

## 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	
						LIVE-LOAD FACTORS (γ <sub>LL</sub> )	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	PERMANENT LOAD	N/A	S	1.04	--	N/A	1.16	1	BOTTOM SLAB	10.88	1.04	1	BOTTOM SLAB	9.34	1,2

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:

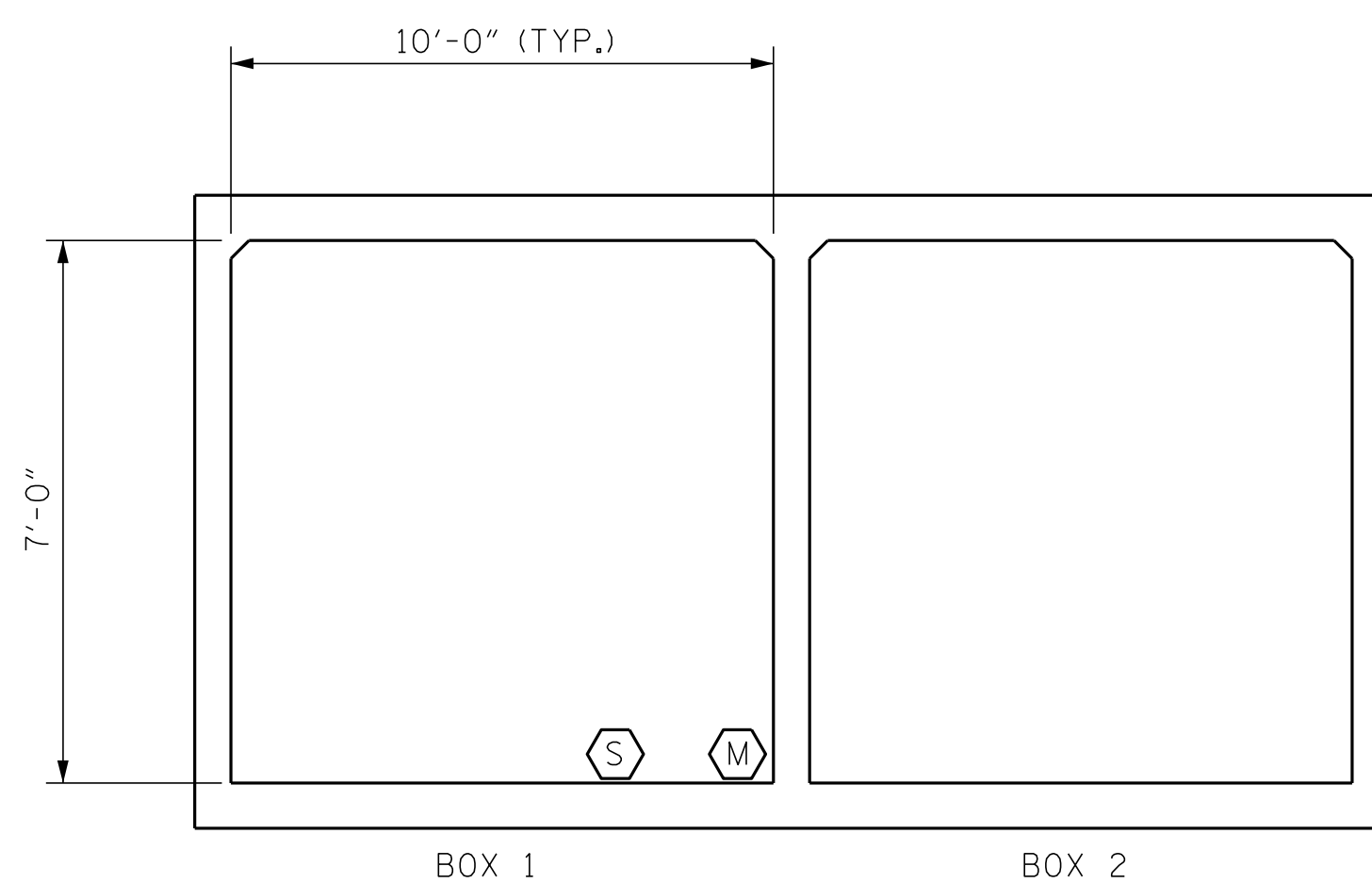
RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

FILL HEIGHT (27.50') EXCEEDS THE DISTANCE BETWEEN FACES OF END WALLS (20'-8").  
DESIGN CONTROLLED BY DEAD LOAD ONLY. SEE AASHTO 3.6.1.2.6

CULVERT LOAD RATED FOR PERMANENT LOAD ONLY.

COMMENTS:

1. CALCULATED MOMENT RATING FACTOR EQUALS MOMENT CAPACITY DIVIDED BY DEAD LOAD MOMENT.
2. CALCULATED SHEAR RATING FACTOR EQUALS SHEAR CAPACITY DIVIDED BY DEAD LOAD SHEAR.

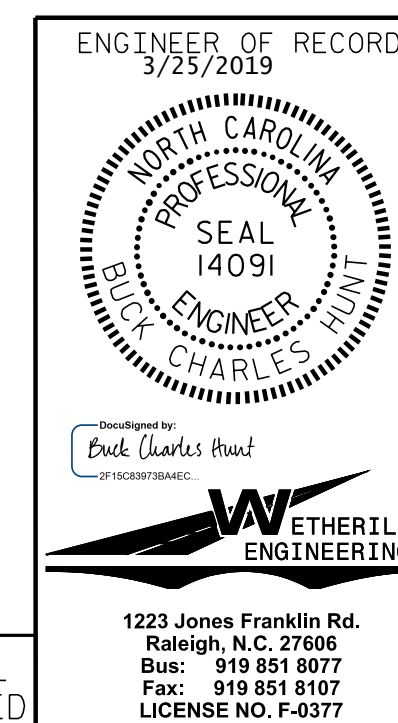


M MOMENT RATING FACTOR  
S SHEAR RATING FACTOR

**LRFR SUMMARY**  
(LOOKING DOWNSTREAM)

PROJECT NO. W-5600  
JOHNSTON COUNTY  
STATION: 28+84.00 -Y7-

SHEET 2 OF 8



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.  
C3-2  
TOTAL SHEETS  
8

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : B.C. HUNT	DATE : 5-18
CHECKED BY : J.A. DILWORTH	DATE : 5-18
DRAWN BY : WMC	7/11
CHECKED BY :	7/11
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC