STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION

THE ANALYSIS AND DESIGN OF MULTIPLE COLUMN PIERS

E7570M

SHEET _ OF _

GROUP II WIND

CN	SUPERSTRUCTURE AREA m² TRANS	SUPERSTRUCTURE AREA m² LONG	SHOW	WIND ON SUPERSTRUCTURE INTENSITY kN/m² FT1 FL1 FT2 FL2 FT3 FL3 FT4 FL4 FT5 FL5	WIND FORCE ARMS m APT	WIND FORCE ARMS m APL	WIND ON PIER kN PT	WIND ON PIER kN PL
1 2	3 4 5 6 7 8	9 10 11 12 13 14	15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	36 37 38 39 40	41 42 43 44 45	46 47 48 49 50	51 52 53 54 55
4 1		*				*		*

GROUP III WIND

CN	SHOW	WIND ON SUPERSTRUCTURE INTENSITY FT1 FL1 FT2 FL2 FT3 FL3 FT4 FL4 FT5 FL5	SHOW	WIND ON LIVE LOAD INTENSITY FT1 FL1 FT2 FL2 FT3 FL3 FT4 FL4 FT5 FL5	LENGTH OF LIVE LOADS TRANS	LENGTH OF LIVE LOADS LONG	WIND ON L.L. ARMS APT	WIND ON L.L. ARMS APL
1 2	3	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	25	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50	51 52 53 54 55	56 57 58 59 60	61 62 63 64 65
4 2								

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

MISC. FORCES

CN	CENTRIFUGAL FORCE FT	TRACTION FORCE FL	CENTRIFUGAL FORCE & TRACTION FORCE ARMS APT	CENTRIFUGAL FORCE & TRACTION FORCE ARMS APL	EXPANSION COEFFICIENT	SHRINKAGE COEFFICIENT	STREAM FLOW PT	STREAM FLOW PL	* EQ
1 2	3 4 5 6 7 8	9 10 11 12 13 14	15 16 17 18 19 20	21 22 23 24 25 26	27 28 29 30 31 32	33 34 35 36 37 38	39 40 41 42 43 44	45 46 47 48 49 50	51 52
4 3									

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

SEISMIC FORCES

CN	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
1 2	3 4	5 6 7 8	9 10 11 12 13 14	15 16 17 18 19 20	21 22 23 24 25 26	27 28 29 30 31 32	33 34 35 36 37 38	39 40	41 42 43 44 45 46	47 48 49 50 51 52	53 54 55 56 57 58	59 60 61 62 63 64	65 66 67 68 69 70	71 72 73 74	
4 4															
4 4															
4 4															
4 4															
4 4															

DEAD LOAD SUPERSTRUCTURE AND LIVE LOAD CASES+

CN	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
1 2	3 4 5 6 7 8	9 10 11 12 13 14	15 16 17 18 19 20	21 22 23 24 25 26	27 28 29 30 31 32	33 34 35 36 37 38	39 40	41 42 43 44 45 46	47 48 49 50 51 52	53 54 55 56 57 58	59 60 61 62 63 64	65 66 67 68 69 70	71 72 73 74 75 76	77 78 79 80
5 1	D - L - S S	*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*
6 1		*	*	*	*	*	*	*	*	*	*	*	*	*