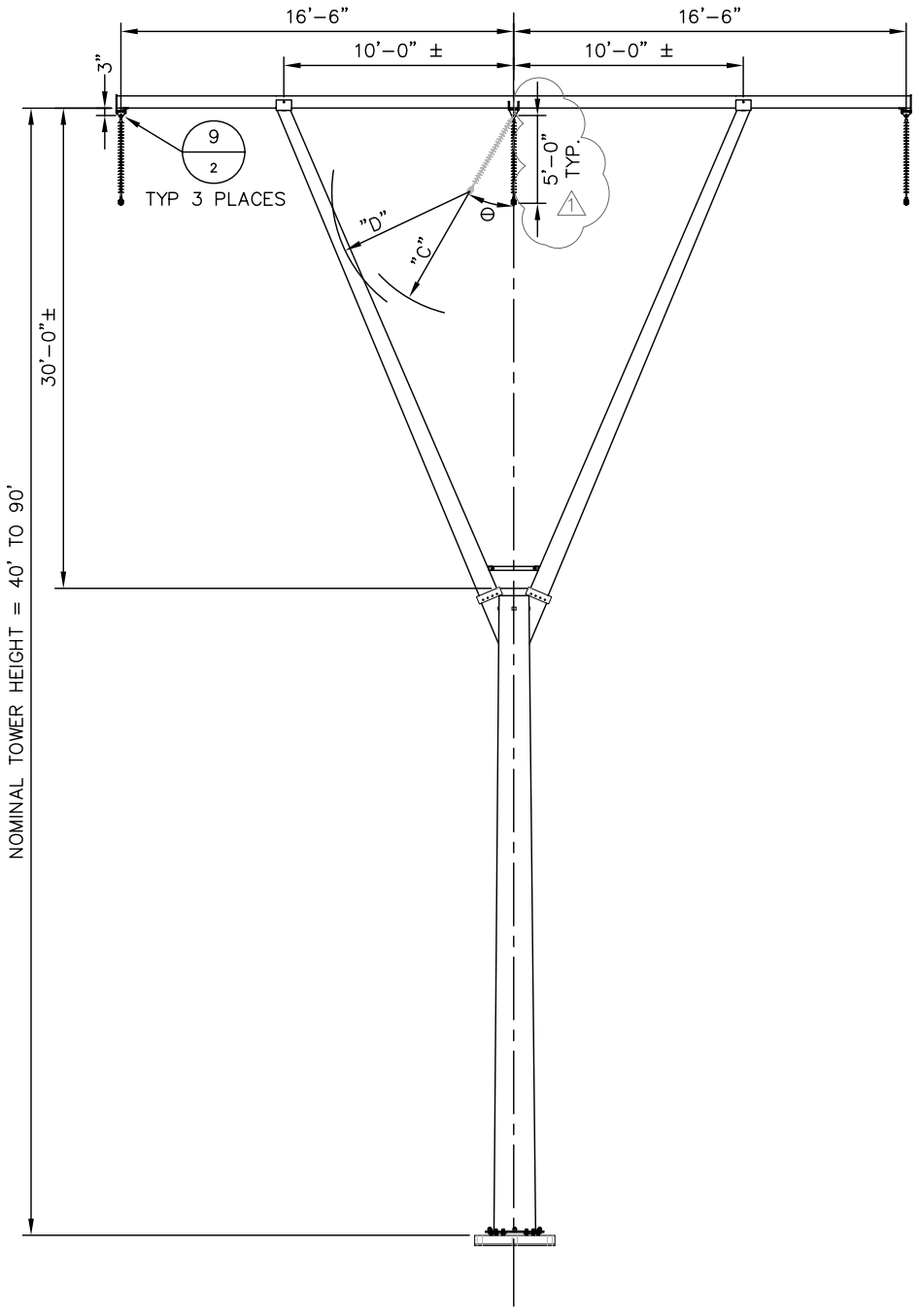
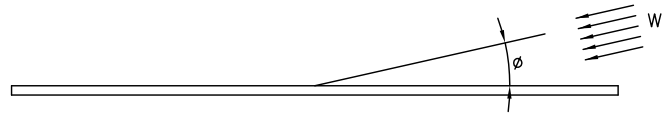
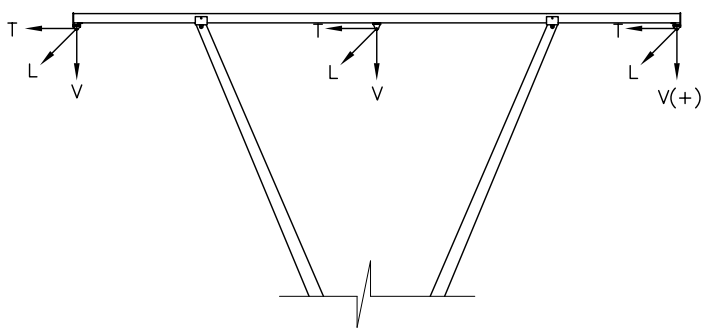


TOWER TYPES – YSA1 AND YSA2





TOWER YSA1 AND YSA2

CONDUCTOR: 397.5 kcmil 30/7 AACSR/AW "LARK"

	YSA1	YSA2
MAX. WIND SPAN AND LINE ANGLE COMBINATIONS:	950' @ 0° AND 750' @ 1.5°	1270' @ 0° AND 900' @ 3.0°
MAX. WEIGHT SPAN:		
HEAVY ICE:	2000'	2000'
ALL OTHERS:	3500'	3500'

NOTES:

1. THE INDICATED LOADS ARE ULTIMATE LOADS WHICH INCLUDE ALL OVERLOAD CAPACITY FACTORS. WEIGHTS OF INSULATORS AND ATTACHMENT HARDWARE ARE INCLUDED.

2. ø IS THE ANGLE BETWEEN THE TRANSVERSE CENTERLINE OF THE TOWER AND THE WIND DIRECTION. "W" IS THE WIND PRESSURE, INCLUDING OVERLOAD CAPACITY FACTORS, TO BE APPLIED TO THE TOWER BASED ON CYLINDRICAL MEMBERS. SEE SPECIFICATIONS FOR SHAPE FACTORS FOR OTHER SECTIONS. "k" IS THE OVERLOAD CAPACITY FACTOR BY WHICH THE DEAD LOAD OF THE TOWER SHALL BE MULTIPLIED.

3. FOR UNBALANCED LONGITUDINAL LOAD, INDICATED AS $\frac{X.XX}{Y.YY}$, THE X.XX LOADS SHALL BE APPLIED AT ANY ONE ATTACHMENT POINT WITH THE Y.YY LOADS APPLIED AT THE OTHER TWO ATTACHMENT POINTS.

4. ATTACHMENT PLATES AND VANGS FOR HARDWARE SHALL BE COMPATIBLE WITH THE GUY, INSULATOR AND HARDWARE ASSEMBLIES SHOWN.

5. GUY VANGS SHALL BE DESIGNED FOR 1.2 TIMES THE RATED BREAKING STRENGTH OF THE GUY.

6. SEE DRAWING 1 FOR TYPICAL DETAILS.

CONCEPTUAL

ELECTRICAL CLEARANCES		
INSULATOR SWING Θ	MIN. CLEARANCE TO TOWER SURFACE, "C" (ALL PHASES)	MIN. CLEARANCE TO C/L UPPER ARM, "D" (CENTER PHASE ONLY)
15°	4'–0"	6'–4"
60°	2'–6"	–
75°	1'–0"	–

TABLE 1: CLEARANCES

DESCRIPTION	TEMP °F	ICE R–IN	WIND psf	V kip	T kip	L kip	W psf	ø	k
NESC HEAVY	0°	0.5	4.0	7.48	1.61	–	10.0	0	1.5
HEAVY ICE AND WIND	30°	1.5	4.0	10.86	1.62	–	5.2	0	1.1
TRANSVERSE HIGH WIND	40°	0.0	27.4	2.36	1.92	–	36.4	0	1.1
LONGITUDINAL HIGH WIND	40°	0.0	27.4	2.36	0.16	0.20	36.4	90°	1.1
UNBALANCE LONGITUDINAL	30°	0.5 0	– 1	3.84 2.36	0.22 0.16	3.50 0	0.0	0	1.1

LOADING DIAGRAM TOWER TYPE YSA1

DESCRIPTION	TEMP °F	ICE R–IN	WIND psf	V kip	T kip	L kip	W psf	ø	k
NESC HEAVY	0°	0.5	4.0	7.48	2.30	–	10.0	0	1.5
HEAVY ICE AND WIND	30°	1.5	4.0	10.86	2.39	–	5.2	0	1.1
TRANSVERSE HIGH WIND	40°	0.0	28.2	2.36	2.57	–	36.4	0	1.1
LONGITUDINAL HIGH WIND	40°	0.0	28.2	2.36	0.32	0.20	36.4	90°	1.1
UNBALANCE LONGITUDINAL	30°	0.5 0	–	3.84 2.36	0.44 0.31	3.50 0	0.0	0	1.1

LOADING DIAGRAM TOWER TYPE YSA2

NO.	DATE	BY	REVISION DESCRIPTION
0	04/16/04	GMC	ISSUED FOR PRELIM. STRUC. DESIGN
1	05/07/04	GDH	GENERAL REVISIONS

NO.	DATE	BY	REVISION DESCRIPTION

CONTRACT No.	BID ISSUE REV	DATE

STATE OF ALASKA 49th
GREG D. HUFFMAN
CE 8349
REGISTERED PROFESSIONAL ENGINEER

DESIGNED: GDH
DRAWN: GMC
CHECKED:

Dryden & LaRue, Inc.
CONSULTING ENGINEERS

APPROVED:
CONTRACT No.:
ORIGINAL DATE: 03/22/04

THE FOUR DAM POOL POWER AGENCY
SWAN LAKE – LAKE TYEE
138KV INTERTIE
TOWER TYPES YSA1 AND YSA2

DRAWING NO. 4 | SHEET 1 of 1 | REV. 1

PROJECT CODE: FDPINL010 PLOT DATE:
FILE NAME (CADD): T:\Dryden & LaRue\Projects – Active\Four Dam Pool\Drawing–04–YSA12.dwg. Nov 14, 2005 – 3:53pm

T:\Dryden & LaRue\Projects – Active\Four Dam Pool\Drawing–04–YSA12.dwg. Nov 14, 2005 – 3:53pm