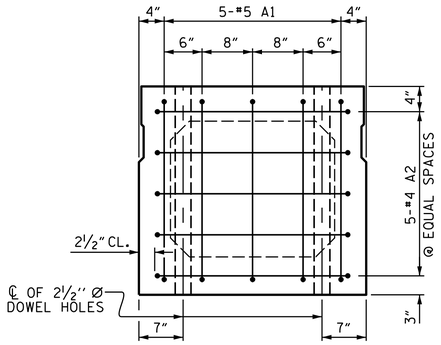
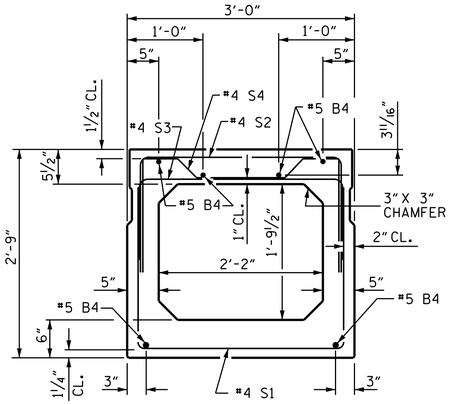
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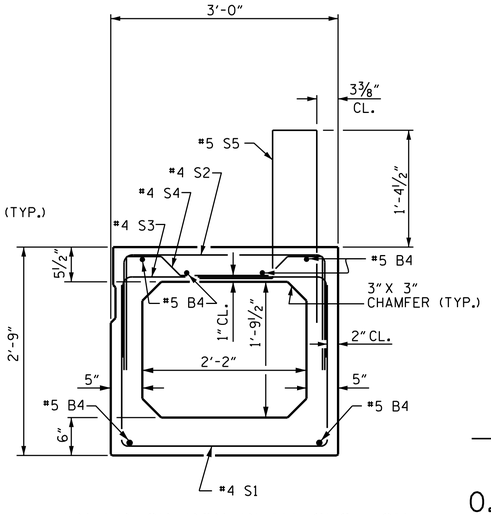
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



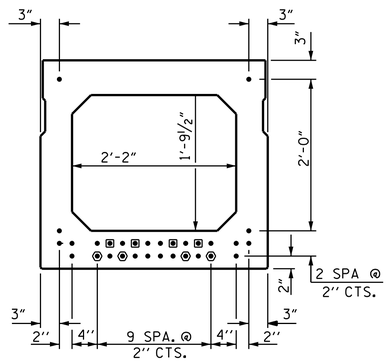
INTERIOR BOX BEAM SECTION

TYPE II
(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

TYPE I
(FOR PRESTRESSED STRAND LAYOUT, SEE "TYPICAL STRAND LOCATION")

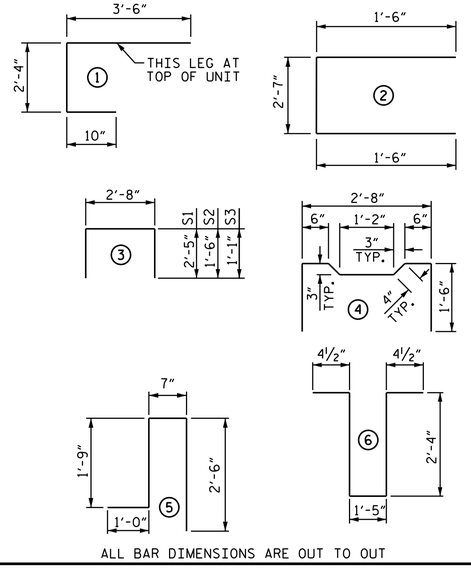


TYPICAL STRAND LOCATION

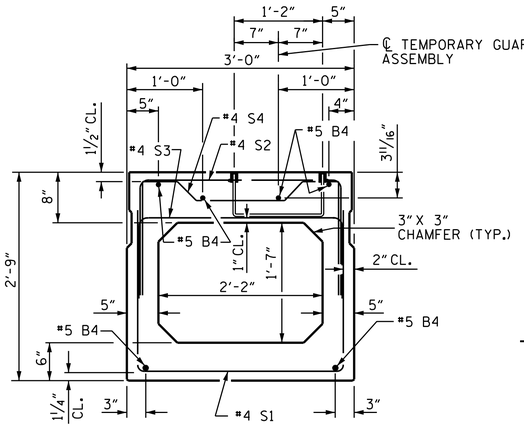
(30 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

BAR TYPES



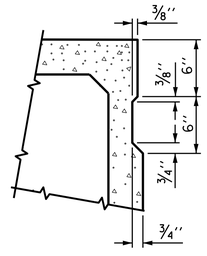
ALL BAR DIMENSIONS ARE OUT TO OUT



INTERIOR BOX BEAM SECTION

TYPE III
(FOR PRESTRESSED STRAND LAYOUT, SEE "TYPICAL STRAND LOCATION")

FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY LOCATION, SEE SECTION OF ANCHOR ASSEMBLY LOCATION ON "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY FOR TYPE III BOX BEAM SECTION" SHEET.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

DEBONDING LEGEND

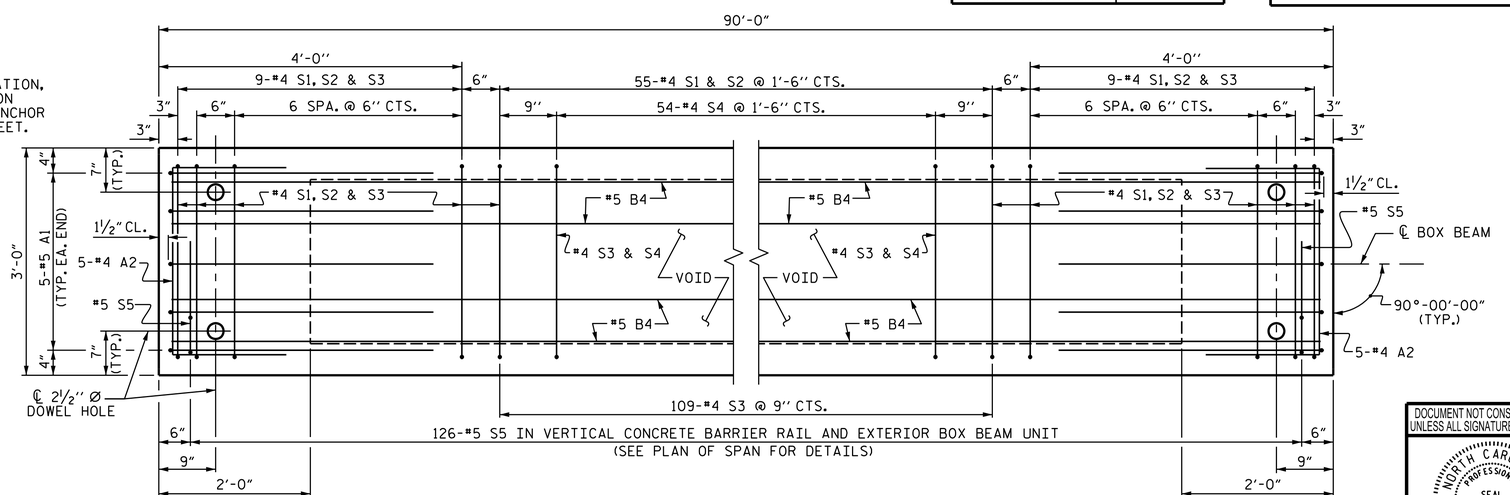
- ● FULLY BONDED STRANDS
- ◧ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ⬢ STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

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

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				TYPE I UNIT		TYPE II UNIT		TYPE III UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	6'-8"	70	6'-8"	70	6'-8"	70
A2	40	#4	2	5'-7"	149	5'-7"	149	5'-7"	149
B4	12	#5	STR	45'-11"	575	45'-11"	575	45'-11"	575
K1	15	#4	6	7'-0"	70	7'-0"	70	7'-0"	70
K2	10	#4	STR	2'-7"	17	2'-7"	17	2'-7"	17
S1	73	#4	3	7'-6"	366	7'-6"	366	7'-6"	366
S2	73	#4	3	5'-8"	276	5'-8"	276	5'-8"	276
S3	127	#4	3	4'-10"	410	4'-10"	410	4'-10"	410
S4	54	#4	4	5'-10"	210	5'-10"	210	5'-10"	210
✱ S5	126	#5	5	5'-10"	767	--	--	--	--
REINFORCING STEEL					2143 LBS.		2143 LBS.		2143 LBS.
✱ EPOXY COATED REINF. STEEL					767 LBS.				
8000 P.S.I. CONCRETE					16.5 CU. YDS.		16.4 CU. YDS.		17.7 CU. YDS.
0.6" Ø L.R. STRANDS					No. 30		No. 30		No. 30



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF SPAN".
FOR THREADED INSERTS, SEE "THREADED INSERT DETAIL".
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS" ON SHEET 2 OF 6.

PROJECT NO. BP14-R014
SWAIN COUNTY
STATION: 12+45.82 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 044167 7/20/2026 ENGINEER ELIZABETH F. LAWES
DocuSigned by: Elizabeth F. Lawes
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WSP USA Inc.
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
TEL: 1.919.836.4040
LICENSE NO. F-0165

DESIGNED BY:	E. LAWES	DATE :	OCT 2024
DRAWN BY:	E. LAWES	DATE :	APR 2026
CHECKED BY:	P. GALLAGHER	DATE :	APR 2026
DESIGN ENGINEER OF RECORD:	E. LAWES	DATE :	APR 2026

7/20/2026
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