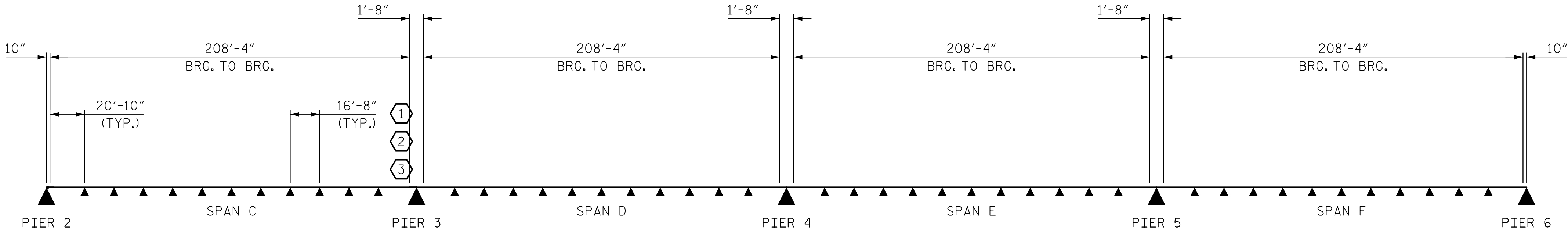


DATE: 8/28/2018
TIME: 2:25:04 PM

USER: nstf1pm
DGN: \\SFA\3\p00\ncasomel.com\Drawings\401\017_E4974_SINU_LRFR2.dgn

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR ARCH SPAN CONCRETE GIRDERS																							
LEVEL	VEHICLE	WEIGHT (W) (TONS)	# CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE					COMMENT NUMBER	
						γ_{LL} LIVE-LOAD FACTORS	MOMENT					SHEAR					γ_{LL} LIVE-LOAD FACTORS	MOMENT					
							DF DISTRIBUTION FACTORS	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DF DISTRIBUTION FACTORS	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DF DISTRIBUTION FACTORS	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.15	--	1.75	0.92	1.61	D	ER	129.17	1.06	1.15	C	ER	208.33	NOT APPLICABLE						
	HL-93 (OPERATING)	N/A		1.19	--	1.35	0.92	2.08	D	ER	129.17	1.06	1.19	C	ER	208.33							
	HS-20 (INVENTORY)	36.000	2	2.09	75.265	1.75	0.93	2.72	E	ER	129.17	1.04	2.09	C	ER	208.33							
	HS-20 (OPERATING)	36.000		2.15	77.507	1.35	0.93	3.53	E	ER	129.17	1.04	2.15	C	ER	208.33							
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.83	51.741	1.40	0.90	4.39	E	ER	129.17	0.98	3.83	C	ER	208.33						
		SNGARBS2	20.000		3.06	61.131	1.40	0.92	3.68	E	ER	129.17	1.01	3.06	C	ER	208.33						
		SNAGRIS2	22.000		2.97	65.267	1.40	0.93	3.64	E	ER	129.17	1.03	2.97	C	ER	208.33						
		SNCOTTS3	27.250		1.88	51.189	1.40	0.89	2.42	E	ER	129.17	0.97	1.88	C	ER	208.33						
		SNAGGRS4	34.925		1.66	57.845	1.40	0.91	2.19	E	ER	129.17	1.02	1.66	C	ER	208.33						
		SNS5A	35.550		1.85	65.793	1.40	0.91	2.15	E	ER	129.17	1.01	1.85	C	ER	208.33						
		SNS6A	39.950		1.75	69.938	1.40	0.91	2.04	E	ER	129.17	1.03	1.75	C	ER	208.33						
		SNS7B	42.000		1.78	74.826	1.40	0.91	1.98	E	ER	129.17	1.01	1.78	C	ER	208.33						
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.25	74.222	1.40	1.13	2.52	D	I	70.83	1.08	2.25	C	ER	208.33						
		TNT4A	33.075		1.92	63.406	1.40	0.92	2.45	E	ER	129.17	1.04	1.92	C	ER	208.33						
		TNT6A	41.600		1.86	77.296	1.40	0.92	2.11	E	ER	129.17	1.01	1.86	C	ER	208.33						
		TNT7A	42.000		1.79	75.016	1.40	1.11	2.16	D	I	70.83	1.07	1.79	C	ER	208.33						
		TNT7B	42.000		1.72	72.104	1.40	0.93	2.14	E	ER	129.17	1.06	1.72	C	ER	208.33						
		TNAGRIT4	43.000		1.68	72.446	1.40	1.14	2.10	D	I	70.83	1.09	1.68	C	ER	208.33						
		TNAGT5A	45.000		1.81	81.349	1.40	1.13	2.02	D	I	70.83	1.01	1.81	C	ER	208.33						
		TNAGT5B	45.000	3	1.59	71.517	1.40	1.13	1.96	D	I	70.83	1.07	1.59	C	ER	208.33						



LRFR SUMMARY
(EXPANSION JOINTS ARE LOCATED AT PIERS 2-6)

DRAWN BY : K. DONALD	DATE : 11/2017
CHECKED BY : N. BROWN	DATE : 11/2017
DESIGNED BY : K. DONALD	DATE : 11/2017
DESIGN CHECKED BY : N. BROWN	DATE : 11/2017

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ _{DC}	γ _{DW}	γ _{TU}
	STRENGTH I	1.25	1.50	0.50

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

ARCH SPAN GIRDERS ARE NOT PRESTRESSED, THEREFORE SERVICE III LIMIT STATE DOES NOT APPLY. PROVISIONS OF ARTICLE 5.7.3.4 HAVE BEEN SATISFIED FOR SERVICEABILITY.

LOAD AND FACTOR RESISTANCE RATINGS ARE CALCULATED FOR POPOSED REINFORCED CONCRETE GIRDERS.

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. B-4974
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR
ARCH SPAN
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 148
2			4			