



0012DEL\_P28  
1002ADD\_P28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

May 23, 2018

**Addendum No. 2**

RE: Contract # C204058  
WBS # 44475.3.6, 44475FHWA.3.1  
F. A. # STBGDA-1001 (79)  
Mecklenburg County (P-5705BA, BB)  
Charlotte Gateway Station

**May 29, 2018 Special Letting (Advertisement extended from May 15, 2018 Letting)**

To Whom It May Concern:

The Contractor is hereby notified that, as a matter of supplemental information, NSR Standard Specifications, NSR Public Projects Manual and Existing NS Bridge plans for bridges with required demolition have been posted on the web along with the other information for this project.

Reference is made to the plans and proposal form furnished to you on this project.

The following revisions have been made to the Roadway plans:

Sheet No.	Revisions
Title Sheet 1	Revised the letting date on the combined title sheet for "BA" & "BB"
Title Sheet 1	Revised the letting date on the title sheet for "R-5705 BA"
UO-02	Revised to note that utility owner "Zayo" is not in conflict

Please void the above listed sheets in your plans and staple the revised sheets thereto.

The following revisions have been made to the Structure plans:

Sheet No.	Revisions
Title Sheet 1	Revised the letting date on the Structures title sheet for "R-5705 BA"
S1-4	Various revisions to general notes concerning dampproofing and waterproofing.

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACT STANDARDS AND DEVELOPMENT  
1591 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900  
Fax: (919) 250-4127  
Customer Service: 1-877-368-4968

Location:  
1020 BIRCH RIDGE DR.  
RALEIGH, NC 27610

Website: [www.ncdot.gov](http://www.ncdot.gov)

Sheet No.	Revisions
S3-4	Revised the columns for "Class AA Concrete" and "Reinforcing Steel" concerning the superstructure. Revised the total quantities for these two items
S8-3	Revised quantity of "Micropile Verification Test" in the Total Bill Of Material
S8-4	Various revisions to general notes concerning dampproofing and waterproofing
W-1	Revised the Total Bill of Material for the steel pile quantities for Wall RW-7
W-9	Added "Foundation Notes" for Wall RW-9
Title Sheet	Revised the letting date on the title sheet for P-5705BB "Platform and Canopy" plans
S-110, S-134, S-135 and S-137	Revised to clarify platform footing width
S-301	Revised to remove Note 2 concerning undercutting in the area
S13-07, S13-11 and S13-13	Revised to clarify bottom of baggage ramp elevation and revision to top of shaft/bottom of column elevation at Pier 3

Please void the above noted sheets in your plans and staple the revised sheets thereto.

The following revisions have been made to the proposal:

Page No.	Revisions
Proposal Cover	Note added that reads "Includes Addendum No. 2 Dated 05-23-2018". Also, revised the bid opening date
G-1, G-3, G-4 and G-5	Revised the date of availability within the project special provisions entitled "Contract Time and Liquidated Damages" and "Intermediate Contract Time Numbers 1, 3, 4, 5, 7, 8, 9, 10 And Liquidated Damages"
G-41	Revised the deadline date within the project special provision entitled "Prequalification Of Contractors" .
G-49	Added a new paragraph (number 3) under "Limited Access to Site" within the project special provision entitled "Bank Of America Stadium Requirements".
UbO-2	Revised to remove information concerning "Zayo" within the project special provision entitled "Utilities By Others"

Please void the Proposal Cover and the above listed pages in your proposal and staple the revised pages thereto.

On the item sheets the following pay item quantities have been revised:

<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
185-8834000000-N-SP	Micropile Verification Test	6 EA	1 EA
187-8834000000-N-SP	Pile Driving Equipment Setup For HP 14X73 Steel Piles	308 EA	316 EA
188-8839000000-E-SP	HP 14X73 Steel Piles	10,806.7 LF	11,113.4 LF
215-8175000000-E-420	Class AA Concrete (Bridge)	7,995.3 CY	7,887.6 CY
216-8217000000-E-425	Reinforcing Steel (Bridge)	1,702,846 LB	1,684,508 LB
286-8897000000-N-SP	Micropile Verification Test	12 EA	1 EA

The Contractor's bid must be based on the revised pay item quantities.

**Please delete the EBS file you previously downloaded for the May 15, 2018 letting and download the new EBS file listed for the May 29, 2018 letting. Please download the Expedite Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the new EBS file associated with the May 29, 2018 letting is used and the addendum file has been applied.**

The contract will be prepared accordingly.

Sincerely,

DocuSigned by:  
*Ronald E. Davenport, Jr.*  
FB1B6038A47A442...  
Ronald E. Davenport, Jr., PE  
State Contract Officer

RED/jag  
Attachments

cc: Mr. Lamar Sylvester, PE	Mr. Ray Arnold, PE
Mr. Scott Cole, PE	Ms. Theresa Canales, PE
Mr. Ron Hancock, PE	Mr. Jason Orthner, PE
Mr. Jon Weathersbee, PE	Mr. Mike Gwyn
Mr. Ken Kennedy, PE	Ms. Jaci Kincaid
Ms. Lori Strickland	Ms. Penny Higgins
Project File (2)	Mr. Mitchell Dixon

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N.C.

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PROPOSAL

**INCLUDES ADDENDUM No. 2 DATED 05-23-2018**  
**INCLUDES ADDENDUM No. 1 DATED 05-04-2018**

DATE AND TIME OF BID OPENING: **MAY 29, 2018 AT 2:00 PM**

CONTRACT ID      C204058  
WBS                44475.3.6, 44475FHWA.3.1

FEDERAL-AID NO. STATE FUNDED, STBGDA-1001(79)  
COUNTY            MECKLENBURG  
T.I.P. NO.         P-5705BA, P-5705BB  
MILES                0.742  
ROUTE NO.  
LOCATION            CHARLOTTE GATEWAY STATION.

TYPE OF WORK     GRADING, DRAINAGE, PAVING, STRUCTURES, AND ARCHITECTURE.

**NOTICE:**

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

**BIDS WILL BE RECEIVED AS SHOWN BELOW:**

**THIS IS A RAIL PROPOSAL**

**5% BID BOND OR BID DEPOSIT REQUIRED**

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PROJECT SPECIAL PROVISIONS

GENERAL

CONTRACT TIME AND LIQUIDATED DAMAGES:

(4-17-12)

108

SP1 G07 C

The date of availability for this contract is **July 9, 2018**.

The completion date for this contract is **April 27, 2022**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$ 200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12)

108

SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **July 9, 2018**.

The completion date for this intermediate contract time is **October 29, 2021**.

The liquidated damages for this intermediate contract time are **Three Thousand Dollars (\$ 3,000.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

**INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required of the sub-ballast layer and finished roadbed ready for NSR acceptance for track construction from -S1- Sta. 18+00 to -S1- Sta. 35+77 and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is July 9, 2018.

The completion date for this intermediate contract time is September 24, 2021.

The liquidated damages are One Thousand Five Hundred Dollars (\$ 1,500.00) per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work (excluding rub rails) required from -S1- Sta. 19+68 to -S1- Sta. 30+86 constructing the high-level platform including, but not limited to, on-grade structure, bridge superstructures over Trade St and 4<sup>th</sup> St and plumbing system, and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is July 9, 2018.

The completion date for this intermediate contract time is September 10, 2021.

The liquidated damages are One Thousand Five Hundred Dollars (\$ 1,500.00) per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 5 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required from -S1- Sta. 18+00 to -S1- Sta. 22+97 including, but not limited to, construction of the 5<sup>th</sup> Street Bridges, roadbed up to subgrade level, Abutment 1 and Pier 1 of the Trade Street bridges, grading and drainage, retaining walls, canopy foundations (Piers 1 and 2) and egress stairs and shall place and maintain traffic on same. The sub-ballast layer, platform, associated plumbing system, superstructure of the Trade Street bridges and final paving are excluded.

The date of availability for this intermediate contract time is July 9, 2018.

The completion date for this intermediate contract time is April 1, 2021.

The liquidated damages are One Thousand Dollars (\$ 1,000.00) per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 6 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required from -S1- Sta. 22+61 to -S1- Sta. 28+76 including, but not limited to, construction of the Trade Street Bridges, roadbed up to subgrade level and 4<sup>th</sup> Street bridges, grading and drainage, retaining walls, canopy foundations (Piers 3 and 4), concourse, baggage ramp and pedestrian/baggage tunnels and shall place and maintain traffic on same. The sub-ballast layer, platform, plumbing system,

concourse and tunnel fit out, and final paving are excluded.

The date of availability for this intermediate contract time is the day the Engineer informs the Contractor that Parcel 022A is available for his construction.

The completion date for this intermediate contract time is **October 31, 2020**.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 7 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required from -S1- Sta. 28+48 to -S1- Sta. 35+77 including, but not limited to, construction of Bent 2 and Abutment 2 of the 4<sup>th</sup> Street bridges, roadbed up to subgrade level, grading and drainage, retaining walls, egress stairs, tunnel and walkway and shall place and maintain traffic on same. The sub-ballast layer, platform, associated plumbing system and final paving, and superstructure of the 4<sup>th</sup> Street bridges are excluded.

The date of availability for this intermediate contract time is **July 9, 2018**.

The completion date for this intermediate contract time is **August 28, 2020**.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 8 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required from -S1- Sta. 41+81 to -S1- Sta. 49+17 including, but not limited to, construction of the P&N bridge and finished roadbed, grading and drainage, rock plating and sub-ballast and shall place and maintain traffic on same.

The Contractor's attention is directed to access restrictions within this station range detailed elsewhere in this Contract.

The date of availability for this intermediate contract time is **July 9, 2018**.

The completion date for this intermediate contract time is **June 25, 2021**.

The liquidated damages are **One Thousand Five Hundred Dollars (\$ 1,500.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 9 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SP1 G14 L

The Contractor shall complete the work required of the substructure of Structure 8 (P&N bridge), retaining wall RW-9 and all utility work between -S1- Sta. 41+81 and -S1- Sta. 43+37. This includes, all grading, drainage, bridge demolition, temporary pedestrian walkway enclosure, and temporary shoring required to complete this work and shall place and maintain traffic on same. The P&N bridge superstructure is excluded.

The Contractor's attention is directed to access restrictions within this station range detailed elsewhere in this Contract.

The date of availability for this intermediate contract time is **July 9, 2018**.

The completion date for this intermediate contract time is **July 10, 2020**.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 10 AND LIQUIDATED DAMAGES:**

(6-18-13)

108

SPI G14 L

The Contractor shall complete the work required from -S1- Sta. 10+00 to -S1- Sta. 18+00 and from -S1- Sta. 35+77 to -S1- Sta. 42+00. This includes, but is not limited to, the 6<sup>th</sup> Street bridge, grading, drainage, retaining walls, rock plating, utility relocations, and sub-ballast and shall place and maintain traffic on same. Grading and structure construction for -A1- from -S1- Sta. 40+50 to -A1- Sta. 49+50 is excluded from this ICT.

The Contractor's attention is directed to access restrictions within this station range detailed elsewhere in this Contract.

The date of availability for this intermediate contract time is **July 9, 2018**.

The completion date for this intermediate contract time is **August 28, 2020**.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 11 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

108

SPI G14 F

The Contractor shall complete the work required of 6<sup>th</sup> Street, Phase I, Step #1 as shown on Sheet TMP-2A and shall place and maintain traffic on same.

The time of availability for this intermediate contract time is the **Friday at 8:00 p.m.** that the Contractor elects to begin the work.

The completion time for this intermediate contract time is the following **Monday at 5:00 a.m.** after the time of availability.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per hour.

**INTERMEDIATE CONTRACT TIME NUMBER 12 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

108

SPI G14 F

The Contractor shall complete the work required of 6<sup>th</sup> Street, Phase II, Step #1 as shown on Sheet TMP-2A and shall place and maintain traffic on same.

The time of availability for this intermediate contract time is the **Friday at 8:00 p.m.** that the Contractor elects to begin the work.



**RAILROAD SAFETY JOB BRIEFINGS:**

*Add the following to Standard Specification 108-4:*

In addition to construction conferences, the contractor shall perform daily railroad safety job briefings with the railroad flagman before commencing work. The attendees of the job briefing shall include anyone who will be entering the work zone during that work period. All contractor and subcontractor supervisory staff, craftsmen, unskilled labor who will be in or entering the work zone shall be in attendance during the safety briefings. Individuals who enter the work zone after the safety briefing has already been conducted shall receive the job briefing from the contractor's employee in charge prior to entry.

**PREQUALIFICATION OF CONTRACTORS:**

In order to be awarded this project the prime contractor shall be prequalified for work code 5090 "Right-of-Way Prime Contractor". Applications for prequalification in work code 5090 must be transmitted to and received by Mr. Mickey Biedell, PE, State Qualifications Engineer no later than 5:00 p.m. on Thursday May 24<sup>th</sup>, 2018. If the apparent low bidder is not prequalified for work code 5090 at the time of bid, the deadline for getting this prequalification is 10:00 a. m. on the sixth calendar day following the opening of bids. If the apparent low bidder cannot obtain the required 5090 work code by this deadline the Department will consider their bid non-responsive and will move to the next lowest responsible/responsive bidder.

**NOTIFICATION OF OPERATIONS:**

The Contractor shall notify the Engineer a minimum of 48 hours in advance of beginning work on this project. Some work, including work that will require railroad oversight or Bank of America security will require notice on the order of 15 or more days. The Contractor shall give the Engineer sufficient notice of all operations for any sampling, inspection or acceptance testing required.

**MATERIALS AND TESTING:**

The Engineer reserves the right to perform all sampling and testing in accordance with Section 106 of the *Standard Specifications* and the Department's "Materials and Tests Manual." However, the Engineer may reduce or increase the frequency of sampling and testing where he deems it appropriate for the project under construction.

Additional sampling and testing activities will not be considered grounds for Contractor-caused delays.

**LOCATING EXISTING UNDERGROUND UTILITIES:**

*Add the following to Standard Specification section 105-8:*

Underground railroad communication utilities are not located by independent utility locating services. Prior to construction activities, the contractor shall coordinate with the Engineer and the Railroad to have underground railroad communication utilities located by the railroad signal department.

The contractor shall also locate all existing underground storm water pipes and storm water drainage structures prior to construction activities. The data collected shall include all horizontal and vertical information of pipe and drainage structure inverts, pipe sizes and pipe materials.

**BANK OF AMERICA STADIUM REQUIREMENTS:**

This special provision applies to all work performed in the vicinity of Bank of America Stadium, from -S1- Sta. 41+00 to -S1- Sta. 49+17.

**Limited Access to Site**

The Contractor's attention is directed to the limited access in this area. The site is bounded closely by the Norfolk Southern mainline track and bridge to the west, Bank of America Stadium fence and property and Duke Energy substation to the east, and Duke Energy transmission and distribution lines above. The Contractor shall not assume that access will be permitted under the existing mainline railroad bridge from the west, or along the pedestrian walkway from Graham St from the east. Contractor shall coordinate and cooperate to eliminate and reduce hindrances to other operations in the vicinity, specifically with the adjacent property owners.

A temporary construction easement at Morehead St will be provided to facilitate access to the area from the south, as shown in the plans. If the Contractor elects to use the easement in any fashion, the Contractor shall submit a plan for the proposed use to the Engineer for approval prior to starting any activities within the easement. The submittal shall address access road location and usage schedule, limits of construction, utility relocations, schedule, method of protecting existing track, and temporary closures of access/clean-up for events at the stadium. The Engineer may consult with the Carolina Panthers and Bank of America Stadium staff to confirm whether the Contractor's proposed use has any impacts on the Bank of America Stadium property or operations, and the contractor shall be prepared to make modifications to grades, install soil retaining structures and relocate utilities in a manner acceptable to the Carolina Panthers and Bank of America Stadium staff. Hauling operations shall be approved by the Engineer. Existing utilities within the easement that are in conflict with any proposed use are the Contractor's responsibility to coordinate and relocate. The Contractor shall have no claims whatsoever against the Department for any delays or costs incurred for elected use of the easement or relocation of utilities for said use.

If the Contractor elects to use the easement, the Contractor shall not store any construction equipment or materials within the easement area and shall keep the easement area and the immediately surrounding area free from trash and debris. Upon completion of the project the Contractor shall return the area to its original grade.

**Pedestrian Walkway Requirements**

The public pedestrian walkway located under the existing railroad bridges is utilized by BOA and Panthers staff and players to transit between the stadium and the practice fields located on the west side of the railroad tracks on a daily basis. Under no circumstances shall the Contractor close or restrict access to the pedestrian walkway except for activities requiring closure as identified in the Intermediate Contract Times and on sheet TMP-3, as identified in the accepted Site Safety and Security Plan, or as otherwise directed by the Engineer. Any closure will be subject to prior notification and receipt of authorization from the Engineer.

The Contractor shall provide a temporary enclosure of the pedestrian walkway prior to demolition of the existing P&N bridge as required by **Pedestrian Walkway, Phase I, Step 2** as shown on sheet **TMP-3**. The enclosure shall remain in place until the Contractor has completed and the Department has accepted Structure 8 (P&N bridge) and is demobilizing from the area.

Project: P-5705BA

## UbO-2

### PROJECT SPECIAL PROVISIONS

#### Utilities by Others

B) Verizon

Eric Crane

(919) 326-5604

[eric.crane@verizon.com](mailto:eric.crane@verizon.com)

C) CenturyLink

Richard Browning

(336) 268-8942

[dennis.browning@centurylink.com](mailto:dennis.browning@centurylink.com)

1. CenturyLink cable will be relocated by September 1, 2018.

D) AT&T

Roger Ramsey

(704) 424-1443

[rr2136@att.com](mailto:rr2136@att.com)

DI) Spectrum

Greg Brown

(980) 722-7631

[Gregg.brown@twcable.com](mailto:Gregg.brown@twcable.com)

1. Spectrum will have completed their relocation by September 1, 2018

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0000500000-N	801	SUPPLEMENTAL FIELD SURVEYING	20 HR		
0004	0000600000-N	801	SUPPLEMENTAL SURVEYING OFFICE CALCULATIONS	10 HR		
0005	0000700000-N	SP	FIELD OFFICE	Lump Sum	L.S.	
0006	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM BOA MOBILIZATION	4 EA		
0007	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0008	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUBBING	1 ACR		
0009	0022000000-E	225	UNCLASSIFIED EXCAVATION	2,950 CY		
0010	0036000000-E	225	UNDERCUT EXCAVATION	1,300 CY		
0011	0106000000-E	230	BORROW EXCAVATION	29,400 CY		
0012	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	5,870 SY		
0013	0163000000-E	250	REMOVAL OF EXISTING CONCRETE PAVEMENT	60 SY		
0014	0185000000-E	250	BREAKING OF EXISTING CONCRETE PAVEMENT	880 SY		
0015	0192000000-N	260	PROOF ROLLING	11 HR		
0016	0194000000-E	265	SELECT GRANULAR MATERIAL, CLASS III	84,400 CY		
0017	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	1,400 SY		
0018	0199000000-E	SP	TEMPORARY SHORING	3,900 SF		

County: Mecklenburg

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0223000000-E	275	ROCK PLATING	1,015 SY		
0020	0248000000-N	SP	GENERIC GRADING ITEM SELECT DEMOLITION OF CONCRETE SHEET PILE WALL	Lump Sum	L.S.	
0021	0248000000-N	SP	GENERIC GRADING ITEM SELECT DEMOLITION OF CRIB WALL	Lump Sum	L.S.	
0022	0255000000-E	SP	GENERIC GRADING ITEM EARTH MOUND	5 TON		
0023	0255000000-E	SP	GENERIC GRADING ITEM HAULING AND DISPOSAL OF CONTAMINATED SOIL	4,555 TON		
0024	0255000000-E	SP	GENERIC GRADING ITEM SURGE STONE	200 TON		
0025	0257000000-E	SP	GENERIC GRADING ITEM RAILROAD SIGNAL CONDUIT	3,000 LF		
0026	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	440 TON		
0027	0320000000-E	300	FOUNDATION CONDITIONING GEO- TEXTILE	1,000 SY		
0028	0335000000-E	305	*** DRAINAGE PIPE (8")	170 LF		
0029	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	324 LF		
0030	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	252 LF		
0031	0378000000-E	310	24" RC PIPE CULVERTS, CLASS III	92 LF		
0032	0536000000-E	310	**** HDPE PIPE CULVERTS (12")	156 LF		
0033	0536000000-E	310	**** HDPE PIPE CULVERTS (15")	280 LF		
0034	0536000000-E	310	**** HDPE PIPE CULVERTS (18")	68 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	0536000000-E	310	**** HDPE PIPE CULVERTS (30")	432 LF		
0036	0995000000-E	340	PIPE REMOVAL	480 LF		
0037	0996000000-N	350	PIPE CLEAN OUT	1 EA		
0038	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0039	1099500000-E	505	SHALLOW UNDERCUT	100 CY		
0040	1099700000-E	505	CLASS IV SUBGRADE STABILIZA- TION	200 TON		
0041	1220000000-E	545	INCIDENTAL STONE BASE	225 TON		
0042	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (3")	3,560 SY		
0043	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	960 TON		
0044	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	30 TON		
0045	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	940 TON		
0046	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	105 TON		
0047	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	245 TON		
0048	2022000000-E	815	SUBDRAIN EXCAVATION	224 CY		
0049	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	1,000 SY		
0050	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	168 CY		
0051	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	1,000 LF		
0052	2070000000-N	815	SUBDRAIN PIPE OUTLET	2 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0053	2077000000-E	815	6" OUTLET PIPE	12 LF		
0054	2253000000-E	840	PIPE COLLARS	0.66 CY		
0055	2275000000-E	SP	FLOWABLE FILL	36 CY		
0056	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	18 EA		
0057	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	49.3 LF		
0058	2365000000-N	840	FRAME WITH TWO GRATES, STD 840.22	6 EA		
0059	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	2 EA		
0060	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	3 EA		
0061	2396000000-N	840	FRAME WITH COVER, STD 840.54	5 EA		
0062	2484000000-E	SP	GENERIC DRAINAGE ITEM 8" UNDERDRAIN	5,250 LF		
0063	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	600 LF		
0064	2591000000-E	848	4" CONCRETE SIDEWALK	1,440 SY		
0065	2612000000-E	848	6" CONCRETE DRIVEWAY	20 SY		
0066	2800000000-N	858	ADJUSTMENT OF CATCH BASINS	2 EA		
0067	2905000000-N	859	CONVERT EXISTING DROP INLET TO JUNCTION BOX	1 EA		
0068	3030000000-E	862	STEEL BEAM GUARDRAIL	1,350 LF		
0069	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	300 LF		
0070	3105000000-N	862	STEEL BEAM GUARDRAIL TERMINAL SECTIONS	8 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0071	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0072	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	4 EA		
0073	3533000000-E	866	CHAIN LINK FENCE, *** FABRIC (72")	1,183 LF		
0074	3536000000-E	866	CHAIN LINK FENCE, 48" FABRIC	193 LF		
0075	3539000000-E	866	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")	102 EA		
0076	3542000000-E	866	METAL LINE POSTS FOR 48" CHAIN LINK FENCE	17 EA		
0077	3545000000-E	866	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")	10 EA		
0078	3548000000-E	866	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE	6 EA		
0079	3551000000-E	866	METAL GATE POSTS FOR *** CHAIN LINK FENCE, SINGLE GATE (72")	2 EA		
0080	3554000000-E	866	METAL GATE POSTS FOR *** CHAIN LINK FENCE, DOUBLE GATE (72")	2 EA		
0081	3564000000-E	866	SINGLE GATES, *** HIGH, *** WIDE, *** OPENING (72", 12', 12')	1 EA		
0082	3565000000-E	866	DOUBLE GATES, *** HIGH, *** WIDE, *** OPENING (72", 12', 24')	1 EA		
0083	3578000000-N	SP	GENERIC FENCING ITEM GATE	2 EA		
0084	3649000000-E	876	RIP RAP, CLASS B	18 TON		
0085	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	795 SY		
0086	3832000000-E	SP	RAILROAD TRACK TO BE REMOVED	3,740 TF		



Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0087	3884000000-N	SP	GENERIC TRACKWORK ITEM CROSSTIE DISPOSAL	2,120 EA		
0088	3885000000-E	SP	GENERIC TRACKWORK ITEM SUB-BALLAST	6,615 TON		
0089	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	49 LF		
0090	4102000000-N	904	SIGN ERECTION, TYPE E	1 EA		
0091	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E)	4 EA		
0092	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	2 EA		
0093	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	2 EA		
0094	4238000000-N	907	DISPOSAL OF SIGN, D, E OR F	4 EA		
0095	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	421 SF		
0096	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	173 SF		
0097	4415000000-N	1115	FLASHING ARROW BOARD	2 EA		
0098	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	2 EA		
0099	4430000000-N	1130	DRUMS	50 EA		
0100	4445000000-E	1145	BARRICADES (TYPE III)	208 LF		
0101	4455000000-N	1150	FLAGGER	30 DAY		
0102	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	2 EA		
0103	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	2 EA		
0104	4485000000-E	1170	PORTABLE CONCRETE BARRIER	275 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0105	4500000000-E	1170	REMOVE & RESET PORTABLE CONCRETE BARRIER	373 LF		
0106	4507000000-E	1170	WATER FILLED BARRIER	224 LF		
0107	4516000000-N	1180	SKINNY DRUM	30 EA		
0108	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	100 LF		
0109	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	1,300 LF		
0110	4847010000-E	1205	POLYUREA PAVEMENT MARKING LINES (4", 20 MILS)	1,000 LF		
0111	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	100 LF		
0112	4915000000-E	1264	7' U-CHANNEL POSTS	3 EA		
0113	4955000000-N	1264	OBJECT MARKERS (END OF ROAD)	3 EA		
0114	5325600000-E	1510	6" WATER LINE	109 LF		
0115	5325800000-E	1510	8" WATER LINE	14 LF		
0116	5326200000-E	1510	12" WATER LINE	372 LF		
0117	5327000000-E	1510	20" WATER LINE	60 LF		
0118	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	3,100 LB		
0119	5540000000-E	1515	6" VALVE	2 EA		
0120	5558000000-E	1515	12" VALVE	2 EA		
0121	5606000000-E	1515	2" BLOW OFF	1 EA		
0122	5648000000-N	1515	RELOCATE WATER METER	1 EA		
0123	5649000000-N	1515	RECONNECT WATER METER	1 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0124	5672000000-N	1515	RELOCATE FIRE HYDRANT	1 EA		
0125	5673000000-E	1515	FIRE HYDRANT LEG	17 LF		
0126	5678400000-E	1515	6" LINE STOP	2 EA		
0127	5678600000-E	1515	8" LINE STOP	2 EA		
0128	5686500000-E	1515	WATER SERVICE LINE	29 LF		
0129	5691500000-E	1520	12" SANITARY GRAVITY SEWER	143 LF		
0130	5691900000-E	1520	24" SANITARY GRAVITY SEWER	504 LF		
0131	5775000000-E	1525	4' DIA UTILITY MANHOLE	2 EA		
0132	5776000000-E	1525	5' DIA UTILITY MANHOLE	4 EA		
0133	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	4 LF		
0134	5782000000-E	1525	UTILITY MANHOLE WALL 5' DIA	10 LF		
0135	5800000000-E	1530	ABANDON 6" UTILITY PIPE	418 LF		
0136	5801000000-E	1530	ABANDON 8" UTILITY PIPE	919 LF		
0137	5802000000-E	1530	ABANDON 10" UTILITY PIPE	227 LF		
0138	5811000000-E	1530	ABANDON 18" UTILITY PIPE	524 LF		
0139	5815000000-N	1530	REMOVE WATER METER	9 EA		
0140	5816000000-N	1530	ABANDON UTILITY MANHOLE	6 EA		
0141	5828000000-N	1530	REMOVE UTILITY MANHOLE	3 EA		
0142	5888000000-E	SP	GENERIC UTILITY ITEM 8" CURED IN PLACE PIPE	517 LF		
0143	6000000000-E	1605	TEMPORARY SILT FENCE	7,200 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0144	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	330 TON		
0145	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	1,970 TON		
0146	6012000000-E	1610	SEDIMENT CONTROL STONE	1,160 TON		
0147	6015000000-E	1615	TEMPORARY MULCHING	15 ACR		
0148	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	700 LB		
0149	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED- ING	3.5 TON		
0150	6024000000-E	1622	TEMPORARY SLOPE DRAINS	1,850 LF		
0151	6029000000-E	SP	SAFETY FENCE	500 LF		
0152	6030000000-E	1630	SILT EXCAVATION	3,700 CY		
0153	6036000000-E	1631	MATTING FOR EROSION CONTROL	28,000 SY		
0154	6037000000-E	SP	COIR FIBER MAT	50 SY		
0155	6042000000-E	1632	1/4" HARDWARE CLOTH	1,000 LF		
0156	6071012000-E	SP	COIR FIBER WATTLE	1,050 LF		
0157	6071020000-E	SP	POLYACRYLAMIDE (PAM)	500 LB		
0158	6071030000-E	1640	COIR FIBER BAFFLE	1,200 LF		
0159	6084000000-E	1660	SEEDING & MULCHING	6 ACR		
0160	6087000000-E	1660	MOWING	6 ACR		
0161	6090000000-E	1661	SEED FOR REPAIR SEEDING	150 LB		
0162	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.75 TON		
0163	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	425 LB		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0164	6108000000-E	1665	FERTILIZER TOPDRESSING	12.25 TON		
0165	6114500000-N	1667	SPECIALIZED HAND MOWING	30 MHR		
0166	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	100 EA		
0167	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	5 EA		
0168	6132000000-N	SP	GENERIC EROSION CONTROL ITEM SUPPLEMENTAL RESPONSE FOR EROSION CONTROL	10 EA		
0292	3575000000-E	SP	GENERIC FENCING ITEM TEMP CHAIN LINK FENCE, 60" FABRIC	195 LF		
0293	3575000000-E	SP	GENERIC FENCING ITEM DECORATIVE FENCE RESET	50 LF		
<b>CULVERT ITEMS</b>						
0169	8126000000-N	414	CULVERT EXCAVATION, STA ***** (25+30.89-S1-)	Lump Sum	L.S.	
0170	8126000000-N	414	CULVERT EXCAVATION, STA ***** (29+35.21-S1-)	Lump Sum	L.S.	
0171	8126000000-N	414	CULVERT EXCAVATION, STA ***** (42+05.33-A1-)	Lump Sum	L.S.	
0172	8133000000-E	414	FOUNDATION CONDITIONING MATER- IAL, BOX CULVERT	177 TON		
0173	8245000000-E	425	REINFORCING STEEL (CULVERT)	158,630 LB		
0174	8453000000-E	454	METHOD B DAMPPROOFING	17.6 SY		
0175	8806000000-N	SP	GENERIC CULVERT ITEM PDA TESTING	2 EA		
0176	8806000000-N	SP	GENERIC CULVERT ITEM PILE DRIVING EQUIPMENT SETUP FOR HP14X73 STEEL PILES	43 EA		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0177	8811000000-E	SP	GENERIC CULVERT ITEM HP14X73 STEEL PILES	1,602 LF		
0178	8811000000-E	SP	GENERIC CULVERT ITEM METAL RAIL (ALUMINUM)	47.2 LF		
0179	8822000000-E	SP	GENERIC CULVERT ITEM WATERPROOFING	562 SY		
0180	8826000000-E	420	GENERIC CULVERT ITEM CLASS AA CONCRETE	646.6 CY		
<b>WALL ITEMS</b>						
0181	8077000000-E	410	FOUNDATION EXCAVATION (RETAIN- ING WALL)	2,693.7 CY		
0182	8252000000-E	425	REINFORCING STEEL (RETAINING WALL)	382,579 LB		
0183	8453000000-E	454	METHOD B DAMPPROOFING	905.2 SY		
0184	8834000000-N	SP	GENERIC RETAINING WALL ITEM 7" DIA MICROPILES	6 EA		
0185	8834000000-N	SP	GENERIC RETAINING WALL ITEM MICROPILE VERIFICATION TEST	1 EA		
0186	8834000000-N	SP	GENERIC RETAINING WALL ITEM PDA TESTING	2 EA		
0187	8834000000-N	SP	GENERIC RETAINING WALL ITEM PILE DRIVING EQUIPMENT SETUP FOR HP14X73 STEEL PILES	316 EA		
0188	8839000000-E	SP	GENERIC RETAINING WALL ITEM HP14X73 STEEL PILES	11,113.4 LF		
0189	8839000000-E	SP	GENERIC RETAINING WALL ITEM METAL RAIL (ALUMINUM)	594.4 LF		
0190	8839000000-E	SP	GENERIC RETAINING WALL ITEM METAL RAIL (STEEL) & FENCE	1,320.1 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0191	8847000000-E	SP	GENERIC RETAINING WALL ITEM PILE PANEL RETAINING WALLS	10,304.8 SF		
0192	8853000000-E	SP	GENERIC RETAINING WALL ITEM CLASS AA CONCRETE	2,296.9 CY		

STRUCTURE ITEMS

0193	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (15+39.55-S1-)	Lump Sum	L.S.	
0194	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (23+62.98-S2-)	Lump Sum	L.S.	
0195	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (28+12.88-S2-)	Lump Sum	L.S.	
0196	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (42+59.46-A1-)	Lump Sum	L.S.	
0197	8070000000-E	410	FOUNDATION EXCAVATION (BRIDGE)	1,600 CY		
0198	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 1, 18+79.37-S2-)	Lump Sum	L.S.	
0199	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 1, 23+62.98-S2-)	Lump Sum	L.S.	
0200	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 1, 28+12.88-S2-)	Lump Sum	L.S.	
0201	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 2, 18+79.37-S2-)	Lump Sum	L.S.	
0202	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 2, 28+12.88-S2-)	Lump Sum	L.S.	

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0203	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT ** AT STATION ***** (PIER 3, 23+62.98-S2-)	Lump Sum	L.S.	
0204	8105500000-E	411	***.*** DIA DRILLED PIERS IN SOIL (4'-6")	84.5 LF		
0205	8105500000-E	411	***.*** DIA DRILLED PIERS IN SOIL (6'-0")	366.5 LF		
0206	8105600000-E	411	***.*** DIA DRILLED PIERS NOT IN SOIL (4'-6")	86 LF		
0207	8105600000-E	411	***.*** DIA DRILLED PIERS NOT IN SOIL (5'-6")	407 LF		
0208	8105600000-E	411	***.*** DIA DRILLED PIERS NOT IN SOIL (6'-0")	90 LF		
0209	8111000000-E	411	PERMANENT STEEL CASING FOR ***.*** DIA DRILLED PIER (6'-0")	193.4 LF		
0210	8113000000-N	411	SID INSPECTIONS	20 EA		
0211	8114000000-N	411	SPT TESTING	20 EA		
0212	8115000000-N	411	CSL TESTING	20 EA		
0213	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVA- TION AT STATION ***** (42+59.46-A1-)	Lump Sum	L.S.	
0214	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	35,454.2 SF		
0215	8175000000-E	420	CLASS AA CONCRETE (BRIDGE)	7,887.6 CY		
0216	8217000000-E	425	REINFORCING STEEL (BRIDGE)	1,684,508 LB		
0217	8238000000-E	425	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)	84,013 LB		
0218	8453000000-E	454	METHOD B DAMPPROOFING	1,690.8 SY		



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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0219	8531000000-E	462	4" SLOPE PROTECTION	1,482.8 SY		
0220	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	975 TON		
0221	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	1,085 SY		
0222	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0223	8860000000-N	SP	GENERIC STRUCTURE ITEM APPLICATION OF BRIDGE COATING	Lump Sum	L.S.	
0224	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 160,000 LBS STRUCTURAL STEEL	Lump Sum	L.S.	
0225	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 177,727 LBS STRUCTURAL STEEL	Lump Sum	L.S.	
0226	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 177,963 LBS STRUCTURAL STEEL	Lump Sum	L.S.	
0227	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 231,350 LBS STRUCTURAL STEEL	Lump Sum	L.S.	
0228	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 233,588 LBS STRUCTURAL STEEL STA 28+12.88-S2-	Lump Sum	L.S.	
0229	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 233,588 LBS STRUCTURAL STEEL STA 28+17.22-S1-	Lump Sum	L.S.	
0230	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 338,035 LBS STRUCTURAL STEEL STA 23+62.98-S2-	Lump Sum	L.S.	
0231	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 338,035 LBS STRUCTURAL STEEL STA 23+65.83-S1-	Lump Sum	L.S.	
0232	8860000000-N	SP	GENERIC STRUCTURE ITEM APPROX 764,875 LBS STRUCTURAL STEEL	Lump Sum	L.S.	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0233	8860000000-N	SP	GENERIC STRUCTURE ITEM ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0234	8860000000-N	SP	GENERIC STRUCTURE ITEM PAINTING OF STRUCTURAL STEEL	Lump Sum	L.S.	
0235	8860000000-N	SP	GENERIC STRUCTURE ITEM PLATFORM STRUCTURE DRAINAGE SYSTEM	Lump Sum	L.S.	
0236	8860000000-N	SP	GENERIC STRUCTURE ITEM SELF LUBRICATING EXPANSION BEARING ASSEMBLIES	Lump Sum	L.S.	
0237	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 15+39.55-S1-	Lump Sum	L.S.	
0238	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 18+79.37-S2-	Lump Sum	L.S.	
0239	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 18+82.25-S1-	Lump Sum	L.S.	
0240	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 23+62.98-S2-	Lump Sum	L.S.	
0241	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 23+65.83-S1-	Lump Sum	L.S.	
0242	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 28+12.88-S2-	Lump Sum	L.S.	
0243	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 28+17.22-S1-	Lump Sum	L.S.	
0244	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE DRAINAGE SYSTEM AT STA 42+59.46-A1-	Lump Sum	L.S.	
0245	8860000000-N	SP	GENERIC STRUCTURE ITEM STRUCTURE GROUNDING AND BONDING AT STA 23+65.83-S1-	Lump Sum	L.S.	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0246	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 1 (23+62.98-S2-)	Lump Sum	L.S.	
0247	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 1 (28+12.88-S2-)	Lump Sum	L.S.	
0248	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 1 (42+59.46-A1-)	Lump Sum	L.S.	
0249	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 2 (23+62.98-S2-)	Lump Sum	L.S.	
0250	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 2 (28+12.88-S2-)	Lump Sum	L.S.	
0251	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ ABUTMENT 2 (42+59.46-A1-)	Lump Sum	L.S.	
0252	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 1 (18+79.37-S2-)	Lump Sum	L.S.	
0253	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 1 (23+62.98-S2-)	Lump Sum	L.S.	
0254	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 1 (28+12.88-S2-)	Lump Sum	L.S.	
0255	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 2 (18+79.37-S2-)	Lump Sum	L.S.	
0256	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 2 (28+12.88-S2-)	Lump Sum	L.S.	
0257	8860000000-N	SP	GENERIC STRUCTURE ITEM TEMPORARY RAILROAD SHORING/ PIER 3 (23+62.98-S2-)	Lump Sum	L.S.	
0258	8867000000-E	SP	GENERIC STRUCTURE ITEM ABRASIVE METAL NOSINGS	999 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0259	8867000000-E	SP	GENERIC STRUCTURE ITEM ARCHITECTURAL FIN RAIL (ALUMINUM HAND RAIL AND FIN ASSEMBLY)	400.4 LF		
0260	8867000000-E	SP	GENERIC STRUCTURE ITEM ARMORLESS EXPANSION JOINT SYSTEM	335 LF		
0261	8867000000-E	SP	GENERIC STRUCTURE ITEM CONCRETE PARAPET	2,205.2 LF		
0262	8867000000-E	SP	GENERIC STRUCTURE ITEM HP14X73 STEEL PILES	27,972.7 LF		
0263	8867000000-E	SP	GENERIC STRUCTURE ITEM METAL RAIL (ALUMINUM)	842.7 LF		
0264	8867000000-E	SP	GENERIC STRUCTURE ITEM METAL RAIL (STEEL) & FENCE	660.4 LF		
0265	8867000000-E	SP	GENERIC STRUCTURE ITEM PLATFORM EXPANSION JOINTS	315 LF		
0266	8867000000-E	SP	GENERIC STRUCTURE ITEM PLATFORM PAINT	2,200 LF		
0267	8867000000-E	SP	GENERIC STRUCTURE ITEM PREDRILLING FOR PILES	128 LF		
0268	8867000000-E	SP	GENERIC STRUCTURE ITEM RUB RAIL	2,200 LF		
0269	8867000000-E	SP	GENERIC STRUCTURE ITEM SOIL/ROCK BORING	640 LF		
0270	8867000000-E	SP	GENERIC STRUCTURE ITEM STAINLESS STEEL HANDRAILS	370 LF		
0271	8867000000-E	SP	GENERIC STRUCTURE ITEM STAINLESS STEEL RAILINGS	368 LF		
0272	8867000000-E	SP	GENERIC STRUCTURE ITEM TACTILE WARNING SURFACE	2,200 LF		
0273	8889000000-E	SP	GENERIC STRUCTURE ITEM REINFORCING STEEL, BLACK (GRADE 75)	139,300 LB		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0274	8889000000-E	SP	GENERIC STRUCTURE ITEM REINFORCING STEEL, GALVANIZED (GRADE 75)	67,320 LB		
0275	8889000000-E	SP	GENERIC STRUCTURE ITEM SPIRAL REINFORCING STEEL, BLACK (GRADE 75)	69,800 LB		
0276	8889000000-E	SP	GENERIC STRUCTURE ITEM SPIRAL REINFORCING STEEL, GALVANIZED (GRADE 75)	18,000 LB		
0277	8892000000-E	SP	GENERIC STRUCTURE ITEM LIQUID FLOOR TREATMENTS	38,400 SF		
0278	8892000000-E	SP	GENERIC STRUCTURE ITEM STAINLESS STEEL ENCLOSURE	442 SF		
0279	8893000000-E	SP	GENERIC STRUCTURE ITEM FOUNDATION WATERPROOFING	2,400 SY		
0280	8893000000-E	SP	GENERIC STRUCTURE ITEM WATERPROOFING	3,048.2 SY		
0281	8897000000-N	SP	GENERIC STRUCTURE ITEM 3'-6" STAINLESS STEEL GATES	3 EA		
0282	8897000000-N	SP	GENERIC STRUCTURE ITEM 7" DIA MICROPILES	12 EA		
0283	8897000000-N	SP	GENERIC STRUCTURE ITEM 8'-0" STAINLESS STEEL GATES	2 EA		
0284	8897000000-N	SP	GENERIC STRUCTURE ITEM HINGE	30 EA		
0285	8897000000-N	SP	GENERIC STRUCTURE ITEM LIGHTNING PROTECTION SYSTEM	2 EA		
0286	8897000000-N	SP	GENERIC STRUCTURE ITEM MICROPILE VERIFICATION TEST	1 EA		
0287	8897000000-N	SP	GENERIC STRUCTURE ITEM PANIC DEVICE	4 EA		
0288	8897000000-N	SP	GENERIC STRUCTURE ITEM PDA TESTING	20 EA		

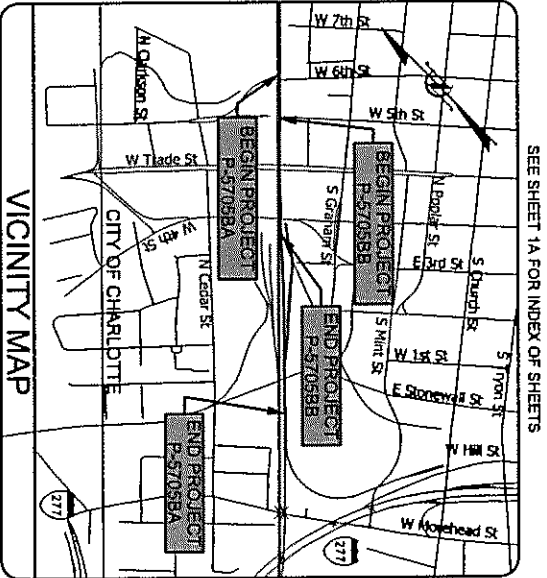
County: Mecklenburg

1001ADD\_P28

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0289	8897000000-N	SP	GENERIC STRUCTURE ITEM PILE DRIVING EQUIPMENT SETUP FOR HP14X73 STEEL PILES	593 EA		
0290	8897000000-N	SP	GENERIC STRUCTURE ITEM STEEL PILE POINTS	12 EA		
0291	8897000000-N	SP	GENERIC STRUCTURE ITEM THERMAL INTEGRITY PROFILER	20 EA		
1452/May22/Q3012083.06/D1647933887000/E293			Total Amount Of Bid For Entire Project :			

REV #1: REVISE LETTING DATE

**CONTRACT: C204058 TIP PROJECT: P-5705BA & P-5705BB**



SEE SHEET 1A FOR INDEX OF SHEETS

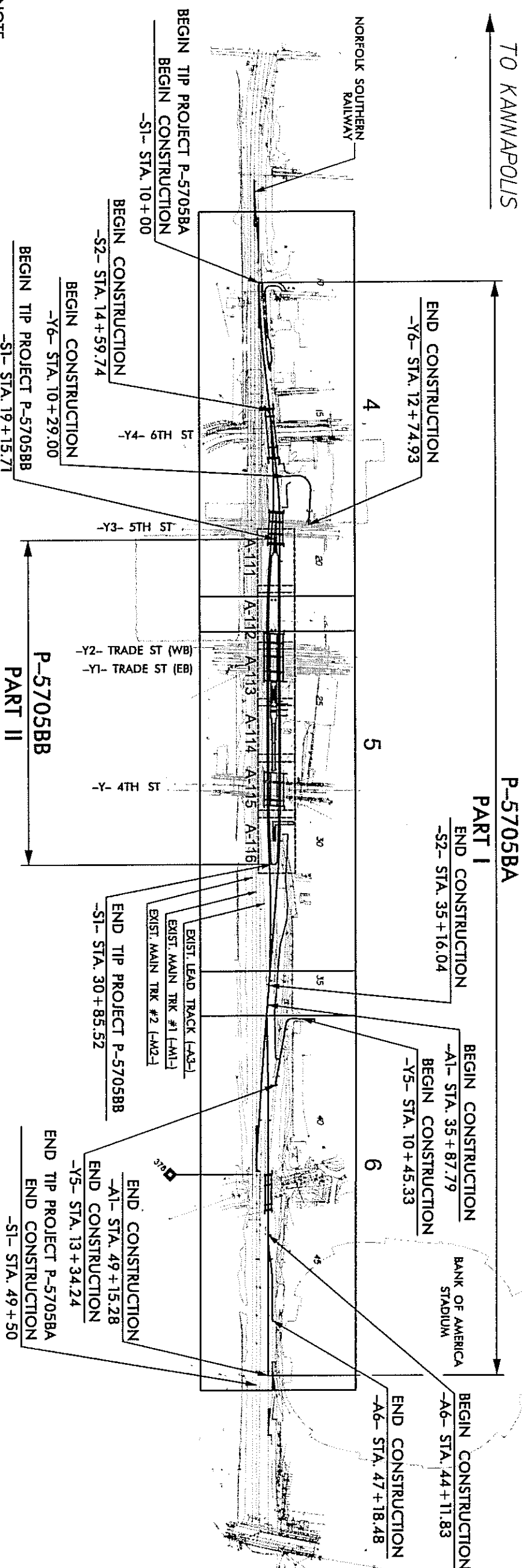
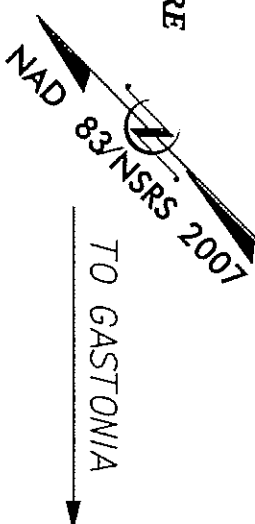
STATE OF NORTH CAROLINA  
RAIL DIVISION

**MECKLENBURG COUNTY**

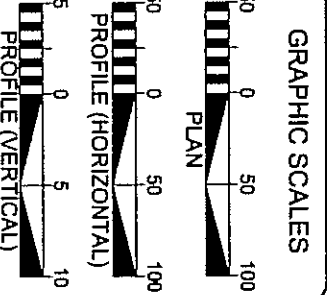
LOCATION: CHARLOTTE GATEWAY STATION - TRACK, STRUCTURES AND SIGNALS  
CHARLOTTE GATEWAY STATION - PLATFORM AND CANOPY  
TYPE OF WORK: DRAINAGE, PAVING, GRADING, STRUCTURES, ARCHITECTURE

CHARLOTTE PROJ. NO.: TK1715009

STATE	FEDERAL PROJECT NUMBER	PROJECT NUMBER	SHEET NUMBER
N.C.	P-5705BA & P-5705BB	1	
STATE PROJECT NUMBER	F.A. PROJECT NUMBER	PROJECT NUMBER	
32213		RAW/P-5705BAP-P-5705BB1	
44475.12		PE/UTIL (P-5705BAP-P-5705BB)	
44475.3.6	FR-T11-0047-12	UTIL CONST. (P-5705BAP-P-5705BB)	
44475THWA.3.1	STBGDA-1001(07B)	CONST. (P-5705BAP-P-5705BB)	



NOTE:  
PROPOSED STRUCTURE BEGIN/END STATIONS NOT SHOWN FOR CLARITY.  
SEE P-5705BA AND P-5705BB TITLE SHEETS FOR STRUCTURE BEGIN/END STATIONS.



PROJECT LENGTH	2018 STANDARD SPECIFICATIONS
LENGTH OF RAIL TIP PROJECT P-5705BA	0.612 MILES
LENGTH OF STRUCTURES TIP PROJECT P-5705BA	0.136 MILES
TOTAL LENGTH OF RAIL TIP PROJECT P-5705BA	0.748 MILES
LENGTH OF STRUCTURES TIP PROJECT P-5705BB	0.220 MILES
TOTAL LENGTH OF RAIL TIP PROJECT P-5705BB	0.220 MILES
LENGTH OF RAIL TIP PROJECT P-5705BA & P-5705BB	0.612 MILES
LENGTH OF STRUCTURES TIP PROJECT P-5705BA & P-5705BB	0.356 MILES
TOTAL LENGTH OF RAIL TIP PROJECT P-5705BA & P-5705BB	0.968 MILES
LENGTH MEASURED ALONG -S1-	

RIGHT OF WAY DATE:  
N/A

LETTING DATE:  
MAY 29, 2018

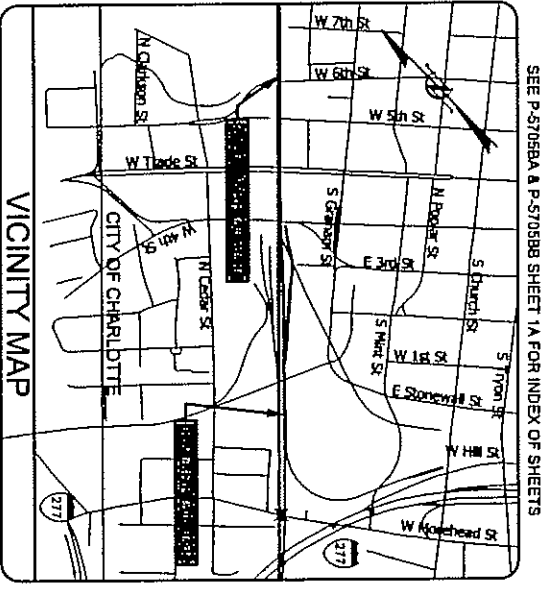
PREPARED IN THE OFFICE OF:  
**HNTB**  
HNTB NORTH CAROLINA, P.C.  
1115 W. HARRIS ST., SUITE 200  
RANDOLPH, NC 27808  
PHONE: 704.748.2700  
FAX: 704.748.2700  
NC License No: C-18554

COREY VERNIER, P.E.  
KALE PROJECT ENGINEER  
DAVID HAWKINS, P.E.  
STRUCTURE PROJECT ENGINEER  
JAMES BYRD, P.E.  
ARCHITECTURE PROJECT ENGINEER  
ERIC SECKINGER, P.E.  
ROADWAY PROJECT ENGINEER  
CHRISTOPHER PARK, P.E.  
STRUCTURE PROJECT ENGINEER  
BLAIR WAGENBLAST, R.A.  
PROJECT ARCHITECT  
MATTHEW SIMMONS, P.E.  
SCOOT PROJECT MANAGER



**CONTRACT: C204058** **TIP PROJECT: P-5705BA**

REV #1: REVISE LETTING DATE



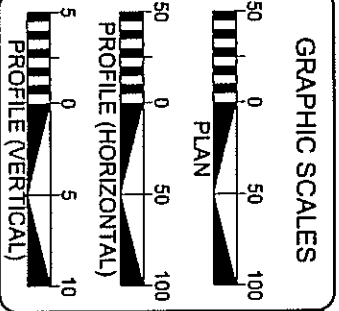
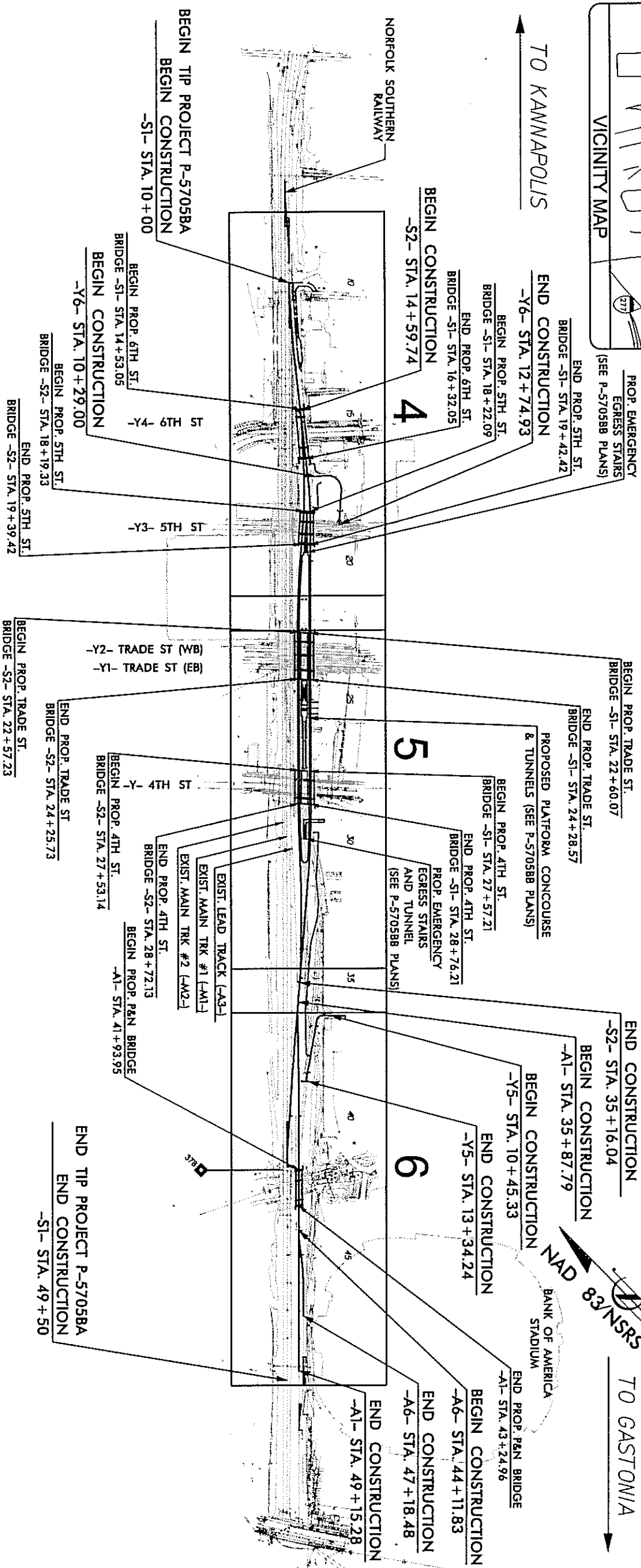
SEE P-5705BA & P-5705BB SHEET 1A FOR INDEX OF SHEETS

STATE OF NORTH CAROLINA  
RAIL DIVISION  
**MECKLENBURG COUNTY**

LOCATION: CHARLOTTE GATEWAY STATION - TRACK, STRUCTURES AND SIGNALS  
TYPE OF WORK: DRAINAGE, PAVING, GRADING, STRUCTURES

CHARLOTTE PROJ. NO.: TK1715009  
PART 1 OF 2

STATE	STATE PROJECT NUMBER	ROW	CONSTRUCTION
N.C.	P-5705BA	1	
	32213	ROW	
	44475.12	P.E./UTIL P.E.	
	44475.3.6	CONST./UTIL CONST.	
	44475CHWA.3.1	STBD.-(100(107B))	CONST.



**PROJECT LENGTH**

LENGTH OF RAIL TIP PROJECT	0.612 MILES
LENGTH OF STRUCTURES TIP PROJECT	0.136 MILES
TOTAL LENGTH OF RAIL TIP PROJECT	0.748 MILES
LENGTH MEASURED ALONG -S1-	

**NCDOT CONTACT:** MATTHEW SIMMONS, P.E.  
NCDOT PROJECT MANAGER

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. 81st Forks Road, Suite 200  
Raleigh, North Carolina 27608  
NC License No: C-1584

**2016 STANDARD SPECIFICATIONS**

**RIGHT OF WAY DATE:** N/A

**LETTING DATE:** MAY 29, 2018

**COREY VERNIER, P.E.** RAIL PROJECT ENGINEER  
**DAVID HAWKINS, P.E.** STRUCTURE PROJECT ENGINEER  
**JAMES BYRD, P.E.** HYDRAULICS PROJECT ENGINEER  
**ERIC SECKINGER, P.E.** ROADWAY PROJECT ENGINEER  
**MATTHEW SIMMONS, P.E.** NCDOT PROJECT MANAGER

**RAIL ENGINEER**

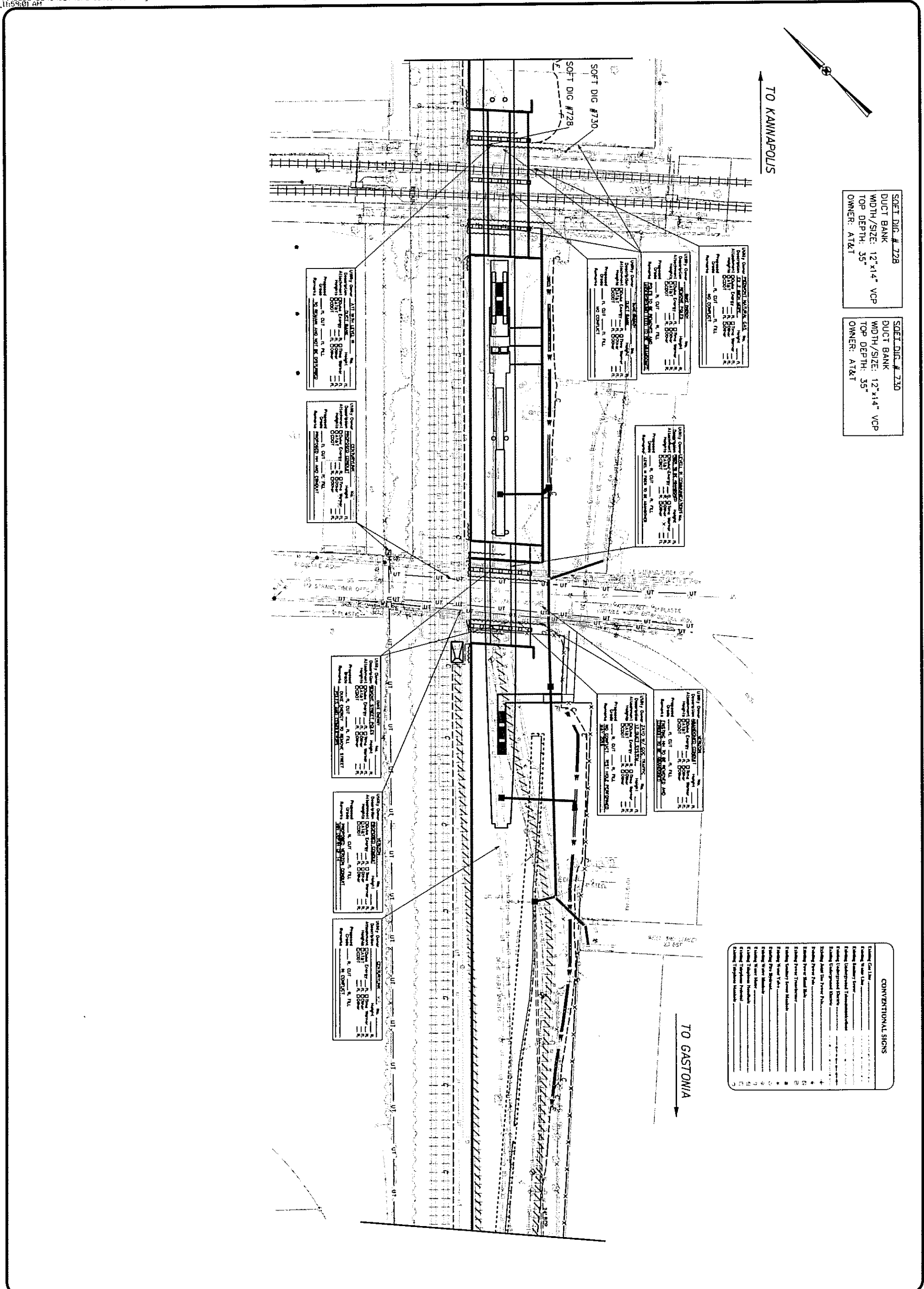
**HYDRAULICS ENGINEER**

Professional Engineer Seal for Corey Vernier, P.E., License No. C-1584, State of North Carolina, expires 11/30/2018 11:51:28 AM EST.

Professional Engineer Seal for David Hawkins, P.E., License No. 15764, State of North Carolina, expires 11/30/2018 9:01:22 AM EST.

NC DEPARTMENT OF TRANSPORTATION  
**RAIL DIVISION**  
DESIGN AND CONSTRUCTION





SOFT DIG # 728  
DUCT BANK  
WIDTH/SIZE: 12"x14" VCP  
TOP DEPTH: 35"  
OWNER: AT&T

SOFT DIG # 730  
DUCT BANK  
WIDTH/SIZE: 12"x14" VCP  
TOP DEPTH: 35"  
OWNER: AT&T

CONVENTIONAL SIGNS

1	Existing Curbside
2	Existing Water Main
3	Existing Sewer Main
4	Existing Gas Main
5	Existing Electric Main
6	Existing Fiber Optic Main
7	Existing Storm Sewer
8	Existing Telephone
9	Existing Cable TV
10	Existing Fire Alarm
11	Existing Data Line
12	Existing Power Line
13	Existing Transformer
14	Existing Manhole
15	Existing Valve
16	Existing Water Meter
17	Existing Gas Meter
18	Existing Telephone Pole
19	Existing Cable TV Pole
20	Existing Fire Alarm Pole
21	Existing Data Line Pole
22	Existing Power Pole
23	Existing Transformer Pole
24	Existing Manhole Pole
25	Existing Valve Pole
26	Existing Water Meter Pole
27	Existing Gas Meter Pole
28	Existing Telephone Pole
29	Existing Cable TV Pole
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31	Existing Data Line Pole
32	Existing Power Pole
33	Existing Transformer Pole
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35	Existing Valve Pole
36	Existing Water Meter Pole
37	Existing Gas Meter Pole
38	Existing Telephone Pole
39	Existing Cable TV Pole
40	Existing Fire Alarm Pole
41	Existing Data Line Pole
42	Existing Power Pole
43	Existing Transformer Pole
44	Existing Manhole Pole
45	Existing Valve Pole
46	Existing Water Meter Pole
47	Existing Gas Meter Pole
48	Existing Telephone Pole
49	Existing Cable TV Pole
50	Existing Fire Alarm Pole

SHEET UO-02	P-5705BA	896.027 JOB NO.	1" = 20' SCALE	FINAL SET DO NOT USE FOR CONSTRUCTION MARCH 13, 2018	NO. DATE BY DESCRIPTION	Plans Prepared By:		
		C.B. PREPARED BY	W.W. CHECKED BY			07-23-2017 DATE	APPROVED BY	
OF UO-03	UBO PLAN S1 STA 22+00 TO S1 STA 35+50							



**GENERAL NOTES:**

ASSUMED LIVE LOAD = AREMA E80 OR ALTERNATE LIVE LOAD  
FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.  
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.  
THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 16TH EDITION OF AREMA'S MANUAL FOR RAILWAY ENGINEERING, VOL. 2, STRUCTURES, AND NORFOLK SOUTHERN CORPORATION'S GUIDELINES FOR DESIGN OF GRADE SEPARATED STRUCTURES UNDERPASS GRADE SEPARATION DESIGN CRITERIA.  
THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AREMA MANUAL FOR RAILWAY ENGINEERING, VOL. 2, CH. 9, SEISMIC DESIGN FOR RAILWAY.  
REINFORCING STEEL SHALL BE ASTM DESIGNATION A615, GRADE 60. ALL DIMENSIONS RELATING TO BAR SPACING ARE TO BAR CENTERS UNLESS NOTED. FABRICATION TO BE IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE, A.C.I. 315-80. ALL REINFORCING IN THE CONCRETE DECK SLAB AND PARAPETS SHALL BE EPOXY COATED.  
EXPANSION JOINT MATERIAL SHALL BE EITHER RUBBER OR CORK CONFORMING WITH AASHTO SPECIFICATIONS M-153-84 EXCEPT AS SHOWN ON THE PLANS OR IN THE SPECIAL PROVISIONS. CELLULAR AND BLUB TYPE WATERSTOPS AND RUBBER JOINT COMPOUNDS SHALL BE AS SHOWN ON THE PLANS AND IN THE SPECIAL PROVISIONS.  
STRUCTURE DRAINAGE SYSTEM METAL DRAINS BEHIND ABUTMENTS AND IN BALLAST TROUGH OF BRIDGE, INCLUDING DUCTILE IRON PIPE COLLECTOR SYSTEM, SHALL BE AS SHOWN ON THE PLANS AND OUTLINED IN THE SPECIAL PROVISIONS. DETAILS OF THE DRAINAGE SYSTEM SHALL BE SUBMITTED TO THE CHIEF ENGINEER BRIDGES AND STRUCTURES, NORFOLK SOUTHERN CORPORATION, ATLANTA, GA. FOR APPROVAL.  
DAMPENING OF BRIDGE SHALL BE PROVIDED BY METHOD OF BACKWALLS AND ABUTMENT SEATS, AND BACK OF WINGS SHALL BE DAMPROOFED WITH METHOD OF DAMPROOFING.  
WATERPROOFING: BRIDGE DECK AND ALL CONSTRUCTION JOINTS WHICH WILL BE COVERED BY FILL SHALL BE WATERPROOFED WITH A COLD LIQUID-APPLIED ELASTOMERIC MEMBRANE. FOR WATERPROOFING, SEE SPECIAL PROVISIONS.  
WATERPROOFING IS REQUIRED AT THE FOLLOWING LOCATIONS:  
1. BRIDGE DECK AND INSIDE OF CONCRETE PARAPET AS SHOWN ON SUPERSTRUCTURE - PLAN, SECTION SHEET OF EACH SPAN OR SECTION OF BRIDGE.  
2. ALONG FILL FACE OF HORIZONTAL CONSTRUCTION JOINT AT TOP OF FOOTING ELEVATION AT EACH ABUTMENT.  
3. THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SAME SIZE AND LENGTH OF THE SAMPLE PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.  
ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2018, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (HEREIN CALLED STANDARD SPECIFICATIONS), EXCEPT AS NOTED HEREIN ELSEWHERE ON PLANS, OR IN THE SPECIAL PROVISIONS (STRUCTURAL STEEL IN ACCORDANCE WITH CURRENT AREMA SPECIFICATIONS).

ALL CONCRETE SHALL BE 4500 PSI CLASS AA CONCRETE WITH NO. 57 OR 67 COARSE AGGREGATE AND SHALL BE AIR-ENTRAINED. MINIMUM CEMENT CONTENT PER CUBIC YARD OF CONCRETE SHALL BE 6.5 BAGS. NO SUBSTITUTION OF FLYASH, BLAST FURNACE SLAG OR OTHER MATERIAL WILL BE PERMITTED IN MEETING THIS MINIMUM CEMENT REQUIREMENT. CHAMFER ALL EXPOSED EDGES AND CORNERS 3/4" EXCEPT AS NOTED. THE USE OF GROUND GRANULATED BLAST FURNACE SLAG IS NOT PERMITTED IN THIS STRUCTURE.

CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE RAILWAY STRUCTURE SHALL BE PERFORMED SATISFACTORY TO THE ENGINEER AND COMPLIANT WITH THE DESIGN STANDARDS OF NORFOLK SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING THE WORK AFFECTING THE SAFETY OF RAIL OPERATIONS MUST BE APPROVED BY THE RAILWAY COMPANY, AS A SUBMITTAL THROUGH THE ENGINEER. AT LEAST 2 WEEKS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK, RAIL TRAFFIC SHALL AT ALL TIMES BE MAINTAINED AND PROTECTED. THE CONTRACTOR SHALL NOT AT ANY TIME DELAY OR INTERFERE WITH RAIL OPERATIONS.  
NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR METAL RAIL (ALUMINUM), SEE SPECIAL PROVISIONS.

FOR SELF-LUBRICATING EXPANSION BEARING ASSEMBLIES, SEE SPECIAL PROVISIONS.

FOR CONDUIT IN PARAPETS, SEE SPECIAL PROVISIONS.

FOR PORTLAND CEMENT, SEE SPECIAL PROVISIONS.

FOR FINE AND COARSE AGGREGATE, SEE SPECIAL PROVISIONS.

SEE STRUCTURAL STEEL DETAILS SHEET FOR STRUCTURAL STEEL NOTES.

FOR BACKFILL BEHIND ABUTMENTS AND OTHER BACKFILL AROUND THE STRUCTURE, SEE SPECIAL PROVISIONS. BACKFILLING AROUND STRUCTURES.

FOR PAINTING STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.

FOR WATERSTOPS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC FLASHING, SEE SPECIAL PROVISIONS.

FOR RUBBER JOINT COMPOUNDS, SEE SPECIAL PROVISIONS.

FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

FOR STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.

FOR RAILROAD TRACKWORK, SEE RAILROAD TRACKWORK PLANS.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CONCRETE PARAPET, SEE SPECIAL PROVISIONS.

FOR WATERPROOFING, SEE SPECIAL PROVISIONS.

ALL BAR SUPPORTS AND ALL INCIDENTAL REINFORCING STEEL USED IN THE DECK AND PARAPET SHALL BE EPOXY COATED IN ACCORDANCE WITH THE NC DOT STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON THE DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

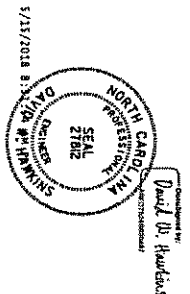
INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 42+64.46 -41+.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR APPLICATION OF BRIDGE COATING, SEE SPECIAL PROVISIONS.

**INDEX OF DRAWINGS**

- 1 GENERAL DRAWING: GENERAL PLAN AND ELEVATION (SHEET 1 OF 4)
- 2 GENERAL DRAWING: FOUNDATION LAYOUT AND FOUNDATION NOTES (SHEET 2 OF 4)
- 3 GENERAL DRAWING: LOCATION SKETCH AND TOTAL BOM (SHEET 3 OF 4)
- 4 GENERAL DRAWING: GENERAL NOTES (SHEET 4 OF 4)
- 5 SEQUENCE OF CONSTRUCTION (SHEET 1 OF 2)
- 6 SEQUENCE OF CONSTRUCTION (SHEET 2 OF 2)
- 7 SUPERSTRUCTURE: TYPICAL SECTION
- 8 SUPERSTRUCTURE: DECK DETAILS
- 9 SUPERSTRUCTURE: PLAN OF DECK - SPAN A
- 10 SUPERSTRUCTURE: PLAN OF DECK - SPAN B
- 11 SUPERSTRUCTURE: PLAN OF DECK - SPAN C
- 12 SUPERSTRUCTURE: FRAMING PLAN AND GIRDER DETAILS - SPAN A
- 13 SUPERSTRUCTURE: FRAMING PLAN AND GIRDER DETAILS - SPAN B
- 14 SUPERSTRUCTURE: FRAMING PLAN AND GIRDER DETAILS - SPAN C
- 15 SUPERSTRUCTURE: STRUCTURAL STEEL DETAILS
- 16 SUPERSTRUCTURE: BEARING DETAILS (SHEET 1 OF 2)
- 17 SUPERSTRUCTURE: BEARING DETAILS (SHEET 2 OF 2)
- 18 SUPERSTRUCTURE: EXPANSION PLATE DETAILS
- 19 SUPERSTRUCTURE: PARAPET DETAILS (SHEET 1 OF 2)
- 20 SUPERSTRUCTURE: PARAPET DETAILS (SHEET 2 OF 2)
- 21 SUPERSTRUCTURE: METAL HANDRAIL DETAILS (SHEET 1 OF 2)
- 22 SUPERSTRUCTURE: METAL HANDRAIL DETAILS (SHEET 2 OF 2)
- 23 SUPERSTRUCTURE: BILL OF MATERIAL
- 24 SUBSTRUCTURE: ABUTMENT 1 (SHEET 1 OF 3)
- 25 SUBSTRUCTURE: ABUTMENT 1 (SHEET 2 OF 3)
- 26 SUBSTRUCTURE: ABUTMENT 1 (SHEET 3 OF 3)
- 27 SUBSTRUCTURE: PIER 1 (SHEET 1 OF 2)
- 28 SUBSTRUCTURE: PIER 1 (SHEET 2 OF 2)
- 29 SUBSTRUCTURE: COLUMN AND DRILLED PIER CONSTRUCTION SEQUENCE - PIER
- 30 SUBSTRUCTURE: PIER 2 (SHEET 1 OF 2)
- 31 SUBSTRUCTURE: PIER 2 (SHEET 2 OF 2)
- 32 SUBSTRUCTURE: ABUTMENT 2 (SHEET 1 OF 3)
- 33 SUBSTRUCTURE: ABUTMENT 2 (SHEET 2 OF 3)
- 34 SUBSTRUCTURE: ABUTMENT 2 (SHEET 3 OF 3)
- 35 STRUCTURE DRAINAGE DETAILS (SHEET 1 OF 4)
- 36 STRUCTURE DRAINAGE DETAILS (SHEET 2 OF 4)
- 37 STRUCTURE DRAINAGE DETAILS (SHEET 3 OF 4)
- 38 STRUCTURE DRAINAGE DETAILS (SHEET 4 OF 4)
- 39 RIP RAP DETAILS



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**GENERAL NOTES**

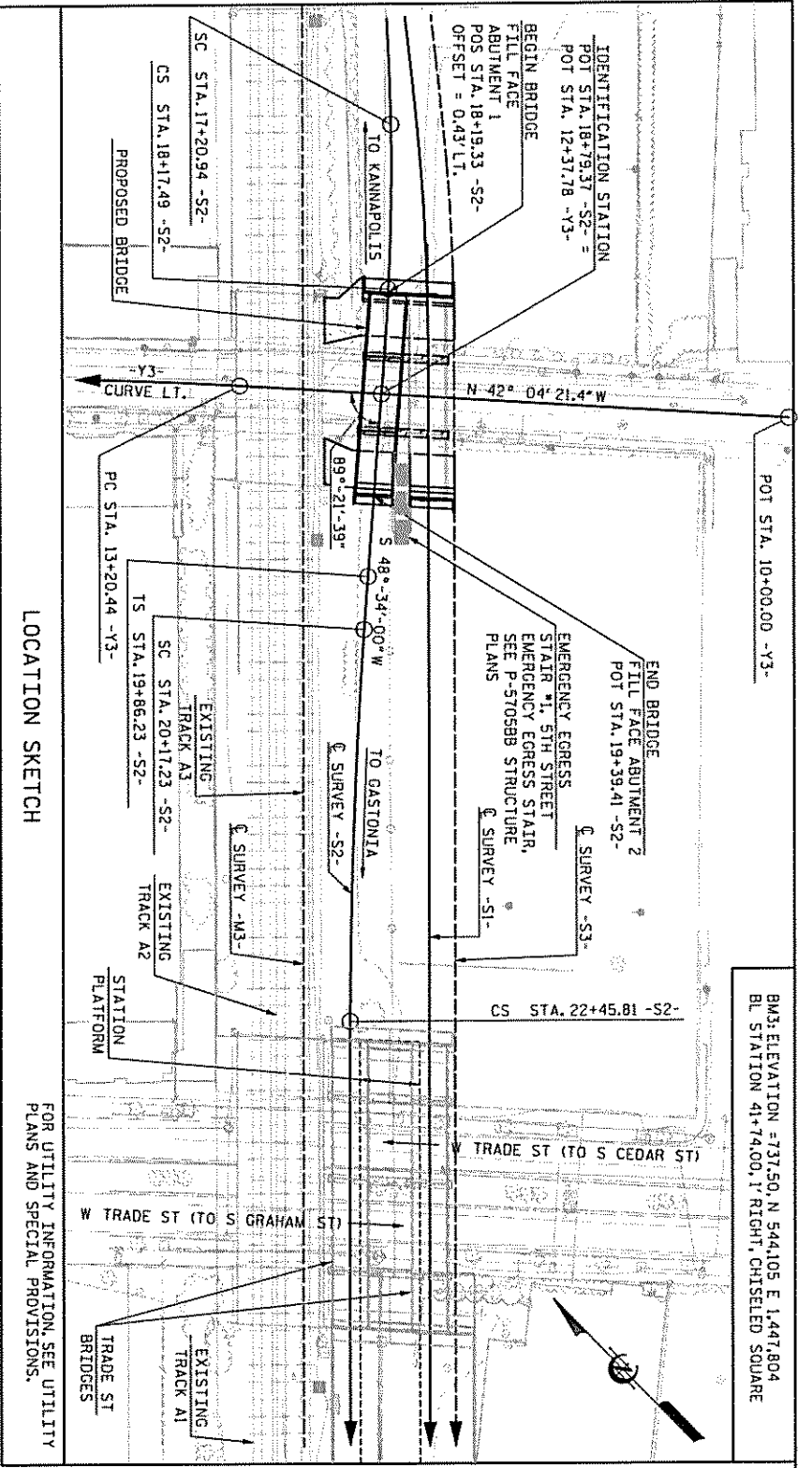
**GENERAL DRAWING**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PROJECT NO. P-5705BA  
MECKLENBURG COUNTY  
STATION: 15+39.55 -S1-

SHEET 4 OF 4

<b>HNTB</b>		HNTB NORTH CAROLINA, P.C.		SHEET NO. 51-4	
343 E. SIX FORDS RD., SUITE 200, RALEIGH, NC 27609		DATE: 5/15/18		TOTAL SHEETS: 39	
DESIGNED BY: M. WRIGHT	DATE: 5/17	NO.	BY	DATE	
CHECKED BY: D. CARSON	DATE: 5/17	1	DWH	5/15/18	
		2			



BMS: ELEVATION = 137.50, N 544.105, E 1,447.804  
BL STATION 41+74.00, 1' RIGHT, CHISELED SQUARE

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES:  
FOR TRACK 1 SUPERSTRUCTURE BILL OF MATERIAL, REFER TO BRIDGE ON TRACK 1 OVER W 5TH STREET PLANS.

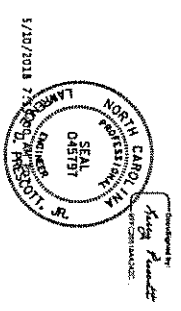
TOTAL BILL OF MATERIAL

TEMPORARY RAILROAD SHORING/PIER 1 AT STATION 18+79.37 -S2-	TEMPORARY RAILROAD SHORING/PIER 2 AT STATION 18+79.37 -S2-	FOUNDATION EXCAVATION FOR PIER 1 AT STATION 18+79.37 -S2-	FOUNDATION EXCAVATION FOR PIER 2 AT STATION 18+79.37 -S2-	PDA TESTING (REACH)	REINFORCED CONCRETE DECK SLAB	CU. YARDS CONCRETE	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROX. 177,727 LBS. STRUCTURAL STEEL	PAINTING OF STRUCTURAL STEEL	HP 14 x 73 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP14x73 STEEL PILES	SO. YARDS WATERPROOFING	SO. YARDS METHOD B DAMPROOFING
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	NO.	50. FEET	88.0	7,696	3,436	LUMP SUM	LUMP SUM	NO.	EACH	289.6	53.6
ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	2	2	164.1	21,196	3,436	18	1,192.0	18	14	14.1	80.3
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	2	2	173.7	22,506	3,436	14	478.0	14	14	34.9	85.0
ABUTMENT 2				2		86.0	7,622		16	862.0	16	16	14.8	55.0
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	8	2,630.7	511.8	59,020	6,872	LUMP SUM	LUMP SUM	62	3339.0	62	273.9

METAL RAIL (STEEL) & FENCE	METAL RAIL (ALUMINUM)	CONCRETE PARAPET	4" SLOPE PROTECTION	SELF-LUBRICATING EXPANSION BEARING ASSEMBLIES	STRUCTURE DRAINAGE SYSTEM AT STATION 18+79.37 -S2-	APPLICATION OF BRIDGE COATING
L.F.	L.F.	L.F.	SO. YARDS	LUMP SUM	LUMP SUM	LUMP SUM
234.8	25.0	234.9	251.0	LUMP SUM	LUMP SUM	LUMP SUM
ABUTMENT 1						
PIER 1						LUMP SUM
PIER 2						LUMP SUM
ABUTMENT 2			201.0			LUMP SUM
TOTAL	25.0	234.9	452.0	LUMP SUM	LUMP SUM	LUMP SUM

PROJECT NO. P-5705BA  
MECKLENBURG COUNTY  
STATION: POT STA. 18+79.37 -S2-

SHEET 4 OF 5  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
GENERAL DRAWING  
LOCATION SKETCH  
AND  
TOTAL BILL OF MATERIAL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALLED SIGNATURES COMPLETED

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. 5th Street, Suite 200, Raleigh, NC 27609  
DATE: 5/10/18  
DWG. NO. 4

NO.	BY	DATE	REVISIONS
1	DWH	5/10/18	3
2			4

SHEET NO. 53-4  
TOTAL NO. 42





**GENERAL NOTES:**

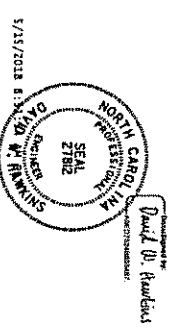
ASSUMED LIVE LOAD = AREMA E80 OR ALTERNATE LIVE LOAD  
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.  
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.  
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 16TH EDITION OF AREMA'S MANUAL FOR RAILWAY ENGINEERING, VOL. 2, STRUCTURES, AND NORFOLK SOUTHERN CORPORATION'S GUIDELINES FOR DESIGN OF GRADE SEPARATED STRUCTURES UNDERPASS GRADE SEPARATION DESIGN CRITERIA.  
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AREMA MANUAL FOR RAILWAY ENGINEERING, VOL. 2, CH. 9, SEISMIC DESIGN FOR RAILWAY.  
 REINFORCING STEEL SHALL BE ASTM DESIGNATION A615, GRADE 60. ALL DIMENSIONS RELATING TO BAR SPACING ARE TO BAR CENTERS UNLESS NOTED. FABRICATION TO BE IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE, A.C.I. 318-90. ALL REINFORCING IN THE CONCRETE DECK SLAB AND PARAPETS SHALL BE EPOXY COATED.  
 EXPANSION JOINT MATERIAL SHALL BE EITHER RUBBER OR CORK CONFORMING WITH ASHTO SPECIFICATIONS M-153-84 EXCEPT AS SHOWN ON THE PLANS OR IN THE SPECIAL PROVISIONS. CELLULAR AND BULB TYPE WATERSTOPS AND RUBBER JOINT COMPOUNDS SHALL BE AS SHOWN ON THE PLANS AND IN THE SPECIAL PROVISIONS.  
 STRUCTURE DRAINAGE SYSTEM METAL DRAINS BEHIND ABUTMENTS AND IN BALLAST TROUGH OF BRIDGE, INCLUDING DUCTILE IRON PIPE COLLECTOR SYSTEM, SHALL BE AS SHOWN ON THE PLANS AND OUTLINED IN THE SPECIAL PROVISIONS. DETAILS OF THE DRAINAGE SYSTEM SHALL BE SUBMITTED TO THE CHIEF ENGINEER BRIDGES AND STRUCTURES, NORFOLK SOUTHERN CORPORATION, ATLANTA, GA, FOR APPROVAL.  
 DAMPROOFING: ~~SEE SPECIAL PROVISIONS FOR DAMPROOFING OF BACKWALLS AND ABUTMENT SEATS. AND BACK OF WINGS SHALL BE DAMPROOFED WITH METHOD B DAMPROOFING.~~  
 WATERPROOFING: BRIDGE DECK AND ALL CONSTRUCTION JOINTS WHICH WILL BE COVERED BY FILL SHALL BE WATERPROOFED WITH A COLD LIQUID-APPLIED ELASTOMERIC MEMBRANE. FOR WATERPROOFING, SEE SPECIAL PROVISIONS.  
 WATERPROOFING IS REQUIRED AT THE FOLLOWING LOCATIONS:  
 1. BRIDGE DECK AND INSIDE OF CONCRETE PARAPET AS SHOWN ON SUPERSTRUCTURE TYPICAL SECTION SHEET.  
 2. ALONG THE ENTIRE LENGTH OF EACH SIDE OF THE DECK.  
 3. ALONG THE FACE OF HORIZONTAL CONSTRUCTION JOINT AT TOP OF FOOTING ELEVATION AT EACH ABUTMENT.  
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SAME SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.  
 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2018, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (HEREIN CALLED STANDARD SPECIFICATIONS), EXCEPT AS NOTED HEREIN, ELSEWHERE ON PLANS, OR IN THE SPECIAL PROVISIONS (STRUCTURAL STEEL IN ACCORDANCE WITH CURRENT AREMA SPECIFICATIONS).  
 ALL CONCRETE SHALL BE 4,500 PSI CLASS AA CONCRETE WITH NO. 57 OR 67 COARSE AGGREGATE AND SHALL BE AIR-ENTRAINED. MINIMUM CEMENT CONTENT PER CUBIC YARD OF CONCRETE SHALL BE 6.5 BAGS. NO SUBSTITUTION OF FLYASH, BLAST FURNACE SLAG OR OTHER MATERIAL WILL BE PERMITTED IN MEETING THIS MINIMUM CEMENT REQUIREMENT. CHAMFER ALL EXPOSED EDGES AND CORNERS 3/4" EXCEPT AS NOTED. THE USE OF GROUND GRANULATED BLAST FURNACE SLAG IS NOT PERMITTED IN THIS STRUCTURE.  
 CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE RAILWAY STRUCTURE SHALL BE PERFORMED SATISFACTORILY TO THE ENGINEER AND COMPLIANT WITH THE DESIGN STANDARDS OF NORFOLK SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING THE WORK AFFECTING THE SAFETY OF RAIL OPERATIONS MUST BE APPROVED BY THE RAILWAY COMPANY, AS A SUBMITTAL THROUGH THE ENGINEER, AT LEAST 2 WEEKS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. RAIL TRAFFIC SHALL, AT ALL TIMES, BE MAINTAINED AND PROTECTED. THE CONTRACTOR SHALL NOT AT ANY TIME DELAY OR INTERFERE WITH RAIL OPERATIONS.  
 NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR METAL RAIL (ALUMINUM), SEE SPECIAL PROVISIONS.  
 FOR SELF-LUBRICATING EXPANSION BEARING ASSEMBLIES, SEE SPECIAL PROVISIONS.  
 FOR CONDUIT IN PARAPETS, SEE SPECIAL PROVISIONS.  
 FOR PORTLAND CEMENT, SEE SPECIAL PROVISIONS.  
 FOR FINE AND COARSE AGGREGATE, SEE SPECIAL PROVISIONS.  
 SEE "STRUCTURAL STEEL DETAILS" SHEET FOR STRUCTURAL STEEL NOTES.  
 FOR BACKFILL BEHIND ABUTMENTS AND OTHER BACKFILL AROUND THE STRUCTURE, SEE SPECIAL PROVISION "BACKFILLING AROUND STRUCTURES".  
 FOR PAINTING STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.  
 FOR WATERSTOPS, SEE SPECIAL PROVISIONS.  
 FOR ELASTOMERIC FLASHING, SEE SPECIAL PROVISIONS.  
 FOR RUBBER JOINT COMPOUNDS, SEE SPECIAL PROVISIONS.  
 FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.  
 FOR STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.  
 FOR RAILROAD TRACKWORK, SEE RAILROAD TRACKWORK PLANS.  
 FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.  
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.  
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.  
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.  
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.  
 FOR CONCRETE PARAPET, SEE SPECIAL PROVISIONS.  
 FOR WATERPROOFING, SEE SPECIAL PROVISIONS.  
 ALL BAR SUPPORTS AND ALL INCIDENTAL REINFORCING STEEL USED IN THE DECK AND PARAPET SHALL BE EPOXY COATED IN ACCORDANCE WITH THE NC DOT STANDARD SPECIFICATIONS.  
 THE CONCRETE DECK, STEEL GIRDERS AND CONCRETE BACKWALL OF THE EXISTING SINGLE SPAN BRIDGE SHALL BE REMOVED TO THE SEAT ELEVATION OF EXISTING ABUTMENT WALLS, APPROXIMATE EL. 703.0± AS SHOWN IN THE PLANS.  
 THE EXISTING STRUCTURE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON THE DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.  
 REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.  
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 42+64.46 -41'-".  
 FOR TEMPORARY RAILROAD SHORING, SEE SPECIAL PROVISIONS.  
 FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.  
 FOR APPLICATION OF BRIDGE COATING, SEE SPECIAL PROVISIONS.

**INDEX OF DRAWINGS**

- 1 GENERAL DRAWING: GENERAL PLAN & ELEVATION (SHEET 1 OF 4)
- 2 GENERAL DRAWING: FOUNDATION LAYOUT AND FOUNDATION NOTES (SHEET 2 OF 4)
- 3 GENERAL DRAWING: LOCATION SKETCH AND TOTAL BILL OF MATERIAL (SHEET 3 OF 4)
- 4 GENERAL DRAWING: GENERAL NOTES (SHEET 4 OF 4)
- 5 SEQUENCE OF CONSTRUCTION
- 6 SUPERSTRUCTURE: TYPICAL SECTION
- 7 SUPERSTRUCTURE: DECK DETAILS
- 8 SUPERSTRUCTURE: PLAN OF DECK - SPAN A
- 9 SUPERSTRUCTURE: PLAN OF DECK - SPAN B
- 10 SUPERSTRUCTURE: PLAN OF DECK - SPAN C
- 11 SUPERSTRUCTURE: FRAMING PLAN & GIRDER DETAILS - SPAN A AND SPAN C
- 12 SUPERSTRUCTURE: FRAMING PLAN & GIRDER DETAILS - SPAN B
- 13 SUPERSTRUCTURE: STRUCTURAL STEEL DETAILS
- 14 SUPERSTRUCTURE: BEARING DETAILS (SHEET 1 OF 2)
- 15 SUPERSTRUCTURE: BEARING DETAILS (SHEET 2 OF 2)
- 16 SUPERSTRUCTURE: EXPANSION PLATE DETAILS
- 17 SUPERSTRUCTURE: PARAPET DETAILS (SHEET 1 OF 2)
- 18 SUPERSTRUCTURE: PARAPET DETAILS (SHEET 2 OF 2)
- 19 SUPERSTRUCTURE: METAL HANDRAIL DETAILS (SHEET 1 OF 2)
- 20 SUPERSTRUCTURE: METAL HANDRAIL DETAILS (SHEET 2 OF 2)
- 21 SUPERSTRUCTURE: BILL OF MATERIAL
- 22 SUBSTRUCTURE: ABUTMENT 1 SHORING (SHEET 1 OF 2)
- 23 SUBSTRUCTURE: ABUTMENT 1 SHORING (SHEET 2 OF 2)
- 24 SUBSTRUCTURE: ABUTMENT 1 (SHEET 1 OF 3)
- 25 SUBSTRUCTURE: ABUTMENT 1 (SHEET 2 OF 3)
- 26 SUBSTRUCTURE: ABUTMENT 1 (SHEET 3 OF 3)
- 27 SUBSTRUCTURE: PIER 1 (SHEET 1 OF 2)
- 28 SUBSTRUCTURE: PIER 1 (SHEET 2 OF 2)
- 29 SUBSTRUCTURE: COLUMN AND DRILLED PIER CONSTRUCTION SEQUENCE - PIER 1
- 30 SUBSTRUCTURE: PIER 2 (SHEET 1 OF 2)
- 31 SUBSTRUCTURE: PIER 2 (SHEET 2 OF 2)
- 32 SUBSTRUCTURE: ABUTMENT 2 (SHEET 1 OF 3)
- 33 SUBSTRUCTURE: ABUTMENT 2 (SHEET 2 OF 3)
- 34 SUBSTRUCTURE: ABUTMENT 2 (SHEET 3 OF 3)
- 35 SUBSTRUCTURE: ABUTMENT 2 (SHEET 1 OF 3)
- 36 SUBSTRUCTURE: ABUTMENT 2 (SHEET 2 OF 3)
- 37 SUBSTRUCTURE: ABUTMENT 2 (SHEET 3 OF 3)
- 38 STRUCTURE DRAINAGE DETAILS (SHEET 3 OF 3)
- 39 RIPRAP DETAILS

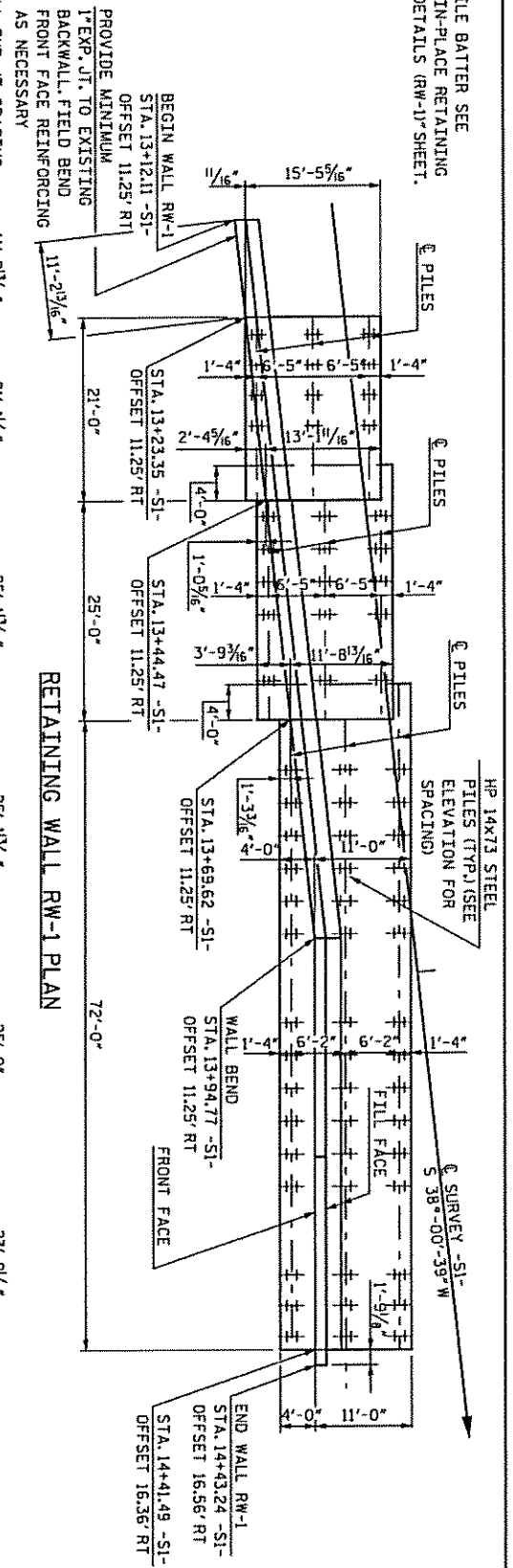
PROJECT NO. P-5705BA  
 MECKLENBURG COUNTY  
 STATION: STA. 42+59.46 -41-  
 SHEET 4 OF 4  
 DEPARTMENT OF TRANSPORTATION  
 GENERAL DRAWING  
 GENERAL NOTES



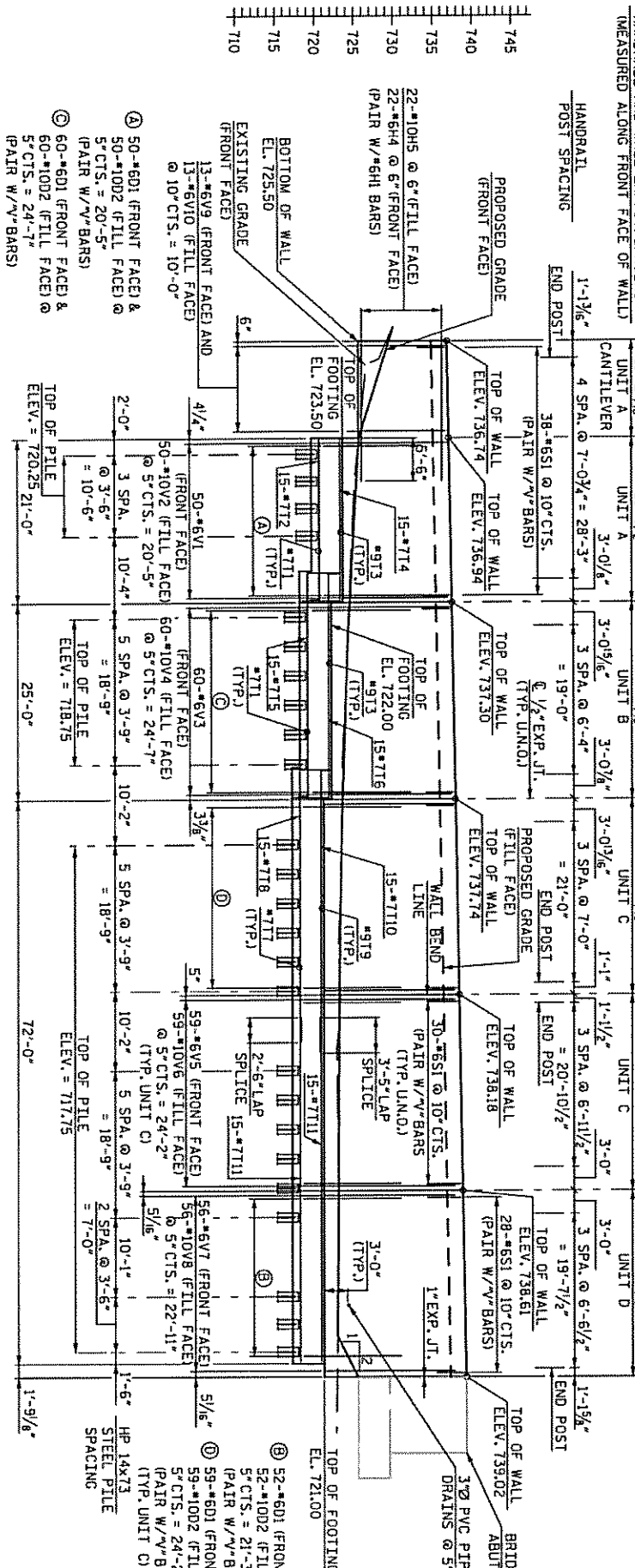
DOCUMENT NOT CONSIDERED FINAL UNLESS SIGNED AND SEALED BY THE ENGINEER

<p><b>HNTB</b>                  HNTB NORTH CAROLINA, P.C.                  NC License No. C-5654                  341 E. 5th Street, Suite 200, Raleigh, N.C. 27609</p>		<p>DATE: 5/15/18                  DATE: 5/15/18                  DWG. NO.: 4</p>		<p>NO. 2                  BY: DMH                  DATE: 5/15/18</p>		<p>NO. 3                  BY: [ ]                  DATE: [ ]</p>		<p>NO. 4                  BY: [ ]                  DATE: [ ]</p>		<p>SHEET NO. SB-4                  TOTAL SHEETS 39</p>	
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NOTE: FOR PILE BATTER SEE  
CAST-IN-PLACE RETAINING  
WALL DETAILS (RW-1) SHEET.



RETAINING WALL RW-1 PLAN



RETAINING WALL RW-1 ELEVATION

NOTE: RETAINING WALL RW-6 REMOVED FROM PLANS.

TOTAL BILL OF MATERIAL											
FOUNDATION EXCAVATION	PDA TESTING	CLASS AA CONCRETE	REINFORCING STEEL	HP 14x73 STEEL PILES	PILE DRYING EQUIPMENT SETUP FOR HP 14x73 STEEL PILES	7" DIA. MICROPILES	MIRCOPILE VERIFICATION TESTS	METHOD B DAMPROOFING	METAL RAIL (STEEL) AND FENCE	METAL RAIL (ALUMINUM)	PILE PANEL RETAINING WALL
CU. YDS	EACH	CU. YDS	LBS.	NO.	L.F.	EACH	EACH	SQ. YARDS	L.F.	L.F.	S.F.
RW-1	1	437.1	89,931	75	1,875	75	75	207.5	307.4	131.0	2,433.6
RW-2									317.9		2,373.5
RW-3									694.8		4,830.7
RW-4									191.7		667.0
RW-5											
RW-7	1	1,805.0	285,293	321	9,238.4	321	321	652.2	271.7		
RW-8									35.3		
RW-9									10.2		
TOTAL	2	2,296.9	382,579	316	11,133.4	316	316	905.2	1,320.1	594.4	10,304.8

**INDEX OF DRAWINGS**

- 1 RETAINING WALL RW-1
- 2 RETAINING WALL RW-2
- 3 RETAINING WALL RW-3
- 4 RETAINING WALL RW-4 (SHEET 1 OF 2)
- 5 RETAINING WALL RW-4 (SHEET 2 OF 2)
- 6 RETAINING WALL RW-5
- 7 RETAINING WALL RW-6
- 8 RETAINING WALL RW-7
- 9 RETAINING WALL RW-8
- 10 PILE PANEL RETAINING WALL DETAILS (SHEET 1 OF 2)
- 11 PILE PANEL RETAINING WALL DETAILS (SHEET 2 OF 2)
- 12 CAST IN PLACE RETAINING WALL DETAILS (SHEET 1 OF 3)
- 13 CAST IN PLACE RETAINING WALL DETAILS (SHEET 2 OF 3)
- 14 CAST IN PLACE RETAINING WALL DETAILS (SHEET 3 OF 3)
- 15 WALL MOUNTED FENCE AND HANDRAIL DETAILS (SHEET 1 OF 2)
- 16 WALL MOUNTED FENCE AND HANDRAIL DETAILS (SHEET 2 OF 2)
- 17 METAL HANDRAIL DETAILS

**FOUNDATION NOTES**

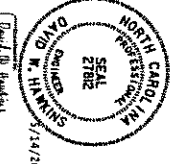
FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS.  
PILES AT RETAINING WALL NO. 1 AND RETAINING WALL NO. 7 ARE DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100 TONS PER PILE.  
DRIVE PILES AT RETAINING WALL NO. 1 AND RETAINING WALL NO. 7 TO A REQUIRED BEARING CAPACITY OF 250 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG.  
TEST THE FIRST PRODUCTION WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT RETAINING WALL NOS 1 AND 7. FOR PDA TESTING, SEE GEOTECHNICAL SPECIAL PROVISIONS.

**CAST IN PLACE WALL NOTES**

FOR REINFORCING IN FOOTING STEP, SEE STEP FOOTING DETAIL ON CAST IN PLACE RETAINING WALL DETAILS (RW-1) SHEET.  
UNO. - UNLESS NOTED OTHERWISE  
DESIGN LOAD: COOPER E80 PER AREMA. TRACK CENTERED 11'-3" MIN. FROM EXPOSED FACE OF WALL RW-1 AND RW-7.  
FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.  
ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2018, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (HEREIN CALLED STANDARD SPECIFICATIONS), EXCEPT AS NOTED HEREIN, ELSEWHERE ON PLANS, OR IN THE SPECIAL PROVISIONS.  
ALL CONCRETE SHALL BE 4,500 PSI CLASS AA CONCRETE WITH NO. 57 OR 67 COARSE AGGREGATE AND SHALL BE AIR-ENTAINED. MINIMUM CEMENT CONENT PER CUBIC YARD OF CONCRETE SHALL BE 6.5 BAGS. NO SUBSTITUTION OF FLASH, BLAST FURNACE FURNACE SLAG OR OTHER MATERIAL WILL BE PERMITTED IN MEETING THIS MINIMUM CEMENT REQUIREMENT. CHAMFER ALL EDGES AND CORNERS 1/4" EXCEPT AS NOTED. THE USE OF GROUND GRANULATED BLAST FURNACE SLAG IS NOT PERMITTED IN THIS STRUCTURE.  
CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE RAILWAY STRUCTURE SHALL BE PERFORMED SATISFACTORY TO THE ENGINEER AND COMPLIANT WITH THE DESIGN STANDARDS OF NORFOLK SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING THE WORK AFFECTING THE SAFETY OF RAIL OPERATIONS MUST BE APPROVED BY THE RAILWAY COMPANY, AS A SUBMITTAL THROUGH THE ENGINEER, AT LEAST 2 WEEKS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. RAIL TRAFFIC SHALL, AT ALL TIMES, BE MAINTAINED AND PROTECTED. THE CONTRACTOR SHALL NOT AT ANY TIME DELAY OR INTERFERE WITH RAIL OPERATIONS.  
FOR PORTLAND CEMENT, SEE SPECIAL PROVISIONS.  
FOR FINE AND COARSE AGGREGATE, SEE SPECIAL PROVISIONS.  
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.  
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.  
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.  
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.  
CONTRACTOR SHALL SUBMIT FORMWORK AND METHOD OF CONCRETE PLACEMENT FOR RW-1 AND RW-7 TO THE ENGINEER FOR APPROVAL. CONTRACTOR SHALL ENSURE THAT METHOD PROVIDES FOR CONSOLIDATION OF CONCRETE AT BASE OF WALL STEM.

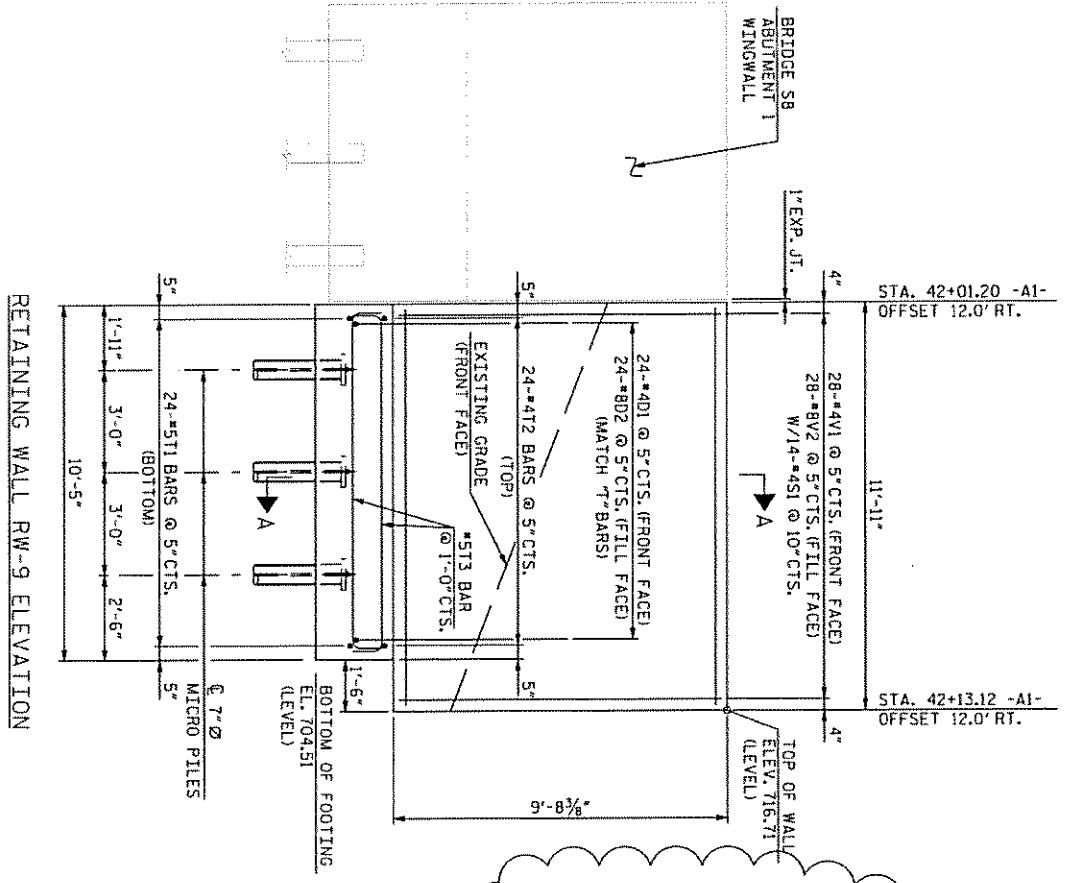
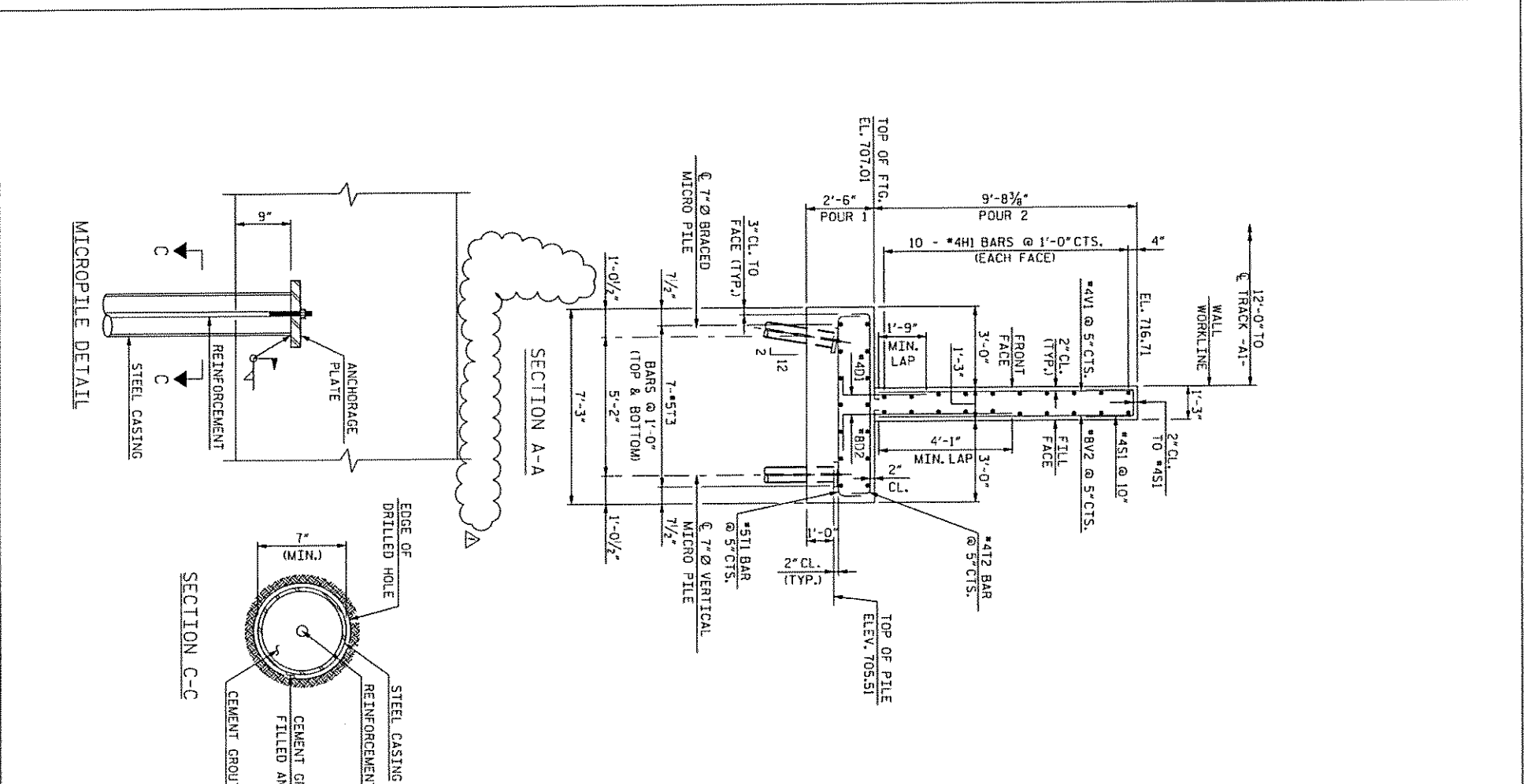
**FOUNDATION NOTES**

FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS.  
PILES AT RETAINING WALL NO. 1 AND RETAINING WALL NO. 7 ARE DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100 TONS PER PILE.  
DRIVE PILES AT RETAINING WALL NO. 1 AND RETAINING WALL NO. 7 TO A REQUIRED BEARING CAPACITY OF 250 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG.  
TEST THE FIRST PRODUCTION WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT RETAINING WALL NOS 1 AND 7. FOR PDA TESTING, SEE GEOTECHNICAL SPECIAL PROVISIONS.



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

HNTB		HNTB NORTH CAROLINA, P.C.		SHEET NO. W-1	
DESIGNED BY	DATE	CHECKED BY	DATE	NO.	DATE
M. BERTI	5/10/18	D. HARRIS	5/10/18	2	5/10/18
PROJECT NO. P-5705BA				STATION: 13+12.11 -S1-	
MECKLENBURG COUNTY				DEPARTMENT OF TRANSPORTATION	
RETAINING WALL RW-1				REVISIONS	
NO.	BY	DATE	NO.	BY	DATE
2	DWH	5/10/18	3		
				TOTAL SHEET 17	



QUANTITIES		TOTAL
ITEM		
REINFORCING STEEL	LBS.	2,078
CLASS AA CONCRETE BREAKDOWN:		
POUR 1 FOOTING	CU. YDS.	7.0
POUR 2 WALL RW-9	CU. YDS.	5.4
TOTAL	CU. YDS.	12.4
7" MICROPILES	EACH	6

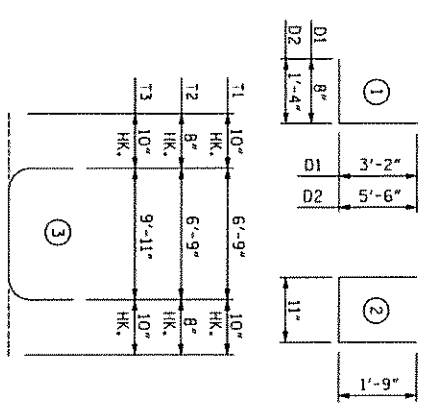
**NOTES:**

FOR CAST IN PLACE WALL NOTES, SEE RETAINING WALL RW-1 SHEET.  
PRIOR TO PLACEMENT OF MICROPILES, CONTRACTOR SHALL LOCATE EXISTING STONE ARCH CULVERT IN VICINITY OF MICROPILES. CONTRACTOR SHALL SUBMIT MICROPILE CLEARANCES TO CULVERT OPENING FOR APPROVAL BY THE ENGINEER.  
FOR WALL EXPANSION JOINT AND CONSTRUCTION JOINT, SEE CAST IN PLACE RETAINING WALL DETAILS (RW-1) SHEET.

**FOUNDATION NOTES:**

FOR MICROPILES, SEE GEOTECHNICAL SPECIAL PROVISION. MICROPILES AT RW-9 ARE DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 70 TONS PER PILE.  
INSTALL REINFORCING CASINGS FOR MICROPILES AT RW-9 TO A TIP ELEVATION NO HIGHER THAN 669 FT AND WITH A PENETRATION OF AT LEAST 10 FT INTO ROCK AS DEFINED BY ARTICLE 4H1 OF THE STANDARD SPECIFICATIONS.  
USE REINFORCING CASINGS WITH YIELD STRENGTHS OF AT LEAST 45 KSI AND A MINIMUM WALL THICKNESS OF 0.5 IN FOR MICROPILES AT RW-9.  
ONE VERIFICATION TEST IS REQUIRED FOR MICROPILES INSTALLED AT RW-9.

**BAR TYPES**



**BILL OF REINFORCING**

ALL BAR DIMENSIONS ARE OUT TO OUT

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
D1	24	4	3'-10"	61
D2	24	8	6'-10"	438
H1	20	4	11'-7"	155
S1	14	4	4'-5"	41
V1	28	4	9'-4"	175
V2	28	8	9'-4"	698
TOTAL				1,568
FOOTING RW-9				
T1	24	5	8'-5"	211
T2	24	4	8'-1"	130
T3	14	5	11'-7"	159
TOTAL				510

PROJECT NO. P-5705BA  
MECKLENBURG COUNTY  
STATION: 42+01.20 -A1-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
REINFORCING  
WALL RW-9



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**HNTB** HNTB NORTH CAROLINA, P.C.  
NC License No. C-5524  
343 E. 5th Street, Suite 200, Raleigh, NC 27609

DESIGNED BY: M. WRIGHT DATE: 5/17  
CHECKED BY: N. ZAMBERG DATE: 5/17

REVISIONS:

NO.	BY	DATE	NO.	BY	DATE
1	DWH	5/10/18	3		
2			4		

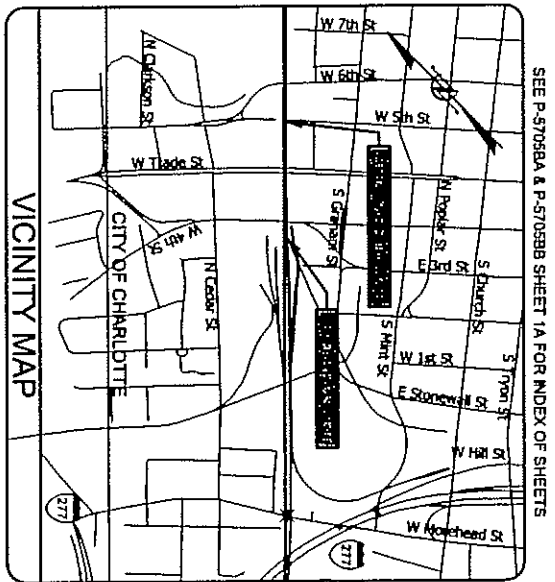
SHEET NO. W-9  
TOTAL SHEETS 17



REV #1: REVISE LETTING DATE

**CONTRACT: C204058**

**TIP PROJECT: P-5705BB**



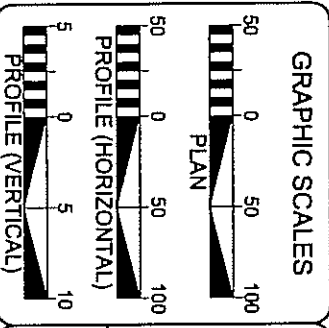
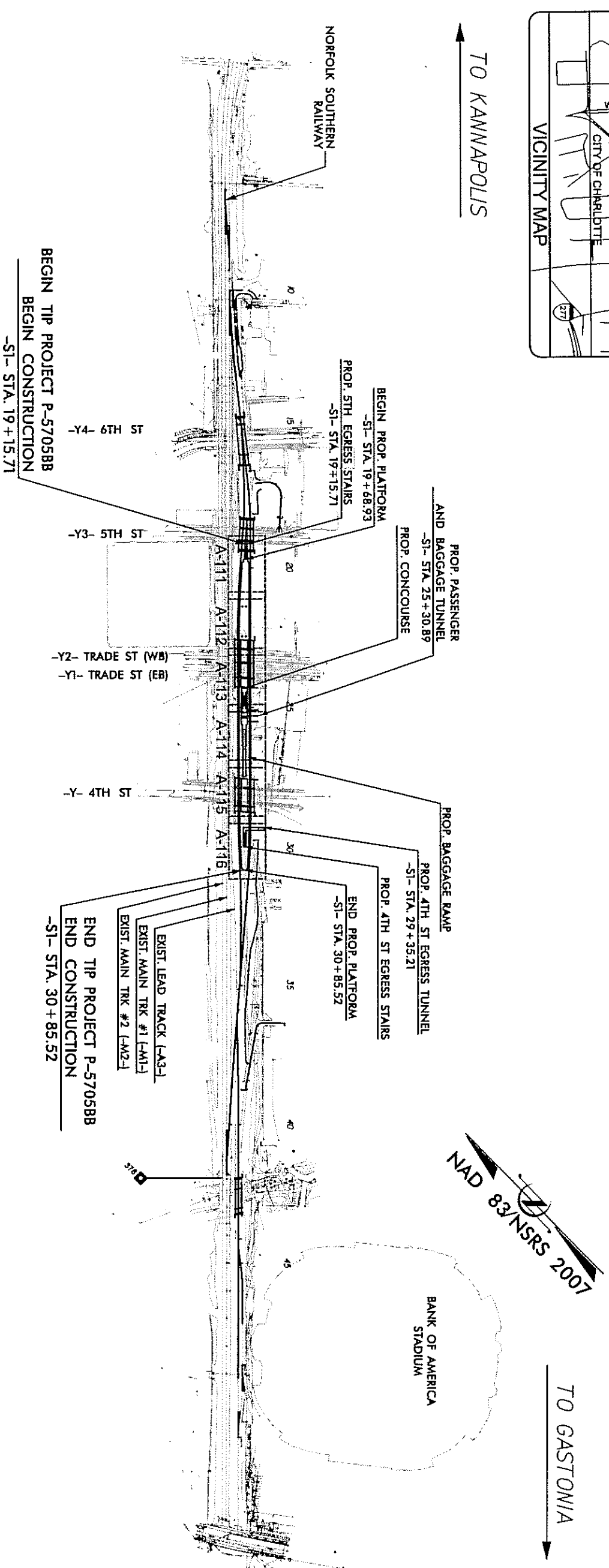
SEE P-5705BA & P-5705BB SHEET 1A FOR INDEX OF SHEETS

STATE OF NORTH CAROLINA  
RAIL DIVISION  
**MECKLENBURG COUNTY**

LOCATION: CHARLOTTE GATEWAY STATION - PLATFORM AND CANOPY  
TYPE OF WORK: STRUCTURES AND ARCHITECTURE

CHARLOTTE PROJ. NO.: TK1715009  
STATE ID NO.: 17-17955-01A  
PART 2 OF 2

STATE	STATE PROJECT ABBREVIATION	SHEET	TOTAL SHEETS
N.C.	P-5705BB	1	
STATE PROJECT NO.	44475FHWA.3.1	F.A. PROJECT NO.	STB/GDA-1001(079)
			CONST.



**PROJECT LENGTH**  
LENGTH OF STRUCTURES TIP PROJECT 0.222 MILES  
TOTAL LENGTH OF RAIL TIP PROJECT 0.222 MILES  
LENGTH MEASURED ALONG -S1-  
NCDOT CONTACT: MATTHEW SIMMONS, P.E.  
NCDOT PROJECT MANAGER

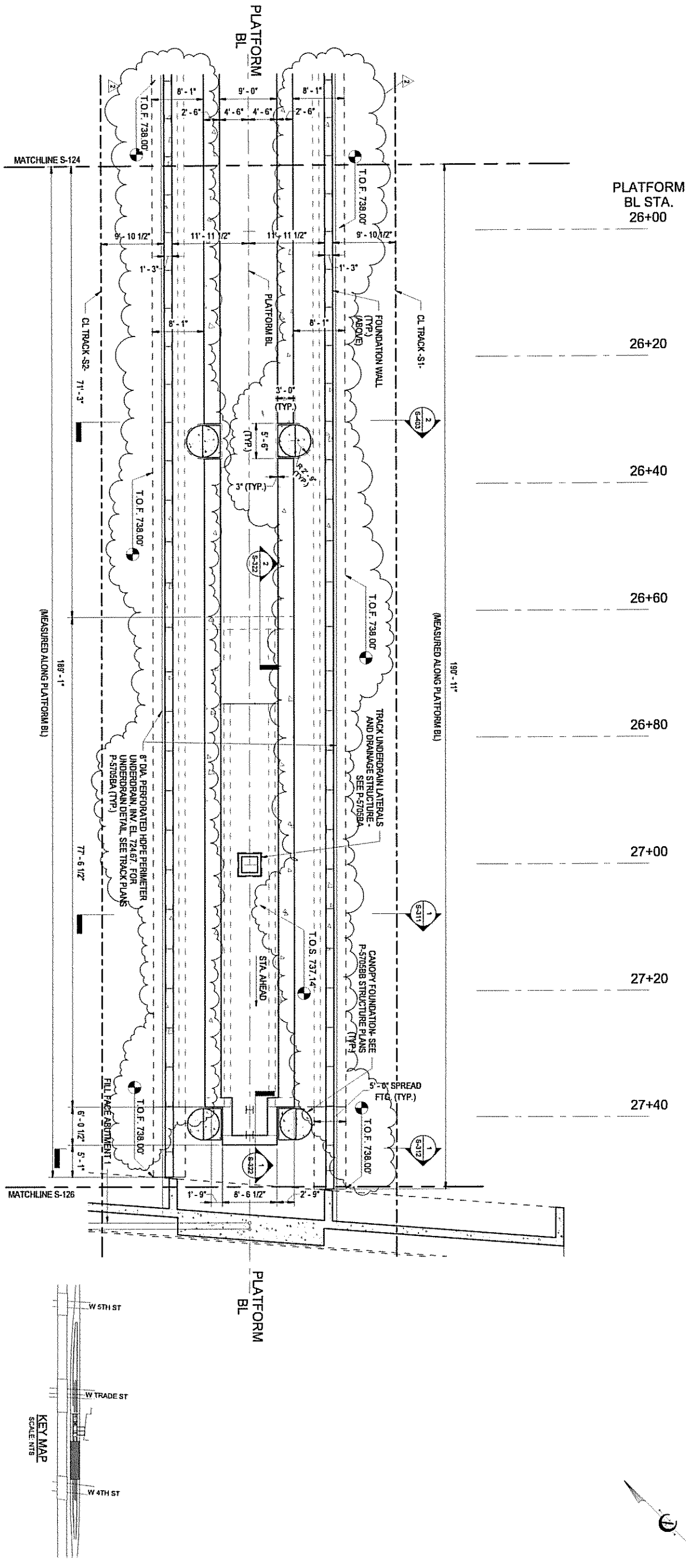
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. 8th Street, Suite 200  
Charlotte, NC 28202  
2018 STANDARD SPECIFICATIONS  
RIGHT OF WAY DATE: N/A  
LETTING DATE: MAY 29, 2018

**CORPORATE REGISTRATION**  
COREY VERNIER, P.E.  
RAIL PROJECT ENGINEER  
BLAIR WAGENBLAST, R.A.  
PROJECT ARCHITECT  
CHRISTOPHER PARK, P.E.  
STRUCTURE PROJECT ENGINEER  
DAVID HAWKINS, P.E.  
STRUCTURE PROJECT ENGINEER  
MATTHEW SIMMONS, P.E.  
NCDOT PROJECT MANAGER

**ARCHITECT**  
BLAIR WAGENBLAST  
13888  
N.C.  
4/14/2018 8:55:13 AM  
RAIL DIVISION  
DESIGN AND CONSTRUCTION





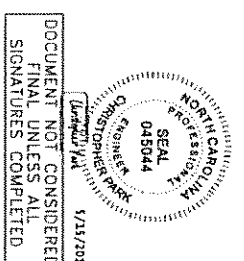


1 ENLARGED PLATFORM FOUNDATION  
PLAN 5 AT CONCOURSE  
S-135 SCALE 1/8" = 1'-0"

PROJECT NO. P-57058B  
MECKLENBURG COUNTY  
PROJECT NO. 19+68.93 -S1-

SHEET 5 OF 7

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALPH  
ENLARGED PLATFORM  
FOUNDATION PLAN

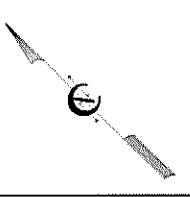
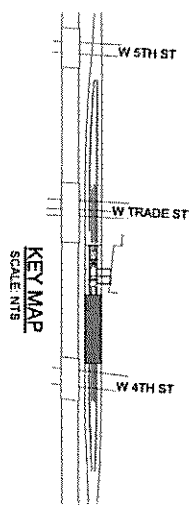


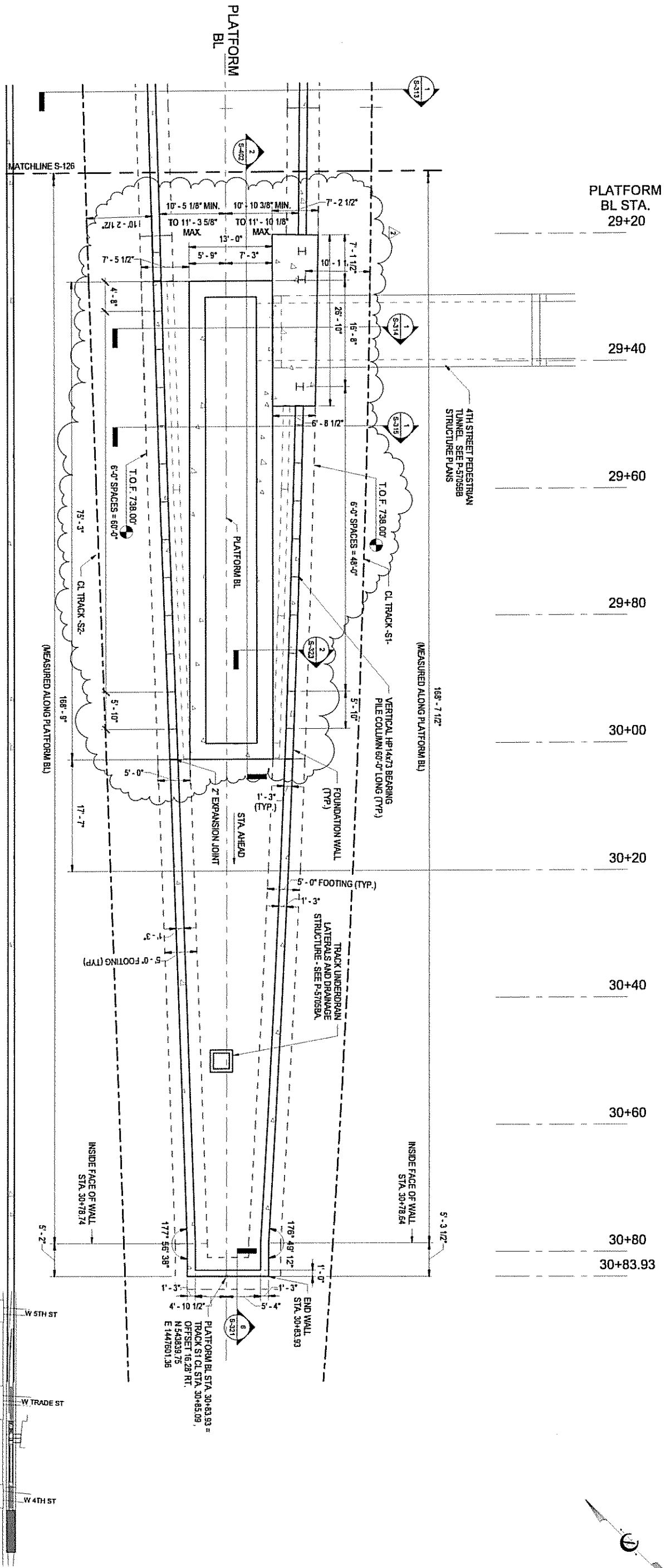
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. 5th Street, Suite 200, Raleigh, N.C. 27603  
DATE: 4/27/2018  
CHECKED BY: [Signature]

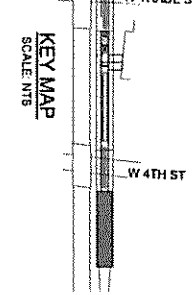
NO.	BY	DATE	NO.	BY	DATE
1	CP	5/2/18	3		
2	CP	5/10/18	4		

SHEET NO. S-135  
TOTAL SHEETS 98





**1**  
ENLARGED PLATFORM FOUNDATION  
PLAN 7  
SCALE: 1/8" = 1'-0"



PROJECT NO. P-5705BB  
MECKLENBURG COUNTY  
PROJECT NO. 19+68.93 -S1-

SHEET 7 OF 7

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RAILROAD  
ENLARGED PLATFORM  
FOUNDATION PLAN

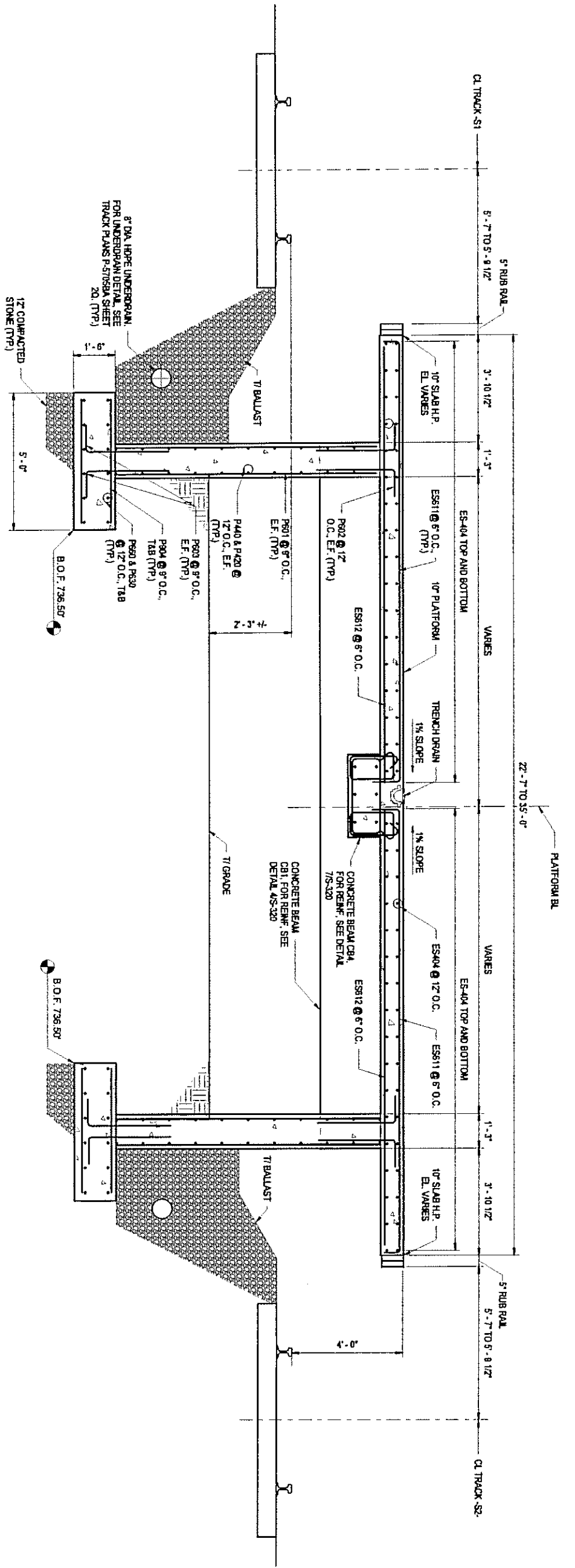
**HNTB**  
HNTB NORTH CAROLINA, P.C.  
345 E. SIX FIDELITY RD., SUITE 200, RALEIGH, NC 27609  
DATE: 4/27/2018  
CHECKED BY: C. PARR

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

5/15/2018 7:32:39 AM EDT

NO.	BY	DATE	NO.	BY	DATE
1	CP	5/2/18	3		
2	CP	5/10/18	4		

SHEET NO.	S-137
TOTAL SHEETS	98



1  
S-301  
SCALE: 1/2" = 1'-0"  
TYPICAL NORTH PLATFORM SECTION -  
STA 22+00

- NOTES
- FOR FOUNDATION UNDERPIN ALONG THE PLATFORM FOUNDATIONS: SEE P-5705BA TRACK PLANS.

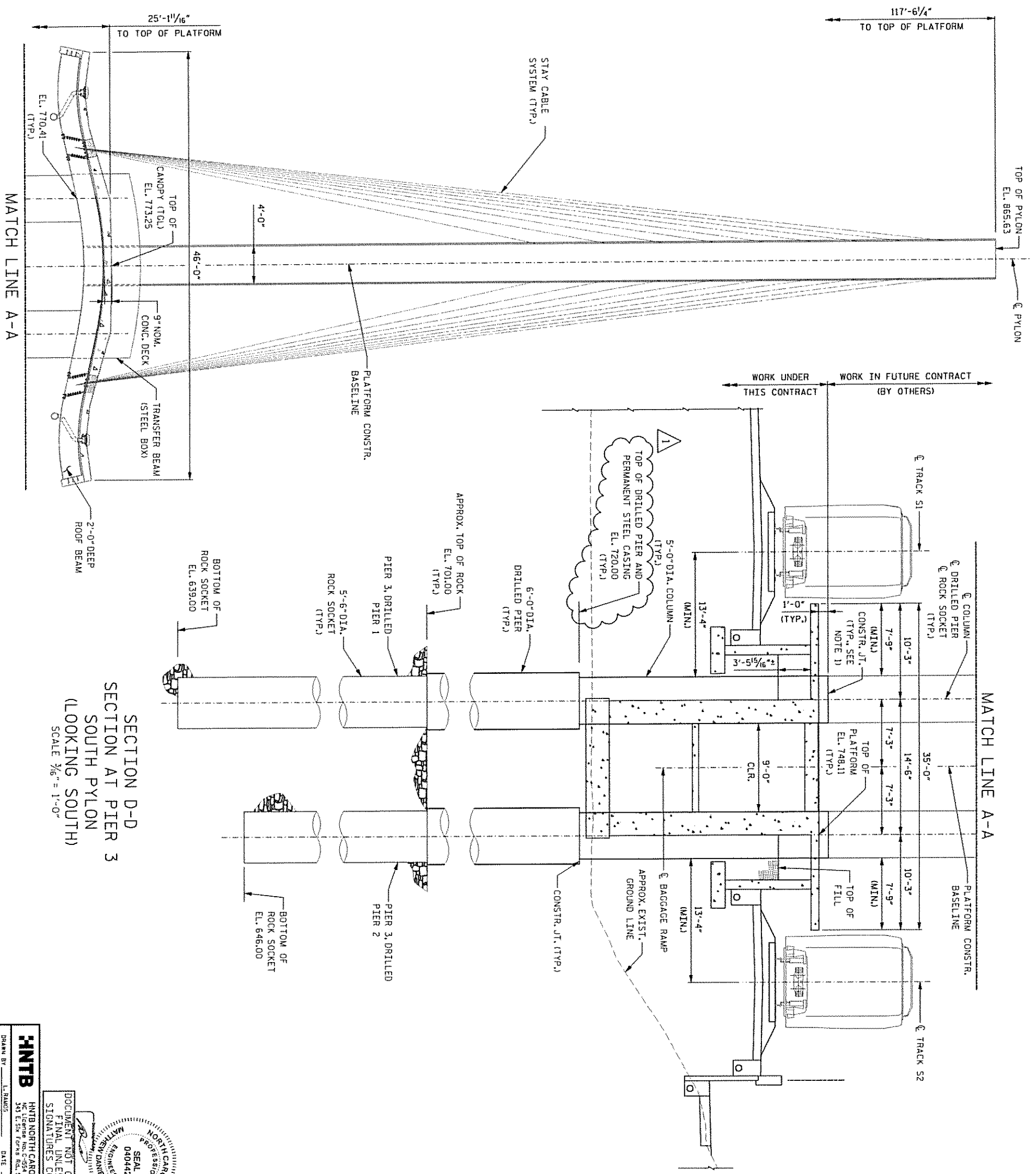
PROJECT NO. P-5705BB  
MECKLENBURG COUNTY  
PROJECT NO. 19+68.93 -S1-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PLATFORM SECTION - STA.  
22+00



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p><b>HNTB</b> HNTB NORTH CAROLINA, P.C. 343 E. 5th Street, Suite 200, Raleigh, NC 27603 DATE: 5/15/2018 CHECKED BY: C.A.M.</p>		<p>DATE: 5/15/2018 7:22:39 AM NOT</p>	
<p>NO. BY DATE</p>		<p>REVISIONS</p>	
1	CP	5/10/18	1
2			4
<p>SHEET NO. S-301</p>		<p>TOTAL SHEETS 98</p>	



MATCH LINE A-A

MATCH LINE A-A

SECTION D-D  
SECTION AT PIER 3  
LOOKING SOUTH  
SCALE 1/8" = 1'-0"

**HNTB**  
DRAWN BY: L. BARNES  
CHECKED BY: C. GARNETT  
DATE: 3/27/2008  
DATE: 3/27/2008  
DWG. NO. 7

STATE OF NORTH CAROLINA  
REGISTERED PROFESSIONAL ENGINEER  
MATHIEV DAVIER  
SEAL NO. 040442  
DATE: 1/14/2018 9:13:52 PM EDT  
DOCUMENT NOT CONSIDERED FINAL UNLESS SIGNED AND SIGNED SIGNATURES COMPLETE

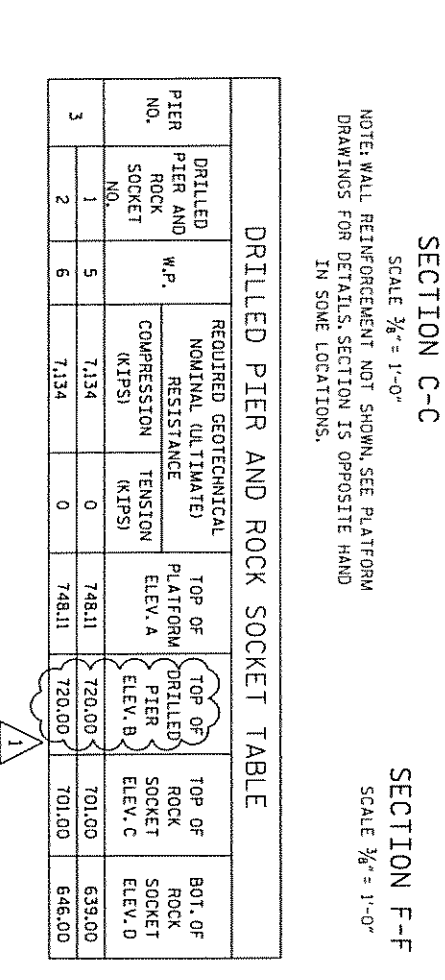
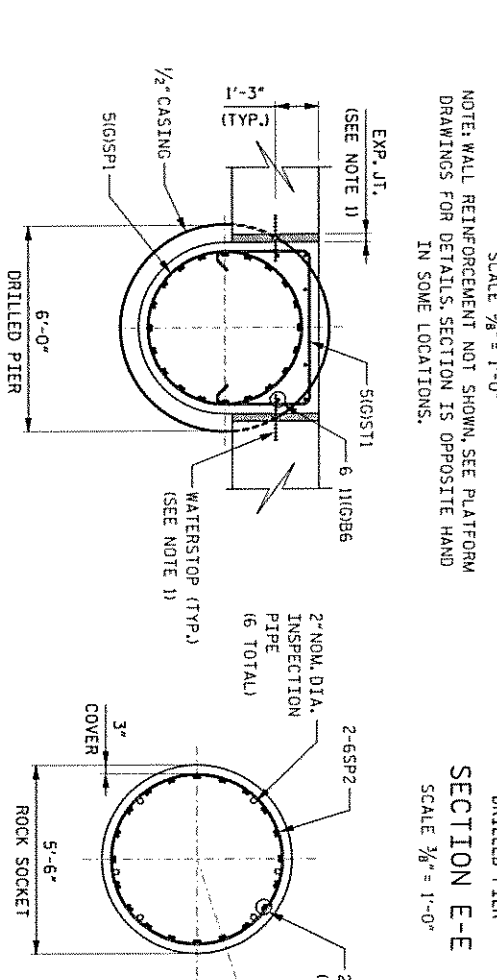
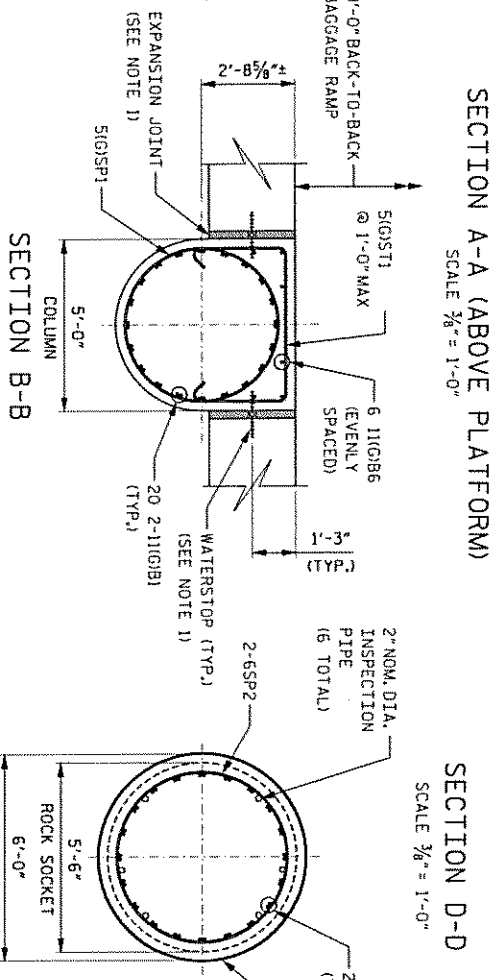
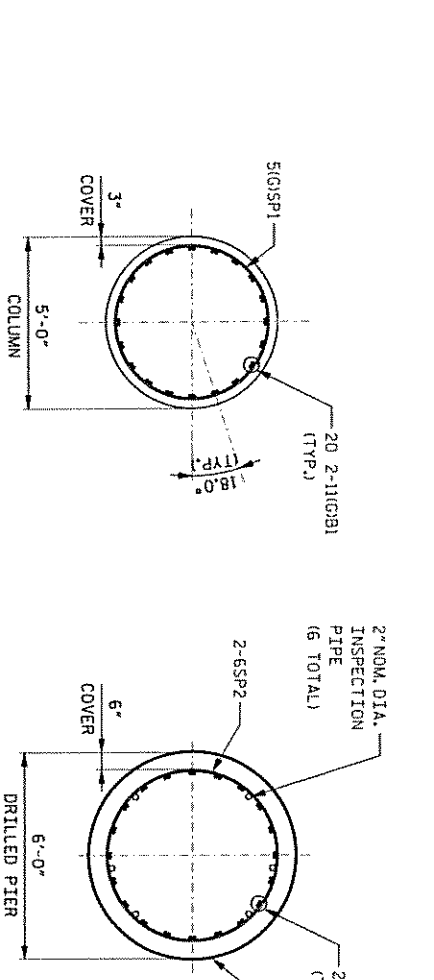
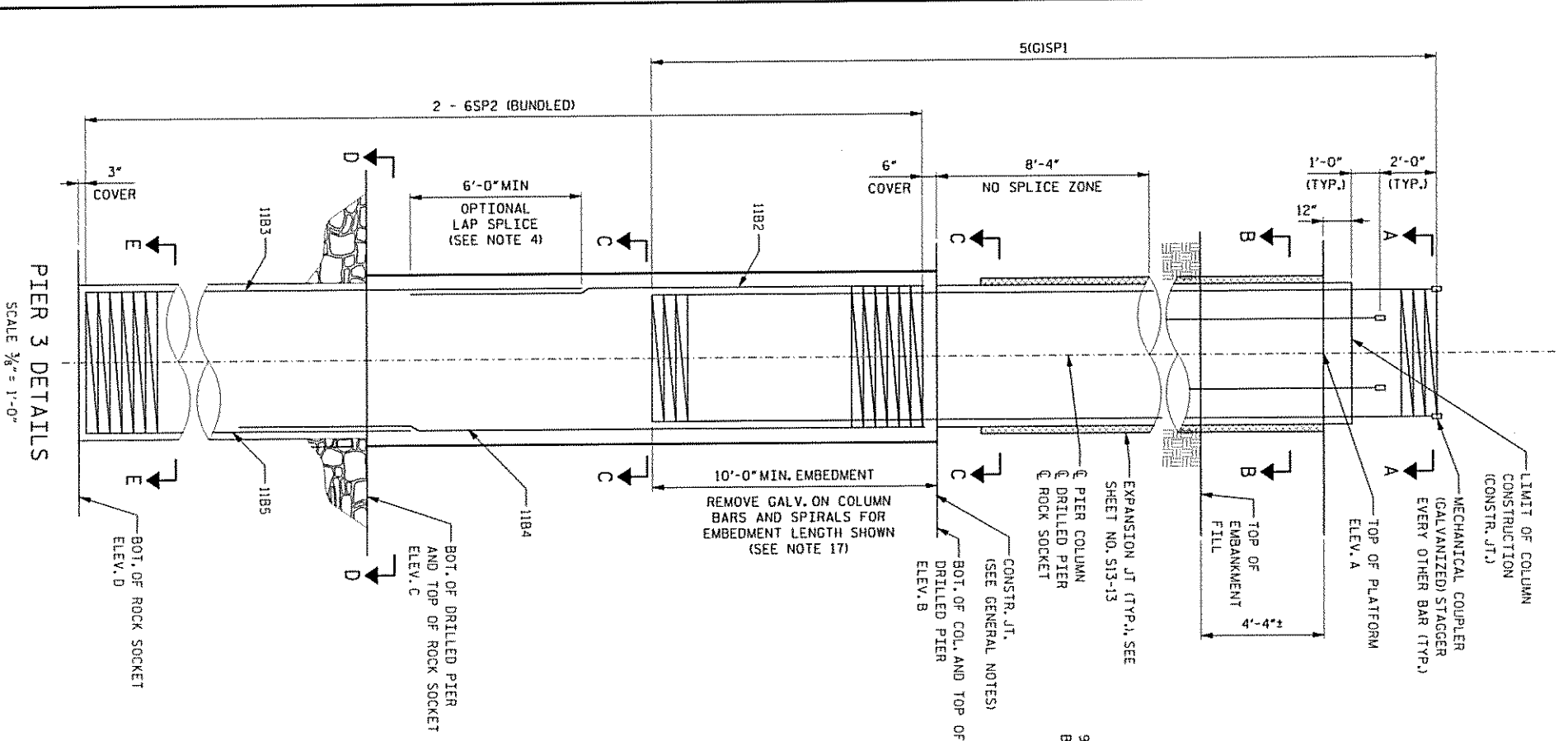
- NOTES:**
1. CANOPY STRUCTURE ELEMENTS ABOVE CONSTRUCTION JOINTS ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS CONTRACT.
  2. FOR LOCATION OF SECTION D-D, SEE SHEET NO. S13-08.
  3. FOR DETAILS OF PLATFORM, CONCOURSE AND BAGGAGE RAMP, SEE SHEET NOS. S-001 THRU S-810.
  4. PLATFORM STRUCTURE AND BAGGAGE RAMP ARE SHOWN SCHEMATICALLY. PILE FOUNDATIONS SUPPORTING THE BAGGAGE RAMP ARE NOT SHOWN FOR CLARITY; SEE PLATFORM AND BAGGAGE RAMP DRAWINGS FOR DETAILS.

PROJECT NO. **P-5705BB**  
MECKLENBURG COUNTY  
STATION: **STA. 19+68.93 -S1-**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
CANOPY STRUCTURE  
SECTION AT SOUTH PYLON  
(PIER 3)

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1	C.G.	05/12/08	3			513-07
2			4			18





**DRILLED PIER AND ROCK SOCKET TABLE**

PIER NO.	DRILLED PIER AND ROCK SOCKET NO.	REQUIRED GEOTECHNICAL NOMINAL (ULTIMATE) RESISTANCE		TOP OF PLATFORM ELEV. A	DRILLED PIER ELEV. B	TOP OF ROCK SOCKET ELEV. C	BOT. OF ROCK SOCKET ELEV. D
		COMPRESSION (KIPS)	TENSION (KIPS)				
3	1	7,134	0	748.11	720.00	701.00	639.00
	2	7,134	0	748.11	720.00	701.00	646.00

**NOTES:**

- FOR PIER 3 LOCATION, SEE SHEET NO. S13-08. FOR EXPANSION JOINT AND WATERSTOP DETAILS, SEE SHEET NO. S13-13.
- ALL PIER COLUMN, DRILLED PIER AND ROCK SOCKET CONCRETE SHALL BE CLASS AA CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GR. 75. COLUMN REINFORCING STEEL SHALL BE GALVANIZED (SEE SPECIAL SPECIFICATIONS), DESIGNATED WITH (G). DRILLED PIER AND ROCK SOCKET REINFORCING STEEL SHALL BE BLACK BARS.
- LAP SPLICES OF COLUMN REINFORCING BARS SHALL NOT BE PERMITTED. MECHANICAL COUPLERS SHALL BE USED FOR ALL COLUMN REINFORCING BAR SPLICES.
- OPTIONAL LAP SPLICES OF DRILLED PIER AND ROCK SOCKET REINFORCING BARS SHALL BE PERMITTED IN THE MIDDLE ONE THIRD (1/3) PORTION OF THE DRILLED PIER AND ROCK SOCKET, FOR THE MINIMUM LENGTH SHOWN AND STAGGERED EVERY OTHER BAR TO PROVIDE A CLASS B LAP SPLICE. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. OPTIONAL LAP SPLICE LOCATIONS SHALL BE CLEARLY SHOWN ON THE SHOP (WORKING) DRAWINGS.
- PERMANENT STEEL CASING IS REQUIRED FOR ALL DRILLED PIERS AT PIER 3. DO NOT EXTEND STEEL CASING BELOW ELEVATION 660.0 FT FOR DRILLED PIER 1 AND ELEVATION 681.5 FT FOR DRILLED PIER 2. SEE SECTION 411 OF THE STANDARD SPECIFICATIONS FOR DRILLED PIERS.
- INSTALL PERMANENT STEEL CASING AT PIER 3 BY VIBRATING, SCREWING OR OSCILLATING THE CASING.
- DRILLED PIERS AT PIER 3 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN THOSE PRESENTED ON THE DRILLED PIER AND ROCK SOCKET TABLE ON THIS SHEET.
- POLYMER SLURRY CONSTRUCTION IS REQUIRED FOR DRILLED PIERS AT PIER 3. SEE SECTION 411 OF THE STANDARD SPECIFICATIONS FOR DRILLED PIERS.
- ALL ROCK SOCKET SIDE WALLS SHALL BE SCARIFIED WITH A BACKSCATCHER TO PRECLUDE THE FORMATION OF A MUD CAKE WITHIN 48 HOURS OF CONCRETE PLACEMENT.
- SID INSPECTIONS ARE REQUIRED BY THE ENGINEER'S REPRESENTATIVE PRIOR TO PLACEMENT OF THE REINFORCING CAGE. IF REQUESTED ROCK SOCKET BOTTOMS SHALL BE INSPECTED WITH A SID AS SPECIFIED IN SECTION 411 OF THE STANDARD SPECIFICATIONS FOR DRILLED PIERS.
- ALL SHAFTS SHALL BE TESTED TO VERIFY CONCRETE INTEGRITY THROUGH CROSSHOLE SONIC LOGGING (CSL). SCHEDULE 40 STEEL INSPECTION PIPES FOR CSL TESTING SHALL BE ATTACHED TO THE INSIDE OF THE REINFORCEMENT CAGE. FILL CSL TUBES WITH WATER PRIOR TO CONCRETING. SEE STANDARD SPECIFICATION 411 FOR DRILLED PIERS.
- SEE STANDARD SPECIFICATION 411 FOR DRILLED PIERS, FOR ADDITIONAL DETAILS.
- PIER 3, DRILLED PIERS 1 AND 2 ARE DESIGNED FOR SIDE SHEAR ONLY.
- ALL REINFORCING STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL, BLACK AND SPIRAL REINFORCING STEEL, BLACK.
- FOR REINFORCEMENT BAR LIST AND BILL OF MATERIALS, SEE SHEET NO. S13-18.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FT. OF EXTRA LENGTH.
- COLUMN BARS EMBEDDED IN THE DRILLED PIER SHALL MEET A "BLACK BAR" CONDITION. REMOVE GALVANIZING ON THE COLUMN BARS, PRIOR TO PLACEMENT, BY STRIPPING GALVANIZING IN THE FIELD, OR BY MASKING THE COLUMN BARS PRIOR TO GALVANIZING AND REMOVING MASKING PRIOR TO PLACEMENT.

PROJECT NO. **P-5705BB**  
MECKLENBURG COUNTY  
STATION: **STA. 19+68.93 -S1-**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
CANOPY STRUCTURE  
DRILLED PIER DETAILS AT  
PIER 3 (SOUTH PYLON)

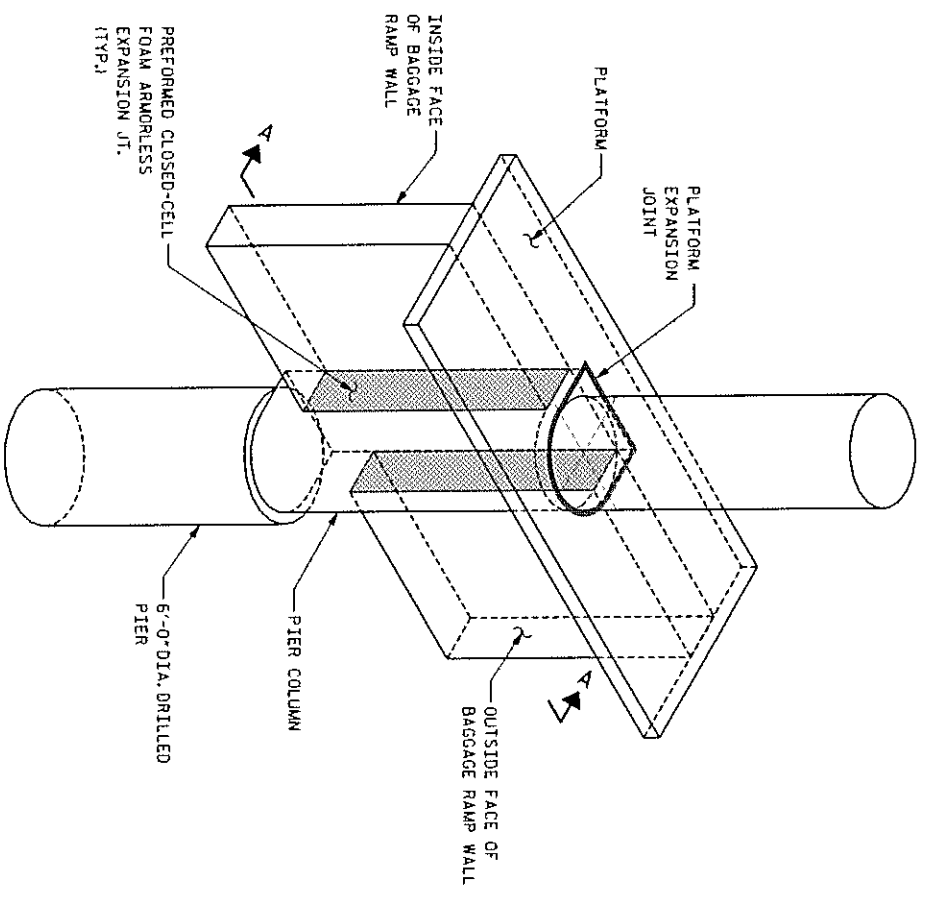
**HNTB**  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 040442  
MATHIAS DWIGER  
REGISTERED ENGINEER  
5/14/2018 9:13:52 PM PGT  
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB NORTH CAROLINA, P.C.  
NC License No. C-554  
143 E. 5th Street, Suite 200, Raleigh, NC 27609  
DATE: 05/27/2018  
DWG. NO. 11

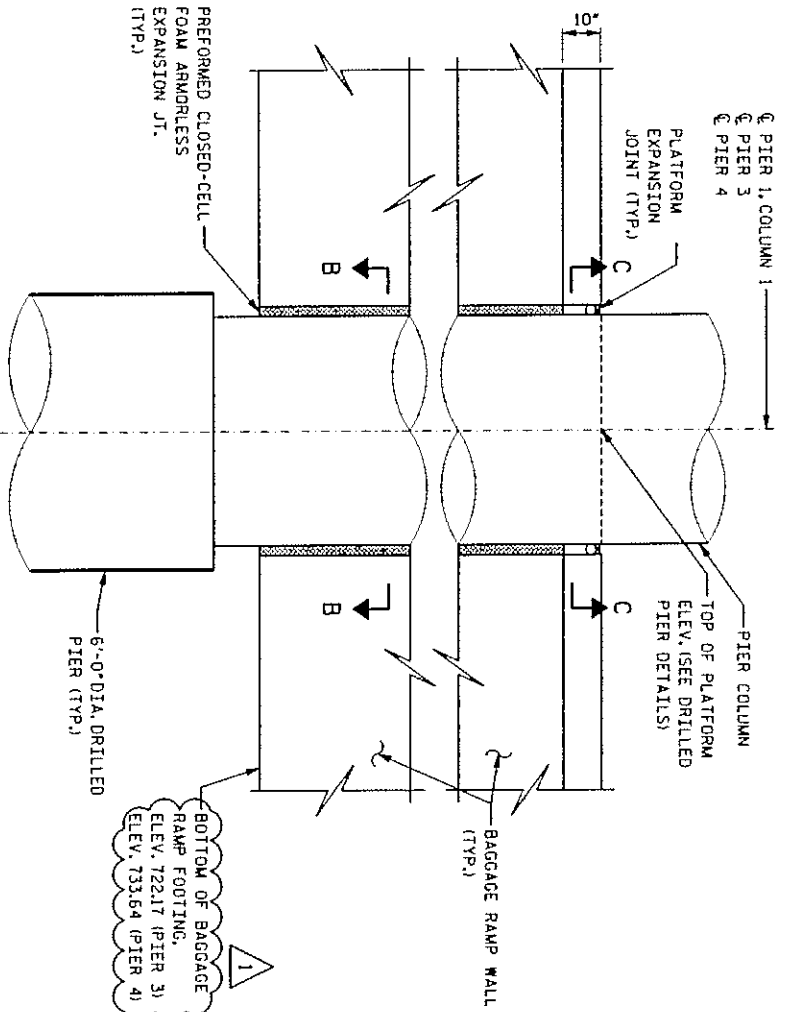
NO.	BY	DATE	NO.	BY	DATE
1	C.G.	05/12/2018	3		
2			4		

SHEET NO. S13-11  
TOTAL SHEETS 18

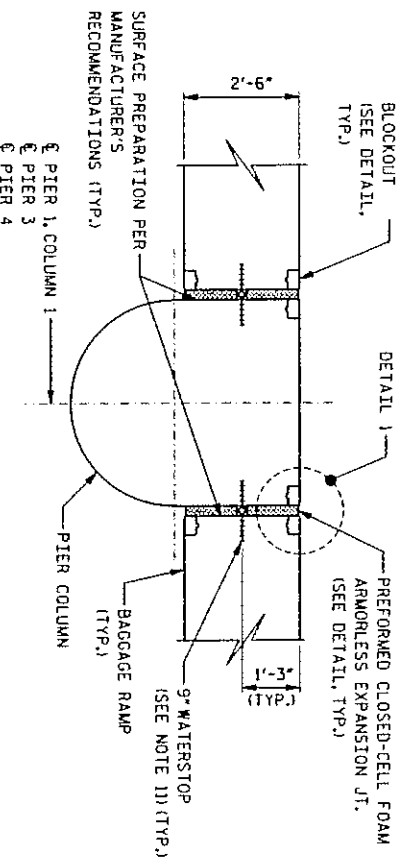




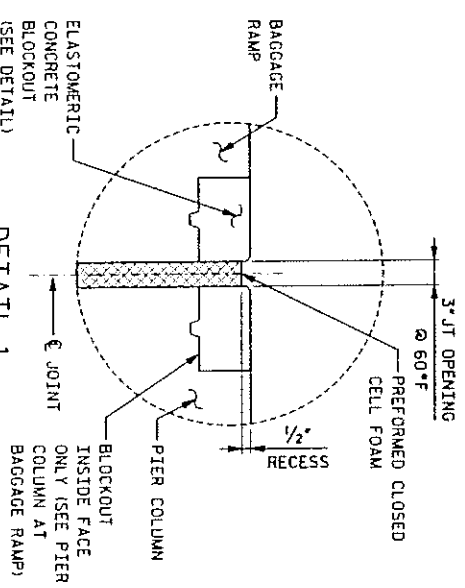
ISOMETRIC VIEW - COLUMN DETAIL BAGGAGE RAMP  
(PIER 3 SHOWN, PIER 1, COLUMN 2 AND PIER 4 SIMILAR)  
N.T.S.



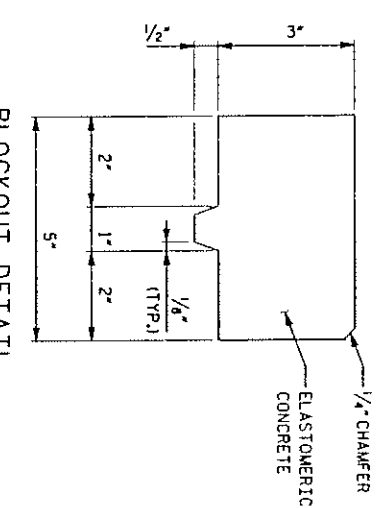
ELEVATION A-A  
SCALE 1/2" = 1'-0"



SECTION B-B  
SCALE 1/2" = 1'-0"



DETAIL 1  
NOT TO SCALE  
DETAIL OPPOSITE HAND AT SOME LOCATIONS

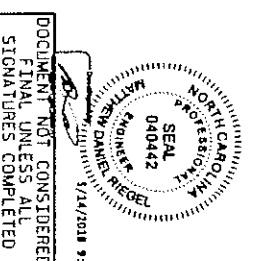


BLOCKOUT DETAIL  
NOT TO SCALE

NOTES:

- FOR SECTION C-C, SEE SHEET NO. S13-14.
- PLATFORM EXPANSION JOINTS SHALL BE A POURABLE SEAL WITH STRUCTURAL SILICONE SEALANT, PREFORMED CLOSED-CELL FOAM OR PREFORMED SEAL TYPE ARMORLESS JOINT IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- PREFORMED EXPANSION JOINTS BELOW PLATFORM SHALL BE A PREFORMED CLOSED-CELL FOAM TYPE ARMORLESS JOINT IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- EXPANSION JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE JOINT MANUFACTURER'S WRITTEN INSTRUCTIONS. CARE SHALL BE TAKEN TO ENSURE ALL SURFACES ARE PROPERLY CLEANED AND PREPARED TO RECEIVE THE JOINT MATERIALS, TO THE SATISFACTION OF THE ENGINEER.
- CONTRACTOR SHALL DETERMINE AND SUPPLY CLOSED CELL FOAM/PREFORMED SEAL DIMENSIONS BASED UPON JOINT OPENING SIZE AND EXPECTED MOVEMENT (JOINT DISPLACEMENT).
- CONTRACTOR MAY HAVE TO MODIFY PLATFORM SLAB TO ACCOMMODATE ARMORLESS JOINT SYSTEM SELECTED.
- CONCRETE HEADERS SHALL NOT OVERHANG THE CONCRETE SLAB UNDER ANY CIRCUMSTANCES.
- DETAILS SHOWN ARE INTENDED TO BE SCHEMATIC AND CONTRACTOR SHALL VERIFY ALL DETAILS WITH THE JOINT MATERIAL SUPPLIER.
- DETAILS ON THE DRAWINGS LABELED NOT TO SCALE ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.
- FOR DETAILS OF PLATFORM, CONCOURSE AND BAGGAGE RAMP, SEE SHEET NOS. S-001 THRU S-810.
- WATERSTOP SHALL BE 9" HOLLOW BULB TYPE, 3/8" MINIMUM THICKNESS WITH 1/2" DIA. BULB. WATERSTOP SHALL BE FURNISHED IN ONE PIECE AND SHALL EXTEND THE FULL HEIGHT OF THE BAGGAGE RAMP WALL.

LOAD COMBINATION	JOINT DISPLACEMENTS (IN.)							
	PIER 1		PIER 2		PIER 3		PIER 4	
AASHTO STRENGTH	1.102	1.128	1.048	1.033	1.239	1.081	0.967	0.927
AASHTO EXTREME	1.082	1.105	1.302	1.390	1.538	1.443	1.169	1.125
NON-SEISMIC	1.095	1.099	1.083	0.992	1.259	1.048	0.945	0.906
ASCE SEISMIC	1.148	1.159	1.359	1.453	1.613	1.522	1.242	1.181



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**HNTB**  
HNTB NORTH CAROLINA, P.C.  
10000 Lenoir Rd., Suite 200, Raleigh, NC 27609  
DATE: 4/9/2018  
DRAWN BY: L. RAMOS  
CHECKED BY: C. GARDNER  
DWG. NO. 13

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
CANOPY STRUCTURE  
DRILLED PIER  
EXPANSION JOINT DETAILS  
SHEET 1 OF 2

PROJECT NO. P-5705BB  
MECKLENBURG COUNTY  
STATION: STA. 19+68.93 -S1-

NO.	BY	DATE	NO.	BY	DATE
1	C.G.	05/11/2018	3		
2			4		

SHEET NO. S13-13  
TOTAL SHEETS 18