



GENERAL NOTES:

DESIGN CRITERIA:

- Reference: Tampa Electric Company's Standard Specifications for Galvanized Structural Steel Transmission Line Towers, dated 9/1/68.
- Ultimate Unit Stresses:
 - Tower Legs:**

ASTM A372-50y: (net section) : 50,000 PSI.
 Tension (gross section) : 50,000-2.18(L/A)² PSI.
 0 < L/A < 107 : 286,000,000 (L/A)² PSI.
 107 < L/A < 150 : 286,000,000 (L/A)² PSI.
 S/T > 25.0 : 11,140,000 (S/T)² PSI.

ASTM A36: (net section) : 36,000 PSI.
 Tension (gross section) : 36,000-1.132(L/A)² PSI.
 0 < L/A < 126 : 286,000,000 (L/A)² PSI.
 126 < L/A < 150 : 286,000,000 (L/A)² PSI.
 S/T > 17.5 : 11,140,000 (S/T)² PSI.
 - Tower Web:**

ASTM A36: (net section) : 36,000 PSI.
 Tension (gross section) : 31,000 PSI.
 Compression (gross section) : 31,000 PSI.
 50 < L/A < 150 : 40,500-190(L/A) PSI.
 150 < L/A < 200 : 27,000-100(L/A) PSI.
 S/T > 17.5 : 11,140,000 (S/T)² PSI.
 - ASTM A394 Bolts:

Shear : 30,000 PSI.
 Bearing (ASTM A36) : 65,000 PSI.
 Bearing (ASTM A372-50y) : 80,000 PSI.
 - E70XX Welding Electrodes:

Shear at throat of fillet welds : 26,300 PSI.
- Slenderness Ratio (maximum):

Leg & main crossarm members : 150
 Other compression members : 200
 Redundant members : 250
 Tension members : 500
- Material Thickness (minimum):

Leg, main crossarm, foundation members : 1/4 inch.
 Other members : 3/16 inch.
- All members acting only in tension shall have standard LESCO design.
- For Tower Reactions & Base Shoe Detail, See Sheet S-5.

MATERIAL:

- Structural Steel: ASTM A36 except where noted [50y].
 ASTM A372 where noted [50y] with minimum yield point = 50,000 PSI.
- Bolts & Step Bolts: 3/4" ASTM A394 Hex. Hd., Hex. Nut.
 Step bolts on one tower leg or ladder angle where shown full height of tower spaces at 1 1/4" c.c. Each tower bolt to be equipped with a "Pinnut" locknut.
- Welding Electrodes: E70XX
- Galvanizing : Structural Steel...ASTM A123
 Hardware...ASTM A153
- All steel, except weldments, to be shipped unassembled.
- Leg splices as noted on design drawing of each tower type.
- Piece marks to be prefixed with tower type designation for special requirements for 50' Tower Tower, See Sheet S-5.

LEGEND:

I : Governing load case & max. calculated member stress (kips)
 + : Tension
 - : Compression
 (xxx.n) : Member capacity (kips).
 (xxx.k) : Member capacity limited by connection capacity (kips).
 18, 28, etc. : Number of bolts in end connection.
 LIM : Long leg of angle in horizontal plane.
 LIV : Long leg of angle in vertical plane.
 [50y] : ASTM A372 Steel (Fy = 50,000 PSI).

NOTES:

- LEG SPLICES: LAP.
- PREFIX PIECE MARKS WITH "A".

1-26-67	2	REVISED PER FINAL APPROVAL - FOR FILE	R.C.D.	
11-13-68	1	FOR CUSTOMER APPROVAL	R.C.D.	
DATE	ISSUE	DESCRIPTION	DR.	CHK.

LEHIGH STRUCTURAL STEEL CO.
 ALLENTOWN, PA.

TYPE "A" - TANGENT TOWER.
 240 KV DOUBLE CIRCUIT TRANSMISSION LINE
 BIG BEND
 TAMPA ELECTRIC COMPANY.

DESIGNED: R. C. D. DATE: 11-11-68 CONTRACT: P 237
 CHECKED: C.E.D. DATE: 11-11-68 SHEET: S-1
 IN CHARGE: L.F. UTSCH DESIGNED: UTSCHE

BIG BEND-78TH STREET AND BIG BEND #3 GENERATOR LEADS TANGENT TOWER DESIGN DATA		TAMPA ELECTRIC CO. ENGINEERING DEPT. TAMPA, FLA.	
SCALE: NONE	REQ. NO. 2-11-68	H-687	
DRAWN: T.L.P.	DATE: 5-9-77	SHEET 1 OF 5	
APP.:	DATE:		