

LOAD FACTORS:

DESIGN LOAD RATING FACTORS

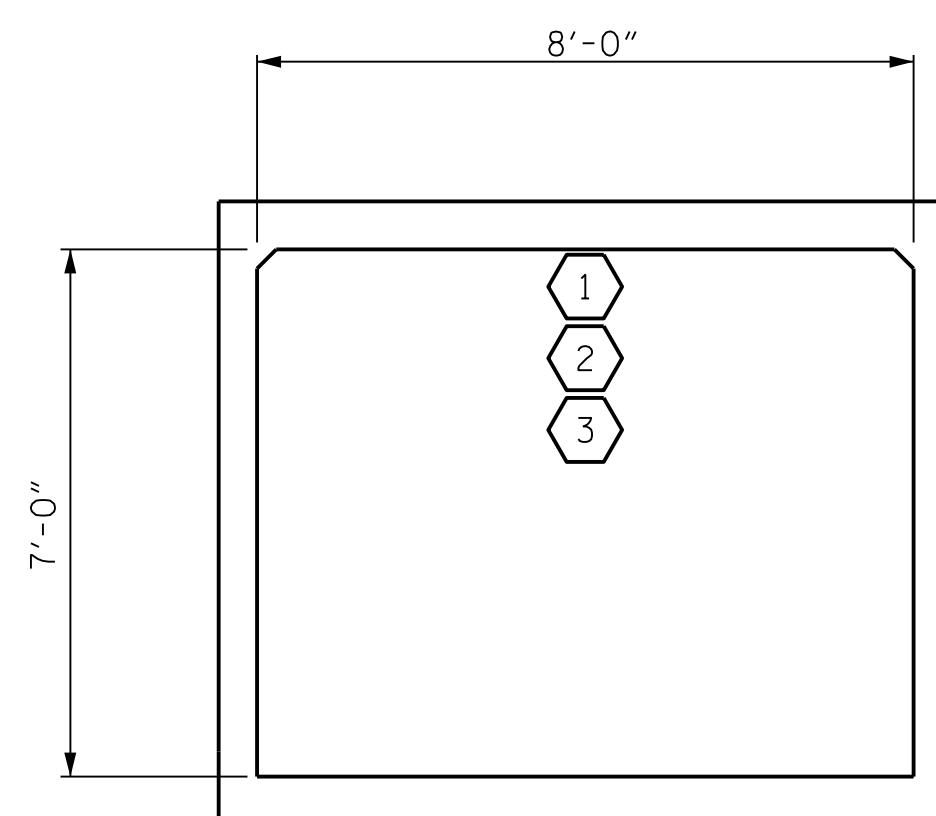
LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS																
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						LIVE-LOAD FACTORS (LL)	MOMENT				SHEAR					
							RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.30	--	1.75	1.30	1	TOP SLAB	4.00	1.68	1	TOP SLAB	8.00		
	HL-93 (OPERATING)	N/A		1.68	--	1.35	1.68	1	TOP SLAB	4.00	2.18	1	TOP SLAB	8.00		
	HS-20 (INVENTORY)	36.000	②	1.35	48.60	1.75	1.35	1	TOP SLAB	4.00	1.93	1	TOP SLAB	0.00		
	HS-20 (OPERATING)	36.000		1.76	63.36	1.35	1.76	1	TOP SLAB	4.00	2.50	1	TOP SLAB	0.00		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH		2.57	32.13	1.40	2.57	1	BOTTOM SLAB	4.00	3.11	1	TOP SLAB	8.00		
		S3C	21.500	③	1.99	42.79	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S3A	22.750		1.99	45.27	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S4A	26.750		1.99	53.23	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S5A	30.500		1.99	60.70	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S6A	34.500		1.99	68.66	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S7B	38.500		1.99	76.62	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		S7A	40.000		1.99	79.60	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		1.99	56.22	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		T5B	32.000		1.99	63.68	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		T6A	36.000		1.99	71.64	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
		T7A	40.000		1.99	79.60	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00	
	T7B	40.000		1.99	79.60	1.40	1.99	1	TOP SLAB	4.00	2.83	1	TOP SLAB	0.00		

①	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY

(LOOKING DOWNSTREAM)

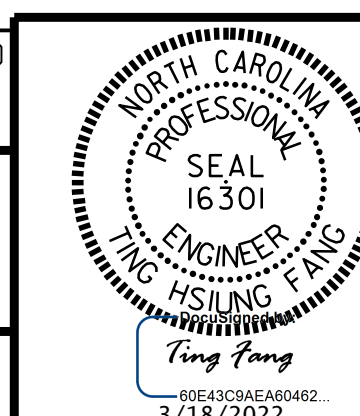
PROJECT NO. I-5987A  
ROBESON COUNTY  
 STATION: 242+85.00 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 LRFR SUMMARY FOR  
 REINFORCED CONCRETE  
 BOX CULVERTS  
 (INTERSTATE TRAFFIC)

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

**CDM Smith**  
 CDM SMITH  
 5400 Glenwood Ave, Suite 400  
 Raleigh, NC 27612-3228  
 NC COA No. F-1255



DRAWN BY: JJR DATE: 9/21  
 CHECKED BY: THF DATE: 11/21  
 DESIGN ENGINEER: VDK DATE: 12/21

DWG. No.

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C20-8
1			3			TOTAL SHEETS 8
2			4			