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BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	SIZE	TYPE	LENGTH	WEIGHT
	90′ UNIT				
✳B10	104	#5	STR	22′-1″	2211
✳ S6	252	#5	1	7′-2″	1884
✳ EPOXY COATED REINFORCING STEEL			LBS.		4095
CLASS AA CONCRETE			CU.YDS.		24.6
TOTAL VERTICAL CONCRETE BARRIER RAIL			LN. FT.		180.0

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
85′ UNITS	1¾″	3′-7¾″

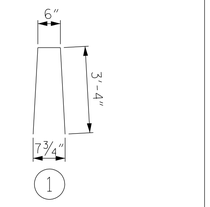
BOX BEAM UNITS REQUIRED

		NUMBER	LENGTH	TOTAL LENGTH
STAGE I	TYPE I	1	90′-0″	90′-0″
	TYPE II	3	90′-0″	270′-0″
	TYPE III	1	90′-0″	90′-0″
		NUMBER	LENGTH	TOTAL LENGTH
STAGE II	TYPE I	1	90′-0″	90′-0″
	TYPE II	4	90′-0″	360′-0″
	TOTAL	10	-	900′-0″

DEAD LOAD DEFLECTION AND CAMBER

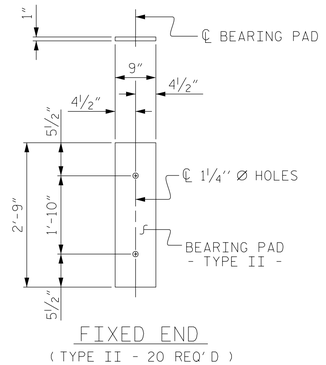
	3′-0″ x 2′-9″
90′ BOX BEAM UNIT	0.6″ Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2¾″ ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✳✳	¾″ ↓
FINAL CAMBER	2″ ↑

✳✳ INCLUDES FUTURE WEARING SURFACE



BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT



FIXED END

(TYPE II - 20 REQ′D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

SECTION THRU RAIL

SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

END VIEW

SIDE VIEW

END OF RAIL DETAILS

PROJECT NO. BP14-R014

SWAIN COUNTY

STATION: 12+45.82 -L-

SHEET 6 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-12
1			3			TOTAL SHEETS
2			4			25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 044167 ENGINEER ELIZABETH F. LAWLES

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SUITE 1500
RALEIGH, NC 27601
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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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