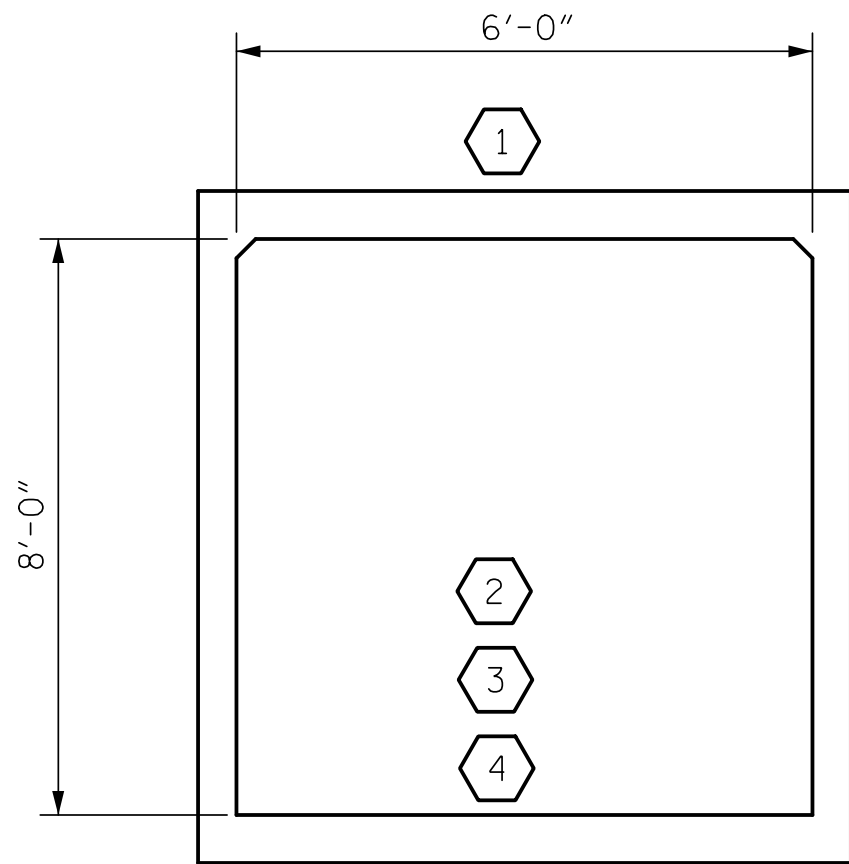


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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS															
LEVEL	VEHICLE	WEIGHT (W) (TONS)	⬡#	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
						LIVE-LOAD, FACTORS (γ _{LL})	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	1.09	--	1.75	1.09	1	TOP SLAB	3.33	1.96	1	TOP SLAB	0.81	
	HL-93 (OPERATING)	N/A		1.42	--	1.35	1.42	1	TOP SLAB	3.33	2.55	1	TOP SLAB	0.81	
	HS-20 (INVENTORY)	36.000	⬡2	1.18	42.48	1.75	1.18	1	BOTT SLAB	3.33	2.23	1	BOTT SLAB	0.87	
	HS-20 (OPERATING)	36.000		1.53	55.08	1.35	1.53	1	BOTT SLAB	3.33	2.88	1	BOTT SLAB	0.87	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SN5H		1.99	26.87	1.40	1.99	1	TOP SLAB	3.33	3.57	1	TOP SLAB	0.81	
		SNGARBS2		1.86	37.20	1.40	1.86	1	TOP SLAB	3.33	3.34	1	TOP SLAB	0.81	
		SNAGRIS2		1.99	43.78	1.40	1.99	1	TOP SLAB	3.33	3.57	1	TOP SLAB	0.81	
		SNCOTTS3	⬡3	1.41	38.42	1.40	1.41	1	BOTT SLAB	3.33	2.67	1	BOTT SLAB	0.87	
		SNAGGRS4		1.81	63.21	1.40	1.81	1	BOTT SLAB	3.33	3.40	1	BOTT SLAB	5.76	
		SNS5A		2.18	77.50	1.40	2.18	1	TOP SLAB	3.33	4.30	1	TOP SLAB	0.81	
		SNS6A		1.66	66.32	1.40	1.66	1	BOTT SLAB	3.33	3.12	1	BOTT SLAB	0.87	
		SNS7B		1.66	69.72	1.40	1.66	1	BOTT SLAB	3.33	3.12	1	BOTT SLAB	0.87	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3		1.99	65.67	1.40	1.99	1	TOP SLAB	3.33	3.57	1	TOP SLAB	0.81	
		TNT4A		1.68	55.57	1.40	1.68	1	BOTT SLAB	3.33	3.18	1	BOTT SLAB	0.87	
		TNT6A		1.66	69.06	1.40	1.66	1	BOTT SLAB	3.33	3.13	1	BOTT SLAB	0.87	
		TNT7A		1.67	70.14	1.40	1.67	1	BOTT SLAB	3.33	3.15	1	BOTT SLAB	0.87	
		TNT7B		1.66	69.72	1.40	1.66	1	BOTT SLAB	3.33	3.13	1	BOTT SLAB	0.87	
		TNAGRIT4		1.68	72.24	1.40	1.68	1	BOTT SLAB	3.33	3.18	1	BOTT SLAB	0.87	
		TNAGT5A		1.68	75.60	1.40	1.68	1	BOTT SLAB	3.33	3.18	1	BOTT SLAB	0.87	
		TNAGT5B		1.68	75.60	1.40	1.68	1	BOTT SLAB	3.33	3.18	1	BOTT SLAB	0.87	
EMERGENCY VEHICLE (EV)	EV2	28.750		1.41	40.54	1.30	1.41	1	TOP SLAB	3.33	2.53	1	TOP SLAB	0.87	
	EV3	43.000	⬡4	1.23	52.89	1.30	1.23	1	BOTT SLAB	3.33	2.32	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\NR-5739\Structures\Str. #7 (529 + 01.60 -L-)\Final Plans\DGNS\417.001.R-5739_SMU.C7-2.dgn
User:z2smi\h

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:

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⬡#	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 2 OF 12

 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		REVISIONS						SHEET NO.
		NO.	BY:	DATE:	NO.	BY:	DATE:	C7-2
		1			3			TOTAL SHEETS
		2			4			12

STR #7

STD. NO. LRFR5