LOCATION SKETCH

NOTES:

ASSUME LIVE LOAD = HL 93 OR ALTERNATE LOADING

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE GENERAL NOTE SHEETS AND SHEET S-109.

THIS BRIDGE (NEW SUPERSTRUCTURE) HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THE BRIDGE (NEW SUPERSTRUCTURE) SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAYOR WORK BRIDGE IS NOT PERMITTED.

REMOVAL OF EXISTING STRUCTURE AT STATION 43+95.83 TO 55+16.87 CONSISTS OF 28 SPANS (40'-0") WITH 16 PRECAST CONCRETE CORED SLABS PER SPAN, WITH AN ASPHALT WEARING SURFACE AND A CLEAR ROADWAY WIDTH OF 40'-0". THE STRUCTURE SHALL BE FULLY CLOSED FOR THE DURATION OF THE PARTIAL SUPERSTRUCTURE REPLACEMENT.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

REMOVAL OF THE EXISTING SUPERSTRUCTURE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO ANY AREA BENEATH THE BRIDGE. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS NEW SUPERSTRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.

FOR BILL OF MATERIALS, SEE QUANTITY SHEETS.

NO KNOWN UTILITY CONFLICTS.

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 SECURING VESSELS, SEE SPECIAL PROVISIONS.

THIS BRIDGE IS IN SEISMIC ZONE 1.

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE TRANSPORTATION MANAGEMENT PLANS.

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

FOR ADHESIVELY ANCHORED RODS OR DOWELS, SEE ARTICLE 420-13 OF THE STANDARD SPECIFICATIONS.

FOR HYDRAULIC DATA AND OVERTOPPING FLOOD DATA, SEE ORIGINAL PLANS.

OOI-CAD PRESTRESSED CORED SLAB NOTES:

THE OLD OAK ISLAND ("OOI-CAD") PRESTRESSED UNIT IS A HYBRID MODIFIED SECTION DEVELOPED BY COMBINING ELEMENTS FROM NCDOT STANDARDS FOR THE 18", 21", AND TOP-DOWN CONSTRUCTION PRESTRESSED CONCRETE CORED SLABS. THE OOI-CAD SECTION'S DEPARTURES FROM STANDARDS, AS WELL AS ANALYSIS AND IMPLEMENTATION NOTES ARE PROVIDED BELOW:

MODIFIED DETAILS DESCRIPTION:

1. INTERIOR UNITS WILL BE CAST AT A DEPTH OF 20", BUT CAN USE ALREADY AVAILABLE 21" STANDARD FORMS.
2. EXTERIOR UNITS WILL BE CAST AT A DEPTH OF 18", BUT WITH ADDITIONAL WIDTH TO ACCOMMODATE A 2-BAR METAL RAIL AS SHOWN IN PLANS.
3. SHEAR KEYS CAN REMAIN IN THE SAME LOCATION AS THE 21" FORM, OR CAN HEIGHT ADJUST TO MATCH THE REVISED DEPTH.
4. TOP STEEL IN THE INTERIOR UNITS WILL BE SHIFTED DOWN TO MATCH THE 18" STANDARD SECTION HEIGHT FROM BOTTOM. THIS IS IN ORDER TO ACCOUNT FOR TOP OF UNIT GRINDING WHICH WILL BE PERFORMED TO PROVIDE APPROPRIATE CROSS SLOPE TO RECEIVE THE PROPOSED PPC OVERLAY.
5. BECAUSE OF THE LOWERED TOP STEEL, 10" Ø VOIDS WILL BE USED IN ALL SECTIONS. THESE MUST BE CENTERED AT 9" FROM THE BOTTOM OF THE CROSS SECTION FOR BOTH INTERIOR AND EXTERIOR UNITS.
6. NO ANCHOR DOWEL BLOCKOUTS WILL BE USED. EXISTING DOWELS WILL BE CUT AND LATERAL RESTRAINT WILL BE PROVIDED BY KEEPERS ON ENDS OF EACH BENT.
7. OOI CAD UNITS WILL USE GROUT AS SHOWN IN PLANS.
8. EACH SPAN WILL HAVE EXTRA TRANSVERSE POST-TENSIONING AS SHOWN IN THE PLANS. THIS WILL CONSIST OF DOUBLE TRANSVERSE POST-TENSIONING AT ¼ POINTS ALONG EACH SPAN. THE HEIGHT OF THE TRANSVERSE POST-TENSIONING WILL BE AT 9¾" FROM BOTTOM OF SECTION.
9. BEARINGS MAY CONSIST OF STANDARD INDIVIDUAL PADS FOR EACH BEAM, OR A CONTINUOUS STRIP OF RUBBER OF THE SAME THICKNESS AND WIDTH.

PARTIAL STRUCTURES REMOVAL (REMOVAL OF EXISTING STRUCTURES AT STATION 43+95.83):

1. REMOVE THE EXISTING CORED SLAB SUPERSTRUCTURE WITH ASPHALT WEARING SURFACE (AWS), TRAFFIC RAILING, BEARINGS AND BEARING ANCHORD RODS IN SPANS 1-28 FROM STATION 43+95.83 TO STATION STA. 55+16.87 PER SECTION 402 OF THE STANDARD SPECIFICATIONS.
2. USE CRANE MATTING TO PROTECT EXISTING DECK SURFACES.
3. SUBMIT REMOVAL AND REPLACEMENT PLAN PRIOR TO BEGINNING WORK. THE PLAN SHALL INCLUDE THE FOLLOW MINIMUM ITEMS:

   PHASING AND SCHEDULE FOR REMOVAL AND REPLACEMENT
   CRANE SIZE AND TYPE
   CRANE MATTING
   PROTECTION OF EXISTING STRUCTURE PLAN INCLUDING SAFE LOADING ON EXISTING/PROPOSED SPANS
   DISPOSAL PLAN
   PROPOSED TRUCK ROUTE(S)
   METHODS OF REMOVAL

4. REMOVE EXISTING TRANSVERSE POST-TENSIONING, LOOSEN SHEAR KEYS AND OTHERWISE SEPARATE CORED SLABS AS NECESSARY TO FACILITATE REMOVAL.
5. DISPOSE OF EXISTING AWS, CORED SLABS, AND OTHER SUPERSTRUTURE MATERIALS LEGALLY OFF-SITE PER THE STANDARD SPECIFICATIONS.
6. REMOVE EXISTING BEARINGS
7. CUT AND GRIND EXISTING ANCHOR DOWELS FLUSH WITH THE TOP OF THE BENT CAPS.
8. COVER CUT DOWELS WITH EPOXY PAINT.
9. CLEAN CAPS OF DEBRIS AND ENSURE FLAT/SMOOTH BEARING SURFACE ON TOP OF BENT CAP.

OOI-CAD PRESTRESSED CORED SLABS, CONTINUED:

ANALYSIS & IMPLEMENTATION DETAILS:

1. THE UNIT WAS DESIGNED PER CURRENT SPECIFICATIONS FOR HL-93 LIVE LOAD AND APPROPRIATE DEAD LOAD.
2. IN ORDER TO FACILITATE TOP-DOWN CONSTRUCTION, THE PROPOSED SECTIONS, AS WELL AS EXISTING GIRDER SPAN SECTIONS (SPANS 29-31) WERE CHECKED FOR A MANITOWOC 222 CRANE TO SIMULATE STRESSES PROVIDED BY CRANE UNIT DURING CONSTRUCTION. THE CRANE ANALYSIS WAS PERFORMED ASSUMING TRANSVERSE POST-TENSIONING AND GROUT HAS BEEN INSTALLED IN EACH SPAN.
3. IF THE CONTRACTOR WISH TO PLACE CRANES ON THE EXISTING 17" PRESTRESSED CONCRETE CORED SLAB UNIT SPANS, THEY MUST DEMOSTRATE THAT THE UTILIZED CRANE CAN BE SAFELY CARRIED BY THE STRUCTURE.
4. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING CRANE SIZE AND CONSTRUCTION LOADING TO ENSURE SAFE CARRYING CAPACITY FOR ALL ACTIVITIES ON ALL SPANS.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL SPANS DURING ALL PHASES OF CONSTRUCTION, AND MUST SUBMIT WORKING DRAWINGS SHOWING THE SAFETY OF ALL EQUIPMENT AND CONSTRUCTION LIVE LOADS AND DEAD LOADS ON THE BRIDGE.

MEASUREMENT AND PAYMENT:

1. MEASUREMENT AND PAYMENT FOR OOI-CAD SECTIONS WILL BE IN ACCORDANCE WITH THE SPECIAL PROVISION FOR FOR OOI-CAD PRESTRESSED CONCRETE CORED SLABS. THE PAY ITEM USED WILL BE

   3'-0" x 1'-8" PRESTRESSED CONC CORED SLABS (LF)
   3'-2" X 1'-6" PRESTRESSED CONC CORED SLABS (LF)

2. WORK OOI-CAD PRESTRESSED CONCRETE CORED SLABS WITH STANDARD SPECIFICATIONS SECTION 1078 FOR PRESTRESSED CONCRETE MEMBERS.

PROJECT NO. 15BPR.25
BRUNSWICK COUNTY
BRIDGE NO. 14

SEAL 043571
SAMUEL L. CULLUM
Samuel L. Cullum
19C97095C75A467
4/12/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR SUPERSTRUCTURE REPLACEMENT

REVISIONS

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

SHEET NO. S-4
TOTAL SHEETS 111

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DESIGN ENGINEER OF RECORD : SAMUEL L. CULLUM DATE : 03-2018

4/12/2018
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User:jduke