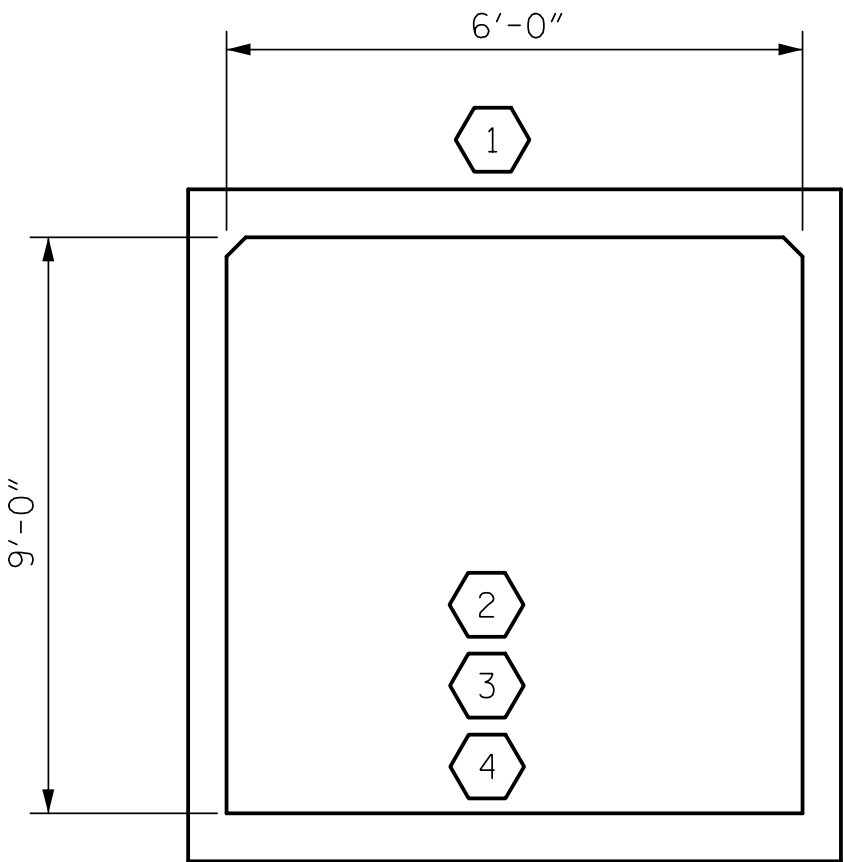


+

+

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 × RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
						γ_{LL} LIVE-LOAD FACTORS	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	1.12	--	1.75	1.12	1	TOP SLAB	3.33	1.99	1	TOP SLAB	0.81	
	HL-93 (OPERATING)	N/A		1.45	--	1.35	1.45	1	TOP SLAB	3.33	2.58	1	TOP SLAB	0.81	
	HS-20 (INVENTORY)	36.000	⬡2	1.21	43.56	1.75	1.21	1	BOTT SLAB	3.33	2.23	1	BOTT SLAB	0.87	
	HS-20 (OPERATING)	36.000		1.57	56.52	1.35	1.57	1	BOTT SLAB	3.33	2.89	1	BOTT SLAB	0.87	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		2.04	27.54	1.40	2.04	1	TOP SLAB	3.33	3.62	1	TOP SLAB	0.81	
		SNGARBS2		1.91	38.20	1.40	1.91	1	TOP SLAB	3.33	3.39	1	TOP SLAB	0.81	
		SNAGRIS2		2.04	44.88	1.40	2.04	1	TOP SLAB	3.33	3.62	1	TOP SLAB	0.81	
		SNCOTTS3	⬡3	1.45	39.51	1.40	1.45	1	BOTT SLAB	3.33	2.68	1	BOTT SLAB	0.87	
		SNAGGRS4		1.85	64.61	1.40	1.85	1	BOTT SLAB	3.33	3.41	1	BOTT SLAB	0.87	
		SNS5A		2.25	79.99	1.40	2.25	1	TOP SLAB	3.33	4.30	1	EXT. WALL	0.86	
		SNS6A		1.70	67.92	1.40	1.70	1	BOTT SLAB	3.33	3.13	1	BOTT SLAB	0.87	
		SNS7B		1.70	71.40	1.40	1.70	1	BOTT SLAB	3.33	3.13	1	BOTT SLAB	0.87	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3		2.04	67.32	1.40	2.04	1	TOP SLAB	3.33	3.62	1	TOP SLAB	0.81	
		TNT4A		1.73	57.22	1.40	1.73	1	BOTT SLAB	3.33	3.19	1	BOTT SLAB	0.87	
		TNT6A		1.70	70.72	1.40	1.70	1	BOTT SLAB	3.33	3.14	1	BOTT SLAB	0.87	
		TNT7A		1.72	72.24	1.40	1.72	1	BOTT SLAB	3.33	3.16	1	BOTT SLAB	0.87	
		TNT7B		1.70	71.40	1.40	1.70	1	BOTT SLAB	3.33	3.13	1	BOTT SLAB	0.87	
		TNAGRIT4		1.73	74.39	1.40	1.73	1	BOTT SLAB	3.33	3.19	1	BOTT SLAB	0.87	
		TNAGT5A		1.73	77.85	1.40	1.73	1	BOTT SLAB	3.33	3.19	1	BOTT SLAB	0.87	
		TNAGT5B		1.73	77.85	1.40	1.73	1	BOTT SLAB	3.33	3.19	1	BOTT SLAB	0.87	
EMERGENCY VEHICLE (EV)	EV2		1.44	41.40	1.30	1.44	1	TOP SLAB	3.33	2.56	1	TOP SLAB	0.81		
	EV3		⬡4	1.26	54.18	1.30	1.26	1	BOTT SLAB	3.33	2.33	1	BOTT SLAB	0.87	



LRFR SUMMARY

ASSEMBLED BY :	STM	DATE :	07/23
CHECKED BY :	MGC	DATE :	11/23
DRAWN BY :	WMC	7/II	REV. 10/1/II
CHECKED BY :	GM	7/II	REV. 12/17
			REV. 04/23
			MAA/GM
			MAA/THC
			BNB/AAI

11/28/2023
X:\NCDOT\VR-5739\Structures\Str. #7 (529 + 01.60 -L-)\Final Plans\DGNS\417.001.R-5739_SMU.C7-3.dgn
User:ZSmith

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:

-
-
-
-

⬡# 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. R-5739
NORTHAMPTON COUNTY
STATION: 529+01.60 -L-

SHEET 3 OF 12

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

LRFR SUMMARY FOR

REINFORCED CONCRETE

BOX CULVERTS

(NON-INTERSTATE TRAFFIC)

RIGHT EXTENSION

7/23/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS

706 HILLSBOROUGH STREET

SUITE 200

RALEIGH, NC 27603

PH (919) 773-8887

CORP. LICENSE NO.: C-0275

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO. BY: DATE:

1 3 4

NO