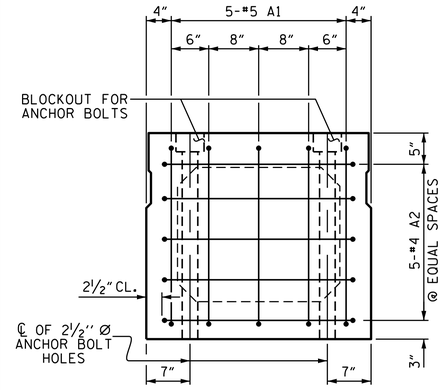
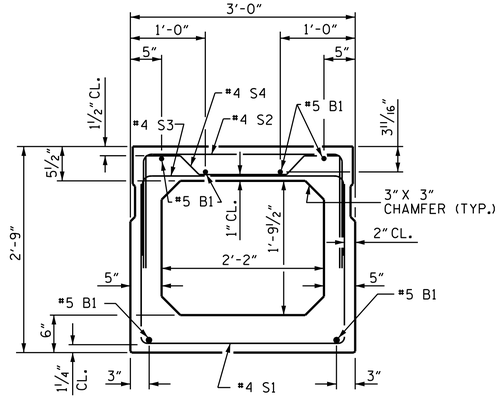


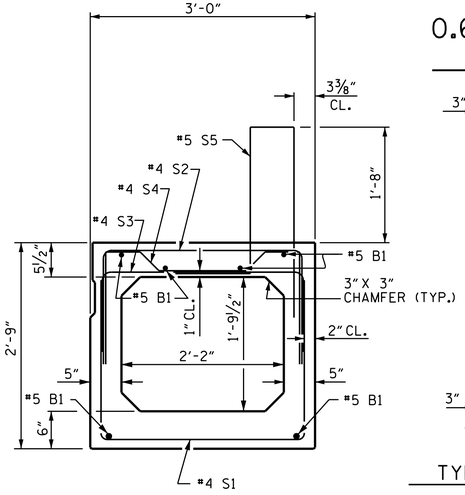
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF ANCHOR BOLT HOLES. FOR LOCATION OF BLOCKOUTS, SEE SHEET 2 OF 7. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



INTERIOR BOX BEAM SECTION

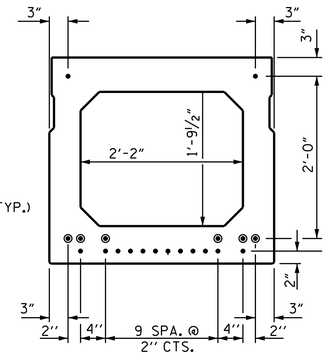
(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

0.6" Ø LOW RELAXATION STRAND LAYOUT



TYPICAL STRAND LOCATION

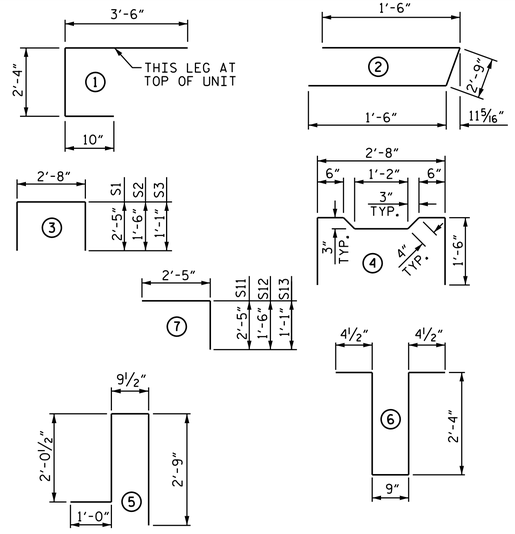
(14 STRANDS REQUIRED)

DEBONDING LEGEND

● FULLY BONDED STRANDS

◉ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE BOX BEAM UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST.

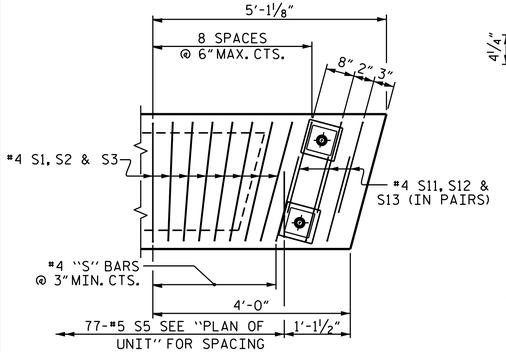
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

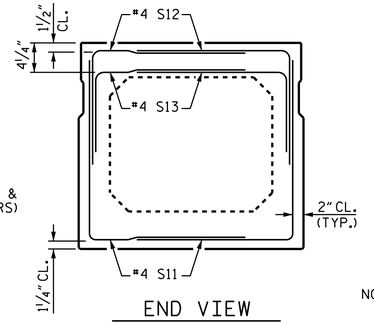
BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	6'-8"	70	6'-8"	70
A2	28	#4	2	5'-9"	108	5'-9"	108
B1	6	#5	STR	59'-7"	373	59'-7"	373
K1	9	#4	6	6'-2"	37	6'-2"	37
K2	6	#4	STR	2'-8"	11	2'-8"	11
S1	50	#4	3	7'-6"	251	7'-6"	251
S2	50	#4	3	5'-8"	189	5'-8"	189
S3	83	#4	3	4'-10"	268	4'-10"	268
S4	33	#4	4	5'-10"	129	5'-10"	129
S11	12	#4	7	4'-10"	39	4'-10"	39
S12	12	#4	7	3'-11"	31	3'-11"	31
S13	12	#4	7	3'-6"	28	3'-6"	28
✱ S5	77	#5	5	6'-7"	529	--	--
REINFORCING STEEL					1534 LBS.		1534 LBS.
✱ EPOXY COATED REINF. STEEL					529 LBS.		
5000 P.S.I. CONCRETE					10.9 CU. YDS.		10.8 CU. YDS.
0.6" Ø L.R. STRANDS					No. 14		No. 14



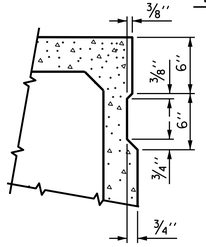
DETAIL "B"

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS. "B" BARS AND "A" BARS NOT SHOWN.



END VIEW

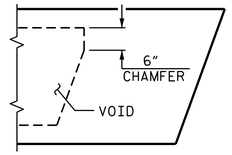
(SHOWING #4 "S" BARS IN END OF BEAM)



SHEAR KEY DETAIL

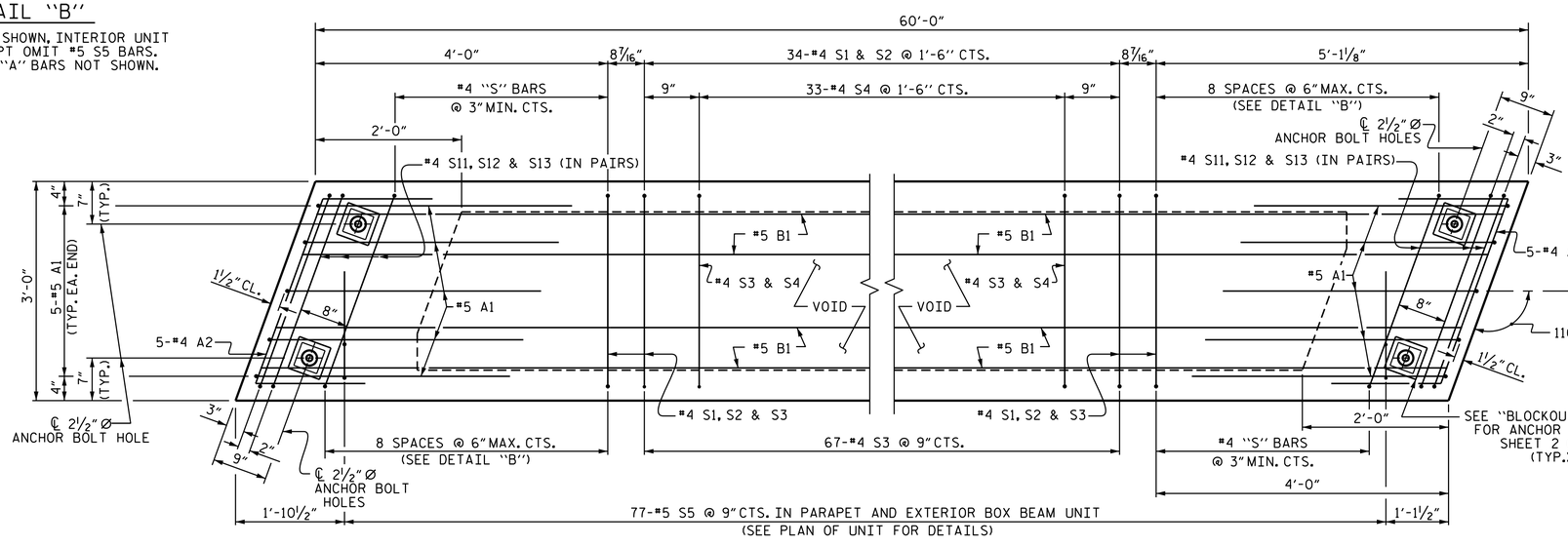
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

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



CHAMFER DETAIL

SHOWING 6" VOID CHAMFER



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
#5 A1 BARS MAY BE SHIFTED TO AVOID BLOCKOUTS FOR ANCHOR BOLTS.
#4 "B" BARS MAY BE FIELD CUT TO AVOID BLOCKOUTS FOR ANCHOR BOLTS. FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF SPANS. FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.

DocuSigned by: Krishna P. Sedai
EA6F7941508F4B7...

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

4/20/2017

PROJECT NO. B-5165
DAVIDSON COUNTY
STATION: 22+12.00 -L-

SHEET 6 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT (SPAN B) 110° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			24

DRAWN BY : H. B. DESAI DATE : 10/12/16
CHECKED BY : T. L. AVERETTE DATE : 2/15/17
DESIGN ENGINEER OF RECORD: K. P. SEDAI DATE : 2/24/17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

20-APR-2017 12:03
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kpaschal