

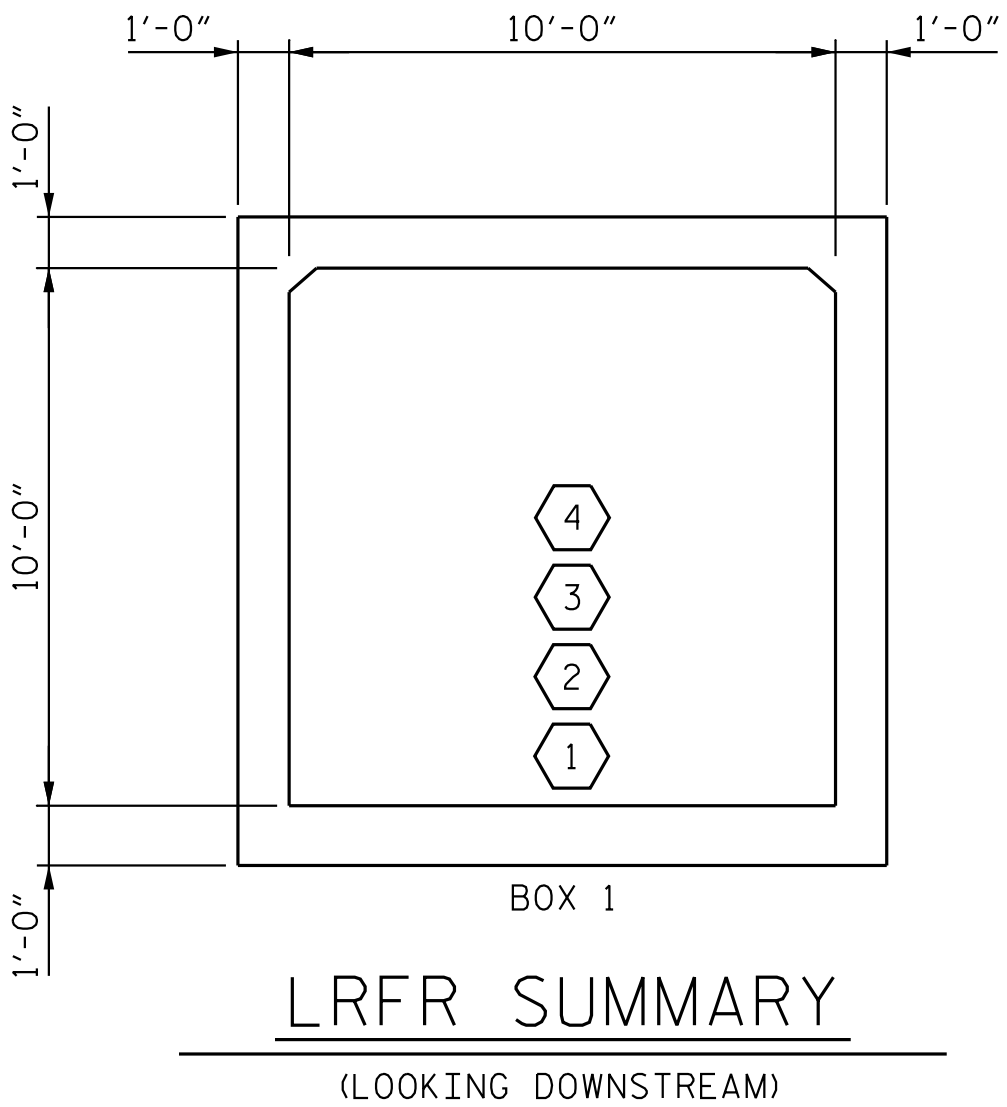
LOAD AND RESISTANCE FACTOR RATING (LRFR)															
SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS															
LOAD TYPE	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING Ⓜ	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
						LIVE-LOAD FACTORS (γLL)	MOMENT				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	2.08	--	1.75	2.08	1	BOTTOM SLAB	6.00	3.34	1	BOTTOM SLAB	1.00	
	HL-93 (OPERATING)	N/A	-	2.70	--	1.35	2.70	1	BOTTOM SLAB	6.00	4.33	1	BOTTOM SLAB	1.00	
	HS-20 (INVENTORY)	36.000	Ⓜ2	2.54	91.44	1.75	2.54	1	BOTTOM SLAB	6.00	4.08	1	BOTTOM SLAB	1.00	
	HS-20 (OPERATING)	36.000	-	3.29	118.44	1.35	3.29	1	BOTTOM SLAB	6.00	5.29	1	BOTTOM SLAB	1.00	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	-	6.07	81.95	1.40	6.07	1	EXTERIOR WALL	1.00	8.90	1	BOTTOM SLAB	11.00	
		SNGARBS2	-	6.07	121.40	1.40	6.07	1	EXTERIOR WALL	1.00	8.33	1	BOTTOM SLAB	1.00	
		SNAGRIS2	-	6.07	133.54	1.40	6.07	1	EXTERIOR WALL	1.00	8.90	1	BOTTOM SLAB	1.00	
		SNCOTTS3	-	2.96	80.66	1.40	2.96	1	BOTTOM SLAB	6.00	4.76	1	BOTTOM SLAB	1.00	
		SNAGGRS4	-	2.94	102.68	1.40	2.94	1	BOTTOM SLAB	6.00	4.75	1	BOTTOM SLAB	1.00	
		SNS5A	-	2.86	101.67	1.40	2.86	1	BOTTOM SLAB	6.00	4.64	1	BOTTOM SLAB	1.00	
		SNS6A	-	2.73	109.06	1.40	2.73	1	BOTTOM SLAB	6.00	4.39	1	BOTTOM SLAB	11.00	
		SNS7B	Ⓜ3	2.73	114.66	1.40	2.73	1	BOTTOM SLAB	6.00	4.39	1	BOTTOM SLAB	1.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	-	4.14	136.62	1.40	4.14	1	BOTTOM SLAB	6.00	6.51	1	BOTTOM SLAB	1.00	
		TNT4A	-	3.33	110.14	1.40	3.33	1	BOTTOM SLAB	6.00	5.34	1	BOTTOM SLAB	11.00	
		TNT6A	-	3.06	127.30	1.40	3.06	1	BOTTOM SLAB	6.00	4.93	1	BOTTOM SLAB	1.00	
		TNT7A	-	3.25	136.50	1.40	3.25	1	BOTTOM SLAB	6.00	5.20	1	BOTTOM SLAB	1.00	
		TNT7B	-	2.89	121.38	1.40	2.89	1	BOTTOM SLAB	6.00	4.65	1	BOTTOM SLAB	1.00	
		TNAGRIT4	-	3.18	136.74	1.40	3.18	1	BOTTOM SLAB	6.00	5.09	1	BOTTOM SLAB	11.00	
		TNAGT5A	-	3.18	143.10	1.40	3.18	1	BOTTOM SLAB	6.00	5.09	1	BOTTOM SLAB	1.00	
		TNAGT5B	-	3.20	144.00	1.40	3.20	1	BOTTOM SLAB	6.00	5.11	1	BOTTOM SLAB	1.00	
EMERGENCY VEHICLE (EV)	EV2	-	3.92	112.70	1.30	3.92	1	BOTTOM SLAB	6.00	6.29	1	BOTTOM SLAB	11.00		
	EV3	Ⓜ4	2.55	109.65	1.30	2.55	1	BOTTOM SLAB	6.00	4.14	1	BOTTOM SLAB	1.00		

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	--

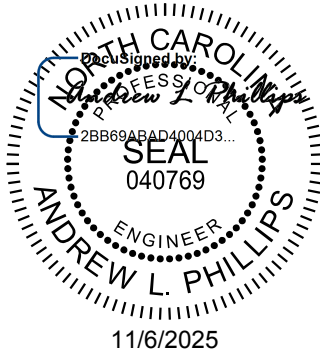
NOTES:
RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

⬡	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	



PROJECT NO. U-6105
MECKLENBURG COUNTY
STATION: 21+05.48 -L-

SHEET 2 OF 5



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS (NON-INTERSTATE TRAFFIC)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. C1-2					TOTAL SHEETS 5

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED