

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
						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		--	1.75								
	HL-93 (OPERATING)	N/A			--	1.35								
	HS-20 (INVENTORY)	36.000	②			1.75								
	HS-20 (OPERATING)	36.000				1.35								
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500			1.40								
		SNGARBS2	20,000			1.40								
		SNAGRIS2	22,000			1.40								
		SNCOTTS3	27,250			1.40								
		SNAGGRS4	34,925			1.40								
		SNS5A	35,550			1.40								
		SNS6A	39,950			1.40								
	SNS7B	42,000			1.40									
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000			1.40								
		TNT4A	33,075			1.40								
		TNT6A	41,600			1.40								
		TNT7A	42,000			1.40								
		TNT7B	42,000			1.40								
		TNAGRIT4	43,000			1.40								
TNAGT5A		45,000			1.40									
TNAGT5B	45,000			1.40										

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	--

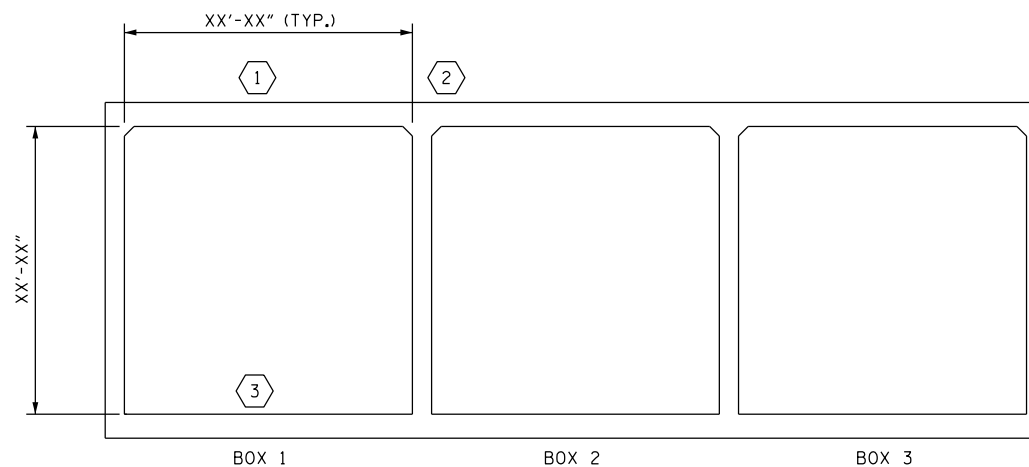
NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS:

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

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. \_\_\_\_\_  
\_\_\_\_\_ COUNTY  
STATION: \_\_\_\_\_

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

ASSEMBLED BY :	DATE :
CHECKED BY :	DATE :
DRAWN BY : WMC 7/II	REV. 10/17/II MAA/GM
CHECKED BY : GM 7/II	

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
2			4			

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED