	SUPERSTRUCTURE - 2 BAR METAL RAIL (SHEET 2 OF 4)	-	-	-	-	-
B-56	SUPERSTRUCTURE - 2 BAR METAL RAIL (SHEET 3 OF 4)	-	-	-	-	-
B-57	SUPERSTRUCTURE - 2 BAR METAL RAIL (SHEET 4 OF 4)	-	-	-	-	-
B-58	SUBSTRUCTURE - END BENT 1 - PLAN AND ELEVATION (SHEET 1 OF 3)	-	-	-	-	-
B-59	SUBSTRUCTURE - END BENT 1 - WINGWALL DETAILS (SHEET 2 OF 3)	-	-	-	-	-
B-60	SUBSTRUCTURE - END BENT 1 - SECTION AND DETAILS (SHEET 3 OF 3)	-	-	-	-	-
B-61	SUBSTRUCTURE - BENT 1 - PLAN AND ELEVATION (SHEET 1 OF 2)	-	-	-	-	-
B-62	SUBSTRUCTURE - BENT 1 - SECTION AND DETAILS (SHEET 2 OF 2)	-	-	-	-	-
B-63	SUBSTRUCTURE - END BENT 2 - PLAN AND ELEVATION (SHEET 1 OF 3)	-	-	-	-	-
B-64	SUBSTRUCTURE - END BENT 2 - WINGWALL DETAILS (SHEET 2 OF 3)	-	-	-	-	-
B-65	SUBSTRUCTURE - END BENT 2 - SECTION AND DETAILS (SHEET 3 OF 3)	-	-	-	-	-
B-66	RIP RAP DETAILS	-	-	-	-	-
B-67	BRIDGE APPROACH SLAB - PLAN AND SECTION (SHEET 1 OF 2)	-	-	-	-	-
B-68	BRIDGE APPROACH SLAB - DETAILS (SHEET 2 OF 2)	-	-	-	-	-
B-69	STANDARD NOTES	-	-	-	-	-

INDEX OF STRUCTURES		
S01	22+34.70 -L-	BRIDGE ON CONNECTOR (-L-) OVER I-85 (-Y3-)
S02	18+89.24 -L-	BRIDGE ON CONNECTOR (-L-) OVER DOBY CREEK




DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CHARLOTTE

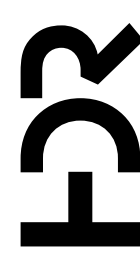
Plans Prepared For:



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Fac: (704) 336-6566

NO.	DATE	BY	DESCRIPTION

Plans Prepared By:



HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1200
Charlotte, NC 28202
N.C. License - License Number: F-0116

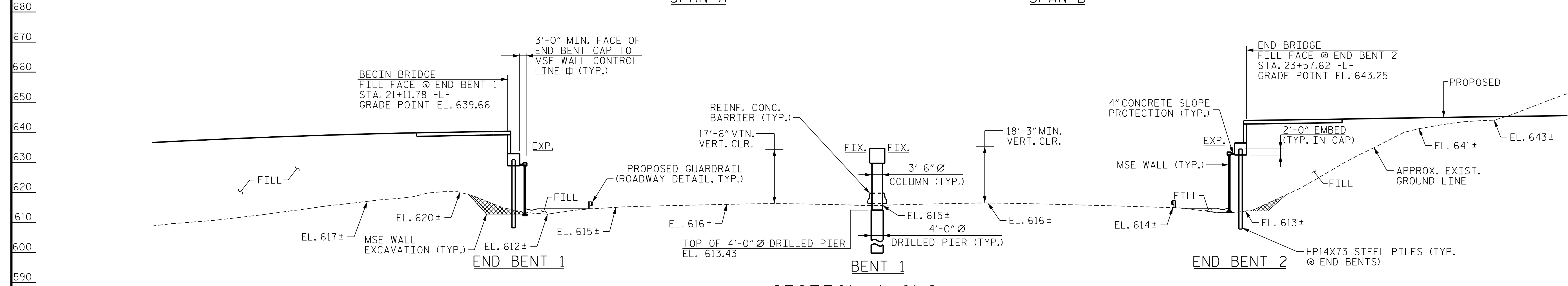
512-15-003 JOB NO.	MJS PREPARED BY	CA APPROVED BY	OCTOBER 2023 DATE
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I-85 NORTH BRIDGE	INDEX OF BRIDGE SHEETS
SHEET B-1	OF B-69

20+00 21+00 22+00 23+00 24+00

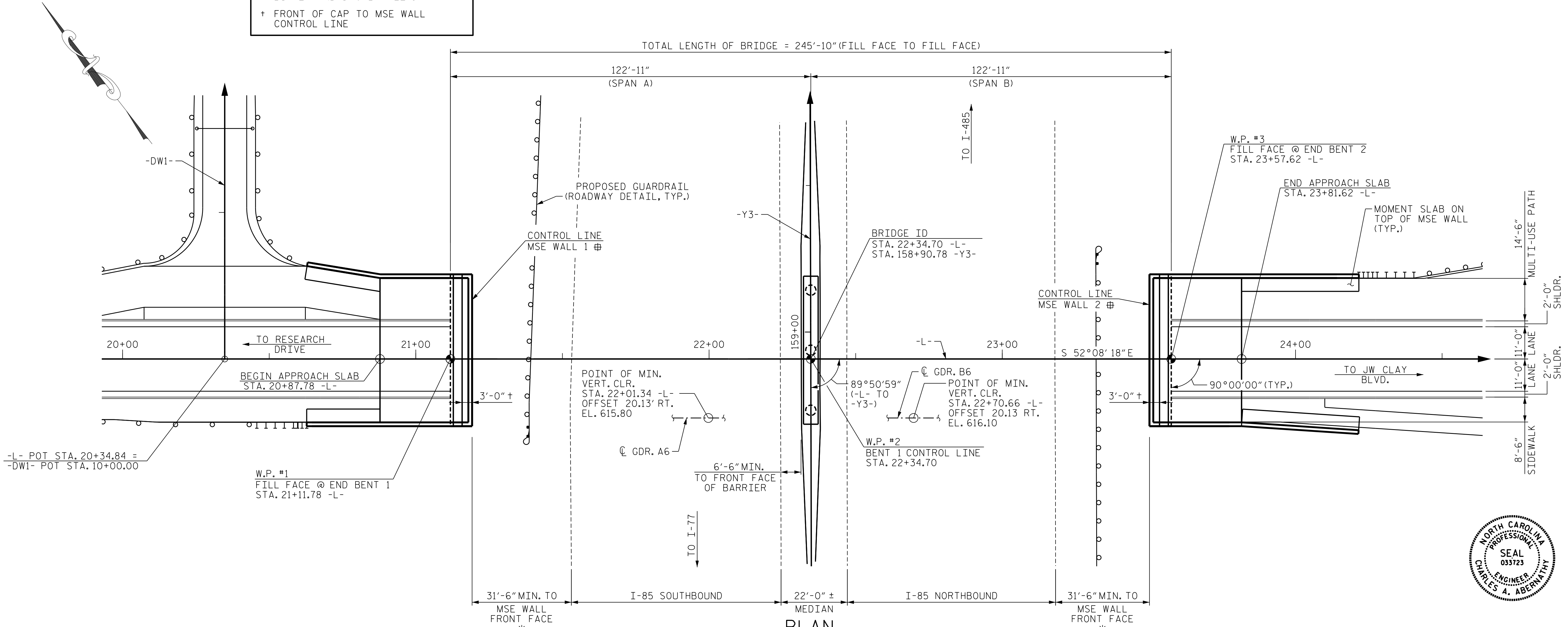
+5.0000% +1.4607%
 PVI STA. 20+50.00
 PVI EL. = 638.75
 VC = 100.00'
 GRADE DATA -L-

SPAN A SPAN B



⊕ MSE WALL CONTROL LINE IS AT THE FRONT FACE OF THE WALL
 * INCLUDES 14'-0" SHOULDER AND 17'-6" FOR FUTURE 12' LANE WITH 4' BUFFER AND 1'-6" BARRIER.
 † FRONT OF CAP TO MSE WALL CONTROL LINE

SECTION ALONG -L-
 (SECTIONS AT END BENTS & BENTS TAKEN AT RIGHT ANGLES TO END BENTS AND BENTS)



PLAN
 (END BENTS AND INTERIOR BENT ARE PARALLEL)
 (PILES NOT SHOWN FOR CLARITY)



BRIDGE OVER I-85 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



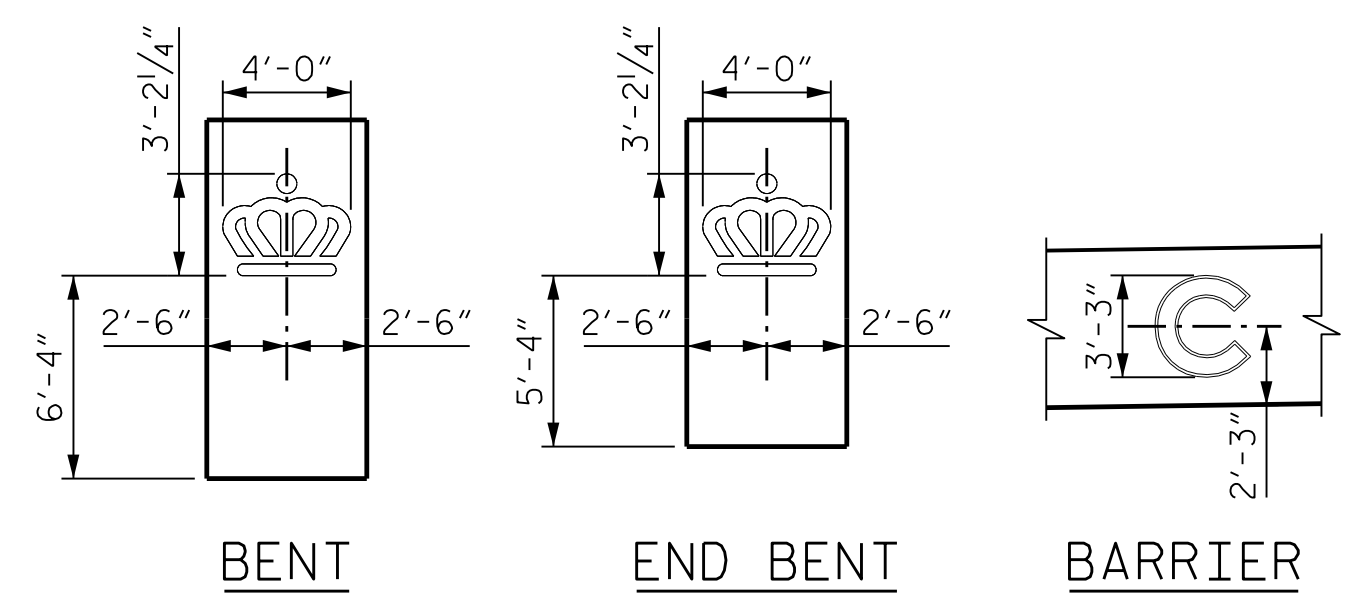
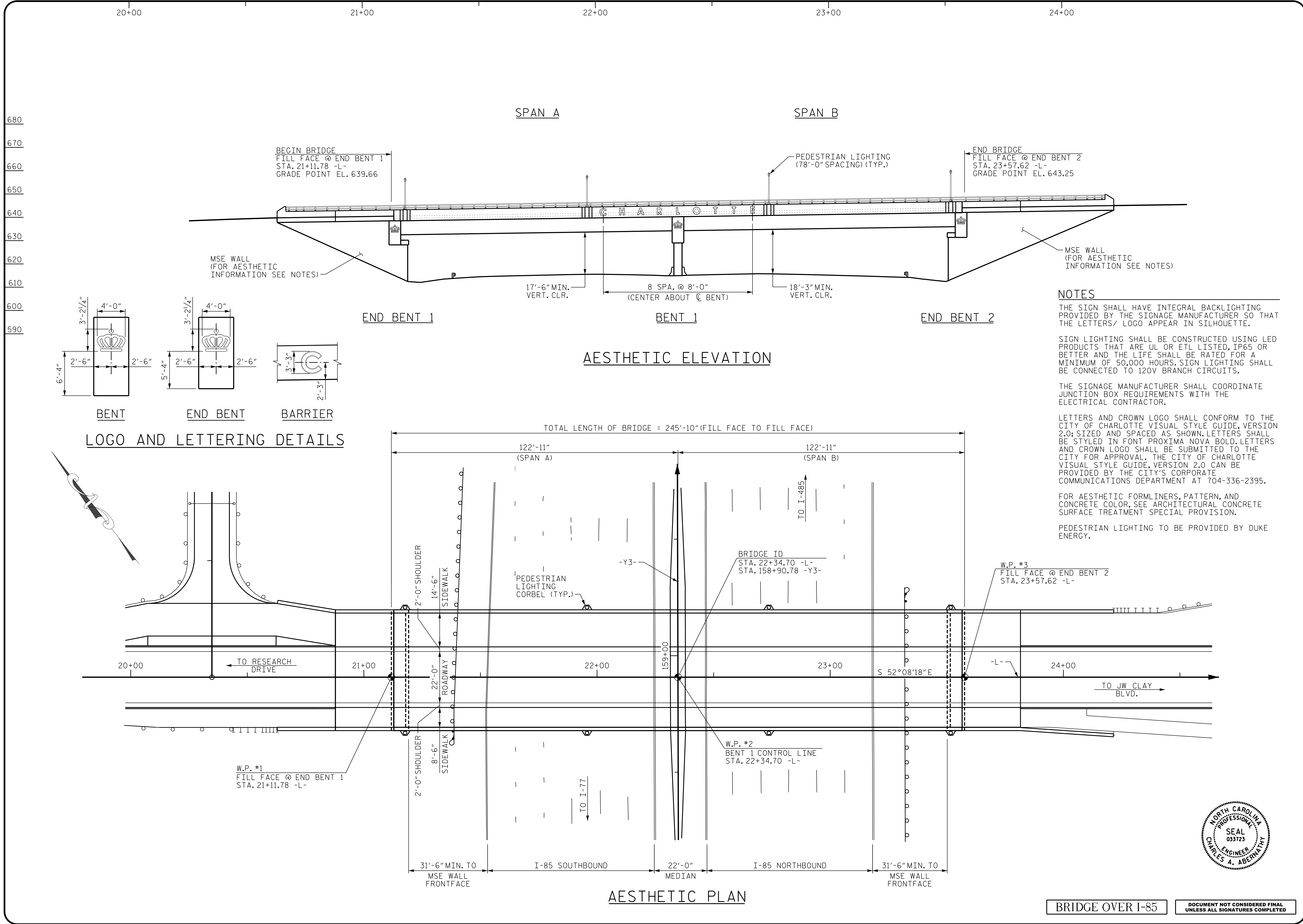
Plans Prepared For:
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NO.	DATE	BY	DESCRIPTION

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 Raleigh, NC 27602
 NCEM License Number: F-0116

NTS SCALE	CHECKED BY	DATE
512-15-003	HNAN	OCTOBER 2023
JOB NO.	PREPARED BY	APPROVED BY
	MJS	CAA

I-85 NORTH BRIDGE
 GENERAL DRAWING
 SHEET 1 OF 5
 SHEET B-2 OF B-69



NOTES

THE SIGN SHALL HAVE INTEGRAL BACKLIGHTING PROVIDED BY THE SIGNAGE MANUFACTURER SO THAT THE LETTERS/ LOGO APPEAR IN SILHOUETTE.

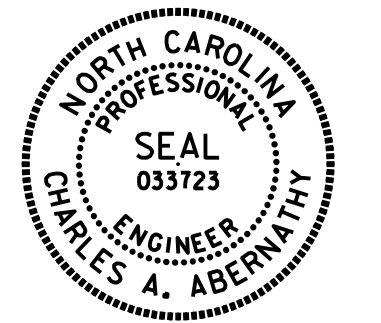
SIGN LIGHTING SHALL BE CONSTRUCTED USING LED PRODUCTS THAT ARE UL OR ETL LISTED, IP65 OR BETTER AND THE LIFE SHALL BE RATED FOR A MINIMUM OF 50,000 HOURS. SIGN LIGHTING SHALL BE CONNECTED TO 120V BRANCH CIRCUITS.

THE SIGNAGE MANUFACTURER SHALL COORDINATE JUNCTION BOX REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.

LETTERS AND CROWN LOGO SHALL CONFORM TO THE CITY OF CHARLOTTE VISUAL STYLE GUIDE, VERSION 2.0; SIZED AND SPACED AS SHOWN. LETTERS SHALL BE STYLED IN FONT PROXIMA NOVA BOLD. LETTERS AND CROWN LOGO SHALL BE SUBMITTED TO THE CITY FOR APPROVAL. THE CITY OF CHARLOTTE VISUAL STYLE GUIDE, VERSION 2.0 CAN BE PROVIDED BY THE CITY'S CORPORATE COMMUNICATIONS DEPARTMENT AT 704-336-2395.

FOR AESTHETIC FORMLINERS, PATTERN, AND CONCRETE COLOR, SEE ARCHITECTURAL CONCRETE SURFACE TREATMENT SPECIAL PROVISION.

PEDESTRIAN LIGHTING TO BE PROVIDED BY DUKE ENERGY.



BRIDGE OVER I-85 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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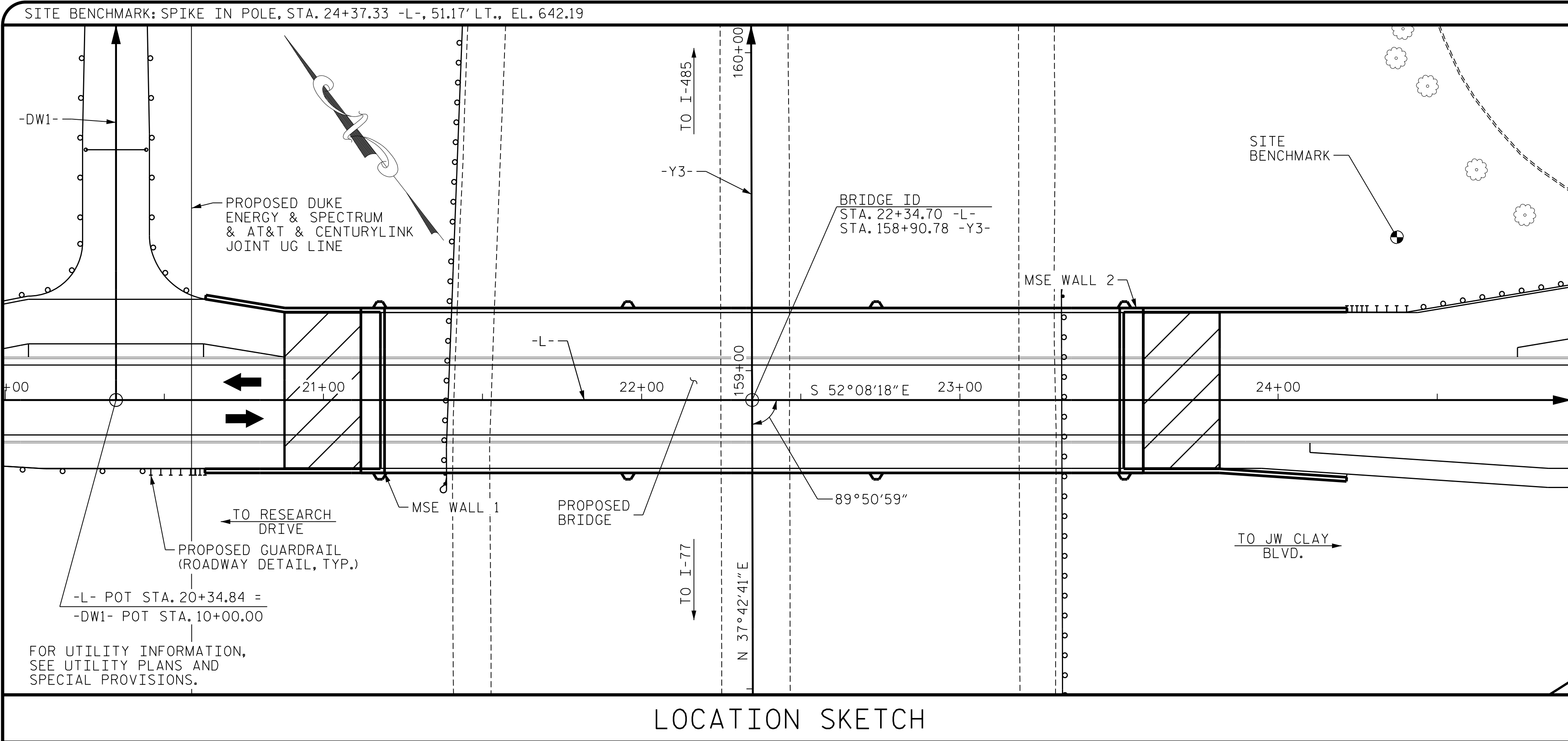
NO.	DATE	BY	DESCRIPTION

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 NC License: License Number: F-0116

512-15-003	NTS	SCALE	LHS	CHECKED BY	OCTOBER 2023	DATE
JOB NO.	MJS	PREPARED BY	CAA	APPROVED BY		

I-85 NORTH BRIDGE
 GENERAL DRAWING
 SHEET 2 OF 5

SHEET B-3 OF B-69



LOCATION SKETCH

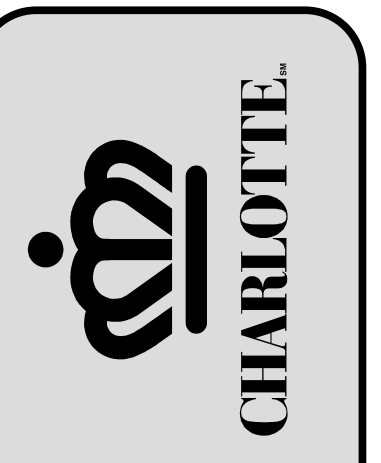
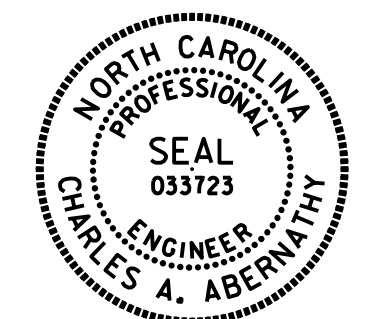
TOTAL BILL OF MATERIAL

	4'-0" DIA. DRILLED PIERS IN SOIL	4'-0" DIA. DRILLED PIERS NOT IN SOIL	SID INSPECTIONS	SPT TESTING	CSL TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	MODIFIED 72" PRESTRESSED CONCRETE GIRDERS	HP 14X73 STEEL PILES		
	LN. FT.	LN. FT.	EACH	EACH	EACH	SO. FT.	SO. FT.	CU. YDS.	CU. YDS.	LUMP SUM	LBS.	LBS.	LBS.	NO.	LN. FT.	NO.	LN. FT.
SUPERSTRUCTURE						12634	6747	197.8				10400		12	1453.75		
END BENT NO. 1									47.0		6625					10	500.0
BENT NO. 1	104.3	10.0							68.5		21057		4400				
END BENT NO. 2									47.2		6627					10	350.0
TOTAL	104.3	10.0	3	3	3	12634	6747	197.8	162.7	LUMP SUM	34309	10400	4400	12	1453.75	20	850.0

	PILE DRIVING EQUIPMENT FOR HP 14X73 STEEL PILES	STEEL PILE POINTS	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	2 BAR METAL RAIL	1'-5" X 2'-6" CONCRETE PARAPET	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	MSE RETAINING WALL	MOMENT SLAB W/ CONCRETE PARAPET
	EACH	EACH	LN. FT.	LN. FT.	LN. FT.	LN. FT.	SQ. YDS.	LUMP SUM	LUMP SUM	SO. FT.	LN. FT.
SUPERSTRUCTURE					702.2	587.7		LUMP SUM	LUMP SUM		130.0
END BENT NO. 1	10	10					13.0			2340	
BENT NO. 1											
END BENT NO. 2	10	10	20	80			13.0			3287	
TOTAL	20	20	20	80	702.2	587.7	26.0	LUMP SUM	LUMP SUM	5627	130.0

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, "SEE STANDARD NOTES" SHEET.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- ELEVATIONS ARE IN FEET.
- THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.



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 FOR CHARLOTTE
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 NCEM License Number: F-0116

NTS SCALE	BMB CHECKED BY	OCTOBER 2023 DATE
512-15-003 JOB NO.	MJS PREPARED BY	CAA APPROVED BY

I-85 NORTH BRIDGE
 GENERAL DRAWING
 SHEET 3 OF 5

SHEET B-4 OF B-69

SCOPE OF WORK

PROVIDE DECORATIVE LIGHTING FOR THE INTERSTATE 85 NORTH BRIDGE. INSTALL LED LUMINAIRES, LIGHT CONTROL SYSTEM PANEL AND CIRCUITRY.

DESIGN CRITERIA

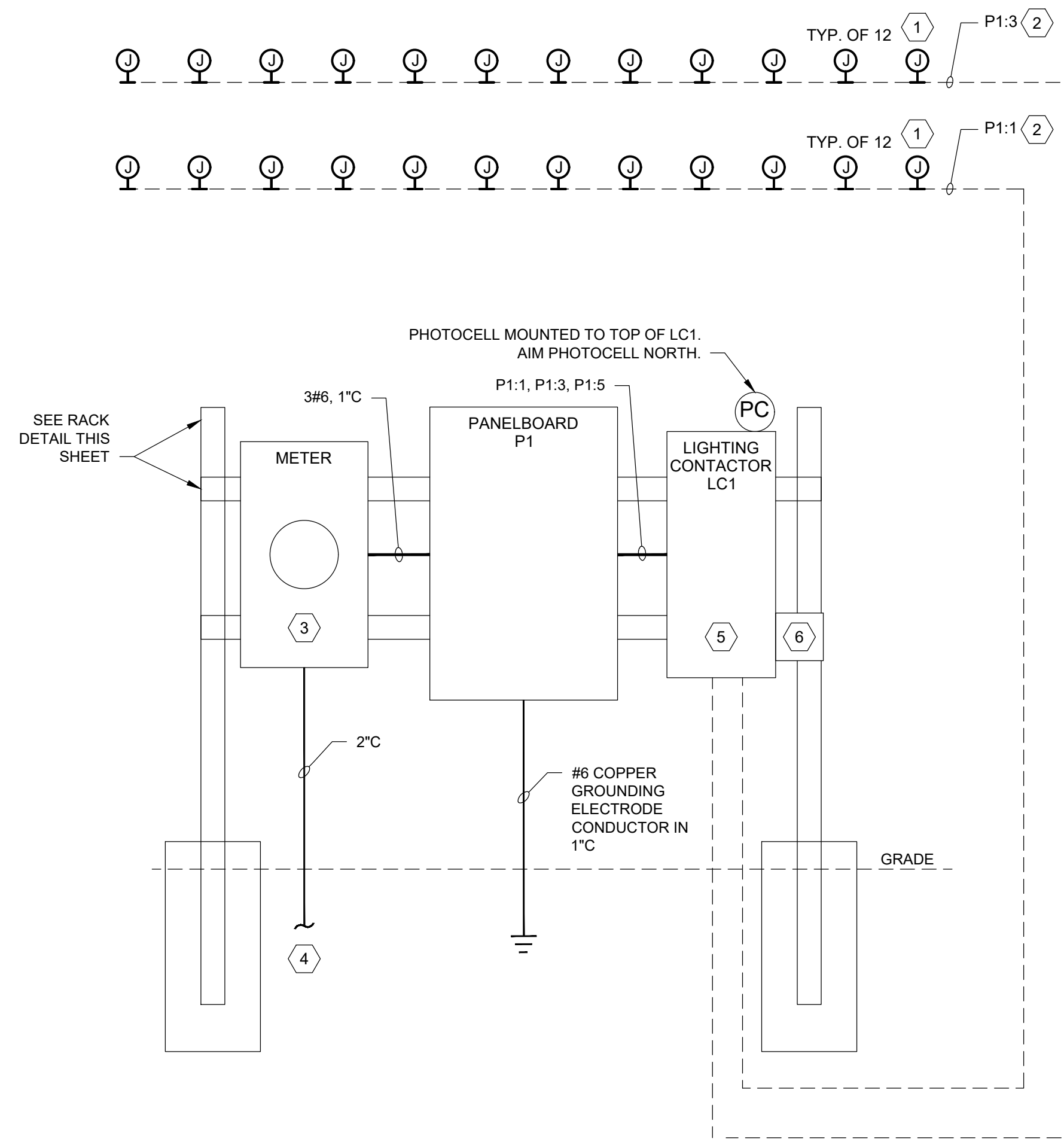
NATIONAL ELECTRICAL CODE (NEC), CURRENT EDITION
ILLUMINATING ENGINEERING SOCIETY HANDBOOK, CURRENT EDITION

ABBREVIATIONS

C CONDUIT
CKT CIRCUIT
LT LIGHT
LTG LIGHTING
LV LOW VOLTAGE
MH MOUNTING HEIGHT
QTY QUANTITY
PVC PVC SCHEDULE 40 CONDUIT
RGS RIGID GALVANIZED STEEL
TYP TYPICAL
V VOLT
VA VOLT AMPERES
WP WEATHERPROOF

LEGEND

- # KEY NOTE REFERENCE SYMBOL
- JUNCTION BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT INDICATED AND REQUIRED
- JUNCTION BOX OR PULLBOX. SEE SPECIFIC SHEETS FOR DETAILS.
- ELECTRICAL PANELBOARD.
- LIGHTING CONTACTOR CABINET.
- CIRCUIT RUN BETWEEN DEVICES IN-SLAB OR UNDERGRADE. SEE TABLE "A" SHEETS E2-E5.
- CIRCUIT RUN BETWEEN DEVICES EXPOSED. SEE TABLE "A" SHEETS E2-E5.
- P1:2 FEEDER CIRCUIT.
LIGHTING CONTROLS CABINET BREAKERS (P1), CIRCUIT (2)
- DUKE ENERGY ELECTRICAL METER



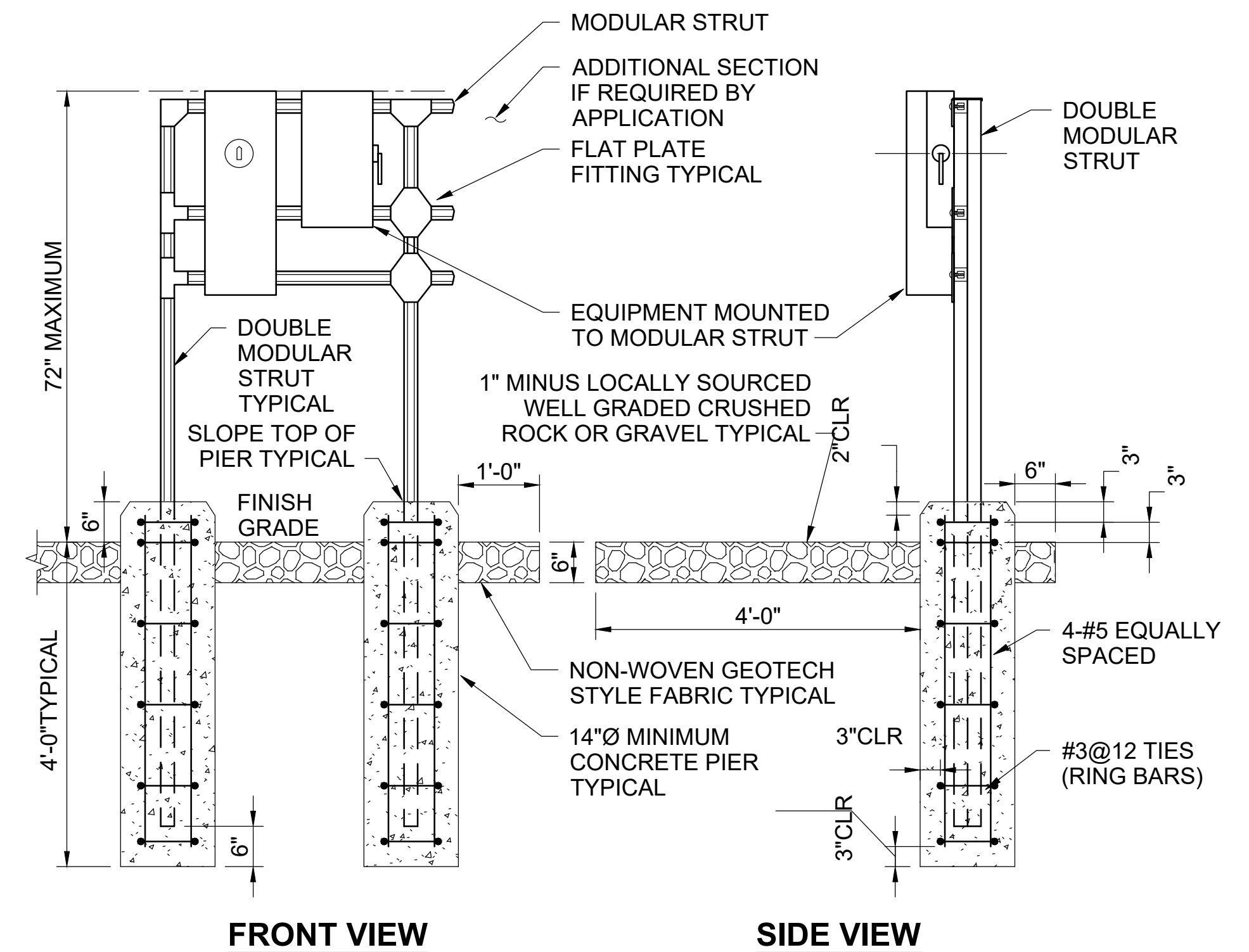
RISER DIAGRAM
NOT TO SCALE

GENERAL NOTES

- PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
- PROVIDE CUTSHEETS FOR EACH COMPONENT USED.
- EXPOSED CONDUIT SHALL BE PVC COATED RIGID GALVANIZED STEEL. WHERE CONDUIT RUNS FROM ABOVE GRADE TO BELOW GRADE, PROVIDE PVC COATED RIGID STEEL CONDUIT AND ELBOW BEFORE TRANSITIONING TO PVC CONDUIT.

KEYNOTES

- JUNCTION BOX FOR LUMINAIRES AT CROWN SYMBOLS AND LETTERING LOCATIONS. SEE LIGHTING PLANS AND ELEVATIONS.
- 120V BRANCH CIRCUITS SERVING LUMINAIRES FOR CROWN SYMBOL AND LETTERING. SEE LIGHTING PLANS.
- METER PER DUKE ENERGY REQUIREMENTS. PROVIDE LOCKABLE, PROTECTIVE ENCLOSURE FOR METER BASE.
- 120/240V, 1PHASE, INCOMING POWER FROM DUKE ENERGY SERVICE LOCATION.
- LC1: ELECTRICALLY HELD CONTACTOR WITH LOCKABLE ENCLOSURE. ENCLOSURE: NEMA 4X STAINLESS STEEL. CONTACTOR RATING: 20A. NUMBER OF POLES: 3 N.O. COIL: 120VAC. OPERATORS: NONE. INDICATING LIGHTS: NONE.
- PHOTOCELL BYPASS TOGGLE SWITCH MOUNTED IN CAST METAL BOX WITH LOCKABLE CAST METAL COVER. CLOSE COUPLE CAST BOX TO CONTACTOR ENCLOSURE.



FRONT VIEW

SIDE VIEW

NOTES THIS DETAIL:

- COMBINED EQUIPMENT LOADS PER 36" SPAN SHALL NOT EXCEED 500LBS.
- PROVIDE GROUNDING FOR OUTDOOR INSTALLATIONS.
- MODULAR STRUCT WIDTH: 1 5/8".
- RACK ASSEMBLY MATERIAL: GALVANIZED.
- ANCHORS: STAINLESS STEEL, 1/2" DIAMETER, 3 1/2" EMBEDMENT.
- PROTECT SURFACES WITH DISSIMILAR MATERIALS.
- REPAIR CUT ENDS AND DAMAGED SURFACES.

MODULAR EQUIPMENT RACK DETAIL

NO SCALE

DOCUMENT NOT CONSIDERED FINAL
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WIRING		CONNECTED LOAD (VA)		OCP		CONNECTED LOAD (VA)		OCP		WIRING						
PHASE	NEUT.	GRND.	COND.	LTS	REC	MECH	MISC	AMPS	P	AMPS	P	PHASE	NEUT.	GRND.	COND.	
8	8	8	1"	1				20	1	A	20	1				
8	8	8	1"	3				20	1	B	20	1				
12	12	12	1"	5			100	20	1	A	20	1				
				7				20	1	B	20	1				
				9				20	1	A	20	1				
				11				20	1	B	20	1				
				13				20	1	A	30	2				
				15				20	1	B						

LOAD SUMMARY									
CONNECTED LOAD (KVA)		LTS	REC	MECH	MISC**	SPARE	TOTAL	PHASE BALANCE	
1.25	0.0	0.0	0.0	0.1	---	---	1.3	240	LINE-TO-LINE VOLTS
1.25	0.0	0.0	0.1	0.3	---	---	5	CONNECTED AMPS	PHASE A (KVA)
1.5	0.0	0.0	0.1	0.3	---	---	8	DESIGN AMPS	PHASE B (KVA)

- NOTES:
1. LOCKABLE ENCLOSURE.
2. BOLT ON BREAKERS.



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No. E.E.S. License Number: E-416

NTS	SCALE	PH	CHECKED BY	DATE

512-15-003	JOB NO.	US	PREPARED BY	SO	APPROVED BY

I-85 NORTH BRIDGE
ELECTRICAL LEGEND,
RACK DETAIL, SCHEDULE
AND RISER DIAGRAM
SHEET E-1 OF E-5

1/8" = 1'-0"	SCALE	PH	CHECKED BY	OCTOBER 2023	DATE
512-15-003	JOB NO.	JS	PREPARED BY	SO	APPROVED BY

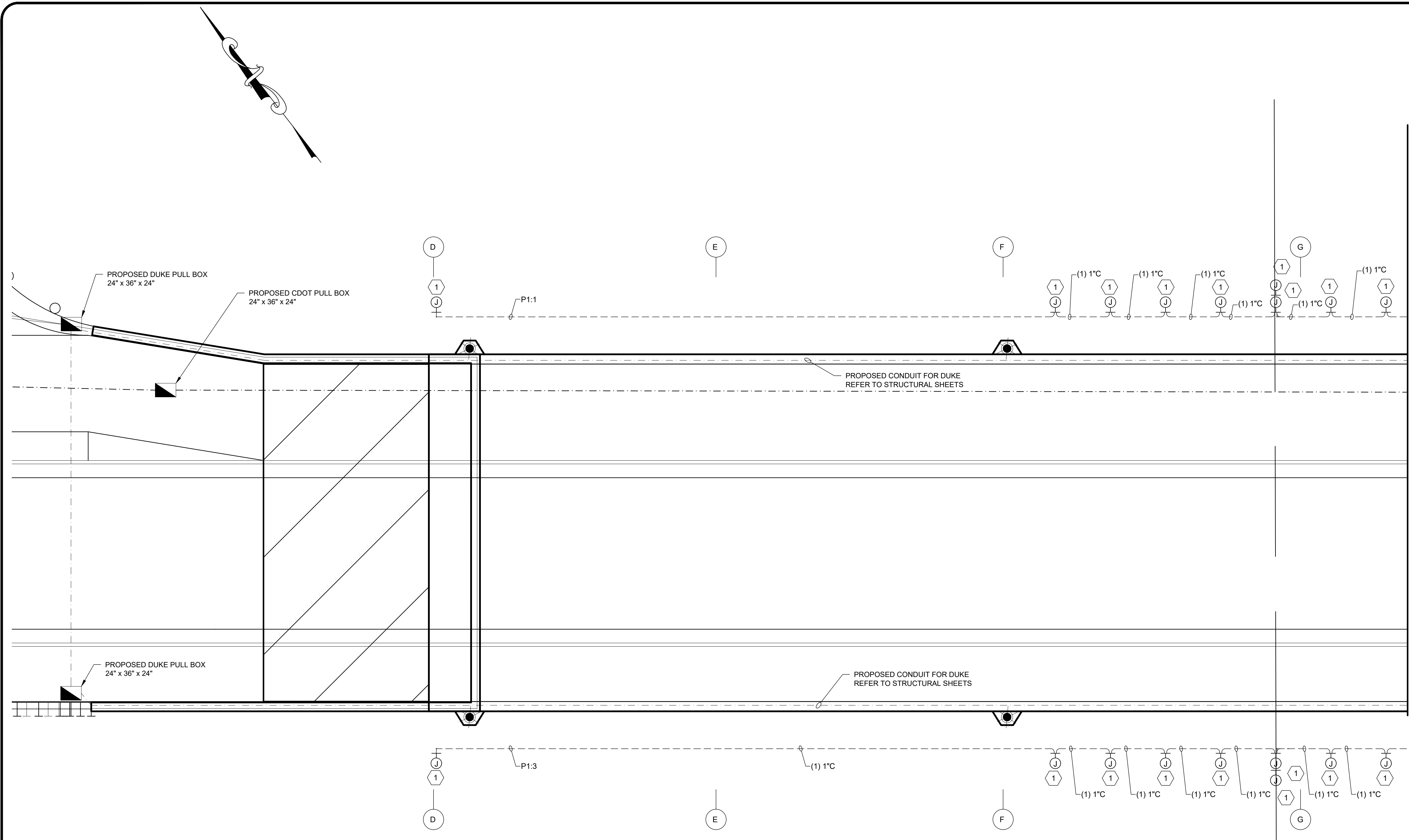
I-85 NORTH BRIDGE	PARTIAL LIGHTING PLAN
SHEET E-2 OF E-5	

GENERAL NOTES

- CONDUIT TAGS INDICATE QUANTITIES OF CONDUITS STACKED AT EACH PLAN VIEW LOCATION BETWEEN PIECES OF EQUIPMENT WHICH THEY CROSS. SEE ELEVATIONS E-4 AND E-5 AND BRIDGE DRAWINGS B-16 THRU B-20 FOR CONDUITS SHOWN IN SECTION FOR ADDITIONAL DETAILS.
- ALL UNDERGROUND OR CONCRETE ENCASED CONDUIT BENDS MUST BE SWEEPING RADIUS BENDS, AS ALLOWED PER SIZE AND TYPE OF CONDUIT.

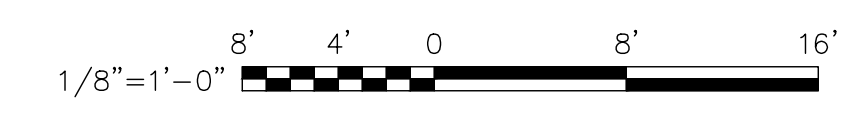
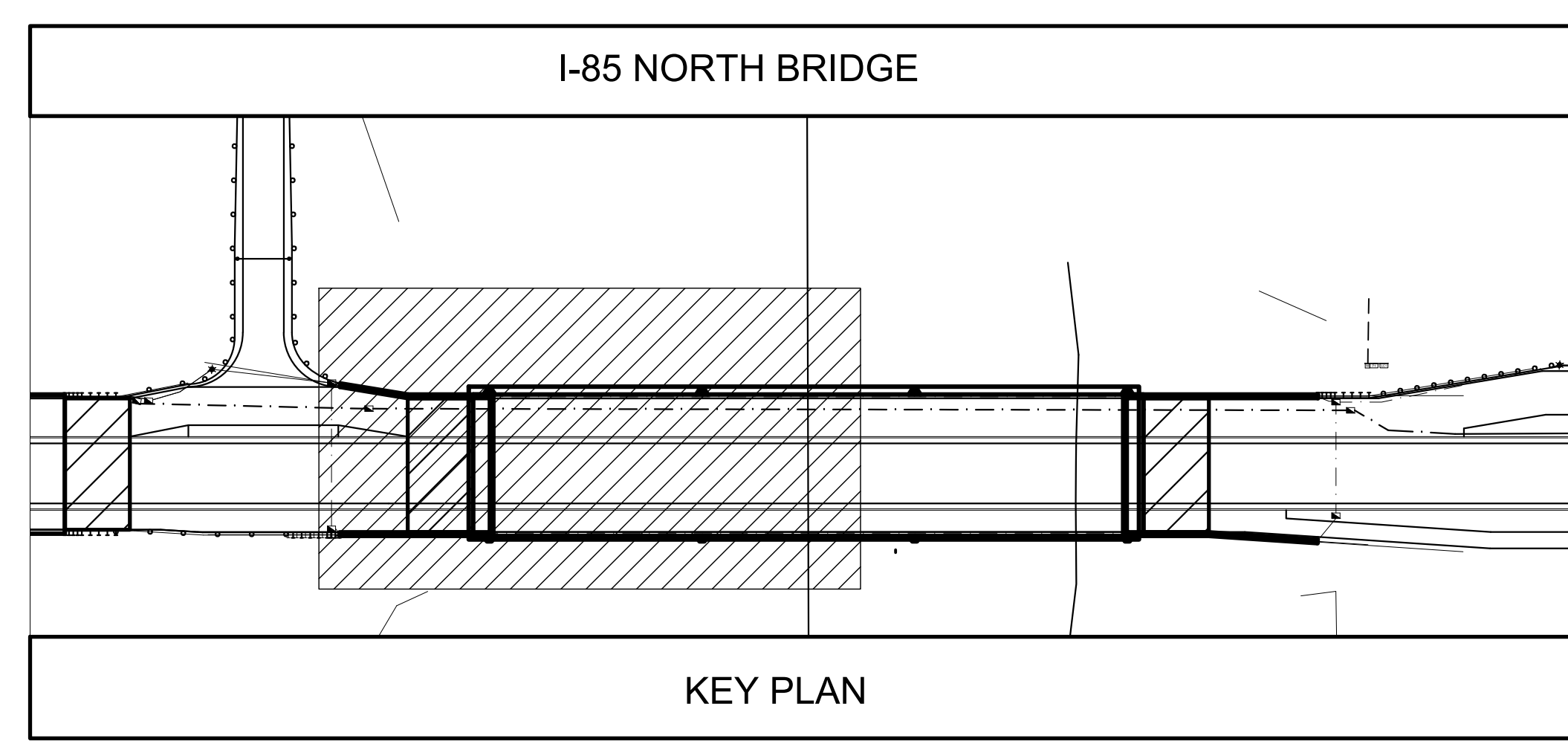
KEYNOTES #

- PROVIDE SURFACE-MOUNTED JUNCTION BOX AND 120V POWER FOR INTERNALLY ILLUMINATED SIGNAGE AT THE HEIGHT SHOWN ON LIGHTING ELEVATION SHEETS E-4 AND E-5. COORDINATE CONNECTION DETAILS, MOUNTING LOCATIONS OF JUNCTION BOXES AND POWER REQUIREMENTS WITH SIGNAGE MANUFACTURER PRIOR TO CONSTRUCTION.



MATCHLINE - SEE SHEET E-3

PARTIAL LIGHTING PLAN
1/8"=1'-0"



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UNLESS ALL SIGNATURES COMPLETED

TABLE "A"		
CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE		
PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
---	2 #8 1 #8G 1" P	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC CONDUIT (NOTE 1)
---	2 #8 1 #8G 1" R	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC-COATED RGS CONDUIT

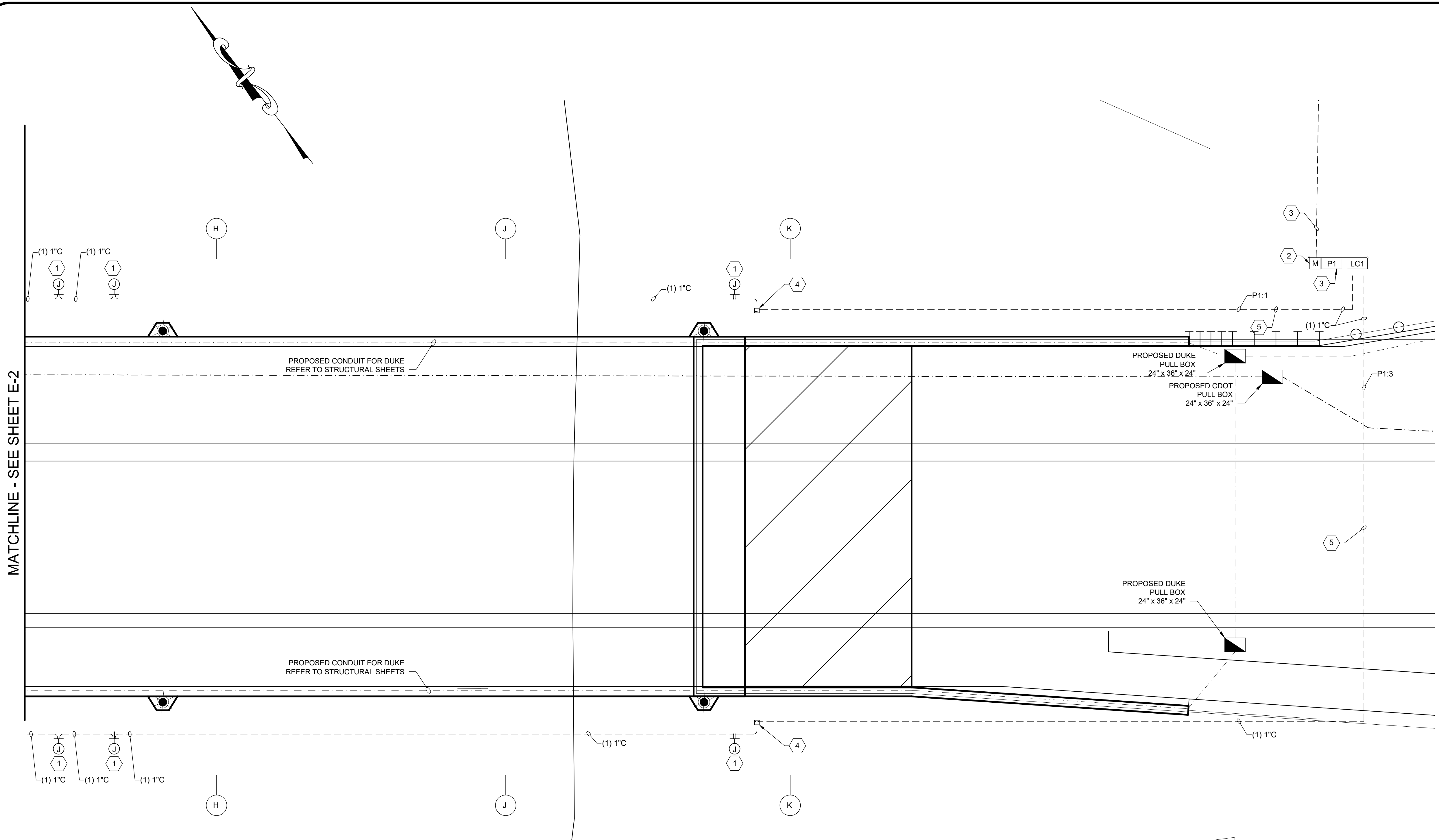
NOTES:
1. CONDUIT RUN FROM ABOVE CONCRETE TO BELOW CONCRETE SHALL BE PVC COATED RGS CONDUIT.

GENERAL NOTES

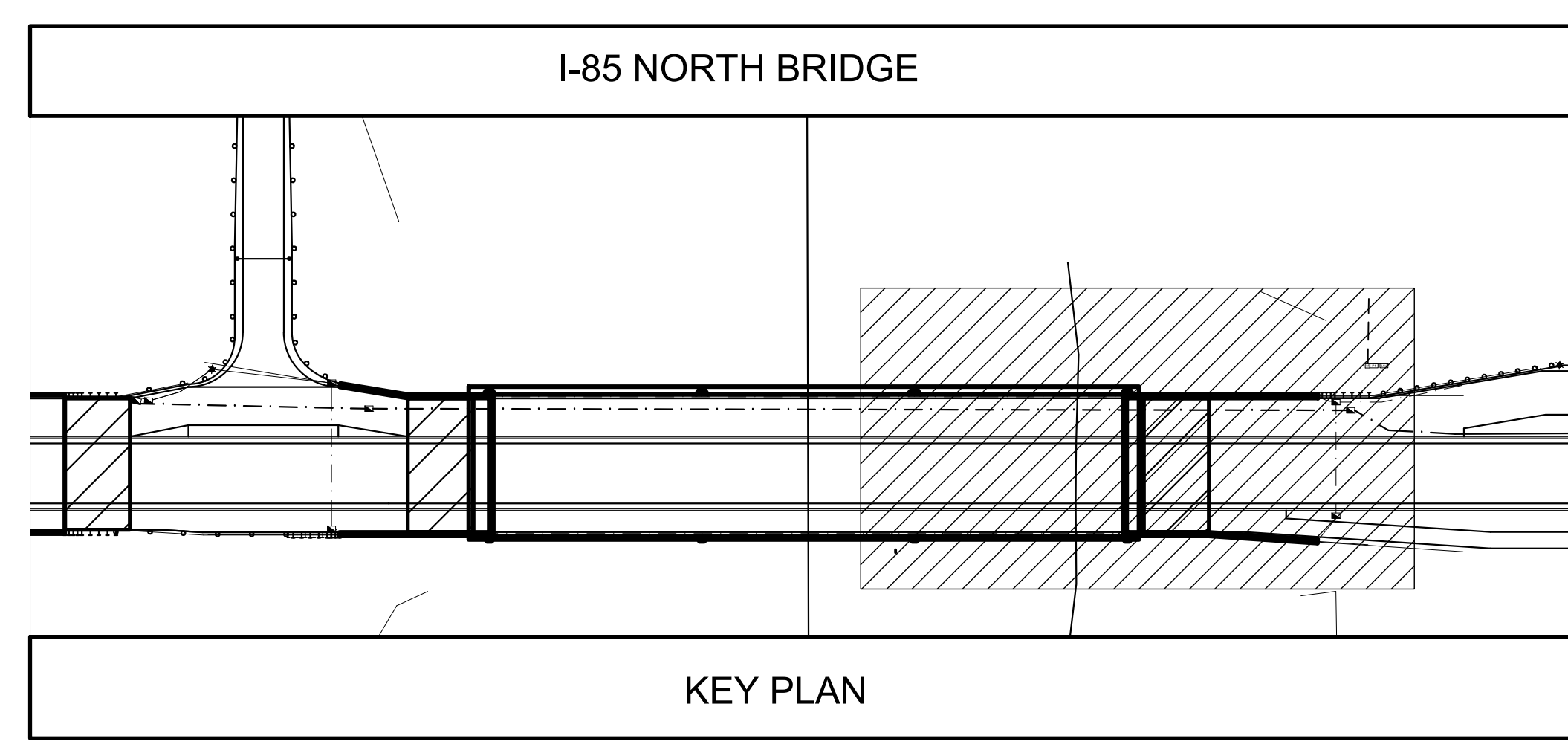
- CONDUIT TAGS INDICATE QUANTITIES OF CONDUITS STACKED AT EACH PLAN VIEW LOCATION BETWEEN PIECES OF EQUIPMENT WHICH THEY CROSS. SEE ELEVATIONS E-4 AND E-5 AND BRIDGE DRAWINGS B-16 THRU B-20 FOR CONDUITS SHOWN IN SECTION FOR ADDITIONAL DETAILS.
- ALL UNDERGROUND OR CONCRETE ENCASED CONDUIT BENDS MUST BE SWEEPING RADIUS BENDS, AS ALLOWED PER SIZE AND TYPE OF CONDUIT.

KEYNOTES

- PROVIDE SURFACE-MOUNTED JUNCTION BOX AND 120V POWER FOR INTERNALLY ILLUMINATED SIGNAGE AT THE HEIGHT SHOWN ON LIGHTING ELEVATION SHEETS E-4 AND E-5. COORDINATE CONNECTION DETAILS, MOUNTING LOCATIONS OF JUNCTION BOXES AND POWER REQUIREMENTS WITH SIGNAGE MANUFACTURER.
- METER, PANELBOARD AND LIGHTING CONTACTOR MOUNTED ON MODULAR EQUIPMENT RACK. SEE RISER DIAGRAM AND RACK DETAIL ON SHEET E-1.
- ROUTE 2" C TO DUKE ENERGY SERVICE LOCATION.
- 8" x 8" x 8" PULLBOX MOUNTED INSIDE OF BRIDGE BARRIER.
- ELECTRICAL DUCT FROM LIGHTING CONTACTOR TO PULLBOX MOUNTED INTERNALLY TO BARRIER. SEE NCDOT SPECIFICATIONS SECTION 1409 FOR MORE INFORMATION.



PARTIAL LIGHTING PLAN
1/8"=1'-0"



KEY PLAN

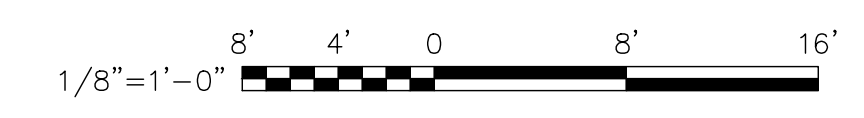


TABLE "A"		
CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE		
PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
---	2 #8 1 #BG 1" C P	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC CONDUIT (NOTE 1)
---	2 #8 1 #BG 1" C R	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC-COATED RGS CONDUIT

NOTES:
1. CONDUIT RUN FROM ABOVE CONCRETE TO BELOW CONCRETE SHALL BE PVC COATED RGS CONDUIT.

DOCUMENT NOT CONSIDERED FINAL
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MATCHLINE - SEE SHEET E-2

GENERAL NOTES

- REFER TO PLAN VIEW DRAWINGS E-2 AND E-3 AND STRUCTURAL SECTIONS FOR CONDUIT SECTIONS.
- ELEVATIONS SHOWN ARE FROM THE BOTTOM OF THE BRIDGE DECK TO THE CENTER OF THE JUNCTION BOX LOCATION.

KEYNOTES #

- PROVIDE JUNCTION BOX AND POWER FOR INTERNALLY ILLUMINATED SIGNAGE AT THE HEIGHT FROM TOP OF BRIDGE DECK SHOWN ON PLANS. COORDINATE CONNECTION DETAILS, MOUNTING LOCATIONS OF JUNCTION BOXES AND POWER REQUIREMENTS WITH SIGNAGE MANUFACTURER.
- METER, PANELBOARD AND LIGHTING CONTACTOR MOUNTED ON MODULAR EQUIPMENT RACK. SEE RISER DIAGRAM AND RACK DETAIL ON SHEET E-1.
- LIGHTING CONTACTOR.



BUILDING FOR CHARLOTTE
GENERAL SERVICES

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NO.	DATE	BY	DESCRIPTION

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NCEES License Number: E-4116

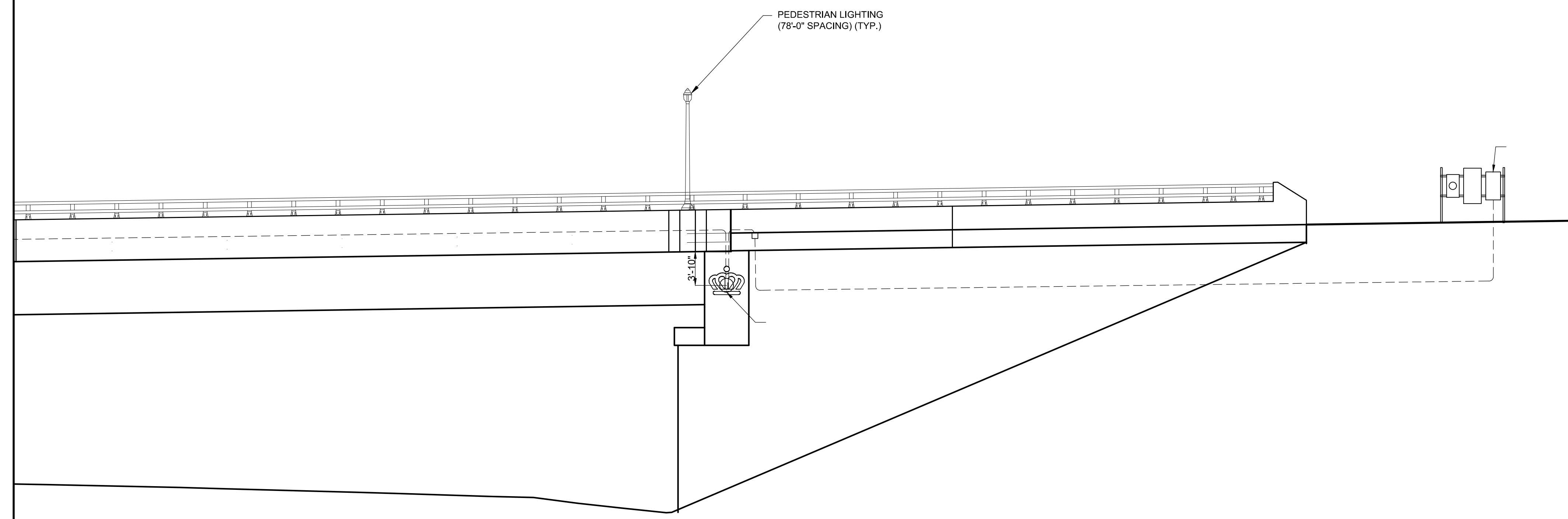
1/8" = 1'-0"	SCALE	PH	CHECKED BY	OCTOBER 2023	DATE
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I-85 NORTH BRIDGE

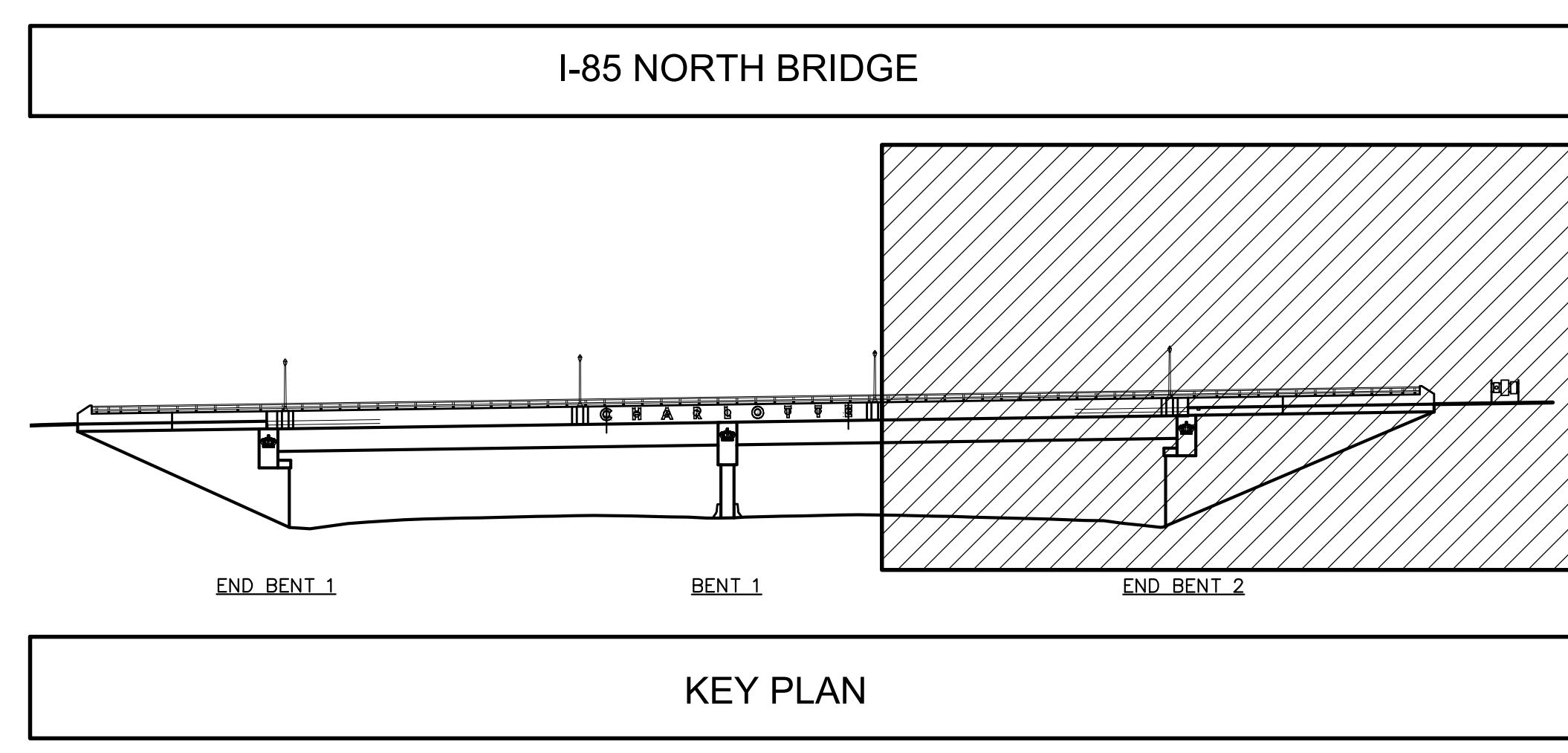
PARTIAL LIGHTING ELEVATION

SHEET E-5 OF E-5

MATCHLINE - SEE SHEET E-4



PARTIAL ELEVATION
1/8"=1'-0"



KEY PLAN
1/8"=1'-0"

TABLE "A"		
CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE		
PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
---	2 #8 1 #G 1" C P	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC CONDUIT (NOTE 1)
---	2 #8 1 #G 1" C R	2 AWG SIZE 10 CONDUCTORS 1 AWG SIZE 10 GROUNDING CONDUCTOR 1" PVC-COATED RGS CONDUIT

NOTES:
1. CONDUIT RUN FROM ABOVE CONCRETE TO BELOW CONCRETE SHALL BE PVC COATED RGS CONDUIT.

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UNLESS ALL SIGNATURES COMPLETED

VERIFICATION OF COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

(Check Appropriate Box)

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

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

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

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

Project Name: I-85 North Bridge

Township: Charlotte County: Mecklenburg County

Project Engineer: Matthew Werder, PE Phone No.: 980-337-5008

Project Contact: Matthew Werder, PE

Applicant's Name: City of Charlotte

P.E. SEAL

Date Submitted: 11/6/2023



SP-05R, TRAFFIC CONTROL

Version Date: 1/7/2022

Revision Date: 5/4/2023 by MJW

1.0 DESCRIPTION

Protection for Construction Staking: The Contractor is responsible for providing, placing, maintaining and removing upon completion, all traffic control devices necessary for the protection of survey crews performing construction staking requested by the Contractor for construction of this project when any offset, reference points, benchmark or any other control point is within the travel lane of any roadway, drive, parking lot or other area where vehicles could endanger or obstruct the survey crew.

Beginning Work and Street Closings: The Contractor is responsible for notifying the Implementation Section Manager of the Charlotte Department of Transportation (CDOT), or their designee at 704-336-4119 in accordance with Sections "Approval and Notification Requirements for Work in the Public Right-Of-Way" and "Notifications for complete Roadway Closure" of the Work Area Traffic Control Handbook (WATCH) of any work where the number of travel lanes is reduced from normal conditions.

The Contractor shall install advance warning signs for the Project. These signs shall be in place for 7 calendar days before construction activity begins. The Contractor shall begin construction activity on a street on the scheduled date for the closing of the travel lane.

During daily construction work hours, the Contractor will maintain at least one lane of traffic. During periods of construction inactivity, all lanes of traffic will be open unless otherwise shown on the plans or noted in the specifications.

Right-of-Way Use Permit: The Contractor will not be responsible for obtaining the Right-of-Way Use Permit(s) from CDOT for approval to work in the streets rights-of-way in Charlotte. The permit(s) will be obtained by the City's General Services department.

Traffic Control Plan: Traffic control will be performed by the Contractor based upon the Traffic Control Special Provisions. The Traffic Control Special Provisions may refer to plan sheets for major work items or details in the WATCH, or both.

The Contractor shall be thoroughly familiar with the current edition of the Work Area Traffic Control Handbook (WATCH). All traffic control devices and procedures shall conform to the requirements of the WATCH, the current edition of the Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD), the current edition of the North Carolina Department of Transportation (NCDOT) Supplement to the *Manual on Uniform Traffic Control Devices for Streets and Highways*, the NCDOT Roadway Standard Drawings, the current edition of the NCDOT Standard Specifications for Roads and Structures, and the 2011 draft *Public Right-of-Way Accessibility Guidelines* (PROWAG) and any amendments thereto.

Under no circumstances shall the WATCH requirements be less restrictive than what is required by the MUTCD or NCDOT Supplement to the MUTCD. Any requirements prescribed by the MUTCD or amendments by the NCDOT Supplement to the MUTCD will supersede the requirements of the WATCH should conflict arise.

The Contractor shall maintain the traffic control as described herein unless the Contractor submits an alternate traffic control plan to the Engineer and it is approved by the Engineer. The Engineer may direct the Contractor to modify the traffic control if, in the Engineer's opinion, traffic is not moving safely or efficiently.

Traffic Control Phasing: Traffic Control Phasing for this project shall be in accordance with the Traffic Control Plans and the reference diagrams from the WATCH, and the appropriate NCDOT Roadway Standard Drawings. The

contractor shall adhere rigidly to these plans and diagrams. If these diagrams are not typical for field conditions, the diagrams may be combined or altered upon approval of the Engineer. The standards and diagrams are the minimum required. Additional signs, cones, drums, barricades and warning devices may be used, but at no time will less than what is specified on the plans, in the standards, and on diagrams be acceptable.

The Contractor shall not begin work along -Y1- and -Y2- in Area 2 (as defined in the Traffic Control Plans) until the City confirms all underground private telecommunication lines are relocated as intended. The Contractor can begin work along -L- in Area 2 and all work in Areas 1 and 3 (as defined in the Traffic Control Plans) simultaneously or independent of each other.

Work must be completed in all areas before opening -L- to traffic.

Maintenance of Traffic: The Contractor shall maintain all travel lanes in accordance with the Traffic Control Plan sheets, the WATCH diagrams, and in accordance with NCDOT Standard Specifications and Roadway Standard Drawings referenced in the Traffic Control Phasing.

Closure or narrowing of lanes shall strictly adhere to the day and time restrictions within the Intermediate Contract Times and shall be implemented in accordance with the plans, the WATCH and NCDOT Standard Specifications and Standard Drawings. All measures of maintaining traffic along I-85 and the ramps shall adhere to NCDOT standards.

As noted in the plans, the Contractor is responsible to coordinate with City inspection staff, CDOT Personnel, and NCDOT Personnel at least thirty (30) days in advanced of any planned traffic shift within NCDOT's right of way.

In addition, the Contractor shall not close or narrow a lane of traffic on any roads associated with the project, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's Day**, between the hours of **6:00 A.M.** December 31st and **9:00 P.M.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **9:00 P.M.** the following Tuesday.
3. For **Easter**, between the hours of **6:00 A.M.** Thursday and **9:00 P.M.** Monday.
4. For **Memorial Day**, between the hours of **6:00 A.M.** Friday and **9:00 P.M.** Tuesday.
5. For **Independence Day**, between the hours of **6:00 A.M.** the day before Independence Day and **9:00 P.M.** the day after Independence Day.

If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 A.M.** the Thursday before Independence Day and **9:00 P.M.** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **6:00 A.M.** Friday and **9:00 P.M.** Tuesday.
7. For **Thanksgiving Day**, between the hours of **6:00 A.M.** Tuesday and **9:00 P.M.** Monday.
8. For **Christmas**, between the hours of **6:00 A.M.** the Friday before the week of Christmas Day

and **9:00 P.M.** the following Tuesday after the week of Christmas Day.

9. For any NASCAR event at the Charlotte Motor Speedway, between the hours of **6:00 A.M.** on the Wednesday before the first track event and **9:00 P.M.** on the day after the last track event
10. For any of the following sporting events played in Charlotte, from five (5) hours before the scheduled start of game to five (5) hours after the scheduled completion of game:
 - i. National Football League (NFL)
 - ii. Major League Soccer (MLS)
 - iii. Fédération Internationale de Football Association (FIFA), or its subsidiaries
 - iv. UNC-Charlotte football
 - v. Any college football game at Bank of America Stadium
11. For any UNC-Charlotte graduation ceremony, from two (2) hours before the ceremony begins to two (2) hours after the ceremony ends.

The Contractor shall use flagger control in accordance with the WATCH diagrams referenced in the Traffic Control Phasing and with Sections “Flagging Procedures”, “Duration of Work”, and Temporary Traffic Control Zone Devices” of the WATCH.

In areas of drop-offs and low shoulders, the Contractor shall backfill up to the edge and elevation of the existing pavement in accordance with Section “Miscellaneous Considerations, DROP-OFFS AND LOW SHOULDERS” of the WATCH.

The Contractor will be required to maintain ingress and egress to all businesses and dwellings, and easy access to fire hydrants in accordance with Section “Miscellaneous Considerations, INGRESS AND EGRESS” of the WATCH.

The Contractor shall not work on both sides of the road simultaneously within the same area, except for work occurring on I-85.

The Contractor shall provide adequate drainage under driveways and within the Project area for the duration of the Project.

The Contractor shall mark all hazards within the Project limits with well-maintained signs, barricades, warning and/or channelizing devices.

Traffic Control Devices: The Contractor shall furnish, install, operate, relocate, maintain and remove all temporary traffic control devices necessary for controlling traffic in accordance with the WATCH and NCDOT Roadway Standard Drawings. The Contractor shall notify CDOT regarding conflicting permanent signs. All construction signs and barricades shall remain in place until the appropriate permanent signs and pavement markings are installed.

Pedestrian Considerations: The Contractor shall accommodate the needs of all pedestrians in accordance with Section “Pedestrian Considerations” of the WATCH, PROWAG, and the Americans with Disabilities Act.

Equipment and Material Storage: During periods of construction inactivity, all construction materials and equipment shall be stored by the Contractor as specified in Section “Miscellaneous Considerations, STORAGE OF EQUIPMENT AND MATERIALS” of the WATCH.

Traffic Signals: The Contractor will coordinate with CDOT for installation of signals and shall notify the Implementation Section Manager of CDOT at least 30 days prior to the installation, relocation or removal of traffic

signal equipment on the Project. The Contractor shall not disturb any traffic signal equipment unless otherwise noted on the traffic control plans or directed to do so by the Engineer.

Excavation and Trenches: Excavations and trenches that cannot be properly backfilled and patched prior to the end of the workday shall be secured as specified in Section "Excavations and Trenches" of the WATCH. This does not apply to work occurring within the I-85 right-of-way.

Temporary Detour: The Contractor is responsible for constructing the temporary detour required on this project in accordance with the typical sections and details in the plans or as directed. After the detours have served their purpose, remove the portions deemed unsuitable for use as a permanent part of the project as directed by the Engineer. Place earth material removed from the detour in embankments or dispose of in waste areas furnished by the Contractor. Dispose of pavement material removed from the detour in waste areas furnished by the Contractor.

The Contractor is responsible for providing, placing, maintaining and removing upon completion, all traffic control devices necessary for the completion of the detour route.

2.0 MEASUREMENT AND PAYMENT

Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this specification. There will be no separate measurement and payment for the setting up and removal of all lane closures as these efforts will be considered incidental to individual pay items being used on said lane closures. If the Contractor fails to maintain acceptable traffic control measures or temporary traffic control devices and the Engineer implements measures necessary to provide the appropriate level of traffic control, the actual cost of performing said work will be deducted from the monies due the Contractor on the contract.

SP-17, LETTERING AND CROWN LOGO WITH BACKLIGHTING

1.0 DESCRIPTION

The work covered in this special provision consists of all labor, materials, and equipment required to install the “CHARLOTTE” Lettering and City of Charlotte Crown Logos, both with backlighting, as shown on Sheet B-3 in the plans. The lettering and crown logos will be attached to the exterior of the I-85 bridge structure in both directions. The letters and crown logo shall conform to the current version of the Charlotte Visual Style Guide, which can be obtained by the City’s Charlotte Communication and Marketing Department at 704-336-2395. The letters shall be styled in font Proxima Nova Bold.

The City of Charlotte Visual Style Guide is available at: [Charlotte Visual Guide \(charlottenc.gov\)](http://charlottenc.gov)

2.0 MATERIALS AND CONSTRUCTION METHODS

All construction covered in this special provision shall be in accordance NCDOT Standard Specifications, the manufacturers’ specifications, and the plans. The backlighting shall adhere to the notes within sheet B-3. The material of the letters and logo shall be cast aluminum and shall be black. A clear finish is required.

3.0 SUBMITTALS

The Contractor shall provide options for the letters and the Crown Logo for the City’s selection and submit shop drawings providing the details of the lettering and logos and backlighting for the City’s approval prior to installation.

4.0 MEASUREMENT AND PAYMENT

“Lettering and Crown Logo with Backlighting” will be paid at a lump sum price. The price and payment will be full compensation for all work associated with designing, coordinating through the City’s final selection of the lettering and logos to be implemented, furnishing, and installing the lettering, crown logo, and backlighting.

Payment will be made under:

LETTERING AND CROWN LOGO WITH BACKLIGHTING LS

SP-18, ARCHITECTURAL CONCRETE SURFACE TREATMENT

1.0 DESCRIPTION

This special provision addresses the architectural concrete surface treatment of the barriers and MSE walls for the bridges over Doby Creek and I-85.

The following patterns, shall be used.

- Bridge over Doby Creek
 - o A stained, simulated rock textured surface of various layered rock strata with a color scheme that mimics a natural stone appearance on exterior face of barrier. The maximum depth of the gaps into the rock strata shall be 3".
 - o A stained, simulated standard size running bond brick pattern that gives the appearance of a red brick wall on interior face of barrier. Pattern shall include 11-5/8" W x 3-5/8" H brick with a 1/2" relief and a 3/8" mortar joint.

- Bridge over I-85
 - o A stained, simulated standard size running bond brick pattern that gives the appearance of a red brick wall on interior face of barrier. Pattern shall include a 11-5/8" W x 3-5/8" H brick with a 1/2" relief and a 3/8" mortar joint.
 - o A stained, simulated standard size running bond brick pattern that gives the appearance of a red brick wall on the exposed faced of MSE retaining walls.

2.0 SUBMITTALS

Prior to submitting shop drawings, the contractor shall provide a minimum of three architectural concrete surface treatments options (including proposed coloring schemes) to the engineer for selection for the project. At a minimum vendor literature that clearly shows dimensioned details of the proposed pattern(s), proposed color(s), color application method and form liner depth shall be provided. All proposed options shall be capable of meeting all requirements listed within this special provision.

Shop Drawings – The Contractor shall submit for review and acceptance, plan and elevation views and details showing overall pattern, joint locations, form tie locations, and end, edge or other special conditions. The drawings shall include typical cross section of applicable surfaces, joints, corners, pattern relief, pattern size, pitch/working line, mortar joint and bed depths. If necessary, the Contractor shall revise the shop drawings until the propose form liner patterns and arrangements have been accepted by the City. Shop drawings shall be of sufficient scale to show the detail of all stone and joint patterns.

The form liner shall be patterned such that long continuous horizontal or vertical lines do not occur on the finished exposed surface. The line pattern shall be random in nature and shall conceal construction joint lines. Special attention shall be given to details from wrapping form liners around corners.

Shop drawings shall be reviewed and accepted prior to fabrication of any form liners.

Sample Panel – After the shop drawings have been reviewed and accepted by the Engineer, the Contractor shall supply sample panels of the architectural treatment that will be applied at all locations.

The Contractor shall construct 24" x 24" transportable sample panel(s) at the project site. The materials used in construction of the sample panel(s) shall comply with section 420 of the 2018 NCDOT Standard Specifications. The sample panel(s) shall be constructed using approved form liners. Any sample panel that is not accepted by the

Engineer is to be removed from the project site and a new sample panel produced at no additional expense to the Owner.

Architectural surface treatments and patterns of the finished work shall achieve the same final effect as demonstrated on the accepted sample panel(s). Upon acceptance by the Engineer, the sample panel(s) shall be used as the quality standard for the project. After the acceptance of the completed structure, the Contractor shall dispose of the sample panel(s) as directed by the Engineer.

3.0 MATERIAL REQUIREMENTS

Form Liner – The form liner shall be high quality, reusable product manufactured of high strength urethane rubber or other approved material which attached easily to the form work system, and shall not compress more than ¼-inch when concrete is poured at a rate of ten vertical feet per hour. The form liners shall be removable without causing deterioration of the surface or underlying concrete.

Form Release Agent – Form release agent shall be a non-staining petroleum distillate free from water, asphaltic, and other insoluble residue, or an equivalent product. Form release agents shall be compatible with color system applied and any special surface finish.

Form Ties – Form ties shall be set back a minimum of two inches from the finished concrete surface. The ties shall be design so that all material in the device to a depth of at least two inches back of the concrete face (bottom of simulated mortar groove) can be disengaged and removed without spalling or damaging the concrete. The Contractor shall submit the type of form ties to the City for approval.

Concrete Color System/Stain – Special surface color system shall be performed using approved coloring systems/stains suitable for the purpose intended and applied in a manner consistent with the design intent of the pattern. The approved sample panels shall be the basis from determining the appropriate color/stain application.

Color stains shall be a special penetrating stain mix as provided by the manufacturer and shall be medium to dark gray to achieve a full, natural color in the finished surface. The stain shall create a surface finish that is breathable (allowing water vapor transmission), and that resists deterioration from water, acid, alkali, fungi, sunlight, and/or weathering. Stain mix shall meet the requirements for mildew resistance of Federal Test Method Standard 144, Method 6271, and requirements for weathering resistance of 1,000 hours accelerated exposure measures by Weatherometer, in accordance with ASTM G 26. Color samples and patterning shall be submitted for approval by the City. Final coloring system shall be subject to approval by the City.

Anti-Graffiti Coating – The Contractor shall apply non-sacrificial anti-graffiti coating that is compatible with the concrete color system/stain. After application, the anti-graffiti coatings shall be dry to the touch within one hour and shall achieve a final cure within three hours. The color of the anti-graffiti coating shall be clear after full cure. The Contractor shall provide one gallon of graffiti remover, thinners, dryers and all necessary components recommended by the manufacturer to the City for testing.

Quality Standards – Manufacturer of patterned form liners and custom coloring system shall have at least five years' experience making the respective pattern form liners and color stains to create the pattern shapes, surface textures and colors.

The Contractor shall schedule a pre-installation conference with a manufacturer representative and the City to assure understanding of pattern form liner use, color application, requirements for construction of sample panel(s), and to coordinate the work. The Contractor shall disclose their source of simulated surface treatment and final coloration contractor at the Preconstruction Meeting.

4.0 CONSTRUCTION

Form Liner Preparation – Prior to each concrete pour, the form liners shall be clean and free of build-up. Each liner shall be visually inspected for blemishes and tears. Repairs shall be made in accordance with the manufacturer’s recommendations. Repairs shall be approved by the City before being used. Form liner panels that do not perform as intended or are no longer repairable shall be replaced.

Form Liner Attachment – Form liners shall be securely attached to forms in accordance with the manufacturer’s recommendations, with less than a ¼-inch seam. Blend form liner butt joints into the brick pattern and finish off the final concrete surface. Create no visible vertical or horizontal seams or conspicuous form liner butt joint marks. At locations where the form liners are joined, carefully blend to match the balance of the pattern. Form liners shall be installed to withstand anticipated concrete placement pressures without leakage and without causing physical or visual defects. Wall ties shall be coordinated with the form liner system. The Contractor shall have a technical representative from the form liner manufacturer on site for technical supervision during the installation and removal of form liners. Unless allowed by the City, installation and removal of form liners shall not be permitted if the aforementioned technical representative is not present.

Form Release Agent – Form release agent shall be applied in accordance with the manufacturer’s recommendations. The material shall be compatible with the form liner material and the concrete coloring system and in accordance with this Project Special Provision. Form release agent shall be worked into all areas, especially pattern recesses.

Patching – Using patching materials and procedures in accordance with the manufacturer’s recommendations, all form tie holes and other defects in finished uncolored surface shall be filled or repaired within 48 hours of form removal.

Surface Finish – All surfaces that are to receive coloring agent application shall be free of all laitance, dirt, dust, grease, efflorescence, paint or any other foreign material prior to the application of coloring agent. Cleaning of surfaces shall be accomplished by pressure washing with water set at 3000 psi to remove laitance. The fan nozzle shall be held perpendicular to the surface at a distance of one to two feet. Sandblasting shall not be permitted.

Final surface shall be free of blemishes, discolorations, surface voids, and other irregularities. All patterns shall be continuous without visual disruption.

Reinforced concrete shall be finished in accordance with the 2018 Standard Specifications for Roads and Structures, except that curing of concrete shall be done to accommodate the application of coloring and surface finish treatment.

Grout Pattern Joints – Grout pattern joints shall be constructed to simulate the appearance of mortared joints produced in laid up masonry work. Grout pattern joints shall be produced in accordance with the form liner / concrete color system manufacturer.

Color/Stain Application – Finished concrete and patches shall stand in place 30 days after form liners are removed prior to application of coloring/staining agent. Maintain the concrete temperature between 40° F and 85° F during color/stain application and for 48 hours after color/stain application. Consult the manufacturer’s recommendations for preparation, application, curing and storage of coloring agents/stains. The Contractor shall provide a Color Application Artist who is trained in the special techniques to achieve realistic surface appearances, if requested by the City. Treated surfaces located adjacent to exposed soil or pavement shall be temporarily covered to prevent dirt or soil splatter from rain.

Anti-Graffiti Coating Application – The Contractor shall apply non-sacrificial anti-graffiti coating after full cure of the color coating. The non-sacrificial anti-graffiti coating shall be applied by brush, roller or airless spray when the ambient temperature is between 45° F and 90° F, and the surface temperature is between 50° F and 100° F. Ensure the surface is clean and dry before applying the non-sacrificial anti-graffiti coating. The minimum dry film thickness of the non-sacrificial anti-graffiti coating shall be 2.0 mils.

Following the completion of all work, repairs of any damage made by other construction operations shall be made to the form lined and colored surfaces, as directed by the Engineer.

Experience and Qualifications – The Contractor shall have a minimum of three consecutive years' experience in architectural concrete surface treatment construction on similar types of projects. The Contractor shall furnish to the City five references who were responsible for supervision of similar projects and will testify to the successful completion of these projects. Include name, address, telephone number, and specific type of application.

5.0 BASIS OF PAYMENT

No separate payment will be made for "Architectural Concrete Surface Treatment". The cost of the material, equipment, labor, placement, and any incidentals necessary to complete the work, including submittals and sample panels, shall be considered incidental to the structure item requiring architectural concrete surface treatment.

SP-23, CRANE SAFETY

(6-20-19)

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration (OSHA) regulations.

Submit all items listed below to the Engineer prior to beginning crane operations. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

CRANE SAFETY SUBMITTAL LIST

- A. **Competent Person:** Provide the name and qualifications of the “Competent Person” responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- B. **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- C. **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- D. **Certifications:** Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

No separate payment will be made for complying with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks or complying with the current Occupational Safety and Health Administration (OSHA) regulations. Any cost associated with this special provision is considered incidental to the contract bid price for “Mobilization”.

**SP-24, MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE AT STATION
22+34.70 -L-**
(8-13-04)

1.0 GENERAL

Maintain traffic on I-85 (-Y3-) as shown in Traffic Control Plans and as directed by the Engineer.

Provide a minimum temporary vertical clearance of 17'-0" at all times during construction.

Submit plans and calculations for review and approval for protecting traffic and bracing girders, as described herein, at the above station before beginning work at this location. Have the drawings and design calculations prepared, signed, and sealed by a North Carolina Registered Professional Engineer. The approval of the Engineer will not relieve the Contractor of the responsibility for the safety of the method or equipment.

2.0 PROTECTION OF TRAFFIC

Protect traffic from any operation that affords the opportunity for construction materials, equipment, tools, etc. to be dropped into the path of traffic beneath the structure. Based on Contractor means and methods determine and clearly define all dead and live loads for this system, which, at a minimum, shall be installed between beams or girders over any travelway or shoulder area where traffic is maintained. Install the protective system before beginning any construction operations over traffic. In addition, for these same areas, keep the overhang falsework in place until after the rails have been poured.

3.0 BRACING GIRDERS

Brace girders to resist wind forces, weight of forms and other temporary loads, especially those eccentric to the vertical axis of the member during all stages of erection and construction. Before casting of intermediate diaphragms, decks, or connecting steel diaphragms do not allow the horizontal movement of girders to exceed ½ inch.

4.0 BASIS OF PAYMENT

Payment at the contract unit prices for the various pay items will be full compensation for the above work.

SP-41, LIGHTING CONTROL EQUIPMENT

1.0 DESCRIPTION

This special provision governs labor, materials, tools, equipment, and services furnished for the for the Lighting Control Equipment, as indicated, in accordance with provisions within the plans, applicable portions of Section 1408 of NCDOT’s Standard Specifications and as outlined in this special provisions.

Refer to the plans for additional requirements regarding control equipment components, mounting and cabinet requirements.

2.0 MATERIALS

Unless otherwise noted on the plans, or within this section, provide materials in accordance with Section 1408-2 of NCDOT’s Standard Specifications and the plans.

Page 14-17, Article 1408-2 MATERIALS, end of article, add paragraph that states:
Provide panelboard, lighting contactor and equipment rack as detailed and described on Sheet E-1 in the plans.

3.0 SUBMITTALS

Provide submittals for each piece of lighting control equipment; provide the following:

- Product Data:
 - Provide a cutsheet for each lighting control system component. Manufacturer’s literature shall demonstrate compliance with requirements for each type of product required for complete lighting control system.

4.0 MEASUREMENT AND PAYMENT

The Lighting Control Equipment shall be measured and paid for as units of each as listed below. Such prices include, but are not limited to lighting controls, conduit, wiring, electrical duct, junction boxes, power supplies, modules, circuit breakers, auxiliary equipment, equipment racks, transformers and power cords necessary to have a fully functioning Lighting Controls System.

The price and payment will be full compensation for all elements of work required to install a complete an operable lighting and controls system. The price and payment will be full compensation for all elements of work required to provide all material, labor, equipment, tools, and incidentals necessary to complete the work as shown on the plans, the manufacturer’s specifications, the provisions of this specification, and as directed by the Engineer.

Payment will be made under:

LIGHTING CONTROL EQUIPMENT, PANELBOARD.....	EA
LIGHTING CONTROL EQUIPMENT, CONTACTOR.....	EA

SP-42, FEEDER CIRCUITS

Revise the NCDOT Standard Specifications as follows:

1.0 DESCRIPTION

Refer to Article 1410-1 of NCDOT Standard Specifications for description.

Page 14-20, Article 1410-2 MATERIALS, lines 1-3, replace the paragraph with the following:

Provide metallic (PVC coated rigid galvanized steel) conduit above ground and non-metallic (PVC) below ground in accordance with the Subarticle 1400-2(B) of NCDOT Standard Specifications with the appropriate type being used at locations as shown in the plans.

2.0 CONSTRUCTION METHODS

Refer to Article 1410-3 of NCDOT Standard Specifications for Construction Methods.

3.0 MEASUREMENT AND PAYMENT

Refer to Article 1410-4 of NCDOT Standard Specifications for Measurement and Payment.

Payment will be made under:

- #6 W/G FEEDER CIRCUIT IN 1" PVC COATED RIGID GALVANIZED STEEL CONDUIT.....LF**
- #8 W/G FEEDER CIRCUIT IN 1" PVC CONDUIT.....LF**
- #8 W/G FEEDER CIRCUIT IN 1" PVC COATED RIGID GALVANIZED STEEL CONDUIT.....LF**
- #12 W/G FEEDER CIRCUIT IN 1" PVC COATED RIGID GALVANIZED STEEL CONDUIT.....LF**

SP-63, REPLACE EXISTING I-85 LIGHTING CONDUIT AND WIRING

1.0 DESCRIPTION

Work covered by this special provision consists of furnishing all materials, equipment, and labor required to replace the existing I-85 lighting conduit and wiring under the proposed median barrier between the two light poles on either side of the proposed bridge crossing to include connecting the power.

2.0 MATERIALS AND CONSTRUCTION METHODS

The conduit should be placed under the proposed median barrier bridge footing accordance with Division 14 of NCDOT Standard Specifications and NCDOT 2018 Roadway Standard Drawings 1405.01 and 1406.01 and Division.

3.0 MEASUREMENT AND PAYMENT

“Replace Existing I-85 Lighting Conduit” will be paid at a lump sum price. The price and payment will be full compensation for all elements of work required to replace the existing I-85 lighting conduit and wiring to be located under the proposed median barrier, to include all material, labor, equipment, tools, and incidentals necessary to complete the work as shown on the plans to include connecting the power.

Payment will be made at the contract unit price for:

REPLACE EXISTING I-85 LIGHTING CONDUIT AND WIRING.....LS

SP-64, BRIDGE LIGHTING CONDUIT SYSTEMS

1.0 DESCRIPTION

The work covered by this section consists of furnishing and installing one conduit system embedded in the barrier rail for roadway lighting to be installed by Duke Energy as shown in the plans. The conduit system in the barrier rail includes anchor bolts for light standard attachment by others. Anchor bolts will be incidental to the cost of the vertical concrete barrier.

Perform all work in accordance with these special provisions, the plans, the National Electrical Code (NEC), and Division 14 of the NCDOT Standard Specifications.

The Contractor actually performing the work described in these special provisions shall have a license of the proper classification from the North Carolina State Board of Examiners of Electrical Contractors.

The licensed Electrical Contractor must be available on the job site when the work is being performed or when requested by the Engineer. The licensed Electrical Contractor shall have a set of plans and special provisions in possession on the job site, and must maintain accurate "as built" plans.

A pre-construction meeting shall be held between the Contractor and Duke Energy representation prior to beginning the conduit installation.

2.0 MATERIALS

Non-metallic conduit shall be rigid PVC (Polyvinyl chloride) heavy wall approved for above ground and for underground use by direct burial or encasement in concrete per UL 651 "Rigid Non-Metallic Conduit". Use terminations designed for PVC conduit to seal and stub out each PVC conduit, and to provide watertight protection. Provide UL listed PVC expansion fittings of the appropriate size at all parapet construction joints and bent expansion joints, as noted in the plans. Expansion fittings shall be weatherproof, designed for non-metallic conduit and provide 4" minimum of conduit movement.

Type BR junction box used in the bridge lighting conduit system shall be NEMA Type-4 cast iron, hot-dipped galvanized with recess flange for flush mounting sized as shown on the plans. The BR junction box shall have a neoprene gasketed cover with brass or stainless steel screws and shall be suitable for a watertight installation. A mounting button with a blind tapped bolt hole shall be provided on the interior for future connection of a grounding lug. The junction box shall have a replaceable checkered cover designed to Tier 15, minimum and include the Duke Energy logo. The covers shall be a standardized design so that replacement can be done without disturbing the box or conduit system.

Type PC30 junction boxes used in the bridge lighting conduit system shall adhere to Section 1411 of the NCDOT Standard Specifications.

Use mastic that is a permanent, non-hardening, water sealing compound that adheres to metal, plastic, and concrete. Provide jute that is a burlap-like material used for filling voids and protecting components from waterproofing and adhesive compounds. Provide zinc rich paint conforming to Section 1080-9 of the NCDOT Standard Specifications. Provide pull lines specifically designed for pulling rope through conduit. Use pull lines made of 2-ply line, with a tensile strength of (240 pounds) minimum. Use rot and mildew resistant pull lines that are resistant to tangling when being dispensed.

Coordinate with Duke Energy to acquire the correct anchor bolt pattern for light pedestals installed on the structure.

3.0 CONSTRUCTION METHODS

Securely fasten all conduit and boxes prior to placing any concrete. Each conduit run between termination points should be as straight as possible. The total angular deflection of all bends in a conduit run should not exceed 180 degrees. Total deflection greater than 180 degrees requires advanced approval by the Duke Energy project engineer. After the conduit is encased in concrete, clean each conduit by snaking with a steel band that has an approved tube cleaner, equipped with a mandrel of a diameter not less than ½" of the nominal inside diameter of the conduit. Coordinate conduit cleaning of the bridge lighting conduit system with Duke Energy personnel, and have Duke Energy personnel on hand to witness cleaning. To ensure against corrosion in the areas where hot dipped galvanizing on BR junction boxes has been damaged, cover all raw metal surfaces with a cold galvanized, zinc rich paint.

Stub the bridge lighting conduit system out in junction boxes as shown in the plans. Place backfill in accordance with Section 300-7 of the NCDOT Standard Specifications. Bridge lighting conduit may enter BR junction boxes through field drilled holes protected with zinc rich paint before the conduit is inserted. Use threaded adapter and PVC bushing at all junction box to conduit connections. Install a pull line in each conduit for future use. Leave sufficient slack for attachment of a rope that will be used to install conductors. Coordinate electrical conduit system work with work by others.

Install anchor bolts according to pattern provided by Duke Energy. Protect exposed threaded portion of anchor bolts, to guard against damage from concrete installation. Seal and cap all conduits exposed in the light pedestals on the structure. All work must be inspected and approved by Duke Energy before concealment.

4.0 MEASUREMENT AND PAYMENT

All costs associated with furnishing and installing the conduit system embedded in the barrier rail for roadway lighting to be installed by Duke Energy as shown in the plans will be included in the cost for the *Two Bar Metal Rail*.