

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS																
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING Ⓢ	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER	
							LIVE-LOAD FACTORS (γLL)	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		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		SINGLE VEHICLE (SV)	SH	12.500				1.40								
			S3C	21.500				1.40								
			S3A	22.750				1.40								
			S4A	26.750				1.40								
			S5A	30.500				1.40								
			S6A	34.500				1.40								
			S7B	38.500				1.40								
			S7A	40.000				1.40								
		TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250				1.40								
			T5B	32.000				1.40								
			T6A	36.000				1.40								
			T7A	40.000				1.40								
T7B	40.000					1.40										
EMERGENCY VEHICLE (EV)		EV2	28.750				1.30									
		EV3	43.000				1.30									

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	--

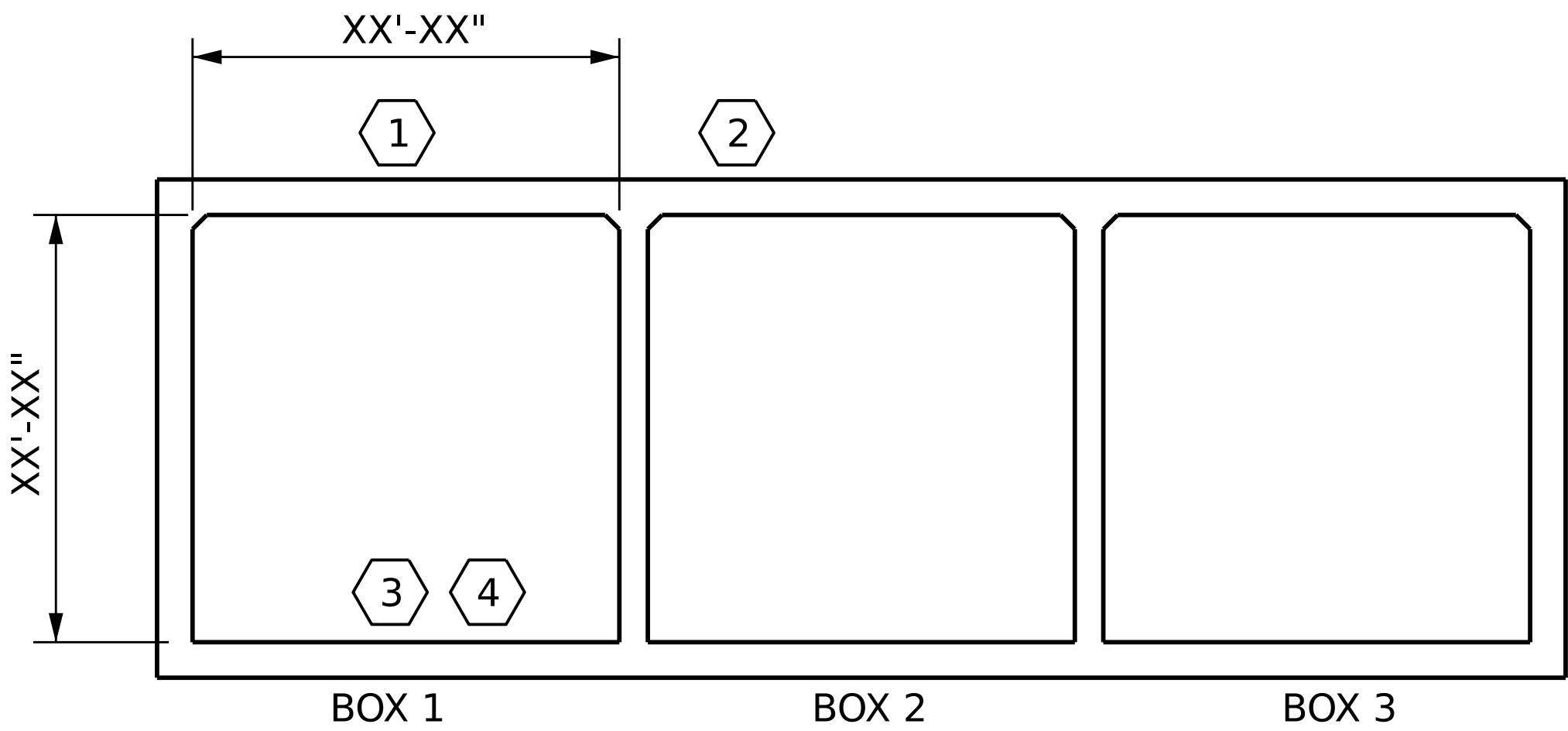
NOTES:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATES.

COMMENTS:

1.
2.
3.
4.

#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
④	EMERGENCY VEHICLE 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 (INTERSTATE TRAFFIC)										SHEET NO.	
REVISIONS										TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:						
①			③								
②			④								

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY :	DATE :
CHECKED BY :	DATE :
DRAWN BY : WMC	7/II
CHECKED BY : GM	7/II
REV. 10/1/II	MAA/GM
REV. 04/23	BNB/AAI