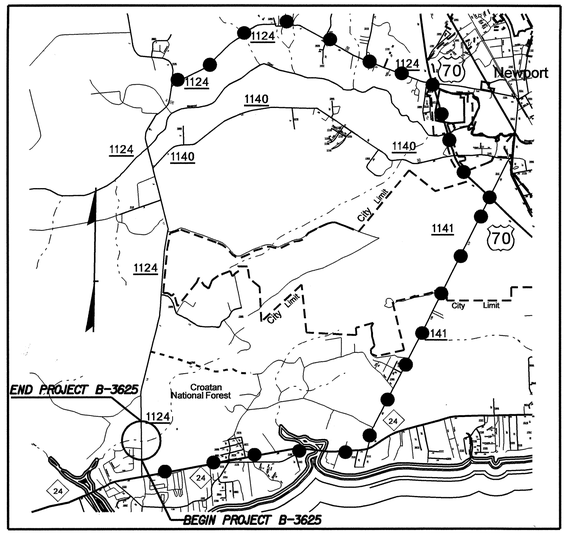
TIP B-3625

CONTRACT: C201603

STRUCTURE



VICINITY MAP

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

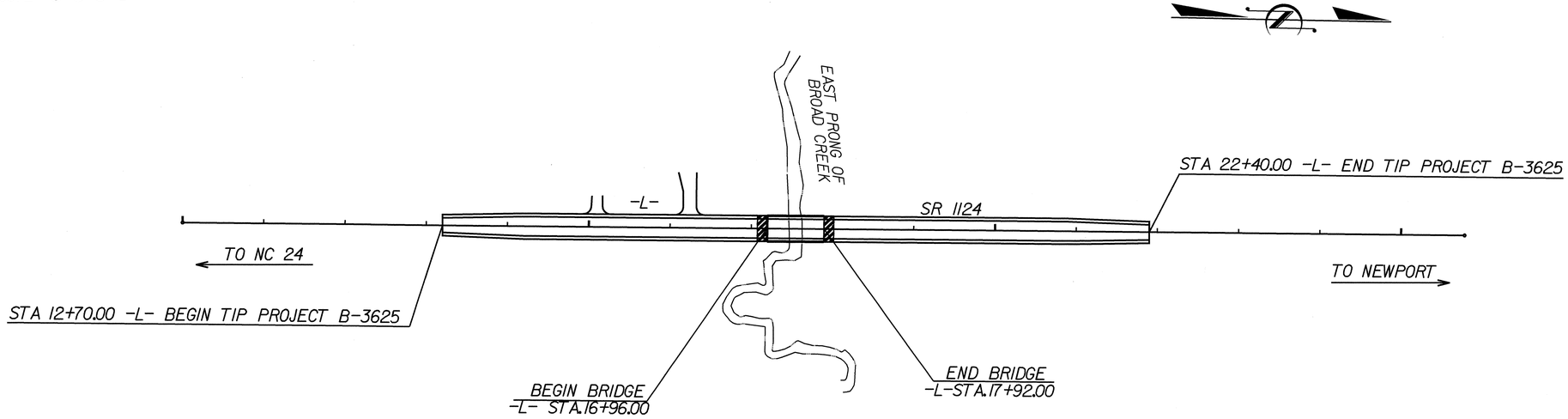
CARTERET COUNTY

LOCATION: BRIDGE No. 20 OVER EAST PRONG OF BROAD CREEK ON SR 1124

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3625		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33173.1.1	BRSTP-1124(3)	P.E.
33173.1.1	BRSTP-1124(3)	R/W,UTL
33173.3.2	BRSTP-1124(3)	CONST.



STATE OF NORTH CAROLINA ★ DEPARTMENT OF TRANSPORTATION ★

DESIGN DATA

ADT 2005 = 5950

ADT 2025 = 8950

DHV = 10 %

D = 55 %

T = 4 % *

V = 60 MPH

* TTST 1 % DUAL 3 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3625 = 0.166 MILE

LENGTH STRUCTURE TIP PROJECT B-3625 = 0.018 MILE

TOTAL LENGTH TIP PROJECT B-3625 = 0.184 MILE

Prepared In the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., NC, 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:

May 20, 2008

JOHN C. FRYE, PE
PROJECT ENGINEER

TING H. FANG, PE
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

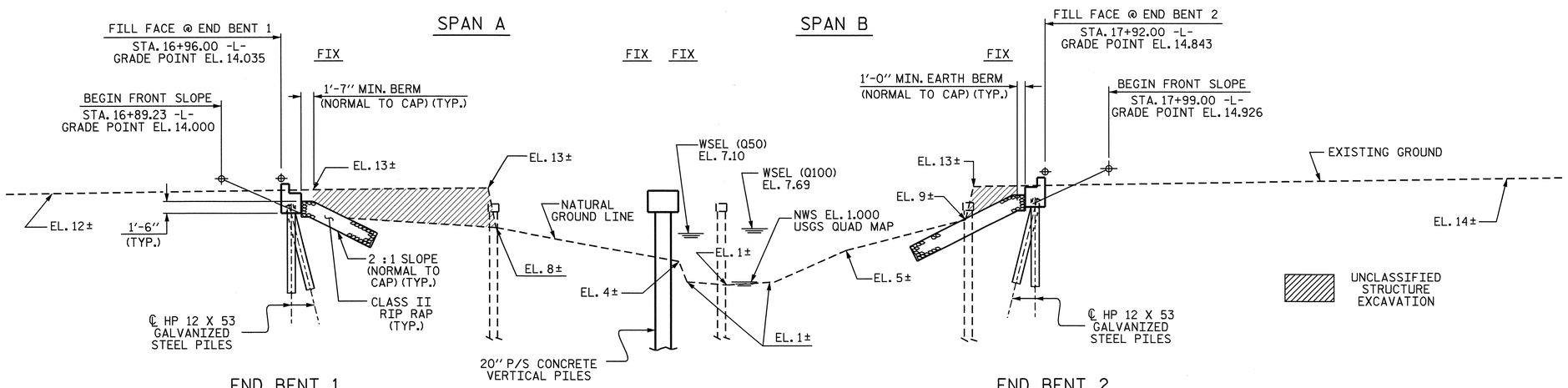
APPROVED
DIVISION ADMINISTRATOR *DATE*

F.A. PROJ. No. BRSTP-1124(3)

(-)0.8284% (+)1.8013%

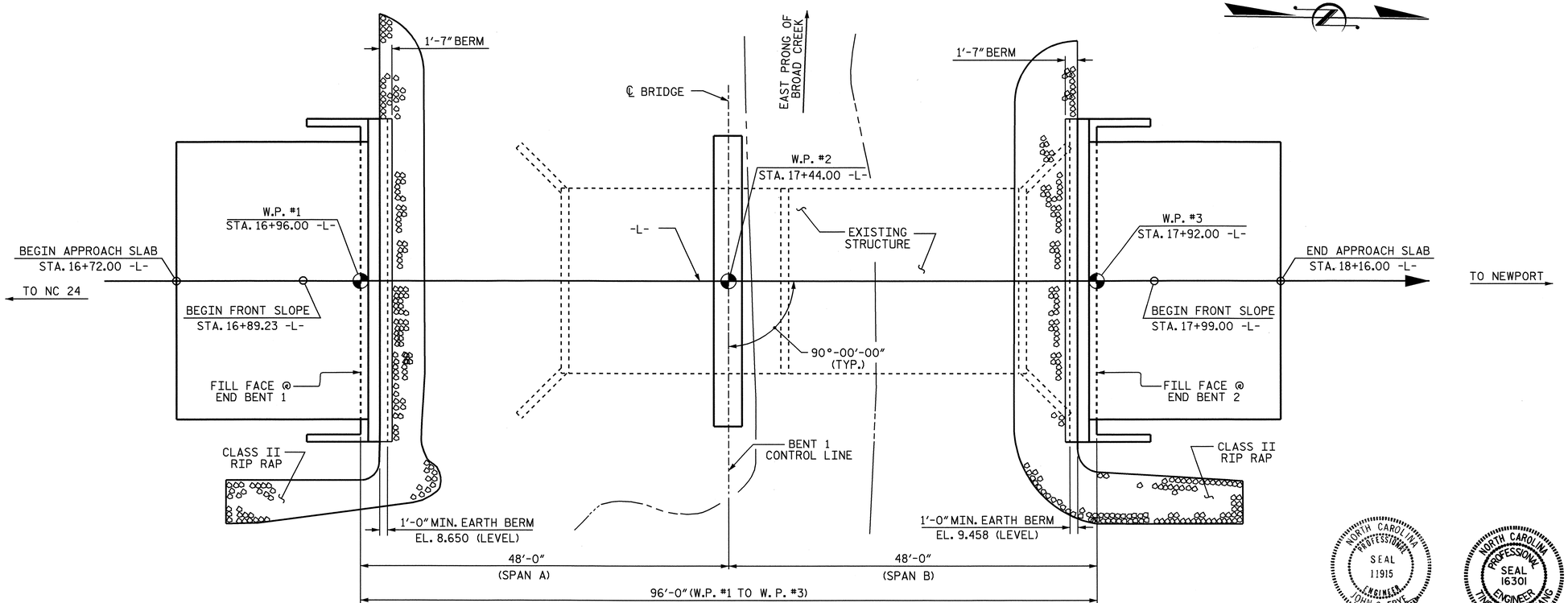
PI = 16+90.00
EL. = 12.690
VC = 400'

GRADE DATA



SECTION ALONG -L-

SECTION TAKEN AT RIGHT ANGLES TO BENTS AND END BENTS



PLAN

PILES NOT SHOWN FOR CLARITY

DRAWN BY : C.H. SIMPSON/QT NGUYEN DATE : 7-05
CHECKED BY : A. NAIK DATE : 8-05

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/11/08

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
2/11/08

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

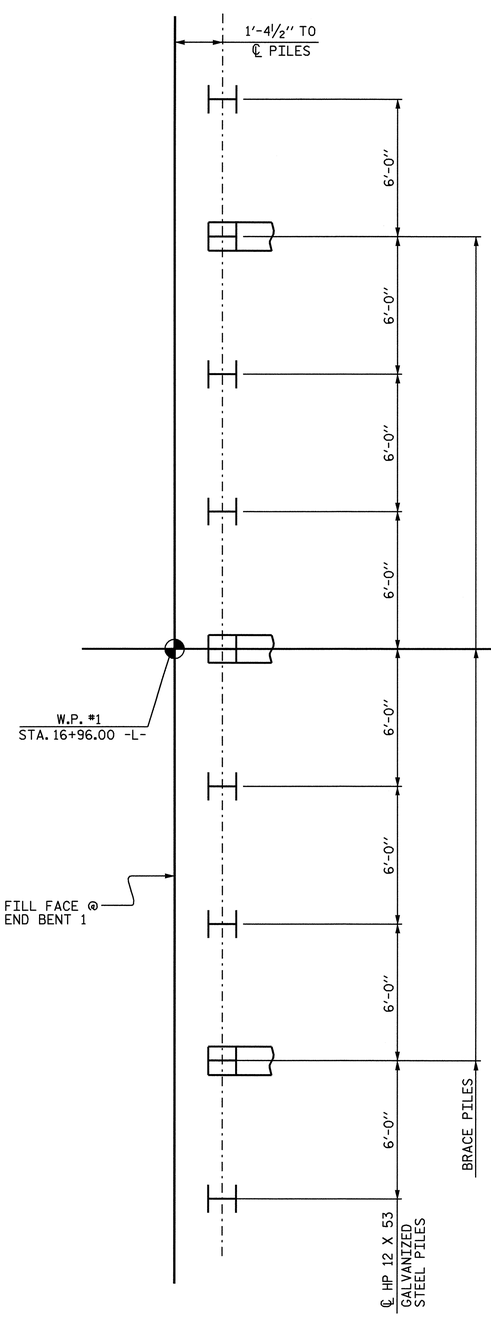
SHEET 1 OF 3 REPLACES BRIDGE No. 20

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

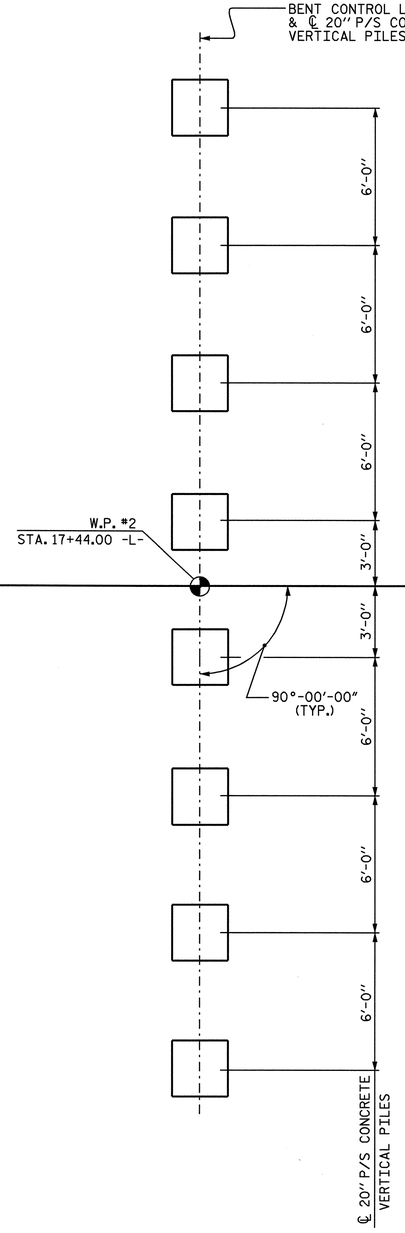
GENERAL DRAWING

FOR BRIDGE OVER
EAST PRONG OF BROAD
CREEK ON SR 1124
BETWEEN NC 24 AND
SR 1140

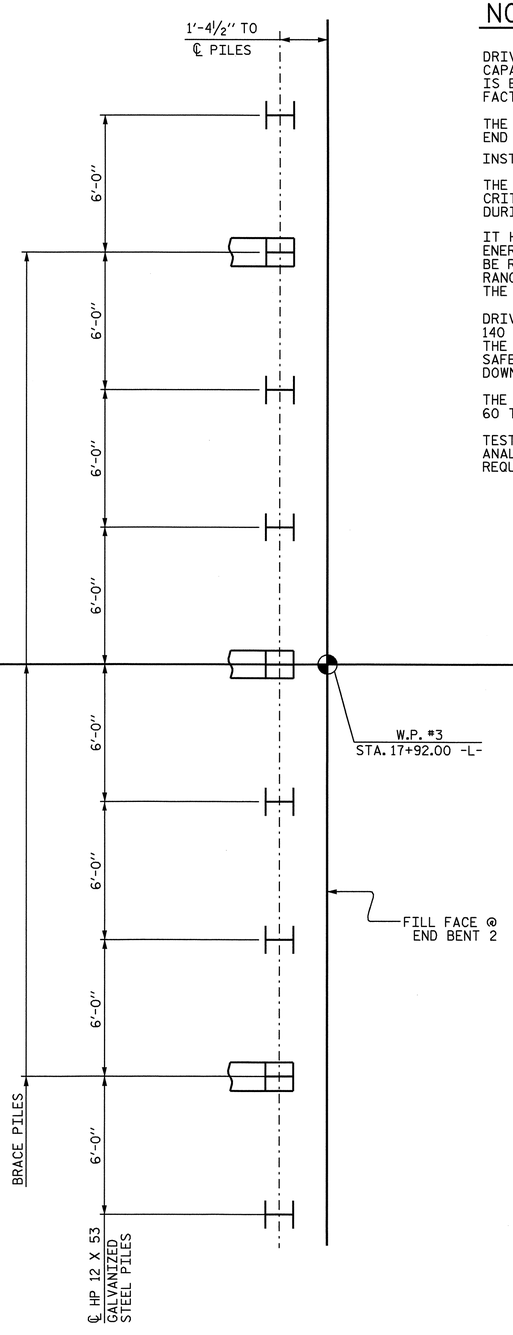
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			22



END BENT 1



BENT 1



END BENT 2

NOTES

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT 1 AND END BENT 2 IS 50 TONS PER PILE.

INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN -28 FEET.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS -10 FEET. THE SCOUR CRITICAL ELEVATION IS USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40,000 TO 60,000 FT-POUNDS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM ARTICLE 450-5 OF THE STANDARD SPECIFICATIONS.

DRIVE PILES AT BENT 1 TO A REQUIRED BEARING CAPACITY OF 140 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWNDRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT 1 IS 60 TONS PER PILE.

TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT 1. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/11/08

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
2/11/08

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE

DRAWN BY : QT NGUYEN DATE : 7-6-05
CHECKED BY : A. NAIK DATE : 8-05

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

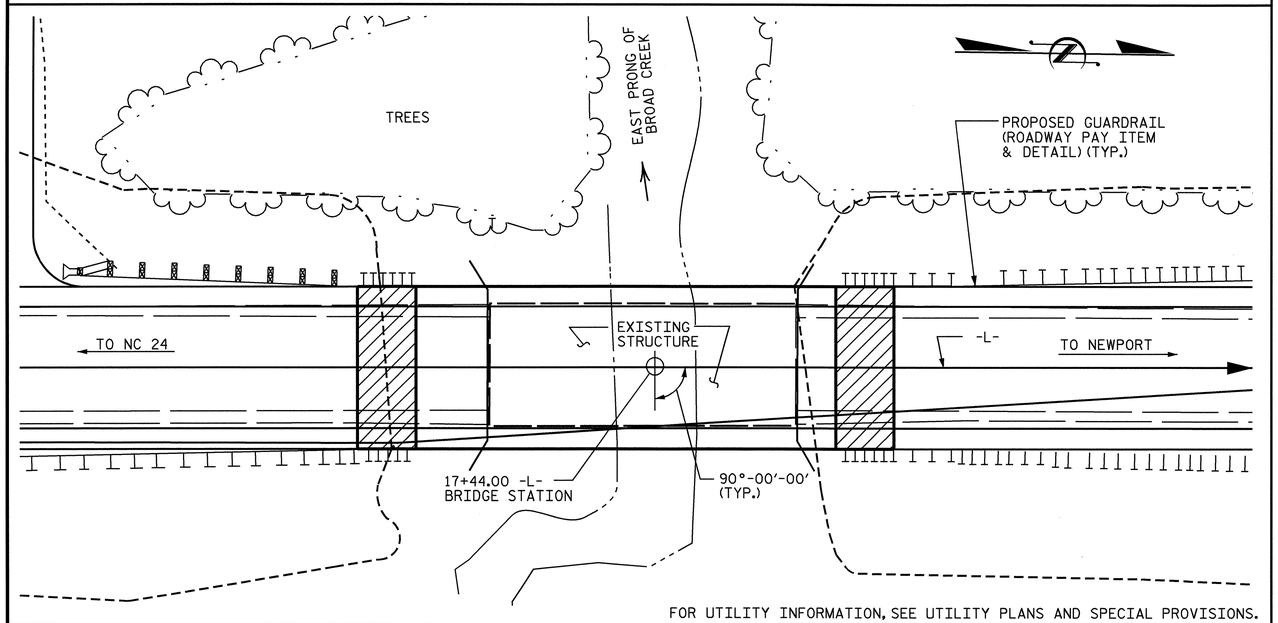
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER EAST PRONG OF BROAD CREEK ON SR 1124 BETWEEN NC 24 AND SR 1140

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			22

BM #1: R/R SPIKE STAMPED "BM 1" SET IN 20" PINE TREE -BL- 9+02.32, 46.76' RT, EL 16.96' (STA. 13+03.78 -L-, 60.52' RT)



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	548 CFS.
FREQUENCY OF DESIGN FLOOD	50 YEARS
DESIGN HIGH WATER ELEVATION	7.10
DRAINAGE AREA	2.0 SQ. MI.
BASIC DISCHARGE(Q100)	693 CFS.
BASIC HIGH WATER ELEVATION	7.69

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	4200 CFS.
FREQUENCY OF OVERTOPPING FLOOD	500 + YRS.
OVERTOPPING FLOOD ELEVATION	13.82

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

NOTES:

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

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 SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

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

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE @ END BENT 1, 25 FT. EACH SIDE @ END BENT 2 OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE 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 DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS; 1 @ 30'-0", 1 @ 30'-9", 24.3 FEET CLEAR ROADWAY, SUPERSTRUCTURE: 10 STANDARD BMD-13 PRESTRESSED CONCRETE CHANNELS; END BENTS AND INTERIOR BENT: PRESTRESSED CONCRETE CAP ON TIMBER PILES, AND LOCATED AT THE SITE OF PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN-PLACE BENT CAPS AND SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR.

ALL BAR SUPPORTS USED IN THE BENT CAPS, PRECAST BARRIER RAILS, PRECAST APPROACH SLABS AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

GRINDING OF BRIDGE DECK AND APPROACH SLAB SHALL BE CONTINUOUS OPERATION FROM BEGINNING OF APPROACH SLAB AT END BENT 1 TO END OF APPROACH SLAB AT END BENT 2 TO ALLOW FOR A SMOOTH TRANSITION AT ALL JOINTS. FOR BRIDGE DECK GRINDING, SEE SPECIAL PROVISIONS.

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 17+44.00 -L-."

FOR PRECAST POST-TENSIONED CONCRETE APPROACH SLAB, SEE SPECIAL PROVISIONS.

FOR PRECAST CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

FOR POST-TENSIONING AND GROUTING, SEE SPECIAL PROVISIONS.

FOR GROUTING FOR APPROACH SLAB, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

HP 12 X 53 STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
3/4/08

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
3/05/08

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS AA CONCRETE	EPOXY COATED REINFORCING STEEL	20" PRESTRESSED CONCRETE PILES		HP 12 X 53 GALVANIZED STEEL PILES		PILE REDRIVES	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	POST-TENSIONING AND GROUTING	PRECAST CONCRETE APPROACH SLAB	3'-0" X 1'-10" PRESTRESSED CONCRETE CORED SLAB		PRECAST CONCRETE BARRIER RAIL		BRIDGE DECK GRINDING
	LUMP SUM	EACH	EACH	LUMP SUM	CU. YDS.	LBS.	NO.	LIN.FT.	NO.	LIN.FT.	EACH	TONS	SQ.YDS.	LUMP SUM	LUMP SUM	LUMP SUM	NO.	LIN.FT.	NO.	LIN.FT.	SQ. FT.
SUPERSTRUCTURE														LUMP SUM	LUMP SUM	LUMP SUM	30	1404.38	12	186.75	5906
END BENT 1					20.7	3215			9	585	5	110	120								
BENT 1		1	1		17.7	3242	8	360			5										
END BENT 2					20.7	3215			9	855	5	120	130								
TOTAL	LUMP SUM	1	1	LUMP SUM	59.1	9672	8	360	18	1440	15	230	250	LUMP SUM	LUMP SUM	LUMP SUM	30	1404.38	12	186.75	5906

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER EAST PRONG OF BROAD CREEK ON SR 1124 BETWEEN NC 24 AND SR 1140

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN DATE : 7-7-05
CHECKED BY : A. NAIK DATE : 8-05

05-MAR-2008 15:19
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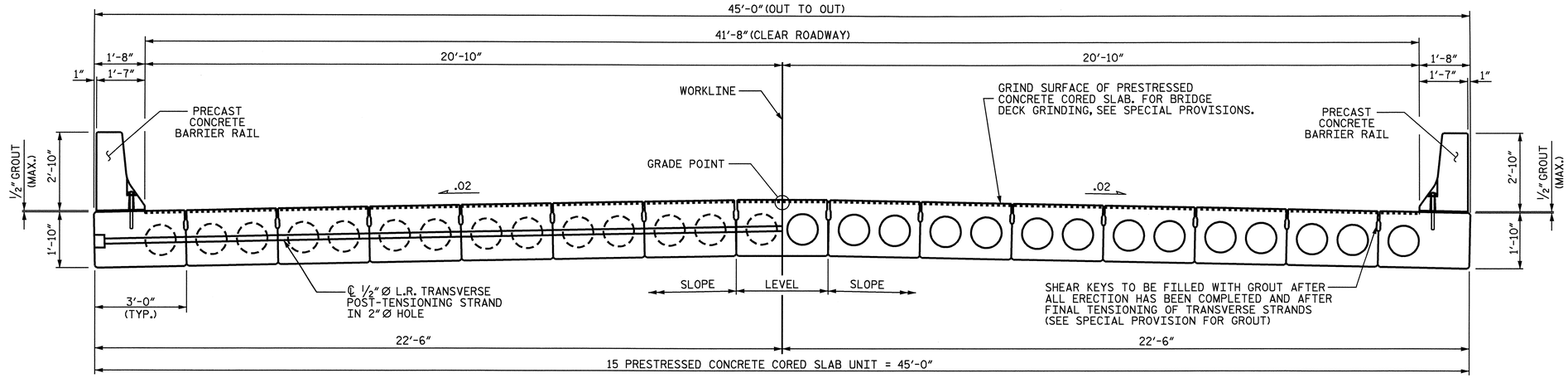
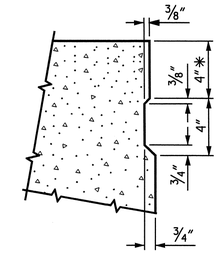
kpnewton



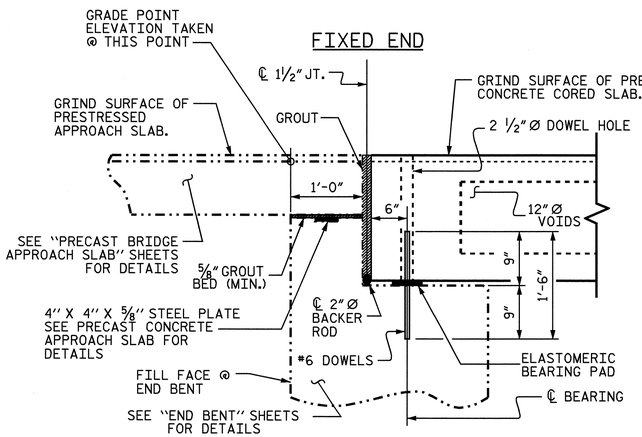
TYPICAL SECTION



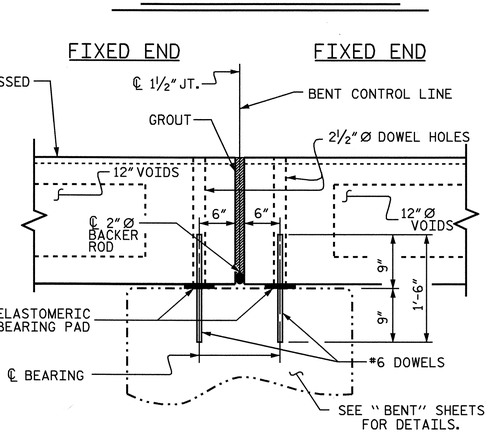
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.
* SHEAR KEY MAY BE ADJUSTED TO MATCH EXISTING FORMS.

HALF SECTION @ INTERMEDIATE DIAPHRAGMS

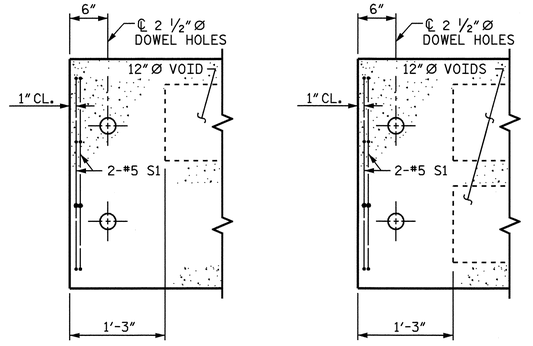


SECTION AT END BENT



SECTION AT BENT

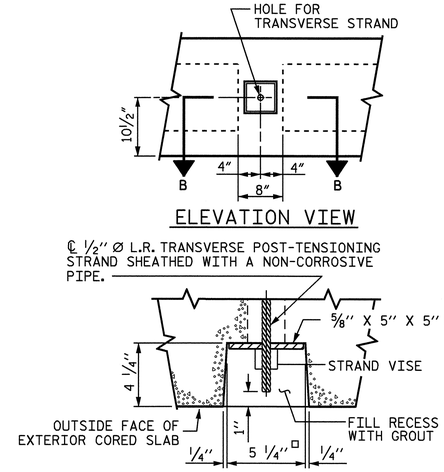
HALF SECTION @ VOIDS



EXTERIOR
RIGHT SIDE SHOWN (LEFT SIDE SIMILAR)

INTERIOR

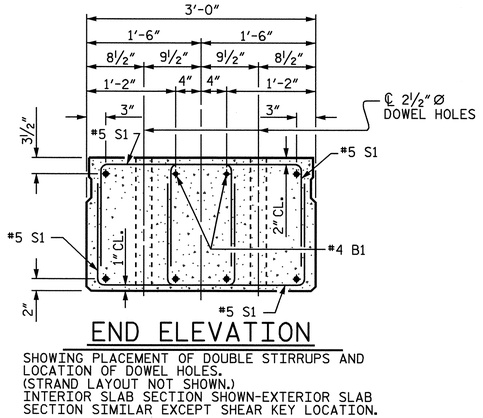
PART PLAN-END OF CORED SLAB



ELEVATION VIEW

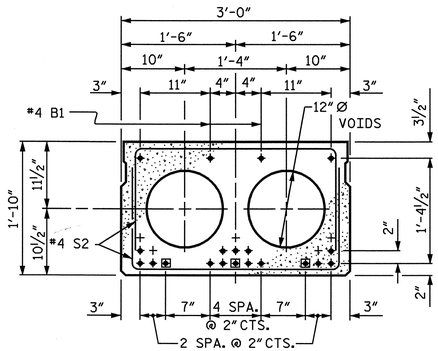
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

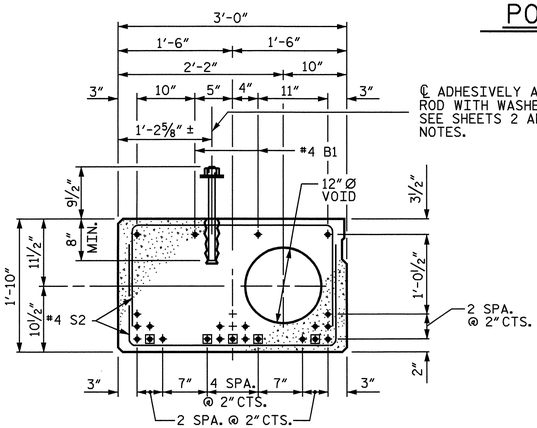


INTERIOR SLAB SECTION

½" Ø LOW RELAXATION STRAND LAYOUT

(18 STRANDS, 3 SHEATHED)

● BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



EXTERIOR SLAB SECTION

½" Ø LOW RELAXATION STRAND LAYOUT

(21 STRANDS, 5 SHEATHED)
(LEFT SIDE SHOWN, RIGHT SIDE IS MIRRORED)

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

3'-0" X 1'-10" PRESTRESSED CONCRETE CORED SLAB UNIT

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/29/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/7-07
CHECKED BY : A. NAIK/JCF DATE : 8-05/12-07

29-FEB-2008 09:33
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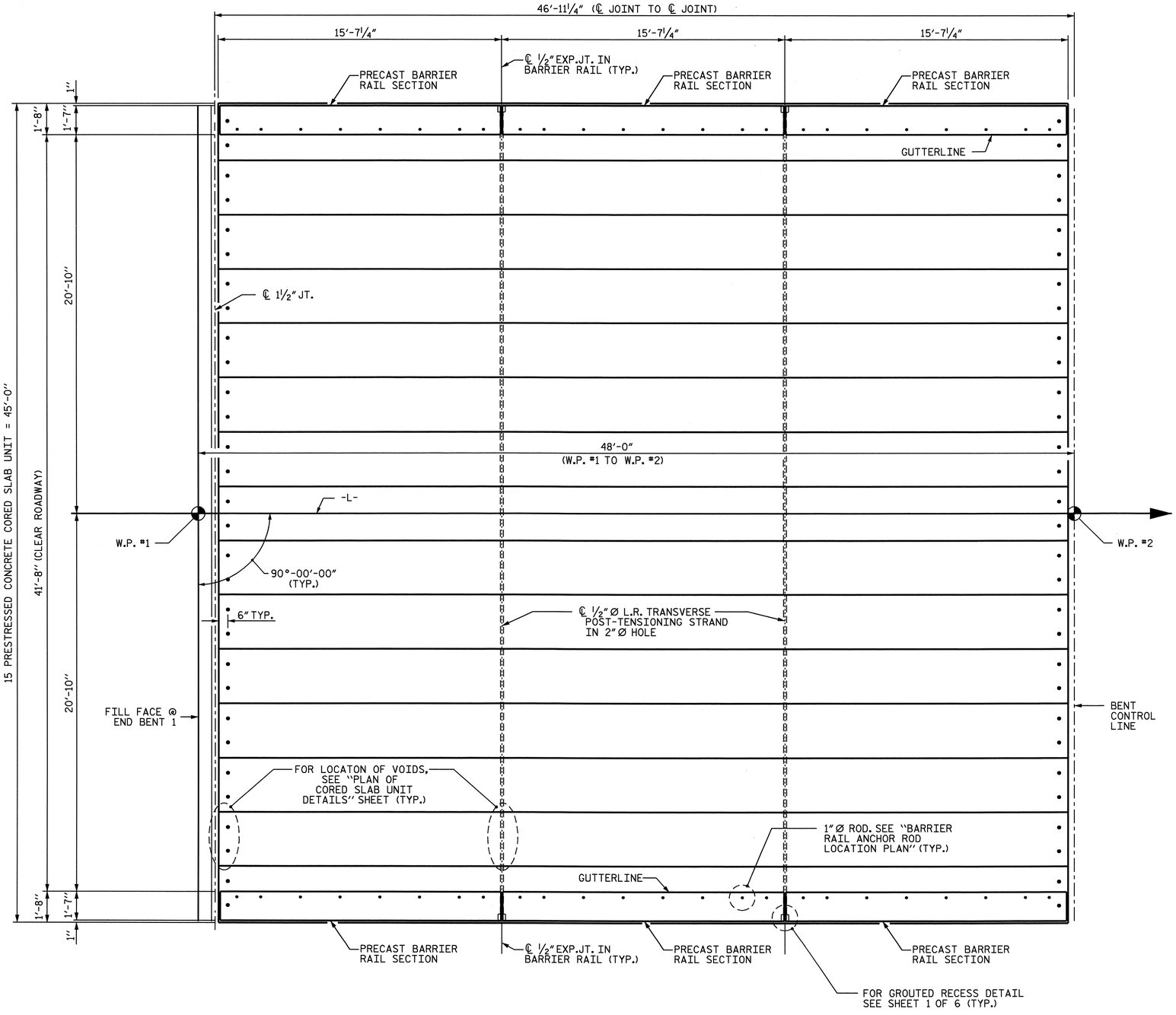
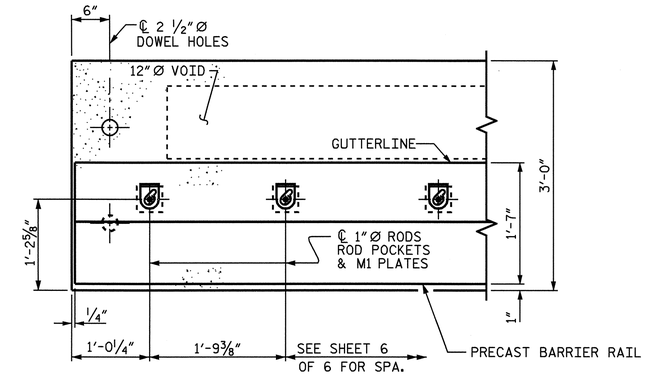
RWWRIGHT

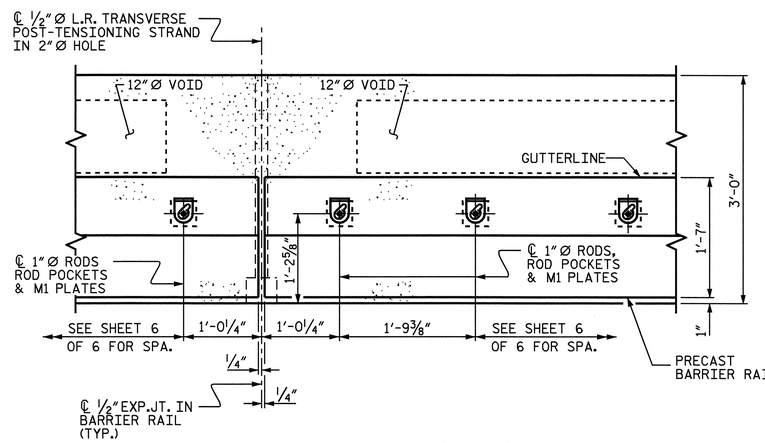


SPAN A



END OF CORED SLAB UNIT

RIGHT SIDE SHOWN
(LEFT SIDE SIMILAR)



INTERIOR OF CORED SLAB UNIT

RIGHT SIDE SHOWN
(LEFT SIDE SIMILAR)

BARRIER RAIL ANCHOR ROD LOCATION PLAN

SEE SHEET 3 OF 6 FOR ANCHORING PRECAST BARRIER RAIL SECTIONS TO CORED SLAB UNITS.

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 2 OF 6

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FOWS
2/29/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/7-07
CHECKED BY : A. NAIK/JCF DATE : 7-05/12-07

29-FEB-2008 09:34
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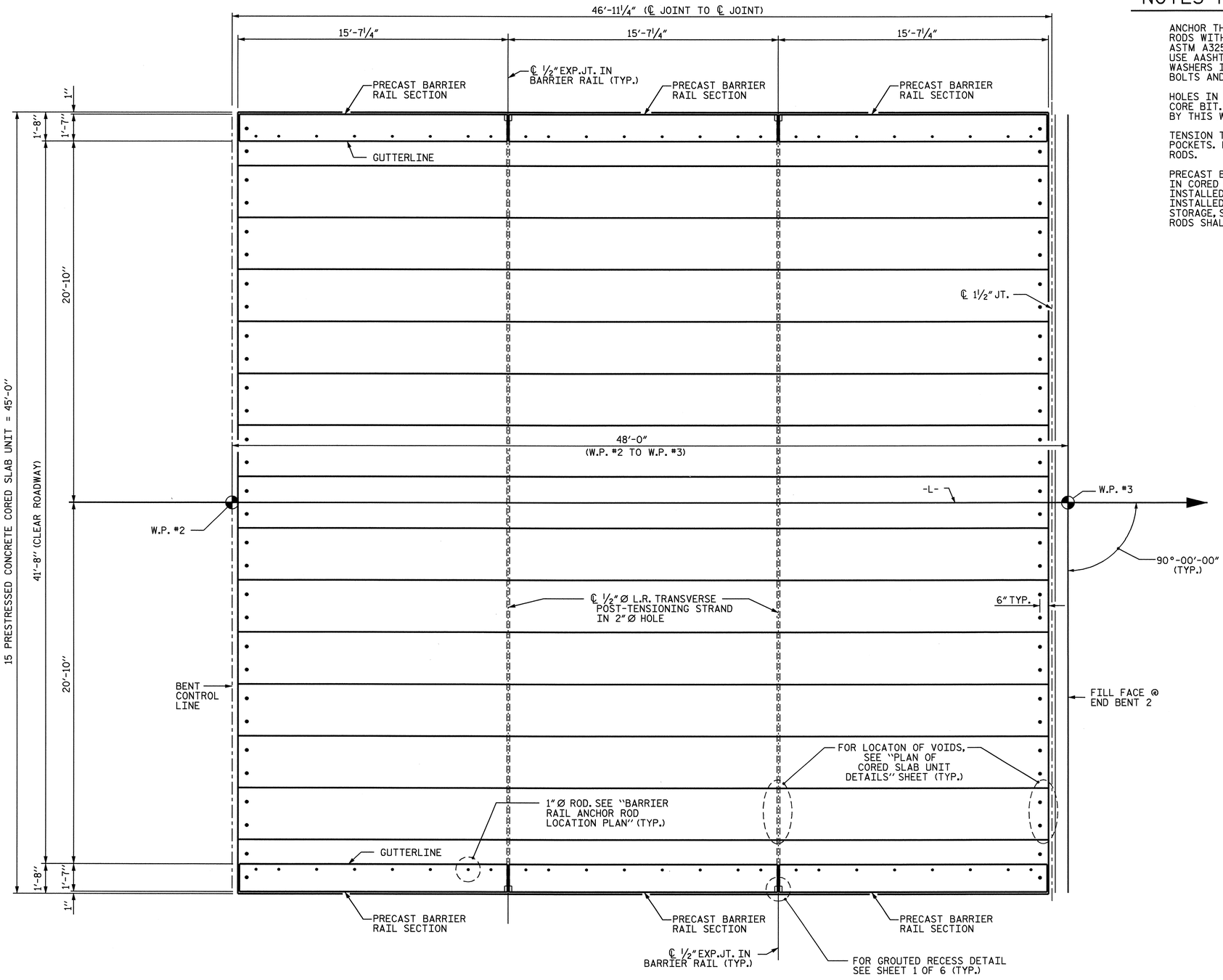
RWWRIGHT



SPAN B

NOTES FOR ANCHORING PRECAST BARRIER RAIL

ANCHOR THE PRECAST BARRIER RAIL USING ADHESIVELY ANCHORED 1" DIA. HIGH STRENGTH RODS WITH NUTS AND WASHERS. USE HIGH STRENGTH RODS WITH THE STRENGTH OF ASTM A325 BOLTS (FY = 92,000 PSI), USE AASHTO M291 GRADE DH HEAVY HEX NUTS, AND USE AASHTO M293 TYPE 1 WASHERS. MECHANICALLY GALVANIZE THE RODS, NUTS AND WASHERS IN ACCORDANCE WITH AASHTO M298 CLASS 50. FOR ADHESIVELY ANCHORED ANCHOR BOLTS AND DOWELS, SEE SPECIAL PROVISIONS.

HOLES IN THE CORED SLAB UNITS FOR THE 1"Ø RODS SHALL BE DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

TENSION THE ANCHORED RODS TO 36,000 LBS. PRIOR TO GROUTING ROD HOLES AND POCKETS. DIRECT TENSION INDICATORS SHALL NOT BE USED FOR TENSIONING ANCHOR RODS.

PRECAST BARRIER SECTIONS SHALL BE USED AS TEMPLATES FOR LOCATING HOLES IN CORED SLAB UNITS FOR THE BARRIER ANCHOR RODS. ANCHOR RODS MAY BE INSTALLED IN THE CORED SLAB UNITS IN THE PLANT OR IN THE FIELD. ONCE INSTALLED, ANCHOR RODS SHALL BE PROTECTED FROM DAMAGE DURING HANDLING, STORAGE, SHIPPING OR SETTING OF CORED SLAB UNITS OR BARRIER UNITS. DAMAGED RODS SHALL BE REPLACED AT THE DIRECTION OF THE ENGINEER.

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/29/08

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/7-07
CHECKED BY : A. NAIK/JCF DATE : 7-05/12-07

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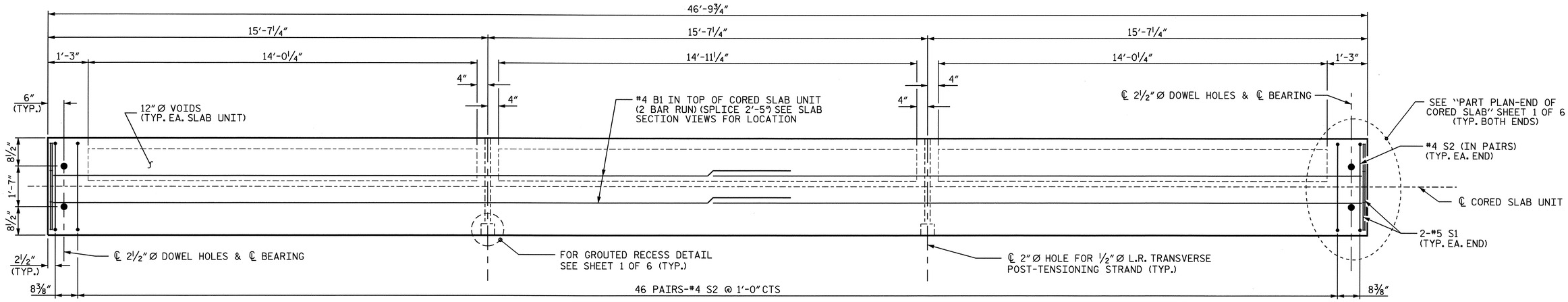
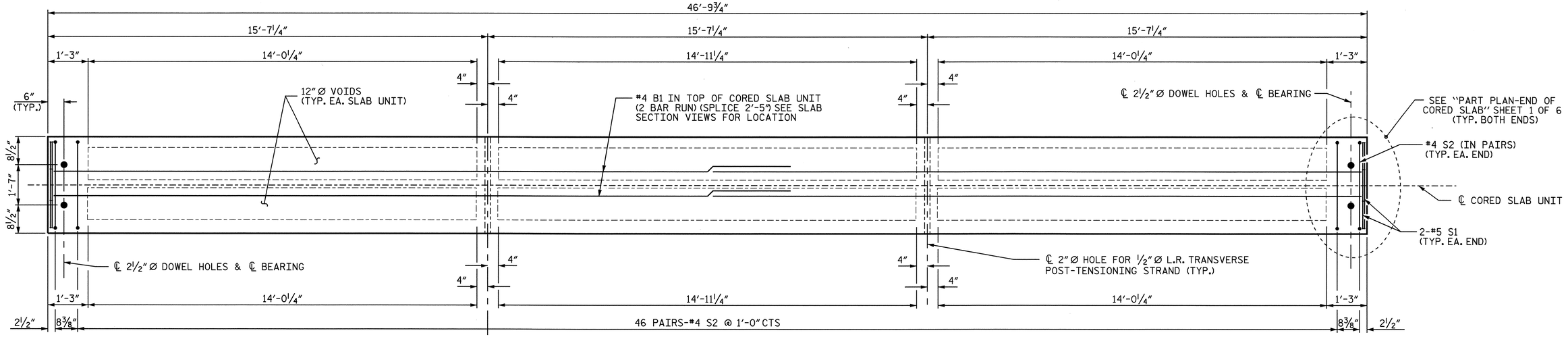
RWWRIGHT



PLAN OF EXTERIOR CORED SLAB UNIT- SPAN A & SPAN B

RIGHT SIDE SHOWN - LEFT SIDE SIMILAR



PLAN OF INTERIOR CORED SLAB UNIT- SPAN A & SPAN B

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF CORED SLAB UNIT DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FEYE
2/11/08

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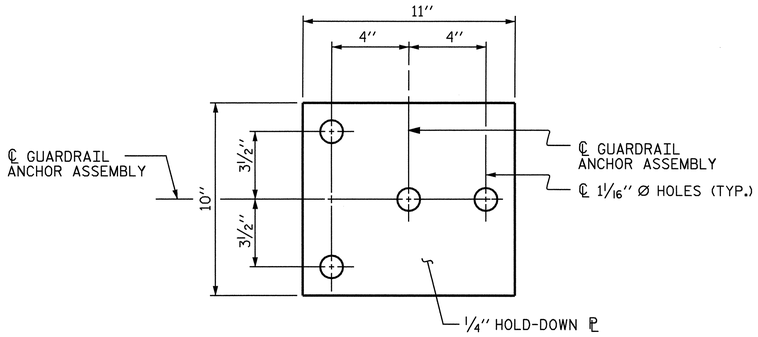

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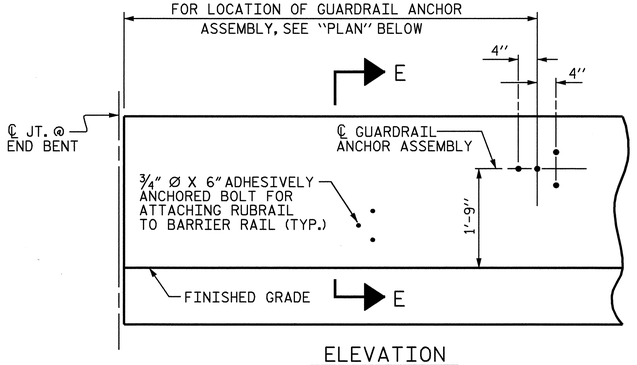
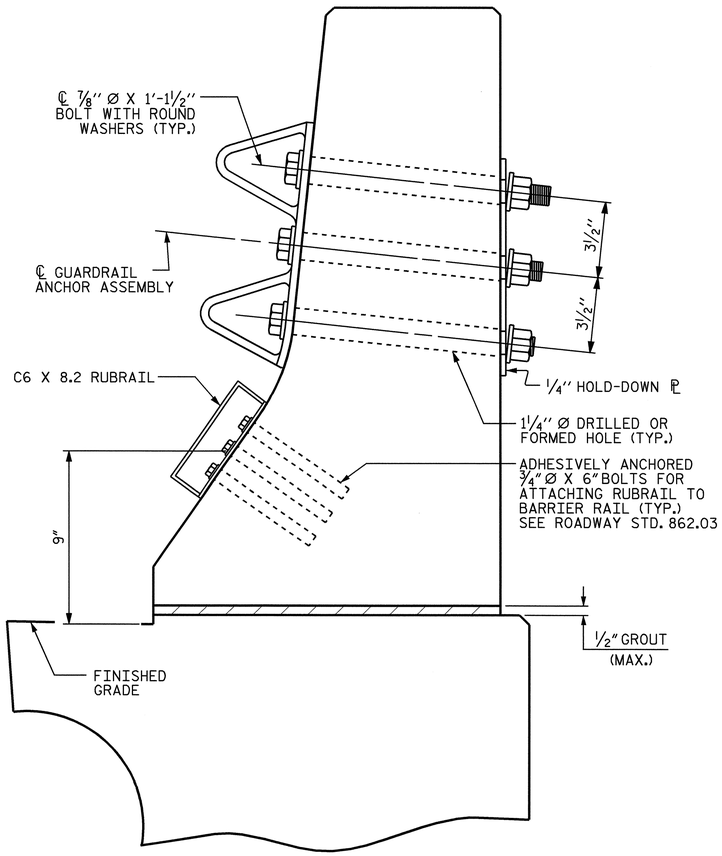


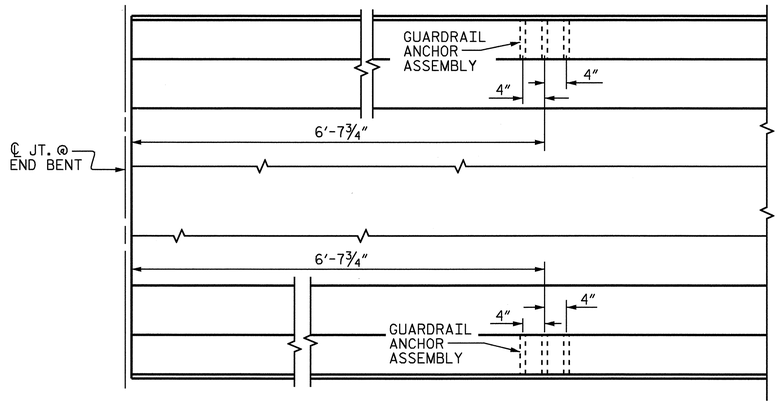
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

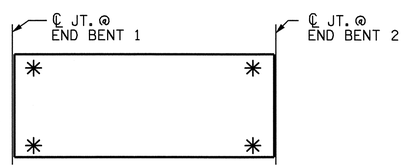


SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4'' HOLD DOWN PLATE AND 4 - 7/8'' Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8'' Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4'' Ø HOLES FOR THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4''Ø X 6'' BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4'' Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. ERVE
2/11/08

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
2/11/08

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00-L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GUARDRAIL ANCHORAGE FOR PRECAST BARRIER RAIL

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			22

DRAWN BY : MA ALLEN DATE : 12-07
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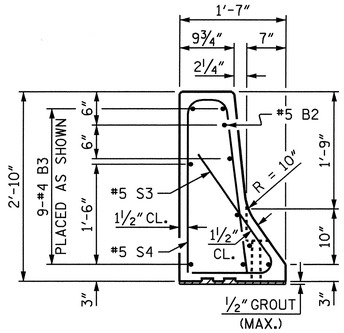
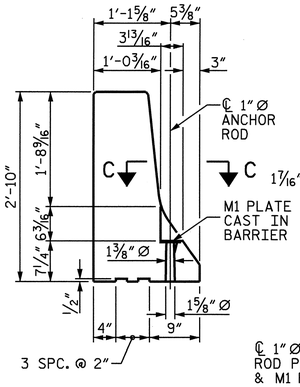
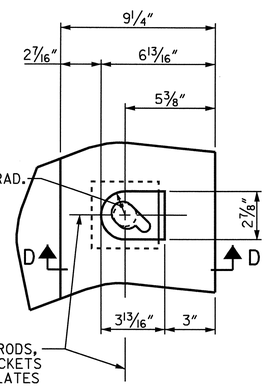


SECTION A-A



SECTION B-B



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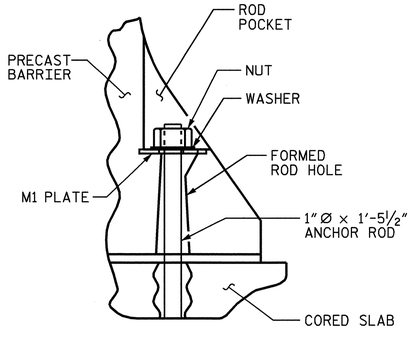

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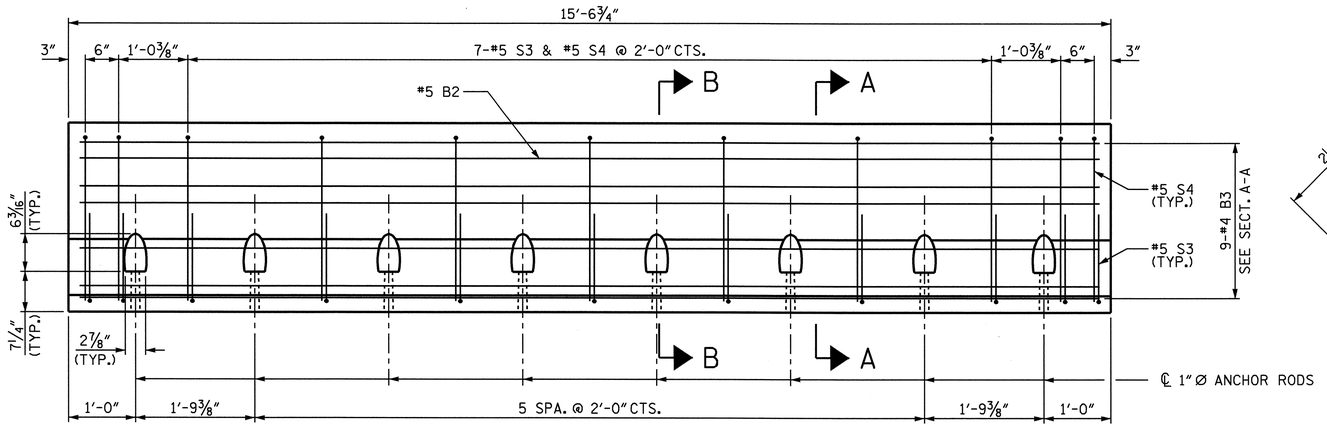
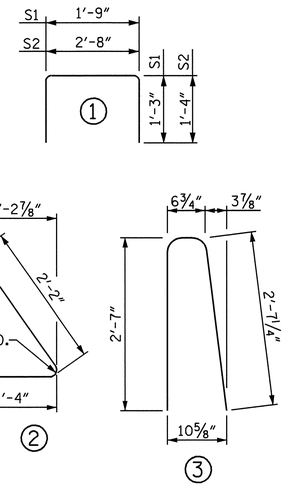


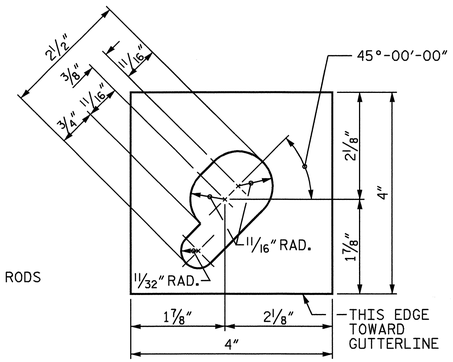
ELEVATION - PRECAST BARRIER RAIL SECTION

(ROADWAY FACE SHOWN)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



M1 PLATE

¼" x 4" x 4" ℙ

(8 REQ'D PER RAIL SECTION)

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½"Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT.

THE 2"Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

PRESTRESSED CONCRETE CORED SLAB UNITS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR.

EACH PRECAST RAIL UNIT SHALL BE CAST WITH CLASS AA CONCRETE.

FILL JOINTS BETWEEN RAIL SECTIONS WITH LOW MODULUS SILICONE.

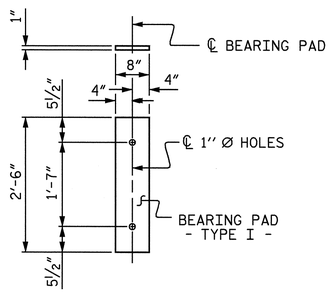
EACH PRECAST RAIL UNIT SHALL BE SUPPLIED WITH LIFTING DEVICE(S). NO CABLES ARE TO BE WRAPPED AROUND THE RAIL UNITS FOR LIFTING.

DRAINS THROUGH RAILS ARE NOT ALLOWED.

CONCRETE CHAMFERS:
UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE ON PLANS.

THE 2⅞" x 3 13/16" ROD POCKETS AND ROD HOLES IN THE PRECAST BARRIER RAIL SHALL BE FILLED WITH GROUT.

MECHANICALLY GALVANIZE M1 PLATES IN ACCORDANCE WITH AASHTO M298 CLASS 50.



FIXED END

(TYPE I - 60 REQ'D)

ELASTOMERIC BEARING DETAILS

BILL OF MATERIAL

FOR ONE PRECAST BARRIER RAIL SECTION

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B2	1	#5	STR	15'-2"	16
* B3	9	#4	STR	15'-2"	91
* S3	11	#5	2	3'-6"	40
* S4	11	#5	3	5'-9"	66
* EPOXY COATED REINF. STEEL					213 LBS.
CLASS AA CONCRETE					1.8 CU. YDS.
TOTAL NO. 12					186.75 LIN. FT

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

SPAN A & SPAN B

			INTERIOR			EXTERIOR		
BAR	SIZE	TYPE	NO	LENGTH	WEIGHT	NO	LENGTH	WEIGHT
B1	4	STR	4	24'-6"	65	4	24'-6"	65
S1	5	1	8	4'-3"	35	8	4'-3"	35
S2	4	1	96	5'-4"	342	96	5'-4"	342
REINFORCING STEEL LB.					442			442
5000 PSI CONCRETE CU. YDS.					7.0			8.3
½"Ø L.R. STRANDS NO.					18			20

BRIDGE DECK GRINDING

APPROACH SLABS	1989 SQ. FT.
BRIDGE DECK	3917 SQ. FT.
TOTAL	5906 SQ. FT.

GRADE 270 STRANDS

	½"Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

CORED SLABS REQUIRED

SPAN A & SPAN B

UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	26	46'-9¾"	1217'-1½"
EXTERIOR	4	46'-9¾"	187'-3"
TOTAL NUMBER	30		1404'-4½"

DEAD LOAD DEFLECTION AND CAMBER

SPAN A & SPAN B	INTERIOR	EXTERIOR
CAMBER (SLAB ALONE IN PLACE)	↑ 1⅜"	↑ 1 3/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	↓ ⅛"	↓ ⅛"
FINAL CAMBER	↑ 1¼"	↑ 1/16"

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/29/08

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

3'-0" X 1'-10" PRESTRESSED CONCRETE CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 9-07
CHECKED BY : J.C. FRYE DATE : 12-07

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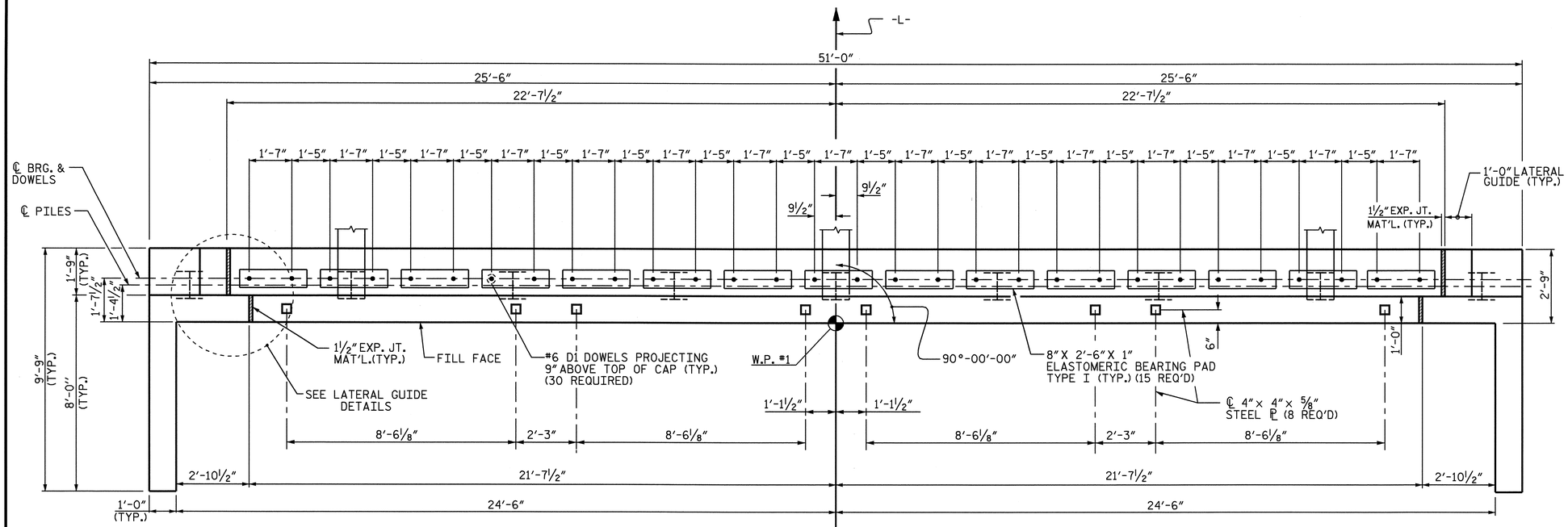
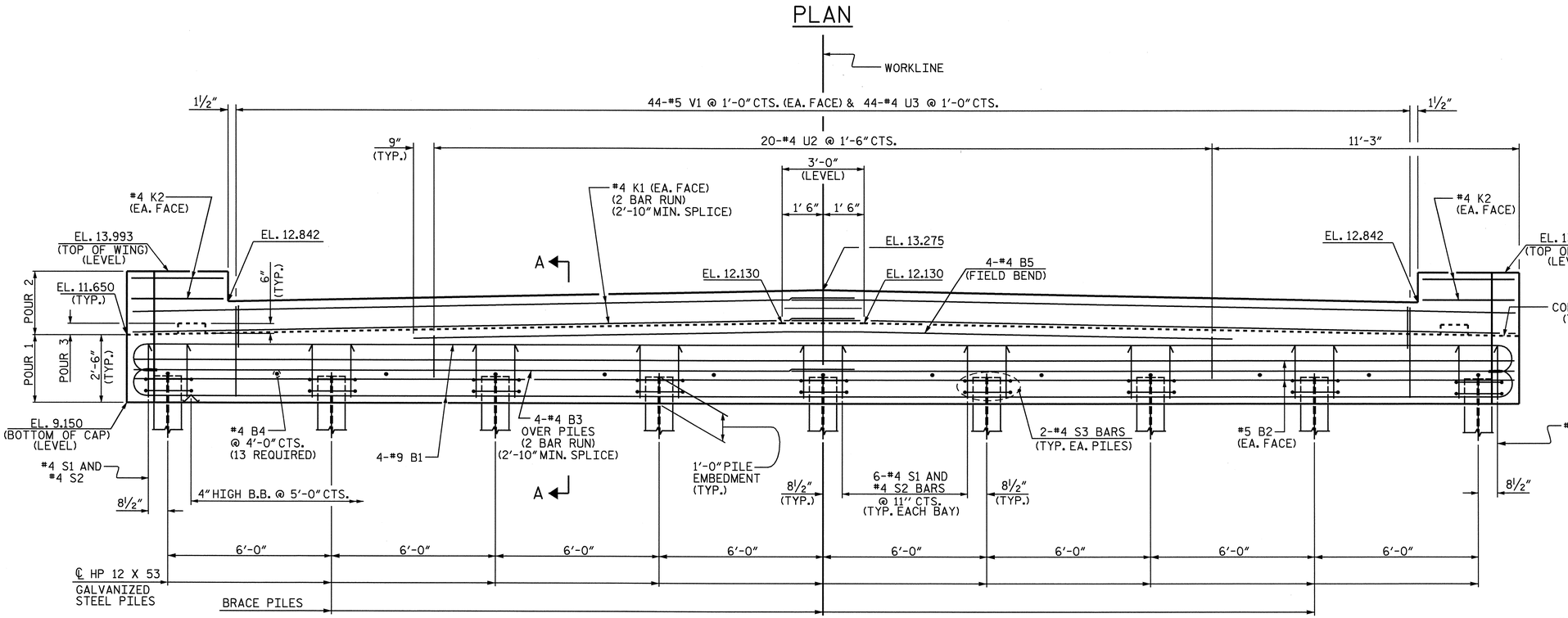


PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

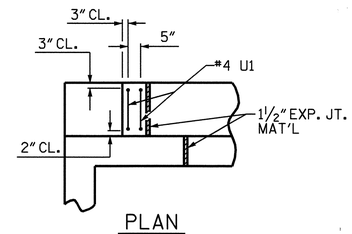
FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.

FOR TEMPORARY DRAINAGE DETAIL, SEE SHEET 2 OF 2

FOR REINFORCING STEEL IN WINGS, SEE SHEET 2 OF 2.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

4"x 4"x 5/8" STEEL PLATES FOR LEVELING PRECAST APPROACH SLAB PANELS SHALL BE PLACED IN GREEN CONCRETE. PLATE SHALL BE SLIGHTLY RECESSED (1/4" ±) IN TOP OF BACKWALL. STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



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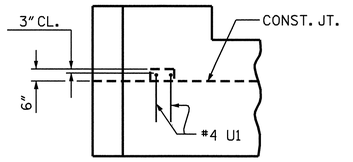

ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			22

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG LIANG

12/11/08

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 8-05/12/07

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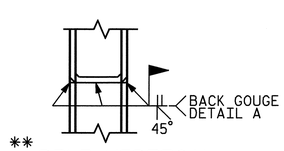
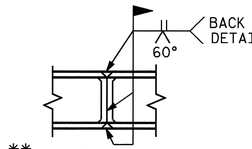
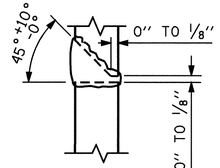


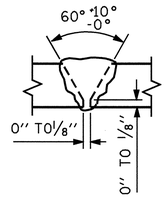
** PILE VERTICAL



** PILE HORIZONTAL OR VERTICAL



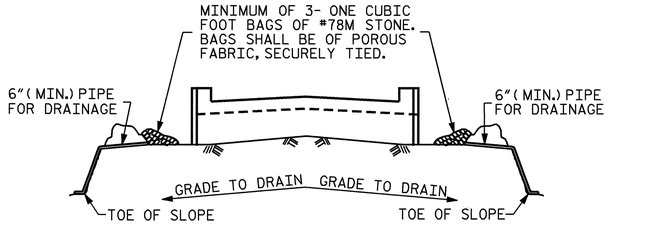
DETAIL A



DETAIL B

** POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



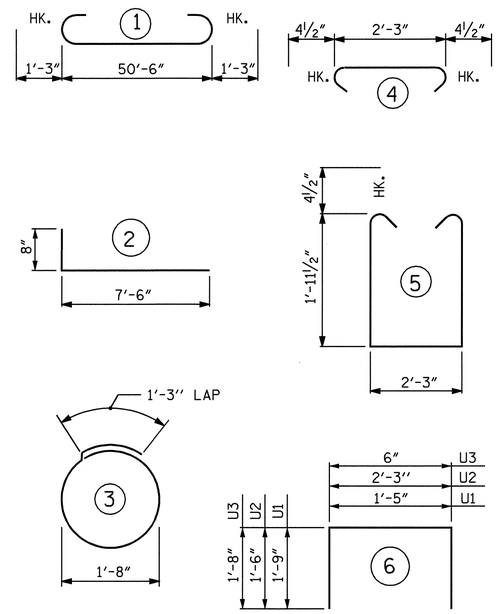
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

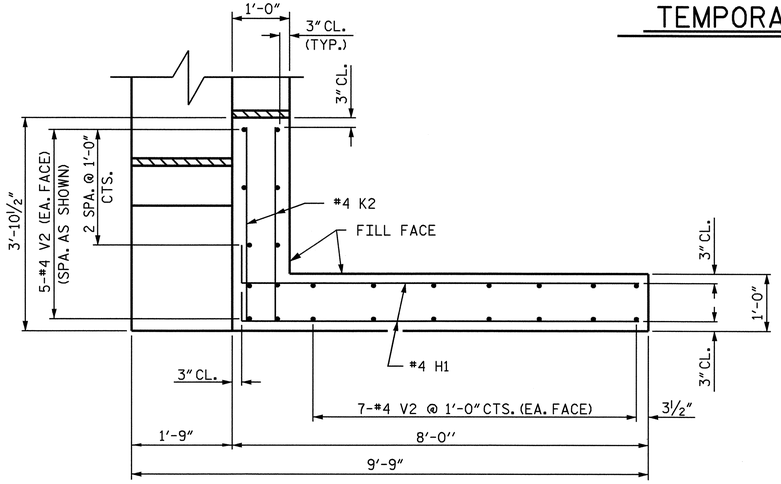
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱B1	8	#9	1	53'-0"	1442
✱B2	4	#5	STR	50'-6"	211
✱B3	8	#4	STR	26'-8"	143
✱B4	13	#4	STR	2'-3"	20
✱B5	4	#4	STR	30'-0"	80
✱D1	30	#6	STR	1'-6"	68
✱H1	28	#4	2	8'-2"	153
✱K1	8	#4	STR	26'-8"	143
✱K2	8	#4	STR	3'-4"	18
✱S1	50	#4	5	6'-11"	231
✱S2	50	#4	4	3'-0"	100
✱S3	18	#4	3	6'-6"	78
✱U1	4	#4	6	4'-11"	13
✱U2	20	#4	6	5'-3"	70
✱U3	44	#4	6	3'-10"	113
✱V1	88	#4	STR	3'-4"	196
✱V2	48	#4	STR	4'-3"	136

✱ EPOXY COATED REINFORCING STEEL LBS. 3215

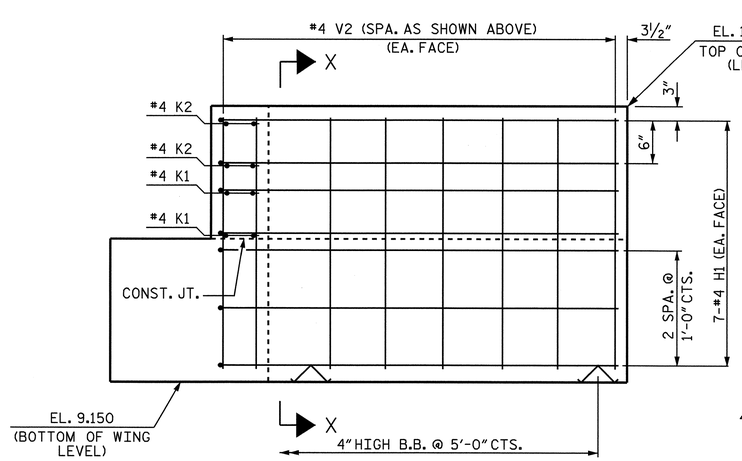
CLASS AA CONC. BREAKDOWN

POUR 1 (CAP & LOWER WINGS)	16.9 CU. YD.
POUR 2 (BACKWALL & UPPER WINGS)	3.7 CU. YD.
POUR 3 (RETAINING BLOCK)	0.1 CU. YD.
TOTAL	20.7 CU. YD.

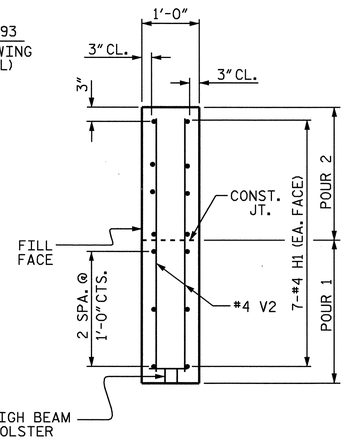
HP 12X53 GALVANIZED STEEL PILES
NUMBER = 9 LIN. FT. = 585



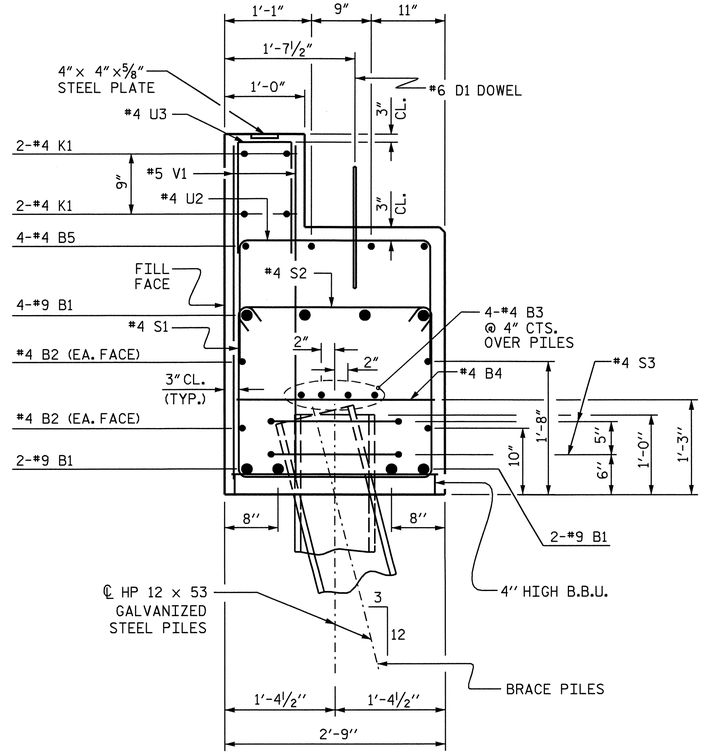
PLAN OF WINGS



ELEVATION OF WINGS



SECTION X-X



SECTION A-A

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 8-05/12/07

11-FEB-2008 09:15
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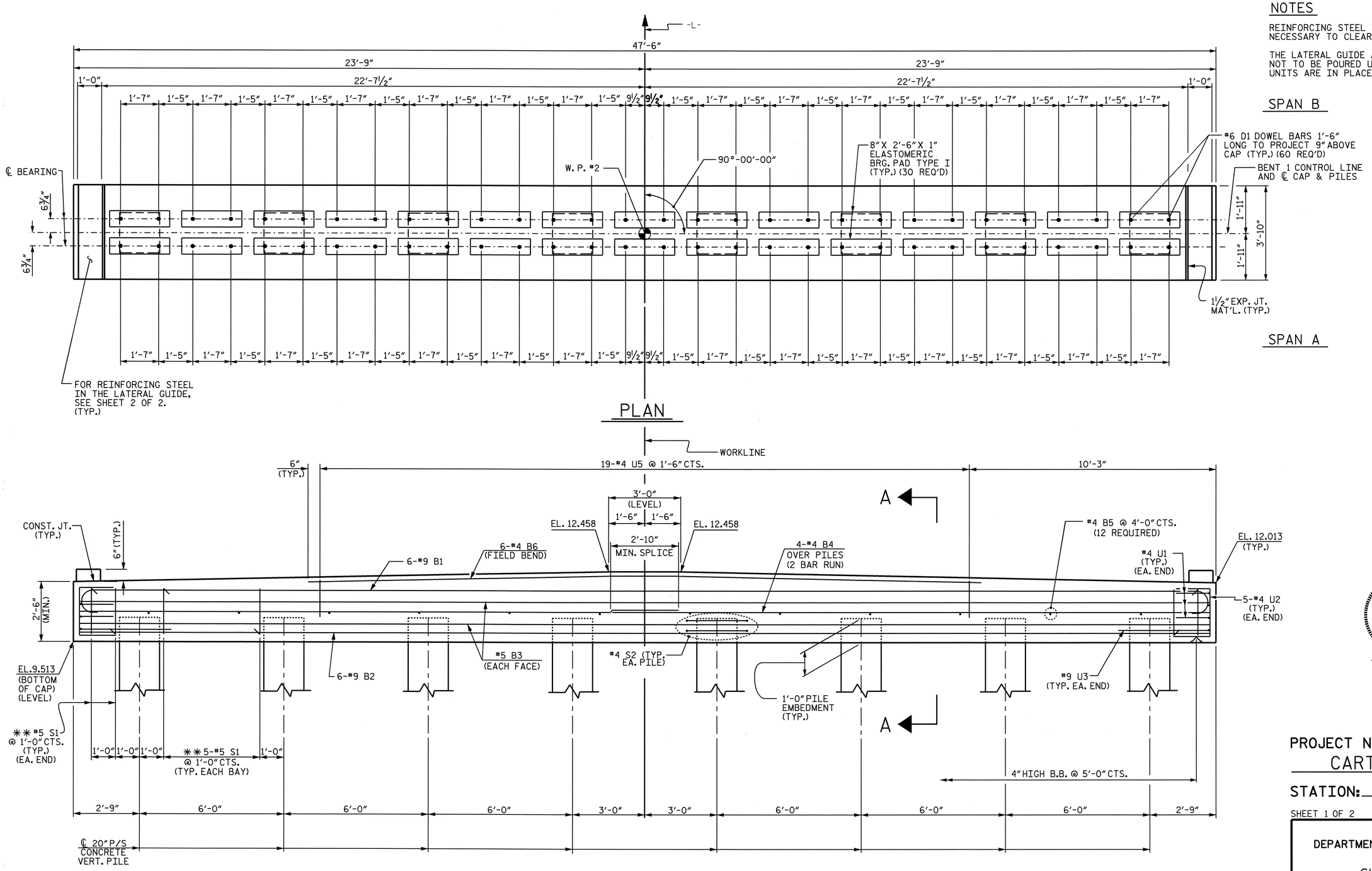
maallen

NOTES

REINFORCING STEL IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.



✱✱ INVERT ALTERNATE STIRRUPS AS SHOWN.

ELEVATION

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
2/11/08

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 7-05/12/07

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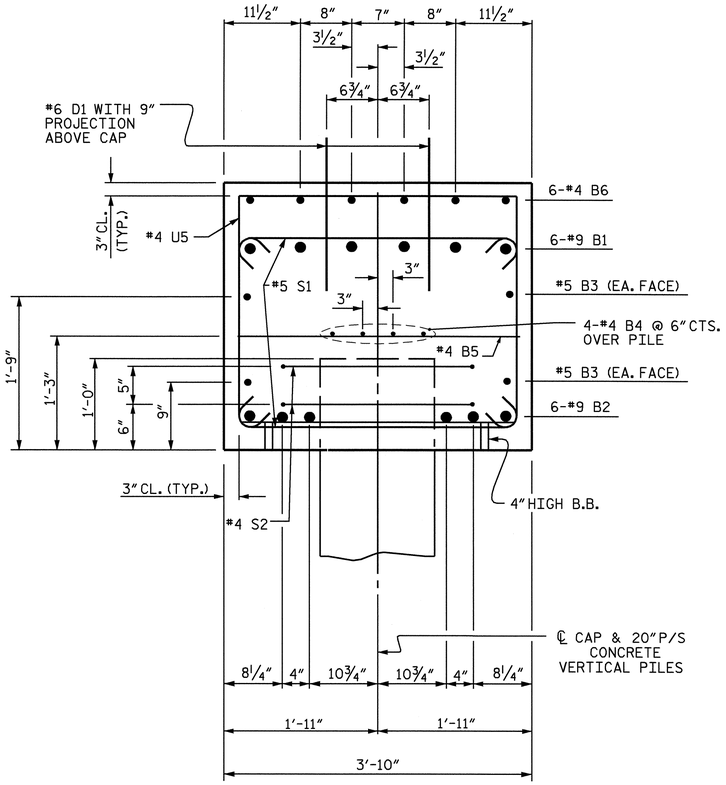
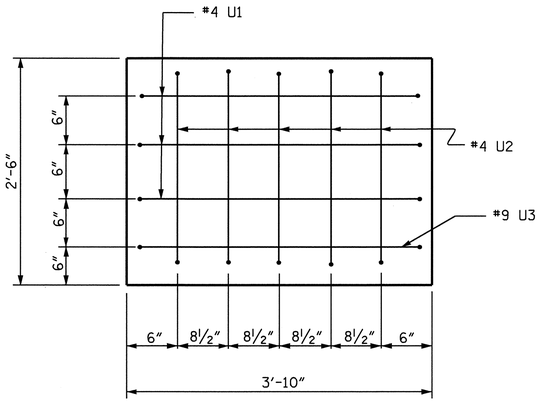
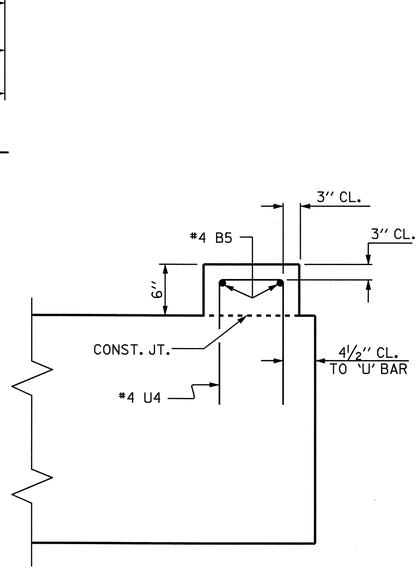


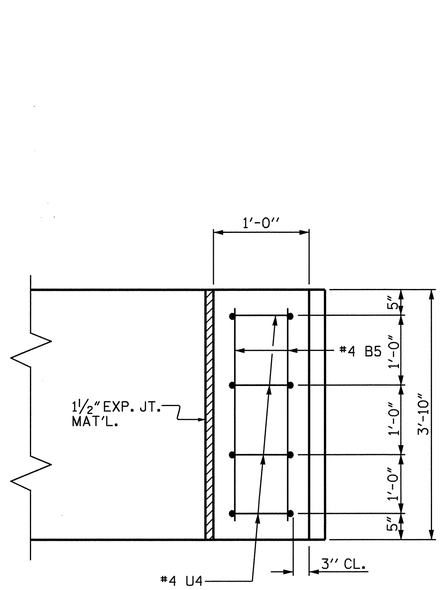
SECTION A-A



END VIEW



ELEVATION

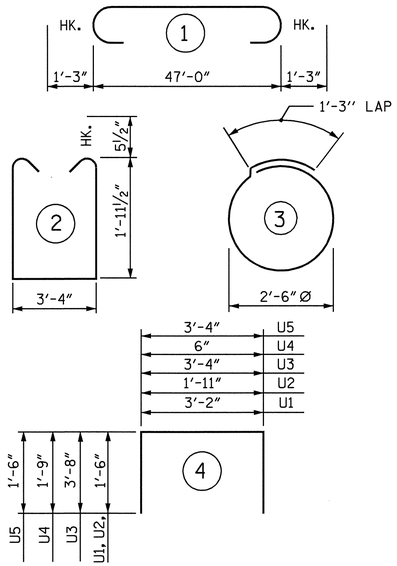


PLAN

LATERAL GUIDE REINFORCING DETAIL

RIGHT END OF THE CAP SHOWN
LEFT END SIMILAR BY ROTATION

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱B1	6	9	1	49'-6"	1010
✱B2	6	9	STR	47'-0"	959
✱B3	4	5	STR	47'-0"	196
✱B4	8	4	STR	24'-11"	133
✱B5	16	4	STR	3'-4"	36
✱B6	6	4	STR	28'-0"	112
✱D1	60	6	STR	1'-6"	135
✱S1	39	5	2	8'-2"	332
✱S2	16	4	3	9'-1"	97
✱U1	6	4	4	6'-2"	25
✱U2	10	4	4	4'-11"	33
✱U3	2	9	4	10'-8"	73
✱U4	8	4	4	4'-0"	21
✱U5	19	4	4	6'-4"	80

✱EPOXY COATED REINFORCING STEEL	LBS.	3242
CLASS AA CONCRETE		
POUR #1	CU.YD.	17.6
POUR #2	CU.YD.	0.1
TOTAL	CU.YD.	17.7

20" P/S CONCRETE PILES
NO. 8 — 360 LIN. FT.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting H. Fang 2/11/08

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 7-05/12/07

11-FEB-2008 09:14
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maallen

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

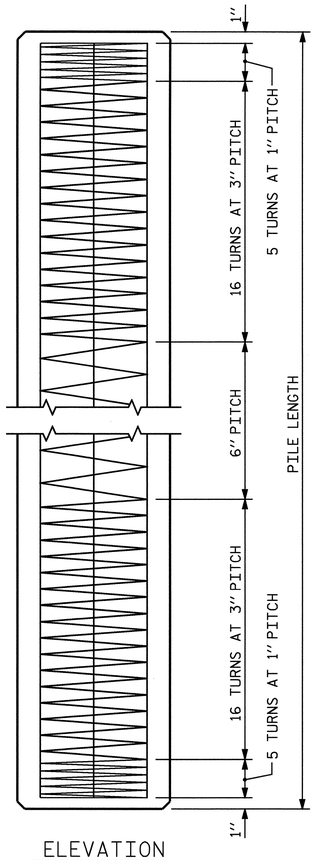
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

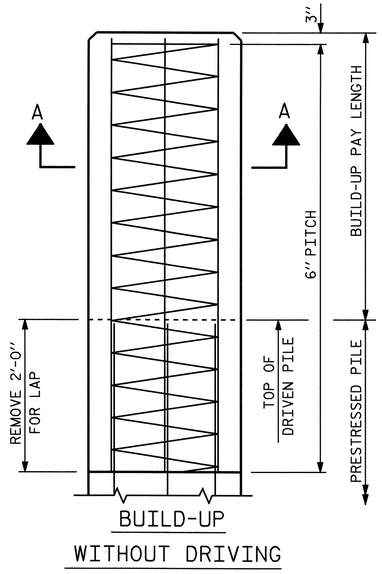
SUBSTRUCTURE

BENT 1

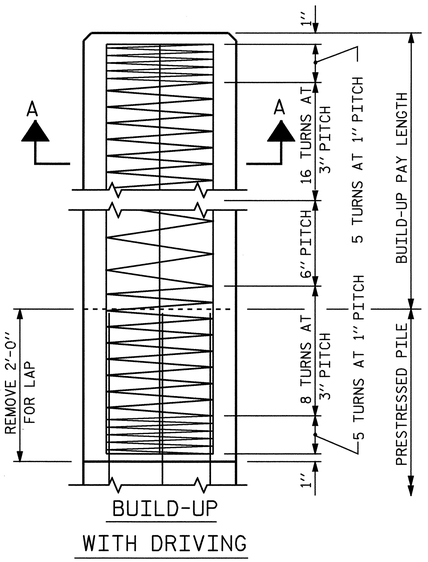
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			22



ELEVATION

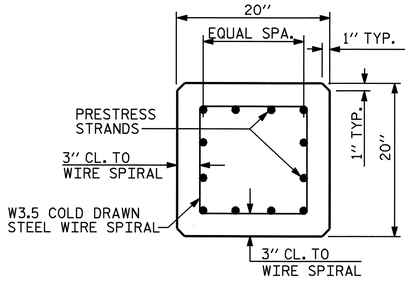


BUILD-UP
WITHOUT DRIVING

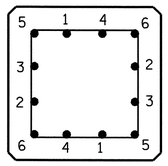


BUILD-UP
WITH DRIVING

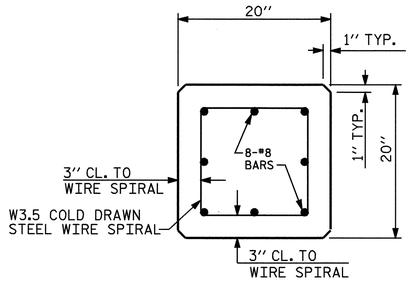
QUANTITIES FOR ONE 20'' SQUARE PILE				
	CONCRETE	PILE WT.	ONE PICK-UP POINTS	
LENGTH	CU. YDS.	TONS	0.3L	0.7L
45'-0''	4.61	9.33	13'-6''	31'-6''



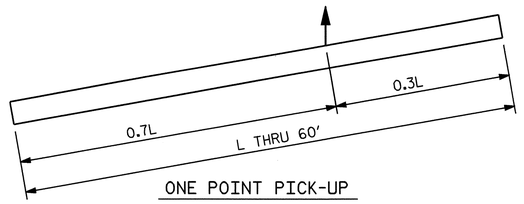
TYPICAL SECTION



TYPICAL PATTERN FOR BURNING STRANDS



SECTION A-A



ONE POINT PICK-UP

PICK-UP POINTS

NOTES

CONCRETE DESIGN DATA : f'c= 5,000 PSI ;fc= 2,000 PSI

IMPACT IN HANDLING = 50%

IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

SIZE	GRADE	NUMBER OF STRANDS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2''	270 L.R.	12	0.153	41,300# PER STRAND	30,980# PER STRAND

STRANDS SHALL BE EQUALLY SPACED AS SHOWN IN THE "TYPICAL SECTION".

A CIRCULAR STRAND PATTERN SHALL NOT BE PERMITTED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXES, STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 5-5 AND 6-6, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

BUILD-UPS SHALL BE OF 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

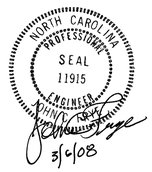
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3500 PSI.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

THE WATER/CEMENT RATIO FOR CONCRETE PILES SHALL NOT EXCEED 0.40.

THE PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRATE CORROSION INHIBITOR.

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

20'' PRESTRESSED CONCRETE PILE

ASSEMBLED BY :	QT NGUYEN	DATE :	8-05
CHECKED BY :	A. NAIK	DATE :	8-05
DRAWN BY :	WJH 1/89	REV. 6/1/94	EEM/GRP
CHECKED BY :	CRK 3/89	REV. 8/16/99R	RAL/LES
		REV. 5/1/06	TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			22

STD. NO. PCP3

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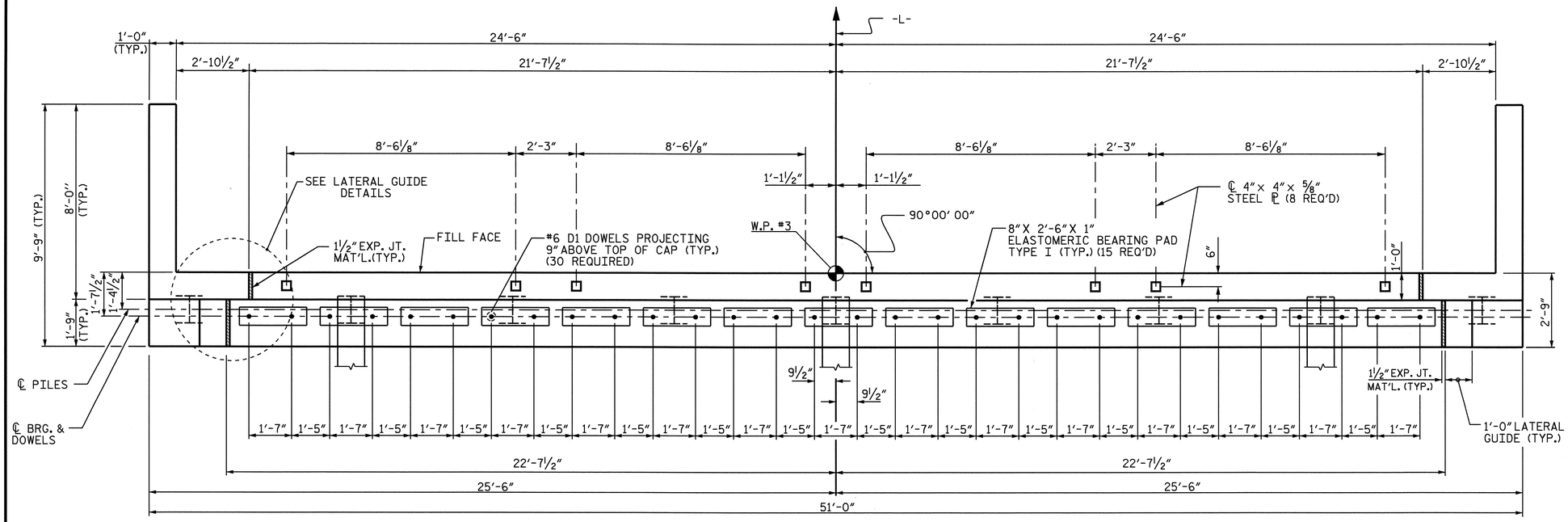
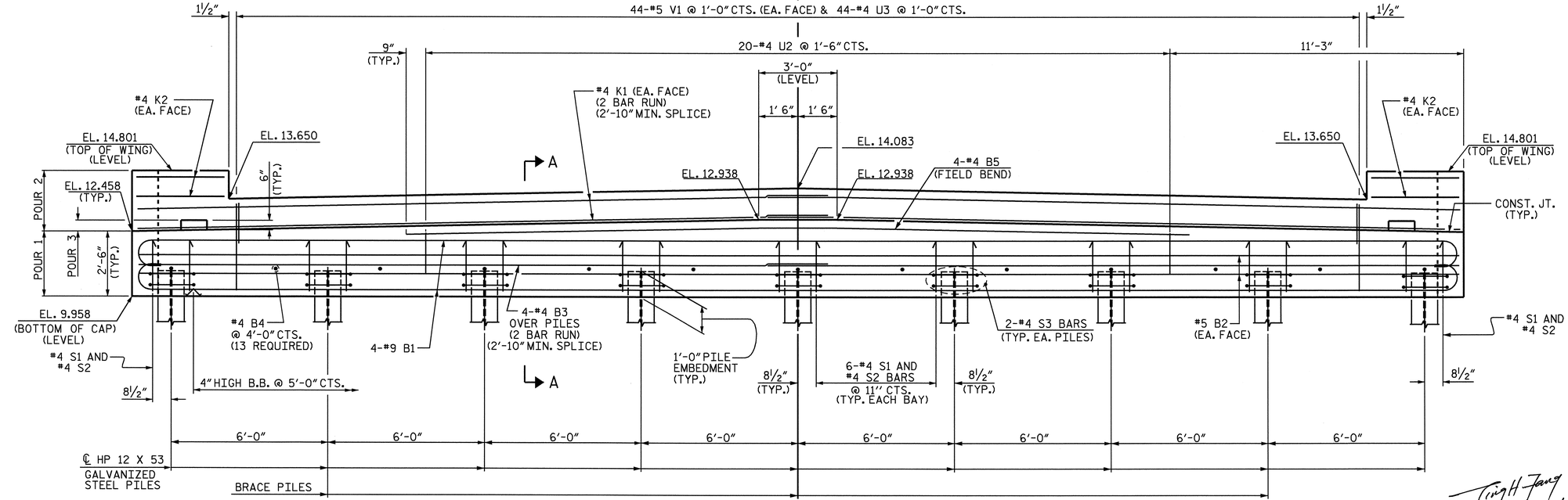
kpnewton



PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

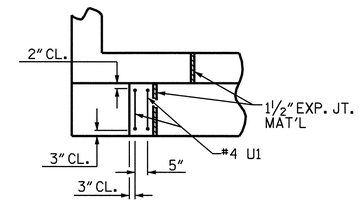
FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.

FOR TEMPORARY DRAINAGE DETAIL, SEE SHEET 2 OF 2

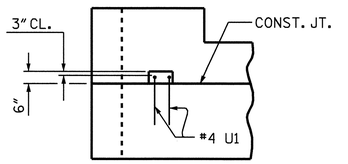
FOR REINFORCING STEEL IN WINGS, SEE SHEET 2 OF 2.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

4"× 4"× ⅝" STEEL PLATES FOR LEVELING PRECAST APPROACH SLAB PANELS SHALL BE PLACED IN GREEN CONCRETE. PLATE SHALL BE SLIGHTLY RECESSED (1/4" ±) IN TOP OF BACKWALL. STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



PLAN



ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			22

Ting H Fang 2/11/08

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG

DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 8-05/12/07

11-FEB-2008 09:13
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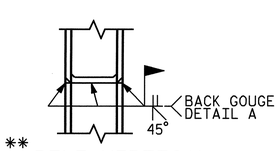
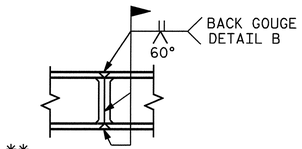
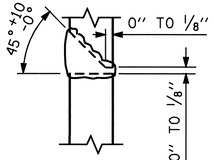
maallen



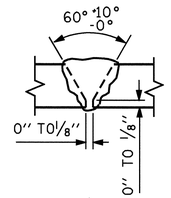
** PILE VERTICAL



** PILE HORIZONTAL OR VERTICAL



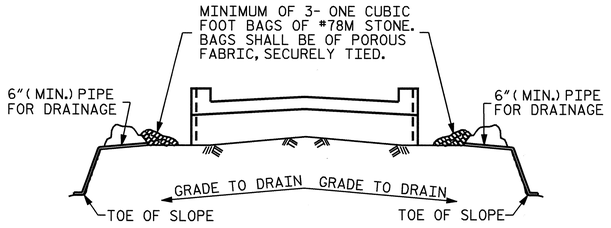
DETAIL A



DETAIL B

** POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



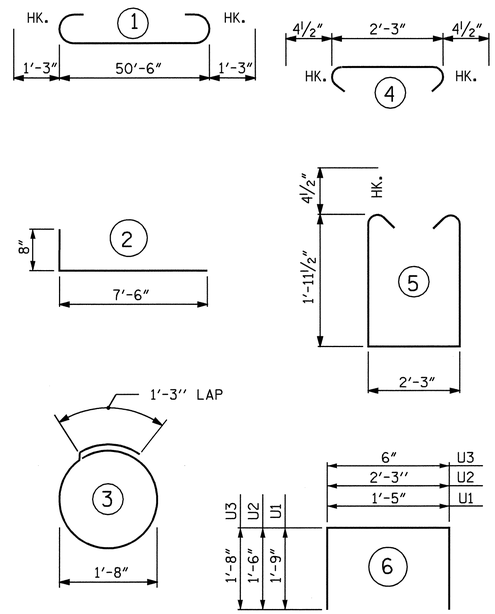
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

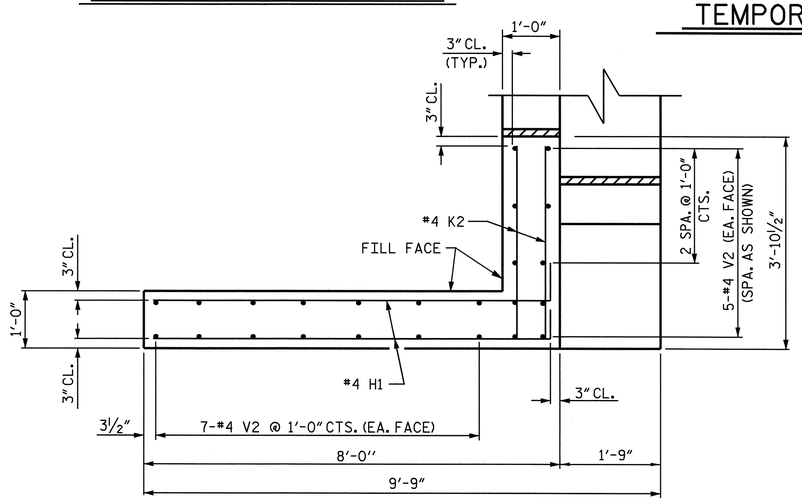
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ B1	8	#9	1	53'-0"	1442
✱ B2	4	#5	STR	50'-6"	211
✱ B3	8	#4	STR	26'-8"	143
✱ B4	13	#4	STR	2'-3"	20
✱ B5	4	#4	STR	30'-0"	80
✱ D1	30	#6	STR	1'-6"	68
✱ H1	28	#4	2	8'-2"	153
✱ K1	8	#4	STR	26'-8"	143
✱ K2	8	#4	STR	3'-4"	18
✱ S1	50	#4	5	6'-11"	231
✱ S2	50	#4	4	3'-0"	100
✱ S3	18	#4	3	6'-6"	78
✱ U1	4	#4	6	4'-11"	13
✱ U2	20	#4	6	5'-3"	70
✱ U3	44	#4	6	3'-10"	113
✱ V1	88	#4	STR	3'-4"	196
✱ V2	48	#4	STR	4'-3"	136

✱ EPOXY COATED REINFORCING STEEL LBS. 3215

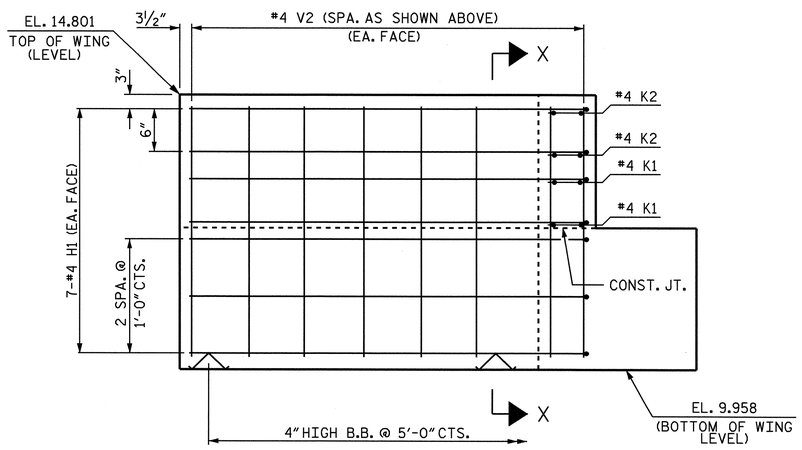
CLASS AA CONC. BREAKDOWN

POUR 1 (CAP & LOWER WINGS)	16.9 CU. YD.
POUR 2 (BACKWALL & UPPER WINGS)	3.7 CU. YD.
POUR 3 (RETAINING BLOCK)	0.1 CU. YD.
TOTAL	20.7 CU. YD.

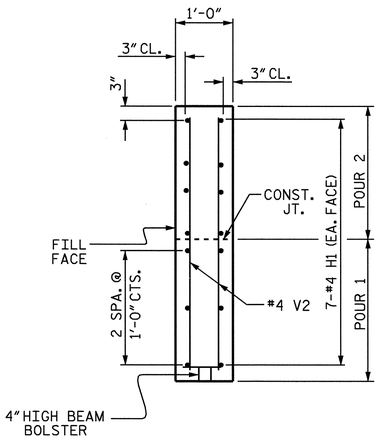
HP 12X53 GALVANIZED STEEL PILES
NUMBER = 9 LIN. FT. = 855



PLAN OF WINGS



ELEVATION OF WINGS



SECTION X-X

SECTION A-A

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
2/11/08

PROJECT NO. B-3625
CARTERET COUNTY
STATION: 17+44.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

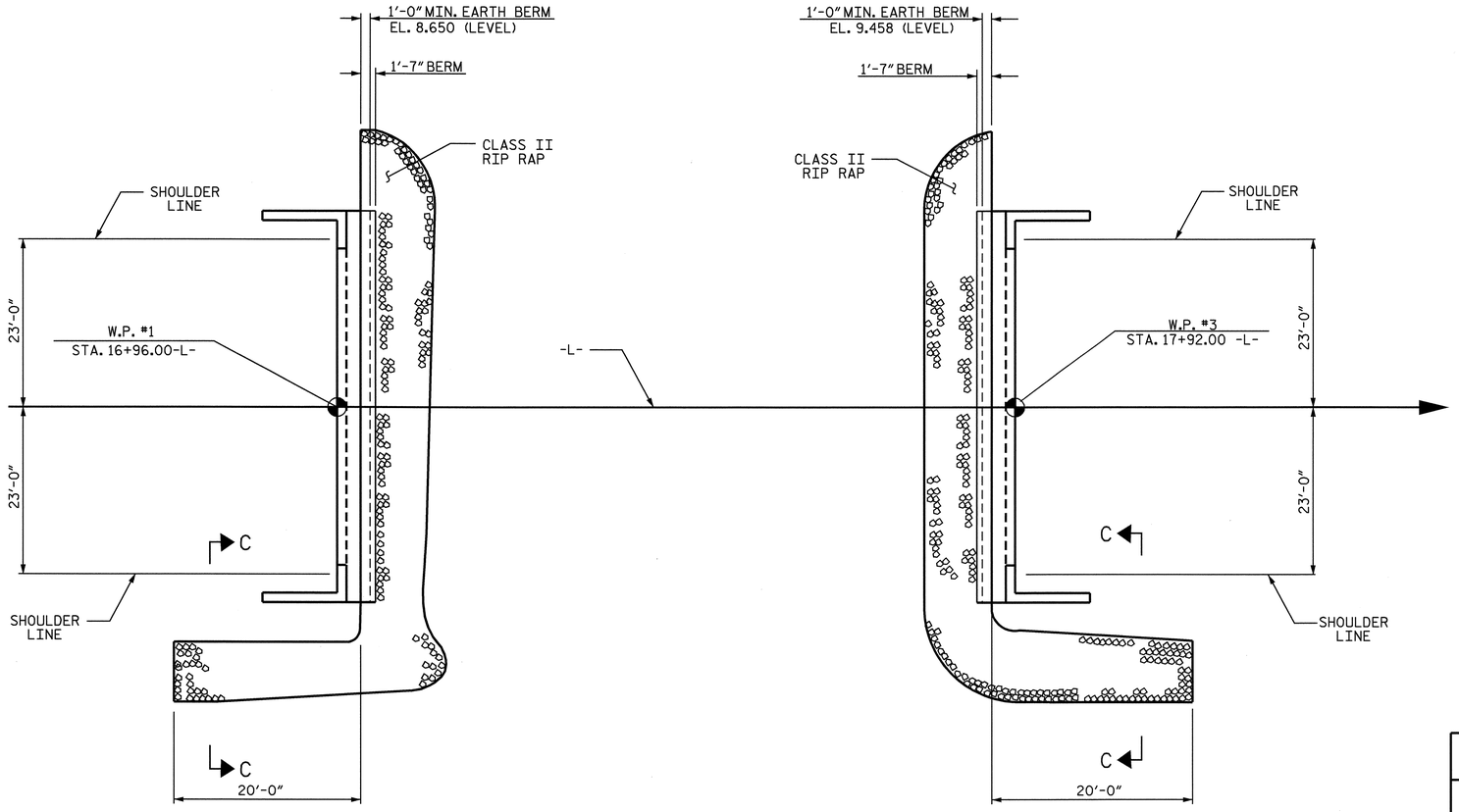
SUBSTRUCTURE

END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			22

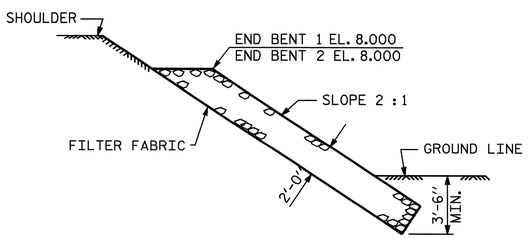
DRAWN BY : QT NGUYEN/MAA DATE : 7-05/8-07
CHECKED BY : A. NAIK DATE : 8-05/12/07

11-FEB-2008 09:13
i:\structures\b3625\final_plans\b-3625_sd_ebs_01.dgn
maallen

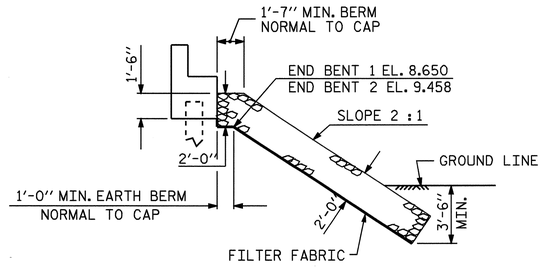


PLAN

ESTIMATED QUANTITIES		
BRIDGE AT STA. 17+44.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	110	120
END BENT 2	120	130



SECTION C-C



℄ SECTION

BERM RIP RAPPED

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

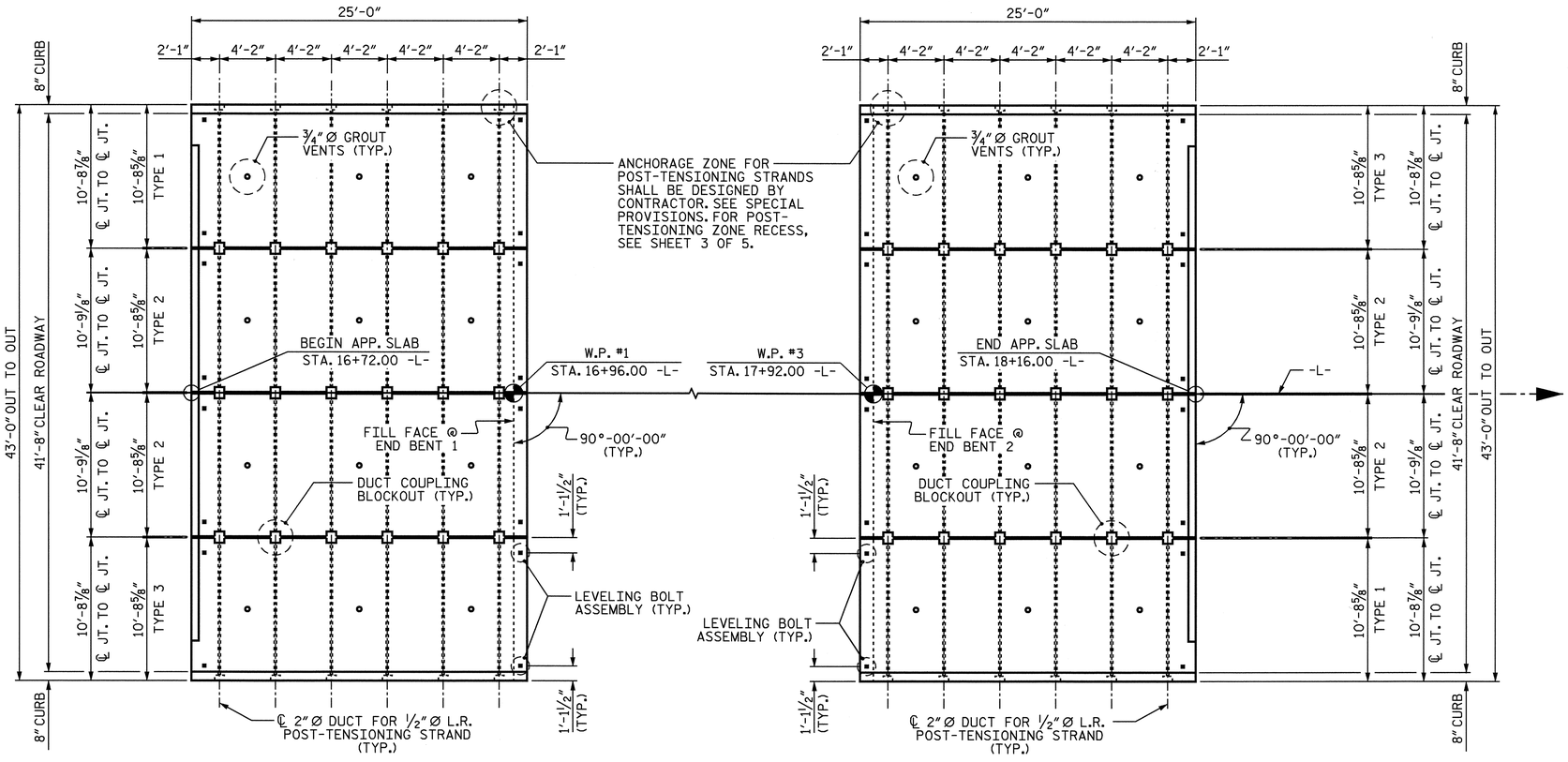
RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			22

ASSEMBLED BY : G.O. COOPER/OT NGUYEN	DATE : 4-03/7-05	
CHECKED BY : J.G. KHARVA/A. NAIK	DATE : 10-03/8-05	
DRAWN BY : FCJ 2/88	REV. 7/17/98	REK/RWW
CHECKED BY : ARB 8/88	REV. 8/16/99	RWW/LES
	REV. 10/17/00	RWW/LES

SKEW 90°

STD. NO. RR2



NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 5" CLASS A CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR JOINT DETAILS BETWEEN APPROACH SLAB AND CORED SLABS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

THE MINIMUM NUMBER OF GROUT VENTS TO BE USED FOR GROUTING VOID BENEATH APPROACH SLABS IS SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF THE NUMBER AND SPACING OF GROUT VENTS IS ADEQUATE FOR ASSURANCE OF GROUT COMPLETELY FILLING VOID BENEATH APPROACH SLABS. FOR GROUTING FOR APPROACH SLAB, SEE SPECIAL PROVISIONS.

EACH ½" Ø LOW-RELAXATION POST-TENSIONING STRAND SHALL BE TENSIONED TO 30,000 POUNDS.

SUGGESTED CONSTRUCTION SEQUENCE

FABRICATE PRECAST CONCRETE APPROACH SLAB PANELS AS SHOWN ON PRECAST APPROACH SLAB SHEETS AND AS REQUIRED BY THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

PLACE, GRADE, AND COMPACT ABC, ASPHALT BASE OR CONCRETE BASE AS SHOWN IN THE PLANS. CONSTRUCT BASE ⅝" BELOW ACTUAL GRADE.

PLACE ⅝" × 6" × 6" STEEL PLATE ON TOP OF 6" COMP. ABC BENEATH EACH LEVELING BOLT AT BEGIN APPROACH SLAB AND END APPROACH SLAB.

PLACE ALL PRECAST APPROACH SLAB PANELS PER APPROACH SLAB.

ADJUST LEVELING BOLTS ON APPROACH SLAB PANELS TO BRING PANELS TO GRADE. ALL LEVELING BOLTS SHALL BE TORQUED TO APPROXIMATELY THE SAME VALUE (20% MAXIMUM DEVIATION).

INSTALL CONNECTORS AND SEAL JOINTS ON POST-TENSIONING DUCTS. INSTALL BACKER RODS BETWEEN CORED SLABS AND BACKWALL.

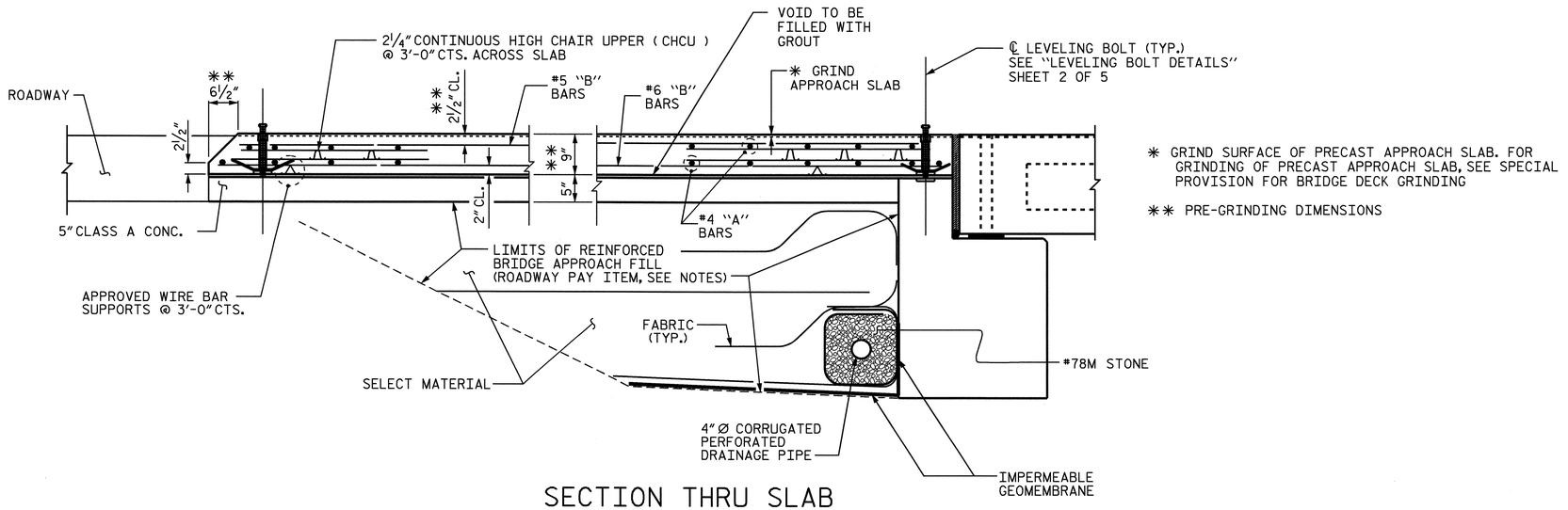
INJECT GROUT TO FILL ALL VOIDS BENEATH APPROACH SLAB PANELS. GROUT LONGITUDINAL JOINTS BETWEEN PANELS, AND GROUT JOINT BETWEEN CORED SLABS AND PANELS. AFTER GROUT HAS REACHED INITIAL SET (1000 PSI), REMOVE LEVELING NUTS AND GROUT LEVELING BOLT SOCKETS, SLEEVES AND BLOCK OUTS.

INSTALL POST-TENSIONING STRANDS. AFTER GROUT IN LONGITUDINAL JOINTS HAS REACHED SPECIFIED STRENGTH, STRESS POST-TENSIONING STRANDS, SET STRANDS AND GROUT DUCTS AND BLOCK OUTS.

GRIND RIDING SURFACE OF APPROACH SLAB PER THE PLANS OR AS DIRECTED BY THE ENGINEER.

PLAN @ END BENT 1

PLAN @ END BENT 2



SECTION THRU SLAB

* GRIND SURFACE OF PRECAST APPROACH SLAB. FOR GRINDING OF PRECAST APPROACH SLAB, SEE SPECIAL PROVISION FOR BRIDGE DECK GRINDING

** PRE-GRINDING DIMENSIONS

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 1 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE

2/11/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRECAST CONCRETE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 9-07
CHECKED BY : J.C. FRYE DATE : 12-07

11-FEB-2008 09:11
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maallen

BILL OF MATERIAL FOR TYPE 1 DECK PANEL

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	48	#4	STR	10′-4″	331
✳ A2	24	#4	STR	10′-1″	162
✳ B1	21	#5	STR	24′-3″	531
✳ B2	2	#5	STR	1′-0″	2
✳ B3	5	#5	STR	3′-1″	16
✳ B4	21	#6	STR	24′-7″	775
✳ B5	2	#6	STR	1′-3″	4
✳ B6	5	#6	STR	3′-1″	23
✳ EPOXY COATED REINFORCING STEEL				LBS.	1844
5,000 PSI CONCRETE				CU. YDS.	7.4

BILL OF MATERIAL FOR TYPE 2 DECK PANEL

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✳ A3	48	#4	STR	10′-3″	329
✳ A4	24	#4	STR	9′-8″	155
✳ B1	20	#5	STR	24′-3″	506
✳ B2	4	#5	STR	1′-0″	4
✳ B3	10	#5	STR	3′-1″	23
✳ B4	20	#6	STR	24′-7″	738
✳ B5	4	#6	STR	1′-3″	4
✳ B6	10	#6	STR	3′-1″	23
✳ EPOXY COATED REINFORCING STEEL				LBS.	1818
5,000 PSI CONCRETE				CU. YDS.	7.3

BILL OF MATERIAL FOR TYPE 3 DECK PANEL

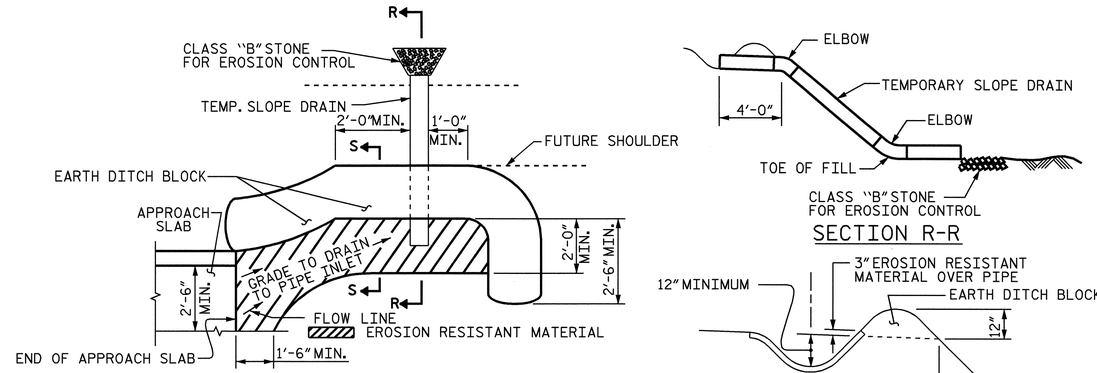
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	48	#4	STR	10′-4″	331
✳ A2	24	#4	STR	10′-1″	162
✳ B1	21	#5	STR	24′-3″	531
✳ B2	2	#5	STR	1′-0″	2
✳ B3	5	#5	STR	3′-1″	16
✳ B4	21	#6	STR	24′-7″	775
✳ B5	2	#6	STR	1′-3″	4
✳ B6	5	#6	STR	3′-1″	23
✳ EPOXY COATED REINFORCING STEEL				LBS.	1844
5,000 PSI CONCRETE				CU. YDS.	7.4

APPROACH SLAB PANELS REQUIRED

PANEL	NUMBER		
	END BENT 1	END BENT 2	TOTAL
TYPE 1	1	1	2
TYPE 2	2	2	4
TYPE 3	1	1	2
TOTAL			8

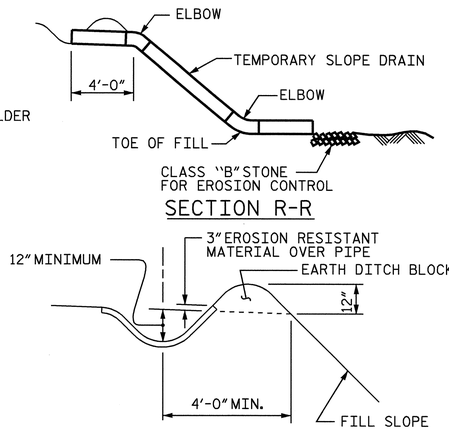
1/2″ Ø POST-TENSIONING STRANDS

LOCATION	NUMBER	LENGTH	TOTAL
END BENT 1	6	43′-4″	260 FT. ±
END BENT 2	6	43′-4″	260 FT. ±
TOTAL	12		520 FT. ±



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2″ DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

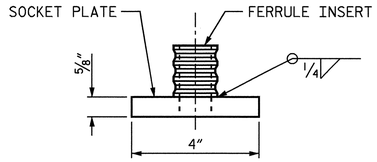
PLAN VIEW



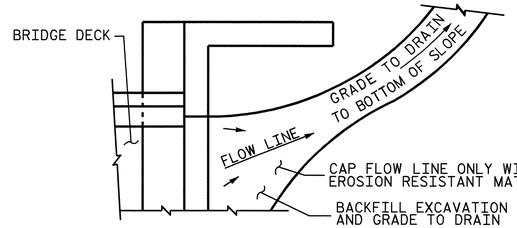
SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

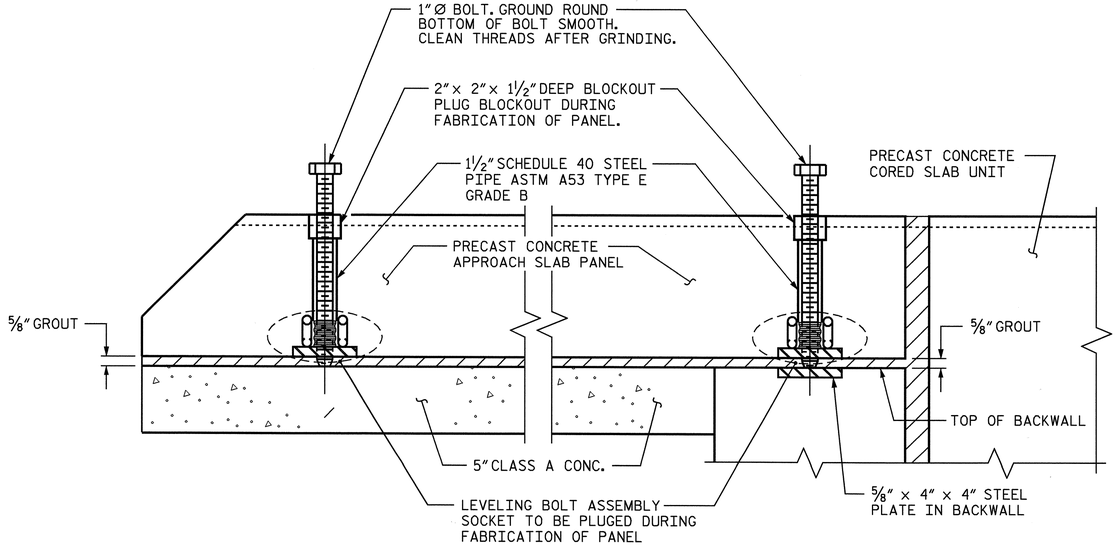


FERRULE INSERT W/SOCKET PLATE

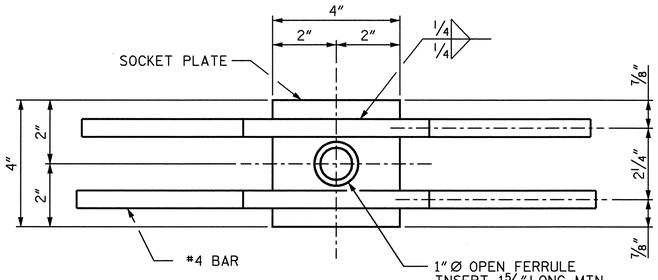


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

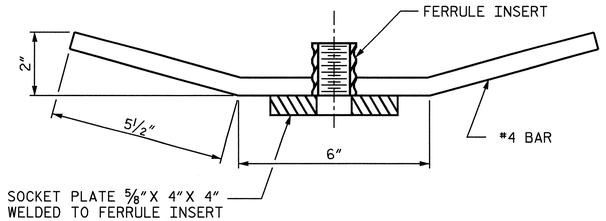
TEMPORARY DRAINAGE DETAIL



LEVELING BOLT DETAILS



PLAN



SECTION

LEVELING BOLT ASSEMBLY

1. HOT DIP GALVANIZED AFTER FABRICATION
2. RETAP 1″ UNC THREAD

(4 REQUIRED PER PANEL)

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRECAST CONCRETE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 8-07
CHECKED BY : J.C. FRYE DATE : 12-07

05-MAR-2008 15:17
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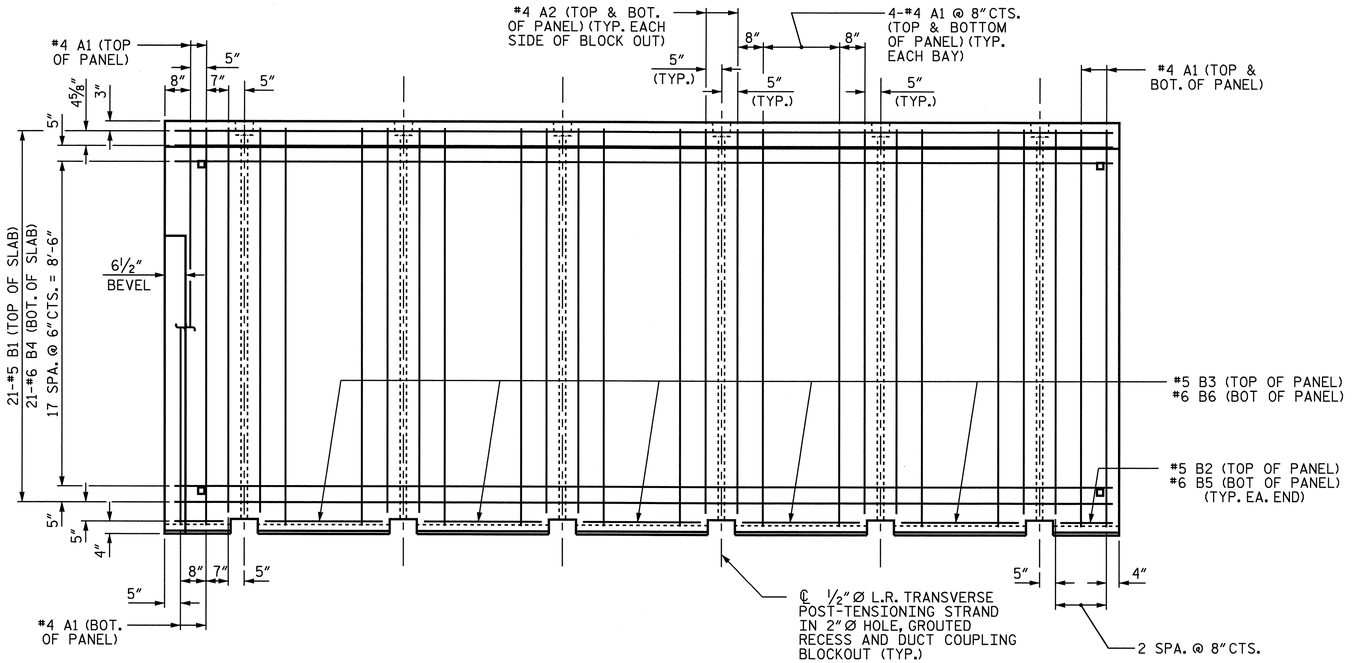
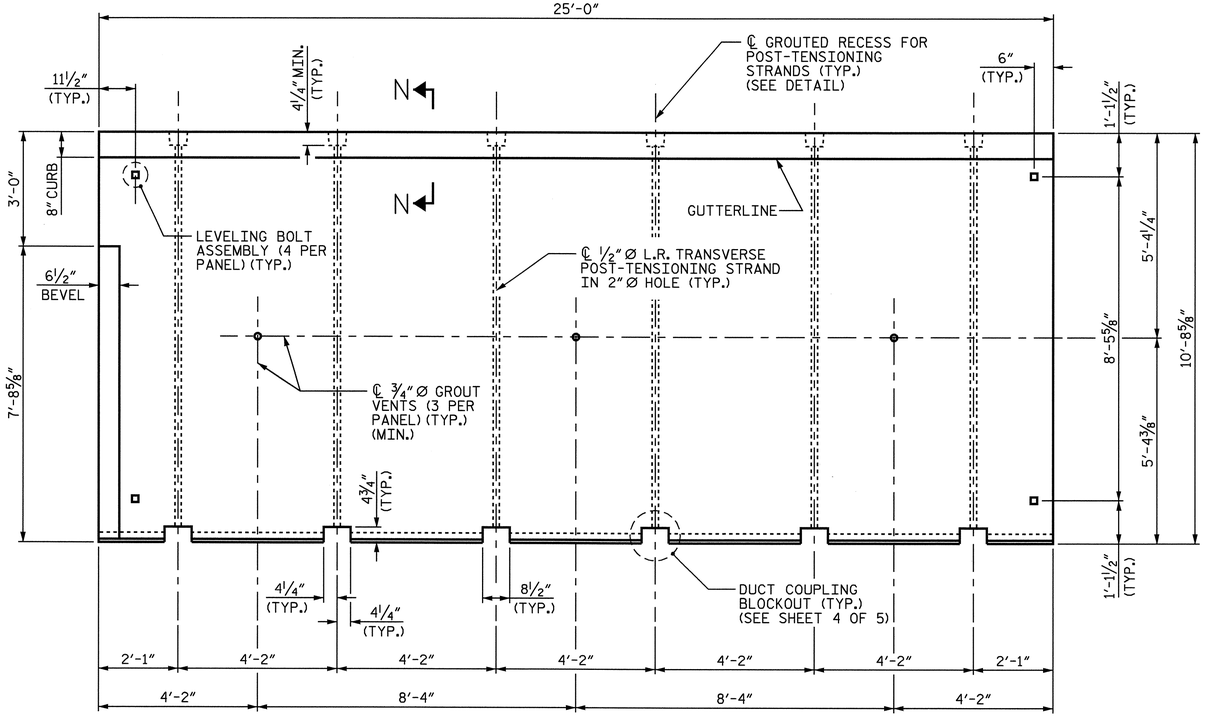
kpnewton



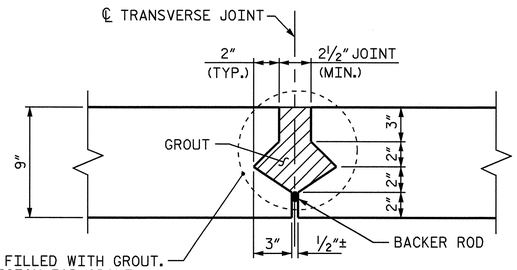
PLAN OF REINFORCING STEEL



PLAN OF DECK BLOCKOUTS

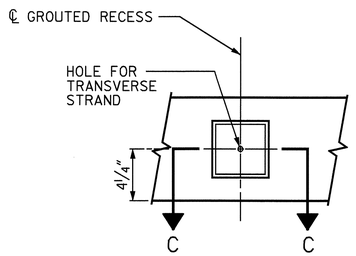
PLAN OF PRECAST APPROACH SLAB PANEL TYPE 1

FOR SECTION N-N, SEE SHEET 5 OF 5.

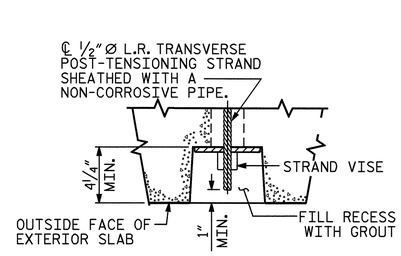


SHEAR KEY DETAIL

NOTE:
1. BACKER ROD TO SEAL TRANSVERSE JOINT SHALL BE CLOSED CELL POLYETHELENE FOAM AND SHALL BE PLACED PRIOR TO PLACING GROUT.
2. THE PANEL SHALL BE PLACED AT THE NOMINAL SPACING SHOWN ON THE PLANS WITH A ½" WIDE GAP BETWEEN THE PANELS. THE WIDTH OF THIS GAP CAN VARY DUE TO PANEL TOLERANCES.
3. GROUT FOR SHEAR KEYS SHALL BE RODDED OR VIBRATED TO ENSURE THAT ALL VOIDS IN THE SHEAR KEY ARE FILLED.



ELEVATION VIEW



SECTION C-C

GROUTED RECESS AT END OF POST-TENSIONED STRAND APPROACH SLABS

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C FRYE
2/11/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRECAST CONCRETE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 8-07
CHECKED BY : J.C. FRYE DATE : 12-07

11-FEB-2008 09:11
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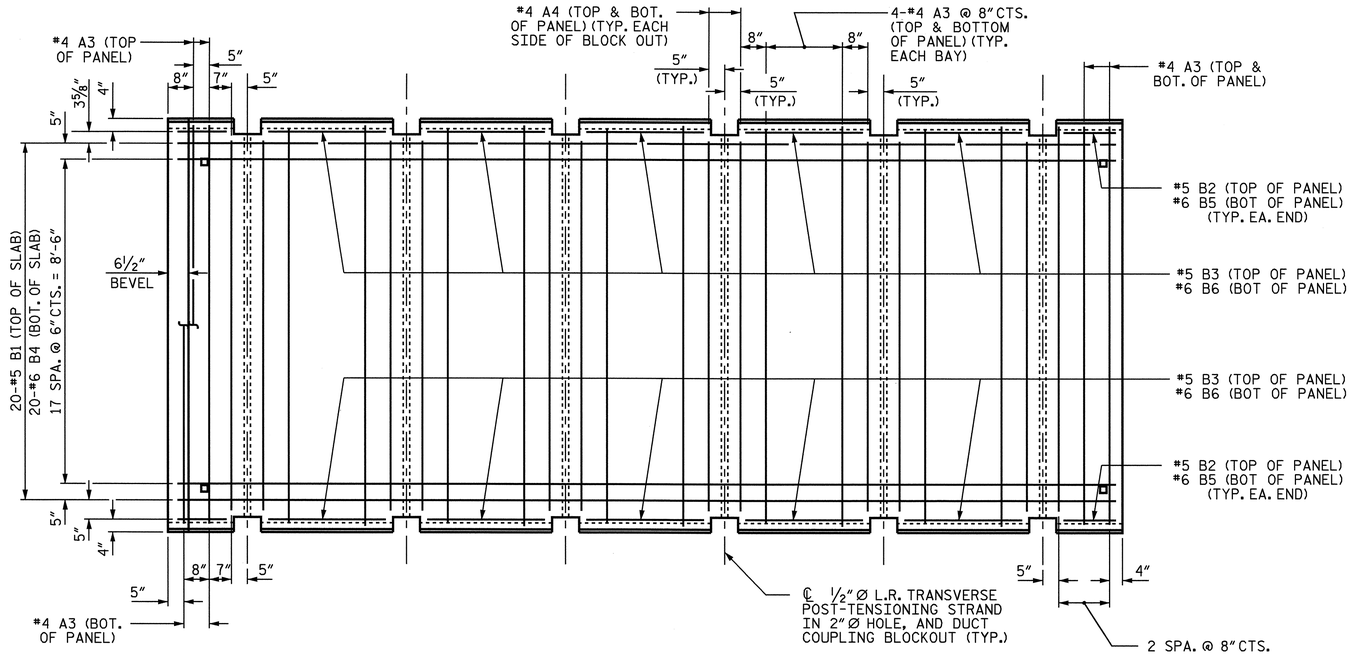
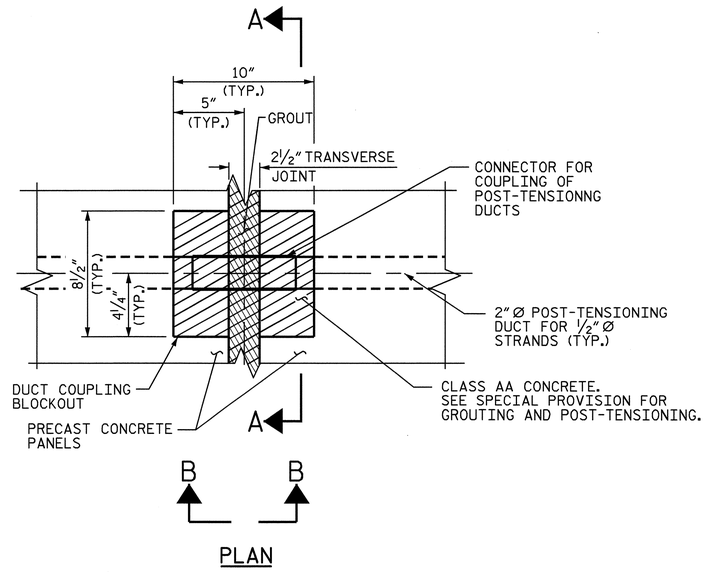
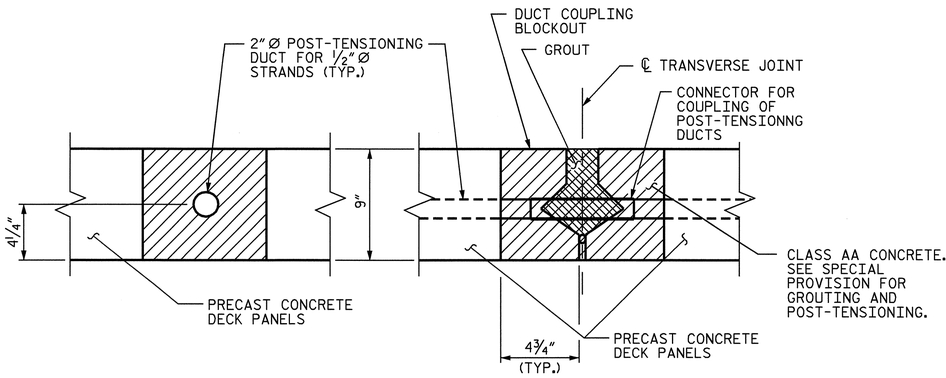
maallen



PLAN OF REINFORCING STEEL

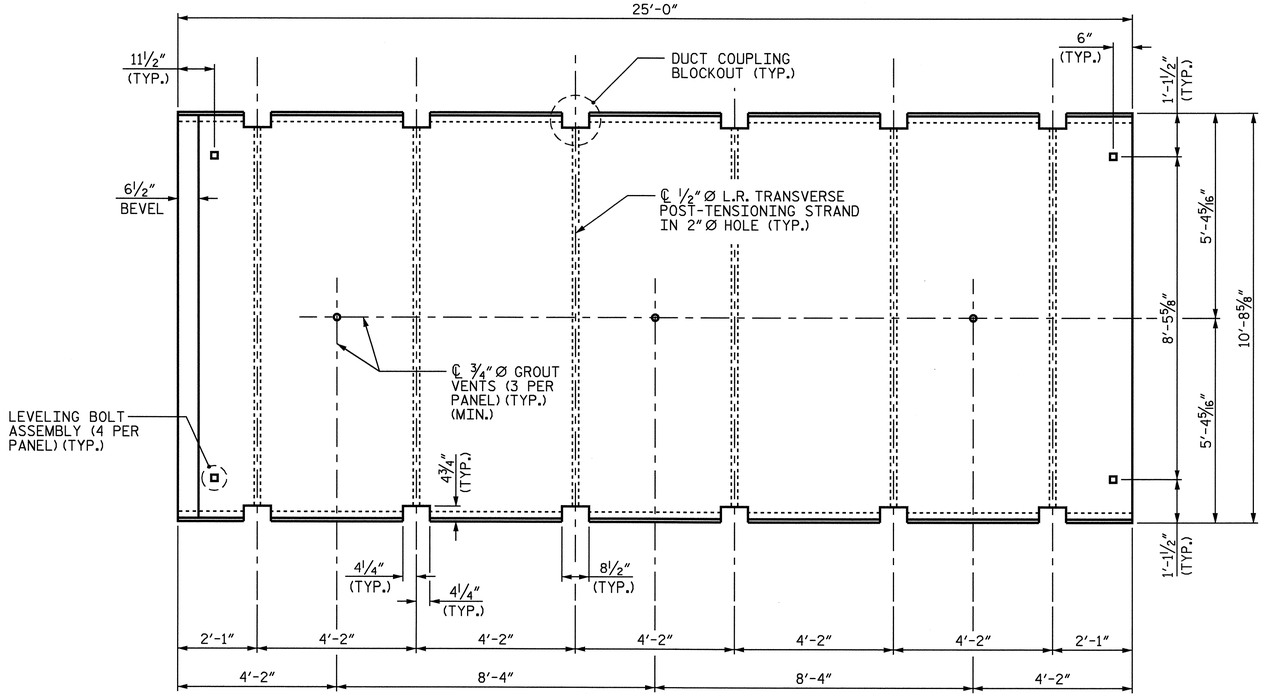


PLAN



SECTION A-A

SECTION B-B



PLAN OF DECK BLOCKOUTS

DUCT COUPLING BLOCKOUT DETAIL

NO SEPARATE PAYMENT WILL BE MADE FOR THE ½" Ø POST-TENSIONING STRANDS, AS THEY ARE INCLUDED IN THE LUMP SUM PRICE FOR "GROUTING AND POST-TENSIONING".

PLAN OF PRECAST APPROACH SLAB PANEL TYPE 2

FOR SECTION N-N, SEE SHEET 5 OF 5.

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FRYE
2/11/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRECAST CONCRETE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 8-07
CHECKED BY : J.C. FRYE DATE : 12-07

11-FEB-2008 09:10
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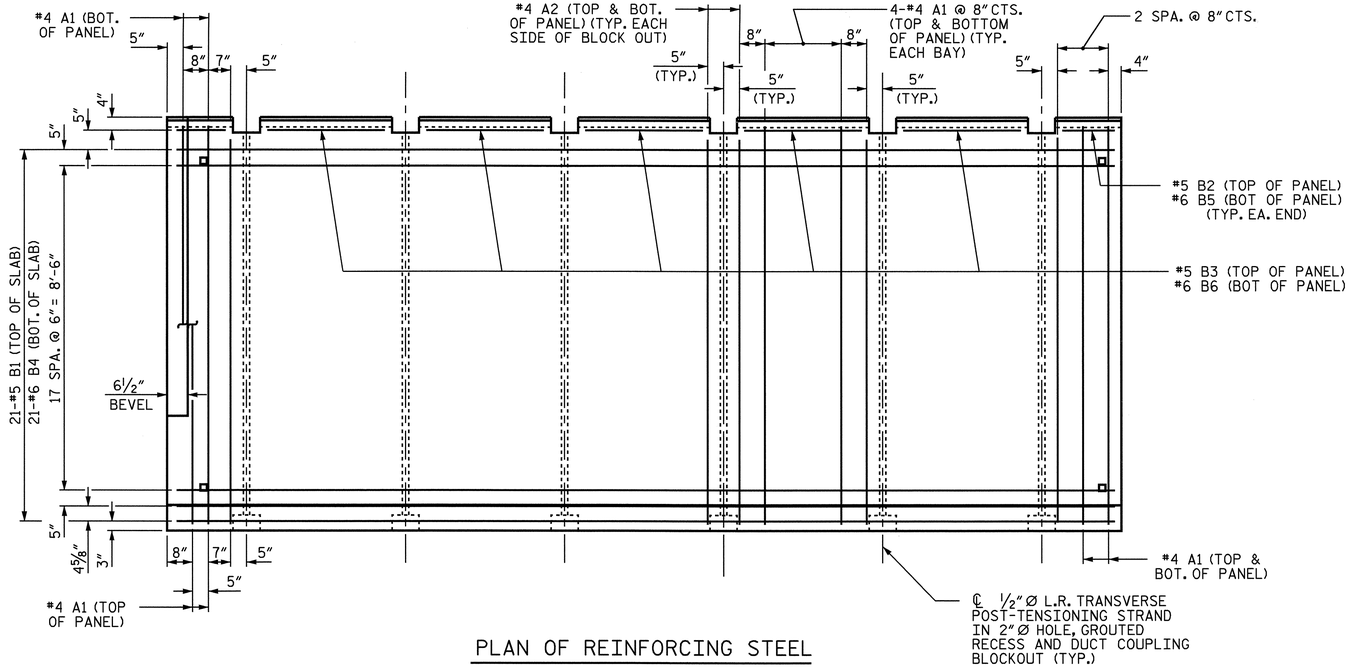
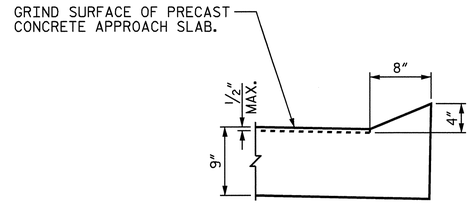
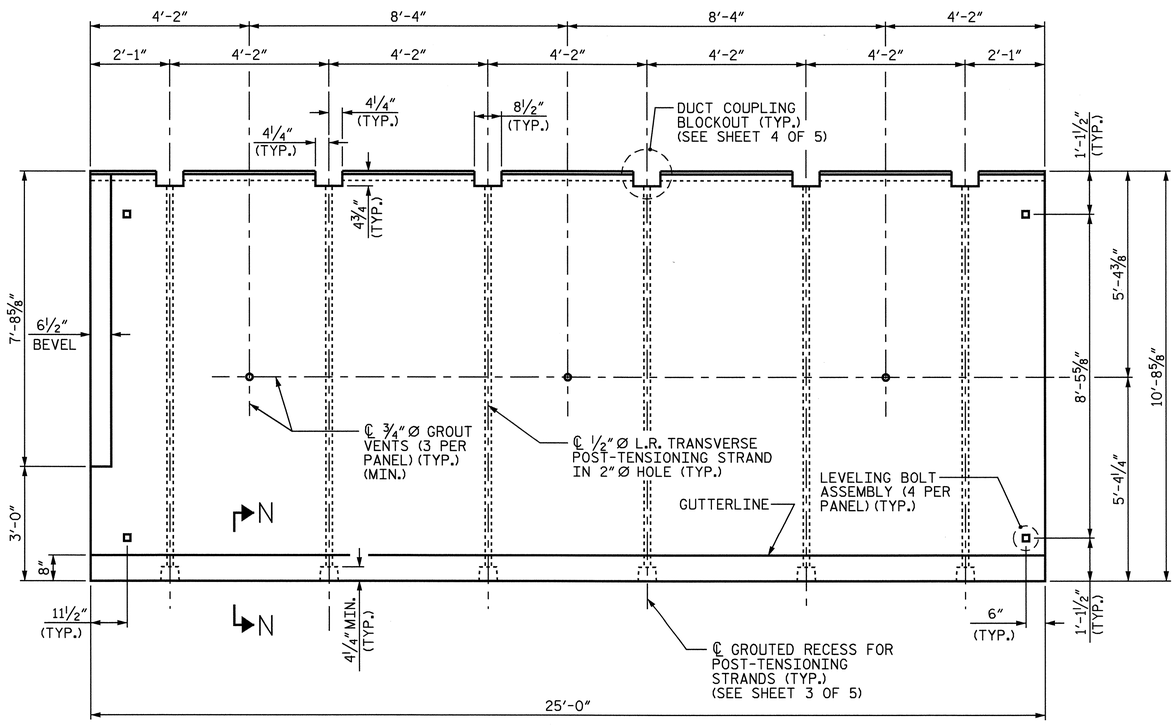


PLAN OF REINFORCING STEEL



SECTION N-N



PLAN OF DECK BLOCKOUTS

PLAN OF PRECAST APPROACH SLAB PANEL TYPE 3

PROJECT NO. B-3625

CARTERET COUNTY

STATION: 17+44.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRECAST CONCRETE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			22

DRAWN BY : M.A. ALLEN DATE : 8-07
CHECKED BY : J.C. FRYE DATE : 12-07

11-FEB-2008 09:10
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maallen

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.
STRESS IN EXTREME FIBER OF	
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.
REINFORCING STEEL IN TENSION	
GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR	
UNTREATED - EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	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 2002 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; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

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 WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. 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.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

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. FINS 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.

REV. 6-16-95 EEM ω RGW REV. 6-27-02 RWW ω JTE
REV. 8-16-99 RWW ω JLES

ENGLISH

JANUARY, 1990

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