

LOAD FACTORS:

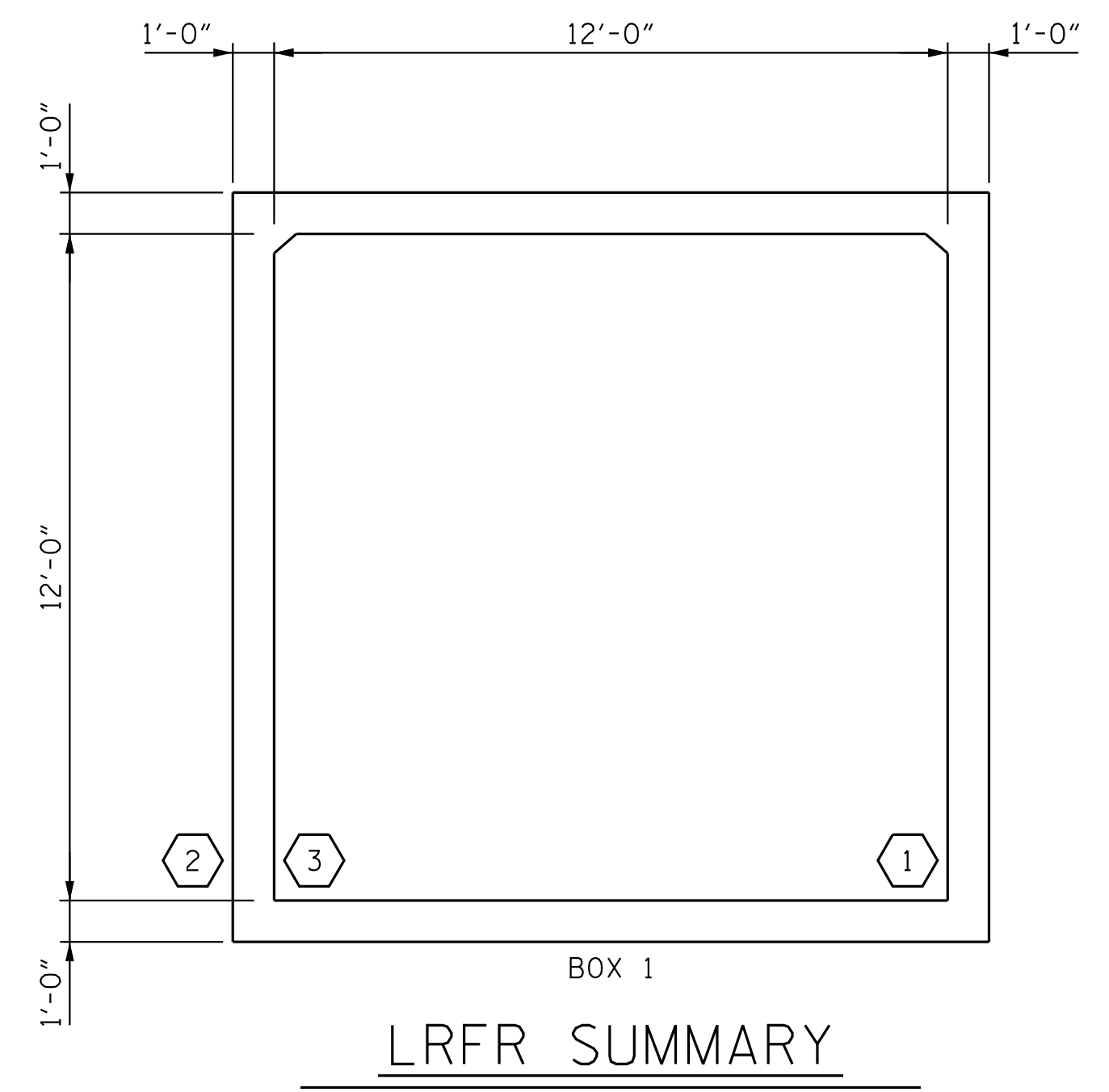
DESIGN LOAD RATING FACTORS

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		
						MOMENT				SHEAR						
						LIVE-LOAD FACTORS (%LL)	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	1.92	--	1.75	2.23	1	BOTTOM SLAB	7.00	1.92	1	BOTTOM SLAB	13.00		
	HL-93 (OPERATING)	N/A		2.48	--	1.35	2.89	1	BOTTOM SLAB	7.00	2.48	1	BOTTOM SLAB	13.00		
	HS-20 (INVENTORY)	36.000	②	2.25	81.00	1.75	2.25	1	EXT WALL	0.50	2.41	1	BOTTOM SLAB	1.00		
	HS-20 (OPERATING)	36.000		2.92	105.12	1.35	2.92	1	EXT WALL	0.50	3.13	1	BOTTOM SLAB	1.00		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.81	37.94	1.40	2.81	1	EXT WALL	0.50	5.26	1	BOTTOM SLAB	1.00	
		SNGARBS2	20.000		2.81	56.20	1.40	2.81	1	EXT WALL	0.50	4.92	1	BOTTOM SLAB	1.00	
		SNAGRIS2	22.000		2.81	61.82	1.40	2.81	1	EXT WALL	0.50	5.26	1	BOTTOM SLAB	1.00	
		SNCOTTS3	27.250		2.45	66.76	1.40	2.81	1	EXT WALL	0.50	2.45	1	BOTTOM SLAB	1.00	
		SNAGGRS4	34.925		2.55	89.06	1.40	2.81	1	EXT WALL	0.50	2.55	1	BOTTOM SLAB	1.00	
		SNS5A	35.550		2.36	83.90	1.40	2.76	1	BOTTOM SLAB	7.00	2.36	1	BOTTOM SLAB	13.00	
		SNS6A	39.950		2.28	91.09	1.40	2.67	1	BOTTOM SLAB	7.00	2.28	1	BOTTOM SLAB	1.00	
		SNS7B	42.000	③	2.24	94.08	1.40	2.63	1	BOTTOM SLAB	7.00	2.24	1	BOTTOM SLAB	1.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.81	92.73	1.40	2.81	1	EXT WALL	0.50	3.52	1	BOTTOM SLAB	1.00	
		TNT4A	33.075		2.81	92.94	1.40	2.81	1	EXT WALL	0.50	2.83	1	BOTTOM SLAB	1.00	
		TNT6A	41.600		2.58	107.33	1.40	2.81	1	EXT WALL	0.50	2.58	1	BOTTOM SLAB	1.00	
		TNT7A	42.000		2.70	113.40	1.40	2.81	1	EXT WALL	0.50	2.70	1	BOTTOM SLAB	1.00	
		TNT7B	42.000		2.49	104.58	1.40	2.81	1	EXT WALL	0.50	2.49	1	BOTTOM SLAB	1.00	
		TNAGRIT4	43.000		2.74	117.82	1.40	2.81	1	EXT WALL	0.50	2.74	1	BOTTOM SLAB	1.00	
		TNAGT5A	45.000		2.74	123.30	1.40	2.81	1	EXT WALL	0.50	2.74	1	BOTTOM SLAB	13.00	
		TNAGT5B	45.000		2.76	124.20	1.40	2.81	1	EXT WALL	0.50	2.76	1	BOTTOM SLAB	1.00	

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

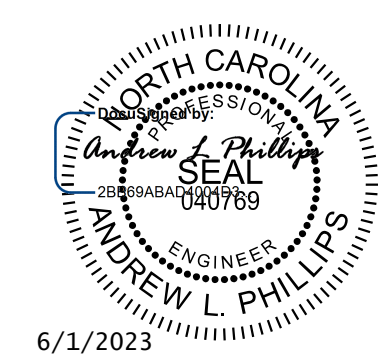


PROJECT NO. R-5930A
CHATHAM COUNTY
 STATION: 67+92.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 REINFORCED CONCRETE
 BOX CULVERTS
 (NON-INTERSTATE TRAFFIC)



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 Raleigh, NC 27601-1772
 Phone (919) 677-2000 NC LICENSE # F-0102

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1-6
1			3			TOTAL SHEETS
2			4			6

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

ASSEMBLED BY : D. D. LOWERY	DATE : 01/2023
CHECKED BY : C. T. POOLE	DATE : 01/2023
DRAWN BY : WMC 7/11	REV. 10/1/11 MAA/GM
CHECKED BY : GM 7/11	REV. 12/17 MAA/THC

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