

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.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

LOAD AND RESISTANCE FACTOR RATING (LRF) 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	1.41	--	1.75	1.71	1	BOTTOM SLAB	8.00	1.41	1	BOTTOM SLAB	8.00		
	HL-93 (OPERATING)	N/A		1.83	--	1.35	2.21	1	BOTTOM SLAB	8.00	1.83	1	BOTTOM SLAB	8.00		
	HS-20 (INVENTORY)	36.000	2	1.38	49.68	1.75	1.38	1	EXTERIOR WALL	4.50	1.88	1	BOTTOM SLAB	8.00		
	HS-20 (OPERATING)	36.000		1.79	64.44	1.35	1.79	1	EXTERIOR WALL	4.50	2.44	1	BOTTOM SLAB	8.00		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500	3	1.73	21.63	1.40	1.73	1	EXTERIOR WALL	4.50	2.48	1	BOTTOM SLAB	8.00	
		S3C	21.500		1.73	37.20	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S3A	22.750		1.73	39.36	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S4A	26.750		1.73	46.28	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S5A	30.500		1.73	52.77	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S6A	34.500		1.73	59.69	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S7B	38.500		1.73	66.61	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		S7A	40.000		1.73	69.20	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		1.73	48.87	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		T5B	32.000		1.73	55.36	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		T6A	36.000		1.73	62.28	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
		T7A	40.000		1.73	69.20	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00	
	T7B	40.000		1.73	69.20	1.40	1.73	1	EXTERIOR WALL	4.50	2.60	1	BOTTOM SLAB	8.00		

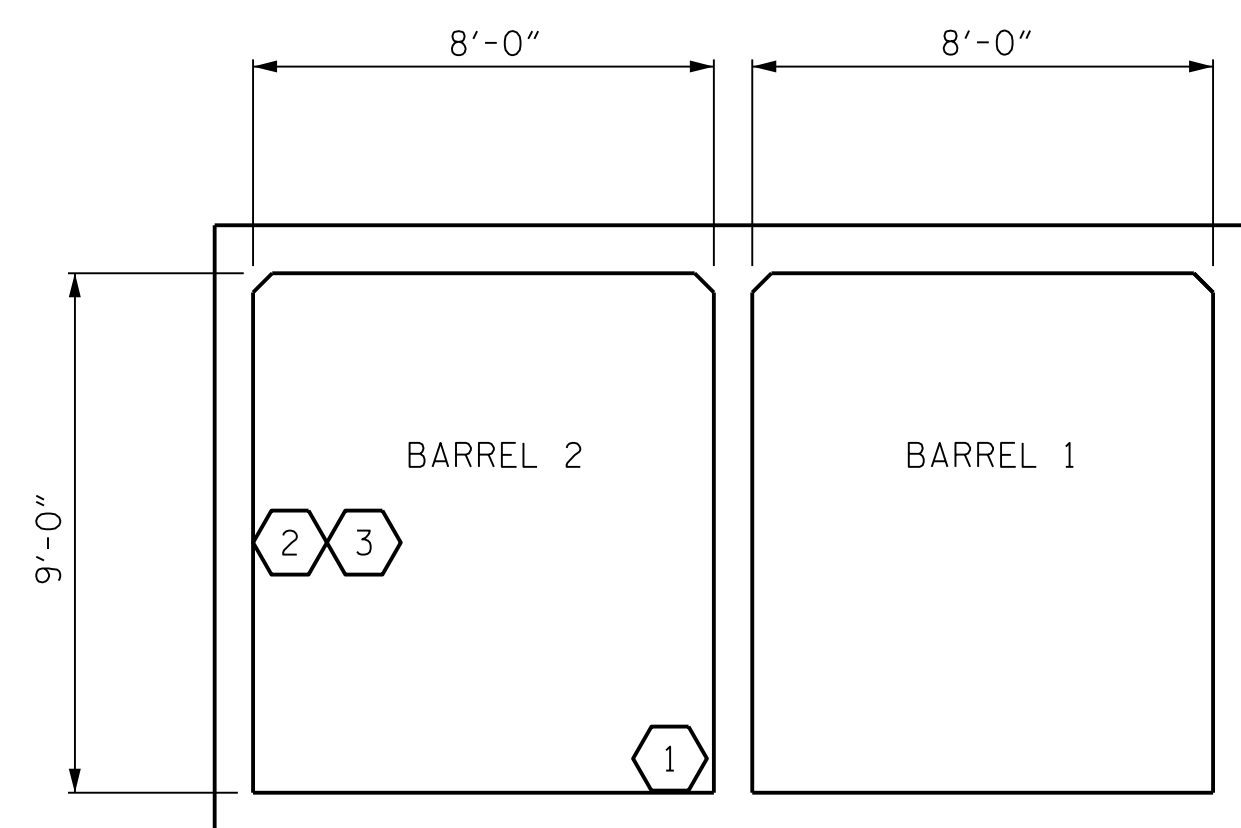
# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE



LRF SUMMARY  
(LOOKING DOWNSTREAM)

PROJECT NO. I-5987A  
ROBESON COUNTY  
 STATION: 366+29.00 -L-

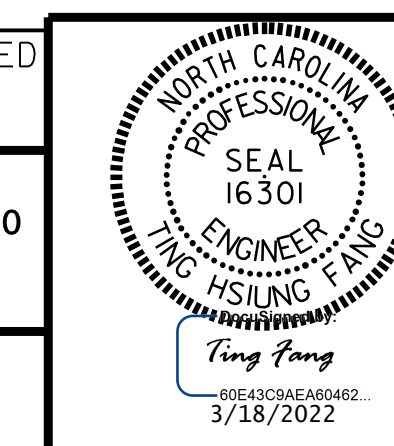
SHEET 8 OF 8

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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

DWG. No.



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			C12-8
2			4			TOTAL SHEETS 8