TIP PROJECT: U-3823A

CONTRACT: C201568

STRUCTURE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

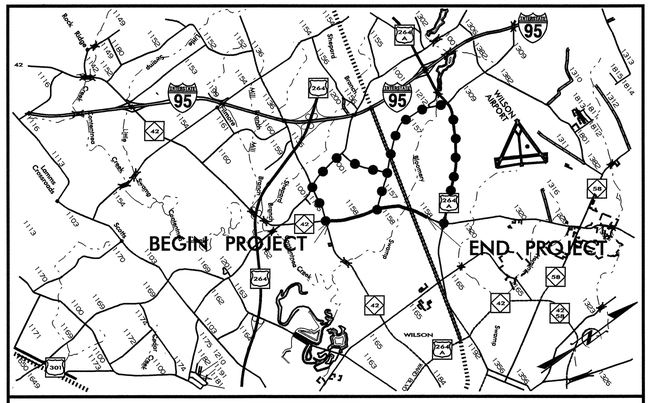
WILSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3823A		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34981.1.1	STP-1158(2)	PE
34981.2.3	STP-1158(4)	R/W&UTILITY
34981.3.3	STP-1158(4)	CONST

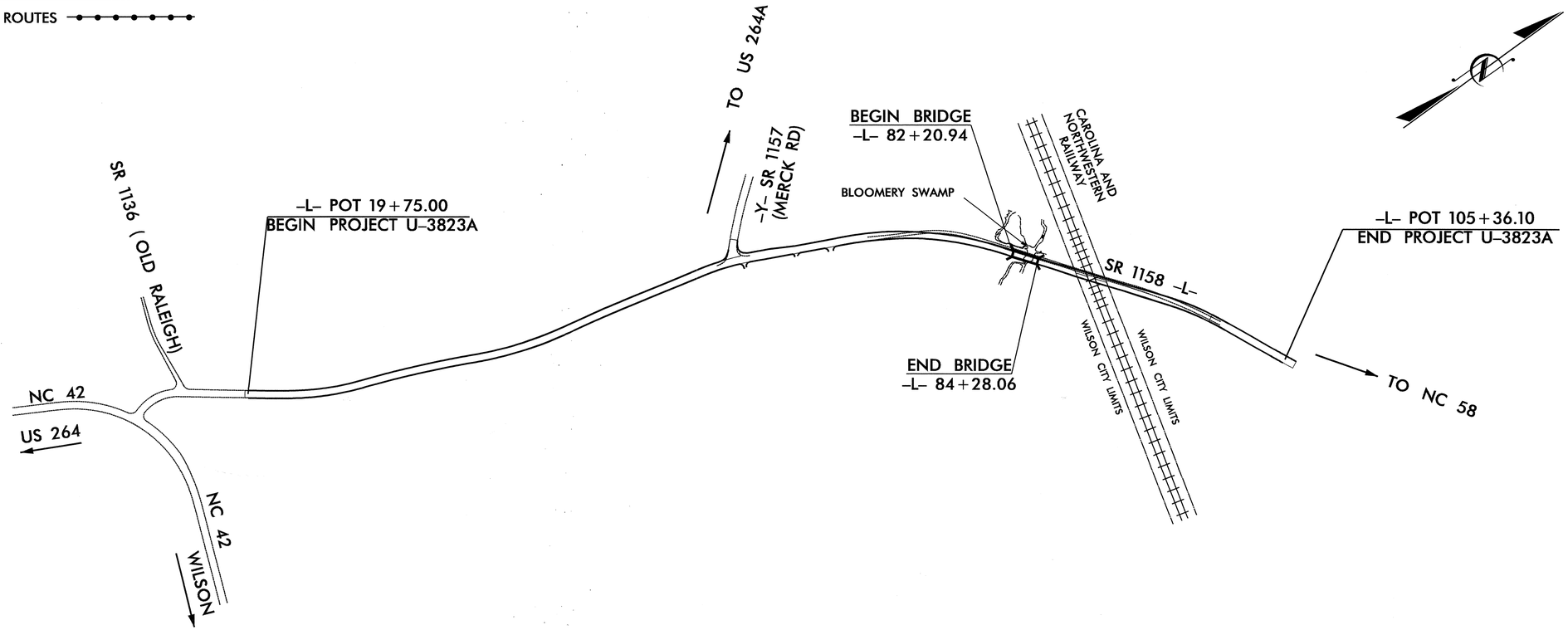
LOCATION: SR 1158 (AIRPORT BLVD.) FROM 0.2 MILES NORTHEAST OF NC 42 TO 0.4 MILES SOUTHEAST OF US 264-A

TYPE OF WORK: GRADING, DRAINAGE, PAVING, TRAFFIC SIGNAL AND STRUCTURE.



VICINITY MAP

DETOUR ROUTES



THIS PROJECT DESIGNED TO HIGH QUALITY WATER STANDARD

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2007 = 9,300
ADT 2025 = 21,600
DHV = 11 %
D = 55 %
T = 3 % *
V = 50 MPH

* TTST 1 % DUAL 2 %

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-3823A = 1.582 Miles
LENGTH OF STRUCTURE TIP PROJECT U-3823A = 0.039 Miles
TOTAL LENGTH OF TIP PROJECT U-3823A = 1.621 Miles

Prepared In the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE:
JUNE 19, 2007

JOHN C. FRYE, PE
PROJECT ENGINEER

TING FANG, PE
PROJECT DESIGN ENGINEER

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

NORTH CAROLINA PROFESSIONAL SEAL 14552 ENGINEER GREGORY R. PERFETTI

5.1.07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

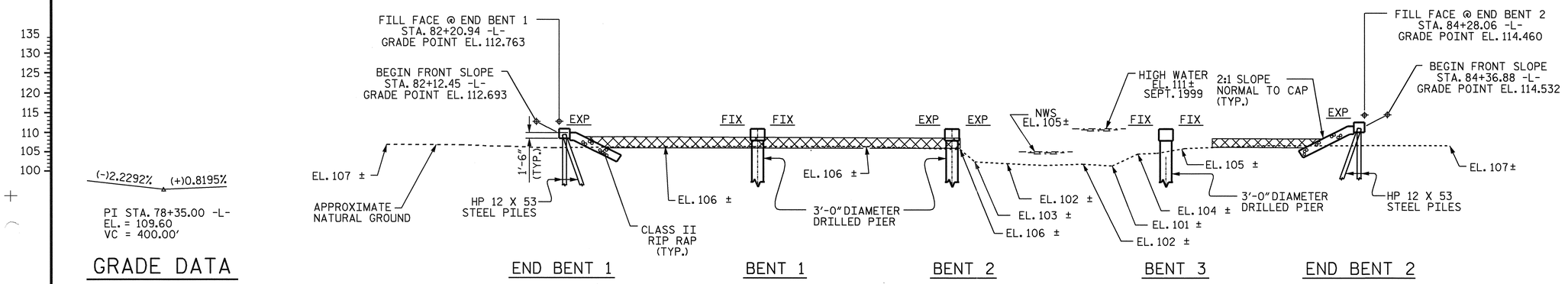
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

F.A. PROJECT STP-1158(4)

81+50 82+00 82+50 83+00 83+50 84+00 84+50 85+00

SPAN A SPAN B SPAN C SPAN D



GRADE DATA

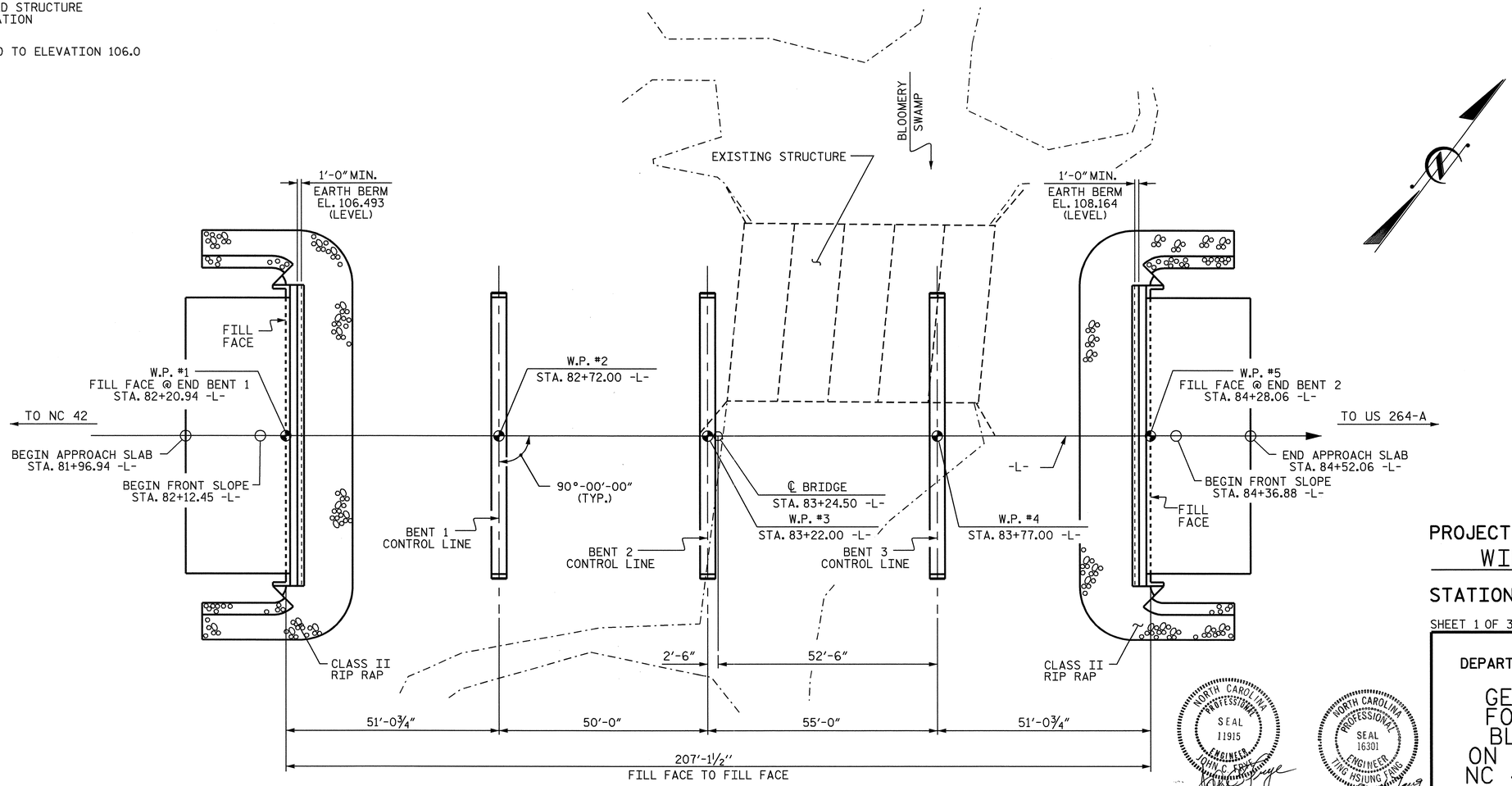
END BENT 1 BENT 1 BENT 2 BENT 3 END BENT 2

= UNCLASSIFIED STRUCTURE EXCAVATION

NOTE: EXCAVATE EXISTING ROADBED TO ELEVATION 106.0

SECTION ALONG -L-

SECTION AT END BENTS AND BENTS ARE TAKEN AT RIGHT ANGLES.



PLAN

(PILES AND DRILLED PIERS NOT SHOWN FOR CLARITY)

NORTH CAROLINA PROFESSIONAL SEAL 11915 ENGINEER JOHN C. FERRY 5/8/07

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG 5/8/07

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 3

REPLACE CULVERT NO. C77 WITH BRIDGE NO. 77

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE OVER BLOOMERY SWAMP ON SR 1158 BETWEEN NC 42 AND US 264-A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 6/21/05
CHECKED BY : K.K. PUROHIT DATE : 7/29/05

07-MAY-2007 16:05
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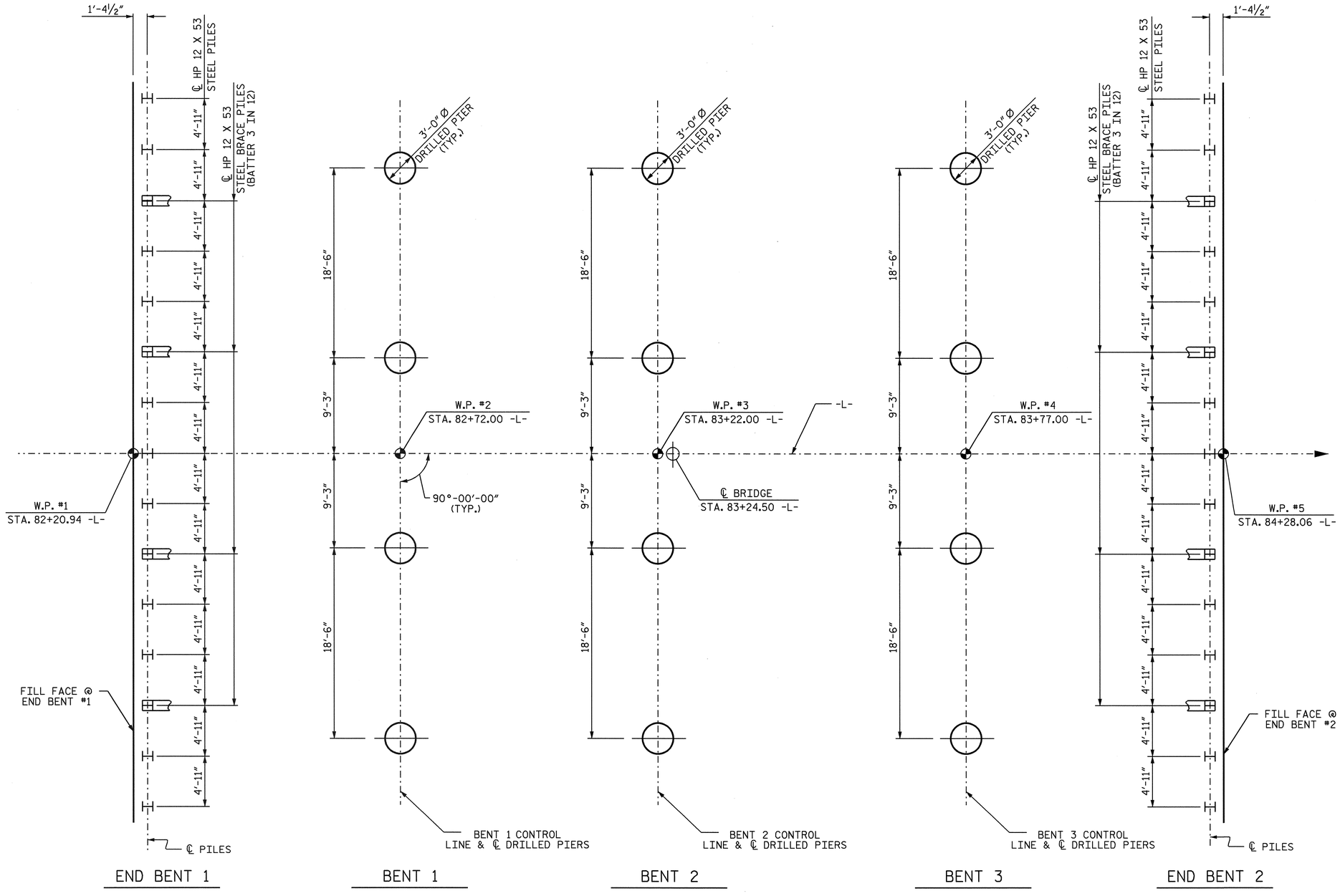
jwalton



FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE)
(DIMENSIONS LOCATING DRILLED PIERS ARE SHOWN TO THE DRILLED PIER CENTERLINE)

NOTES

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 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 NO. 1 AND END BENT NO. 2 IS 50 TONS PER PILE.

DRILLED PIERS AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 45 TSF.

DRILLED PIERS AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3 ARE DESIGNED FOR AN APPLIED LOAD OF 265 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 1. DO NOT EXTEND THE CASING BELOW ELEVATION 87 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIER SPECIAL PROVISION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 2. DO NOT EXTEND THE CASING BELOW ELEVATION 97 FT. (LEFT), OR ELEVATION 93 FT. (RIGHT) WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIER SPECIAL PROVISION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 3. DO NOT EXTEND THE CASING BELOW ELEVATION 89 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIER SPECIAL PROVISION.

DRILLED PIERS AT BENT NO. 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 75 FT. AND SATISFY THE REQUIRED END BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 86 FT. (LEFT) OR 81 FT. (RIGHT) AND SATISFY THE REQUIRED END BEARING CAPACITY.

DRILLED PIERS AT BENT NO. 3 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 78 FT. AND SATISFY THE REQUIRED END BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS 86 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 2 IS 97 FT. (LEFT), AND 92 FT. (RIGHT). SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 3 IS 89 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SPT TESTING IS REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3, SEE DRILLED PIERS SPECIAL PROVISION.

SID INSPECTIONS MAY BE REQUIRED TO INSPECT THE BOTTOM CLEANLINESS OF THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIER SPECIAL PROVISION.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

FOR DRILLED PIERS, SEE DRILLED PIERS SPECIAL PROVISION.

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE OVER BLOOMERY SWAMP ON SR 1158 BETWEEN NC 42 AND US 264-A

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
5/8/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 6/21/05
CHECKED BY : K.K. PUROHIT DATE : 7/29/05

07-MAY-2007 16:05
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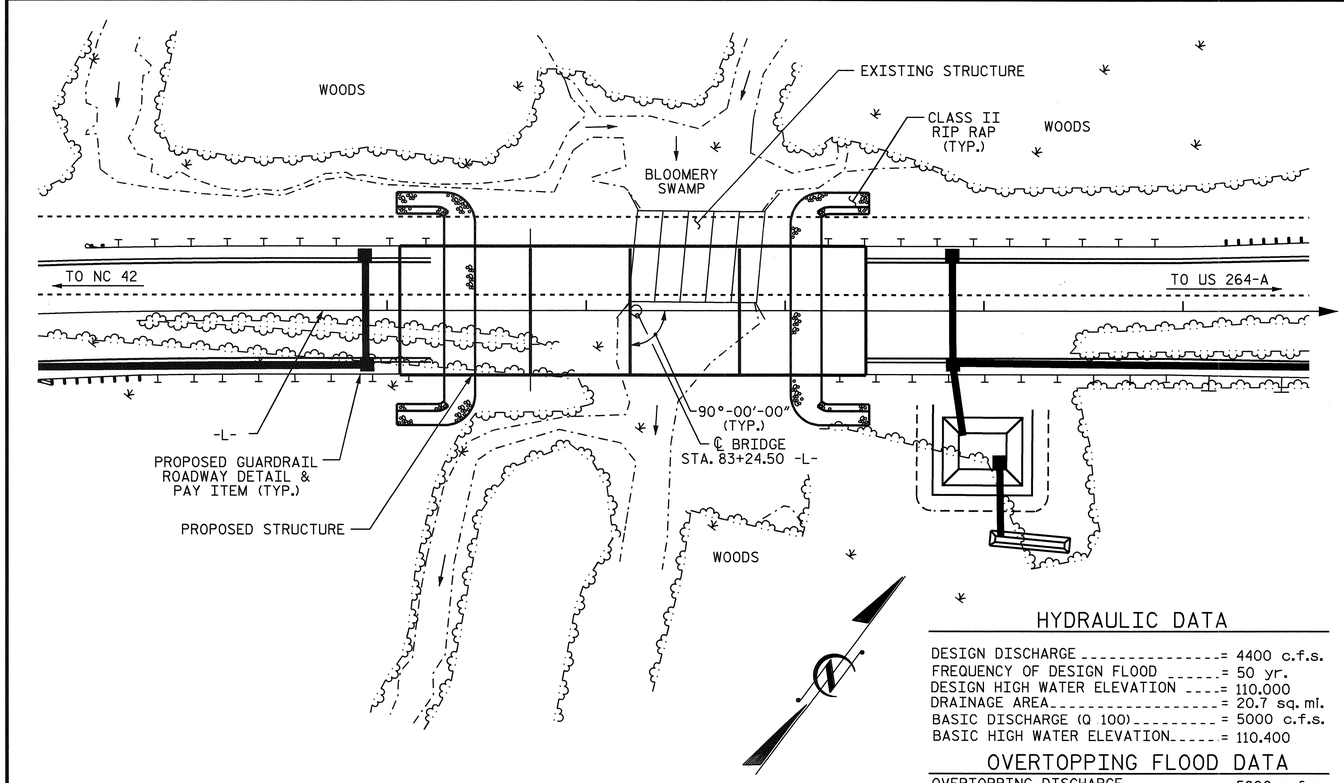
jwalton

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	3'-0" Ø DRILLED PIERS IN SOIL	3'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	SID INSPECTION	SPT TESTING	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	HP 12 x 53 STEEL PILES		THREE BAR METAL RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB	
	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	CU. YDS.	SQ. FEET	SQ. FEET	CU. YDS.	CU. YDS.	LUMP SUM	LBS.	LBS.	LBS.	NO.	LIN. FT.	LIN. FT.	TON	SQ. YD.	LUMP SUM	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE									10,700	12,180	125.4		LUMP SUM		2,164				394.75			LUMP SUM	LUMP SUM	88	4499.0
END BENT 1								965				26.2		4,433			15	150		230	255				
BENT 1		88.0	40.0	80.0	1	1	1					32.0		12,048		2,366									
BENT 2		57.5	38.0	49.5	1	1	1					32.0		10,722		1,772									
BENT 3		80.0	40.0	75.5	1	1	1					32.0		11,694		2,216									
END BENT 2								745				26.2		4,433			15	150		270	300				
TOTAL	LUMP SUM	225.5	118.0	205.0	3	3	3	1,710	10,700	12,180	125.4	148.4	LUMP SUM	43,330	2,164	6,354	30	300	394.75	500	555	LUMP SUM	LUMP SUM	88	4499.0

BENCH MARK #4: 5 FT LEFT OF 83+53.00 -L-, 3 FT RIGHT OF 61+77.00 -BL-, EL. 109.63'



NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	= 4400 c.f.s.
FREQUENCY OF DESIGN FLOOD	= 50 yr.
DESIGN HIGH WATER ELEVATION	= 110.000
DRAINAGE AREA	= 20.7 sq. mi.
BASIC DISCHARGE (Q 100)	= 5000 c.f.s.
BASIC HIGH WATER ELEVATION	= 110.400

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 5800 c.f.s.
FREQUENCY OF OVERTOPPING FLOOD	= 100 yr+.
OVERTOPPING FLOOD ELEVATION	= 110.800

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS 20 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.

CONSTRUCTION JOINTS IN THE DRILLED PIERS ARE NOT ALLOWED.

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

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 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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

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

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 83+24.50 -L-.

THE EXISTING CULVERT CONSISTING OF 5 BARRELS @ 12'-0" X 7'-0" AND 46'-0" IN LENGTH SHALL BE REMOVED.

FOR REMOVAL OF THE EXISTING CULVERT, SEE EROSION CONTROL PLANS.

THE EXISTING CULVERT 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 CULVERT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED BETWEEN 50 FT. LEFT AND 4 FT. RIGHT OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR UNCLASSIFIED STRUCTURE EXCAVATION.

THE EXISTING PAVEMENT WITHIN THE AREA OF THE END BENT PILES SHALL BE REMOVED AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0".

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
5/8/07

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE OVER BLOOMERY SWAMP ON SR 1158 BETWEEN NC 42 AND US 264-A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 6/21/05
CHECKED BY : K.K. PUROHIT DATE : 7/29/05

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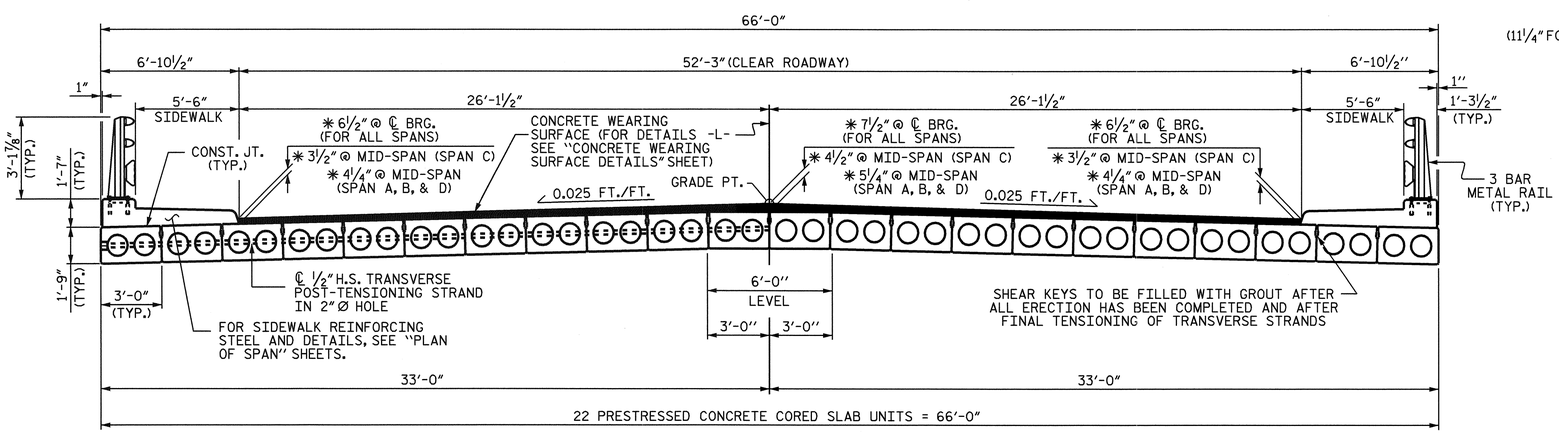
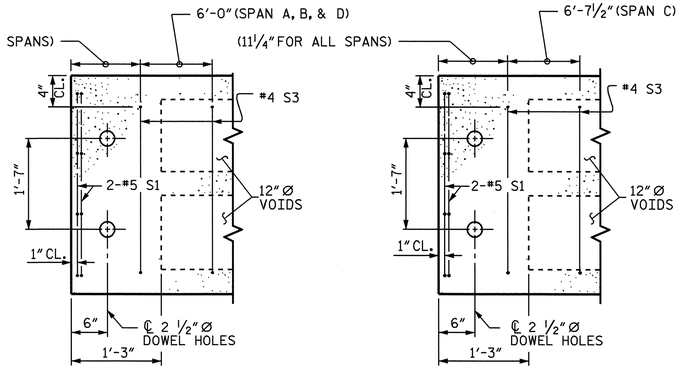


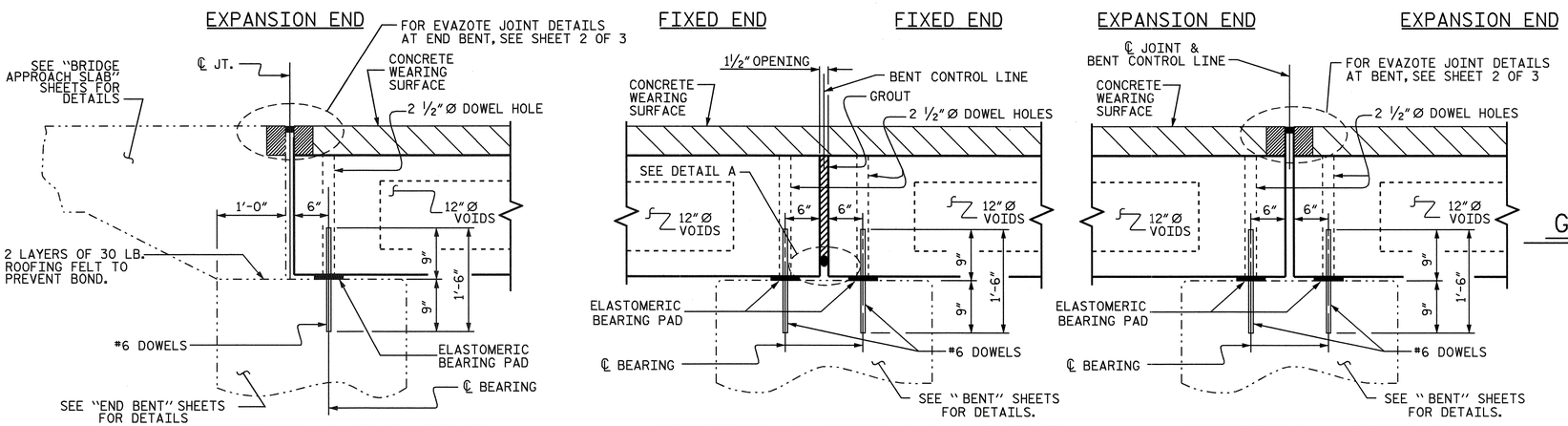
TYPICAL SECTION

✱ BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS



PART PLAN - INTERIOR AND EXTERIOR SECTION

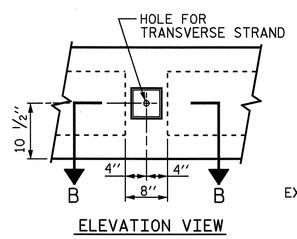
NOTE: INTERIOR SECTIONS WITHOUT SIDEWALK SIMILAR EXCEPT OMIT S3 BARS



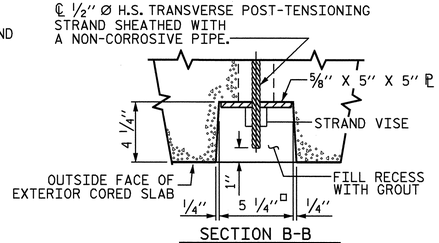
SECTION @ END BENT

SECTION @ BENT 1 & BENT 3

SECTION @ BENT 2

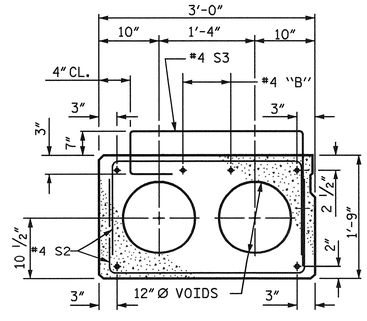


ELEVATION VIEW



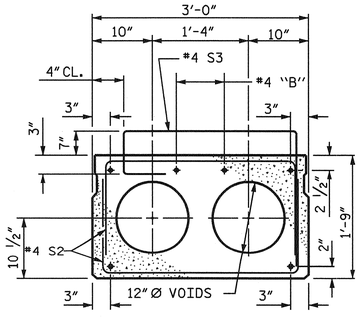
SECTION B-B

GROUTED RECESS @ END OF POST-TENSIONED STRAND



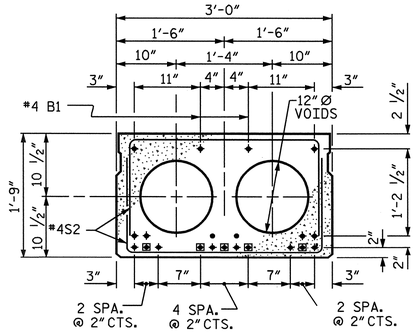
EXTERIOR SLAB SIDEWALK SECTION

STRAND LAYOUT NOT SHOWN



INTERIOR SLAB SIDEWALK SECTION

STRAND LAYOUT NOT SHOWN
(INTERIOR SLAB SECTION ADJACENT TO EXTERIOR SLAB SECTION)

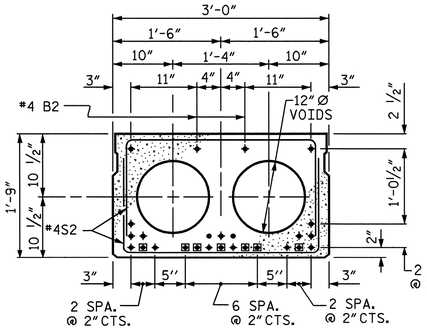


INTERIOR SLAB SECTION

0.6" Ø LOW RELAXATION STRAND LAYOUT

SPANS A, B AND D

(19 STRANDS, 5 SHEATED)
(EXTERIOR SLAB SECTION SIMILAR)

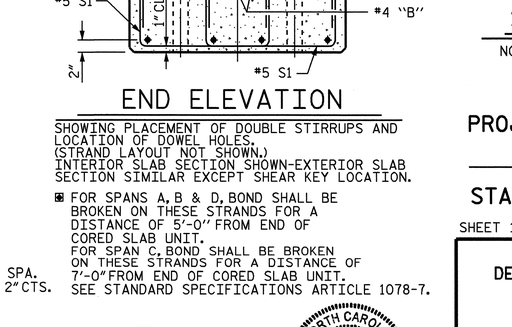


INTERIOR SLAB SECTION

0.6" Ø LOW RELAXATION STRAND LAYOUT

SPAN C

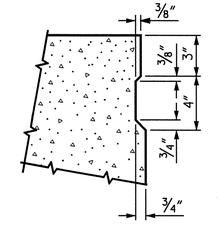
(24 STRANDS, 7 SHEATED)
(EXTERIOR SLAB SECTION SIMILAR)



END ELEVATION

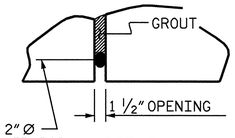
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

✱ FOR SPANS A, B & D, BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-0" FROM END OF CORED SLAB UNIT.
FOR SPAN C, BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 7'-0" FROM END OF CORED SLAB UNIT.
SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



DETAIL A

NORTH CAROLINA PROFESSIONAL SEAL 029441 ENGINEER KRISTY W. ALFORD
5/25/07

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

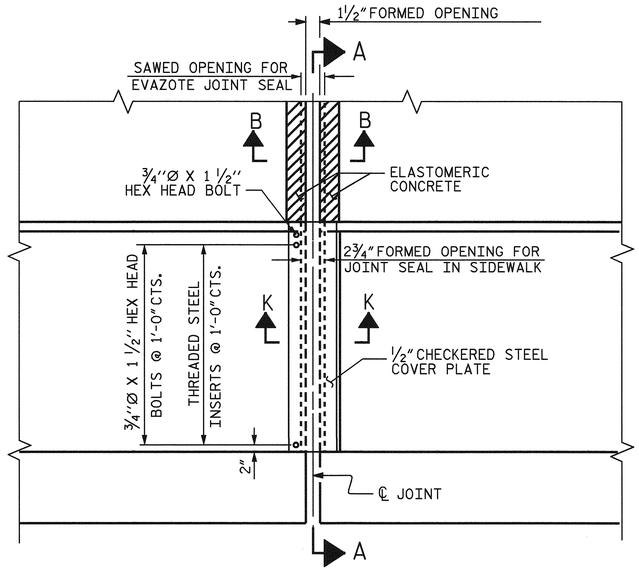
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
3'-0" X 1'-9" PRESTRESSED CORED SLAB UNIT
TYPICAL SECTION WITH DETAILS

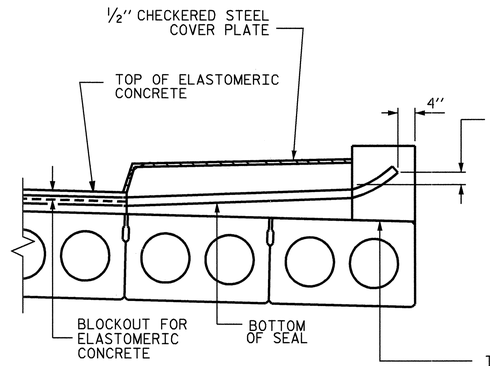
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON 12/7/04
CHECKED BY : K.K. PUROHIT DATE : 4/5/05

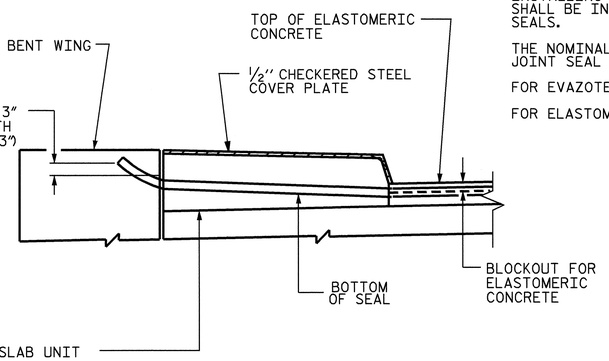


PLAN OF EVAZOTE JOINT SEAL AT BENT 2

(2 CHECKERED STEEL COVER PLATES REQUIRED)



SECTION A-A



SECTION E-E

NOTES

THE STEEL PLATES SHALL BE CONFORM TO AASHTO M270 GRADE OR APPROVAL EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALLY BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTORS OPTION, THESE SURFACES MAY BE METALLIZATION TO A MINIMUM THICKNESS OF 6 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EVAZOTE JOINT SEALS.

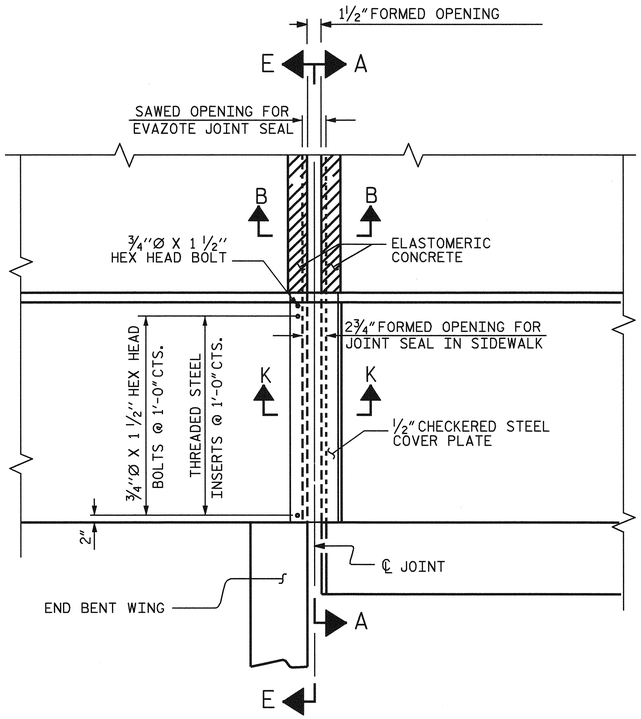
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3 1/16".

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

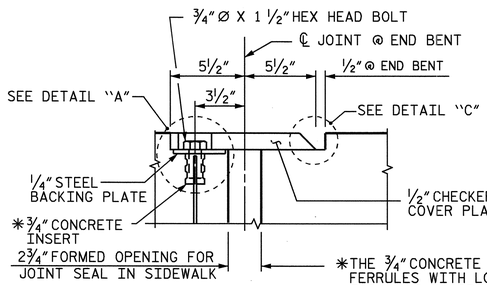
ELASTOMERIC CONCRETE	
	CU. FT.
END BENT 1	26
BENT 2	26
END BENT 2	26

SIDEWALK WITH EVAZOTE JOINT SEAL

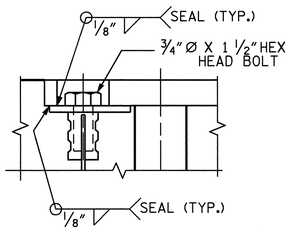


PLAN OF EVAZOTE JOINT SEAL AT END BENT 1 AND 2

(4 CHECKERED STEEL COVER PLATES REQUIRED)

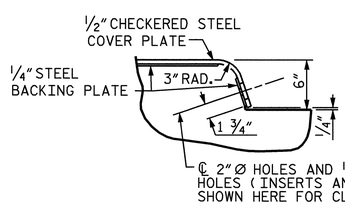


SECTION K-K

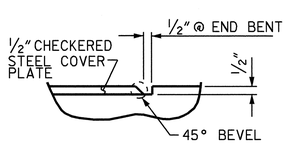


DETAIL "A"

*THE ¾" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

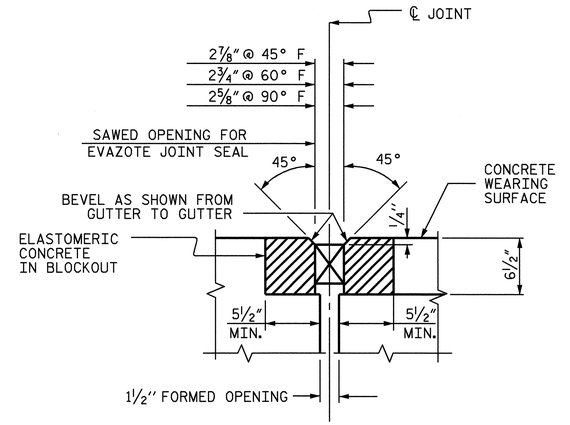


DETAIL "B"



DETAIL "C"

JOINT SEAL DETAILS @ END BENT



SECTION B-B

(END BENT SHOWN BENT 2 SIMILAR)

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
3'-0" X 1'-9" PRESTRESSED CORED SLAB UNIT
JOINT DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG
5/8/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 12/7/04
CHECKED BY : K.K. PUROHIT DATE : 4/5/05

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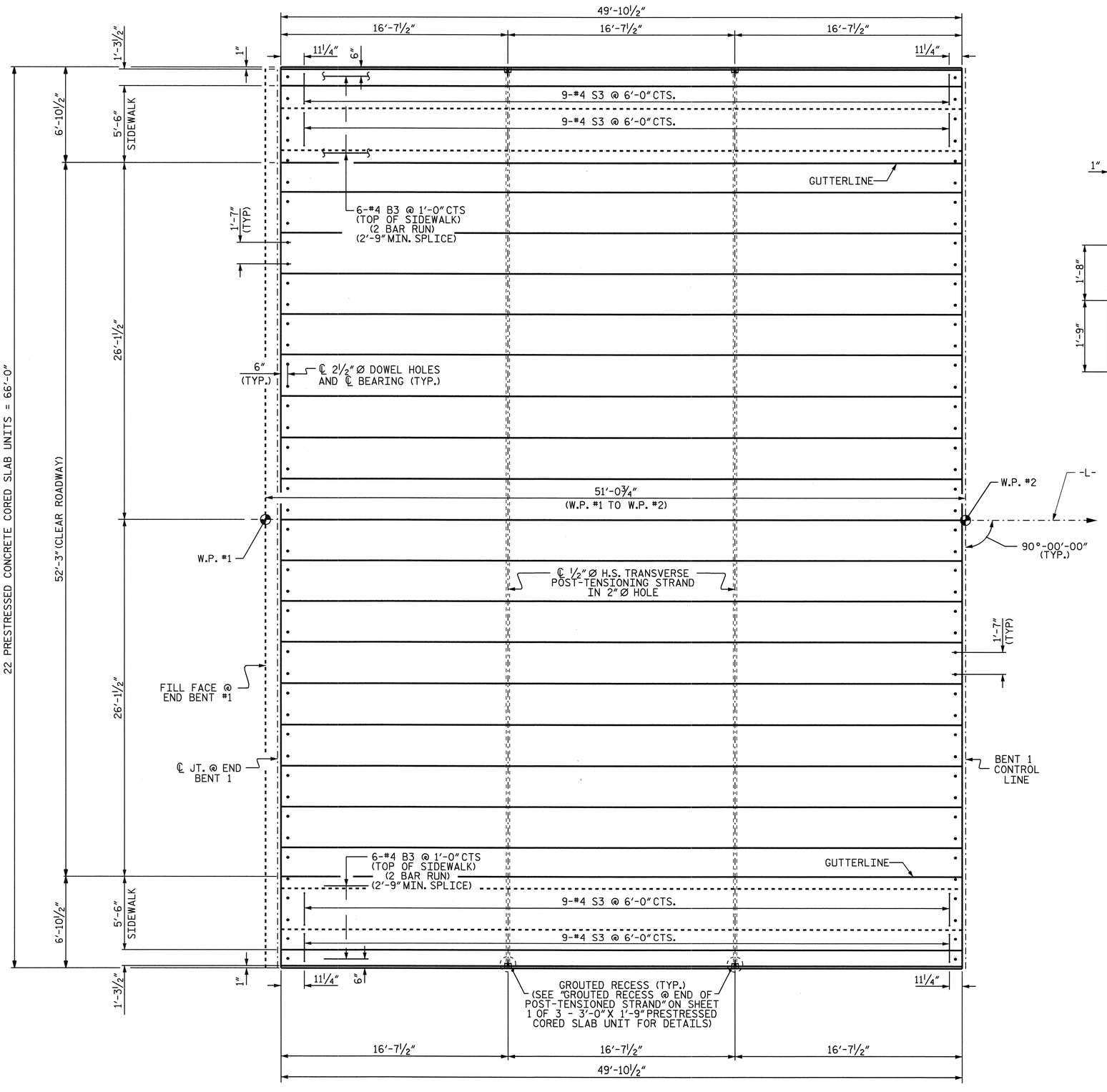
jwalton

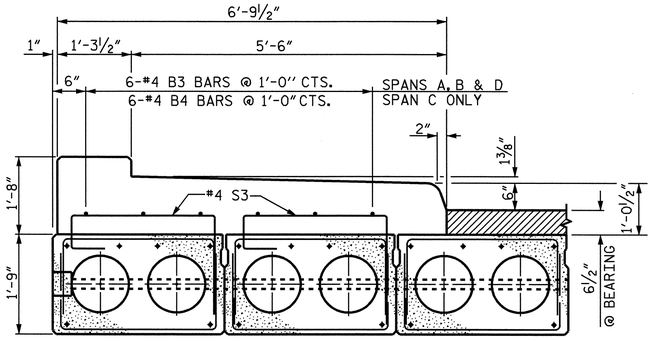


SPAN A

FOR ADDITIONAL CORED SLAB UNIT DETAILS, SEE SHEET 5 OF 6.

NOTES

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10' IN LENGTH.



TYPICAL SECTION THRU SIDEWALK

FOR SPANS A, B, C & D

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			31

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
5/8/07

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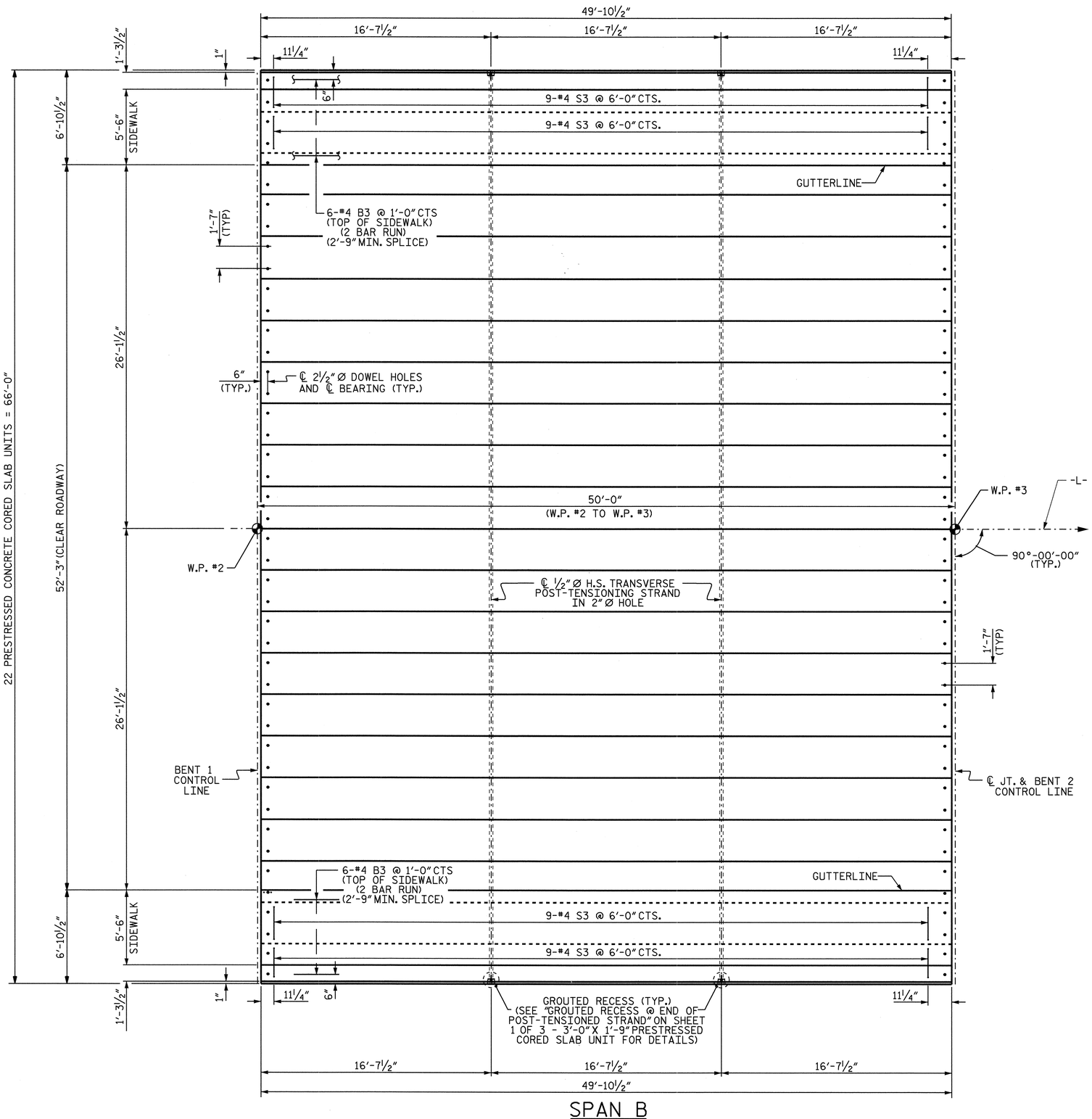

SPAN B

FOR ADDITIONAL CORED SLAB UNIT DETAILS, SEE SHEET 5 OF 6.

NOTES

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10' IN LENGTH.

FOR SECTION THROUGH SIDEWALK, SEE SHEET 1 OF 6, "PLAN OF SPAN" SHEET.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
SPAN B

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
5/8/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			31

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CHECKED BY : K.K. PUROHIT DATE : 4/5/05

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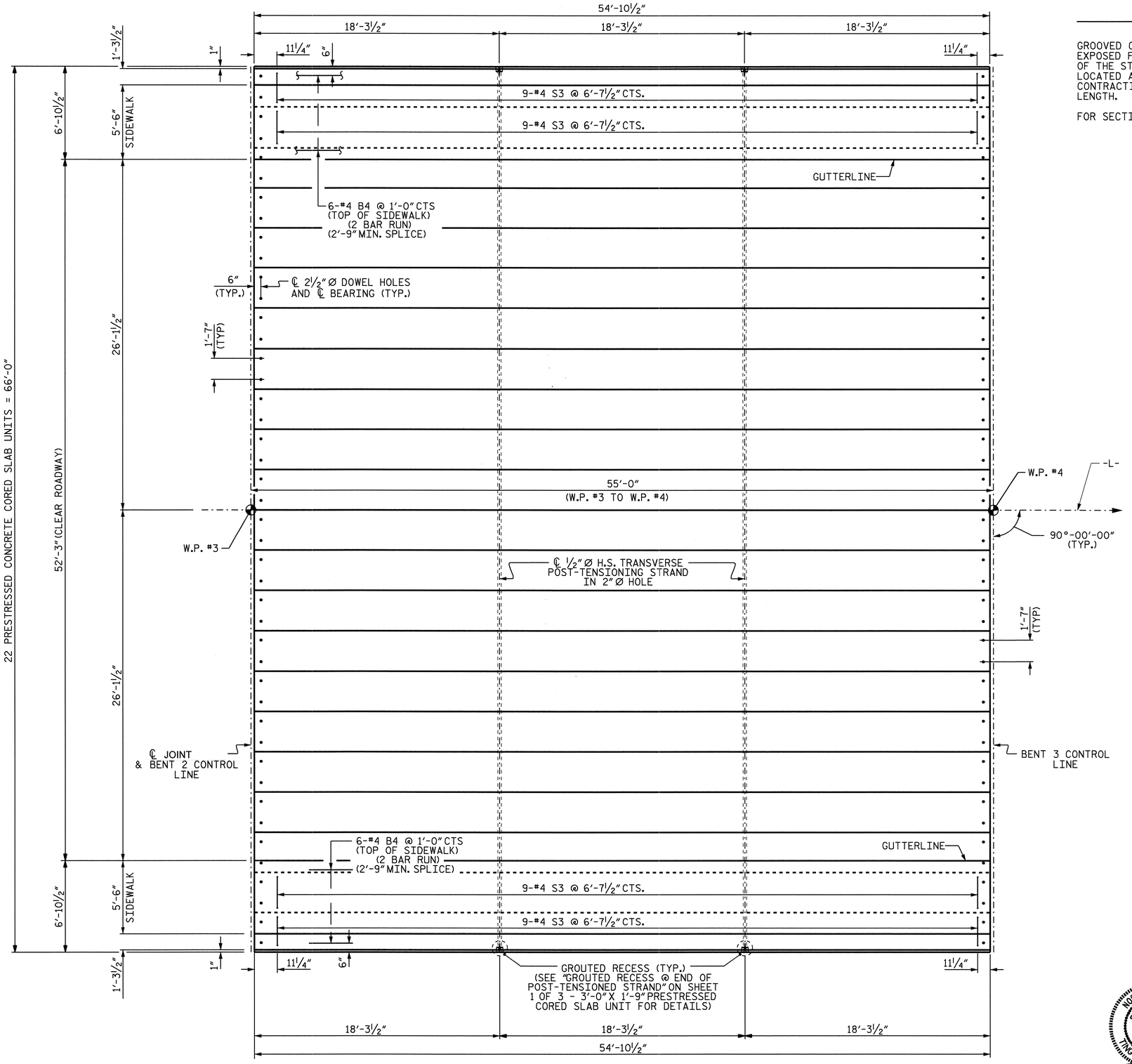

SPAN C

FOR ADDITIONAL CORED SLAB UNIT DETAILS, SEE SHEET 6 OF 6.

NOTES

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10' IN LENGTH.

FOR SECTION THROUGH SIDEWALK, SEE SHEET 1 OF 6, "PLAN OF SPAN" SHEET.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			31

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING YSUNG FANG
3/12/07

DRAWN BY : J.L. WALTON DATE : 12/7/04
CHECKED BY : K.K. PUROHIT DATE : 4/5/05

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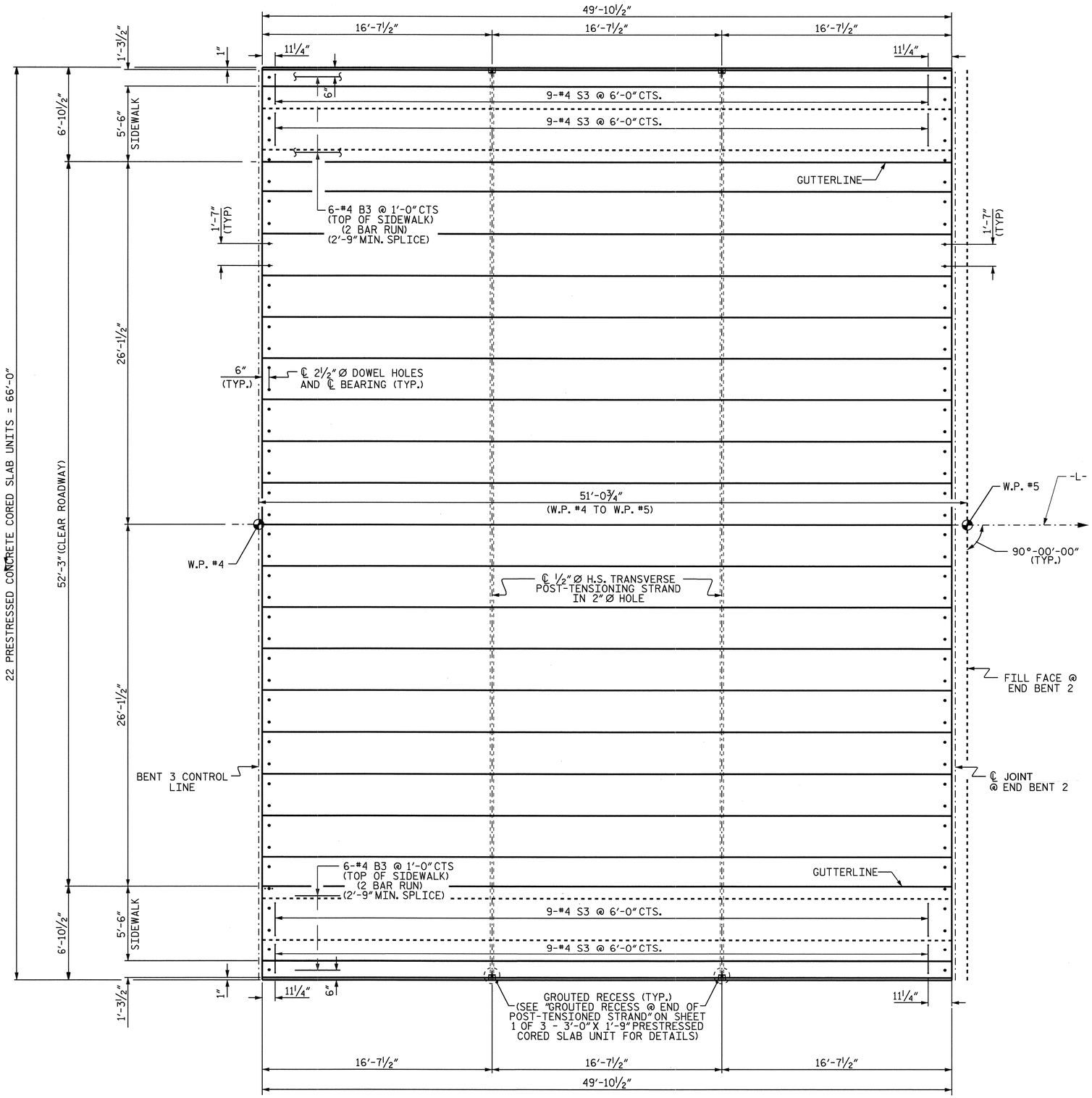

SPAN D

FOR ADDITIONAL CORED SLAB UNIT DETAILS, SEE SHEET 5 OF 6.

NOTES

GROOVED CONTRACTION JOINTS, ½'' IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10' IN LENGTH.

FOR SECTION THROUGH SIDEWALK, SEE SHEET 1 OF 6, "PLAN OF SPAN" SHEET.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG
3/12/07

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
SPAN D

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 12/7/04
CHECKED BY : K.K. PUROHIT DATE : 4/5/05

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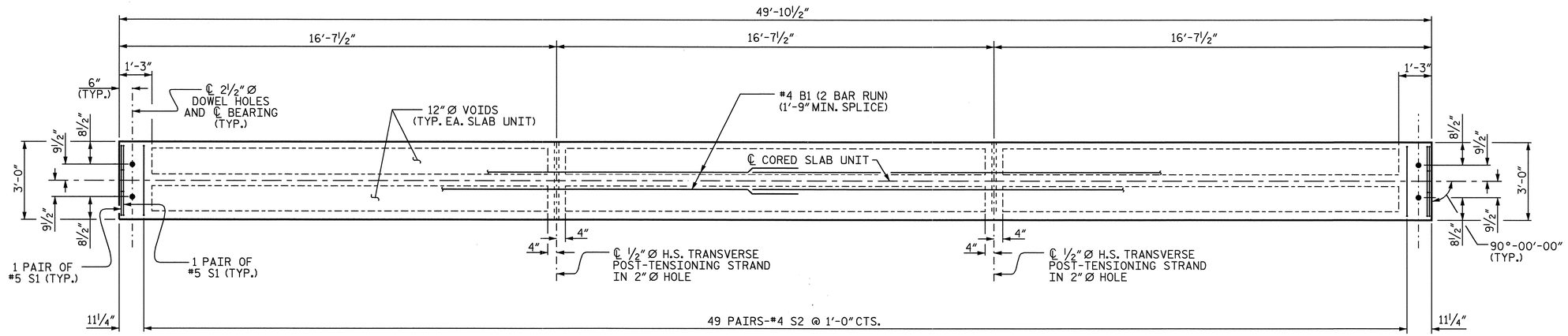
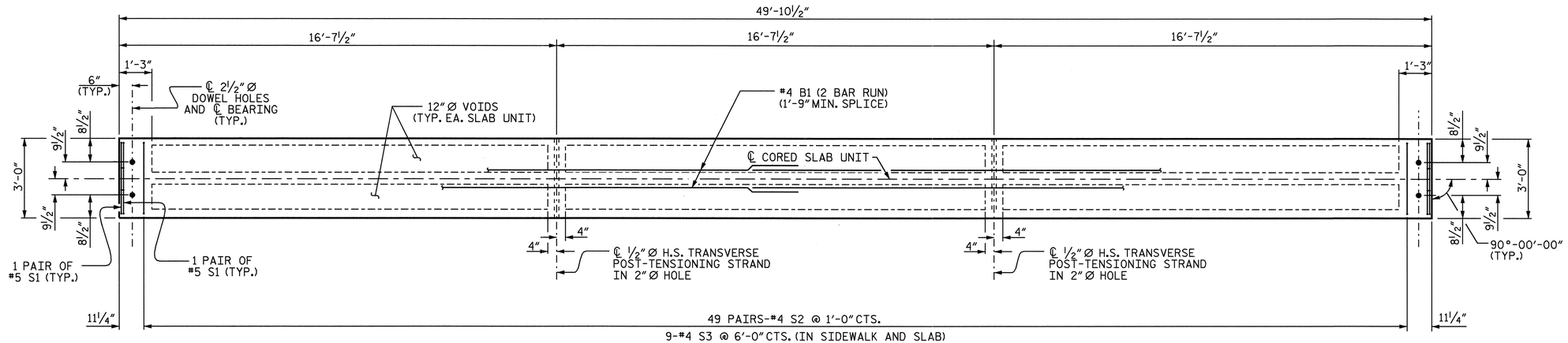
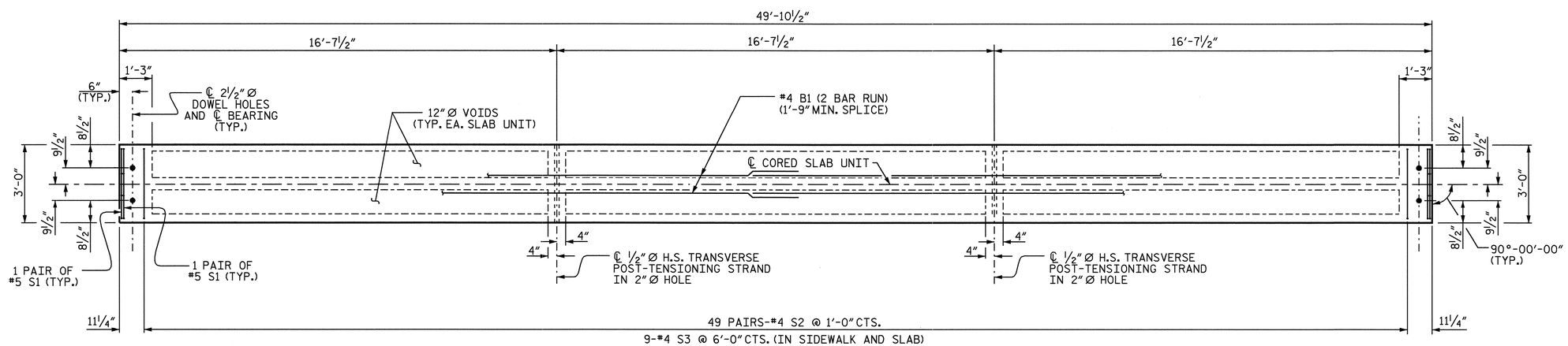


PLAN OF INTERIOR CORED SLAB UNIT
(SPANS A, B, & D)



PLAN OF INTERIOR CORED SLAB UNIT (SIDEWALK)
(SPANS A, B, & D)



PLAN OF EXTERIOR CORED SLAB UNIT (SIDEWALK)
(SPANS A, B, & D)

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG

Ting H. Fang 3/12/07

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN DETAILS FOR SPANS A, B & D

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 12/7/04
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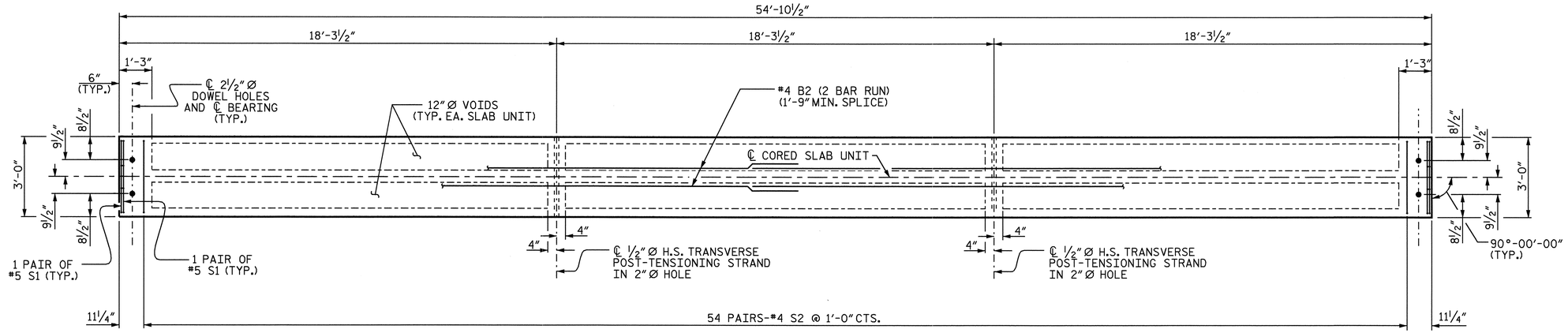
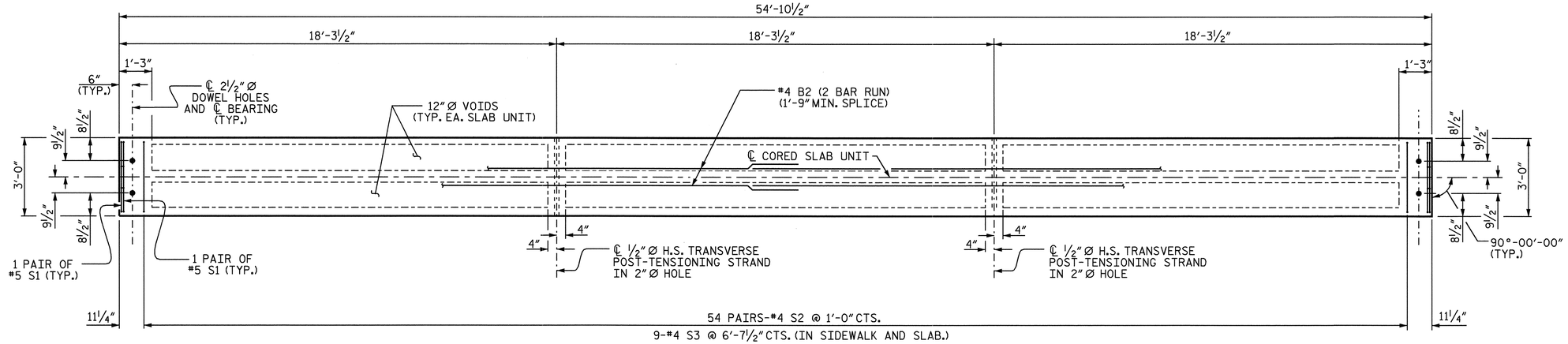
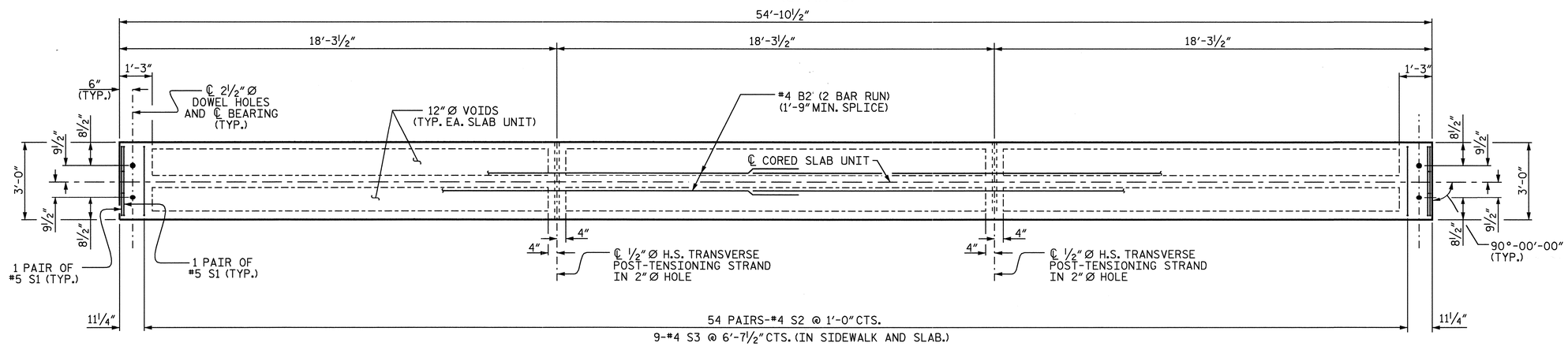


PLAN OF INTERIOR CORED SLAB UNIT
(SPAN C)



PLAN OF INTERIOR CORED SLAB UNIT (SIDEWALK)
(SPAN C)



PLAN OF EXTERIOR CORED SLAB UNIT (SIDEWALK)
(SPAN C)

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIANG FANG
3/12/07

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN DETAILS FOR SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 12/7/04
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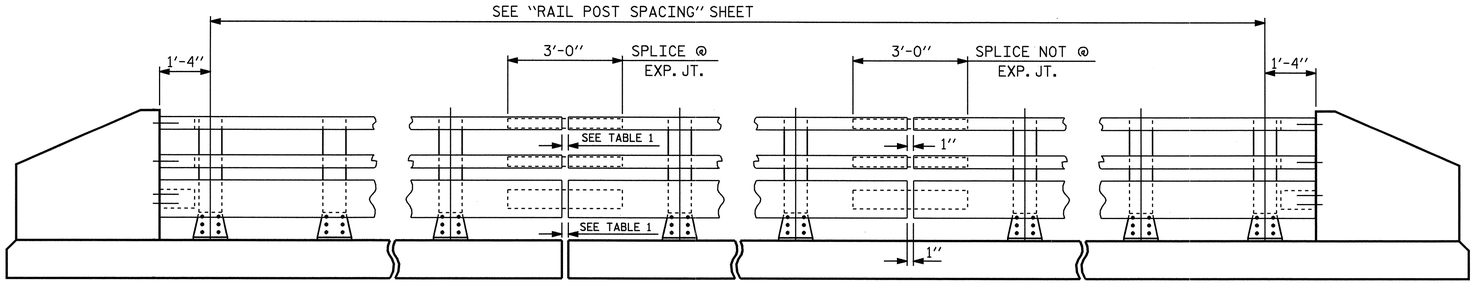
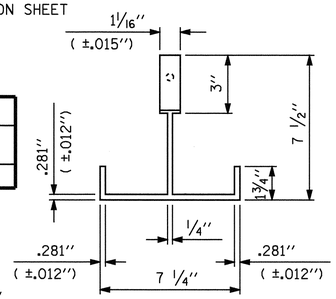


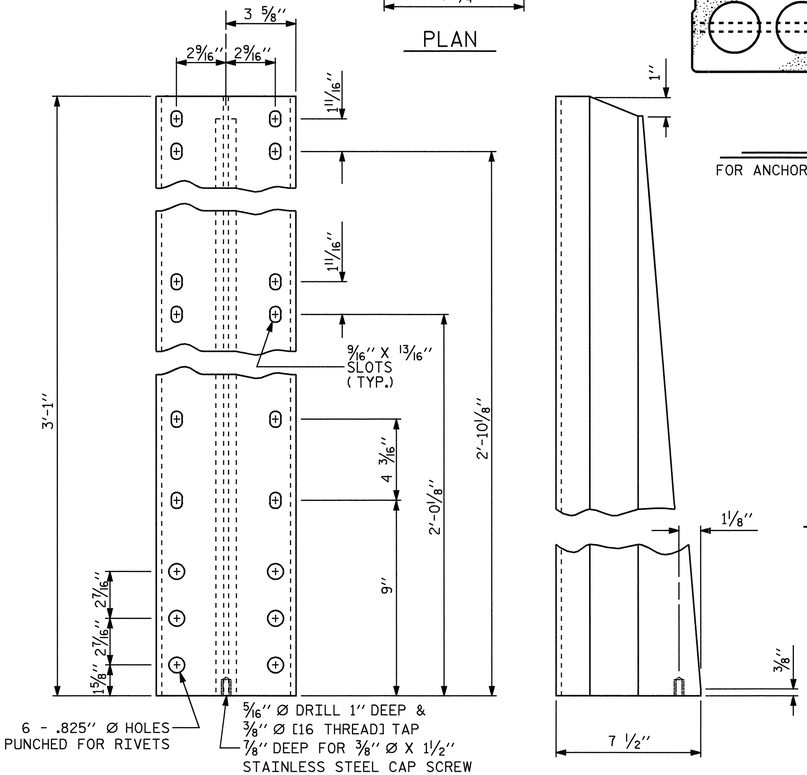
ELEVATION

NOTE:
FOR ATTACHMENT OF METAL RAIL TO END POST, SEE STANDARD NO. BMR7. ON SHEET 3 OF 3, "3 BAR METAL RAIL."

TABLE 1	
℄ EXP.JT. @ BENT	RAIL OPENING
BENT No. 2	1½"



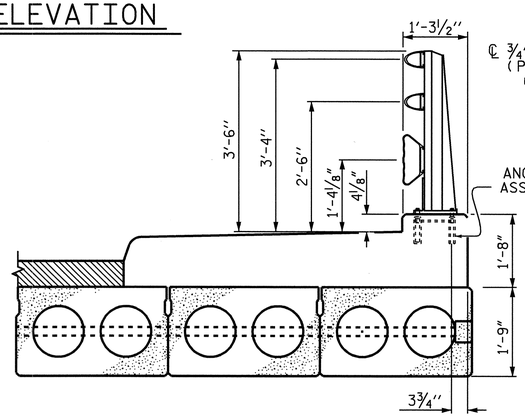
PLAN



FRONT ELEVATION

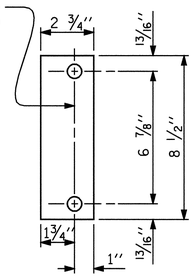
SIDE ELEVATION

DETAILS OF POST

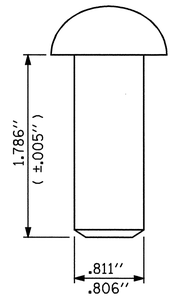


SECTION THRU RAIL

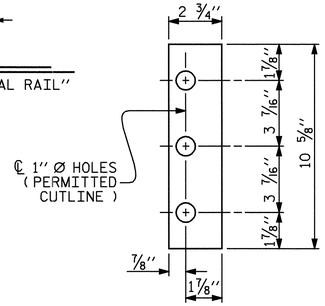
FOR ANCHOR ASSEMBLY, SEE SHEET 2 OF 3, "3 BAR METAL RAIL"



REAR PLATE



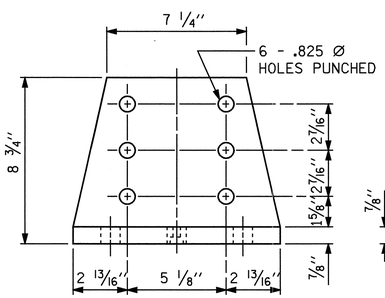
RIVET DETAIL



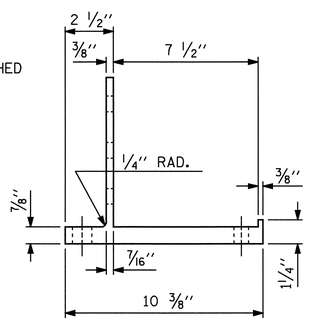
FRONT PLATE

SHIM DETAILS

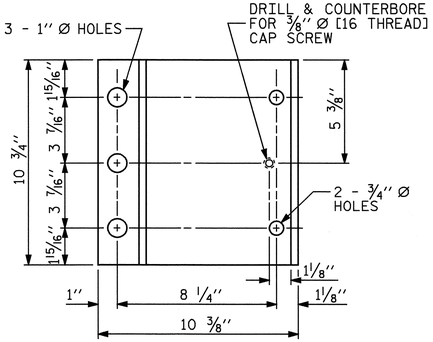
NOTE :
SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.



FRONT ELEVATION



SIDE ELEVATION



PLAN

POST BASE DETAILS

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6.

MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS : AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111.

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS. PLACE ONE JOINT SPLICE JUST BEYOND THE 3RD RAIL POST FROM EACH END, TYPICALLY 14' FROM THE END. PLACE OTHER JOINTS AS NEEDED.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR7.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAIN VISIBLE AFTER RAIL PLACEMENT.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

3 BAR METAL RAIL = 394.75 LIN.FT.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

Ting Hsiung Fang 3/12/07

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

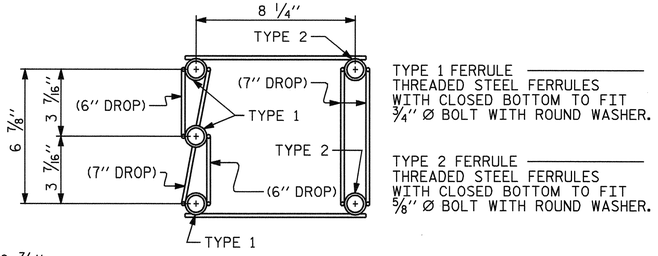
3 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			31

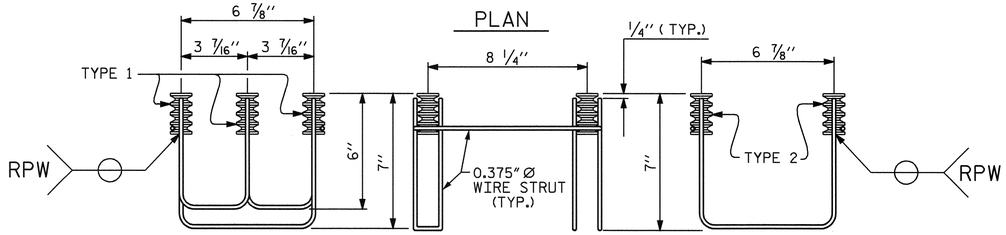
STD. NO. BMR5

ASSEMBLED BY : J.L. WALTON	DATE : 12/7/04	
CHECKED BY : K.K. PUROHIT	DATE : 4/5/05	
DRAWN BY : JMB 1/88	REV. 8/16/99	RWW/LES
CHECKED BY : GGH 1/88	REV. 10/17/00	RWW/LES
	REV. 5/7/03	RWW/JTE

12-MAR-2007 09:39
X:\Structures\FINAL_PLANS\U-3823_sd_CS_01.dgn
jwalton



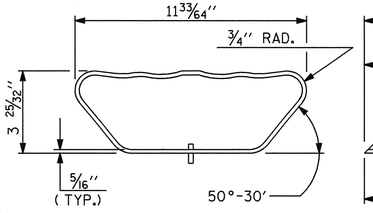
PLAN



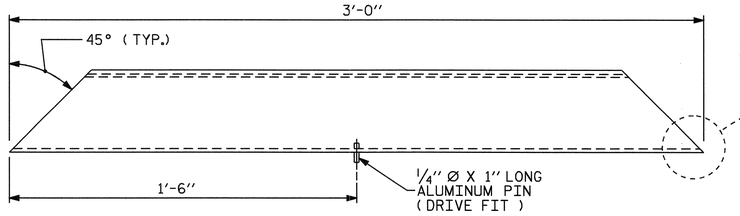
LEFT SIDE VIEW ELEVATION RIGHT SIDE VIEW

5-BOLT METAL RAIL ANCHOR ASSEMBLY

(68 ASSEMBLIES REQUIRED)



END VIEW



PLAN VIEW

BOTTOM RAIL EXPANSION BAR

NOTES

STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES AND 1 3/4" FOR 5/8" FERRULES.

B. 3 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.

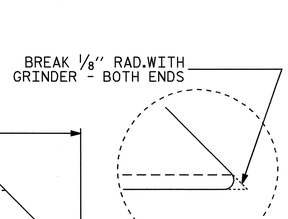
C. 2 - 5/8" Ø X 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 5/8" Ø X 2 1/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

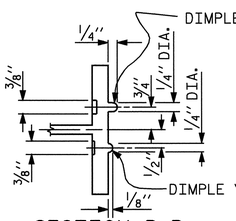
D. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

E. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.

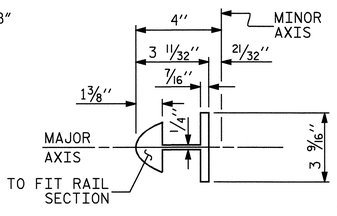
F. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.

G. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

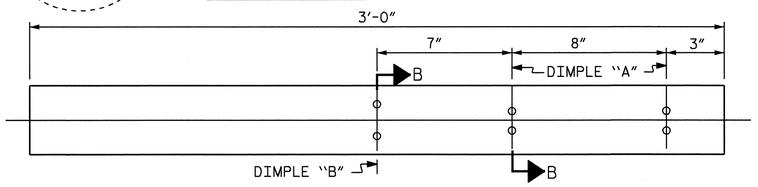




SECTION B-B

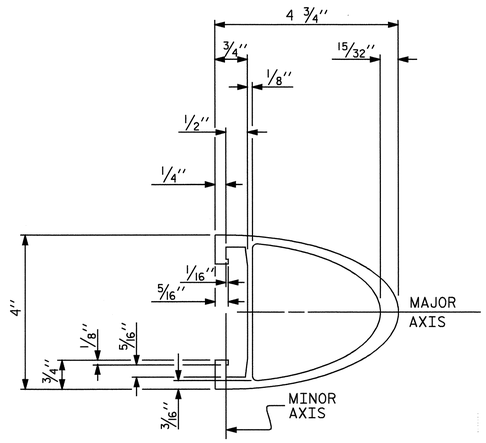


BAR SECTION

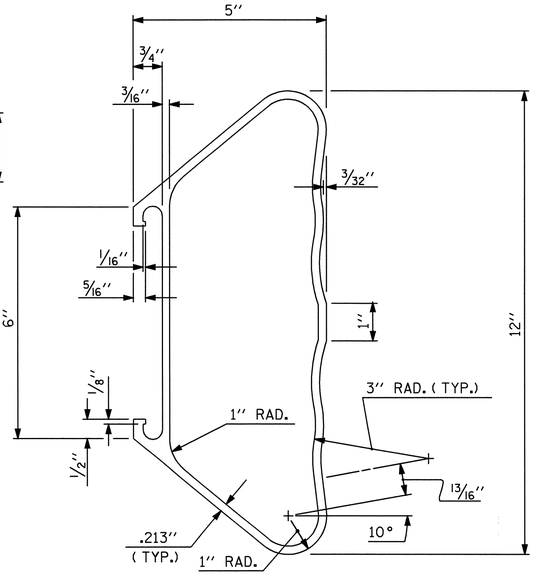


BACK ELEVATION

TOP & MIDDLE RAIL EXPANSION BAR

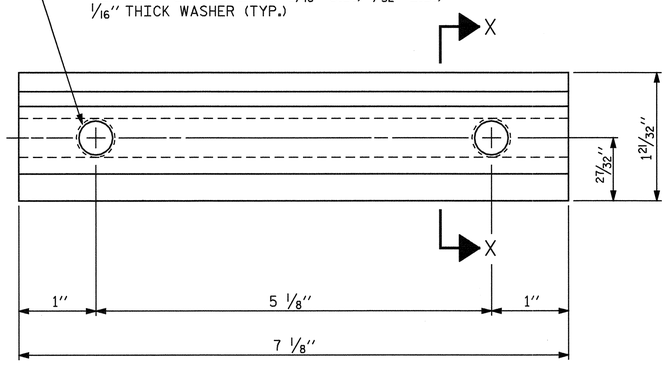


TOP & MIDDLE RAIL SECTION

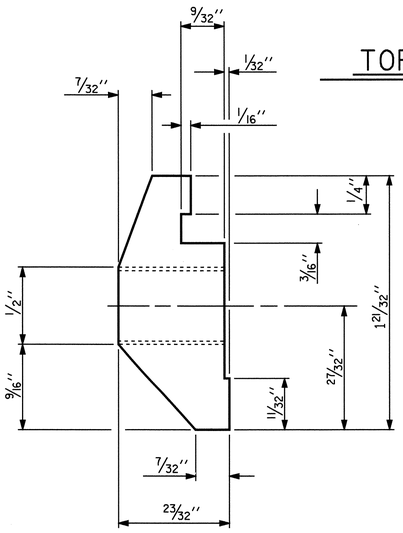


BOTTOM RAIL SECTION

½" Ø [13 THREAD] HOLE FOR ½" Ø X 1" STAINLESS STEEL HEX HEAD CAP SCREW & 1 1/16" O.D., 17/32" I.D., 1/16" THICK WASHER (TYP.)



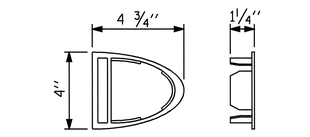
ELEVATION



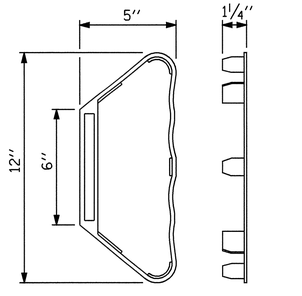
SECTION X-X

CLAMP BAR DETAIL

(6 REQUIRED PER POST)



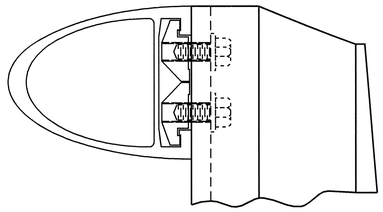
TOP & MIDDLE RAIL CAP



BOTTOM RAIL CAP

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG

Ting H. Fang 3/12/07



CLAMP ASSEMBLY

TOP RAIL SHOWN
(MIDDLE & BOTTOM RAIL ARE SIMILAR)

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3 BAR METAL RAIL

ASSEMBLED BY : J.L. WALTON	DATE : 12/7/04
CHECKED BY : K.K. PUROHIT	DATE : 4/5/05

DRAWN BY : JMB 1/88	REV. 10/17/00 LES/RDR
CHECKED BY : GGH 1/88	REV. 7/10/01 RWW/LES
	REV. 5/7/03 RWW/JTE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			31

12-MAR-2007 09:40
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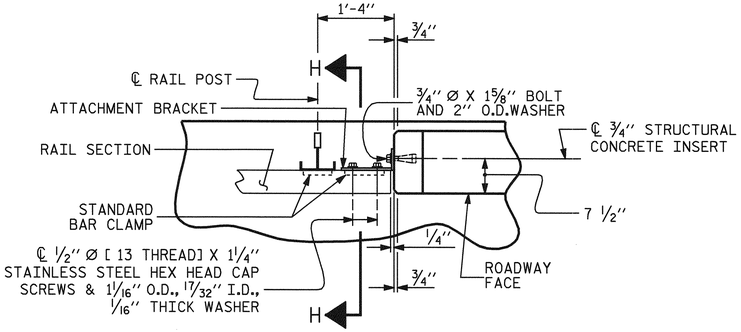
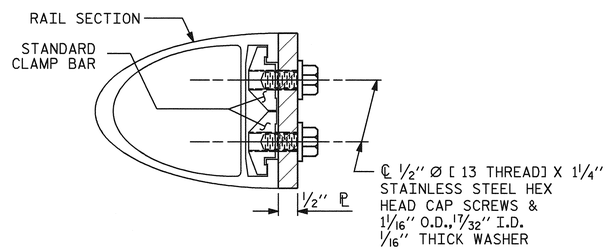
jwalton

STD. NO. BMR6



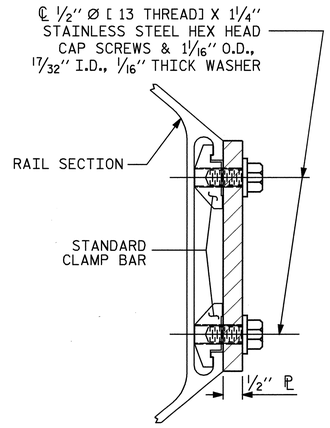
PLAN OF RAIL AND END POST

(STIFFENER ON 1/2" ℙ NOT SHOWN FOR CLARITY)



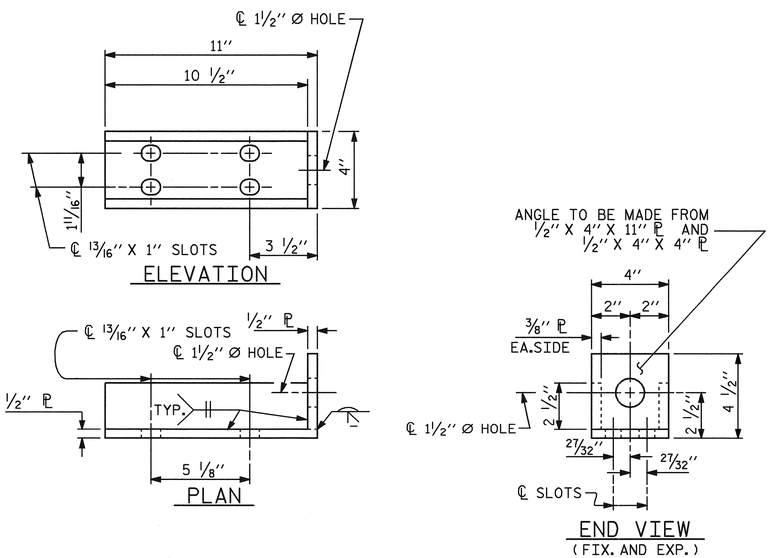
SECTION H-H

(FOR TOP & MIDDLE RAIL)



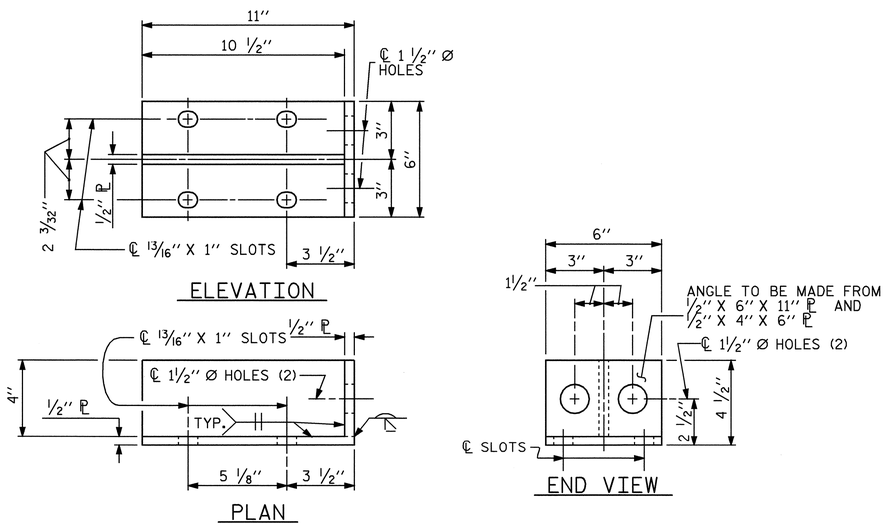
SECTION H-H

(FOR BOTTOM RAIL)



DETAILS FOR ATTACHMENT BRACKET

(TOP & MIDDLE RAIL ONLY)



DETAILS FOR ATTACHMENT BRACKET

(BOTTOM RAIL ONLY)

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.

B. 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N. C. THREADS.

C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

D. STANDARD CLAMP BARS (SEE METAL RAIL SHEET).

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 3 BAR METAL RAIL.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

NOTES

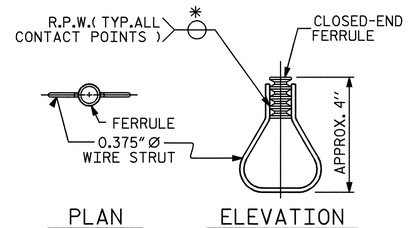
STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".

B. 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. AT THE CONTRACTORS OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

C. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.



STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3 BAR METAL RAIL

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

3/12/07

ASSEMBLED BY : J.L. WALTON	DATE : 12/7/04
CHECKED BY : K.K. PUROHIT	DATE : 4/5/05

DRAWN BY : JMB	1/88	REV. 10/17/00	RWW/LES
CHECKED BY : GGH	1/88	REV. 7/10/01	RWW/LES
		REV. 5/7/03	RWW/JTE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			31

12-MAR-2007 09:40
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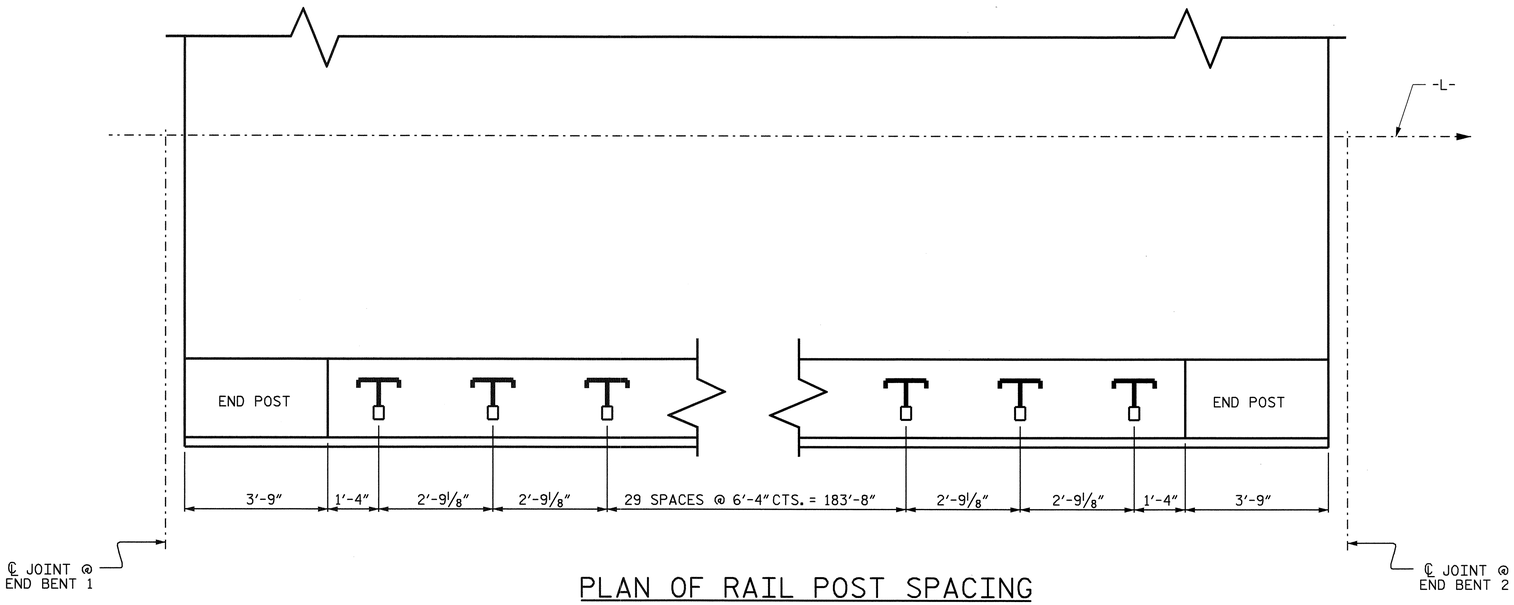
jwalton

STD. NO. BMR7

NOTES

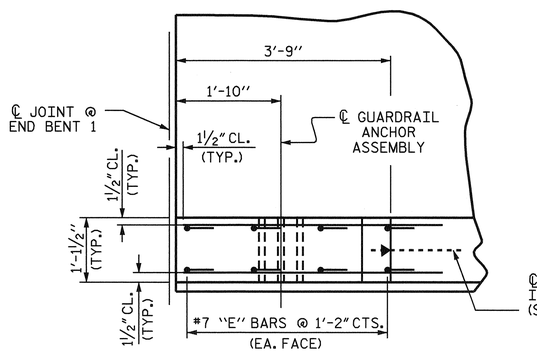
FOR DETAILS OF GUARDRAIL ANCHOR ASSEMBLY SEE "GUARDRAIL ANCHORAGE DETAILS FOR METAL RAILS" SHEET.

FOR DETAILS OF CONCRETE INSERTS, SEE "3 BAR METAL RAIL," SHEET 3 OF 3.

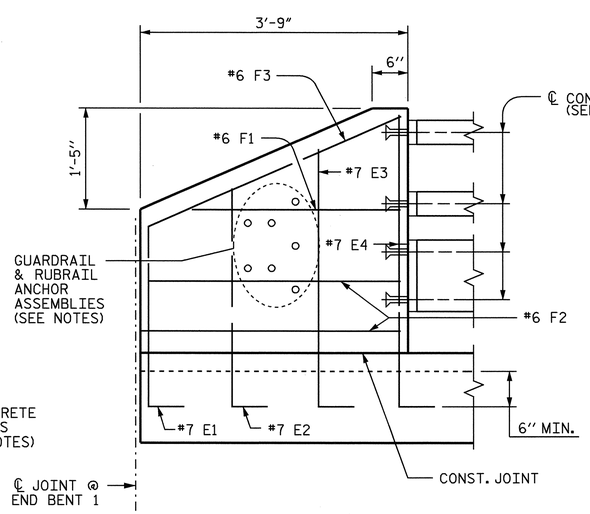


PLAN OF RAIL POST SPACING

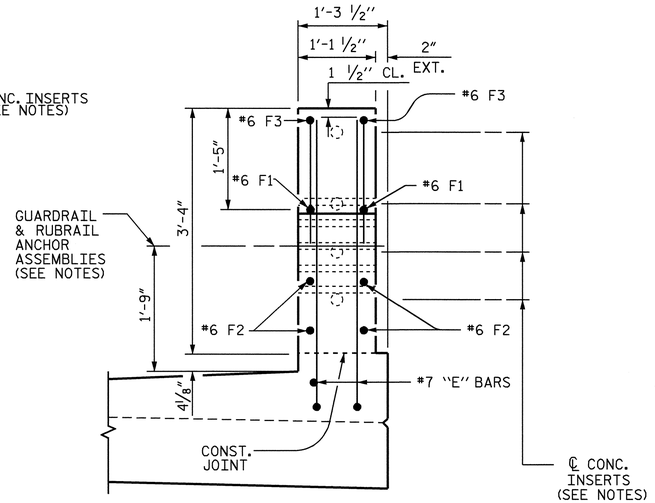
(SYMMETRICAL ABOUT -L-)



PLAN



ELEVATION



END VIEW

END POST DETAILS

END BENT 1 SHOWN, END BENT 2 SIMILAR.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

3/12/07

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END POST DETAILS & RAIL POST SPACING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : J.L. WALTON DATE : 12/7/04
CHECKED BY : K.K. PUROHIT DATE : 4/5/05

12-MAR-2007 09:40
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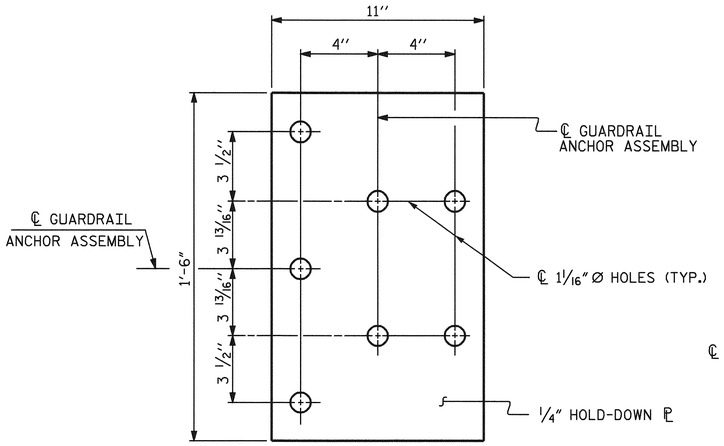
jwalton



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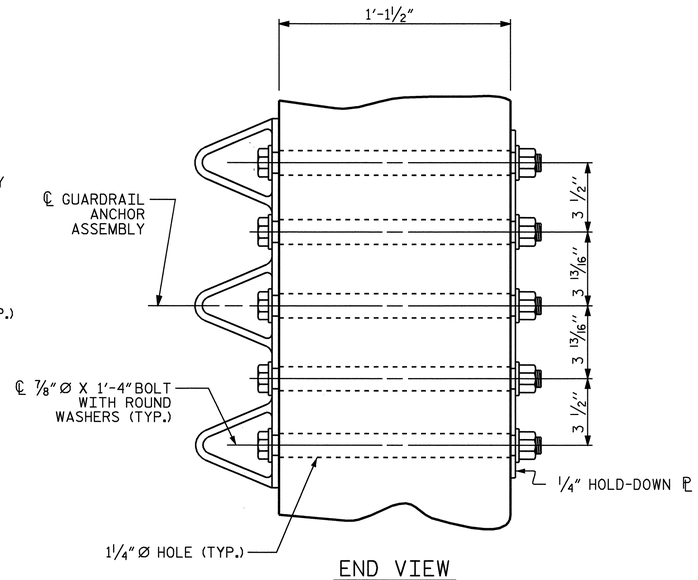


END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS

NOTES

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

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.

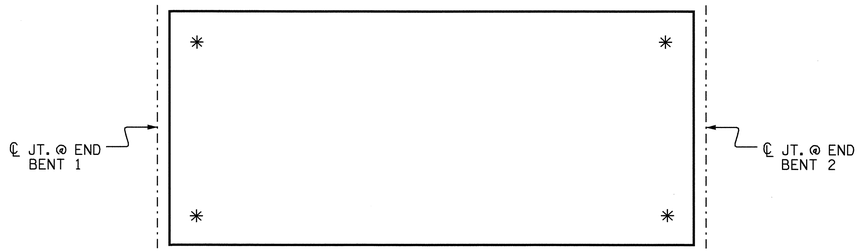
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8'' Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

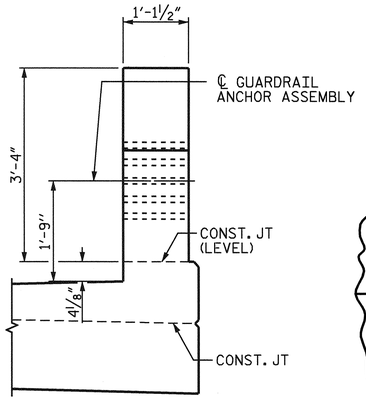
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4'' Ø HOLES 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.

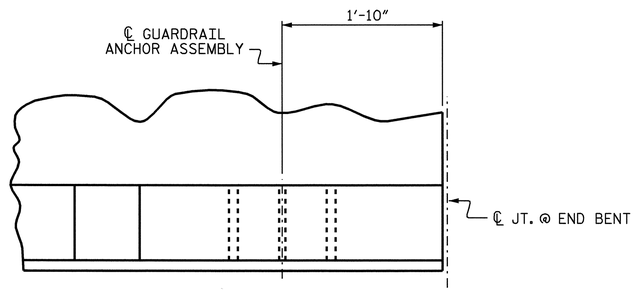


SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



END VIEW
(THREE BAR METAL RAIL)



PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSUNG FANG
3/12/07

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR METAL RAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			31

ASSEMBLED BY : J.L. WALTON	DATE : 12/7/04	
CHECKED BY : K.K. PUROHIT	DATE : 4/5/05	
DRAWN BY : EEM 6/94	REV. 8/16/99	RWW/LES
CHECKED BY : RGW 6/94	REV. 10/17/00	RWW/LES
	REV. 5/7/03	RWW/JTE

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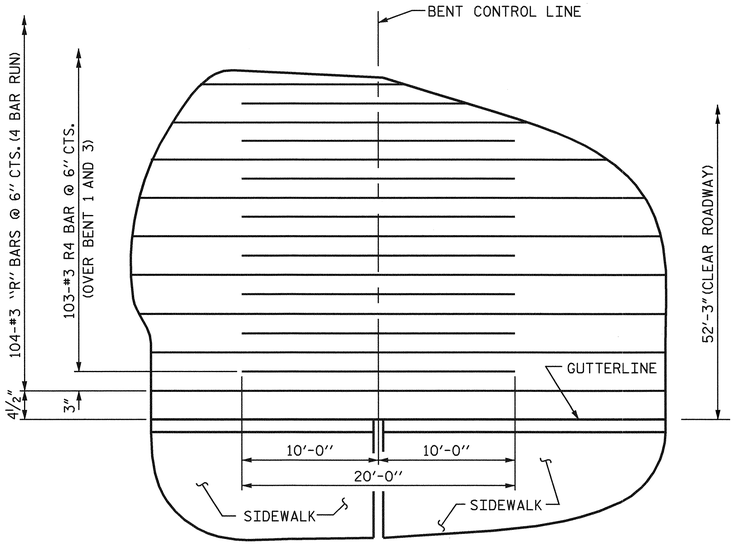
jwalton

STD. NO. BMR8



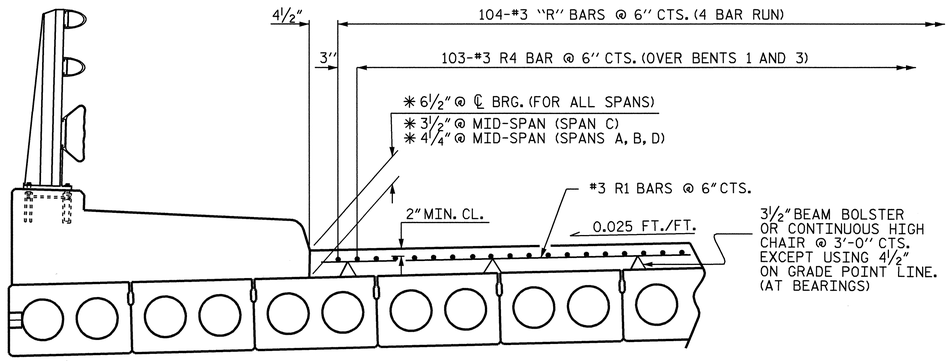
PLAN @ BENTS 1 & 3

NOTES:

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE SIDEWALK. THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

ALL REINFORCING FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.

FOR ELASTOMERIC CONCRETE, SEE "3'-0" X 1'-9" PRESTRESSED CORED SLAB UNIT JOINT DETAILS" SHEET.

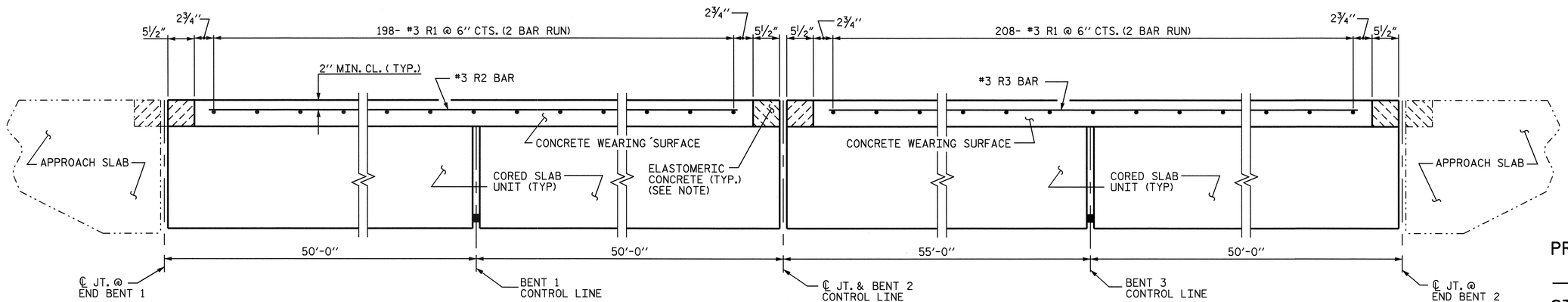


REINFORCING DETAIL

✱BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS

BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱R1	812	#3	STR	26'-8"	8142
✱R2	416	#3	STR	25'-10"	4041
✱R3	416	#3	STR	27'-1"	4236
✱R4	206	#3	STR	20'-0"	1549
EPOXY COATED REINF. STEEL = 17,968 LBS					
CONCRETE WEARING SURFACE = 10,700 SQ. FT.					

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	1'-6"



ELEVATION OF THE CONCRETE WEARING SURFACE

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE WEARING SURFACE DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG
5/8/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : R. W. WRIGHT DATE : 2-10-06
CHECKED BY : T. H. FANG DATE : 2-13-07

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tfang

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

SPANS A, B, & D

BAR	NUMBER	SIZE	TYPE	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT	SIDEWALK (INTERIOR) LENGTH	SIDEWALK (INTERIOR) WEIGHT	SIDEWALK (EXTERIOR) LENGTH	SIDEWALK (EXTERIOR) WEIGHT
B1	4	#4	STR	25'-8"	69	25'-8"	69	25'-8"	69
S1	8	#5	1	4'-4"	36	4'-4"	36	4'-4"	36
S2	98	#4	1	5'-4"	349	5'-4"	349	5'-4"	349
✱S3	9	#4	2			5'-11"	36	5'-11"	36
REINFORCING STEEL			LB.	454		454		454	
✱EPOXY COATED REINFORCING STEEL			LB.	0		36		36	
5,400 PSI CONCRETE			CU. YDS.	6.8		6.8		6.8	
0.6" Ø L.R. STRANDS			No.	19		19		19	

SPAN C

BAR	NUMBER	SIZE	TYPE	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT	SIDEWALK (INTERIOR) LENGTH	SIDEWALK (INTERIOR) WEIGHT	SIDEWALK (EXTERIOR) LENGTH	SIDEWALK (EXTERIOR) WEIGHT
B2	4	#4	STR	28'-2"	75	28'-2"	75	28'-2"	75
S1	8	#5	1	4'-4"	36	4'-4"	36	4'-4"	36
S2	108	#4	1	5'-4"	385	5'-4"	385	5'-4"	385
✱S3	9	#4	2			5'-11"	36	5'-11"	36
REINFORCING STEEL			LB.	496		496		496	
✱EPOXY COATED REINFORCING STEEL			LB.	0		36		36	
7,000 PSI CONCRETE			CU. YDS.	7.5		7.5		7.5	
0.6" Ø L.R. STRANDS			No.	24		24		24	

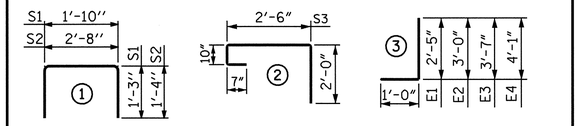
GROOVING BRIDGE FLOOR QUANTITY

	AREA (SQ. FT.)
BRIDGE DECK	9950
APPROACH SLAB	2230
TOTAL	12180

GRADE 270 STRANDS

	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

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 2½" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1½" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. 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.

WHEN A CONCRETE WEARING SURFACE IS DETAILED ON THE CORED SLAB BRIDGE TYPICAL SECTION, THE TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A ⅜" RAKED FINISH.

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 4300 PSI FOR SPANS A, B, & D AND 5400 PSI FOR SPAN C.

ALL REINFORCING STEEL IN SIDEWALK AND END POST SHALL BE EPOXY COATED.

THE COST OF THE SIDEWALK IS INCLUDED IN THE PAY ITEMS FOR CLASS AA CONCRETE AND EPOXY COATED REINFORCING STEEL.

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

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10' IN LENGTH.

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS

BILL OF MATERIAL FOR SIDEWALK & END POSTS SPAN A

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✱E1	4	#7	3	3'-5"	28
✱E2	4	#7	3	4'-0"	33
✱E3	4	#7	3	4'-7"	37
✱E4	4	#7	3	5'-1"	42
✱F1	4	#6	STR	3'-2"	19
✱F2	8	#6	STR	3'-5"	41
✱F3	4	#6	STR	3'-8"	22
✱B3	24	#4	STR	26'-2"	420
✱EPOXY COATED REIN. STEEL			LBS.		642
CLASS AA CONCRETE			CU. YD.		31.0

BILL OF MATERIAL FOR SIDEWALK SPAN B

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✱B3	24	#4	STR	26'-2"	420
✱EPOXY COATED REIN. STEEL			LBS.		420
CLASS AA CONCRETE			CU. YD.		30.2

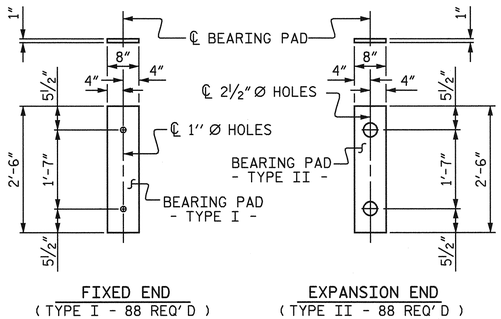
BILL OF MATERIAL FOR SIDEWALK SPAN C

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✱B4	24	#4	STR	28'-8"	460
✱EPOXY COATED REIN. STEEL			LBS.		460
CLASS AA CONCRETE			CU. YD.		33.2

BILL OF MATERIAL FOR SIDEWALK & END POSTS SPAN D

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✱E1	4	#7	3	3'-5"	28
✱E2	4	#7	3	4'-0"	33
✱E3	4	#7	3	4'-7"	37
✱E4	4	#7	3	5'-1"	42
✱F1	4	#6	STR	3'-2"	19
✱F2	8	#6	STR	3'-5"	41
✱F3	4	#6	STR	3'-8"	22
✱B3	24	#4	STR	26'-2"	420
✱EPOXY COATED REIN. STEEL			LBS.		642
CLASS AA CONCRETE			CU. YD.		31.0

TOTAL	
LBS.	2164
CU. YD.	125.4



ELASTOMERIC BEARING DETAILS

DEAD LOAD DEFLECTION AND CAMBER

SPAN A	
CAMBER (SLAB ALONE IN PLACE)	↑ 2 11/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	↓ ½"
FINAL CAMBER	↑ 2 3/16"
SPAN B	
CAMBER (SLAB ALONE IN PLACE)	↑ 2 11/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	↓ ½"
FINAL CAMBER	↑ 2 3/16"
SPAN C	
CAMBER (SLAB ALONE IN PLACE)	↑ 3 3/4"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	↓ ¾"
FINAL CAMBER	↑ 3"
SPAN D	
CAMBER (SLAB ALONE IN PLACE)	↑ 2 11/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	↓ ½"
FINAL CAMBER	↑ 2 3/16"

✱✱ INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED

SPAN A

UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	18	49'-10½"	897'-9"
INT. (SIDEWALK)	2	49'-10½"	99'-9"
EXT. (SIDEWALK)	2	49'-10½"	99'-9"
TOTAL NUMBER	22	49'-10½"	1097'-3"

SPAN B

UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	18	49'-10½"	897'-9"
INT. (SIDEWALK)	2	49'-10½"	99'-9"
EXT. (SIDEWALK)	2	49'-10½"	99'-9"
TOTAL NUMBER	22	49'-10½"	1097'-3"

SPAN C

UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	18	54'-10½"	987'-9"
INT. (SIDEWALK)	2	54'-10½"	109'-9"
EXT. (SIDEWALK)	2	54'-10½"	109'-9"
TOTAL NUMBER	22	54'-10½"	1207'-3"

SPAN D

UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	18	49'-10½"	897'-9"
INT. (SIDEWALK)	2	49'-10½"	99'-9"
EXT. (SIDEWALK)	2	49'-10½"	99'-9"
TOTAL NUMBER	22	49'-10½"	1097'-3"
			TOTAL LENGTH 4499'-0"

SPLICE CHART

BAR	SIZE	LENGTH
B1	#4	1'-9"
B2	#4	1'-9"
✱B3	#4	2'-9"

✱EPOXY COATED REIN. STEEL

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

5/8/07

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL

ASSEMBLED BY : J.L. WALTON	DATE : 12/7/04
CHECKED BY : K.K. PUROHIT	DATE : 4/5/05
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01 RWW/LES
	REV. 5/7/03RR RWW/JTE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			31

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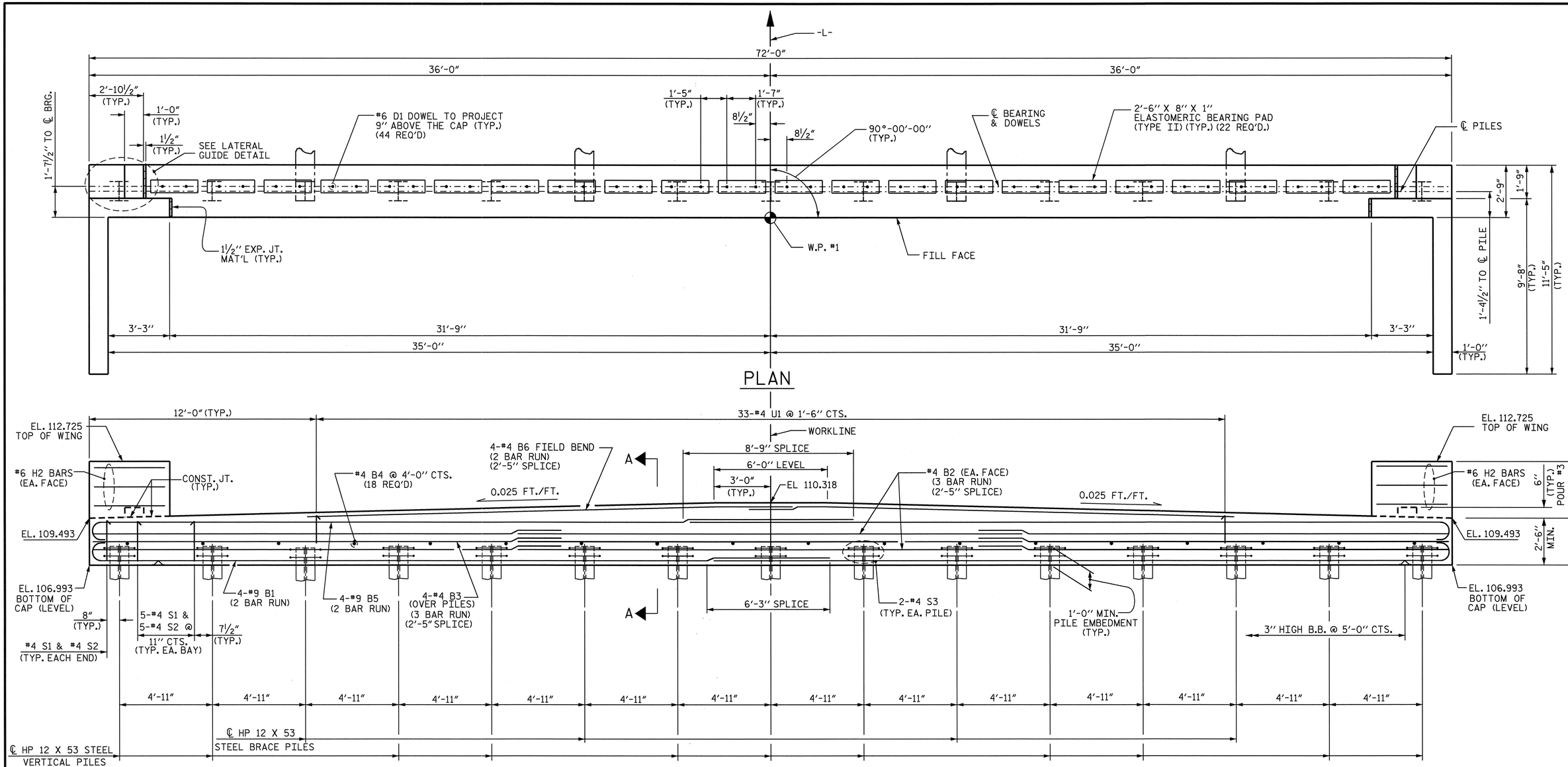


PLAN

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.

FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET 2 OF 2.

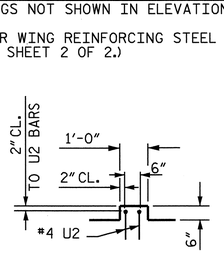
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

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.

ELEVATION

WINGS NOT SHOWN IN ELEVATION VIEW FOR CLARITY.

(FOR WING REINFORCING STEEL & DETAILS, SEE SHEET 2 OF 2.)



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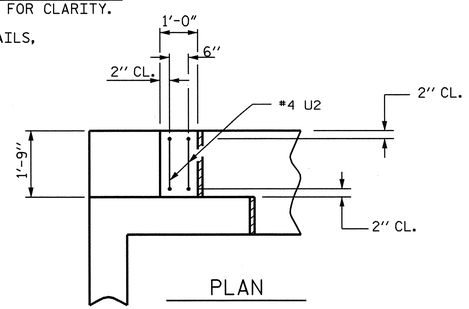

PLAN

LATERAL GUIDE DETAIL

(EACH END SIMILAR)

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 5-7-2007

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -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-19
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01-05
CHECKED BY : A. B. NAIK DATE : 02-05

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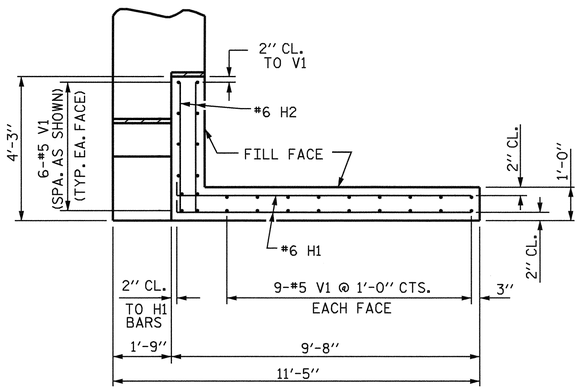
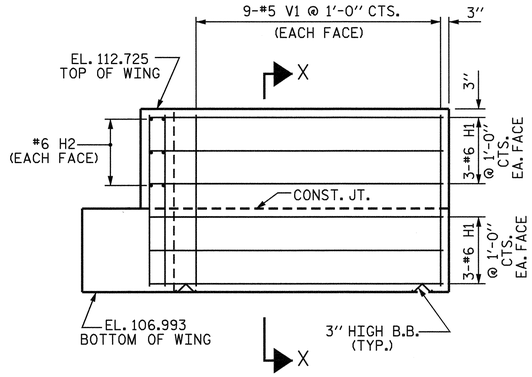
qtnguyen



PLAN



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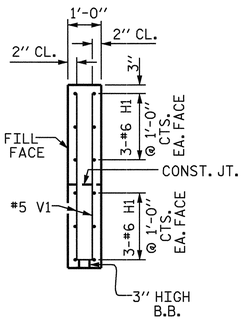
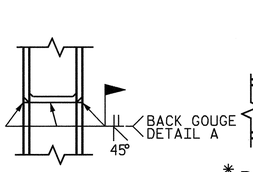


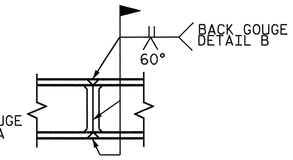
SECTION X-X

WING WALL DETAILS

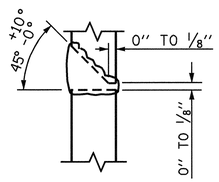
BOTH WINGS ARE SIMILAR.



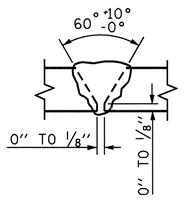
* PILE VERTICAL



* PILE HORIZONTAL OR VERTICAL



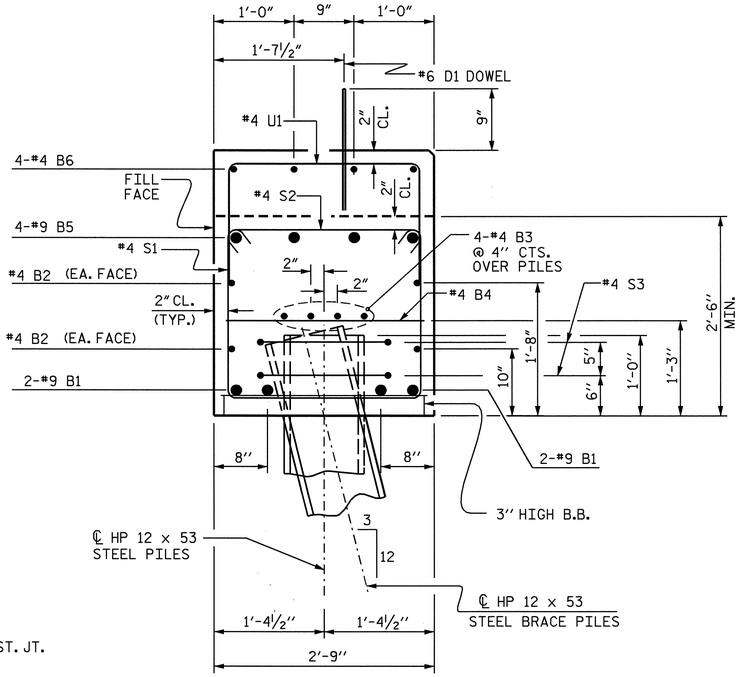
DETAIL A



DETAIL B

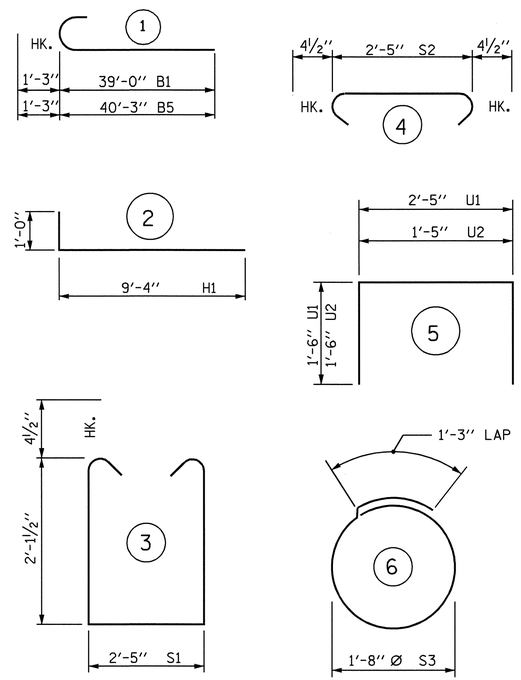
* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



SECTION A-A

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	40'-3"	1095
B2	12	#4	STR	25'-6"	204
B3	12	#4	STR	25'-6"	204
B4	18	#4	STR	2'-5"	29
B5	8	#9	1	41'-6"	1129
B6	8	#4	STR	25'-7"	137
D1	44	#6	STR	1'-6"	99
H1	24	#6	2	10'-4"	372
H2	12	#6	STR	3'-11"	71
S1	72	#4	3	7'-5"	357
S2	72	#4	4	3'-2"	152
S3	30	#4	6	6'-6"	130
U1	33	#4	5	5'-5"	119
U2	4	#4	5	4'-5"	12
V1	60	#5	STR	5'-2"	323

REINFORCING STEEL = 4433 LBS.

CLASS A CONCRETE

POUR #1: CAP & LOWER WINGS 23.0 C.Y.

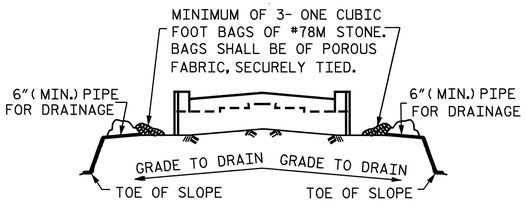
POUR #2: TOP OF WINGS 3.1 C.Y.

POUR #3: LATERAL GUIDE 0.1 C.Y.

TOTAL CLASS A CONCRETE 26.2 C.Y.

HP 12 X 53 STEEL PILES

NO. 15 LIN. FEET 150.0



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

NORTH CAROLINA PROFESSIONAL SEAL 19875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -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-20
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01-05
CHECKED BY : A. B. NAIK DATE : 02-05

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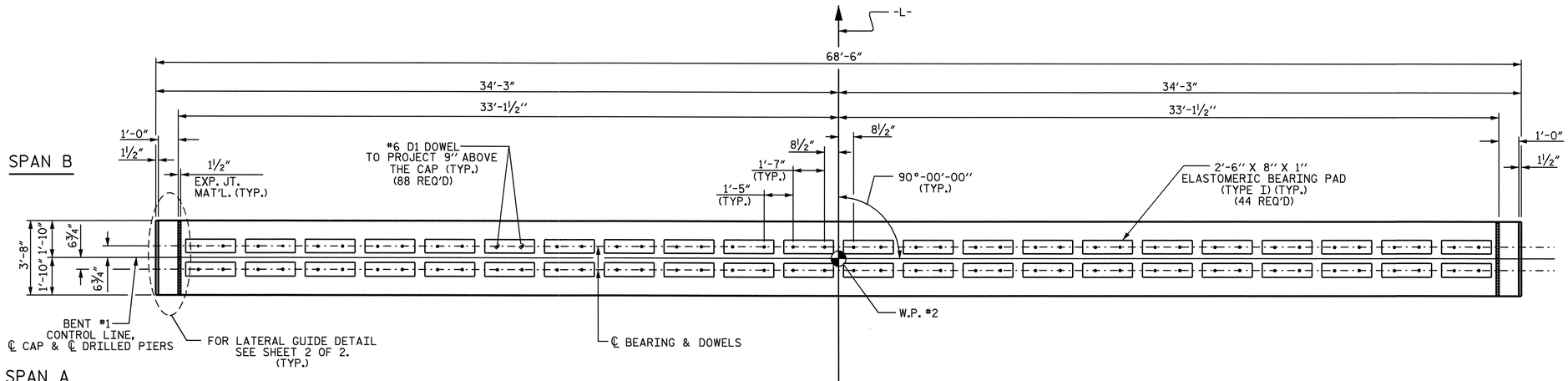
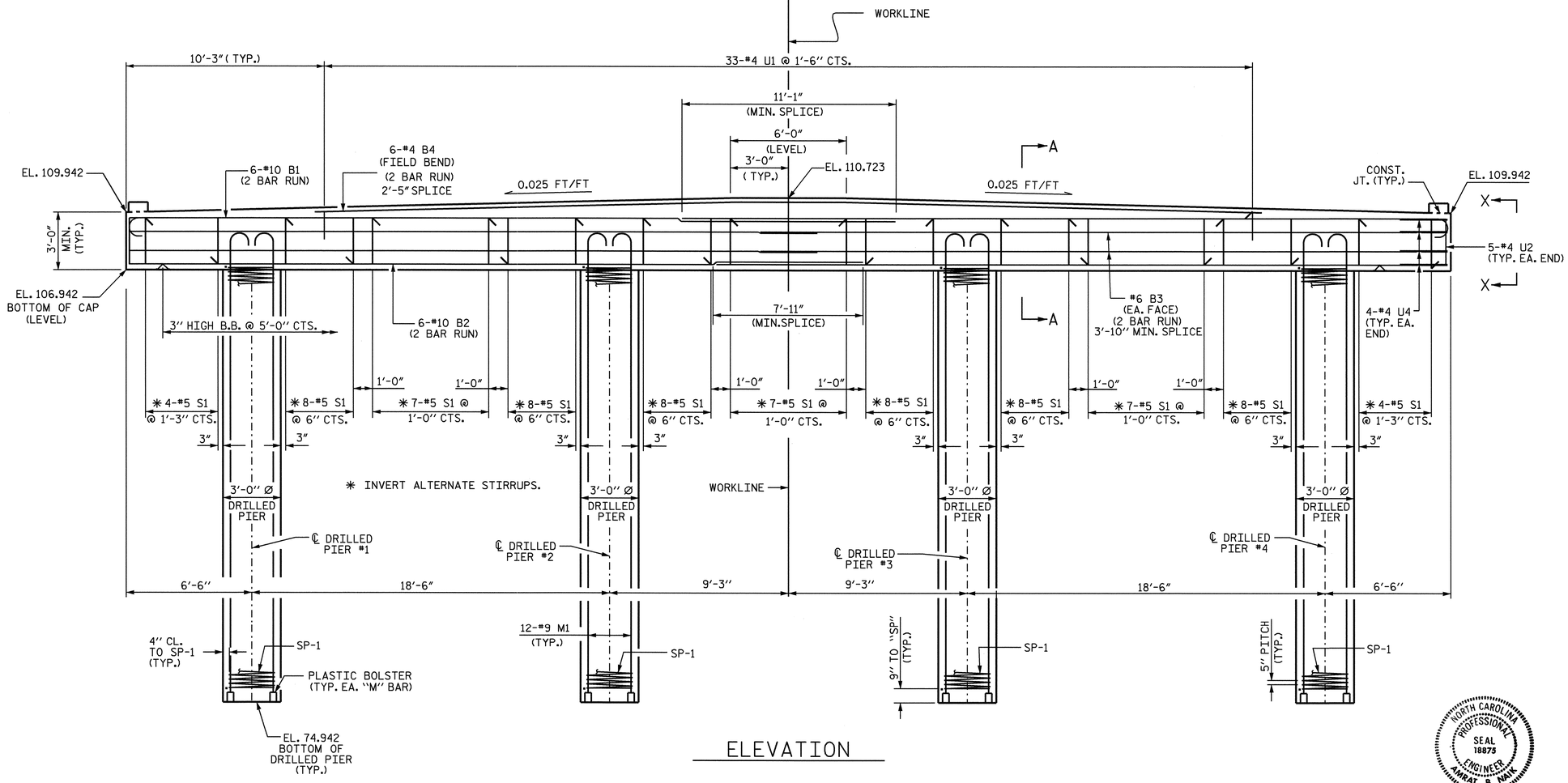


PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 D1 DOWELS.

HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL"

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH THREE FEET OF EXTRA LENGTH.

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

SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIERS WILL NOT BE PERMITTED.

PERMANENT STEEL CASING SHALL END AT THE CONSTRUCTION JOINT AT THE BOTTOM OF THE CAP.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik
5/3/2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01/05
CHECKED BY : A. B. NAIK DATE : 02/05

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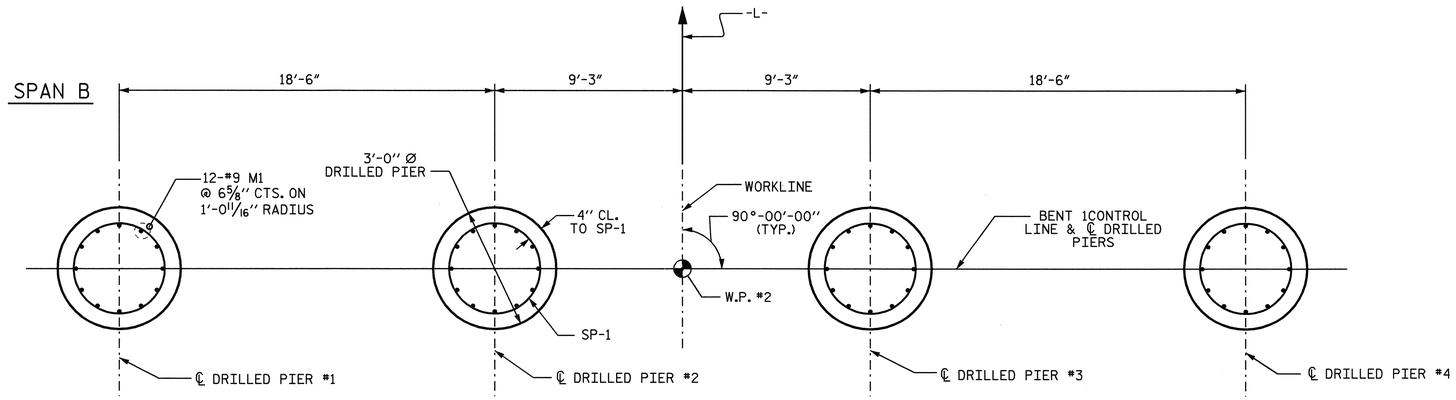
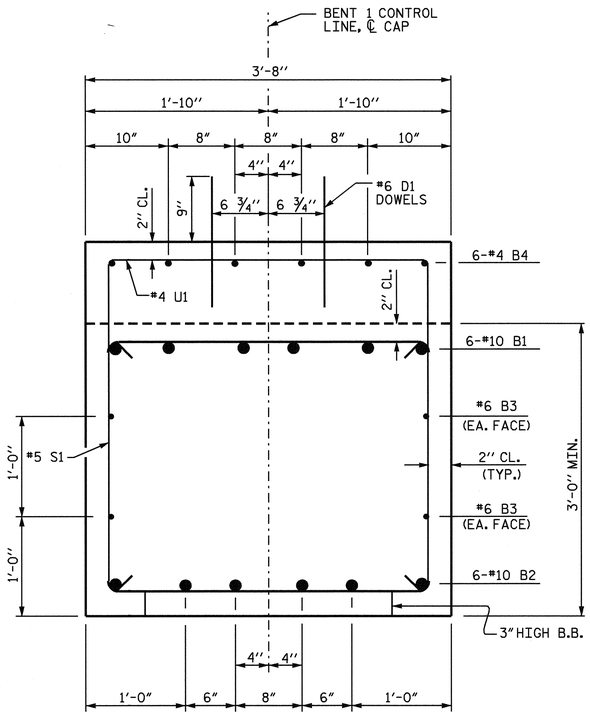
qtnguyen

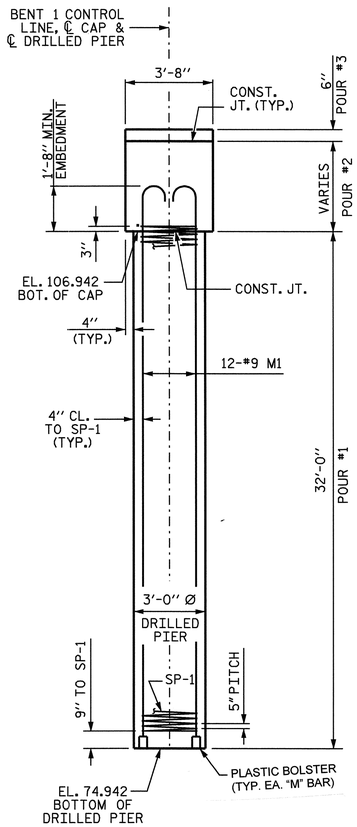


PLAN OF DRILLED PIERS

(DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH DRILLED PIER)

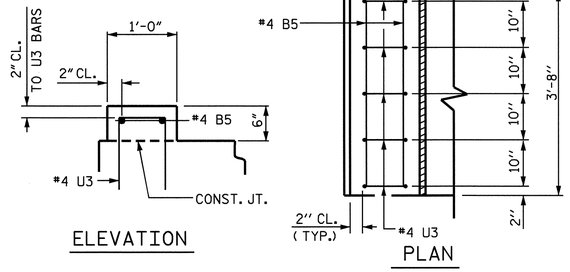


SECTION A-A



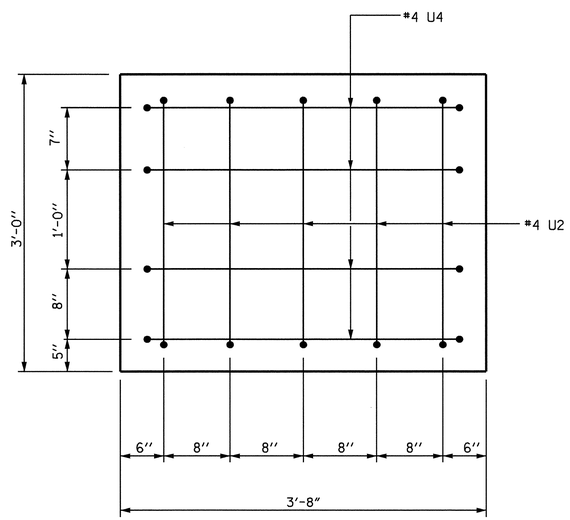
END ELEVATION

(TYP. EA. DRILLED PIER)



LATERAL GUIDE DETAIL

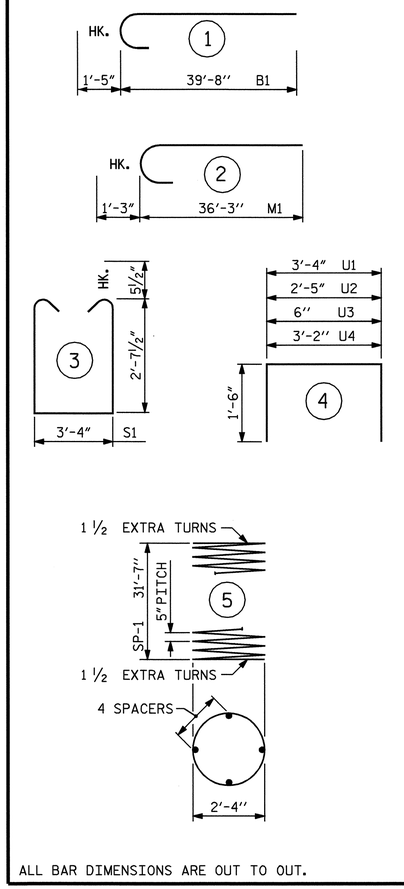
(EACH END SIMILAR)



SECTION X-X

(TYP. EACH END)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#10	1	41'-1"	2121
B2	12	#10	STR	38'-1"	1966
B3	8	#6	STR	36'-0"	433
B4	12	#4	STR	25'-8"	206
B5	4	#4	STR	3'-4"	9
D1	88	#6	STR	1'-6"	198
M1	48	#9	2	37'-6"	6120
S1	77	#5	3	9'-6"	763
U1	33	#4	4	6'-4"	140
U2	10	#4	4	5'-5"	36
U3	10	#4	4	3'-6"	23
U4	8	#4	4	6'-2"	33
REINFORCING STEEL				LBS	12048
SP-1	4	**	5	567'-2"	2366

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS 2366

CLASS "A" CONCRETE BREAKDOWN		
POUR #2 (CAP)	C.Y.	31.9
POUR #3 (LATERAL GUIDES)	C.Y.	0.1
TOTAL	C.Y.	32.0

DRILLED PIER QUANTITIES

DRILLED PIER CONCRETE		
POUR #1 (DRILLED PIER)	C.Y.	33.5
3'-0" Ø DRILLED PIER IN SOIL	FT.	88.0
3'-0" Ø DRILLED PIER NOT IN SOIL	FT.	40.0
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	FT.	80.0
CROSSHOLE SONIC LOGGING	EA.	1
SPT TESTING	EA.	1
SID INSPECTION	EA.	1
CSL TUBES	FT.	551.0

** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01/05

CHECKED BY : A. B. NAIK DATE : 02/05

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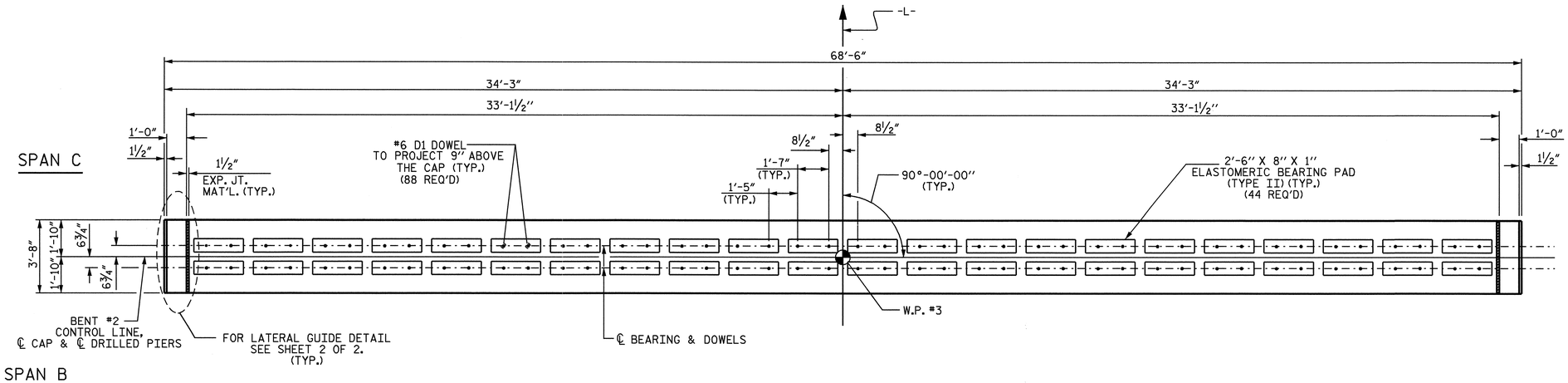

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 D1 DOWELS.

HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

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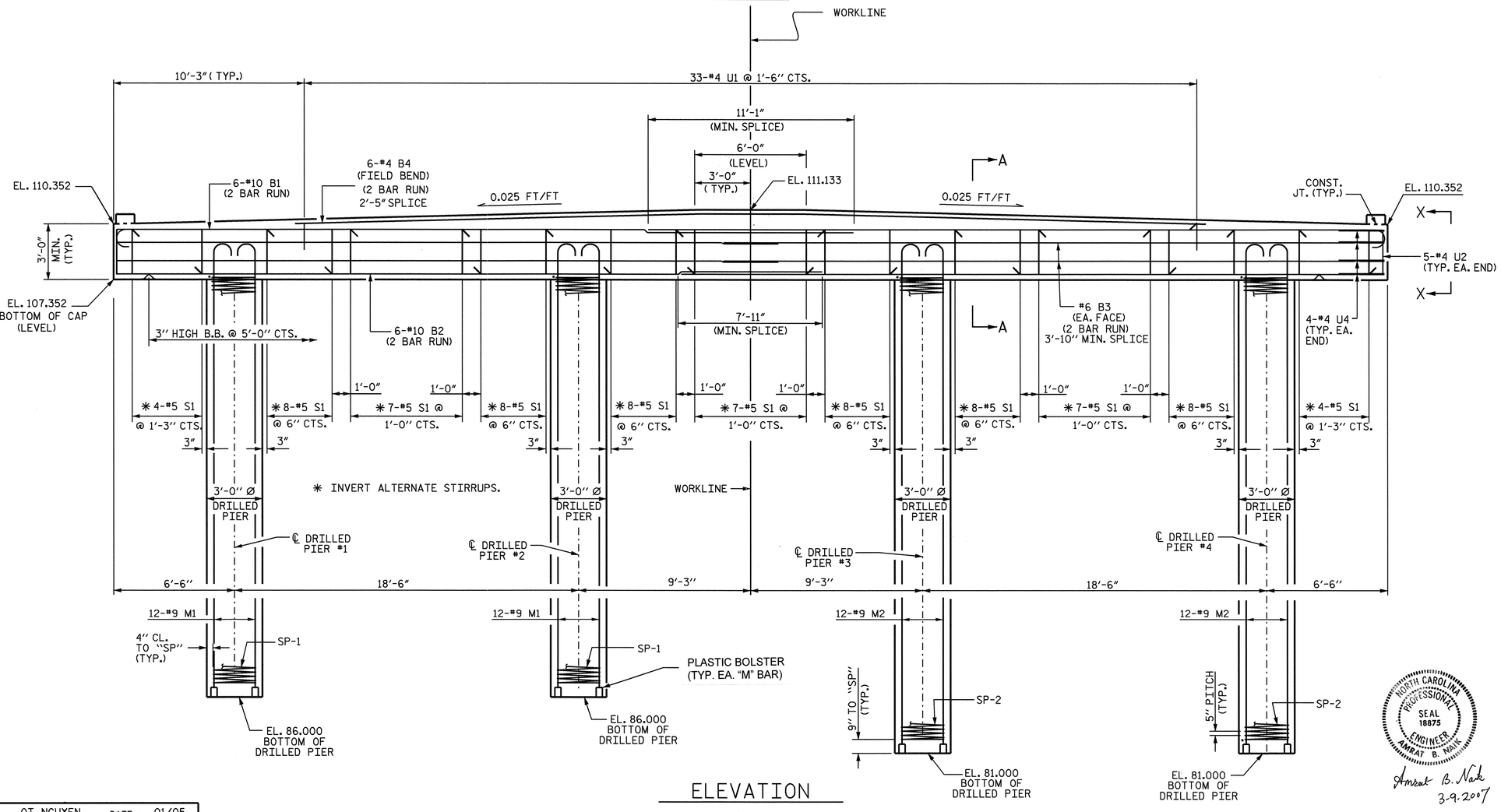
SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIERS WILL NOT BE PERMITTED.

PERMANENT STEEL CASING SHALL END AT THE CONSTRUCTION JOINT AT THE BOTTOM OF THE CAP.

PLAN



ELEVATION

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			31

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

DRAWN BY : QT NGUYEN DATE : 01/05
CHECKED BY : A. B. NAIK DATE : 02/05

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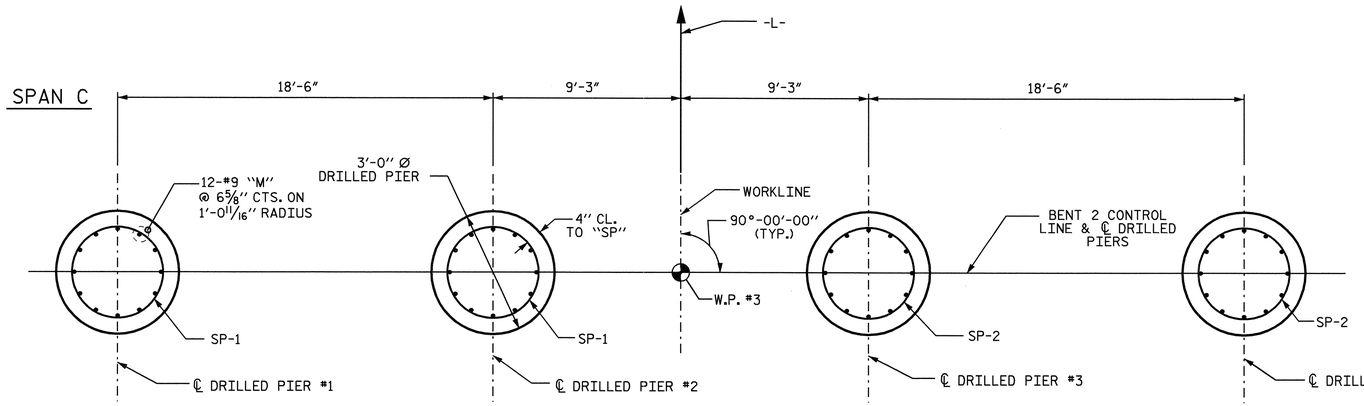
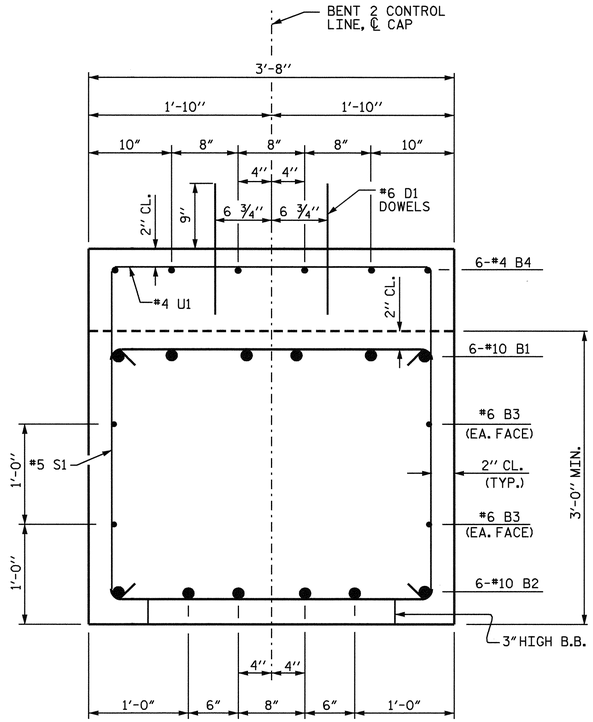
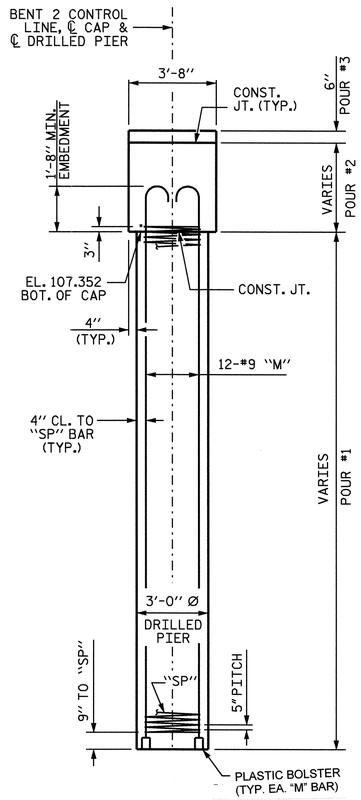


PLAN OF DRILLED PIERS

(DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH DRILLED PIER)

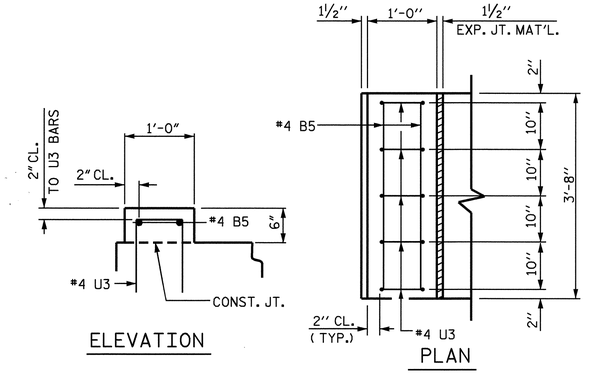


SECTION A-A



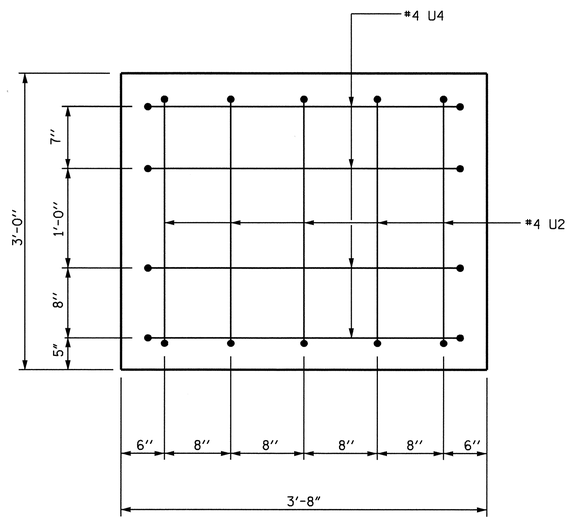
END ELEVATION

(TYP. EA. DRILLED PIER)



LATERAL GUIDE DETAIL

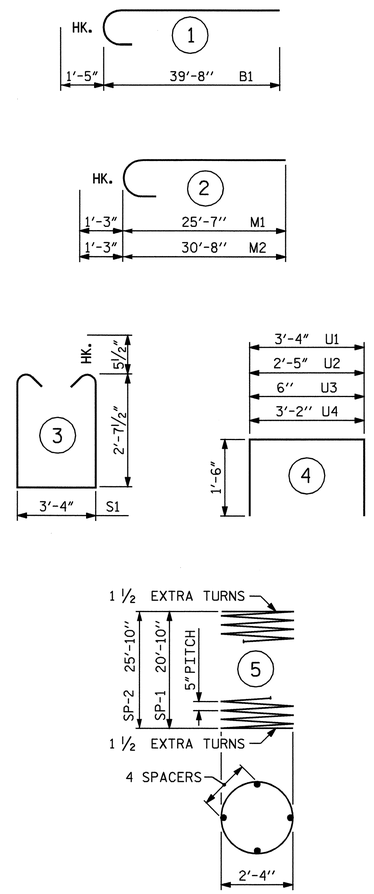
(EACH END SIMILAR)



SECTION X-X

(TYP. EACH END)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#10	1	41'-1"	2121
B2	12	#10	STR	38'-1"	1966
B3	8	#6	STR	36'-0"	433
B4	12	#4	STR	25'-8"	206
B5	4	#4	STR	3'-4"	9
D1	88	#6	STR	1'-6"	198
M1	24	#9	2	26'-10"	2190
M2	24	#9	2	31'-11"	2604
S1	77	#5	3	9'-6"	763
U1	33	#4	4	6'-4"	140
U2	10	#4	4	5'-5"	36
U3	10	#4	4	3'-6"	23
U4	8	#4	4	6'-2"	33
REINFORCING STEEL				LBS	10722
SP-1	2	**	5	380'-8"	796
SP-2	2	**	5	468'-0"	976

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS 1772

CLASS "A" CONCRETE BREAKDOWN

POUR #2 (CAP)	C.Y.	31.9
POUR #3 (LATERAL GUIDES)	C.Y.	0.1
TOTAL	C.Y.	32.0

DRILLED PIER QUANTITIES

DRILLED PIER CONCRETE

POUR #1 (DRILLED PIER)	C.Y.	25.0
3'-0" Ø DRILLED PIER IN SOIL	FT.	57.5
3'-0" Ø DRILLED PIER NOT IN SOIL	FT.	38.0
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	FT.	49.5
CROSSHOLE SONIC LOGGING	EA.	1
SPT TESTING	EA.	1
SID INSPECTION	EA.	1
CSL TUBES	FT.	422.0

** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01/05
CHECKED BY : A. B. NAIK DATE : 02/05

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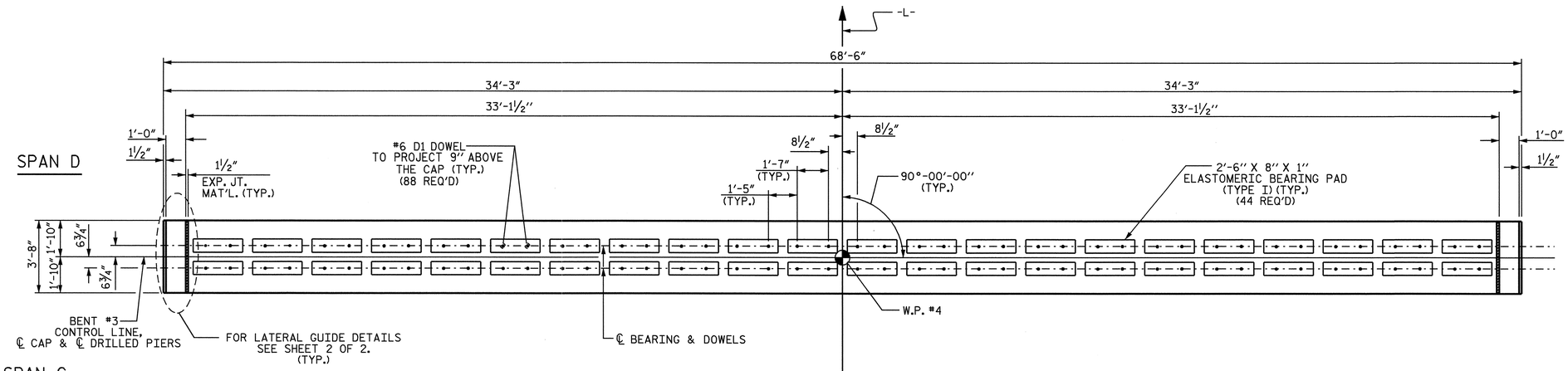
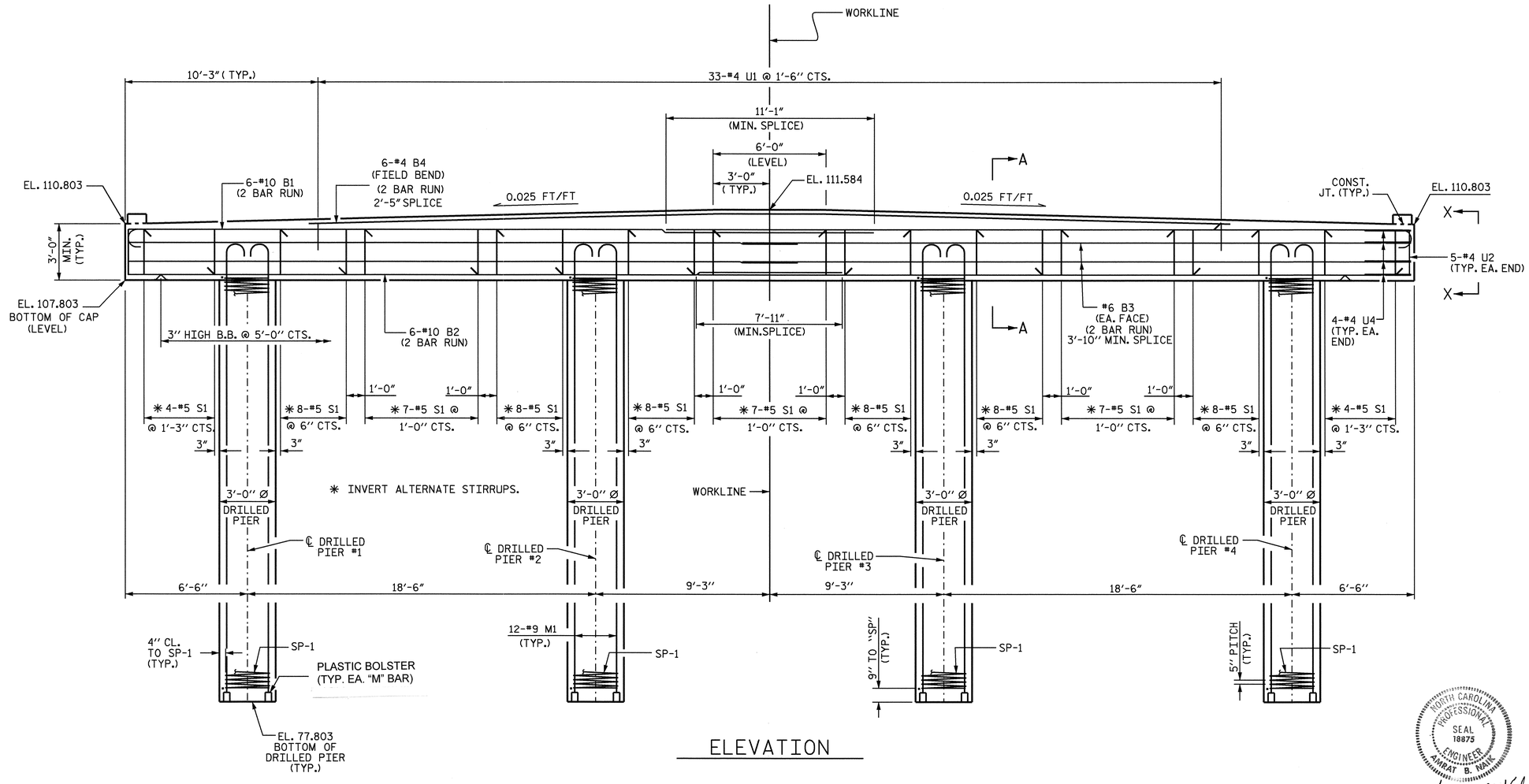


PLAN



ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 D1 DOWELS.

HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL"

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH THREE FEET OF EXTRA LENGTH.

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

SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIERS WILL NOT BE PERMITTED.

PERMANENT STEEL CASING SHALL END AT THE CONSTRUCTION JOINT AT THE BOTTOM OF THE CAP.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			31

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3.9.2007

DRAWN BY : QT NGUYEN DATE : 01/05
CHECKED BY : A. B. NAIK DATE : 02/05

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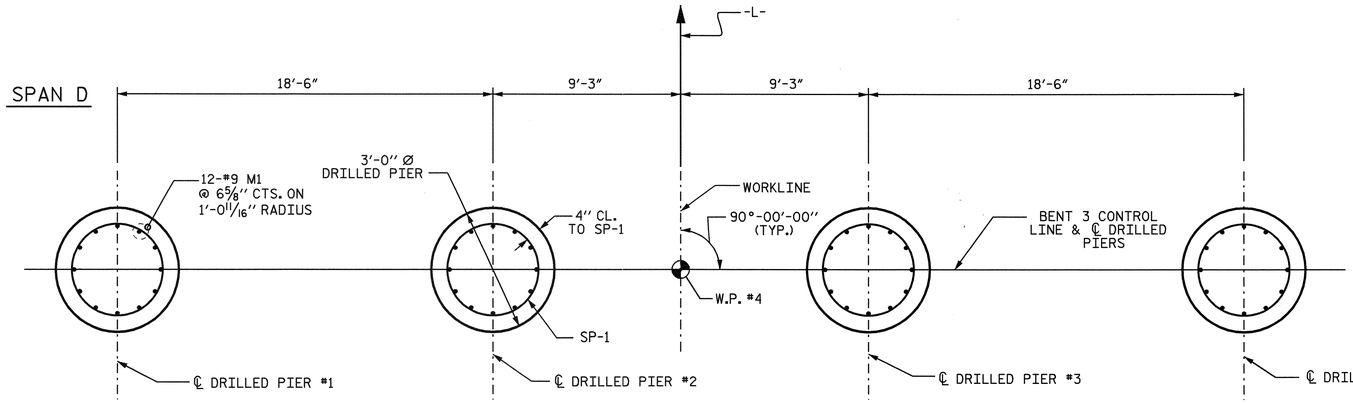
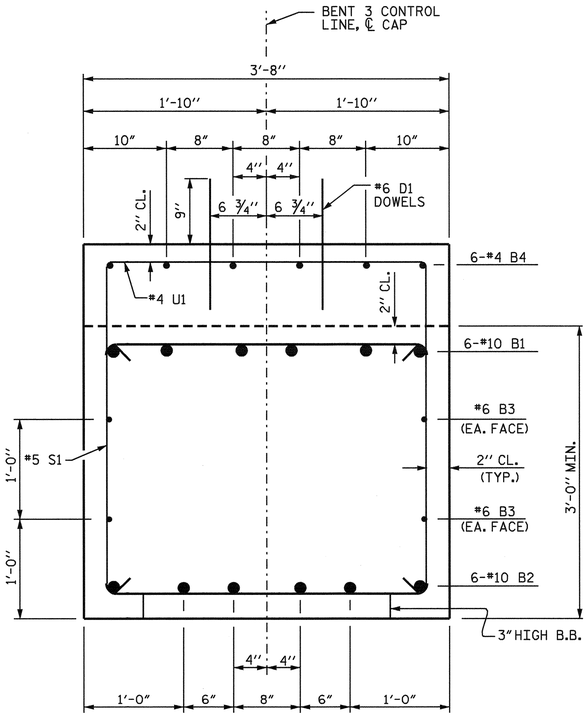


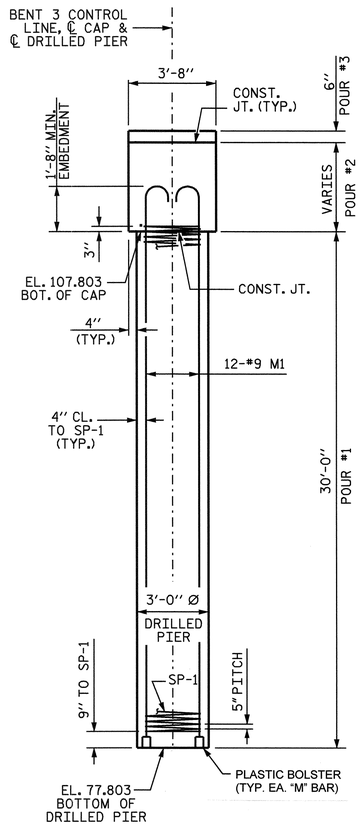
SPAN C

PLAN OF DRILLED PIERS

(DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH DRILLED PIER)

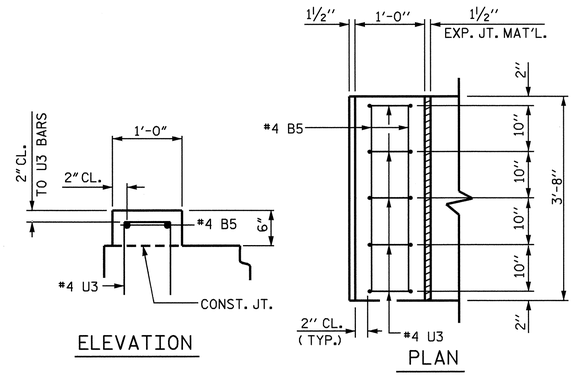


SECTION A-A



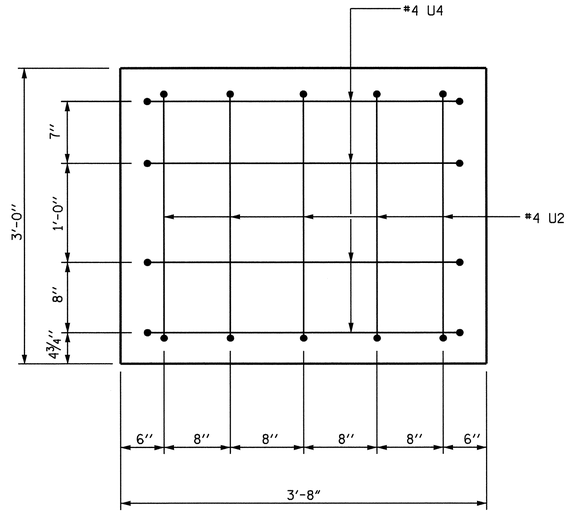
END ELEVATION

(TYP. EA. DRILLED PIER)



LATERAL GUIDE DETAIL

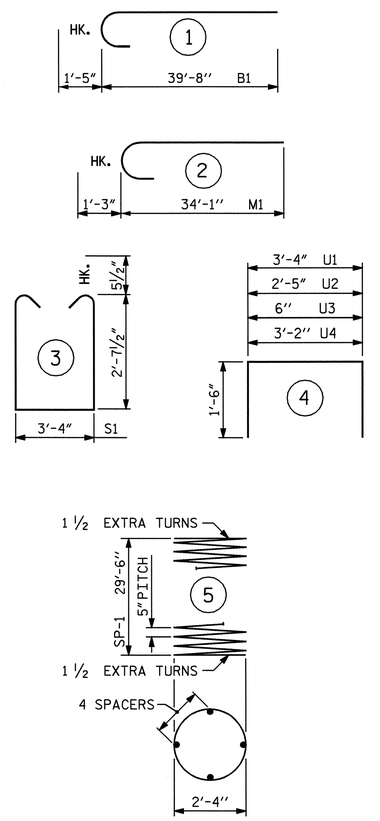
(EACH END SIMILAR)



SECTION X-X

(TYP. EACH END)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#10	1	41'-1"	2121
B2	12	#10	STR	38'-1"	1966
B3	8	#6	STR	36'-0"	433
B4	12	#4	STR	25'-8"	206
B5	4	#4	STR	3'-4"	9
D1	88	#6	STR	1'-6"	198
M1	48	#9	2	35'-4"	5766
S1	77	#5	3	9'-6"	763
U1	33	#4	4	6'-4"	140
U2	10	#4	4	5'-5"	36
U3	10	#4	4	3'-6"	23
U4	8	#4	4	6'-2"	33
REINFORCING STEEL				LBS	11694
SP-1	4	**	5	531'-3"	2216

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS 2216

CLASS "A" CONCRETE BREAKDOWN

POUR #2 (CAP)	C.Y.	31.9
POUR #3 (LATERAL GUIDES)	C.Y.	0.1
TOTAL	C.Y.	32.0

DRILLED PIER QUANTITIES

DRILLED PIER CONCRETE

POUR #1 (DRILLED PIER)	C.Y.	31.4
3'-0" Ø DRILLED PIER IN SOIL	FT.	80.0
3'-0" Ø DRILLED PIER NOT IN SOIL	FT.	40.0
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	FT.	75.5
CROSSHOLE SONIC LOGGING	EA.	1
SPT TESTING	EA.	1
SID INSPECTION	EA.	1
CSL TUBES	FT.	520.0

** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 3

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01/05
CHECKED BY : A. B. NAIK DATE : 02/05

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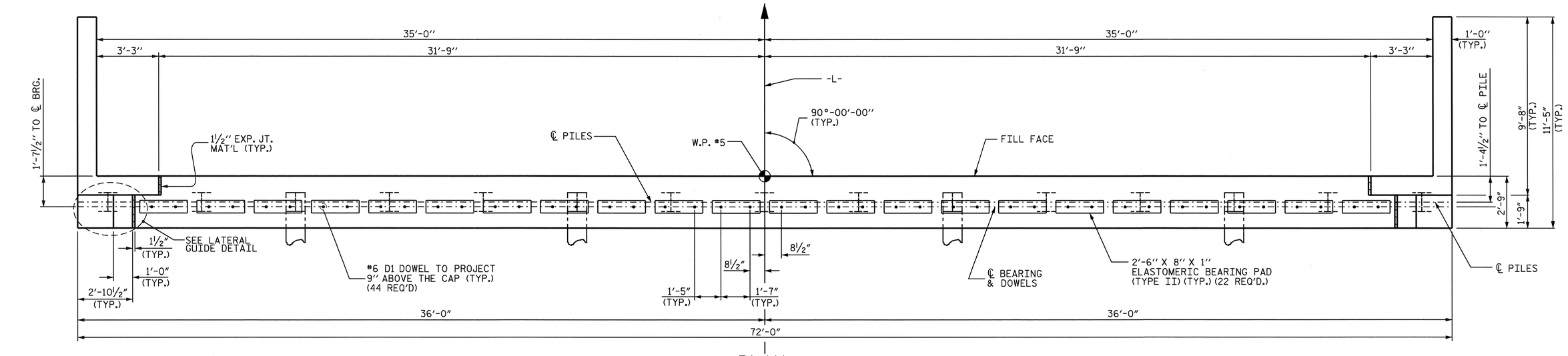
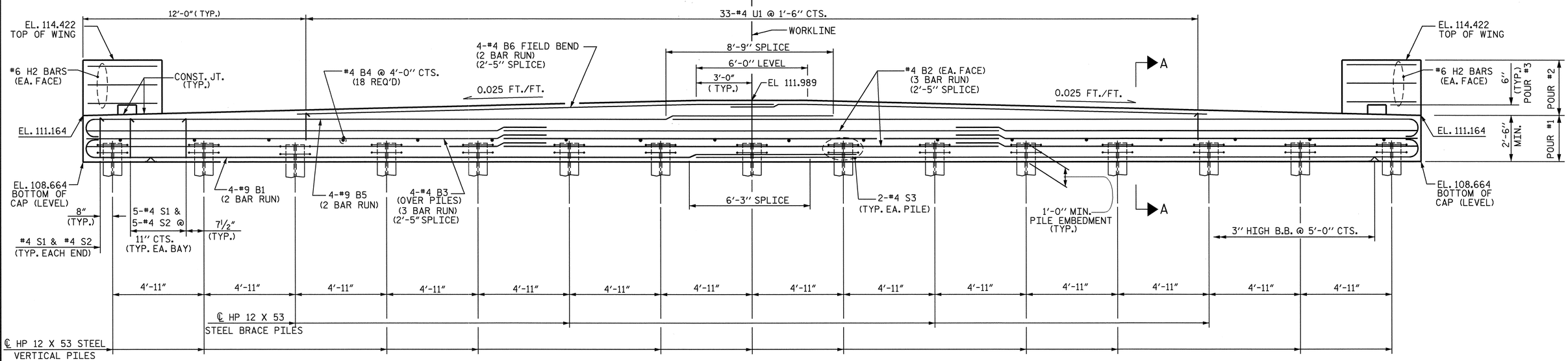


PLAN



ELEVATION

WINGS NOT SHOWN IN ELEVATION VIEW FOR CLARITY.

(FOR WING REINFORCING STEEL & DETAILS, SEE SHEET 2 OF 2.)

NOTES

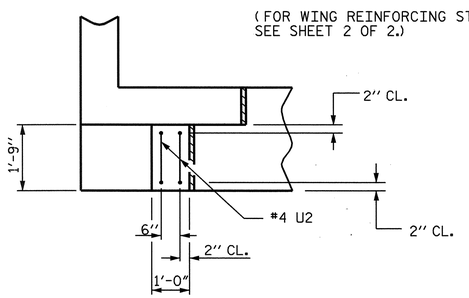
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.

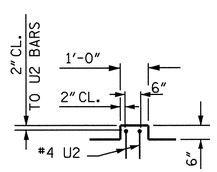
FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET 2 OF 2.

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

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.



PLAN



ELEVATION

LATERAL GUIDE DETAIL

(EACH END SIMILAR)

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -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-27
1			3			TOTAL SHEETS
2			4			31

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 5-7-2007

DRAWN BY : QT NGUYEN DATE : 01-05
CHECKED BY : A. B. NAIK DATE : 02-05

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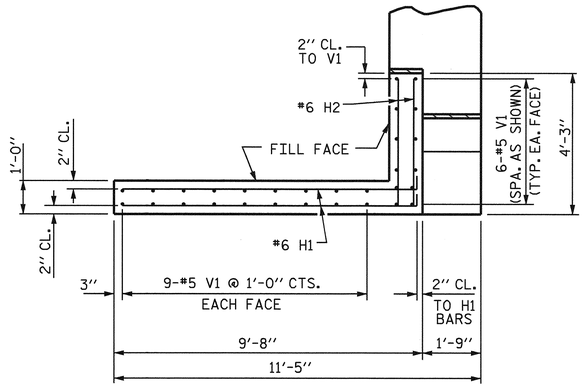
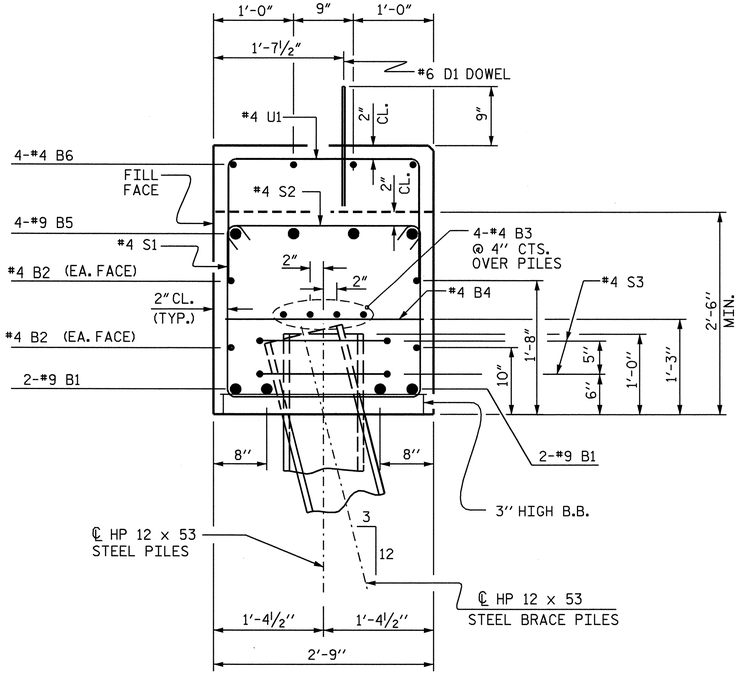
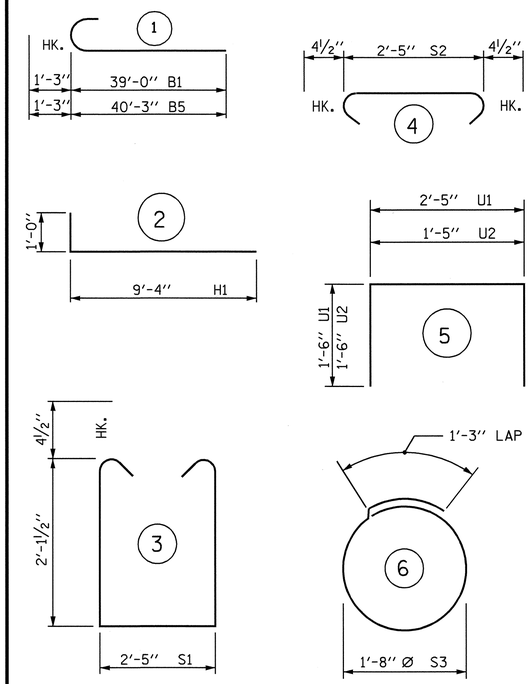


PLAN



SECTION A-A

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	40'-3"	1095
B2	12	#4	STR	25'-6"	204
B3	12	#4	STR	25'-6"	204
B4	18	#4	STR	2'-5"	29
B5	8	#9	1	41'-6"	1129
B6	8	#4	STR	25'-7"	137
D1	44	#6	STR	1'-6"	99
H1	24	#6	2	10'-4"	372
H2	12	#6	STR	3'-11"	71
S1	72	#4	3	7'-5"	357
S2	72	#4	4	3'-2"	152
S3	30	#4	6	6'-6"	130
U1	33	#4	5	5'-5"	119
U2	4	#4	5	4'-5"	12
V1	60	#5	STR	5'-2"	323

REINFORCING STEEL = 4433 LBS.

CLASS A CONCRETE

POUR #1: CAP & LOWER WINGS 23.0 C.Y.

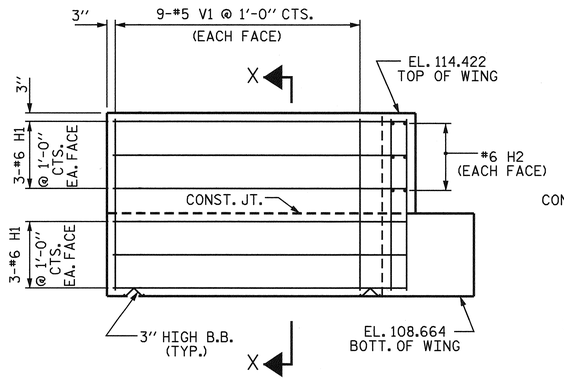
POUR #2: TOP OF WINGS 3.1 C.Y.

POUR #3: LATERAL GUIDE 0.1 C.Y.

TOTAL CLASS A CONCRETE 26.2 C.Y.

HP 12 X 53 STEEL PILES

NO. 15 LIN. FEET 150.0



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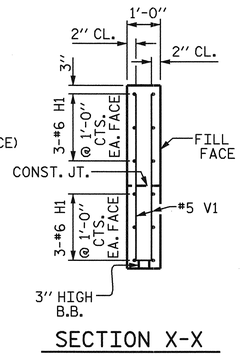
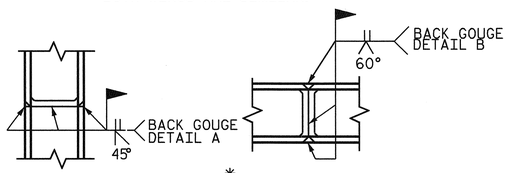


SECTION X-X

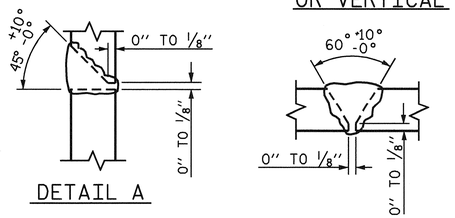
WING WALL DETAILS

BOTH WINGS ARE SIMILAR.



* PILE VERTICAL

* PILE HORIZONTAL OR VERTICAL

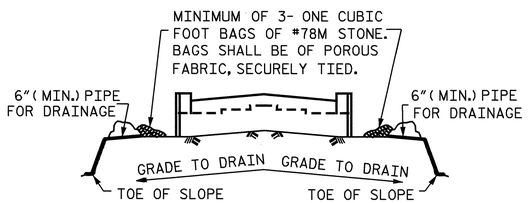


DETAIL A

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

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik 3-9-2007

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -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-28
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : QT NGUYEN DATE : 01-05

CHECKED BY : A. B. NAIK DATE : 02-05

09-MAR-2007 10:08
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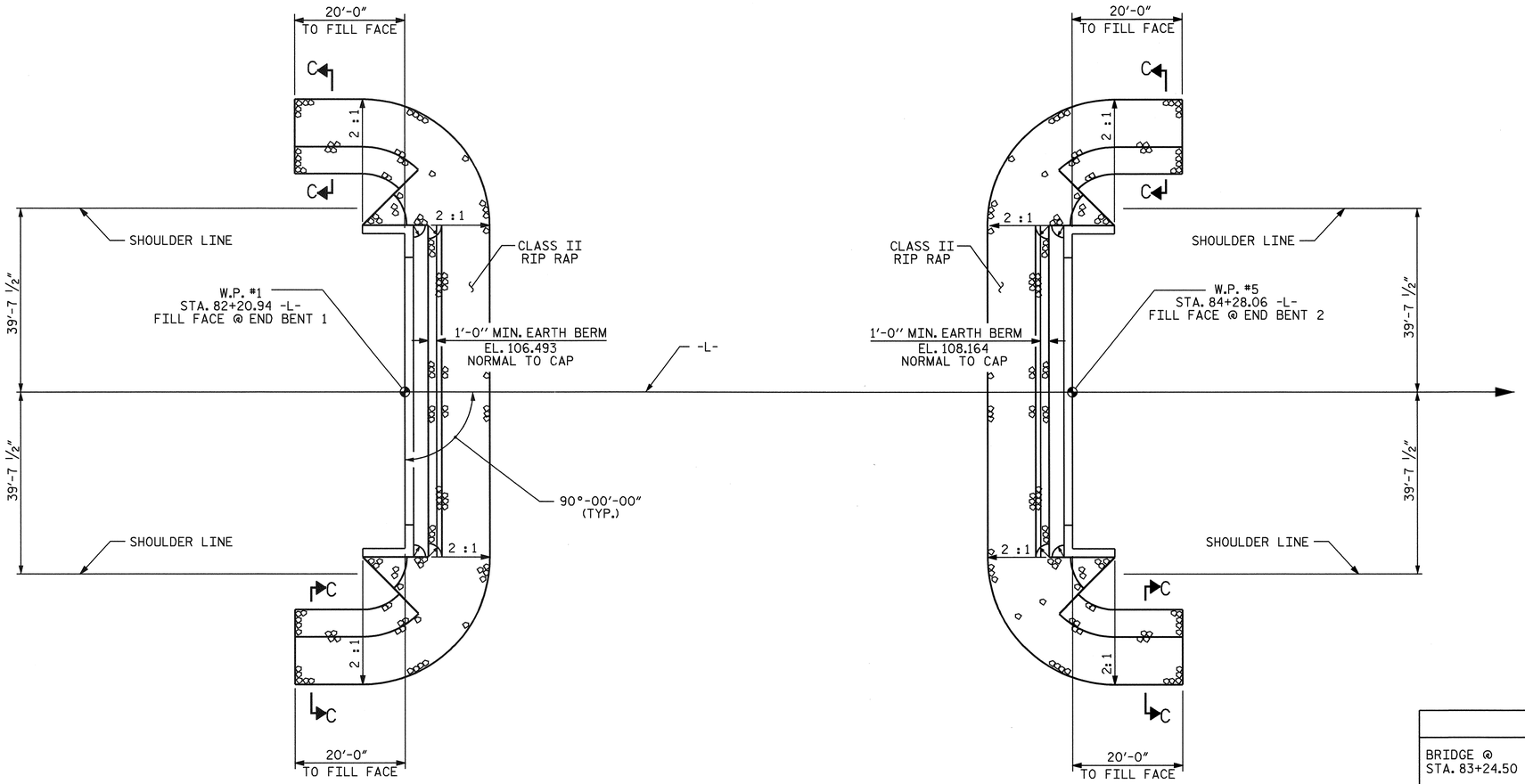
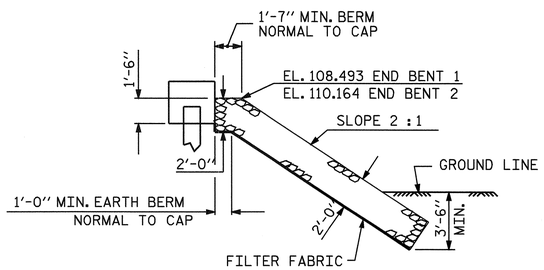
qtnguyen

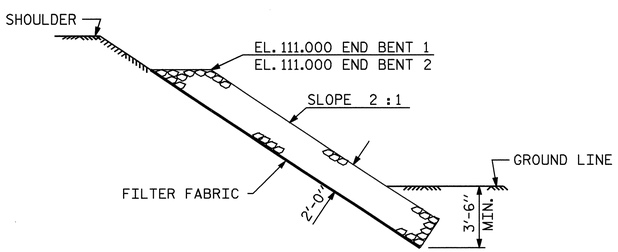


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 83+24.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	230	255
END BENT 2	270	300



℄ SECTION
BERM RIP RAPPED



SECTION C-C

PROJECT NO. U-3823A
WILSON COUNTY
STATION: 83+24.50 -L-

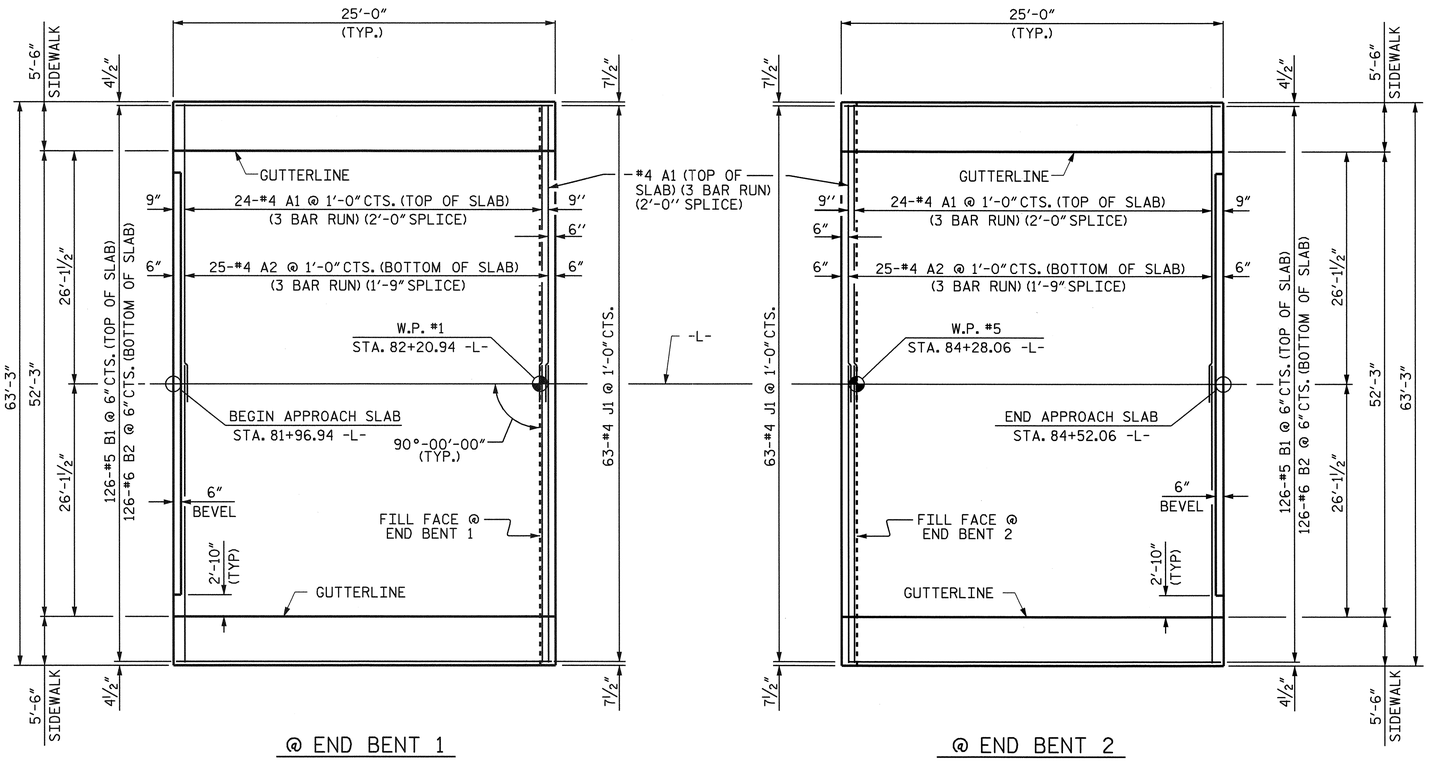
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

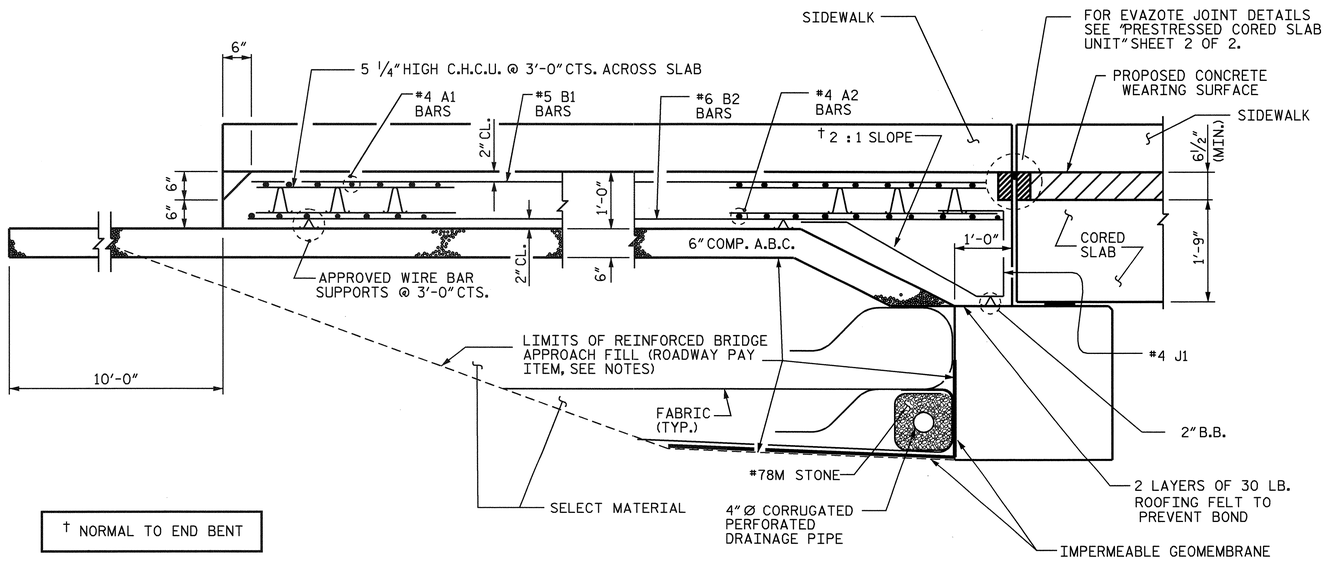
STANDARD
RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMIRAT B. NAIK
Amirat B. Naik
5-8-2007

ASSEMBLED BY : J.L. WALTON	DATE : 1/05
CHECKED BY : A.B. NAIK	DATE : 3/05
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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			31





SECTION THRU SLAB

NOTES

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

TEMPORARY DRAINAGE AND TEMPORARY BERM AND SLOPE DRAINS WILL BE PAID FOR UNDER THE LUMP SUM PRICE FOR BRIDGE APPROACH SLAB.

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 6" COMP. A.B.C. SHALL EXTEND 10'-0" BEYOND THE END OF THE APPROACH SLAB AND 1'-0" OUTSIDE OF EACH EDGE OF SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL EXTEND 1'-0" BEYOND THE 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, SEE "PRESTRESSED CORED SLAB UNIT" SHEETS.

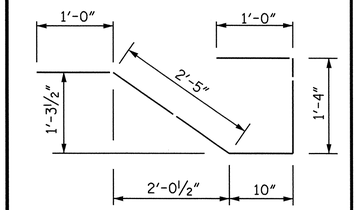
GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8' TO 10' BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAT 10' IN LENGTH

APPROACH SLABS SHALL BE POURED AFTER CONCRETE OVERLAY IS POURED.

BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱A1	75	#4	STR	22'-4"	1119
A2	75	#4	STR	22'-2"	1111
✱B1	126	#5	STR	24'-2"	3176
B2	126	#6	STR	24'-8"	4668
✱B3	8	#4	STR	24'-8"	132
✱D1	56	#4	STR	1'-0"	37
✱G1	50	#4	STR	5'-2"	173
J1	63	#4	1	6'-7"	277
REINFORCING STEEL				LBS.	6056
✱EPOXY COATED REINFORCING STEEL				LBS.	4637
CLASS AA CONCRETE BREAKDOWN					
POUR 1 SLAB				C. Y.	65.3
POUR 2 SIDEWALK				C. Y.	5.6
CLASS AA CONCRETE				C. Y.	70.9



PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik
5/8/2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			31

STD. NO. BAS7

ASSEMBLED BY : J.L. WALTON	DATE : 12/04	
CHECKED BY : A.B. NAIK	DATE : 10/05	
DRAWN BY : FCJ 6/87	REV. 10/17/00	RWW/LES
CHECKED BY : EGA 6/87	REV. 7/10/01	LES/RDR
	REV. 5/7/03R	RWW/JTE

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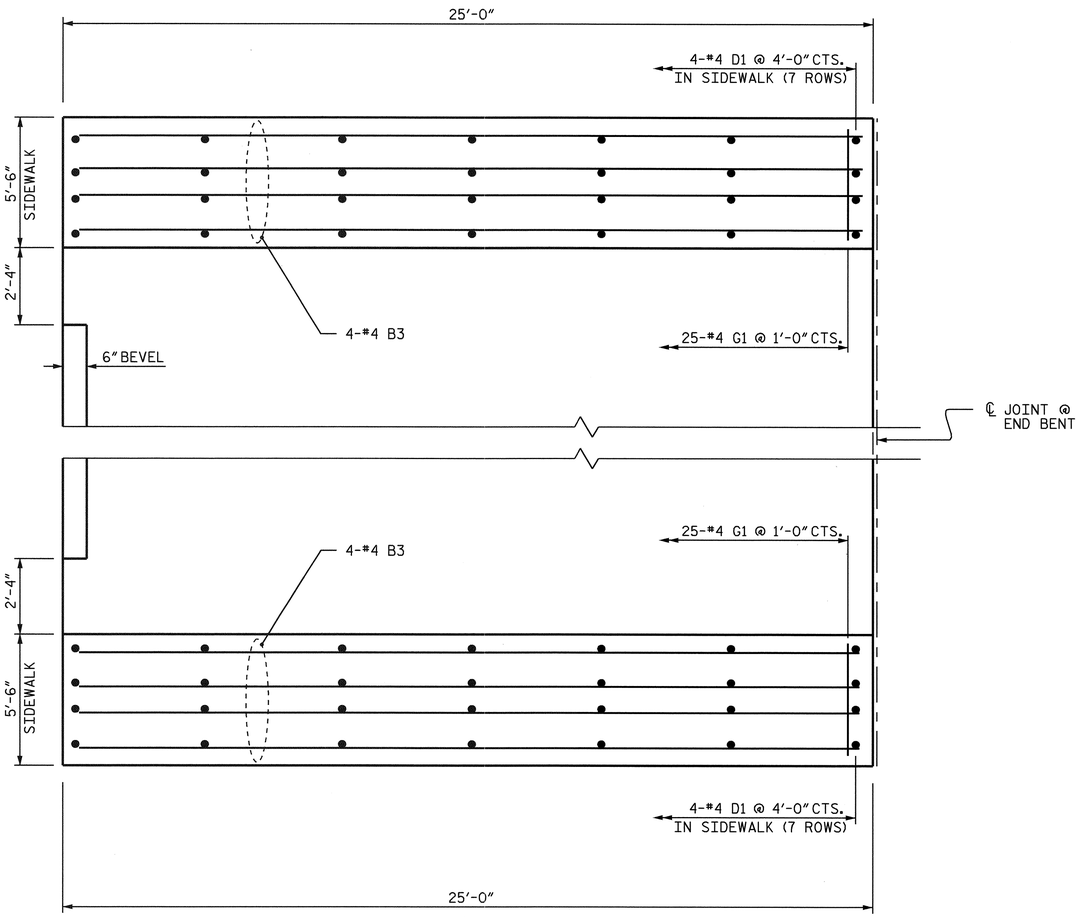
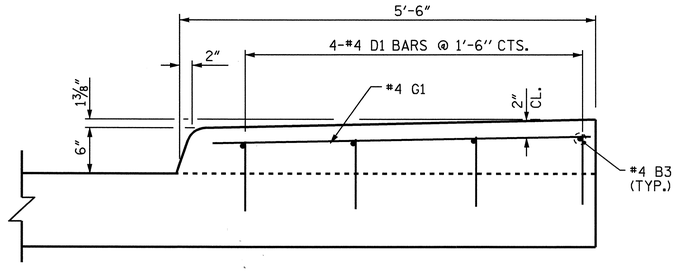
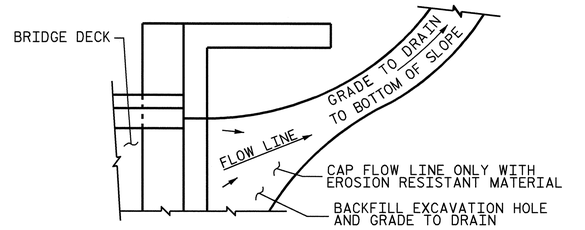


PLAN

BEGIN APPROACH SLAB SHOWN,
END APPROACH SLAB SIMILAR



SECTION THRU SIDEWALK



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

PROJECT NO. U-3823A

WILSON COUNTY

STATION: 83+24.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH
SLAB DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 18875 ENGINEER AMRAT B. NAIK

Amrat B. Naik
3-9-2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			31

ASSEMBLED BY : J.L. WALTON	DATE : 12/04		
CHECKED BY : A.B. NAIK	DATE : 3/05		
DRAWN BY : FCJ 11/88	REV. 8/16/99	MAB/LES	
CHECKED BY : ARB 11/88	REV. 10/17/00	RWW/LES	
	REV. 5/7/03	RWW/JTE	

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STD. NO. BAS10

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.

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