



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

May 17, 2019

N.C. Department of Environmental Quality  
Division of Coastal Management  
400 Commerce Avenue  
Morehead City, NC 28557

Attn: Mr. Stephen Lane  
NCDOT Coordinator

Dear Sir:

Subject: **Application for a CAMA General Permit** for utility work associated with the Isabel Holmes Memorial Bridge Preservation project on US 74/NC 133 over the Northeast Cape Fear River, New Hanover County. Debit \$200.00 from WBS 15BPR.14.

Please find enclosed the North Carolina Division of Coastal Management Major Permit Form (MP-1) and utility plans for the above referenced project. The North Carolina Department of Transportation (NCDOT), Division of Highways proposes to complete bridge preservation activities on the Isabel Holmes drawbridge over the Northeast Cape Fear River on US 74/NC 133 in Wilmington, NC. These activities include the replacement of electrical cable and a sewer line that service certain operations associated with the moveable span (operator house, traffic signals and gates), as well as the installation of a concrete electrical generator pad and gravel access road. All work will occur within NCDOT right-of-way (ROW) or previously acquired easements.

Approximately 1,080 ft. of the proposed sewer line will be buried and installed by open trench methods on land; the remaining 950 ft. will be attached to the bridge in approximately the same location as the existing. The electrical cables will also be attached to the bridge in approximately the same location as the existing. Neither utility will hang below the low chord elevation of the bridge. The 24' x 28' generator pad will be located east of the bridge and accessed by a 300 ft. long, 12 ft. wide gravel access road. No impacts to jurisdictional streams or wetlands are anticipated.

This project was let to construction on February 19, 2019.

### Regulatory Approvals

NCDOT requests that the proposed utility work associated with this project be authorized under a Coastal Area Management Act General Permit. The adjacent riparian landowner return receipts will be provided once they are received. Authorization to debit the \$200 Permit Application Fee from WBS Element 15BPR.14 is hereby given.

Section 404 and 401 permit approvals are not required for this work.

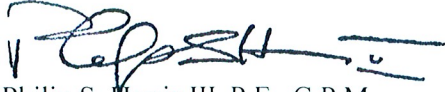
*Mailing Address:*  
NC DEPARTMENT OF TRANSPORTATION  
ENVIRONMENT ANALYSIS UNIT  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598

*Telephone:* (919) 707-6000  
*Fax:* (919) 212-5785  
*Customer Service:* 1-877-368-4968  
*Website:* [www.ncdot.gov](http://www.ncdot.gov)

*Location:*  
1000 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

A copy of this permit application will be posted on the NCDOT Website at:  
<https://xfer.services.ncdot.gov/pdea/PermApps/>. Thank you for your assistance with this project. If you  
have any questions or need additional information, please contact Chris Rivenbark at  
[crivenbark@ncdot.gov](mailto:crivenbark@ncdot.gov) or (919) 707-6152.

Sincerely,

A handwritten signature in black ink, appearing to read "P. Harris III", with a horizontal line extending to the right.

Philip S. Harris III, P.E., C.P.M.  
Environmental Analysis Unit Head

# APPLICATION for Major Development Permit

(last revised 12/27/06)



North Carolina DIVISION OF COASTAL MANAGEMENT

## 1. Primary Applicant/ Landowner Information

Business Name North Carolina Department Of Transportation (NCDOT)		Project Name (if applicable) Isabel Holmes Memorial Bridge Preservation (15BPR.14)	
Applicant 1: First Name Philip	MI S	Last Name Harris	
Applicant 2: First Name	MI	Last Name	
<i>If additional applicants, please attach an additional page(s) with names listed.</i>			
Mailing Address 1548 Mail Service Center		PO Box	City Raleigh
			State NC
ZIP 27699 1548	Country USA	Phone No. 919 - 707 - 6000 ext.	FAX No. 919 - 212 - 5785
Street Address (if different from above) 1000 Birch Ridge Dr.		City Raleigh	State NC
			ZIP 27610- 4328
Email pharris@ncdot.gov			

## 2. Agent/Contractor Information

Business Name			
Agent/ Contractor 1: First Name	MI	Last Name	
Agent/ Contractor 2: First Name	MI	Last Name	
Mailing Address		PO Box	City
			State
ZIP		Phone No. 1 - - ext.	Phone No. 2 - - ext.
FAX No.	Contractor #		
Street Address (if different from above)		City	State
			ZIP -
Email			

&lt;Form continues on back&gt;

**3. Project Location**

County (can be multiple) New Hanover		Street Address Martin Luther King Jr. Parkway/US 74/NC 133		State Rd. #
Subdivision Name N/A		City Wilmington	State NC	Zip -
Phone No. N/A - - ext.		Lot No.(s) (if many, attach additional page with list) N/A, , ,		
a. In which NC river basin is the project located? Cape Fear		b. Name of body of water nearest to proposed project Northeast Cape Fear River		
c. Is the water body identified in (b) above, natural or manmade? <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Manmade <input type="checkbox"/> Unknown		d. Name the closest major water body to the proposed project site. Northeast Cape Fear River		
e. Is proposed work within city limits or planning jurisdiction? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. All work will be completed within NCDOT right-of-way or easements		

**4. Site Description**

a. Total length of shoreline on the tract (ft.) Northeast Cape Fear River: 500 ft.	b. Size of entire tract (sq.ft.) 363,300 sq ft. (approximately 8.4 acres)
c. Size of individual lot(s) N/A, (If many lot sizes, please attach additional page with a list)	d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level) <input type="checkbox"/> NHW or <input type="checkbox"/> NWL
e. Vegetation on tract Maintained grass, shrub-scrub, tidal marsh.	
f. Man-made features and uses now on tract Transportation facility and right-of-way.	
g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site. This section of US 74 is adjacent to residential, commercial, and industrial development associated with downtown Wilmington.	
h. How does local government zone the tract? All work will be completed within NCDOT right-of-way/easements or attached to existing bridges.	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA  If yes, by whom?	
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	

&lt;Form continues on next page&gt;

m. (i) Are there wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(ii) Are there coastal wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? (Attach documentation, if available)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



n. Describe existing wastewater treatment facilities.

None

o. Describe existing drinking water supply source.

None

p. Describe existing storm water management or treatment systems.

Various transportation-related storm water management facilities (grassed swales, bridge deck drainage systems, etc.)

**5. Activities and Impacts**

a. Will the project be for commercial, public, or private use?

☐ Commercial ☒ Public/Government  
☐ Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.

The purpose of the project is to replace existing electrical cables and a sewer line that service certain operations associated with the bridge's moveable span (operator house, traffic signals and gates) and to install a generator pad to support the electrical system. The use and daily operations of the transportation facility will remain unchanged once the project is complete.

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.

Electrical cables and the sewer line will be attached to bridge as shown on the plans. To connect with the sanitary sewer outfall, part of the sewer line will also be installed on land via open trench methods.

d. List all development activities you propose.

Installation of a 24x28 electrical concrete generator pad and associated 300 ft. gravel access road; installation of a 2,030 ft. long sewer line (1,080 ft. buried, 950 ft. attached to bridge) and attachment of electrical cables to the bridge.

e. Are the proposed activities maintenance of an existing project, new work, or both?

Both

f. What is the approximate total disturbed land area resulting from the proposed project?

9,672 ☒ Sq.Ft or ☐ Acres

g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?

☐ Yes ☒ No ☐ NA

h. Describe location and type of existing and proposed discharges to waters of the state.

All work will be completed within NCDOT right-of-way. No discharges to streams or wetlands are anticipated

i. Will wastewater or stormwater be discharged into a wetland?

☐ Yes ☒ No ☐ NA

If yes, will this discharged water be of the same salinity as the receiving water?

☐ Yes ☐ No ☐ NA

j. Is there any mitigation proposed?

☐ Yes ☒ No ☐ NA

If yes, attach a mitigation proposal.

&lt;Form continues on back&gt;

**6. Additional Information**

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.
e. The appropriate application fee. Check or money order made payable to DENR.
f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.  Name see attached letters Phone No.  Address  Name Phone No.  Address  Name Phone No.  Address
g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates. N/A
h. Signed consultant or agent authorization form, if applicable.
i. Wetland delineation, if necessary.
j. A signed AEC hazard notice for projects in oceanfront and inlet areas. <i>(Must be signed by property owner)</i>
k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

**7. Certification and Permission to Enter on Land**

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

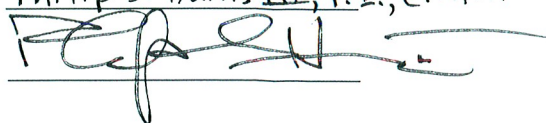
I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 5/17/19

Print Name Philip S. Harris III, P.E., C.P.M.

Signature



Please indicate application attachments pertaining to your proposed project.

☐ DCM MP-2 Excavation and Fill Information

☐ DCM MP-5 Bridges and Culverts

☐ DCM MP-3 Upland Development

☐ DCM MP-4 Structures Information

5/17/19

PROJECT: 15BPR.14

CONTRACT:



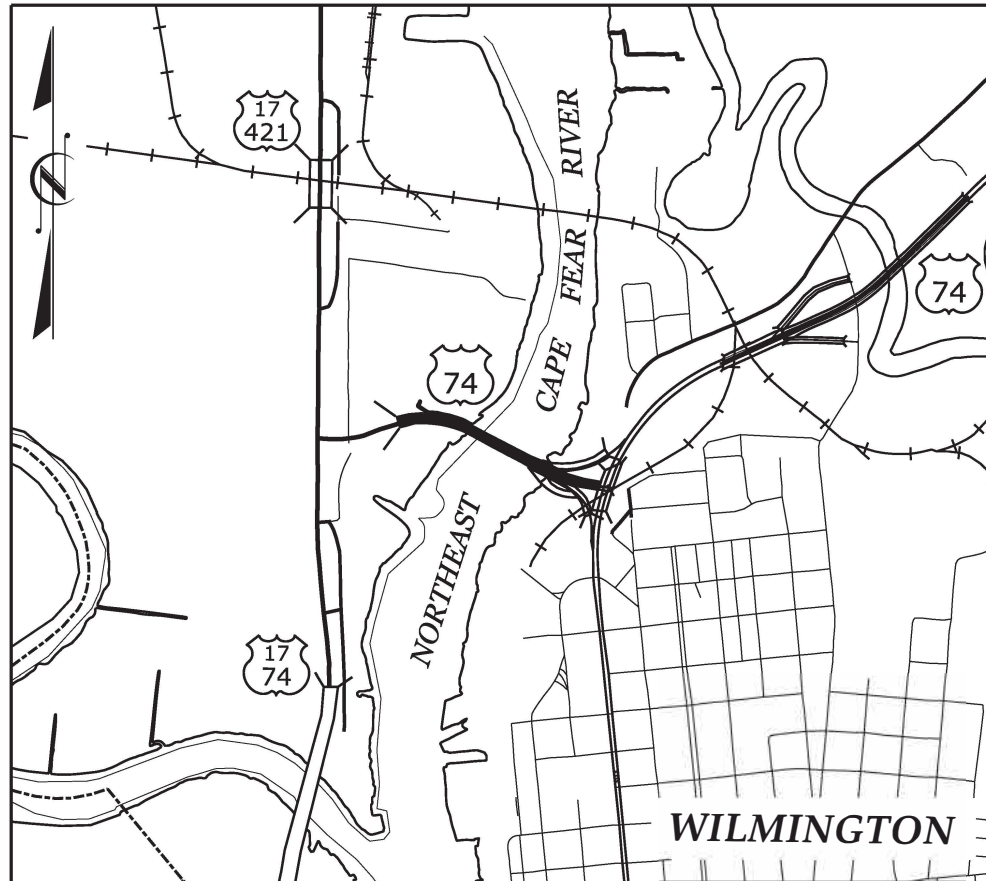
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

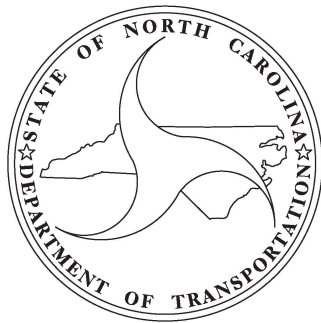
LOCATION: ISABEL HOLMES BASCULE BRIDGE  
ON US 74, NC 133 OVER  
NORTHEAST CAPE FEAR RIVER

TYPE OF WORK: BRIDGE PRESERVATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.14	1	213
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.14		CONSTRUCTION	



VICINITY MAP



DESIGN DATA

DESIGN DATA

LENGTH OF STRUCTURE = 0.437 MI

2018 STANDARD SPECIFICATIONS

LETTING DATE:  
FEBRUARY 19, 2019

Prepared for the Office of:

**DIVISION OF HIGHWAYS**  
STRUCTURES MANAGEMENT UNIT  
1000 BIRCH RIDGE DR., RALEIGH, N.C. 27610

Prepared in the Office of:



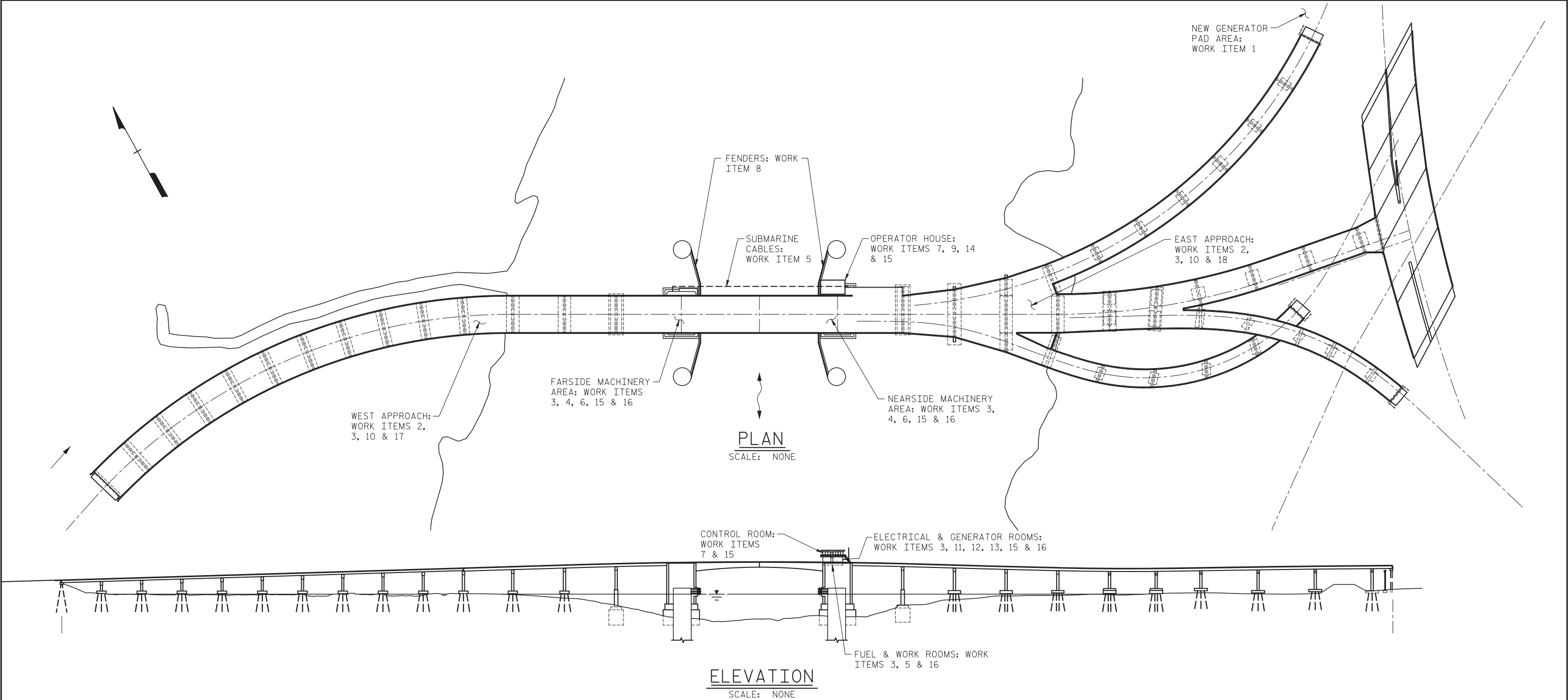
333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

**JASON R. DOUGHTY, PE**  
DESIGN ENGINEER OF RECORD



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

5/17/19



ELECTRICAL WORK ITEMS:

1. PROVIDE NEW CONCRETE GENERATOR PAD WITH NEW BACKUP GENERATOR, ATS, LOAD BANK, SECURITY FENCE, CRUSHED STONE ACCESS DRIVEWAY, AND RELATED COMPONENTS.
2. REMOVE EXISTING TRAFFIC GATES AND INSTALL NEW TRAFFIC GATES AT SAME LOCATION (6 LOCATIONS). REMOVE EXISTING RAMP A AND RAMP B TRAFFIC GATES AND INSTALL NEW TRAFFIC GATES AT NEW LOCATIONS (2 LOCATIONS). INSTALL NEW NEARSIDE OFFGOING TRAFFIC GATE AT NEW LOCATION (1 LOCATION).
3. REMOVE EXISTING EXPOSED CONDUIT AND CONDUCTORS ON THE BASCULE PIERS AND APPROACH SPANS AND REPLACE WITH NEW CONDUIT AND WIRING.
4. REROUTE CONDUITS AND CONDUCTORS FROM SUBMARINE CABLE TERMINAL CABINETS TO THE MACHINERY AREAS TO ELIMINATE USE OF EXISTING PULL BOXES IN COUNTERWEIGHT PITS.
5. INSTALL NEW SUBMARINE CABLES AND RELATED TERMINAL CABINETS.
6. REMOVE EXISTING FLEXIBLE CABLES TO MOVEABLE SPAN. PROVIDE AND INSTALL NEW FLEXIBLE CABLES AND RELATED HARDWARE BETWEEN EXISTING JUNCTION BOXES.
7. INSTALL NEW ANALOG CCTV CAMERAS. PROVIDE ADDITIONAL CAMERAS AND A SECOND VIEWING MONITOR IN CONTROL ROOM FOR ADDITIONAL CAMERA VIEWS.
8. REMOVE EXISTING PIER NAVIGATION LIGHTS AND WARNING HORN. PROVIDE AND INSTALL NEW PIER NAVIGATION LIGHTS, WARNING HORN, AND CHANNEL FLOODLIGHTS BENEATH MOVABLE SPAN.
9. INSTALL NEW SECURITY FENCE WITH RFID LOCK AROUND CONTROL HOUSE.
10. REMOVE EXISTING HPS ROADWAY LIGHTING CONDUCTORS. INSTALL NEW CONDUCTORS AND CONNECT NEW WIRING TO EXISTING POLES AND FIXTURES.
11. IN CONJUNCTION WITH MAIN MOTOR REPLACEMENT, PROVIDE AND INSTALL NEW AC FLUX VECTOR DRIVES, CABINETS, AND RELATED COMPONENTS.
12. REMOVE EXISTING PANEL BOARDS PNB-1 AND PNB-2, TRANSFORMER, GENERATORS, AND AUTOMATIC TRANSFER SWITCHES. PROVIDE AND INSTALL A NEW 208/120V PANEL BOARD, TRANSFORMER, AND TELEPHONE BOARD, INSTALL NEW HEAT PUMP SYSTEM TO SERVE ELECTRICAL ROOMS BELOW CONTROL ROOM.
13. REMOVE EXISTING CONTROL CABINETS IN ELECTRICAL ROOM. INSTALL NEW MOTOR CONTROL CENTER WITH MOTOR STARTERS AND RELATED COMPONENTS FOR POWER DISTRIBUTION.
14. PROVIDE NEW PUBLIC ADDRESS SYSTEM.
15. INSTALL NEW PLC BASED CONTROL SYSTEM INCLUDING CONTROL CABINETS AND COMPONENTS, NEW/REFURBISHED CONTROL CONSOLE, AND VARIOUS LIMIT SWITCHES/SENSORS.
16. REMOVE EXISTING SERVICE LIGHTS IN MACHINERY AREAS, ELECTRICAL ROOMS, AND STAIRWAYS. INSTALL NEW LED SERVICE LIGHTING FIXTURES IN SIMILAR LOCATIONS.
17. REMOVE EXISTING WEST TRAFFIC SIGNAL HEADS. INSTALL NEW STANDARD TRAFFIC SIGNAL HEADS WITH VISORS.
18. INSTALL NEW 120VAC POWER FOR EAST INTERSECTION TRAFFIC SIGNALS WITH PROVISIONS FOR A PORTABLE GENERATOR CONNECTION.
19. PROVIDE AND INSTALL TEMPORARY CONTROLS AS REQUIRED TO MAINTAIN BRIDGE OPERATIONS DURING CONSTRUCTION.

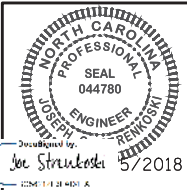
PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:

DESIGNED BY: J. C. RINEHART DATE: 03/09/18  
DRAWN BY: R. L. REED DATE: 03/09/18  
CHECKED BY: L. V. BORDEN DATE: 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/15/18



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL SCOPE  
OF WORK

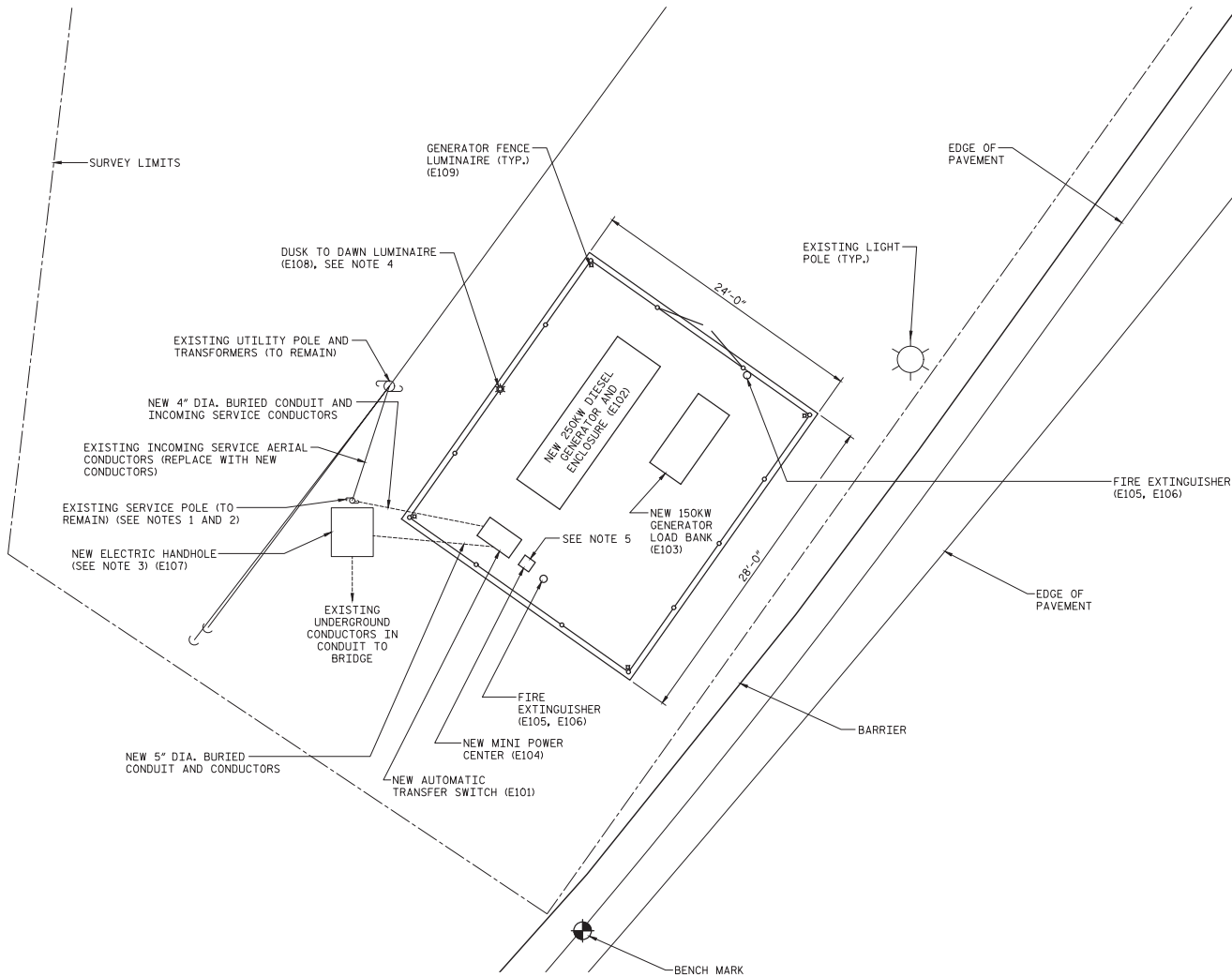
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			E-1
2			4			TOTAL SHEETS 213



5/17/19

LAST SAID 11/15/2018 11:59 AM BY JORDENHART, LAST PLOTTED 11/15/2018 12:43 PM, FILE \\modjeski\proj\15BPR14\DWG\Electrical\15BPR14\_SML111.dwg

DESIGNED BY: R. I. PETERS DATE: 04/11/18  
DRAWN BY: R. L. REED DATE: 04/11/18  
CHECKED BY: L. V. BORDEN DATE: 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/15/18



NOTES:

1. REMOVE EXISTING WEATHER HEAD, CONDUITS, SERVICE CONDUCTORS, AND 600A MAIN DISCONNECT SWITCH FROM EXISTING SERVICE POLE.
2. INSTALL NEW WEATHER HEAD, NEW SERVICE CONDUCTORS, AND CONDUIT ON EXISTING SERVICE POLE.
3. SPLICE EXISTING CONDUCTORS TO NEW CONDUCTORS FROM LOAD SIDE OF AUTOMATIC TRANSFER SWITCH IN THE ELECTRIC HANDHOLE.
4. DUSK TO DAWN LUMINAIRE TO BE MOUNTED TO TOP OF FENCE POST SIMILAR TO MAINTENANCE LIGHT MOUNTING DETAILED IN "LIGHTING DETAIL" ON DRAWING E-12.
5. POSITION MINI POWER CENTER SUCH THAT CONDUCTOR LENGTH FROM ATS SECONDARY LUGS TO MINI POWER CENTER MAIN BREAKER IS LESS THAN 10'.

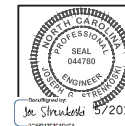
PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_

PLAN  
GENERATOR PAD  
SCALE: 1"=5'-0"



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879

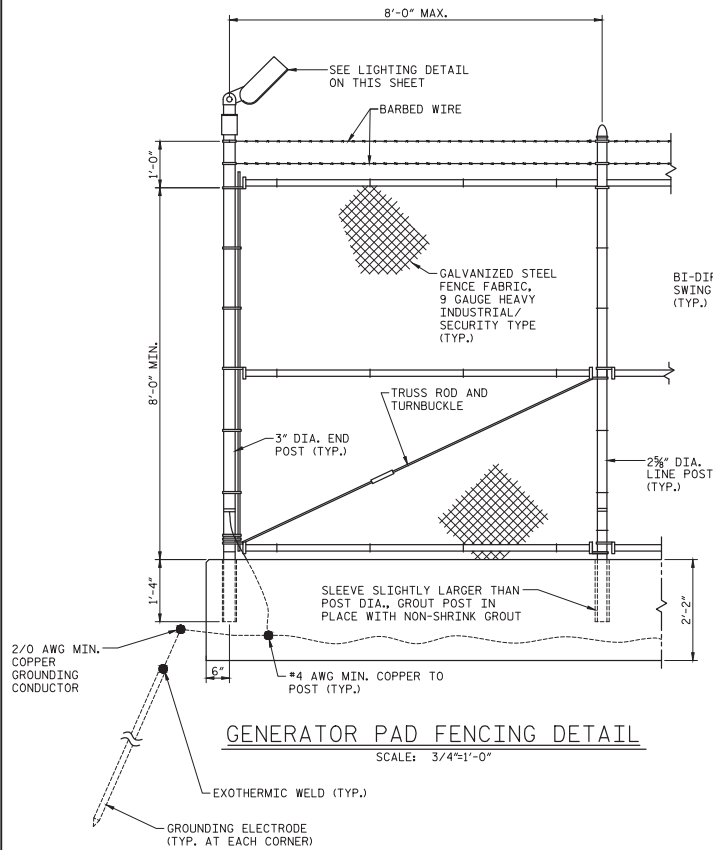
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UNLESS ALL SIGNATURES COMPLETED



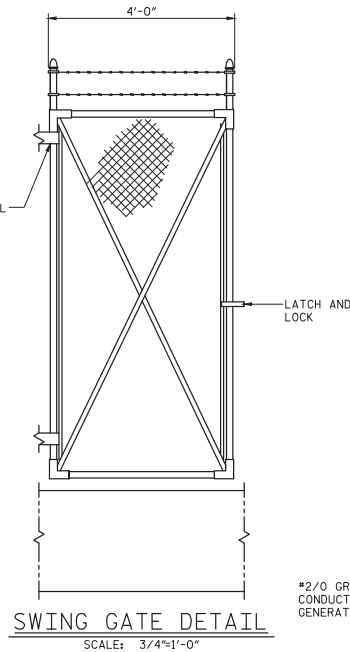
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL GENERATOR  
LOCATION PLAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	E-11
1			3			TOTAL SHEETS 213
2			4			

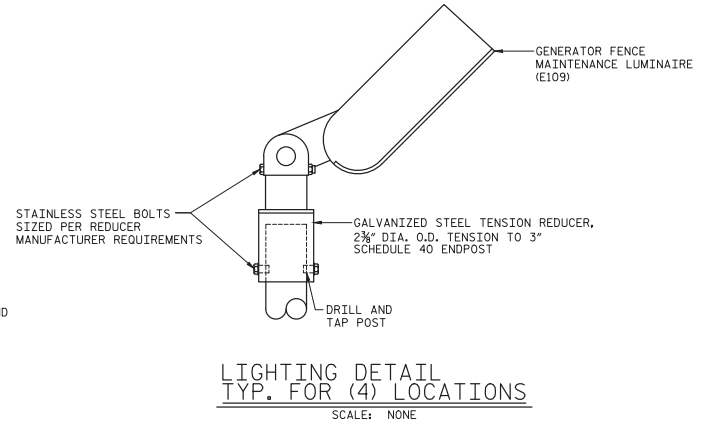
5/17/19



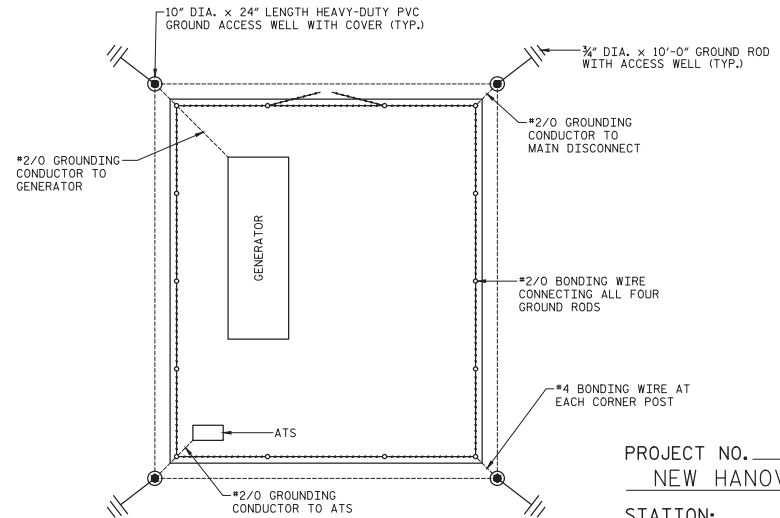
GENERATOR PAD FENCING DETAIL  
SCALE: 3/4"=1'-0"



SWING GATE DETAIL  
SCALE: 3/4"=1'-0"



LIGHTING DETAIL  
TYP. FOR (4) LOCATIONS  
SCALE: NONE



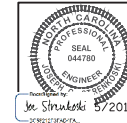
GROUNDING DETAIL  
SCALE: NONE

NOTES:

- CHAIN LINK FABRIC, POSTS, RAILS, GATES, AND OTHER ASSOCIATED HARDWARE SHALL BE GALVANIZED STEEL, A MOISTURE-EXCLUDING CAP IS REQUIRED FOR ALL POSTS.
- POSTS SHALL BE HIGH STRENGTH SCHEDULE 40 PIPE, TOP RAIL BRACE RAIL, AND BOTTOM RAIL SHALL BE 1 1/2" DIA. TRUSS ROD ADJUSTING UNITS SHALL BE 3/4" DIA. MIN.
- THE SWING GATE SHALL HAVE LOCKABLE TYPE HARDWARE WITH CORROSION RESISTANT LOCK. LOCK TYPE AND KEYING SHALL BE AS SPECIFIED BY THE DEPARTMENT.
- BONDING CONNECTIONS TO POSTS, FABRIC, AND BARBED WIRE SHALL BE MADE WITH UL LISTED GROUND CLAMPS, COMPRESSION TYPE CONNECTORS SHALL BE SUITABLE FOR USE WITH COPPER.
- PROVIDE AND INSTALL FOUR GROUNDING ELECTRODES, ONE AT EACH CORNER OF THE GENERATOR PAD, GROUNDING ELECTRODES SHALL BE DRIVEN TO A DEPTH OF AT LEAST 12 INCHES BELOW FINISHED GRADE. INSTALL A GROUNDING RING AROUND THE PERIMETER OF THE PAD AT A SIMILAR DEPTH BELOW GRADE.
- GROUNDING CONDUCTORS FOR FENCE GROUNDING SHALL BE AWG SOLID COPPER WITH TIN PLATING, GATES SHALL BE BONDED WITH AWG 2 FLEXIBLE STRANDED COPPER CONDUCTORS.
- PROVIDE GROUNDING CONNECTIONS TO THE GROUNDING RING FOR THE GENERATOR AND LOAD PANEL AS SHOWN IN THE PLANS.
- FENCING SHALL COMPLY WITH NCDOT SECTION 866.
- PROVIDE TEST WELLS FOR ALL GROUND RODS, TEST WELLS SHALL PROVIDE ACCESS TO GROUND ROD CONNECTIONS.

DESIGNED BY: R. J. PETERS DATE: 04/11/18  
DRAWN BY: R. L. REED DATE: 04/11/18  
CHECKED BY: L. V. BORDEN DATE: 11/13/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/15/18

**MODJESKI-MASTERS**  
Superior Great Bridges  
333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879



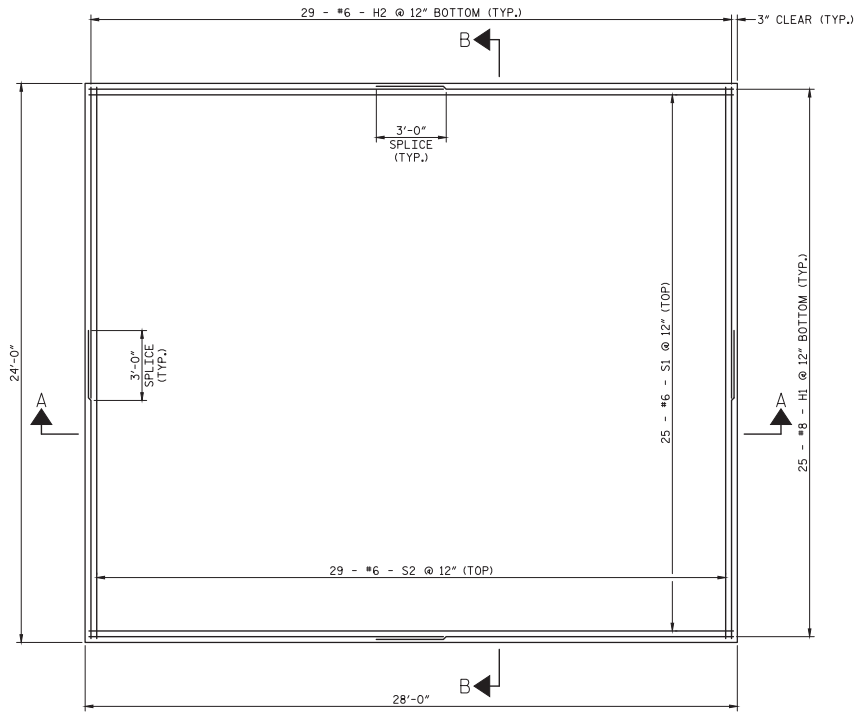
PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL GENERATOR  
PAD DETAILS - 1

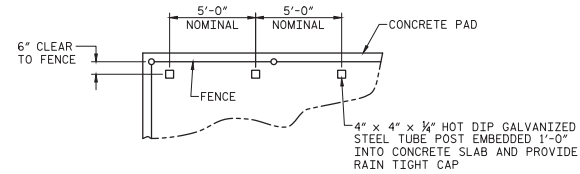
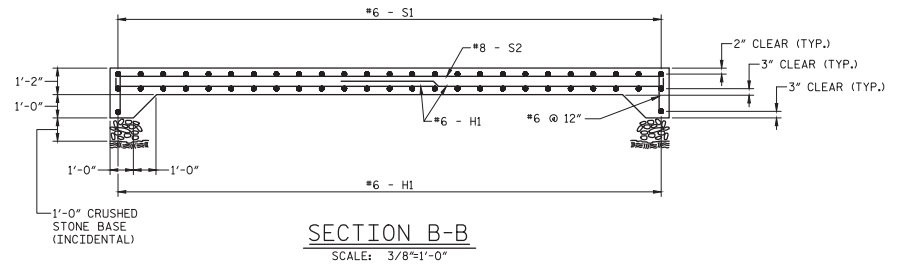
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	213

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

5/17/19



PLAN  
SCALE: 3/8"=1'-0"

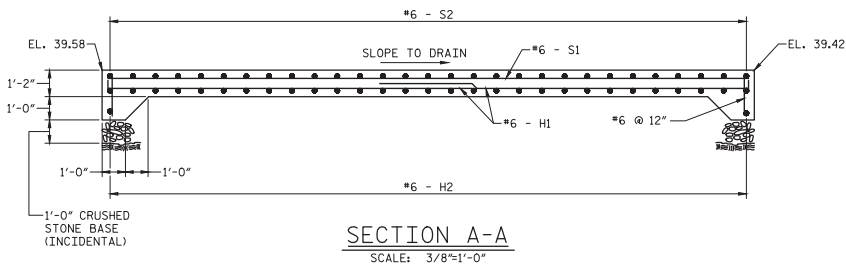


PLAN  
EQUIPMENT FRAME POSTS DETAIL  
SCALE: NONE

NOTES:

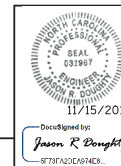
1. CONSTRUCT GENERATOR PAD IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS, SECTION 420.
2. USE CLASS A CONCRETE, REINFORCING STEEL TO BE UNCOATED.
3. REFER TO DRAWING E-17 FOR ADDITIONAL DETAILS.
4. ALL WORK SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR BRIDGE BACKUP GENERATOR, UNLESS OTHERWISE NOTED.

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879

DOCUMENT NOT CONSIDERED FINAL  
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL GENERATOR  
PAD DETAILS - 2

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	213

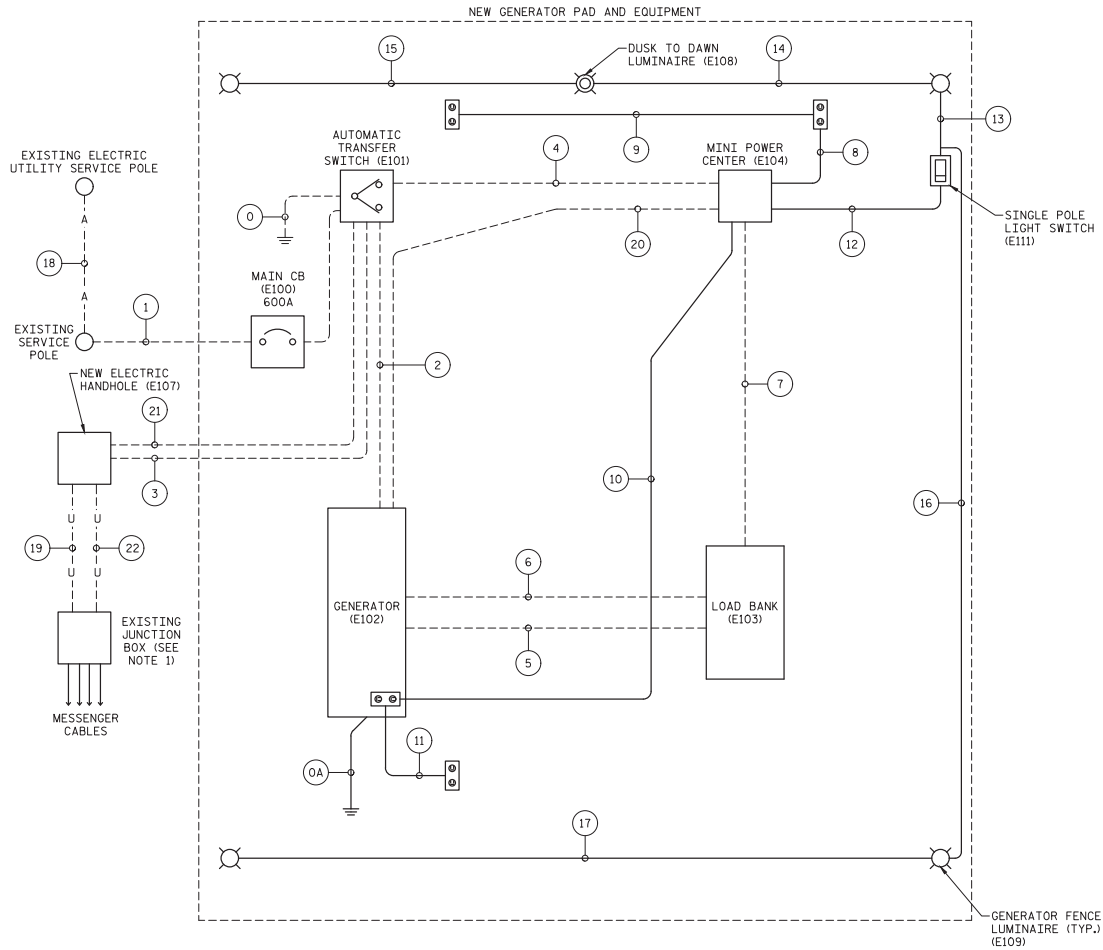
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DESIGNED BY: N. K. BHINGE DATE: 04/11/18  
DRAWN BY: R. V. REED DATE: 04/11/18  
CHECKED BY: L. V. BORDEN DATE: 11/13/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/13/18

5/17/19

LAST SAVED 11/15/2018 11:50 AM BY JORDENHART. LAST PLOTTED 11/15/2018 12:43 PM.  
FILE: \\modjeski-masters\projects\15BPR14\15BPR14\_04\07\_15BPR14\_SML124.dwg

DESIGNED BY: N. K. RHINE DATE: 04/17/18  
DRAWN BY: R. L. REED DATE: 04/17/18  
CHECKED BY: L. V. BORDEN DATE: 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/15/18



LEGEND:

- A - - - A - AERIAL CONDUCTORS
- - - - - CONDUIT EMBEDDED IN GENERATOR PAD
- U - - - U - UNDERGROUND CONDUIT
- - - - - EXPOSED CONDUIT

NOTES:

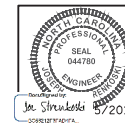
1. UNDERGROUND CONDUIT FROM NEW ELECTRICAL HANDHOLE SHALL TERMINATE IN EXISTING JUNCTION BOX ALONG EAST APPROACH, RAMP A AND TRANSITION TO AERIAL CABLES. SEE SHEET E-123 FOR MESSENGER CABLE DETAILS

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879

DOCUMENT NOT CONSIDERED FINAL  
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL GENERATOR  
PAD DETAILS - 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			E-14
2			4			
TOTAL SHEETS						213



+

5/17/19

+

LAST SAID 11/15/2018 11:45 AM BY JORDENHART, LAST PLOTTED 11/15/2018 12:43 PM, FILED \\modjeski-masters\366220\CADD\Electrical\404\021\_15BPR14\_SML115.dwg

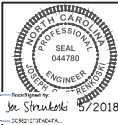
CONDUIT SCHEDULE						
CONDUIT NO.	SIZE	FROM	TO	WIRE	GND	NOTES
0	1	ATS	GROUNDING ELECTRODE/GROUNDING RING	-	#2/0	GROUNDING ELECTRODE CONDUCTOR
0A	1	GENERATOR	GROUNDING ELECTRODE/GROUNDING RING	-	#2/0	GROUNDING ELECTRODE CONDUCTOR
1	5	EXISTING SERVICE POLE	ATS	(8) 400 MCM	400 MCM	BURIED CONDUIT, EMBEDDED IN GENERATOR PAD, COORDINATE WITH UTILITY
2	5	GENERATOR	ATS	(8) 400 MCM	400 MCM	EMBEDDED IN GENERATOR PAD
3	5	ATS	NEW ELECTRIC HANDHOLE	(8) 500 MCM	500 MCM	EMBEDDED IN GENERATOR PAD
4	1	ATS	MINI POWER CENTER	(2) #6 AWG	#6 AWG	EMBEDDED IN GENERATOR PAD
5	2½	GENERATOR	LOAD BANK	(3) #3/0 AWG	#3/0 AWG	EMBEDDED IN GENERATOR PAD (LOAD BANK POWER WIRING)
6	¾	GENERATOR	LOAD BANK	(4) #14 AWG	#14 AWG	EMBEDDED IN GENERATOR PAD (LOAD BANK CURRENT SENSING)
7	¾	MINI POWER CENTER	LOAD BANK	(2) #10 AWG	#10 AWG	EMBEDDED IN GENERATOR PAD (LOAD BANK CONTROL WIRING)
8	¾	MINI POWER CENTER	RECEPTACLE 1	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
9	¾	RECEPTACLE 1	RECEPTACLE 2	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
10	¾	MINI POWER CENTER	RECEPTACLE 3	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
11	¾	RECEPTACLE 3	RECEPTACLE 4	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
12	¾	MINI POWER CENTER	LIGHT SWITCH	(3) #10 AWG	#10 AWG	EXPOSED CONDUIT
13	¾	LIGHT SWITCH	LIGHT 1	(3) #10 AWG	#10 AWG	EXPOSED CONDUIT
14	¾	LIGHT 1	DUSK TO DAWN LIGHT	(3) #10 AWG	#10 AWG	EXPOSED CONDUIT
15	¾	DUSK TO DAWN LIGHT	LIGHT 2	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
16	¾	LIGHT SWITCH	LIGHT 3	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
17	¾	LIGHT 3	LIGHT 4	(2) #10 AWG	#10 AWG	EXPOSED CONDUIT
18	-	EXISTING UTILITY SERVICE POLE	EXISTING SERVICE POLE	(8) 400 MCM	400 MCM	AERIAL SERVICE CONDUCTORS, COORDINATE WITH UTILITY
19	5	NEW ELECTRIC HANDHOLE	EXISTING JUNCTION BOX	(8) 500 MCM	500 MCM	UNDERGROUND CONDUIT
20	1	MINI POWER CENTER	GENERATOR	(6) #10 AWG	#10 AWG	GEN. BATTERY CHARGER, GEN. COOLANT HEATER, ALTERNATOR HEATER
21	5	ATS	NEW ELECTRICAL HANDHOLE	(8) 500 MCM	500 MCM	EMBEDDED IN GENERATOR PAD
22	5	NEW ELECTRICAL HANDHOLE	EXISTING JUNCTION BOX	(8) 500 MCM	500 MCM	UNDERGROUND CONDUIT

NOTES:  
1. SEE SHEET E-14 FOR GENERATOR PAD CONDUIT LAYOUT.

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_

DESIGNED BY: N. K. RHINE DATE : 04/11/18  
DRAWN BY: R. L. REED DATE : 04/11/18  
CHECKED BY: J. V. BORDEN DATE : 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE : 11/15/18

**MODJESKI-MASTERS**  
Superior great bridges.  
333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879

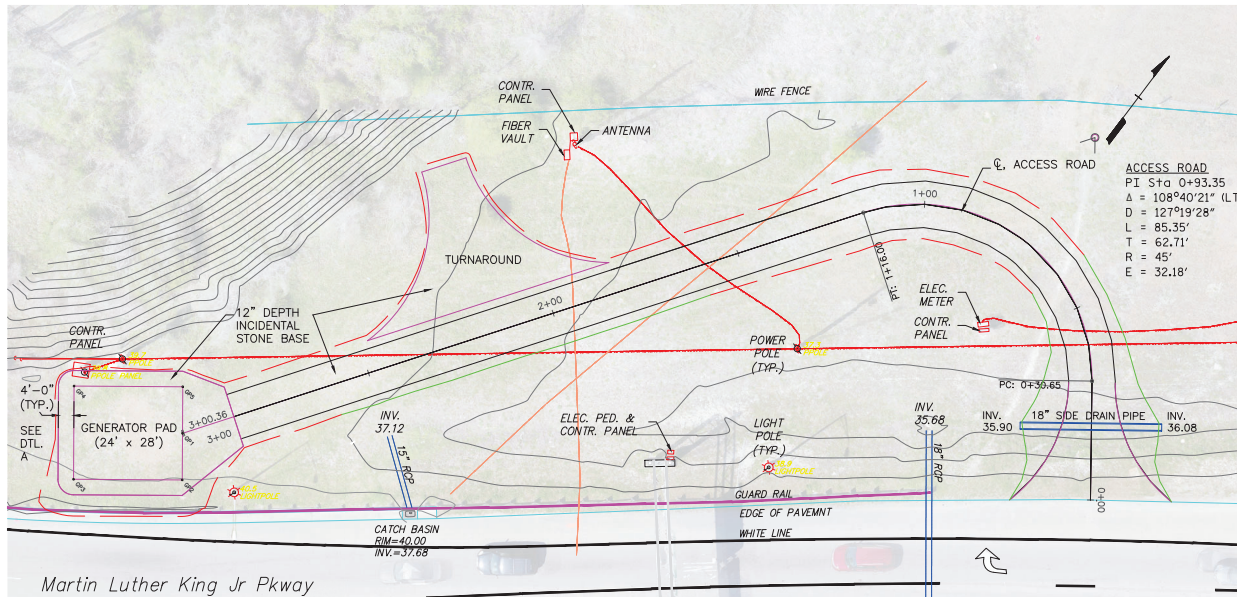


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
ELECTRICAL  
ELECTRICAL GENERATOR  
PAD DETAILS - 4

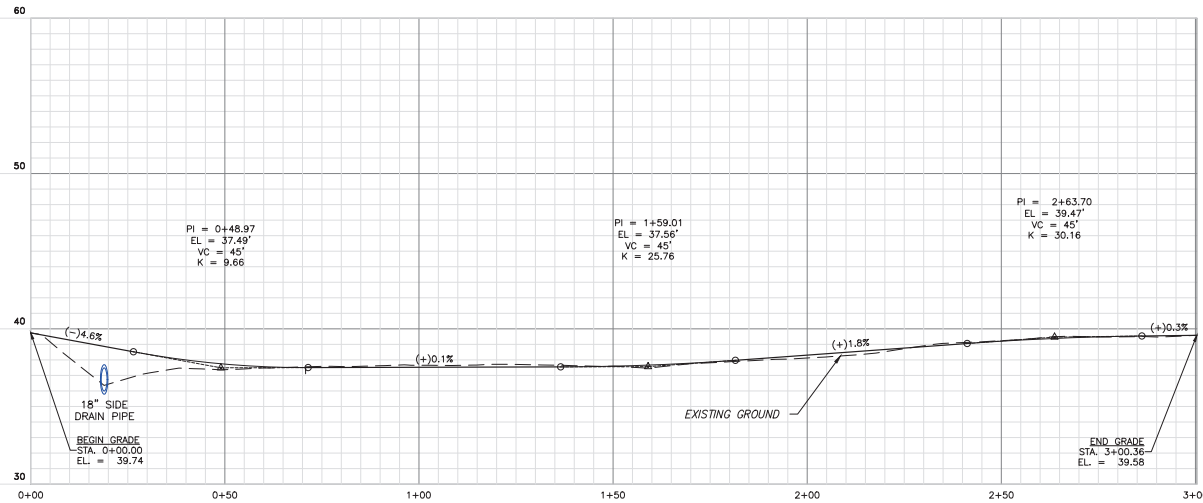
DOCUMENT NOT CONSIDERED FINAL  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	E-15
1			3			TOTAL SHEETS 213
2			4			

5/17/19



PLAN



PROFILE

SUMMARY OF ACCESS ROAD COORDINATES				
Station	POINT	COORDINATES		BEARING
		NORTH	EAST	
0+00.00	BEGIN	184694.8285	2318450.2636	N 52° 17' 03.75" W
0+30.65	PC	184713.5758	2318426.0210	N 52° 17' 03.75" W
0+93.35	PI	184751.9368	2318376.4156	S 19° 02' 35.45" W
1+16.00	PT	184692.6609	2318355.9553	S 19° 02' 35.45" W
2+86.46	BEGIN TAPER	184531.5268	2318300.3365	S 19° 02' 35.45" W
3+00.36	BEGIN PAD	184518.3849	2318295.8003	

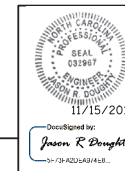
SUMMARY OF GENERATOR PAD COORDINATES				
Station	POINT	COORDINATES		BEARING
		NORTH	EAST	
3+00.36	GP1	184518.3849	2318295.8003	S 52° 39' 01" E
--	GP2	184511.1047	2318305.3397	S 37° 20' 59" W
--	GP3	184488.8462	2318288.3527	N 52° 39' 01" W
--	GP4	184503.4065	2318269.2739	N 19° 02' 35.45" E
--	GP5	184525.6650	2318286.2609	

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2879

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				
ELECTRICAL GENERATOR PAD ACCESS ROAD PLAN & PROFILE				
REVISIONS				
NO.	BY:	DATE:	NO.	BY:
1			3	
2			4	
				SHEET NO. E-16 213

LAST SAVED 11/13/2018 9:03 AM BY: RAREED. LAST PLOTTED 11/13/2018 11:47 AM.  
FILE: \\mmod01\proj\015\BPR.14\DWG\Electrical\15BPR14\_5ML16.dwg

DESIGNED BY: J. T. MCILHENNY DATE: 08/23/18  
DRAWN BY: J. T. MCILHENNY DATE: 08/23/18  
CHECKED BY: M. D. HOUSE DATE: 10/18/18  
DESIGN ENGINEER OF RECORD: J. R. DOUGHTY DATE: 11/12/18

+

DESIGNED BY: J. T. MCILHENNY DATE : 08/23/18  
 DRAWN BY: J. T. MCILHENNY DATE : 08/23/18  
 CHECKED BY: M. D. HOUSE DATE : 10/18/18  
 DESIGN ENGINEER  
 OF RECORD: J. R. DOUGHTY DATE : 11/12/18

1. CONSTRUCT ACCESS ROAD IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS USING ITEMS NOTED ON THIS DRAWING.
2. UNCLASSIFIED EXCAVATION, UNDERCUT EXCAVATION, EMBANKMENT, SELECT GRANULAR MATERIAL-CLASS III, GEOTEXTILE FOR SOIL STABILIZATION, 18" SIDE DRAIN PIPE, AND SEEDING AND MULCHING ARE ROADWAY PAY ITEMS.



GENERATOR PAD  
ELEV. 39.58

4'-0"

2.0%

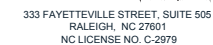
EXISTING GROUND  
4:1

12" INCIDENTAL  
STONE BASE

DETAIL A

SCALE: NONE

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
 STATION: \_\_\_\_\_



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

ELECTRICAL

GENERATOR PAD  
ACCESS ROAD  
TYPICAL SECTION

5/17/19

LAST SAVED 11/15/2018 1:46 PM BY JCRINEHART, LAST PLOTTED 11/15/2018 1:53 PM, FILE: \\mmd101\projects\3682\03\CADD\Electrical\04\_239\_15BPR14\_SMU\_E120\_64001

MATCH LINE A, SHEET E-121

- LEGEND:
- OVERHEAD TRAFFIC SIGNAL
  - WARNING OR BARRIER GATE
  - PA SYSTEM SPEAKER
  - ROADWAY LIGHTING POLE AND FIXTURE
  - TRAFFIC SIGNAL OR OVERHEAD SIGN POLE
  - NEW CCTV CAMERA
  - POLE MOUNTED TRAFFIC SIGNAL
  - SUBMARINE CABLES
  - NEW MESSENGER CABLE AND POWER CABLE BUNDLE

DETAIL A  
SCALE: NONE

TRANSITION FROM AERIAL CABLE TO CONDUIT AT ABUTMENT. CONTINUE TELEPHONE CABLE BACK TO TELEPHONE SERVICE POLE AND GENERATOR SIGNAL CABLE TO NEW GENERATOR PAD

NEARSIDE MESSENGER CABLE ROUTING  
SCALE: NONE

NOTES:

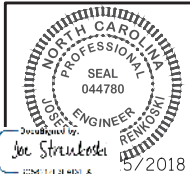
- CONTRACTOR SHALL REMOVE EXISTING GENERAL WIRING MESSENGER CABLES INCLUDING THE MESSENGER CABLE, CABLE RINGS, AND MULTIPLE CONDUCTOR POWER CABLES FOR: TRAFFIC GATES, TRAFFIC SIGNALS, ROADWAY LIGHTS, AND TELEPHONE. ALL EXISTING EYEBOLTS TO REMAIN IN PLACE TO BE REUSED FOR THE NEW MESSENGER CABLE AND CONDUCTOR BUNDLE WHEREVER APPLICABLE.
- AT LOCATIONS WHERE USE OF EXISTING EYEBOLTS IS NOT FEASIBLE TO SUPPORT NEW MESSENGER CABLE, NEW EYEBOLTS SHALL BE INSTALLED. ALL NEW MESSENGER CABLE EQUIPMENT SHALL BE INSTALLED TO MATCH INSTALLATION OF EXISTING MESSENGER CABLE SYSTEM. REFER TO SHEETS E-124 AND E-125 FOR EXISTING MESSENGER CABLE SYSTEM DETAILS.
- REFER TO SHEET E-121 FOR FARSIDE MESSENGER CABLE DETAILS.
- NUMBERS IN CIRCLES CORRESPOND TO CABLE BUNDLE NO. IN THE NEARSIDE GENERAL WIRING MESSENGER CABLE SCHEDULE ON SHEET E-122.
- NEW MESSENGER CABLES TO ORIGINATE IN NEW NEARSIDE MESSENGER CABLE TERMINAL CABINET, MCTC-1. CABLES SHALL EXIT BOX IN 2 BUNDLES, USE (2) 3" CORD GRIPS AND FILLER AS NECESSARY FOR CABLE OPENINGS IN MCTC-1 ENCLOSURE. FOLLOW EXISTING MESSENGER CABLE ROUTING TO APPROACH FROM WORK ROOM HALLWAY. REMOVE EXISTING CABLES AND CONDUCTORS FOR TRAFFIC GATES, TRAFFIC SIGNALS, TELEPHONE, AND ROADWAY LIGHTS FROM EXISTING WORK ROOM HALLWAY JUNCTION BOXES AFTER NEW SYSTEM IS INSTALLED AND FUNCTIONAL.
- NEARSIDE TRAFFIC SIGNAL MULTI-CONDUCTOR POWER CABLE TO TERMINATE IN CITY OWNED TRAFFIC SIGNAL CONTROL CABINET.

DESIGNED BY: E. N. CLAY DATE : 09/19/18  
DRAWN BY: E. N. CLAY DATE : 09/19/18  
CHECKED BY: L. V. BORDEN DATE : 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE : 11/15/18



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

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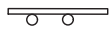










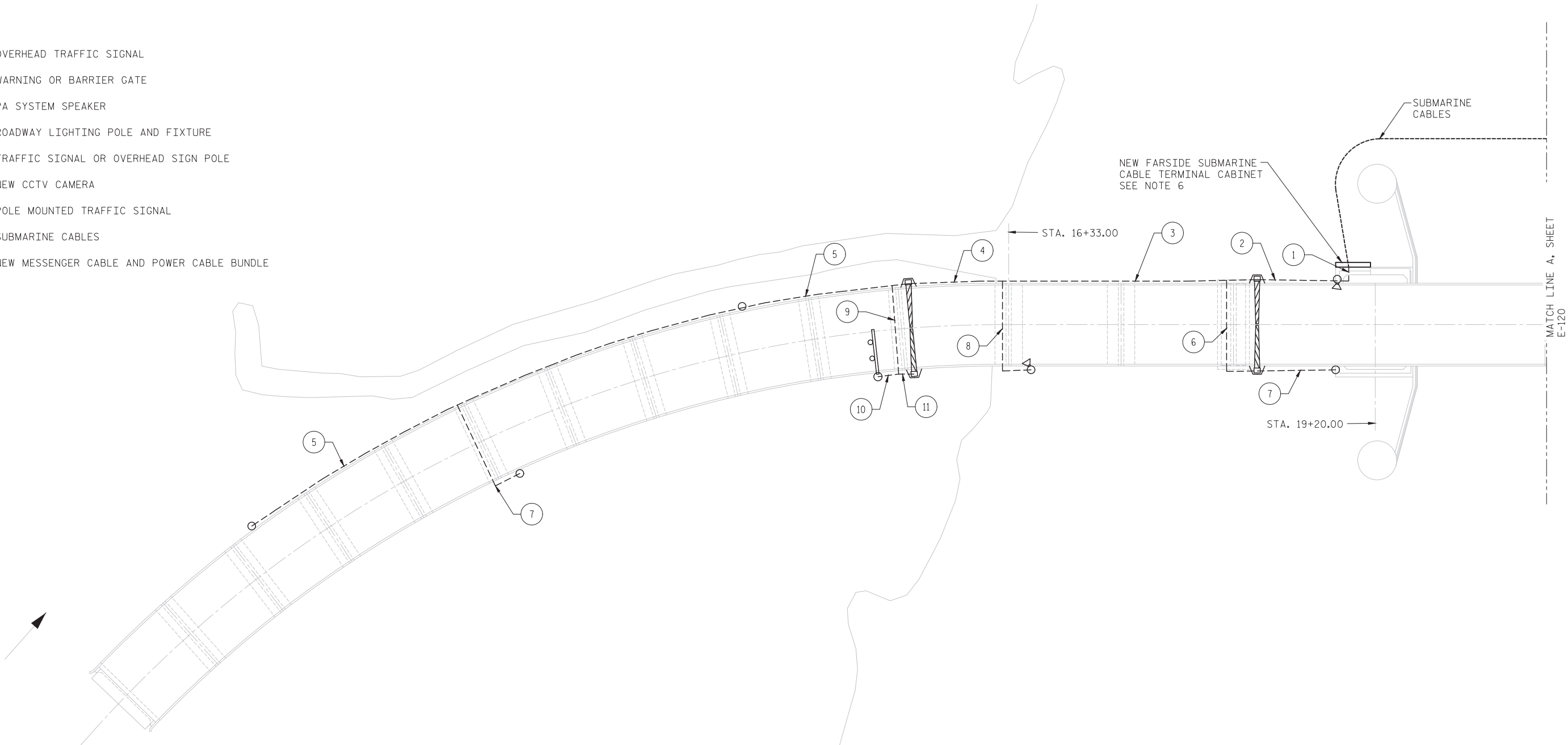
PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH ELECTRICAL MESSENGER CABLE DETAILS - 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. E-120					TOTAL SHEETS 213

5/17/19

LEGEND:

-  OVERHEAD TRAFFIC SIGNAL
-  WARNING OR BARRIER GATE
-  PA SYSTEM SPEAKER
-  ROADWAY LIGHTING POLE AND FIXTURE
-  TRAFFIC SIGNAL OR OVERHEAD SIGN POLE
-  NEW CCTV CAMERA
-  POLE MOUNTED TRAFFIC SIGNAL
-  SUBMARINE CABLES
-  NEW MESSENGER CABLE AND POWER CABLE BUNDLE

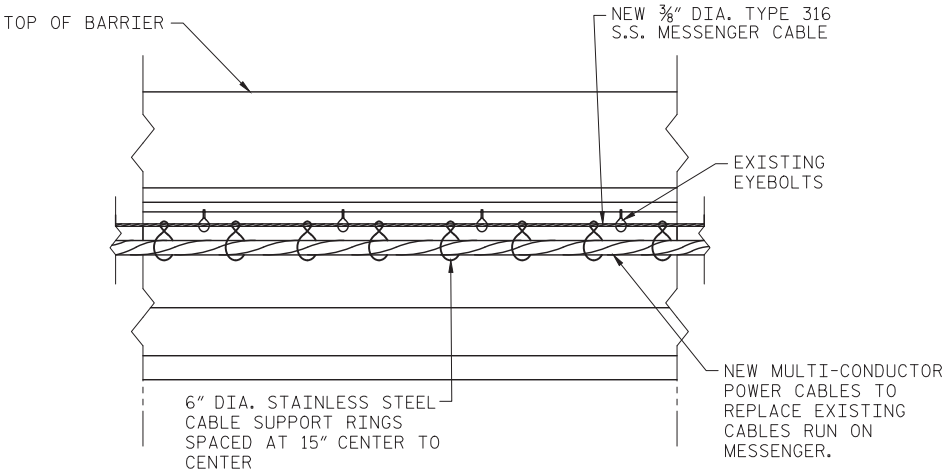


FARSIDE MESSENGER CABLE ROUTING

SCALE: NONE

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING GENERAL WIRING MESSENGER CABLES INCLUDING THE MESSENGER CABLE, CABLE RINGS, AND MULTIPLE CONDUCTOR POWER CABLES FOR: TRAFFIC GATES, TRAFFIC SIGNALS, ROADWAY LIGHTS, AND TELEPHONE. ALL EXISTING EYEBOLTS TO REMAIN IN PLACE TO BE REUSED FOR THE NEW MESSENGER CABLE AND CONDUCTOR BUNDLE WHEREVER APPLICABLE.
2. AT LOCATIONS WHERE USE OF EXISTING EYEBOLTS IS NOT FEASIBLE TO SUPPORT NEW MESSENGER CABLE, NEW EYEBOLTS SHALL BE INSTALLED. ALL NEW MESSENGER CABLE EQUIPMENT SHALL BE INSTALLED TO MATCH INSTALLATION OF EXISTING MESSENGER CABLE SYSTEM. REFER TO SHEETS E-124 AND E-125 FOR EXISTING MESSENGER CABLE SYSTEM DETAILS.
3. REFER TO SHEET E-120 FOR NEARSIDE MESSENGER CABLE DETAILS.
4. NUMBERS IN CIRCLES CORRESPOND TO CABLE BUNDLE NO. IN THE FARSIDE GENERAL WIRING MESSENGER CABLE SCHEDULE ON SHEET E-122.
5. NEW MESSENGER CABLES TO ORIGINATE AT NEW FARSIDE SUBMARINE CABLE TERMINAL CABINET. FOLLOW EXISTING ROUTING THROUGH THE COUNTERWEIGHT PIT WALL, ALONG THE INTERIOR STAIRWAY WALL AND UP TO THE APPROACH USING EXISTING EYEBOLT SUPPORTS.



GENERAL WIRING MESSENGER CABLE  
TYPICAL MOUNTING DETAIL

SCALE: NONE

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:

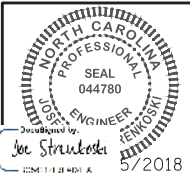
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
ELECTRICAL MESSENGER CABLE DETAILS - 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. E-121					TOTAL SHEETS 213

DESIGNED BY:	E. N. CLAY	DATE :	09/19/18
DRAWN BY:	E. N. CLAY	DATE :	09/19/18
CHECKED BY:	L. V. BORDEN	DATE :	11/15/18
DESIGN ENGINEER OF RECORD:	J. G. STRENKOSKI	DATE :	11/15/18



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

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5/17/19

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FILE: \\modj10\projects\3682.03\CADD\Electrical\404.243.15BPR14\_SML E122\_64001

DESIGNED BY: E. N. CLAY DATE : 09/18/18  
DRAWN BY: E. N. CLAY DATE : 09/18/18  
CHECKED BY: L. V. BORDEN DATE : 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE : 11/15/18

NEARSIDE GENERAL WIRING MESSENGER CABLE SCHEDULE				
CABLE BUNDLE NO.	NO. OF CABLES	CABLE CONDUCTOR SIZE	NO. OF CONDUCTORS PER CABLE	DESCRIPTION
1	5	10 AWG	20	TRAFFIC GATES POWER
	4	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	20	TRAFFIC SIGNALS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	2	10 AWG	3	CCTV CAMERA POWER
	2	14 AWG	COAX	CCTV CAMERA CONTROL
	1	18 AWG	2 TSP	PTZ CAMERA CONTROL
	1	18 AWG	4 TSP	TELEPHONE
	1	18 AWG	2 TSP	GENERATOR SIGNAL
	1	12 AWG	9	GENERATOR CONTROL POWER
2	3	10 AWG	20	TRAFFIC GATES
	4	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	20	TRAFFIC SIGNALS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	1	10 AWG	3	CCTV CAMERA POWER
	1	14 AWG	COAX	CCTV CAMERA CONTROL
	1	18 AWG	2 TSP	PTZ CAMERA CONTROL
	1	18 AWG	4 TSP	TELEPHONE
	1	18 AWG	2 TSP	GENERATOR SIGNAL
	1	12 AWG	9	GENERATOR CONTROL POWER
3	3	10 AWG	20	TRAFFIC GATES
	4	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	20	TRAFFIC SIGNALS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	1	18 AWG	4 TSP	TELEPHONE
	1	18 AWG	2 TSP	GENERATOR SIGNAL
	1	12 AWG	9	GENERATOR CONTROL POWER
4	1	10 AWG	4	ROADWAY LIGHTS
	1	18 AWG	4 TSP	TELEPHONE
	1	18 AWG	2 TSP	GENERATOR SIGNAL
	1	12 AWG	9	GENERATOR CONTROL POWER
5	1	10 AWG	4	ROADWAY LIGHTS
6	1	10 AWG	20	TRAFFIC GATES
	1	10 AWG	3	CCTV CAMERA POWER
	1	14 AWG	COAX	CCTV CAMERA CONTROL
	2	SEE NOTE 2	8	PA SYSTEM SPEAKERS
7	1	10 AWG	3	CCTV CAMERA POWER
	1	18 AWG	COAX	CCTV CAMERA CONTROL
	1	10 AWG	4	ROADWAY LIGHTS
8	1	10 AWG	3	CCTV CAMERA POWER
	1	14 AWG	COAX	CCTV CAMERA CONTROL
	1	18 AWG	2 TSP	PTZ CAMERA CONTROL
9	3	10 AWG	20	TRAFFIC GATES POWER
	3	10 AWG	4	ROADWAY LIGHTS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	1	10 AWG	20	TRAFFIC SIGNALS
10	1	10 AWG	20	TRAFFIC SIGNALS
11	1	10 AWG	20	TRAFFIC GATES
12	1	10 AWG	20	TRAFFIC GATES
	2	10 AWG	4	ROADWAY LIGHTS
13	1	18 AWG	4 TSP	TELEPHONE
	1	18 AWG	2 TSP	GENERATOR SIGNAL
	1	12 AWG	9	GENERATOR CONTROL POWER
14	2	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	1	10 AWG	4	ROADWAY LIGHTS
15	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS

FARSIDE GENERAL WIRING MESSENGER CABLE SCHEDULE				
CABLE BUNDLE NO.	NO. OF CABLES	CABLE CONDUCTOR SIZE	NO. OF CONDUCTORS PER CABLE	DESCRIPTION
1	4	10 AWG	20	TRAFFIC GATES
	1	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	7	TRAFFIC SIGNALS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
2	4	10 AWG	20	TRAFFIC GATES
	1	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	7	TRAFFIC SIGNALS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
3	2	10 AWG	20	TRAFFIC GATES
	1	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	7	TRAFFIC SIGNALS
4	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
	2	10 AWG	20	TRAFFIC GATES
	1	10 AWG	4	ROADWAY LIGHTS
5	1	10 AWG	4	ROADWAY LIGHTS
	1	10 AWG	20	TRAFFIC GATES
6	1	10 AWG	20	TRAFFIC GATES
	2	10 AWG	4	ROADWAY LIGHTS
7	2	10 AWG	4	ROADWAY LIGHTS
8	2	10 AWG	4	ROADWAY LIGHTS
	1	SEE NOTE 2	8	PA SYSTEM SPEAKERS
9	1	10 AWG	20	TRAFFIC GATES
	1	10 AWG	7	TRAFFIC SIGNALS
10	1	10 AWG	7	TRAFFIC SIGNALS
11	1	10 AWG	20	TRAFFIC GATES

NOTES:

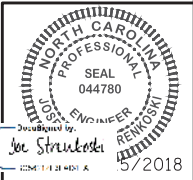
- CABLE BUNDLE NO. CORRESPOND TO CALLOUTS ON SHEET E-120 FOR NEARSIDE MESSENGER CABLE DETAILS AND SHEET E-121 FOR FARSIDE MESSENGER CABLE DETAILS.
- CABLE SHALL BE SYSTEM CABLE AS LISTED IN PUBLIC ADDRESS SYSTEM PARTS LIST ON SHEET E-116 ITEM NUMBER E408F.
- TSP: TWISTED SHIELDED PAIR.

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



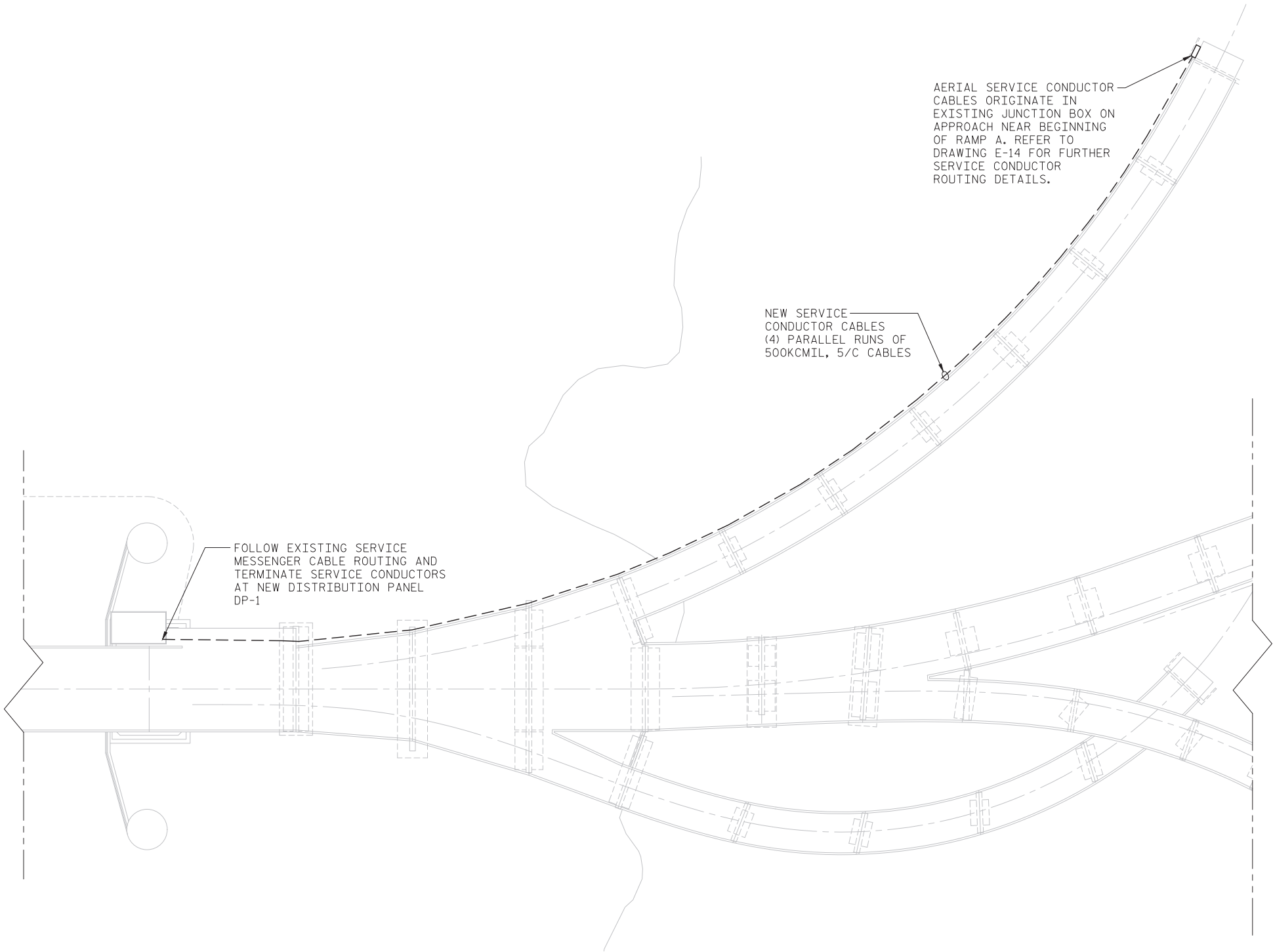
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

ELECTRICAL  
MESSENGER CABLE  
DETAILS - 3

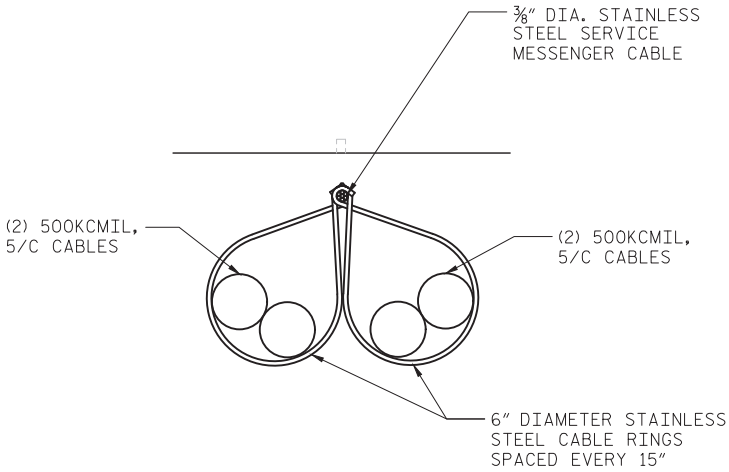
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	E-122
1			3			TOTAL SHEETS
2			4			213

5/17/19

LAST SAVED 11/15/2018 11:57 AM BY AMBR0DSKY, LAST PLOTTED 11/15/2018 1:02 PM, FILE: \\mmdc10\projects\3682\03\CADD\Electrical\404\_245\_15BPR14\_SML123\_64001



SERVICE MESSENGER CABLE ROUTING  
SCALE: NONE



SERVICE CABLES SUPPORT  
SCALE: 3"=1'-0"  
SERVICE CONDUCTOR POWER CABLES

NOTES:

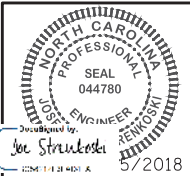
1. CONTRACTOR SHALL REMOVE EXISTING SERVICE MESSENGER CABLES INCLUDING THE MESSENGER CABLE, CABLE RINGS, AND SERVICE CONDUCTOR POWER CABLES. ALL EXISTING EYEBOLTS TO REMAIN IN PLACE TO BE REUSED FOR THE NEW MESSENGER CABLE AND CONDUCTOR CABLES WHEREVER APPLICABLE.
2. AT LOCATIONS WHERE USE OF EXISTING EYEBOLTS IS NOT FEASIBLE TO SUPPORT NEW MESSENGER CABLE, NEW EYEBOLTS SHALL BE INSTALLED. ALL NEW MESSENGER CABLE EQUIPMENT SHALL BE INSTALLED TO MATCH INSTALLATION OF EXISTING MESSENGER CABLE SYSTEM. REFER TO SHEETS E-124 AND E-125 FOR EXISTING MESSENGER CABLE SYSTEM DETAILS.
3. FOLLOW EXISTING MESSENGER CABLE ROUTING.

DESIGNED BY:	E. N. CLAY	DATE :	10/31/18
DRAWN BY:	E. N. CLAY	DATE :	10/31/18
CHECKED BY:	L. V. BORDEN	DATE :	11/15/18
DESIGN ENGINEER OF RECORD:	J. G. STRENKOSKI	DATE :	11/15/18



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:

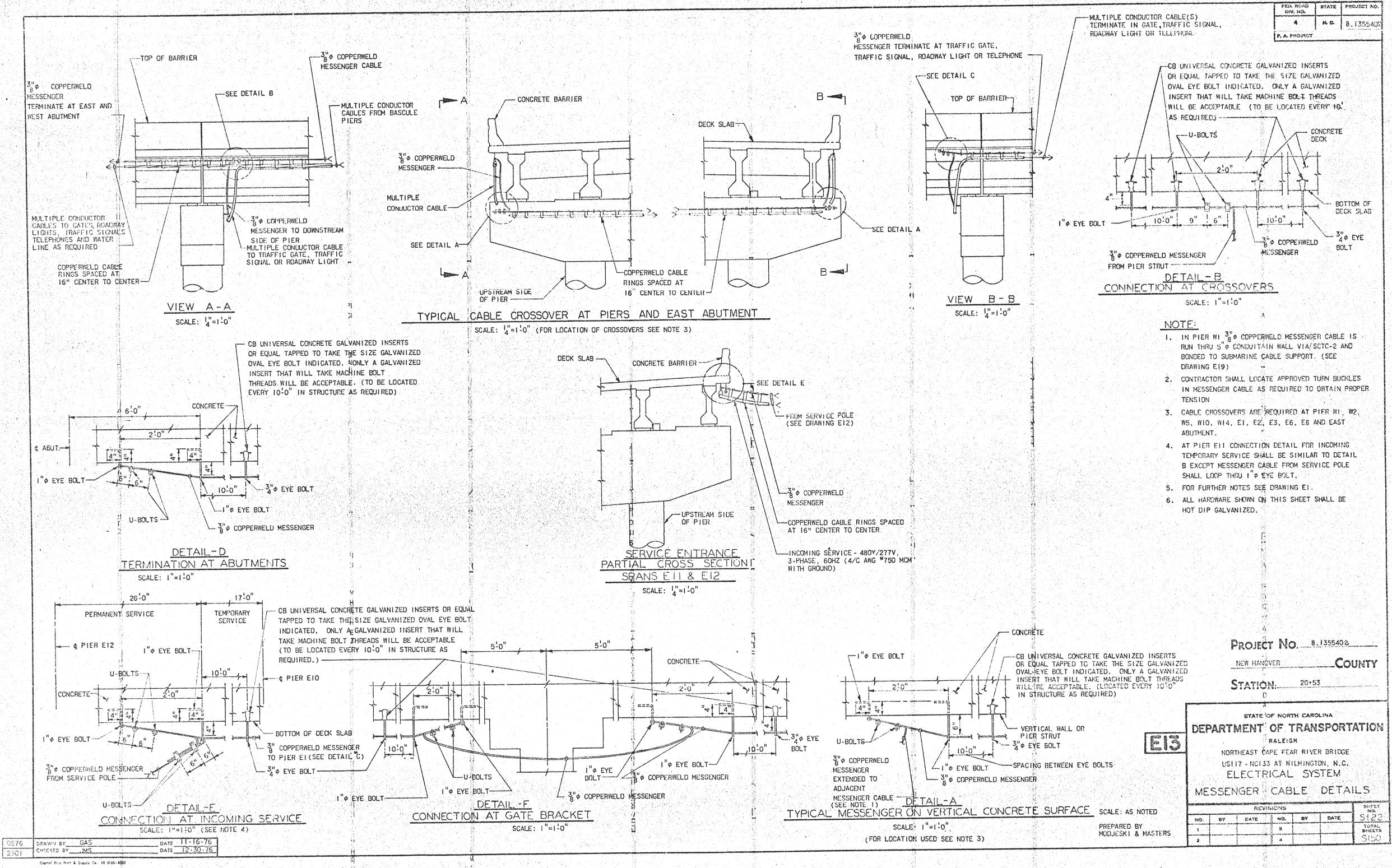
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH ELECTRICAL MESSENGER CABLE DETAILS - 4					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. E-123					TOTAL SHEETS 213



5/17/19

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DESIGNED BY: E. N. CLAY DATE: 10/24/18  
DRAWN BY: R. L. REED DATE: 10/24/18  
CHECKED BY: L. V. BORDEN DATE: 11/15/18  
DESIGN ENGINEER OF RECORD: J. G. STRENKOSKI DATE: 11/15/18

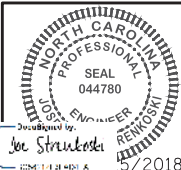


FOR INFORMATION ONLY



333 FAYETTEVILLE STREET, SUITE 505  
RALEIGH, NC 27601  
NC LICENSE NO. C-2979

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UNLESS ALL SIGNATURES COMPLETED



5/2018

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION:

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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SHEET NO. E-124  
TOTAL SHEETS 213



5/17/19


11/13/2018 11:20:17 AM  
P:\2018\11\13\2018 New Hanover\11 - Sewer Line\STRUCTURAL\2018 New Hanover\11 - Sewer Line.dgn



DESIGNED BY:	TSS	DATE:	11-9-18
DRAWN BY:	JTD	DATE:	11-9-18
CHECKED BY:	SC	DATE:	11-9-18
DESIGN ENGINEER:	TSS	DATE:	11-9-18
RECORDS:			

PLAN

**BCSC**  
BATEMAN CIVIL SURVEY COMPANY  
2524 RELIANCE AVENUE  
APEX, NC 27539  
NC LICENSE NO. C-2378



**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**NOTES:**  
INFORMATION SHOWN IS FROM THE BEST DATA AVAILABLE. CONTRACTOR SHOULD CONDUCT THEIR INVESTIGATION PRIOR TO BIDDING. CONTRACTOR SHALL HAVE NO CLAIM AGAINST NCDOT OR THE ENGINEER.  
MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE AND TYPE MATERIAL FOR THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PALETON  
**BRIDGE TENDER HOUSE  
SEWER LINE  
REPLACEMENT**

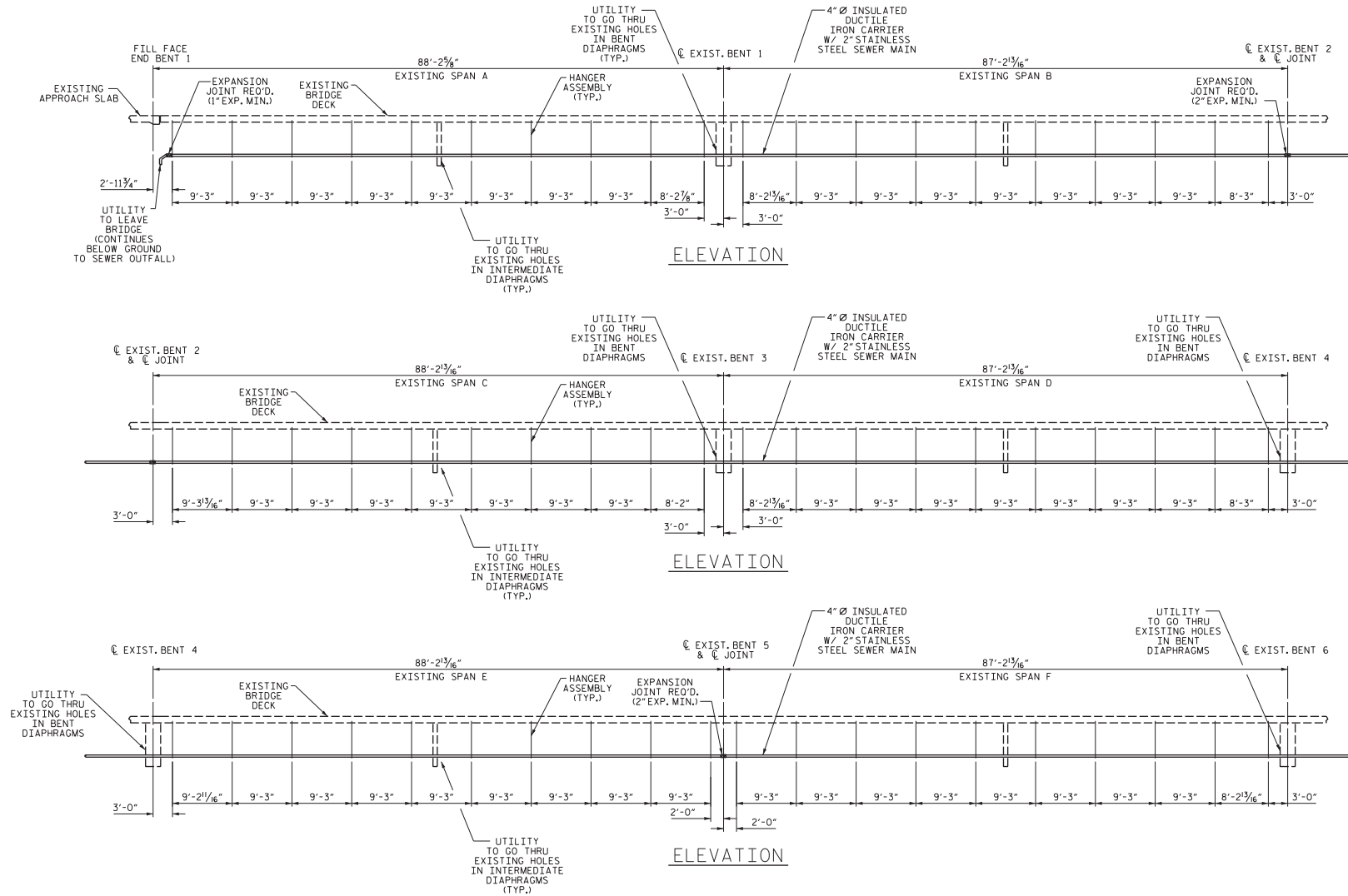
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				U-1	213



5/17/19

11/13/2018 8:11:31 AM  
P:\2019\1913102 New Hanover\11 - Sewer Line Structures\CON New Hanover\11 - Sewer Line Hanger Spacing.dgn

DESIGNED BY: TSS DATE: 11-9-18  
DRAWN BY: RCH DATE: 11-9-18  
CHECKED BY: SC DATE: 11-9-18  
DESIGN ENGINEER OF RECORD: TSS DATE: 11-9-18



PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_  
SHEET 1 OF 2



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
BRIDGE TENDER HOUSE  
SEWER LINE  
HANGER SPACING

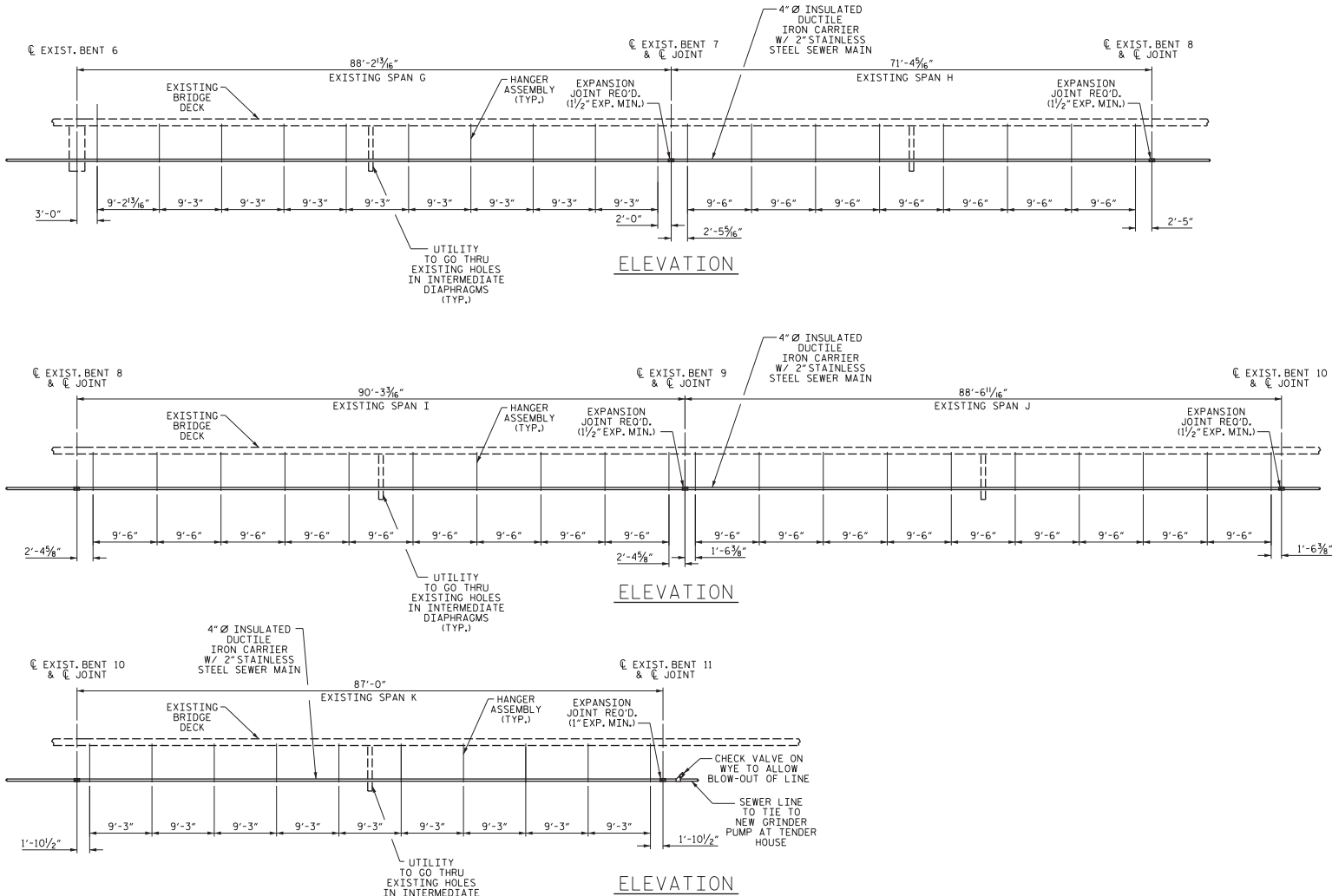
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

U-2  
213

NOTES:

1. PROVIDE EXPANSION JOINTS AT LOCATIONS SHOWN. CONTRACTOR CAN PROVIDE ADDITIONAL EXPANSION JOINTS AS DEEMED NECESSARY. INDICATED EXPANSION JOINTS SHALL BE STAINLESS STEEL AND PROVIDE FOR THE AMOUNT OF MOVEMENT SHOWN (MIN.).

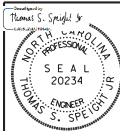


PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
STATION: \_\_\_\_\_

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BRIDGE TENDER HOUSE  
SEWER LINE  
HANGER SPACING



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REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

U-3  
213

DESIGNED BY:	TSS	DATE:	11-9-18
DRAWN BY:	BCH	DATE:	11-9-18
CHECKED BY:	SC	DATE:	11-9-18
DESIGN ENGINEER			
OF RECORD:	TSS	DATE:	11-9-18

5/17/19

11/13/2018 8:20:06 AM  
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EXIST. BRIDGE DECK

SEE DETAIL 'A'

$\frac{3}{4}$ "  $\varnothing$  THREADED ROD

APPROX. 2'-6 $\frac{1}{2}$ " LENGTH TO MATCH EXIST. SEWER LINE

4"  $\varnothing$  DUCTILE IRON CARRIER PIPE

PIPE INSULATION

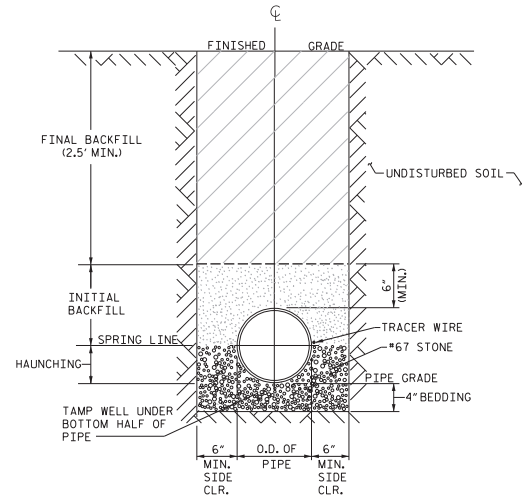
8" YOKE AND ROLLER HANGER FOR 4" PIPE W/ 2" INSULATION

2"  $\varnothing$  STAINLESS STEEL SEWER MAIN W/ HEAT TRACER

## TYPICAL HANGER ASSEMBLY DETAIL

DRILL AND EPOXY ANCHOR  
HANGER ROD INTO EXIST.  
BRIDGE DECK  
(EMBEDMENT DEPTH TO  
BE PER ADHESIVE  
MANUFACTURER'S RECOMMENDATIONS)

DETAIL 'A'



## SEWER LINE TRENCH DETAIL

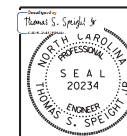
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR Boulders 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL SHALL BE SIFTED TO REMOVE ALL FINE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
5. CONTRACTOR WILL FURNISH AND INSTALL METALLIC WIRING TAPE 24-INCHES ABOVE THE PIPE AND COPPER TRACING WIRE.
6. PROVIDE SILT FENCE ON DOWN SLOPE SIDE OF TRENCH, (CONTRACTOR SHALL COMPLY WITH ALL NC DCE EROSION AND SEDIMENT CONTROL RULES AND REGULATIONS.)

PROJECT NO. 15BPR.14  
NEW HANOVER COUNTY  
 STATION: \_\_\_\_\_

DESIGNED BY: TSS DATE: 11-9-18  
DRAWN BY: BCH DATE: 11-9-18  
CHECKED BY: SC DATE: 11-9-18  
DESIGN ENGINEER OF RECORD: TSS DATE: 11-9-18



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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

# BRIDGE TENDER HOUSE SEWER LINE DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			U-4 TOTAL SHEETS 213
2			4			