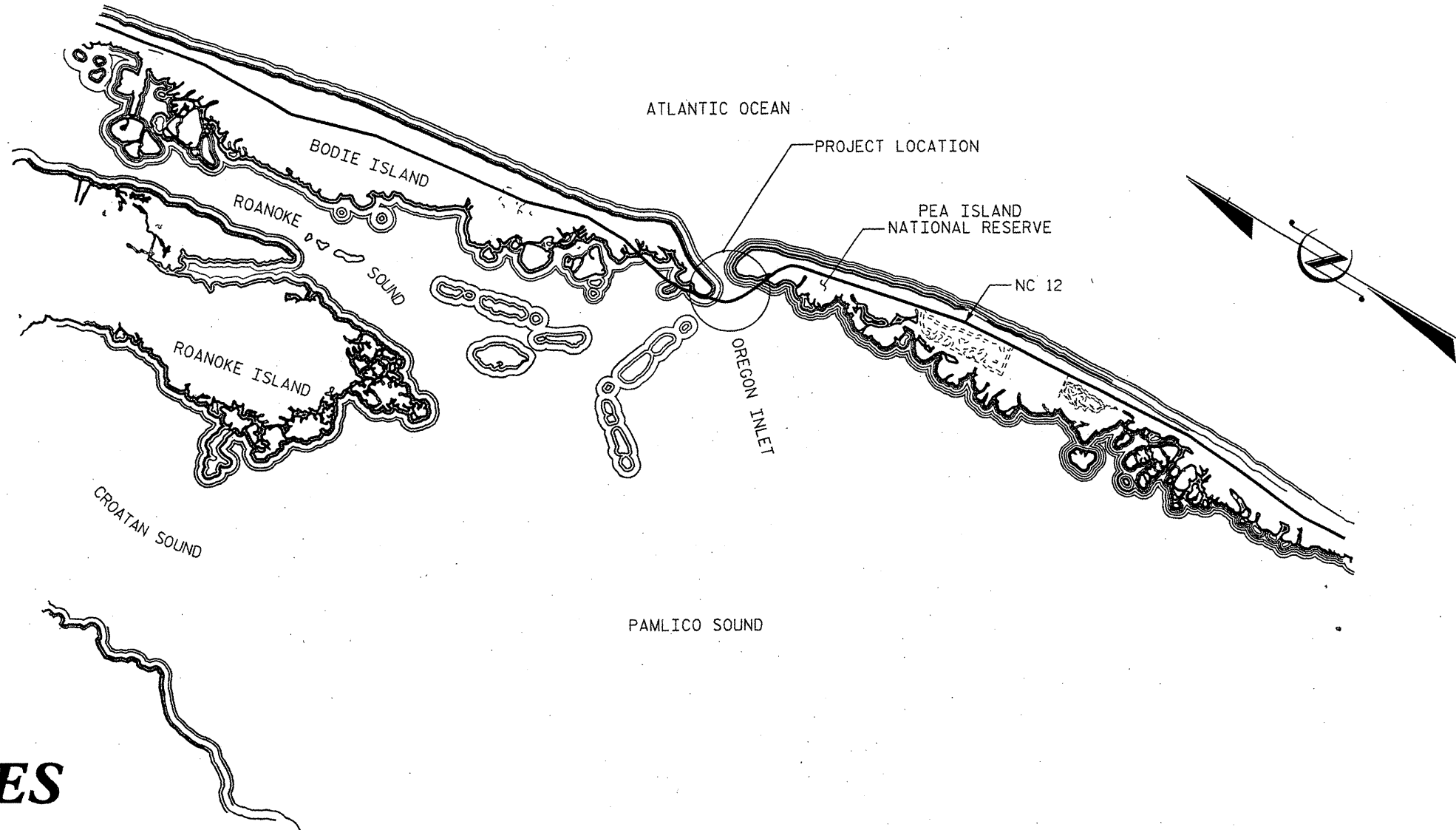


**CONTRACT: C202722 TIP PROJECT: B-5014B**

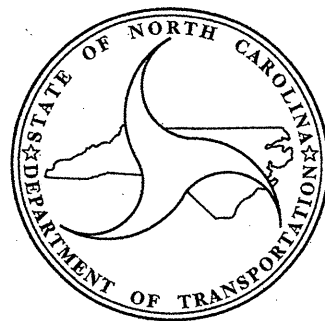
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**DARE COUNTY**

LOCATION: BRIDGE NO. 11 OVER THE OREGON INLET ON NC 12,  
 TYPE OF WORK: SCOUR PROTECTION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5014B		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41470.3.1	BRNHS-0012(47)	PE	
41470.3.2	BRNHS-0012(47)	CONST.	



**STRUCTURES**



**DESIGN DATA**

**PROJECT LENGTH**

LENGTH ROADWAY OF F.A. PROJECT = NA  
 LENGTH STRUCTURE OF F.A. PROJECT = NA  
 TOTAL LENGTH OF STATE PROJECT = NA

Prepared in the Office of:

**DIVISION OF HIGHWAYS**

2006 STANDARD SPECIFICATIONS

LETTING DATE :  
 MAY 17, 2011

**N. N. BULLOCK, PE**  
 PROJECT ENGINEER

**D. R. CALHOUN, PE**  
 PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT  
 1000 BIRCH RIDGE DR.  
 RALEIGH, N.C. 27610

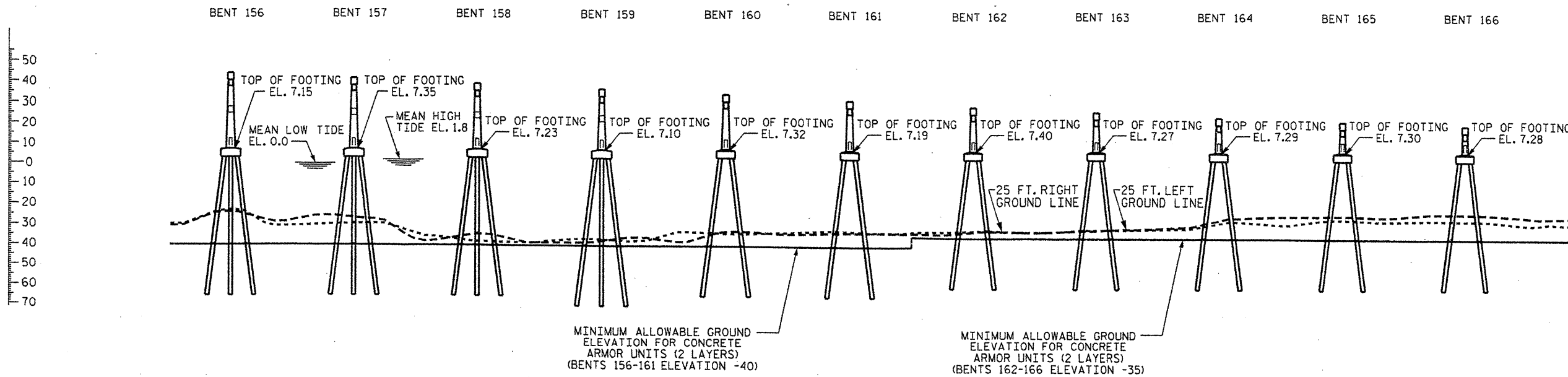
DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER  
 DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

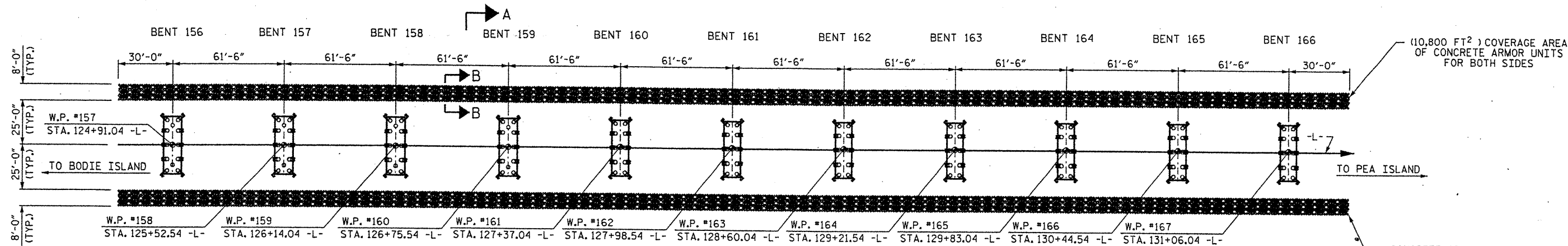
APPROVED  
 DIVISION ADMINISTRATOR DATE

## INDEX OF SHEETS

1	TITLE SHEET
1-A	INDEX OF SHEETS
S-1 THRU S-3	STRUCTURE PLAN SHEETS
2	TEMPORARY BARGE ACCESS
3	TEMPORARY BARGE ACCESS CONTOURS
4	TEMPORARY BARGE ACCESS CROSS SECTION
5	TEMPORARY STAGING ACCESS
6	TEMPORARY STAGING ACCESS TYPICAL SECTION
7	PLANTING DETAIL



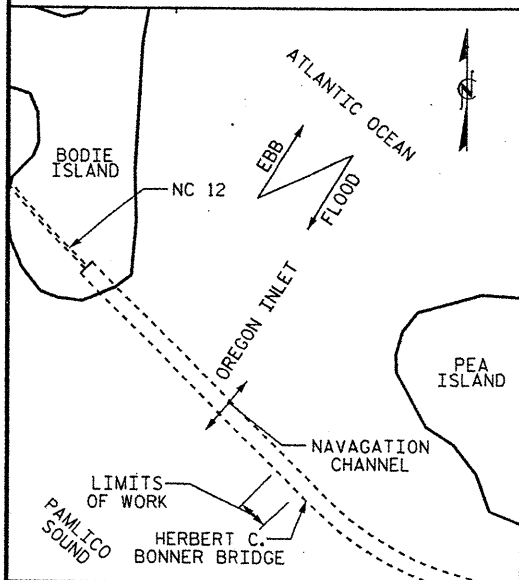
PARTIAL SECTION ALONG C BRIDGE



PLAN

NOTES

THE EXISTING GROUND LINE 25'-0" LEFT AND RIGHT OF THE CENTERLINE BENT IS SHOWN IN THE PARTIAL SECTION VIEW AND IS FROM THE LATEST AVAILABLE INFORMATION. IF THE ACTUAL GROUND ELEVATION IS FOUND TO BE BELOW THE MINIMUM ALLOWABLE GROUND ELEVATION SHOWN, AN ADDITIONAL LAYER OF CONCRETE ARMOR UNITS WILL BE REQUIRED, AS DIRECTED BY THE ENGINEER. IF AN ADDITIONAL LAYER OF CONCRETE ARMOR UNITS IS REQUIRED, THIS LAYER SHALL BE 3 UNITS WIDE.



DRAWN BY : J.L. WALTON DATE : 12/8/10  
 CHECKED BY : D.R. CALHOUN DATE : 2/1/11

Professional Engineer seals for Norman [Name] and [Name], dated 4/19/11.

PROJECT NO. B-5014B  
DARE COUNTY  
 STATION: 127+98.54 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING  
 FOR SCOUR REPAIR  
 ON BRIDGE OVER  
 OREGON INLET**

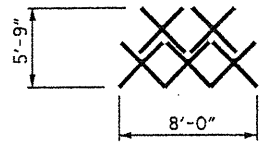
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
			2			

**NOTES**

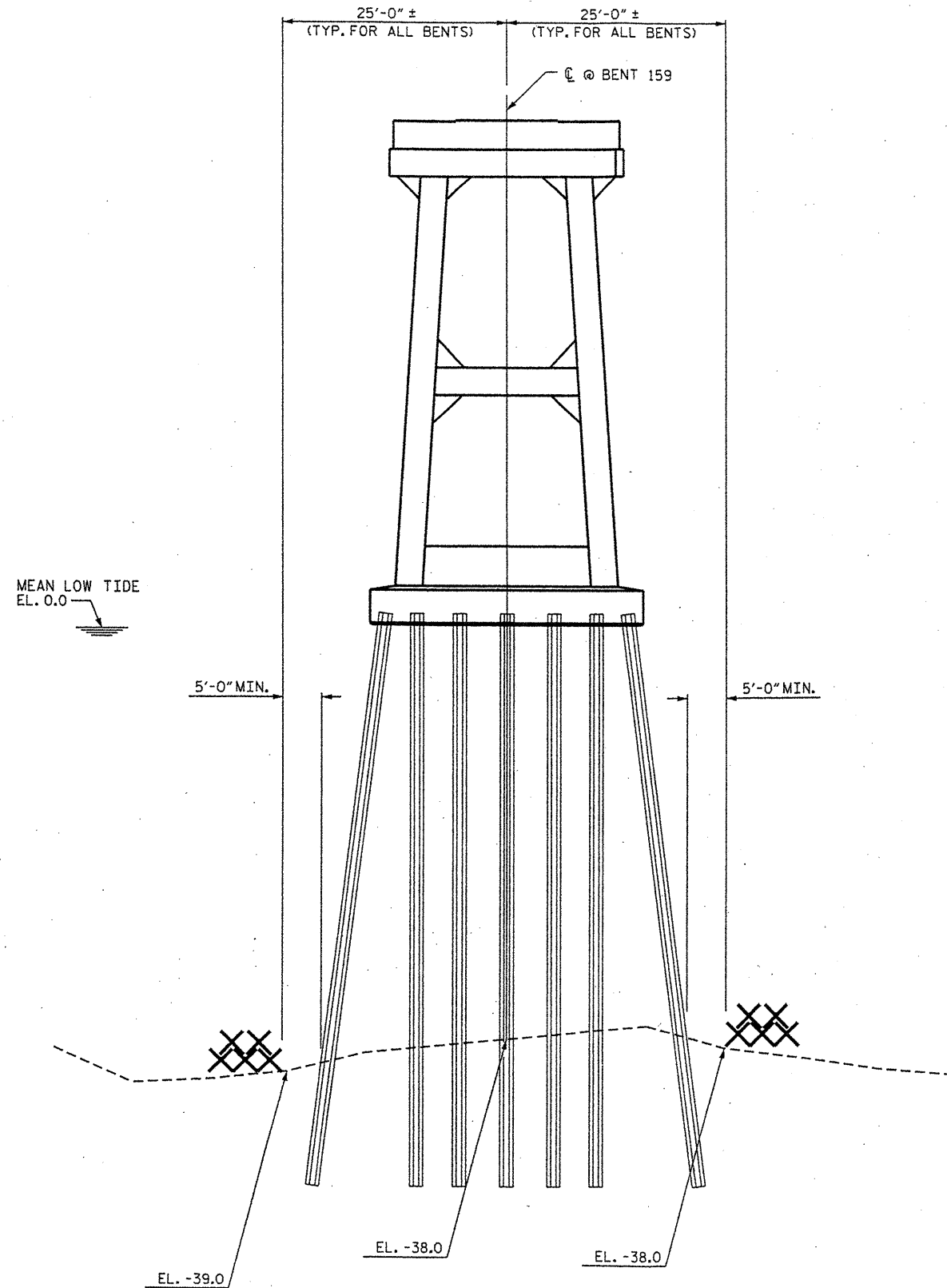
FOR CONCRETE ARMOR UNITS, SEE SPECIAL PROVISIONS.  
 FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.  
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BILL OF MATERIAL**

MOBILIZATION	LUMP SUM
CONCRETE ARMOR UNITS	3375



SECTION B-B



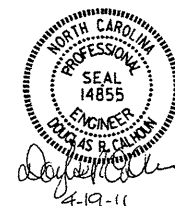
SECTION A-A

PROJECT NO. B-5014B  
DARE COUNTY  
 STATION: 127+98.54 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR SCOUR REPAIR  
 ON BRIDGE OVER  
 OREGON INLET



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS

## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
<b>STRESS IN EXTREME FIBER OF</b>		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
<b>REINFORCING STEEL IN TENSION</b>		
GRADE 60	--	24,000 LBS. PER SQ. IN.
<b>CONCRETE IN COMPRESSION</b>		
	-----	1,200 LBS. PER SQ. IN.
<b>CONCRETE IN SHEAR</b>		
	-----	SEE A.A.S.H.T.O.
<b>STRUCTURAL TIMBER - TREATED OR</b>		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
<b>COMPRESSION PERPENDICULAR TO GRAIN</b>		
OF TIMBER	-----	375 LBS. PER SQ. IN.
<b>EQUIVALENT FLUID PRESSURE OF EARTH</b>		
	-----	30 LBS. PER CU. FT.
		(MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
 ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
 IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
 DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
 WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
 EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
 WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
 METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

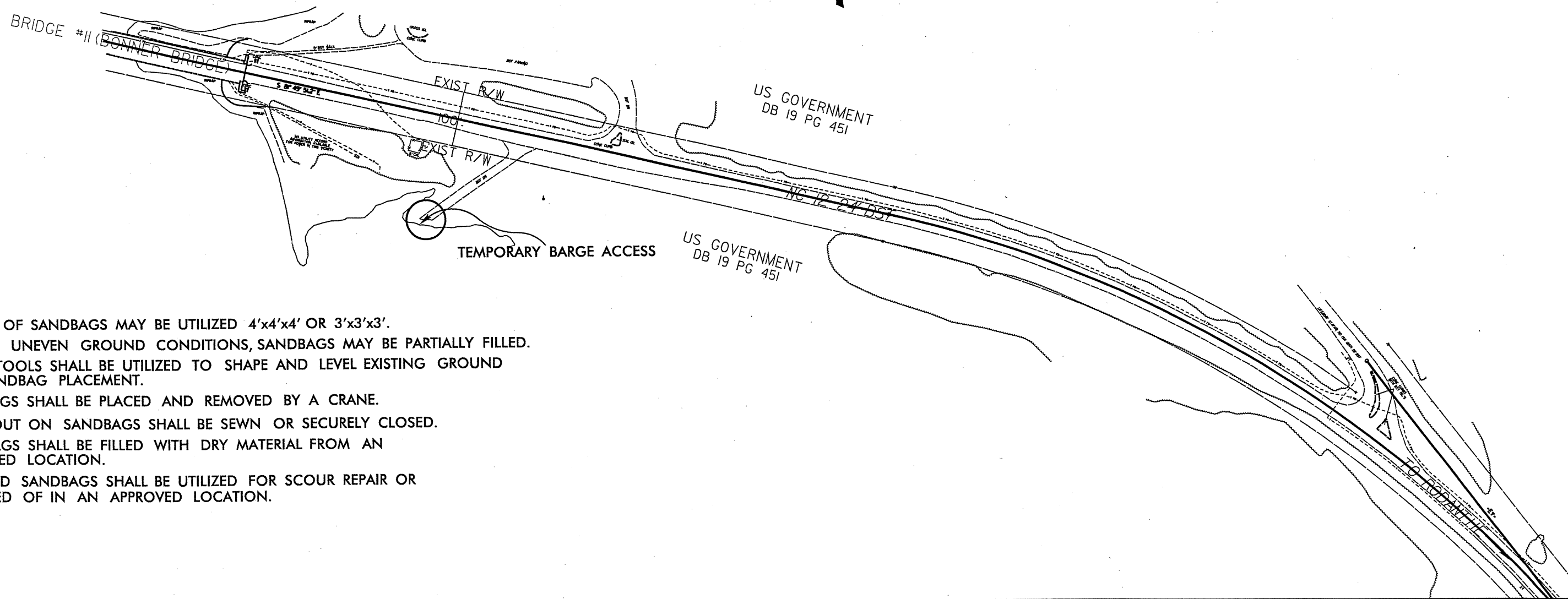
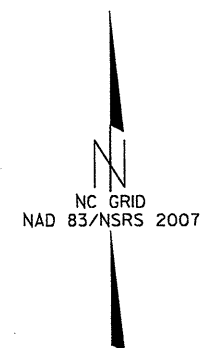
GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

# ENGLISH

JANUARY, 1990

**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**  
**DARE COUNTY**

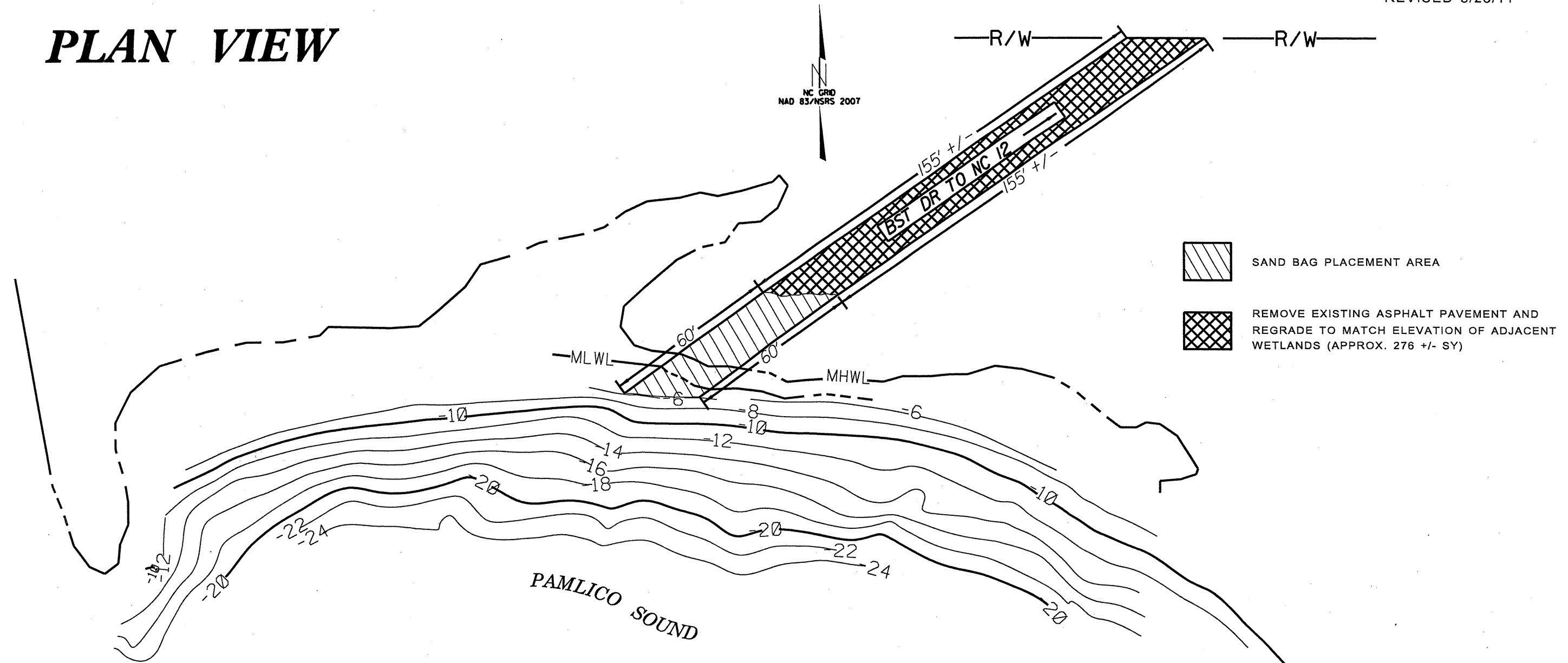
**SANDBAG PLACEMENT FOR TEMPORARY ROAD EXTENSION**





- NOTES:
- 2 SIZES OF SANDBAGS MAY BE UTILIZED 4'x4'x4' OR 3'x3'x3'.
  - DUE TO UNEVEN GROUND CONDITIONS, SANDBAGS MAY BE PARTIALLY FILLED.
  - HAND TOOLS SHALL BE UTILIZED TO SHAPE AND LEVEL EXISTING GROUND FOR SANDBAG PLACEMENT.
  - SANDBAGS SHALL BE PLACED AND REMOVED BY A CRANE.
  - FILL SPOUT ON SANDBAGS SHALL BE SEWN OR SECURELY CLOSED.
  - SANDBAGS SHALL BE FILLED WITH DRY MATERIAL FROM AN APPROVED LOCATION.
  - REMOVED SANDBAGS SHALL BE UTILIZED FOR SCOUR REPAIR OR DISPOSED OF IN AN APPROVED LOCATION.

REVISED 3/28/11


# PLAN VIEW



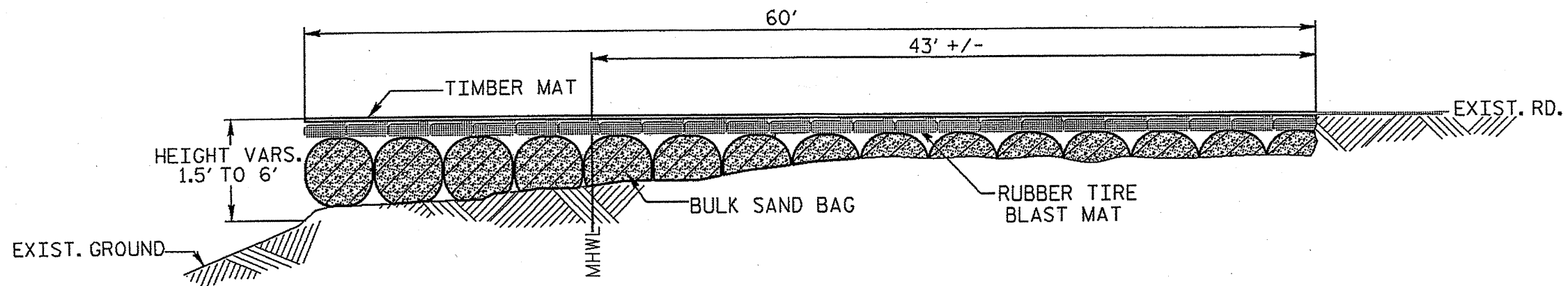
-  SAND BAG PLACEMENT AREA
-  REMOVE EXISTING ASPHALT PAVEMENT AND REGRADE TO MATCH ELEVATION OF ADJACENT WETLANDS (APPROX. 276 +/- SY)

**NOTES:**

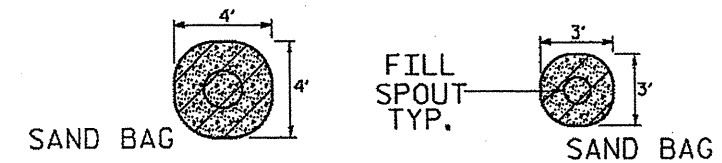
- 2 SIZES OF SANDBAGS MAY BE UTILIZED 4'x4'x4' OR 3'x3'x3'.
- DUE TO UNEVEN GROUND CONDITIONS, SANDBAGS MAY BE PARTIALLY FILLED.
- HAND TOOLS SHALL BE UTILIZED TO SHAPE AND LEVEL EXISTING GROUND FOR SANDBAG PLACEMENT.
- SANDBAGS SHALL BE PLACED AND REMOVED BY A CRANE.
- FILL SPOUT ON SANDBAGS SHALL BE SEWN OR SECURELY CLOSED.
- SANDBAGS SHALL BE FILLED WITH DRY MATERIAL FROM AN APPROVED LOCATION.
- REMOVED SANDBAGS SHALL BE UTILIZED FOR SCOUR REPAIR OR DISPOSED OF IN AN APPROVED LOCATION.
- REMOVE ALL VISIBLE BROKEN ASPHALT, SILT FENCE POSTS, SILT FENCE AND /OR GEOTEXTILE FABRIC FROM THE SHORELINE AND SURROUNDING AREA OF THE "TEMPORARY BARGE ACCESS"

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 1 113 AIRPORT DR. EDENTON, NC 27932 (252) 482-7977		
COUNTY: DARE QUAD: OREGON INLET BASIN: PASQUOTANK	WBS#: N/A DATE: JAN. 26, 2011 SHEET#:	
SUBJECT: SANDBAG PLACEMENT FOR ROAD EXTENSION		
LAT. = 35.765135 N		LONG. = 75.526068 W
DRAWN BY: A.L. MULDER		SCALE: 1" = 40'

REVISED 3/14/11




**CROSS SECTION VIEW**

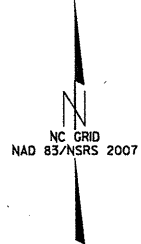
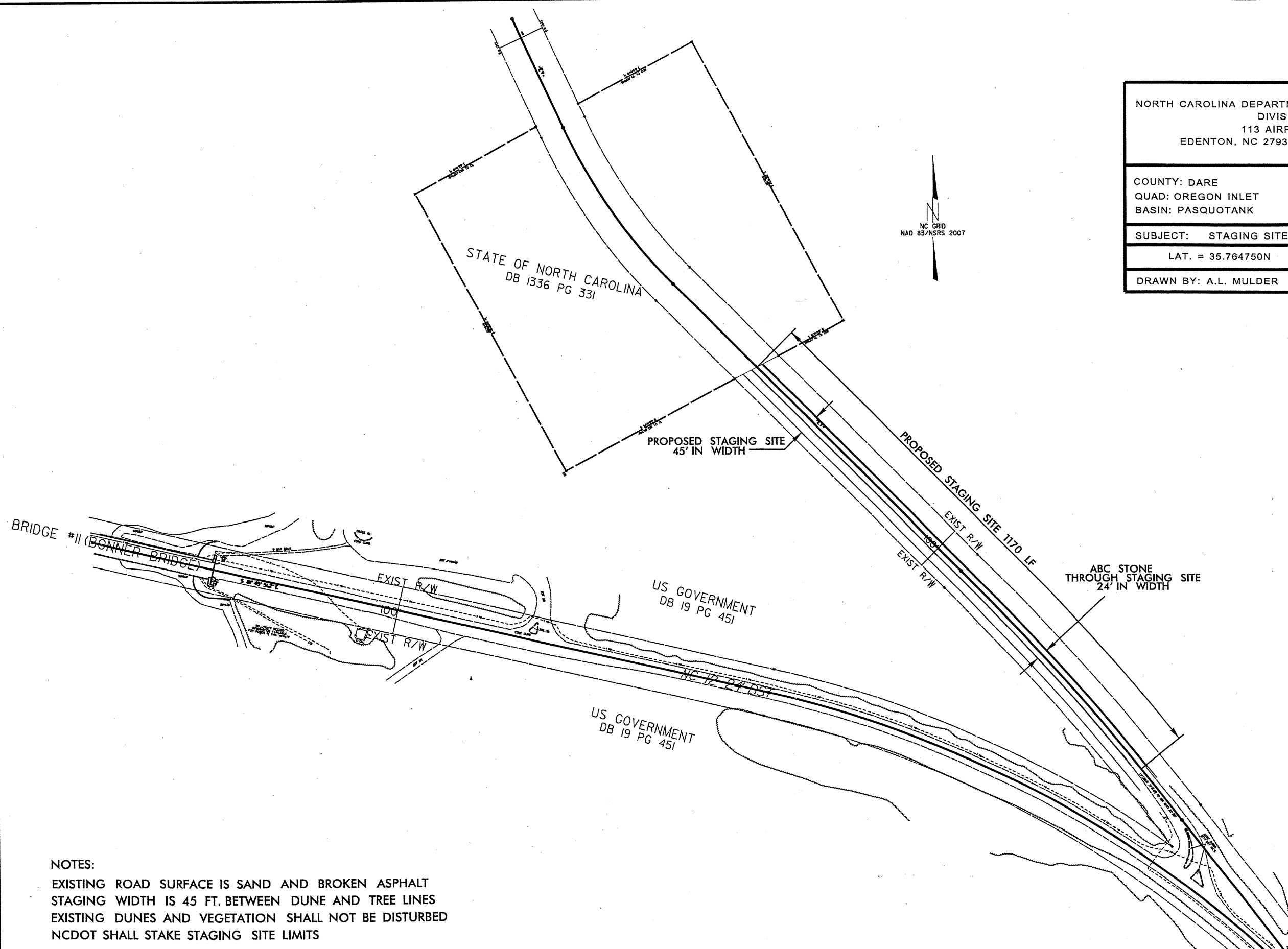


**NOTES:**  
 2 SIZES OF SANDBAGS MAY BE UTILIZED 4'x4'x4' OR 3'x3'x3'.  
 DUE TO UNEVEN GROUND CONDITIONS, SANDBAGS MAY BE PARTIALLY FILLED.  
 HAND TOOLS SHALL BE UTILIZED TO SHAPE AND LEVEL EXISTING GROUND FOR SANDBAG PLACEMENT.  
 SANDBAGS SHALL BE PLACED AND REMOVED BY A CRANE.  
 FILL SPOUT ON SANDBAGS SHALL BE SEWN OR SECURELY CLOSED.  
 SANDBAGS SHALL BE FILLED WITH DRY MATERIAL FROM AN APPROVED LOCATION.  
 REMOVED SANDBAGS SHALL BE UTILIZED FOR SCOUR REPAIR OR DISPOSED OF IN AN APPROVED LOCATION.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 1 113 AIRPORT DR. EDENTON, NC 27832 (252) 482-7977		
COUNTY: DARE	WBS#: N/A	
QUAD: OREGON INLET	DATE: JAN. 28, 2011	
BASIN: PASQUOTANK	SHEET#:	
SUBJECT: SANDBAG PLACEMENT FOR ROAD EXTENSION		
LAT. = 35.788136 N	LONG. = 75.528088 W	
DRAWN BY: A.L. MULDER		SCALE: 1" = 10'



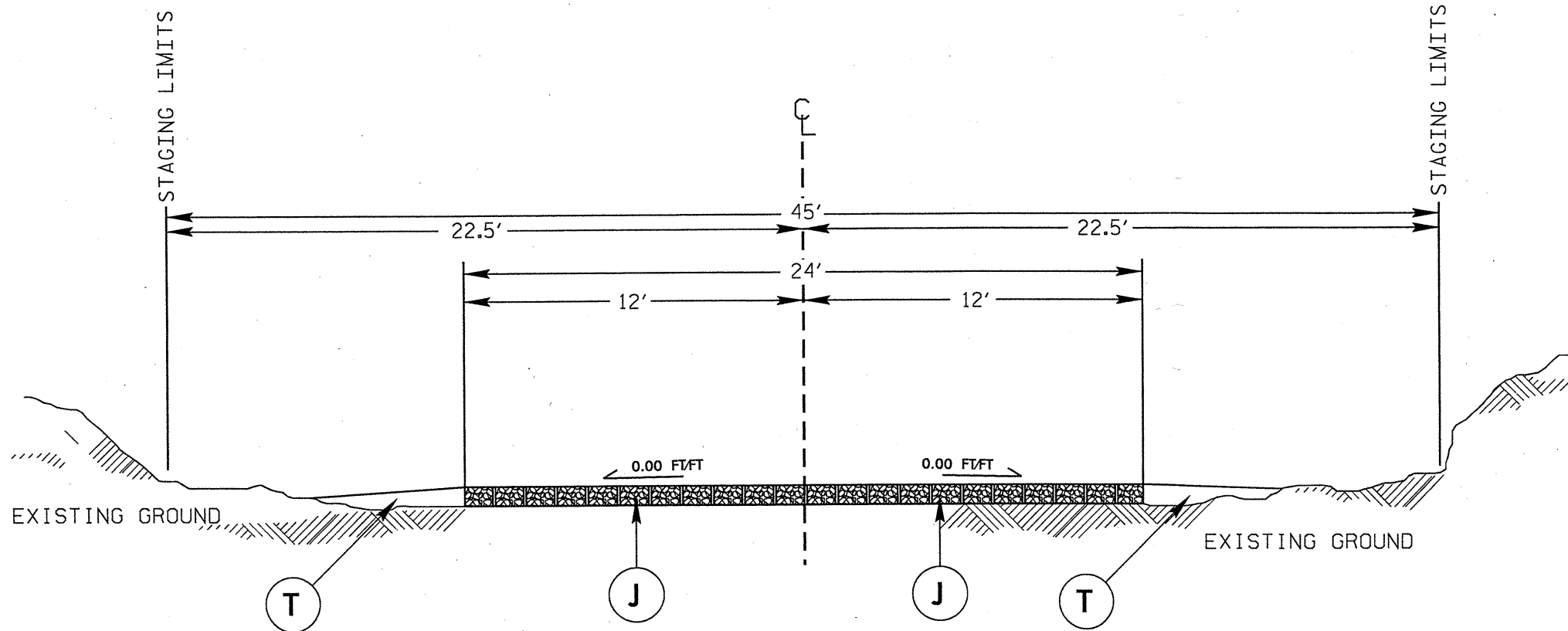
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 1 113 AIRPORT DR. EDENTON, NC 27932 (252) 482-7977		
COUNTY: DARE QUAD: OREGON INLET BASIN: PASQUOTANK	WBS#: N/A DATE: JAN. 26, 2011 SHEET#:	
SUBJECT: STAGING SITE FOR BONNER BRIDGE REPAIRS		
LAT. = 35.764750N		LONG. = 75.519980W
DRAWN BY: A.L. MULDER		SCALE: 1" = 200'



NOTES:  
 EXISTING ROAD SURFACE IS SAND AND BROKEN ASPHALT  
 STAGING WIDTH IS 45 FT. BETWEEN DUNE AND TREE LINES  
 EXISTING DUNES AND VEGETATION SHALL NOT BE DISTURBED  
 NCDOT SHALL STAKE STAGING SITE LIMITS

PAVEMENT SCHEDULE

J	PROP. 8" AGGREGATE BASE COURSE, WITH CELLULAR CONFINEMENT SYSTEM. (SEE SPECIAL PROVISION)
T	EARTH MATERIAL.



NOTES:

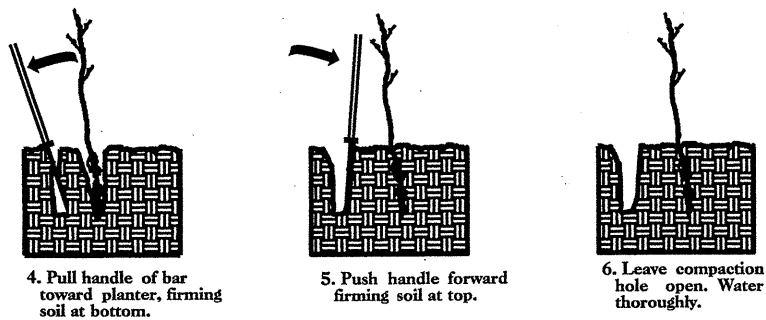
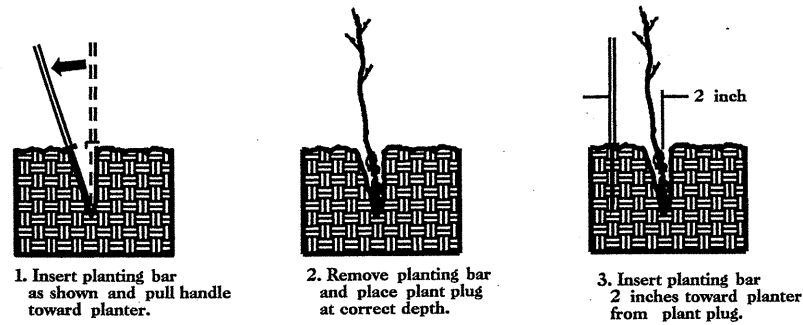
\* EXISTING ROAD SURFACE IS SAND AND BROKEN ASPHALT  
 STAGING WIDTH IS 45 FT. BETWEEN DUNE AND TREE LINES  
 EXISTING DUNES AND VEGETATION SHALL NOT BE DISTURBED  
 NCDOT SHALL STAKE STAGING SITE LIMITS

\* CONTRACTOR WILL PERFORM LUMP SUM GRADING WITHIN  
 THE EXISTING RIGHT-OF-WAY TO ADEQUATELY INSTALL TYPICAL  
 SECTION AND PROVIDE SUFFICIENT STAGING AREA, JACK ASSEMBLY  
 AND TO PROVIDE STORAGE AREA

**TYPICAL SECTION**  
 FOR PROPOSED STAGING AREA

# PLANTING DETAILS

## DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



### PLANTING NOTES:

**PLANTING BAG**  
During planting, plant plugs shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



# WETLAND GRASS PLANTING

- WETLAND GRASS SPECIES SHALL BE PLANTED 2 FT. TO 4 FT. ON CENTER, RANDOM SPACING, AVERAGING 3 FT. ON CENTER, APPROXIMATELY 4840 PLANTS PER ACRE.

### WETLAND GRASS PLANTING

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

80% JUNCUS ROEMERIANUS	BLACK NEEDLE RUSH	2 in PEAT POT
10% SPARTINA PATENS	SALT MEADOW CORDGRASS	2 in PEAT POT
10% SPARTINA CYNOSUROIDES	GIANT CORDGRASS	2 in PEAT POT

## WETLAND GRASS PLANTING

### DETAIL SHEET

N.C.DOT. - ROADSIDE ENVIRONMENTAL UNIT