STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION

THE ANALYSIS AND DESIGN OF MULTIPLE COLUMN PIERS

E75700

SHEET _ OF _

FORCES = KIPS
INTENSITY = LBS/FT^2
AREAS = FT^2
LENGTHS = FT
TRACTION AND CENTRIFUGAL FORCE = 1 LANE
COEFFICIENTS = UNITS/UNITS

GROUP II WIND

CN 1	CN 2	SUPERSTRUCTURE AREA TRANS	SUPERSTRUCTURE AREA LONG	STD W	WIND ON SUPERSTRUCTURE INTENSITY FT_1	FL_1	FT_2	FL_2	FT_3	FL_3	FT_4	FL_4	FT_5	FL_5	WIND FORCE ARMS APT	APL	WIND ON PIER PT	PL
4	1																	

GROUP III WIND

CN 1	CN 2	STD W	WIND ON SUPERSTRUCTURE INTENSITY FT_1	FL_1	FT_2	FL_2	FT_3	FL_3	FT_4	FL_4	FT_5	FL_5	STD W	WIND ON LIVE LOAD INTENSITY FT_1	FL_1	FT_2	FL_2	FT_3	FL_3	FT_4	FL_4	FT_5	FL_5	LENGTH OF LIVE LOADS TRANS	LONG	WIND ON L.L. ARMS APT	APL
4	2																										

+ AT LEAST ONE LIVE LOAD CASE IS REQUIRED. MAXIMUM NUMBER OF LIVE LOAD CASES IS 25.

MISC. FORCES

CN 1	CN 2	CENTRIFUGAL FORCE FT	TRACTION FORCE FL	CENTRIFUGAL FORCE & TRACTION FORCE ARMS APT	APL	EXPANSION COEFFICIENT	SHRINKAGE COEFFICIENT	STREAM FLOW PT	PL	* EQ
4	3									

* = COLUMNS 51,52 MUST BE 0.1 FOR SEISMIC CONSIDERATION.

	FT_1	FL_1	FT_2	FL_2	FT_3	FL_3	FT_4	FL_4	FT_5	FL_5
STD W – GR.II, GR.III SUPERSTRUCTURE	50	0	44	6	41	12	33	16	17	19
STD W – GR.III LIVE LOAD	100	0	88	12	82	24	66	32	34	38

SEISMIC FORCES

CN 1	CN 2	COL.#	LONGITUDINAL LOADING (ALL POSITIVE) VL TOP	VT TOP	ML BOTTOM	ML TOP	MT BOTTOM	MT TOP	P TOP	TRANSVERSE LOADING (ALL POSITIVE) VL TOP	VT TOP	ML BOTTOM	ML TOP	MT BOTTOM	MT TOP	P TOP
4	4															
4	4															
4	4															
4	4															
4	4															

DEAD LOAD SUPERSTRUCTURE AND LIVE LOAD CASES+

CN 1	CN 2	ID	NL	P1, 13, 25	P2, 14, 26	P3, 15, 27	P4, 16, 28	P5, 17, 29	P6, 18, 30	P7, 19, 31	P8, 20, 32	P9, 21, 33	P10, 22, 34	P11, 23, 35	P12, 24, 36
5	1	D-L-0	0												
6	1														
6	1														
6	1														
6	1														
6	1														
6	1														
6	1														
6	1														
6	1														
6	1														

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