

Attachment 1

Tower Placement, Data Information Tables and Location Information

PLS-CADD Version 9.20 3:03:24 PM Thursday, May 15, 2008

SAE Towers Ltd.

Project Name: 'c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\model\leaps_sae review.DON'

Line Title: 'SAE Rev B'

Criteria notes:

60 95 Heavy and Light per Rule 43-3, Page IV-7

60 95 Class E Supply, Grade B Per Table 4, Page IV-10

60 95 Sags and Tensions per Rule 49.4-C(5), Page IV-30

NESC Light Loading per Rule 250B, Page 177, Ice Thickness, Wind Pressure and Temperature in Table 250-1

NESC Extreme Wind Loading per Rule 250C, Page 177, Ice Thickness, Wind Pressure and Temperature in Table 250-2, 250-3

NESC 85 MPH Basic Wind Speed, 3 second Gust Wind Speed, Figure 250-2 Beginning on Page 180

NESC Extreme Ice with Concurrent Wind Loading per Rule 250D, Page 179,

NESC Uniform Ice Thickness with Concurrent Wind, Figure 250-3 Beginning on Page 184

NESC Grade B Construction "Method A" per Table 253-1, Page 197 and Table 261-1A, Page 207

NESC Tension Limits per Rule 261H4, Page 204

NESC Insulator Strength Reduction per Rule 277, Page 214 should be applied to Insulator Strengths when Modeling Insulators

60 95 and 2007 NESC C2-2007 Criteria File for PLS-CADD Created April 8, 2008

Criteria Report

Weather Cases

WC #	Description	Air Density Factor (psf/mb^2)	Wind Vel. (mph)	Wind Pres. (psf)	Wire Ice Thick (in)	Wire Ice Density (lbs/ft^3)	Wire Ice Load (lbs/ft)	Temp (deg F)	Weather Load Factor	NESC Constant (lbs/ft)	Wire Height Adjust Model	Wind Gust Response Factor
1	6095 Heavy (Erection)	0.00256	48	6.0	0.50	57.000	0.00	0	1.00	0.00	None	1
2	6095 Heavy (Erection)	0.00256	48	6.0	0.50	57.000	0.00	60	1.00	0.00	None	1
3	6095 Heavy (Sag)	0.00256	48	6.0	0.50	57.000	0.00	150	1.00	0.00	None	1
4	6095 Light	0.00256	56	8.0	0.00	0.000	0.00	25	1.00	0.00	None	1
5	6095 Light (Erection)	0.00256	56	8.0	0.00	0.000	0.00	60	1.00	0.00	None	1
6	6095 Light (Sag)	0.00256	56	8.0	0.00	0.000	0.00	150	1.00	0.00	None	1
7	NESC Light	0.00256	59	9.0	0.00	0.000	0.00	30	1.00	0.05	None	1
8	NESC Extreme Wind	0.00256	85	18.5	0.00	0.000	0.00	60	1.00	0.00	NESC 2007	NESC 2007
9	NESC Extreme Ice with Wind	0.00256	30	2.3	0.00	57.000	0.00	15	1.00	0.00	None	1
10	Uplift	0.00256	0	0.0	0.00	0.000	0.00	30	1.00	0.00	None	1
11	Maximum Operating	0.00256	0	0.0	0.00	0.000	0.00	212	1.00	0.00	None	1
12	NESC Blowout 6PSF	0.00256	48	6.0	0.00	0.000	0.00	60	1.00	0.00	None	1
13	No Wind (SWING 1)	0.00256	0	0.0	0.00	0.000	0.00	60	1.00	0.00	None	1
14	Medium Wind (SWING 2)	0.00256	48	6.0	0.00	0.000	0.00	60	1.00	0.00	None	1
15	High Wind (SWING 3)	0.00256	85	18.5	0.00	0.000	0.00	60	1.00	0.00	None	1
16	GALLOPING (SWING)	0.00256	28	2.0	0.50	57.000	0.00	32	1.00	0.00	None	1
17	GALLOPING (SAG)	0.00256	0	0.0	0.50	57.000	0.00	-20	1.00	0.00	None	1
18	-20 Deg F	0.00256	0	0.0	0.00	0.000	0.00	-10	1.00	0.00	None	1
19	-10 Deg F	0.00256	0	0.0	0.00	0.000	0.00	0	1.00	0.00	None	1
20	0 Deg F	0.00256	0	0.0	0.00	0.000	0.00	10	1.00	0.00	None	1
21	10 Deg F	0.00256	0	0.0	0.00	0.000	0.00	20	1.00	0.00	None	1
22	20 Deg F	0.00256	0	0.0	0.00	0.000	0.00	30	1.00	0.00	None	1
23	30 Deg F	0.00256	0	0.0	0.00	0.000	0.00	40	1.00	0.00	None	1
24	40 Deg F	0.00256	0	0.0	0.00	0.000	0.00	50	1.00	0.00	None	1
25	50 Deg F	0.00256	0	0.0	0.00	0.000	0.00	60	1.00	0.00	None	1
26	60 Deg F	0.00256	0	0.0	0.00	0.000	0.00	70	1.00	0.00	None	1
27	70 Deg F	0.00256	0	0.0	0.00	0.000	0.00	80	1.00	0.00	None	1
28	80 Deg F	0.00256	0	0.0	0.00	0.000	0.00	90	1.00	0.00	None	1
29	90 Deg F	0.00256	0	0.0	0.00	0.000	0.00	100	1.00	0.00	None	1
30	100 Deg F	0.00256	0	0.0	0.00	0.000	0.00	120	1.00	0.00	None	1
31	120 Deg F	0.00256	0	0.0	0.00	0.000	0.00	130	1.00	0.00	None	1
32	130 Deg F	0.00256	0	0.0	0.00	0.000	0.00	167	1.00	0.00	None	1
33	167 Deg F	0.00256	0	0.0	0.00	0.000	0.00	212	1.00	0.00	None	1
34	212 Deg F	0.00256	0	0.0	0.00	0.000	0.00				None	1

Cable Tension Criteria

LC #	WC Description	Cable Condition	Allowable %Ultimate	Maximum Tension (lbs)	Maximum Catenary (ft)	Applicable Cable
1	4 6095 Light	Initial RS	50.000	0.000	0.000	ALL CABLES
2	7 NESC Light	Load RS	60.000	0.000	0.000	ALL CABLES
3	26 60 Deg F	Initial RS	35.000	0.000	0.000	ALL CABLES
4	26 60 Deg F	Creep RS	25.000	0.000	0.000	ALL CABLES

Automatic Sagging Criteria

LC #	WC Description	Cable Condition	Allowable %Ultimate	Maximum Tension (lbs)	Maximum Catenary (ft)	Applicable Cable
1	4 6095 Light	Initial RS	50.000	0.000	0.000	ALL CABLES
2	7 NESC Light	Initial RS	60.000	0.000	0.000	ALL CABLES
3	26 60 Deg F	Initial RS	35.000	0.000	0.000	ALL CABLES
4	26 60 Deg F	Creep RS	25.000	0.000	0.000	ALL CABLES

Weight Span Criteria (Method 1)

Condition	WC Weather Case #	Description	Cable Condition
Condition 1 (usually Wind)	8	NESC Extreme Wind	Initial RS
Condition 2 (usually Cold)	10	Uplift	Initial RS
Condition 3 (usually Ice)	7	NESC Light	Initial RS

Interaction Diagram Criteria

LC #	WC Weather Case #	Cable Condition

Structure Loads Criteria

LC #	WC Load Case #	Description	Cable Condition	Wind Dir.	Bisect Wind Angle	Wire Vert. Load Factor	Wire Struct. Load Factor	Wire + Tension	Struct. Weight Load Factor	Struct. Area	Struct. Ice Load Model	Struct. Ice Density	Pole Tip Deflection Check	Pole Tip Deflect Limit
1	7	RULE 250B NA+	Initial RS	NA+		1.50	2.50	1.65	1.50	1.00	Wind on Face	0.000	No Limit	0.00
2	7	RULE 250B NA-	Initial RS	NA-		1.50	2.50	1.65	1.50	1.00	Wind on Face	0.00	No Limit	0.00
3	8	RULE 250C NA+	Initial RS	NA+		1.00	1.00	1.00	1.00	1.00	NESC 2007	0.000	No Limit	0.00
4	8	RULE 250C NA-	Initial RS	NA-		1.00	1.00	1.00	1.00	1.00	NESC 2007	0.000	No Limit	0.00
5	9	RULE 250D NA+	Initial RS	NA+		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00
6	9	RULE 250D NA-	Initial RS	NA-		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00
7	7	RULE 250B Uplift NA+	Initial RS	NA+		1.00	2.50	1.65	1.00	1.00	Wind on Face	0.000	No Limit	0.00
8	7	RULE 250B Uplift NA-	Initial RS	NA-		1.00	2.50	1.65	1.00	1.00	Wind on Face	0.000	No Limit	0.00
9	7	RULE 250B Insulators NA+	Initial RS	NA+		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00
10	7	RULE 250B Insulators NA-	Initial RS	NA-		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00
11	4	RULE 43.3 NA+	Initial RS	NA+		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00
12	4	RULE 43.3 NA-	Initial RS	NA-		1.00	1.00	1.00	1.00	1.00	Wind on Face	0.000	No Limit	0.00

Strength Factors for each Load Case

LC #		WC Load Case #	Strength										Factor										Foundation					
			Steel Tubular Towers	Poles Arms	Wood Poles	Concrete Poles	Factor	Strength	Concrete Poles	Factor	Strength	Concrete Poles	Factor	Strength	Guys	Factor	Strength	Non-Tubular Arms	Factor	Strength	Braces	Factor	Strength	Insulators	Factor	Strength	Foundation	
						Ultimate																						
1	7	RULE 250B NA+	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
2	7	RULE 250B NA-	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
3	8	RULE 250C NA+	1.00		0.75	1.00	0.75	1.00	0.00	0.00	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.00
4	8	RULE 250C NA-	1.00		0.75	1.00	0.75	1.00	0.00	0.00	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.00
5	9	RULE 250D NA+	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
6	9	RULE 250D NA-	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
7	7	RULE 250B Uplift NA+	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
8	7	RULE 250B Uplift NA-	1.00		0.65	1.00	0.65	1.00	0.00	0.00	0.90	0.65	0.90	0.65	0.90	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1.00
9	7	RULE 250B Insulators NA+	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	7	RULE 250B Insulators NA-	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11	4	RULE 43.3 NA+	0.80		1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	4	RULE 43.3 NA-	0.80		1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Survey Point Clearance Criteria

LC #	WC Weather Case #	Cable Condition
1	6 6095 Light (Sag)	Max Sag RS
2	7 NESC Light	Max Sag RS
3	11 Maximum Operating	Max Sag RS
4	26 60 Deg F	Max Sag RS
5	12 NESC Blowout 6PSF	Max Sag RS
6	10 Uplift	Initial RS

Survey Point Clearance and Danger Tree Locator functions ARE NOT considering a Continuous Range of wind values from left blowout to right blowout.

Survey Point Clearance functions are treating points with insufficient vertical clearance but adequate horizontal clearance as non violations.

Phase Clearance Criteria

LC #	WC Weather Case	Cable
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SAE Towers Ltd.

#	#	Description	Condition

1	11	Maximum Operating	Creep RS
2	11	Maximum Operating	Creep RS

Insulator Swing Criteria

Condition	WC	Weather Case	Cable Condition

Condition 1	13	No Wind (SWING 1)	Creep RS
Condition 2	14	Medium Wind (SWING 2)	Creep RS
Condition 3	15	High Wind (SWING 3)	Creep RS
Condition 4	4	6095 Light	Creep RS

Blowout and Departure Angle Report Criteria

LC	WC	Weather Case	Cable Condition

1	4	6095 Light	Initial RS
2	7	NESC Light	Initial RS
3	8	NESC Extreme Wind	Initial RS
4	9	NESC Extreme Ice with Wind	Initial RS
5	12	NESC Blowout 6PSF	Creep RS
6	10	Uplift	Initial RS
7	26	60 Deg F	Initial RS
8	6	6095 Light (Sag)	Creep RS
9	11	Maximum Operating	Creep RS

Galloping Criteria
Weather case for swing angle: 16 GALLOPING (SWING) C
Weather case for sag: : 17 GALLOPING (SAG) C
Loops checked: Single

Weight spans calculated by exact method using catenary in blown out plane

Wind & Weight Span Report

LC	WC	Weather Case	Cable Condition

1	4	6095 Light	Initial RS
2	7	NESC Light	Initial RS
3	8	NESC Extreme Wind	Initial RS
4	9	NESC Extreme Ice with Wind	Initial RS
5	10	Uplift	Initial RS
6	26	60 Deg F	Initial RS
7	6	6095 Light (Sag)	Creep RS
8	11	Maximum Operating	Creep RS

Weather case for final after creep '60 Deg F'
Weather case for final after load 6095 Light

Clearance line voltage (kV) 500, clearance line vertical buffer (ft) 0
Display of centerline and side profile clearance lines turned ON.
Display of spikes for points requiring additional clearance turned ON.
Spikes are drawn for all feature codes (no codes have been excluded)

Maximum tensions calculated using actual section geometry

Terrain:
Ground profile width (ft) 0.25
Display width (ft) 100

Outer aluminum strands do not take compression at high temperature

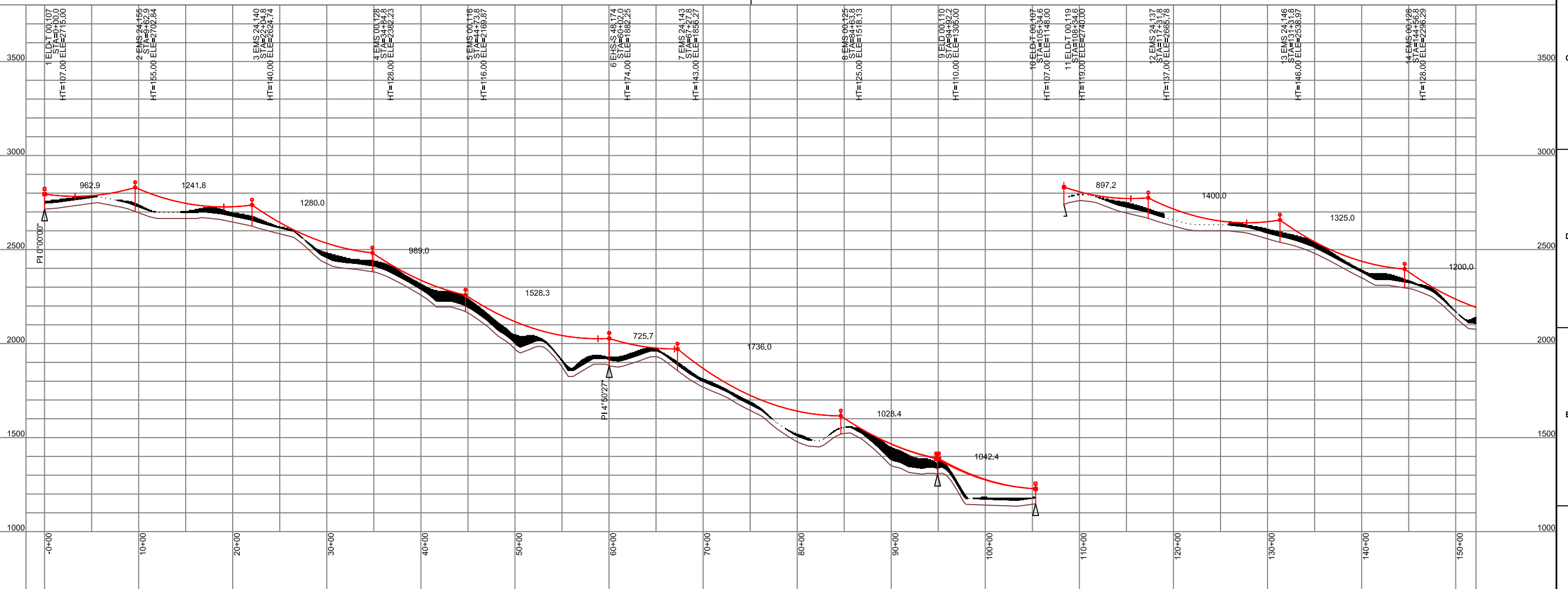
SAPS Finite Element Sag-Tension:
SAPS Analysis Level 2
Default attachment stiffnesses (for level 2 analysis provided, may be overridden with attachment point specific value in Section/Modify)
Dead Ends: 0 (lbs/ft) Transverse, 0 (lbs/ft) Longitudinal
Non dead end with post insulator: 0 (lbs/ft) Transverse, 0 (lbs/ft) Longitudinal
Non dead end with non post insulator: 0 (lbs/ft) Transverse, 0 (lbs/ft) Longitudinal

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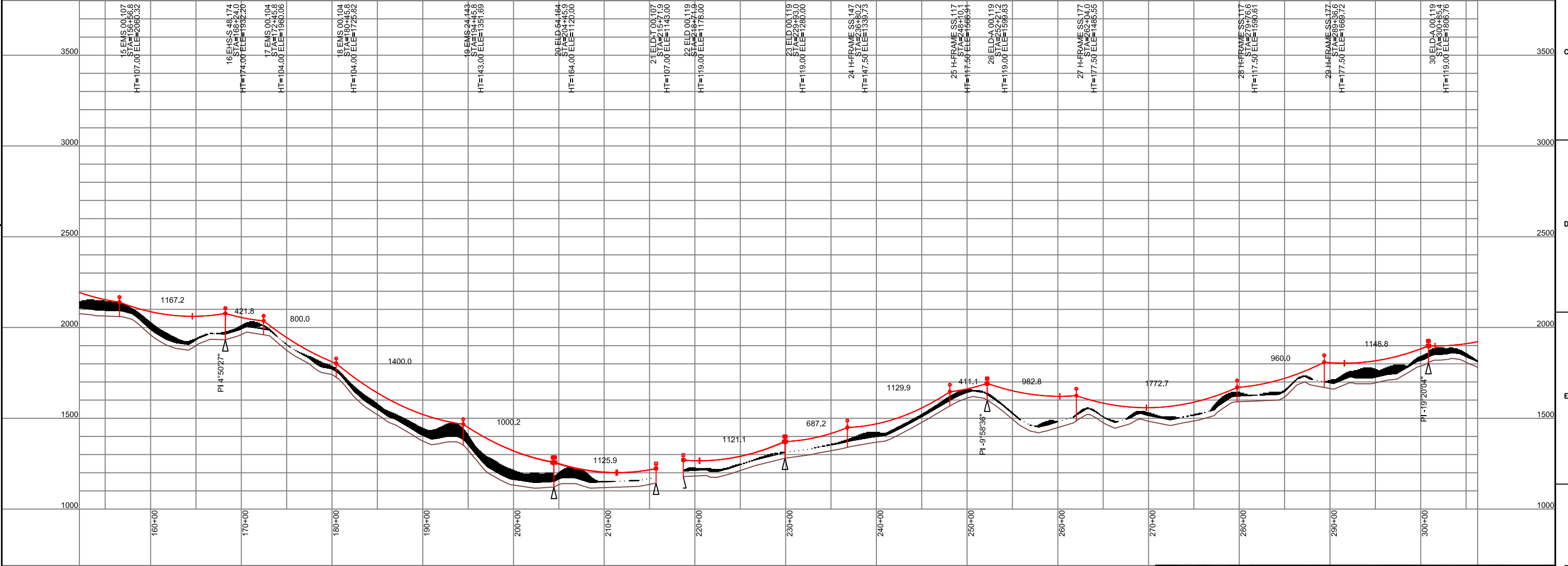
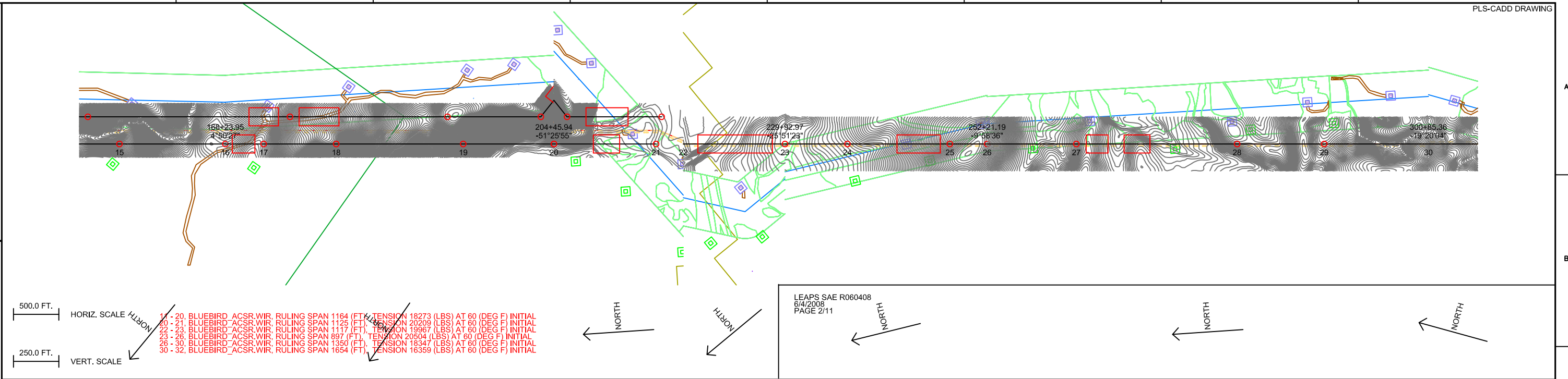
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A	04/11/08	FOR INFORMATION ONLY	MM	MM	CS	CS										CHECKED BY	C. SUTOR
NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	No.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	APVD BY	C. SUTOR		

- ☐ CONCEPT
☒ FOR INFORMATION ONLY
☐ FOR APPROVAL
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☐ FOR CONSTRUCTION
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TITLE	NEVADA HYDRO COMPANY LAKE ELSINORE ADVANCED PUMPED STORAGE PROJECT 500 KV TRANSMISSION LINE DESIGN PLAN & PROFILE SHEET
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SCALE AS SHOWN	DRAWING No. NHC-TLD-001	SHEET 1	CONT'D 2	REV C
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C	06/04/08	ALTERNATIVE LOCATIONS	MM	MM	CS	CS								DRAWN BY	M. MENDIETA	☐ CONCEPT ☒ FOR INFORMATION ONLY ☐ FOR APPROVAL ☐ FOR MANUFACTURE ☐ FOR CONSTRUCTION ☐ FOR RECORD
B	05/15/08	SPOTTING BASED ON LEAPS TOPO BASE	MM	MM	CS	CS								ENGR BY	M. MENDIETA	
A	04/11/08	FOR INFORMATION ONLY	MM	MM	CS	CS								CHECKED BY	C. SUTOR	
NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	No.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	APVD BY	C. SUTOR	

				
TITLE NEVADA HYDRO COMPANY LAKE ELSINORE ADVANCED PUMPED STORAGE PROJECT 500 KV TRANSMISSION LINE DESIGN PLAN & PROFILE SHEET				
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AS SHOWN	NHC-TLD-001	2	3	C

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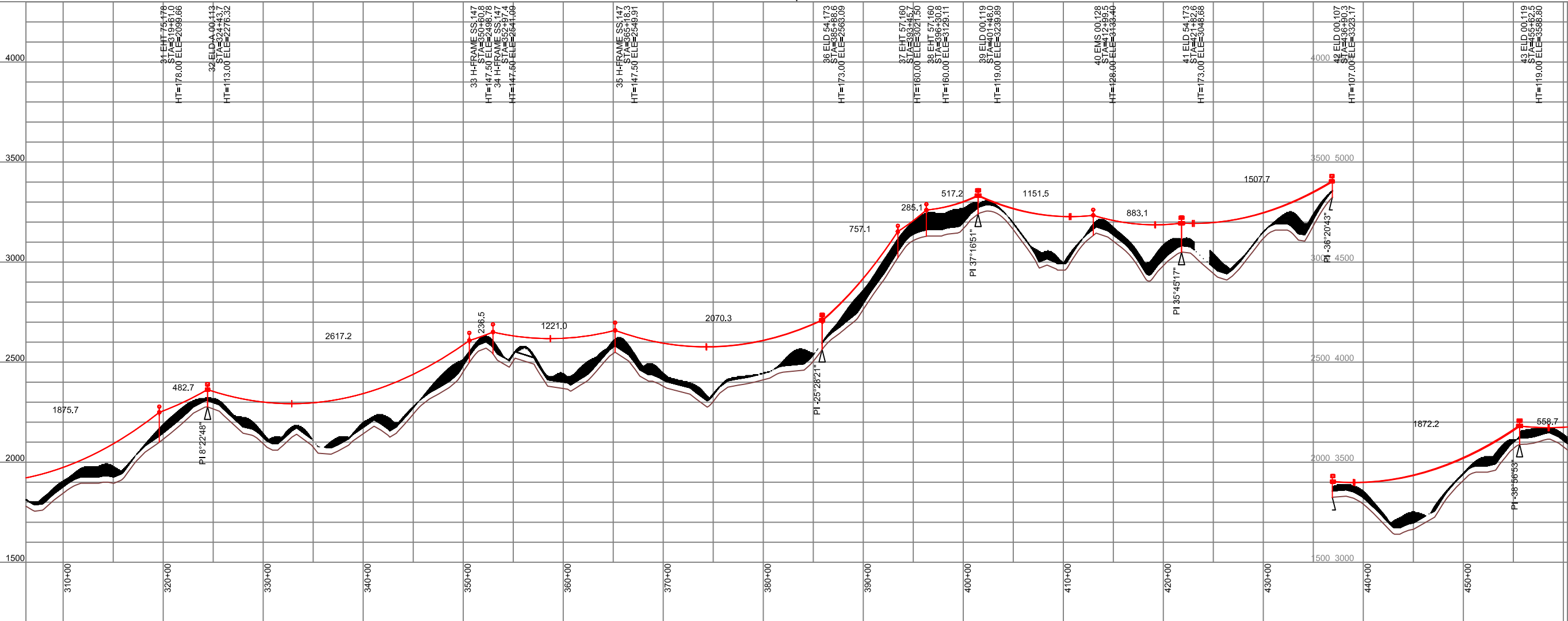
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PLOT SCALE:	B	05/15/08	SPOTTING BASED ON LEAPS TOPO BASE	MM	MM	CS	CS								ENGR BY	M. MENDIETA		
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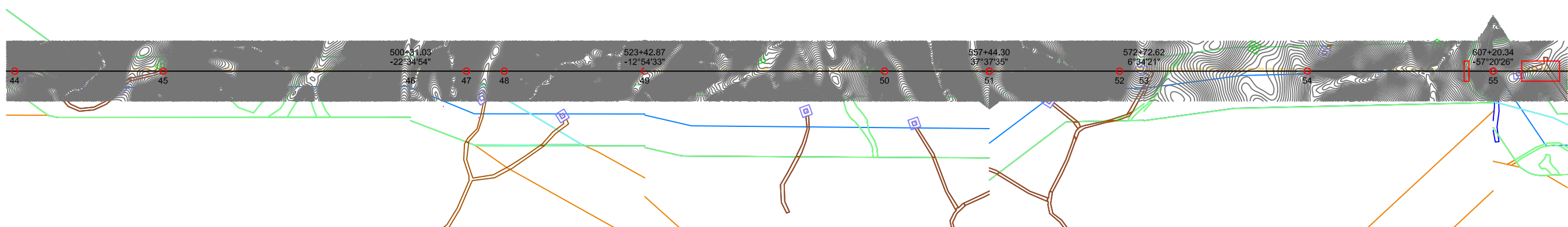
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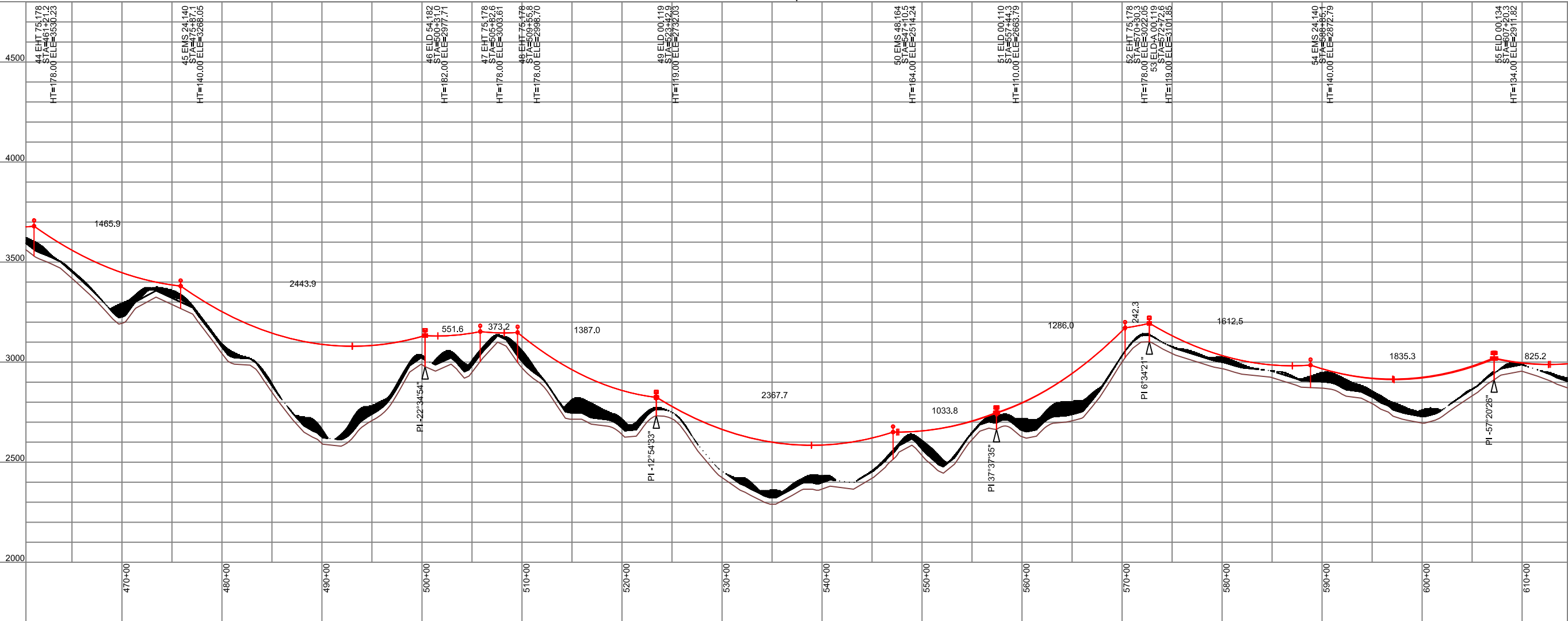
PLS-CADD DRAWING



500.0 FT. HORIZ. SCALE
250.0 FT. VERT. SCALE

43-46, BLUEBIRD_ACSR WIR, RULING SPAN 1983 (FT), TENSION 15837 (LBS) AT 60 (DEG F) INITIAL
46-49, BLUEBIRD_ACSR WIR, RULING SPAN 1092 (FT), TENSION 18794 (LBS) AT 60 (DEG F) INITIAL
49-51, BLUEBIRD_ACSR WIR, RULING SPAN 2047 (FT), TENSION 16066 (LBS) AT 60 (DEG F) INITIAL
51-53, BLUEBIRD_ACSR WIR, RULING SPAN 1126 (FT), TENSION 17641 (LBS) AT 60 (DEG F) INITIAL
53-56, BLUEBIRD_ACSR WIR, RULING SPAN 1726 (FT), TENSION 18750 (LBS) AT 60 (DEG F) INITIAL
56-57, BLUEBIRD_ACSR WIR, RULING SPAN 1952 (FT), TENSION 16090 (LBS) AT 60 (DEG F) INITIAL

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PLOT SCALE: 1"=1'

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DATE

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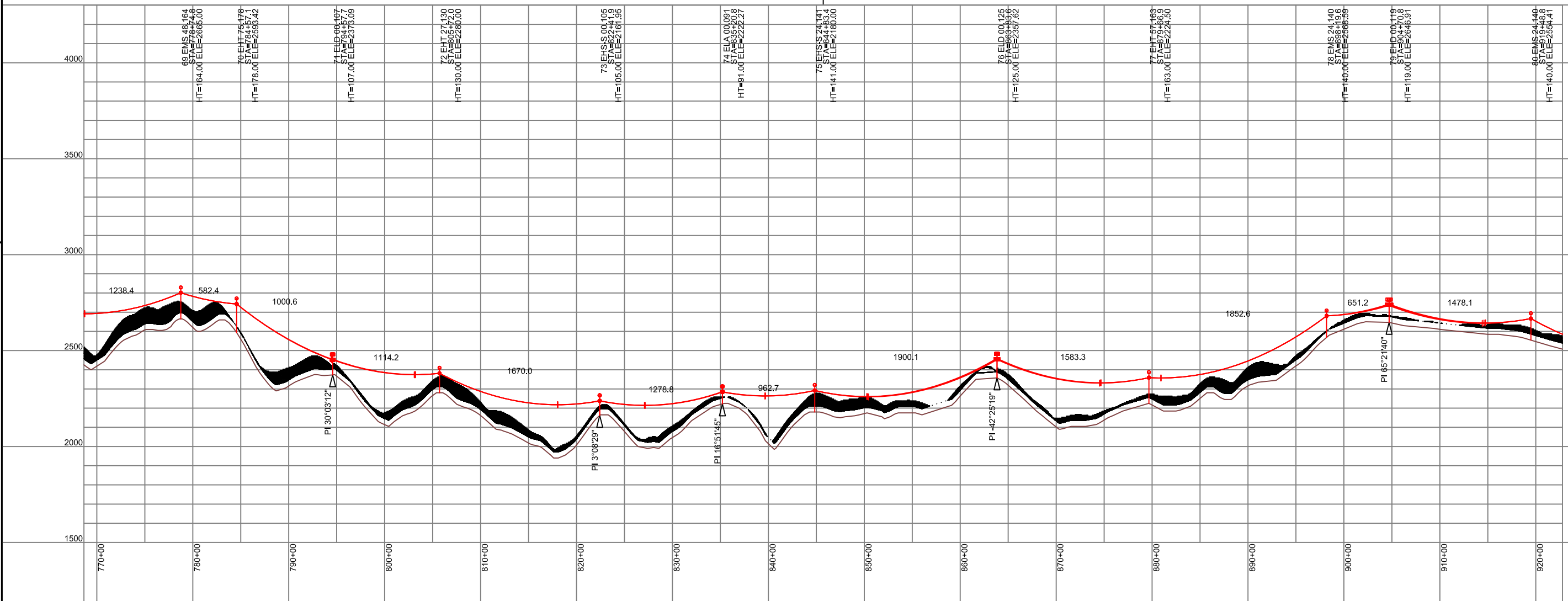
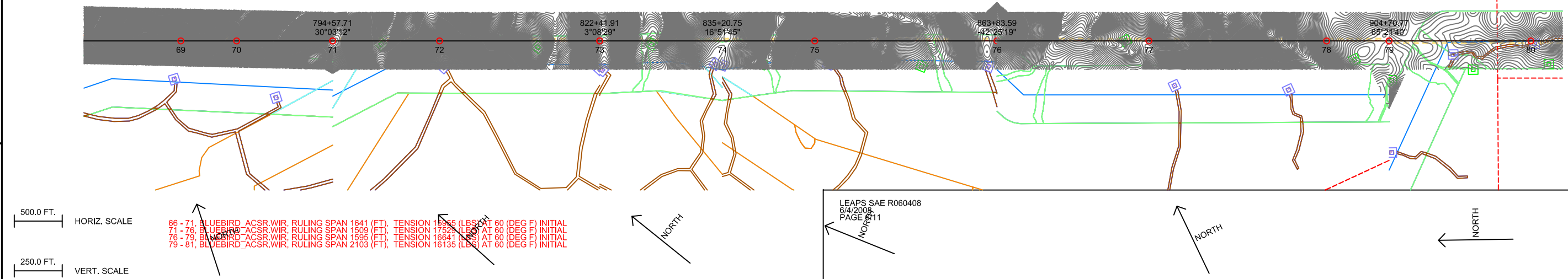
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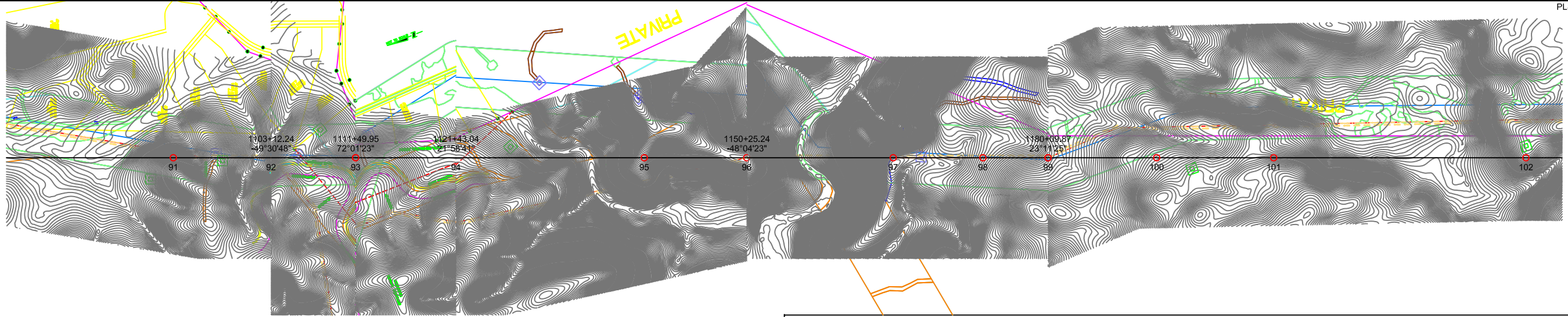
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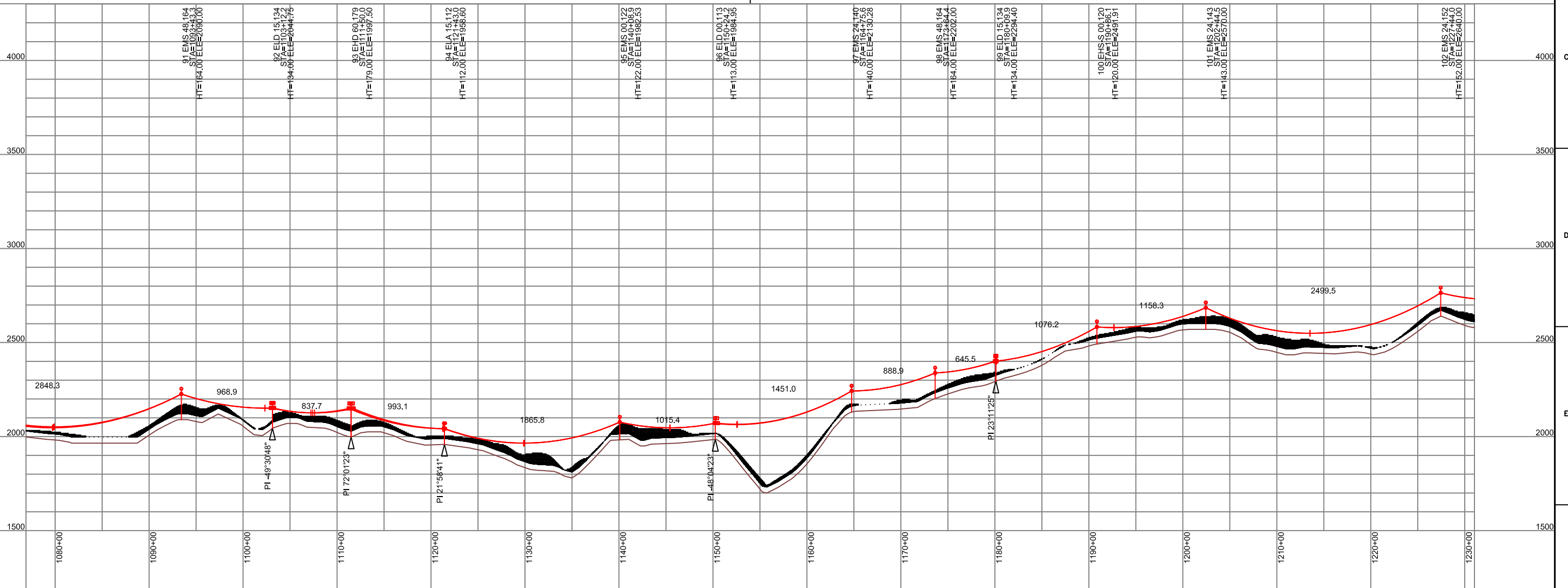
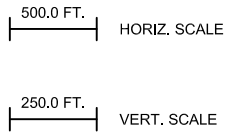
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90 - 92, BLUEBIRD_ACSR.WIR, RULING SPAN 2536 (FT), TENSION 15646 (LBS) AT 60 (DEG F) INITIAL
91 - 93, BLUEBIRD_ACSR.WIR, RULING SPAN 8387 (FT), TENSION 21082 (LBS) AT 60 (DEG F) INITIAL
92 - 94, BLUEBIRD_ACSR.WIR, RULING SPAN 8387 (FT), TENSION 19955 (LBS) AT 60 (DEG F) INITIAL
93 - 95, BLUEBIRD_ACSR.WIR, RULING SPAN 1152 (FT), TENSION 15569 (LBS) AT 60 (DEG F) INITIAL
94 - 96, BLUEBIRD_ACSR.WIR, RULING SPAN 1152 (FT), TENSION 15569 (LBS) AT 60 (DEG F) INITIAL
95 - 97, BLUEBIRD_ACSR.WIR, RULING SPAN 1820 (FT), TENSION 15569 (LBS) AT 60 (DEG F) INITIAL

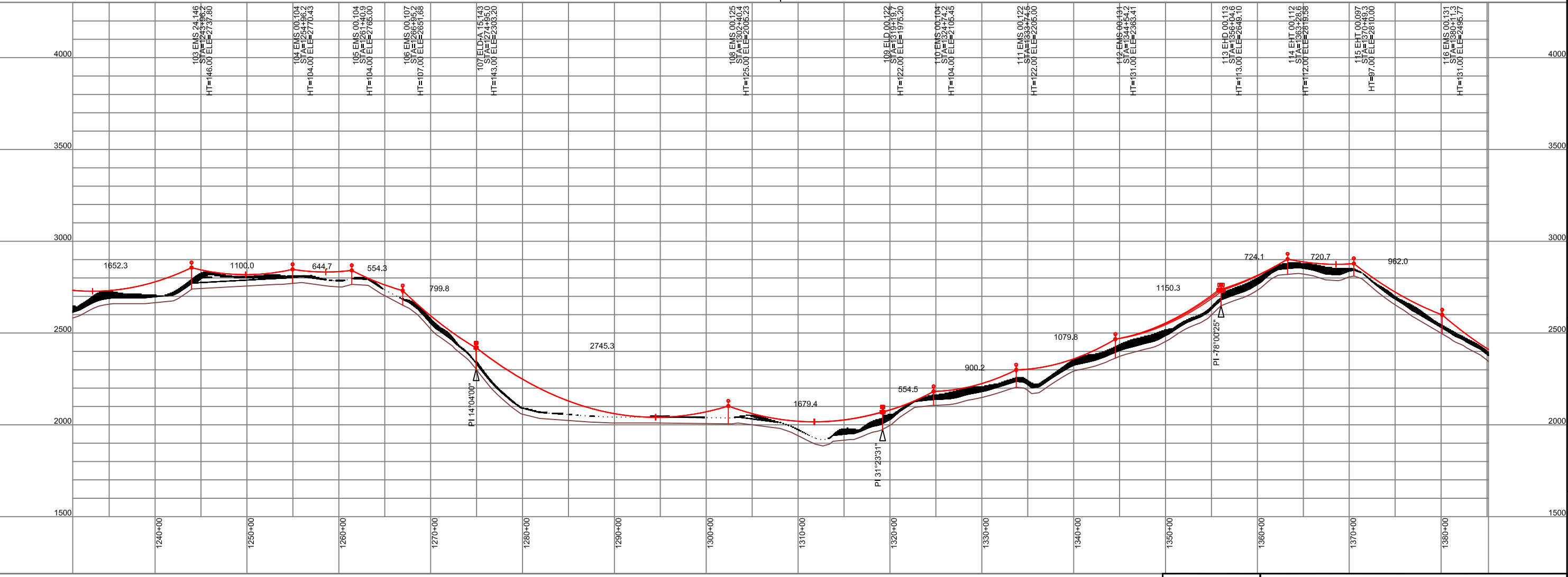
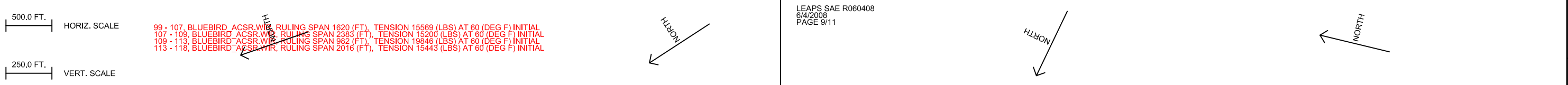
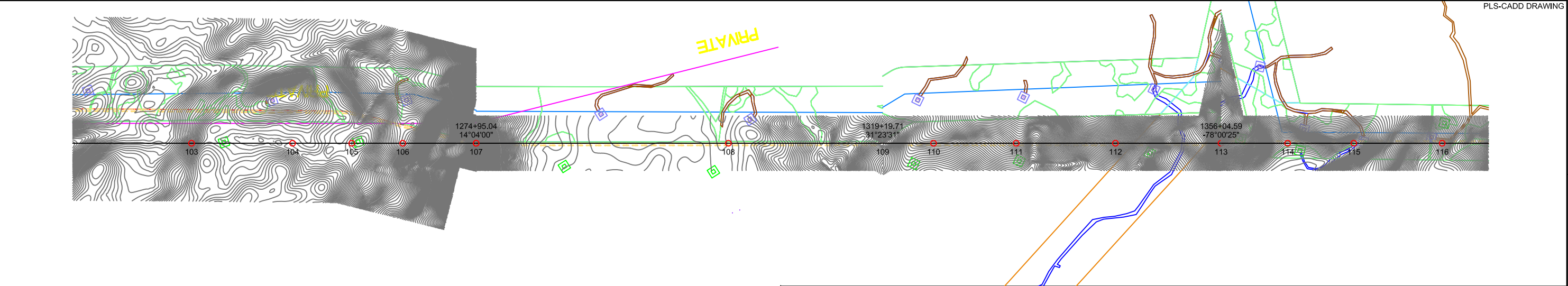
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☐ FOR RECORD

SAE TOWERS

TITLE

NEVADA HYDRO COMPANY
LAKE ELSINORE ADVANCED PUMPED STORAGE PROJECT
500 kV TRANSMISSION LINE DESIGN
PLAN & PROFILE SHEET

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DRAWING No. NHC-TLD-001

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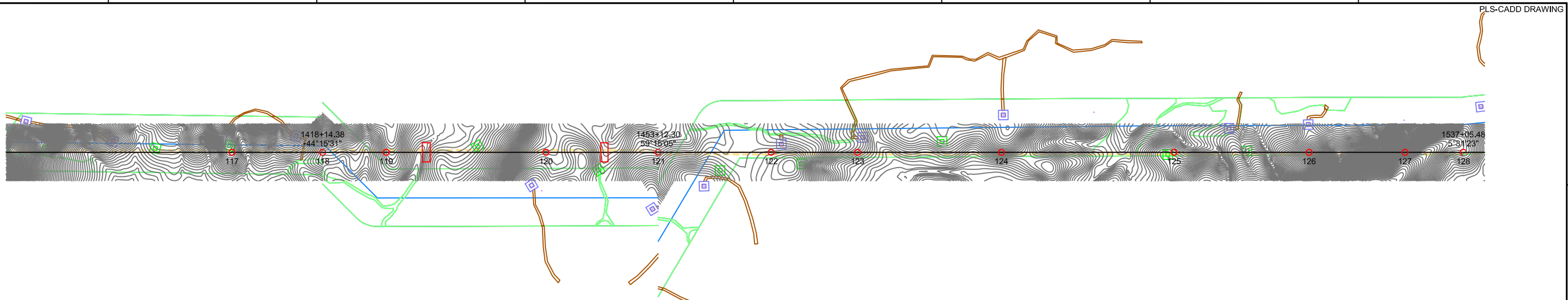
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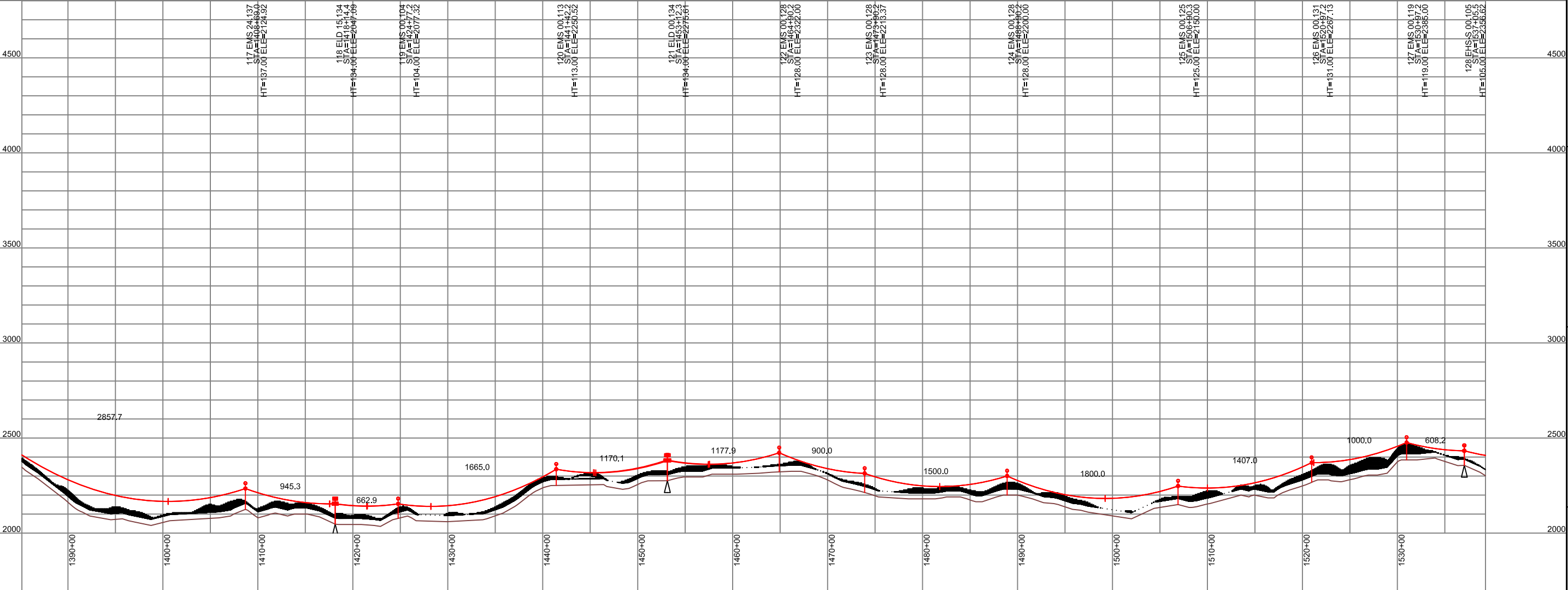
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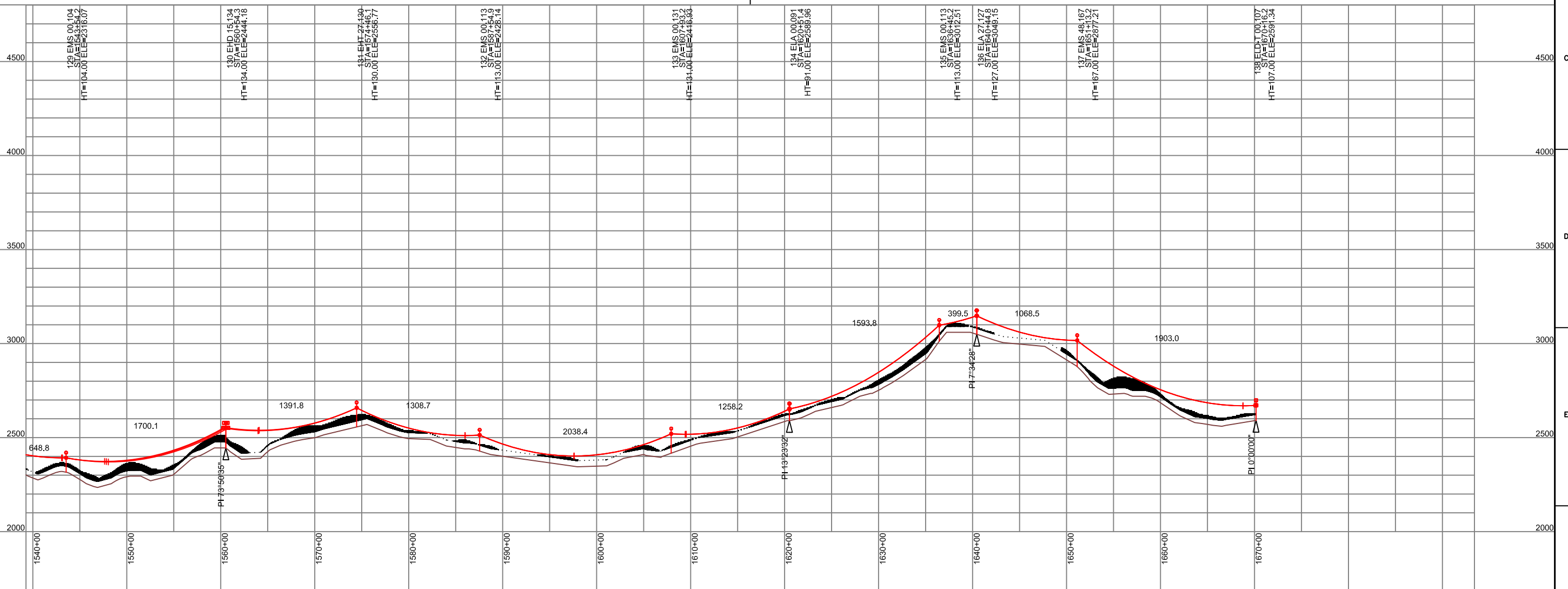
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113 - 118, BLUEBIRD ACSR WIR, RULING SPAN 2016 (FT), TENSION 15443 (LBS) AT 60 (DEG F) INITIAL
118 - 121, BLUEBIRD ACSR WIR, RULING SPAN 1358 (FT), TENSION 18132 (LBS) AT 60 (DEG F) INITIAL
121 - 130, BLUEBIRD ACSR WIR, RULING SPAN 1386 (FT), TENSION 18094 (LBS) AT 60 (DEG F) INITIAL



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PLS-CADD Version 9.20 5:40:09 PM Wednesday, June 04, 2008
SAE Towers Ltd.
Project Name: 'c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\model\leaps sae r060408.DON'
Line Title: 'SAE Rev C Due to Alternate Locations'
Criteria notes:
GO 95 Heavy and Light per Rule 43.3, Page IV-7
GO 95 Class E Supply, Grade B Per Table 4, Page IV-10
GO 95 Sags and Tensions per Rule 49.4-C(5), Page IV-30
NESC Light Loading per Rule 250B, Page 177, Ice Thickness, Wind Pressure and Temperature in Table 250-1
NESC Extreme Wind Loading per Rule 250C, Page 177, Coefficients and Gust Response Factors per Equations in Tables 250-2, 250-3
NESC 85 MPH Basic Wind Speed, 3 second Gust Wind Speed, Figure 250-2 Beginning on Page 180
NESC Extreme Ice with Concurrent Wind Loading per Rule 250D, Page 179,
NESC Uniform Ice Thickness with Concurrent Wind, Figure 250-3 Beginning on Page 184
NESC Grade B Construction "Method A" per Table 253-1, Page 197 and Table 261-1A, Page 207
NESC Tension Limits per Rule 261H1, Page 204
NESC Insulator Strength Reduction per Rule 277, Page 214 Should be applied to Insulator Strengths when Modeling Insulators
GO 95 and 2007 NESC C2-2007 Criteria File for PLS-CADD Created April 8, 2008

Project Coordinate System: California Vi (nad83:406) using grid shift file 'nad83'

P.I. Report

PI No.	Point Des.	X (Easting) (ft)	Y (Northing) (ft)	Z (Elevation) (ft)	Station (ft)	Line Angle (deg)	Azimuth Ahead (deg)
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2	2B	6201158.198	2220949.632	1882.248	6002.032	4.8408	235.2974
3	3B	6198288.859	2218962.615	1305.000	9492.210	-51.4319	183.8655
4	4B	6198218.588	2217922.593	1148.000	10534.603	0.0000	183.8655
5	1A	6205595.624	2225002.242	2740.000	10834.603	0.0000	230.4566
6	2A	6200976.979	2221189.049	1932.200	16823.954	4.8408	235.2974
7	3A	6197999.282	2219126.994	1120.000	20445.936	-51.4319	183.8655
8	4A	6197923.378	2218003.612	1143.000	21571.879	0.0000	183.8655
9	PI	6197749.401	2217327.244	1178.000	21871.879	0.0000	219.7102
10	T6	6197033.131	2216464.804	1280.000	22992.970	-25.8564	193.8538
11	T7	6196499.594	2214301.404	1599.832	25221.190	-9.9768	183.8770
12	T8	6196170.701	2209448.364	1806.758	30085.361	-19.3345	164.5426
13	T9	6196799.246	2207175.345	2276.317	32443.684	8.3801	172.9227
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15	T11	6198395.381	2199762.764	3239.890	40148.035	37.2810	184.7310
16	T12	6198227.571	2197735.104	3048.682	42182.628	35.7546	220.4857
17	T13	6197248.701	2196588.415	3323.173	43690.302	-36.3453	184.1404
18	T14	6197113.531	2194721.137	3588.803	45562.466	-38.9481	145.1922
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22	T18	6205639.039	2187373.032	3101.853	57272.622	6.5725	153.9003
23	T19	6207155.811	2184276.874	2911.822	60720.344	-57.3405	96.5598
24	T20	6210202.431	2183926.534	2608.378	63787.041	23.8964	120.4562
25	T21	6212141.581	2182786.284	2619.095	66036.591	36.0300	156.4862
26	T22	6213216.345	2180316.123	3075.000	68730.439	-14.2546	142.2316
27	GIL NORTH	6214791.725	2178282.837	2879.000	71302.612	0.0000	142.2316
28	GIL SOUTH	6221870.247	2173147.967	2958.000	71602.612	0.0000	138.4029
29	T26a	6222623.910	2172299.010	2997.266	72737.837	-47.6124	90.7904
30	T26b	6226522.072	2172245.229	2554.254	76636.370	17.1356	107.9261
31	T26c	6229206.450	2171376.850	2373.086	79457.711	30.0532	137.9793
32	T27	6231070.190	2169308.460	2161.951	82241.910	3.1413	141.1206
33	T28	6231872.900	2168312.920	2222.274	83520.755	16.8626	157.9831
34	T29	6232946.120	2165658.860	2357.618	86383.592	-42.4218	115.5613
35	T30	6236633.260	2163895.340	2646.909	90470.767	65.3611	180.9224
36	T31	6236570.620	2160004.740	2429.647	94361.871	56.1849	237.1073
37	84A	6233450.205	2157986.614	2384.000	98078.028	-30.7873	206.3199
38	87A	6231858.941	2154769.752	2434.500	101666.945	33.0297	239.3496
39	91A	6227705.399	2152308.422	2099.500	106494.994	-59.9519	179.3977
40	93A	6227745.524	2148491.387	2044.750	110312.240	-49.5134	129.8844
41	94A	6228388.336	2147954.210	1997.500	111149.955	72.0230	201.9074
42	95A	6228017.809	2147032.838	1958.600	112143.040	21.9782	223.8856
43	T36	6226019.811	2144955.565	1985.000	115025.237	-48.0731	175.8124
44	100	6226237.754	2141978.901	2294.400	118009.869	23.1904	199.0028
45	107A	6223149.240	2133010.648	2303.200	127495.041	14.0667	213.0695
46	T39	6220734.890	2129302.730	1975.204	131919.714	31.3919	244.4614
47	T40	6217410.050	2127714.110	2649.095	135604.585	-78.0069	166.4544
48	T41	6218864.500	2121677.050	2047.094	141814.378	-44.2587	122.1957
49	T42	6221824.560	2119813.310	2275.612	145312.303	59.2513	181.4470
50	T43	6221612.610	2111422.810	2356.619	153705.480	5.5231	186.9701
51	T44	6221327.570	2109091.300	2444.182	156054.349	73.8431	260.8132
52	T45	6215407.440	2108133.850	2589.961	162051.402	13.3923	274.2055
53	T46	6213419.450	2108280.030	3049.146	164044.759	7.5743	281.7798
54	T47	6210510.550	2108886.660	2591.345	167016.240	0.0000	281.7798

4590582 XYZ points, 1045860 PFL points

Station range: 167016.240 From 0.000 to 167016.240
Elevation range: 2550.000 From 1090.000 to 3640.000
Height range: 0.000 From 0.000 to 0.000
X range: 41058.390 From 6195872.930 to 6236931.320
Y range: 117270.540 From 2107837.080 to 2225107.620
Z range: 2630.000 From 1090.000 to 3720.000

NEVADA HYDRO COMPANY
LEAPS PROJECT - 500KV TRANSMISSION LINE
PRELIMINARY STACKING TABLE AND TOWER BASE WIDTH

Row #	Structure Number	Station (ft)	Height Adjust. (ft)	Offset Adjust. (ft)	Orientation Angle (deg)	X Easting (ft)	Y Northing (ft)	Centerline Z Elevation (ft)	TIN Z Elevation (ft)	Ahead Span (ft)	Line Angle (deg)	Transverse Axis Azimuth (deg)	Structure Name	Structure Description	Struct. Height (ft)	Square Base (ft)
1	1	0.000			180	6205786.623	2224770.899	2715.000	0.000	962.911	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	0° & Dead End Tower	107.0	29.362
2	2	962.911			180	6205044.081	2224157.850	2702.838	2705.036	1241.849	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.155	Suspension Tower	155.0	41.924
3	3	2204.760			180	6204086.438	2223367.212	2624.744	2624.776	1280.008	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
4	4	3484.768			180	6203099.369	2222552.279	2382.226	2384.705	989.000	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
5	5	4473.768			180	6202336.709	2221922.620	2169.869	2169.769	1528.265	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.116	Suspension Tower	116.0	30.501
6	6	6002.032			180	6201158.198	2220949.632	1882.248	1882.260	725.735	4.841	142.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 48.174	Suspension Tower	174.0	47.196
7	7	6727.768			180	6200561.558	2220536.459	1856.268	1856.243	1736.000	0.000	145.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.143	Suspension Tower	143.0	38.409
8	8	8463.767			180	6199134.361	2219548.125	1518.128	1518.347	1028.443	0.000	145.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.125	Suspension Tower	125.0	33.137
9	9	9492.210			180	6198288.859	2218962.615	1305.000	1304.749	1042.393	-51.432	119.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.110	0°-60° & Dead End Tower	110.0	30.158
10	10	10534.603			180	6198218.588	2217922.593	1148.000	1148.407	0.000	0.000	93.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	0° & Dead End Tower	107.0	29.362
11	11	10834.603			180	6205595.624	2225002.242	2740.000	0.000	897.164	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.119	0° & Dead End Tower	119.0	32.545
12	12	11731.768			180	6204903.782	2224431.051	2665.782	2666.236	1400.000	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.137	Suspension Tower	137.0	36.652
13	13	13131.768			180	6203824.182	2223539.724	2538.970	2539.021	1325.000	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.146	Suspension Tower	146.0	39.288
14	14	14456.768			180	6202802.418	2222696.147	2296.291	2298.237	1200.000	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
15	15	15656.768			180	6201877.047	2221932.152	2060.323	2060.249	1167.186	0.000	140.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.107	Suspension Tower	107.0	27.865
16	16	16823.954			180	6200976.979	2221189.049	1932.200	1932.205	421.814	4.841	142.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 48.174	Suspension Tower	174.0	47.196
17	17	17245.768			180	6200630.199	2220948.903	1960.063	1977.276	800.000	0.000	145.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
18	18	18045.768			180	6199972.504	2220493.450	1725.815	1728.500	1400.000	0.000	145.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
19	19	19445.768			180	6198821.538	2219696.406	1351.690	1351.939	1000.168	0.000	145.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.143	Suspension Tower	143.0	38.409
20	20	20445.936			180	6197999.282	2219126.994	1120.000	1120.389	1125.943	-51.432	119.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.164	0°-60° & Dead End Tower	164.0	44.482
21	21	21571.879			180	6197923.378	2218003.612	1143.000	1142.984	0.000	0.000	93.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	0° & Dead End Tower	107.0	29.362
22	22	21871.879			180	6197749.401	2217327.244	1178.000	1178.491	1121.091	0.000	129.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	0°-60° & Dead End Tower	119.0	32.545
23	23	22992.970			180	6197033.131	2216464.804	1280.000	1280.000	687.210	-25.856	116.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	0°-60° & Dead End Tower	119.0	32.545
24	24	23680.180				6196868.581	2215797.585	1339.726	1339.157	1129.880	0.000	283.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.147	Suspension Tower	147.5	38.000
25	25	24810.060				6196598.037	2214700.574	1566.913	1568.124	411.130	0.000	283.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.117	Suspension Tower	117.5	38.000
26	26	25221.190			180	6196499.594	2214301.404	1599.832	1599.837	982.760	-9.977	98.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.119	0°-60° & Dead End Tower	119.0	32.545
27	27	26203.950				6196433.144	2213320.893	1485.551	1485.344	1772.660	0.000	273.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.177	Suspension Tower	177.5	38.000
28	28	27976.610				6196313.285	2211552.289	1590.612	1592.075	960.000	0.000	273.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.117	Suspension Tower	117.5	38.000
29	29	28936.610				6196248.374	2210594.486	1669.718	1644.006	1148.751	0.000	273.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.177	Suspension Tower	177.5	38.000
30	30	30085.361			180	6196170.701	2209448.364	1806.758	1806.770	1875.669	-19.335	84.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.119	0°-60° & Dead End Tower	119.0	32.545
31	31	31961.030				6196670.608	2207640.541	2099.655	2099.485	482.654	0.000	254.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
32	32	32443.684				6196799.246	2207175.345	2276.317	2276.314	2617.166	8.380	258.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.113	0°-60° & Dead End Tower	113.0	30.954
33	33	35060.850				6197121.703	2204578.119	2498.780	2498.857	236.520	0.000	262.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.147	Suspension Tower	147.5	38.000
34	34	35297.370				6197150.844	2204343.402	2541.088	2541.103	1220.970	0.000	262.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.147	Suspension Tower	147.5	38.000
35	35	36518.340				6197301.277	2203131.734	2549.907	2549.997	2070.258	0.000	262.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.147	Suspension Tower	147.5	38.000
36	36	38588.598			180	6197556.350	2201077.250	2563.093	2563.086	757.106	-25.473	70.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.173	0°-60° & Dead End Tower	173.0	46.869
37	37	39345.704				6197963.699	2200439.067	3021.496	3021.406	285.113	0.000	237.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.160	Suspension Tower	160.0	47.487
38	38	39630.817				6198117.100	2200198.739	3129.114	3129.223	517.218	0.000	237.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.160	Suspension Tower	160.0	47.487
39	39	40148.035				6198395.381	2199762.764	3239.890	3239.900	1151.465	37.281	256.1	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	0°-60° & Dead End Tower	119.0	32.545
40	40	41299.500				6198300.410	2198615.223	3133.399	3136.748	883.128	0.000	274.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
41	41	42182.628				6198227.571	2197735.104	3048.682	3048.616	1507.675	35.755	292.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.173	0°-60° & Dead End Tower	173.0	46.869
42	42	43690.302			180	6197248.701	2196588.415	3323.173	3323.158	1872.164	-36.345	112.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.107	0°-60° & Dead End Tower	107.0	29.362
43	43	45562.466			180	6197113.531	2194721.137	3588.803	3588.792	558.736	-38.948	74.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	0°-60° & Dead End Tower	119.0	32.545
44	44	46121.202			180	6197432.471	2194262.375	3530.232	3528.443	1465.884	0.000	55.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
45	45	47587.086			180	6198269.235	2193058.779	3268.048	3304.141	2443.946	0.000	55.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
46	46	50031.032			180	6199664.301	2191052.124	2977.706	2977.703	551.578	-22.582	43.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.182	0°-60° & Dead End Tower	182.0	49.256
47	47	50582.610				6200128.924	2190754.864	3003.606	3003.697	373.230	0.000	212.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
48	48	50955.840				6200443.315	2190553.720	2998.704	2998.706	1387.027	0.000	212.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
49	49	52342.867			180	6201611.681	2189806.214	2732.034	2732.011	2367.663	-12.909	26.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	0°-60° & Dead End Tower	119.0	32.545
50	50	54710.530				6203840.747	2189008.035	2514.241	2516.195	1033.767	0.000	199.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.164	Suspension Tower	164.0	44.560
51	51	55744.297				6204814.001	2188659.534	2663.786	2663.774	1285.983	37.627	218.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.110	0°-60° & Dead End Tower	110.0	30.158
52	52	57030.280				6205508.215	2187577.029	3022.050	3022.565	242.342	0.000	237.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
53	53	57272.622				6205639.039	2187373.032	3101.853	3101.854	1612.468	6.573	240.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.119	0°-60° & Dead End Tower	119.0	32.545
54	54	58885.090				6206348.419	2185924.987	2872.793	2874.678	1835.254	0.000	243.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
55	55	60720.344			180	6207155.811	2184276.874	2911.822	2911.795	825.236	-57.341	35.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.134	0°-60° & Dead End Tower	134.0	36.524

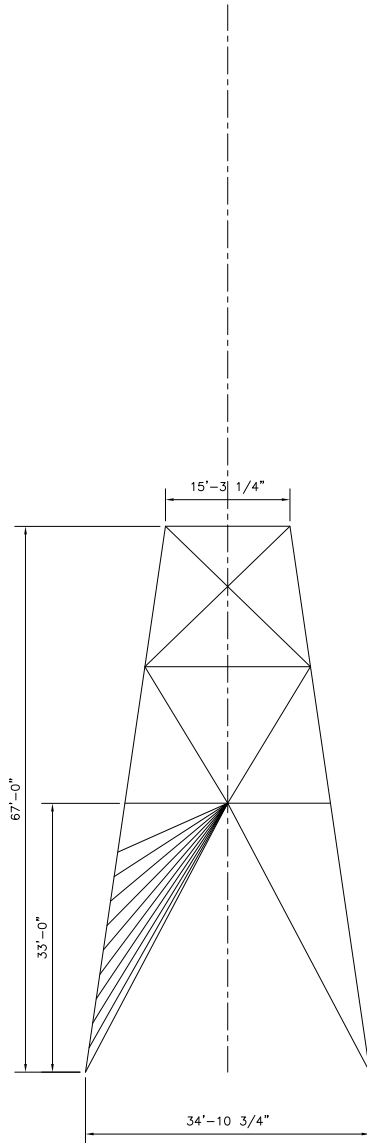
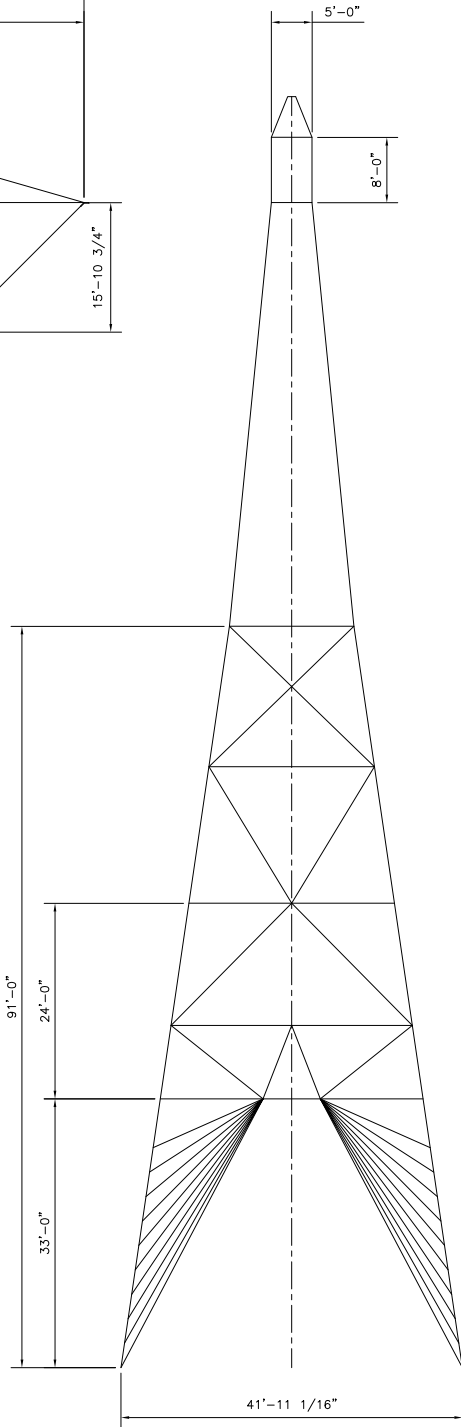
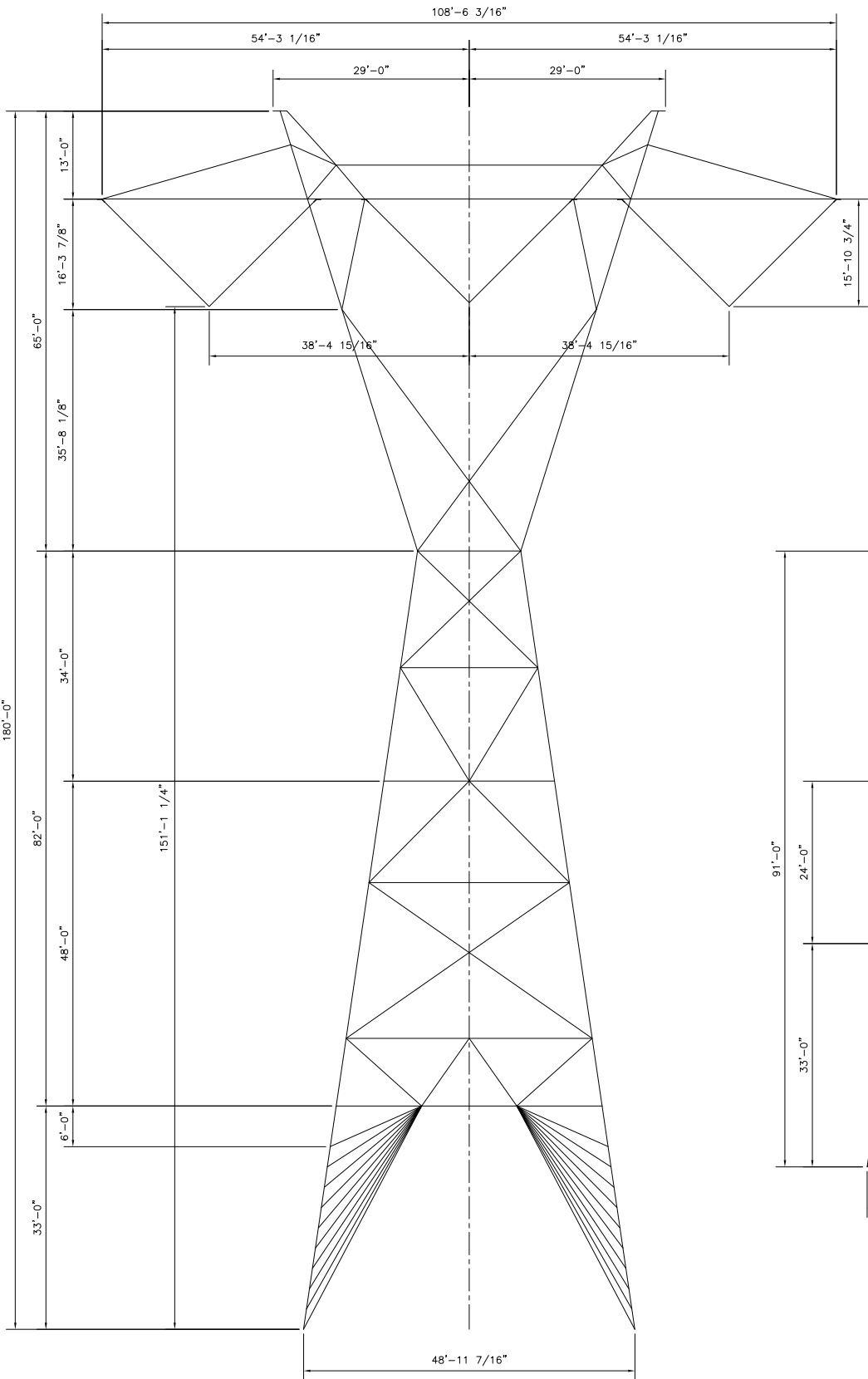
Row #	Structure Number	Station (ft)	Height Adjust. (ft)	Offset Adjust. (ft)	Orientation Angle (deg)	X Easting (ft)	Y Northing (ft)	Centerline Z Elevation (ft)	TIN Z Elevation (ft)	Ahead Span (ft)	Line Angle (deg)	Transverse Axis Azimuth (deg)	Structure Name	Structure Description	Struct. Height (ft)	Square Base (ft)
56	56	61545.580				6207975.644	2184182.599	2859.660	2859.680	2241.461	0.000	186.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 48.165	Suspension Tower	165.0	44.560
57	57	63787.041				6210202.431	2183926.534	2608.378	2608.378	1174.729	23.896	198.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.179	0°-60° & Dead End Tower	179.0	48.461
58	58	64961.770				6211215.067	2183331.089	2686.958	2688.226	1074.821	0.000	210.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.134	Suspension Tower	134.0	35.773
59	59	66036.591				6212141.581	2182786.284	2619.095	2619.097	2382.499	36.030	228.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.128	0°-60° & Dead End Tower	128.0	34.933
60	60	68419.090				6213092.126	2180601.618	2988.881	2990.254	311.349	0.000	246.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.181	Suspension Tower	181.0	53.296
61	61	68730.439			180	6213216.345	2180316.123	3075.000	3075.000	1513.771	-14.255	59.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 57.160	6°-22° Line Angle Tower	160.0	47.445
62	62	70244.210				6214143.485	2179119.496	3050.000	3053.288	1058.400	0.000	232.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 15.118	Suspension Tower	118.0	35.868
63	63	71302.610				6214791.724	2178282.838	2879.000	2879.662	0.000	0.000	232.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	0° & Dead End Tower	107.0	29.362
64	64	71602.612				6221870.247	2173147.967	2958.000	2958.755	564.538	0.000	228.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.119	0° & Dead End Tower	119.0	32.545
65	65	72167.150				6222245.038	2172725.787	3025.000	3028.367	570.687	0.000	228.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 27.130	Suspension Tower	130.0	39.188
66	66	72737.837			180	6222623.910	2172299.010	2997.266	2997.302	1707.563	-47.612	24.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 15.134	0°-60° & Dead End Tower	134.0	36.524
67	67	74445.400				6224331.311	2172275.454	2519.762	2540.926	2190.970	0.000	180.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
68	68	76636.370				6226522.072	2172245.229	2554.254	2553.761	1238.390	17.136	189.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 57.172	6°-22° Line Angle Tower	172.0	50.759
69	69	77874.760				6227700.344	2171864.066	2665.000	2665.878	582.360	0.000	197.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.164	Suspension Tower	164.0	44.560
70	70	78457.120				6228254.433	2171684.821	2593.417	2593.442	1000.591	0.000	197.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	Suspension Tower	178.0	52.466
71	71	79457.711				6229206.450	2171376.850	2373.086	2373.039	1114.249	30.053	213.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.107	0°-60° & Dead End Tower	107.0	29.362
72	72	80571.960				6229952.327	2170549.071	2280.000	2283.498	1669.950	0.000	228.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 27.130	Suspension Tower	130.0	39.188
73	73	82241.910				6231070.190	2169308.460	2161.951	2161.925	1278.844	3.141	229.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 00.105	Suspension Tower	105.0	26.987
74	74	83520.755				6231872.900	2168312.920	2222.274	2222.259	962.695	16.863	239.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 00.091	6°-22° Line Angle Tower	91.0	28.393
75	75	84483.450				6232233.795	2167420.431	2180.000	2183.841	1900.142	0.000	248.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 24.141	Suspension Tower	141.0	37.531
76	76	86383.592			180	6232946.120	2165658.860	2357.618	2357.627	1583.338	-42.422	46.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.125	0°-60° & Dead End Tower	125.0	34.137
77	77	87966.930				6234374.488	2164975.687	2224.504	2224.513	1852.630	0.000	205.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.163	Suspension Tower	163.0	48.317
78	78	89819.560				6236045.790	2164176.321	2568.585	2569.495	651.207	0.000	205.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
79	79	90470.767				6236633.260	2163895.340	2646.909	2646.913	1478.053	65.361	238.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 00.119	60°-90° & Dead End Tower	119.0	32.545
80	80	91948.820				6236609.466	2162417.479	2554.406	2554.415	2413.051	0.000	270.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
81	81	94361.871				6236570.620	2160004.740	2429.647	2429.639	1288.339	56.185	299.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.164	0°-60° & Dead End Tower	164.0	44.482
82	82	95650.210				6235488.817	2159305.084	2405.000	2408.083	1137.080	0.000	327.1	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.125	Suspension Tower	125.0	33.137
83	83	96787.290				6234534.023	2158687.573	2546.937	2555.481	1290.738	0.000	327.1	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 00.112	Suspension Tower	112.0	34.209
84	84	98078.028			180	6233450.205	2157986.614	2384.000	2384.151	1715.432	-30.787	131.7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.173	0°-60° & Dead End Tower	173.0	46.869
85	85	99793.460				6232689.612	2156449.017	2500.000	2499.360	1873.485	0.000	296.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.160	Suspension Tower	160.0	47.487
86	86	101666.945				6231858.941	2154769.752	2434.500	2434.068	1640.115	33.030	312.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.128	0°-60° & Dead End Tower	128.0	34.933
87	87	103307.060				6230447.960	2153933.624	2389.167	2393.409	1168.680	0.000	329.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
88	88	104475.740				6229442.551	2153337.834	2335.472	2335.150	1591.310	0.000	329.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
89	89	106067.050				6228073.557	2152526.587	2272.449	2281.925	427.944	0.000	329.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.110	Suspension Tower	110.0	28.744
90	90	106494.994			180	6227705.399	2152308.422	2099.500	2099.787	2848.296	-59.952	119.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 60.188	60°-90° & Dead End Tower	188.0	50.848
91	91	109343.290				6227735.339	2149460.283	2090.000	2092.209	968.950	0.000	269.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.164	Suspension Tower	164.0	44.560
92	92	110312.240			180	6227745.524	2148491.387	2044.750	2044.806	837.715	-49.513	64.6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 15.134	0°-60° & Dead End Tower	134.0	36.524
93	93	111149.955				6228388.336	2147954.210	1997.500	1997.544	993.085	72.023	255.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 60.179	60°-90° & Dead End Tower	179.0	48.461
94	94	112143.040				6228017.809	2147032.838	1958.600	1958.591	1865.830	21.978	302.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 15.112	6°-22° Line Angle Tower	112.0	34.191
95	95	114008.870				6226724.377	2145688.086	1982.527	2003.492	1015.370	0.000	313.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.122	Suspension Tower	122.0	32.259
96	96	115024.240			180	6226020.502	2144956.283	1984.948	1985.000	1450.979	0.000	133.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.113	0°-60° & Dead End Tower	113.0	30.954
97	97	116475.550				6226125.715	2143509.123	2130.284	2130.506	888.850	0.000	265.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	Suspension Tower	140.0	37.531
98	98	117364.400				6226190.621	2142622.646	2202.001	2202.208	645.469	0.000	265.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.164	Suspension Tower	164.0	44.560
99	99	118009.869				6226237.754	2141978.901	2294.400	2294.426	1076.241	23.190	277.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 15.134	0°-60° & Dead End Tower	134.0	36.524
100	100	119086.110				6225887.314	2140961.312	2491.906	2491.995	1158.350	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 00.120	Suspension Tower	120.0	31.380
101	101	120244.460				6225510.138	2139866.089	2570.000	2572.554	2499.490	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.143	Suspension Tower	143.0	38.409
102	102	122743.950				6224696.266	2137502.815	2640.000	2639.931	1652.290	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.152	Suspension Tower	152.0	41.045
103	103	124396.240				6224158.256	2135940.571	2737.798	2737.828	1100.000	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.146	Suspension Tower	146.0	39.288
104	104	125496.240				6223800.079	2134900.519	2770.432	2767.029	644.680	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
105	105	126140.920				6223590.162	2134290.972	2764.999	2765.000	554.320	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
106	106	126695.240				6223409.667	2133766.861	2651.677	2650.123	799.801	0.000	289.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.107	Suspension Tower	107.0	27.865
107	107	127495.041				6223149.240	2133010.648	2303.200	2303.183	2745.319	14.067	296.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 15.143	0°-60° & Dead End Tower	143.0	38.911
108	108	130240.360				6221651.240	2130710.045	2005.225	2001.693	1679.354	0.000	303.1	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.125	Suspension Tower	125.0	33.137
109	109	131919.714				6220734.890	2129302.730	1975.204	1975.095	554.526	31.392	318.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.122	0°-60° & Dead End Tower	122.0	33.341
110	110	132474.240				6220234.544	2129063.663	2105.451	2105.366	900.230	0.000	334.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987

Row #	Structure Number	Station (ft)	Height Adjust. (ft)	Offset Adjust. (ft)	Orientation Angle (deg)	X Easting (ft)	Y Northing (ft)	Centerline Z Elevation (ft)	TIN Z Elevation (ft)	Ahead Span (ft)	Line Angle (deg)	Transverse Axis Azimuth (deg)	Structure Name	Structure Description	Struct. Height (ft)	Square Base (ft)
111	111	133374.470				6219422.272	2128675.556	2205.000	2204.981	1079.770	0.000	334.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.122	Suspension Tower	122.0	32.259
112	112	134454.240				6218448.001	2128210.046	2363.410	2364.469	1150.345	0.000	334.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.131	Suspension Tower	131.0	34.895
113	113	135604.585			180	6217410.050	2127714.110	2649.095	2649.105	724.065	-78.007	115.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 00.113	60°-90° & Dead End Tower	113.0	30.954
114	114	136328.650				6217579.640	2127010.186	2819.578	2829.365	720.680	0.000	256.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 00.112	Suspension Tower	112.0	34.209
115	115	137049.330				6217748.436	2126309.553	2810.000	2809.997	961.970	0.000	256.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 00.097	Suspension Tower	97.0	30.059
116	116	138011.300				6217973.748	2125374.341	2495.771	2501.618	2857.740	0.000	256.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.131	Suspension Tower	131.0	34.895
117	117	140869.040				6218643.084	2122596.092	2124.924	2124.903	945.338	0.000	256.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.137	Suspension Tower	137.0	36.652
118	118	141814.378			180	6218864.500	2121677.050	2047.094	2047.083	662.862	-44.259	54.3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 15.134	0°-60° & Dead End Tower	134.0	36.524
119	119	142477.240				6219425.436	2121323.868	2077.322	2086.725	1665.000	0.000	212.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
120	120	144142.240				6220834.414	2120436.735	2250.516	2251.989	1170.063	0.000	212.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.113	Suspension Tower	113.0	29.623
121	121	145312.303				6221824.560	2119813.310	2275.612	2275.615	1177.937	59.251	241.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.134	0°-60° & Dead End Tower	134.0	36.524
122	122	146490.240				6221794.814	2118635.749	2322.001	2321.755	900.000	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
123	123	147390.240				6221772.087	2117736.036	2213.367	2213.315	1500.000	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
124	124	148890.240				6221734.208	2116236.514	2200.000	2203.069	1800.010	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	Suspension Tower	128.0	34.016
125	125	150690.250				6221688.753	2114437.078	2150.000	2150.023	1406.990	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.125	Suspension Tower	125.0	33.137
126	126	152097.240				6221653.222	2113030.537	2267.130	2267.094	1000.000	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.131	Suspension Tower	131.0	34.895
127	127	153097.240				6221627.970	2112030.856	2385.000	2387.713	608.240	0.000	271.4	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.119	Suspension Tower	119.0	31.380
128	128	153705.480				6221612.610	2111422.810	2356.619	2356.595	648.760	5.523	274.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 00.105	Suspension Tower	105.0	26.987
129	129	154354.240				6221533.882	2110778.844	2316.073	2316.616	1700.109	0.000	277.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	Suspension Tower	104.0	26.987
130	130	156054.349				6221327.570	2109091.300	2444.182	2444.205	1391.791	73.843	313.9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 15.134	60°-90° & Dead End Tower	134.0	36.524
131	131	157446.140				6219953.631	2108869.096	2556.769	2569.121	1308.740	0.000	350.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 27.130	Suspension Tower	130.0	39.188
132	132	158754.880				6218661.678	2108660.151	2428.141	2429.164	2038.360	0.000	350.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.113	Suspension Tower	113.0	29.623
133	133	160793.240				6216649.464	2108334.720	2416.933	2424.841	1258.162	0.000	350.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.131	Suspension Tower	131.0	34.895
134	134	162051.402				6215407.440	2108133.850	2589.961	2589.965	1593.838	13.392	357.5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 00.091	6°-22° Line Angle Tower	91.0	28.393
135	135	163645.240				6213817.894	2108250.732	3012.509	3012.565	399.519	0.000	4.2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.113	Suspension Tower	113.0	29.623
136	136	164044.759				6213419.450	2108280.030	3049.146	3049.139	1068.481	7.574	8.0	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 27.127	6°-22° Line Angle Tower	127.0	38.333
137	137	165113.240				6212373.472	2108498.161	2877.213	2877.257	1903.000	0.000	11.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.167	Suspension Tower	167.0	45.439
138	138	167016.240				6210510.550	2108886.660	2591.345	0.000	0.000	0.000	11.8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	0° & Dead End Tower	107.0	29.362

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PLOT SCALE: 1"=1'

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NOTES:

- OUTLINE SIMILAR TO SCE'S EXISTING TOWER TYPE EHS.
- TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
OHGW	0°-6"	3,333 FT.	4,825 FT.
COND	0°-6"	1,703 FT.	2,580 FT.
- THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.

NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY
A	03/31/08	FOR INFORMATION ONLY	MM	MM	CS	CS

NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY

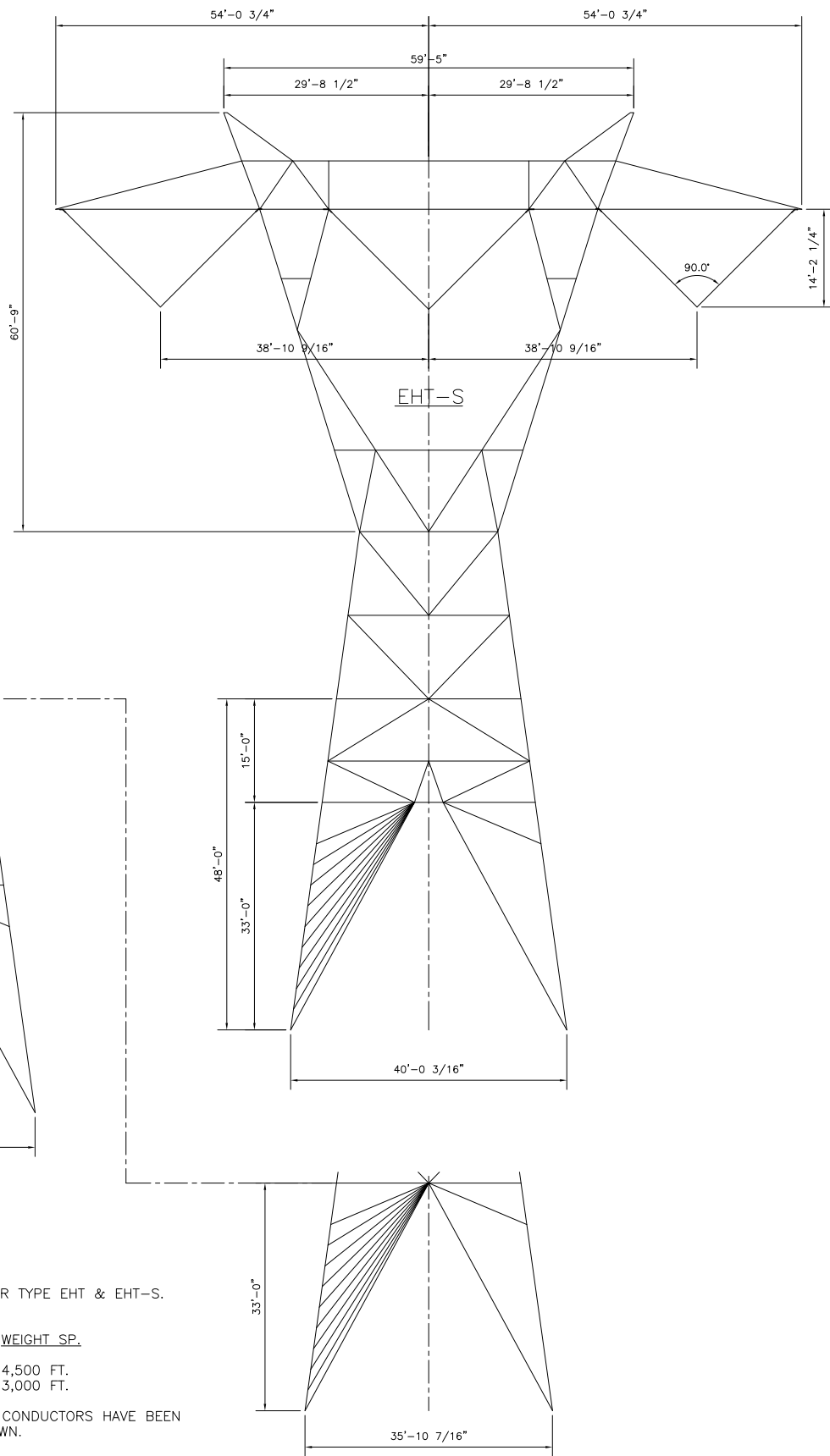
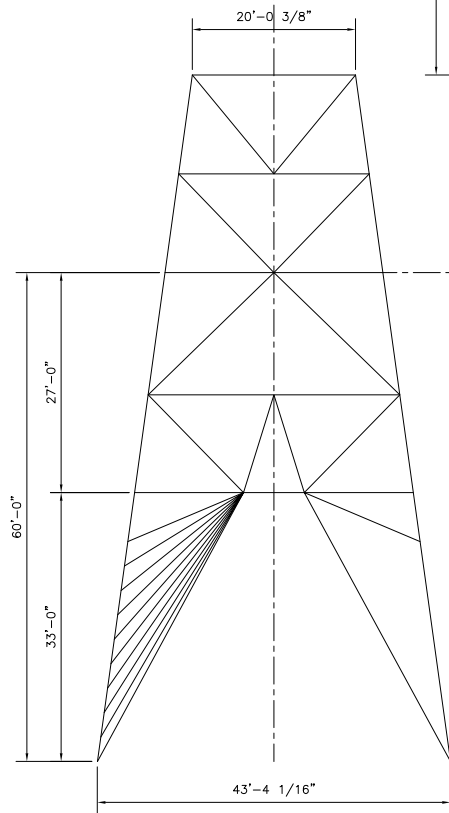
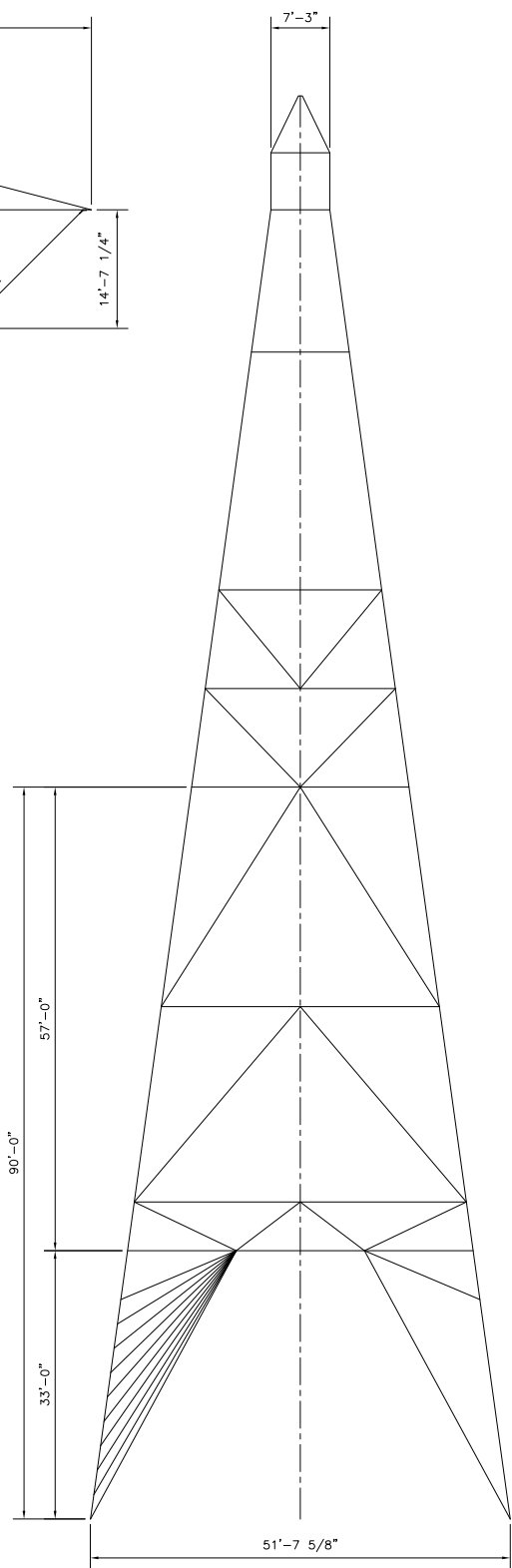
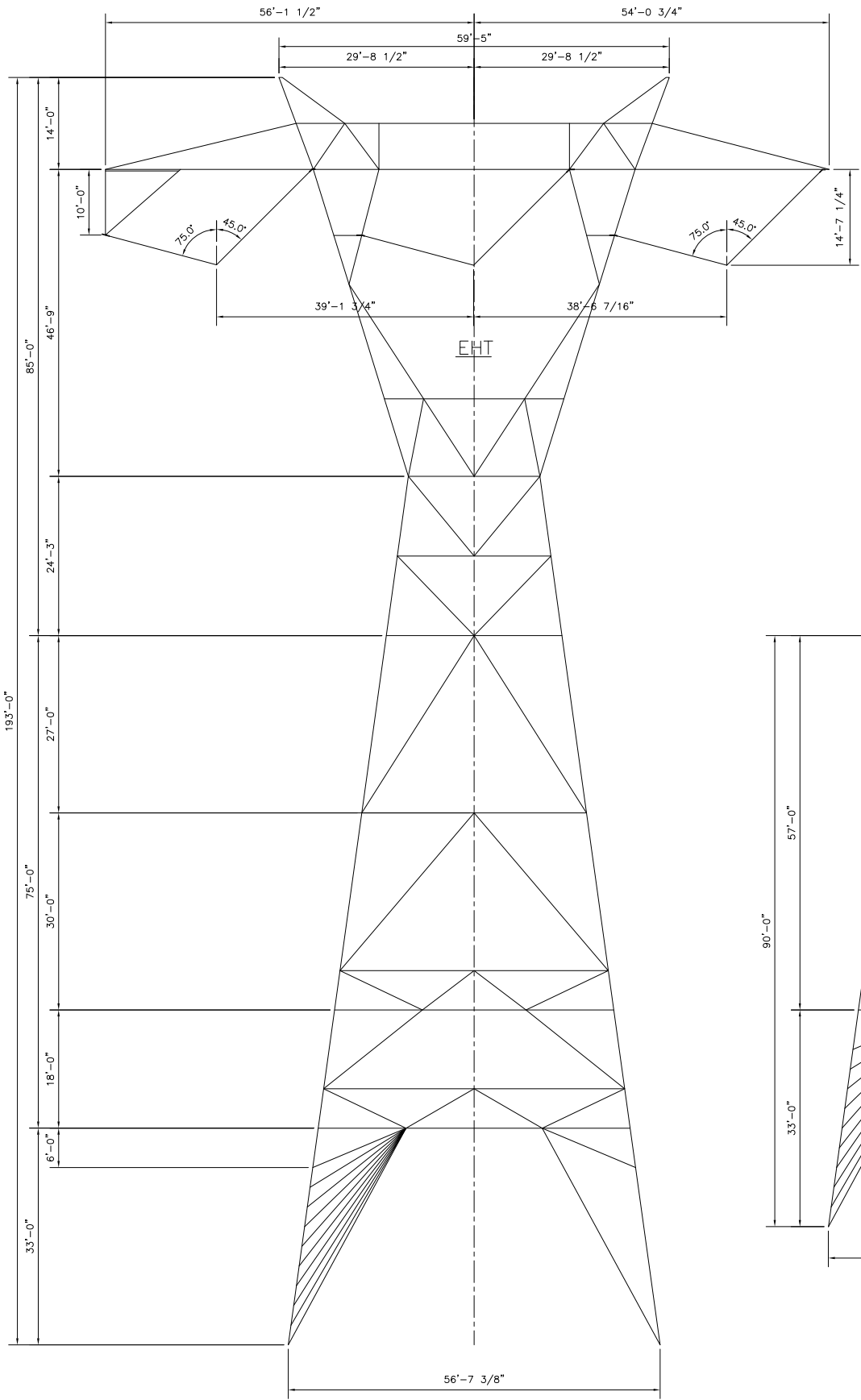
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TITLE NEVADA HYDRO COMPANY LEAPS EHS (SUSPENSION TOWER, 0°-6") TOWER OUTLINE				
SCALE AS SHOWN	DRAWING No. ELA-DSG-001	SHEET 1	CONT'D -	REV 0

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NOTES:

- OUTLINE SIMILAR TO SCE'S EXISTING TOWER TYPE EHT & EHT-S.
- TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
OHGW	0°-6°	3,000 FT.	4,500 FT.
COND	0°-6°	2,000 FT.	3,000 FT.
- THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.

NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	No.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	APVD BY
A	03/31/08	FOR INFORMATION ONLY	MM	MM	CS	CS								

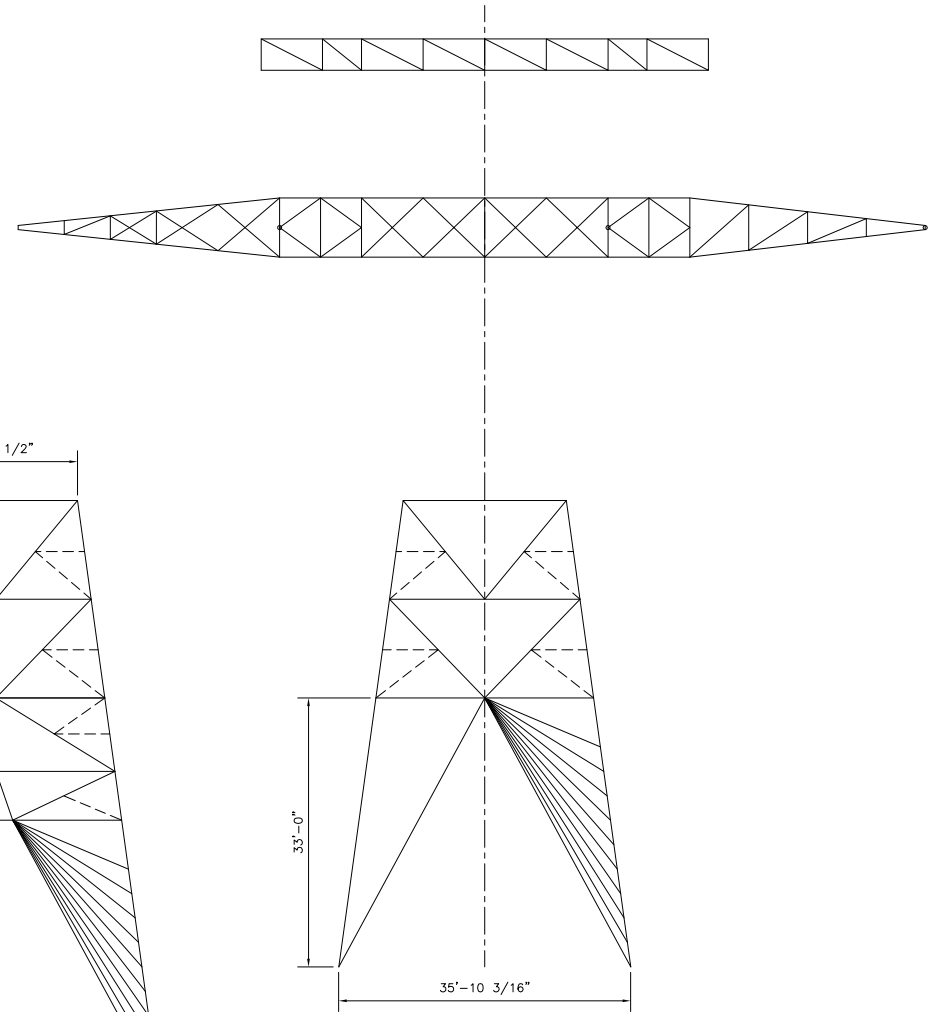
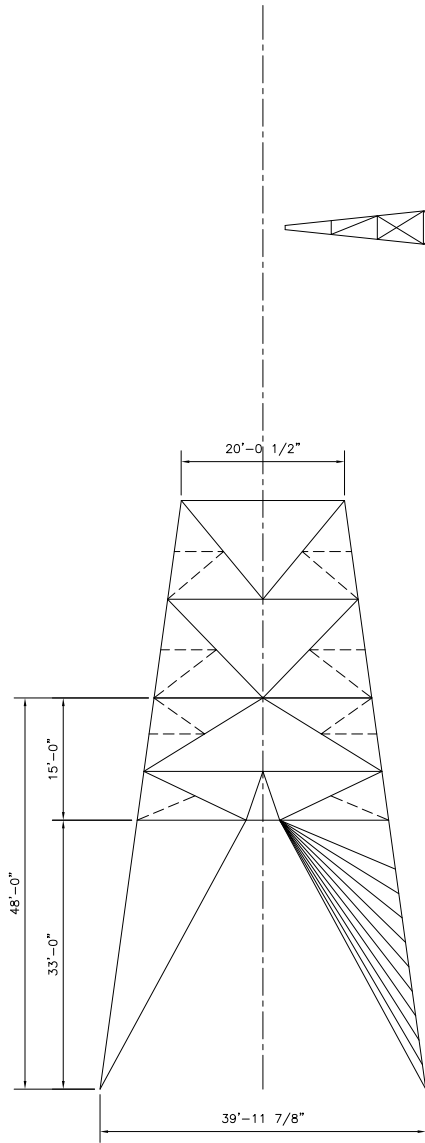
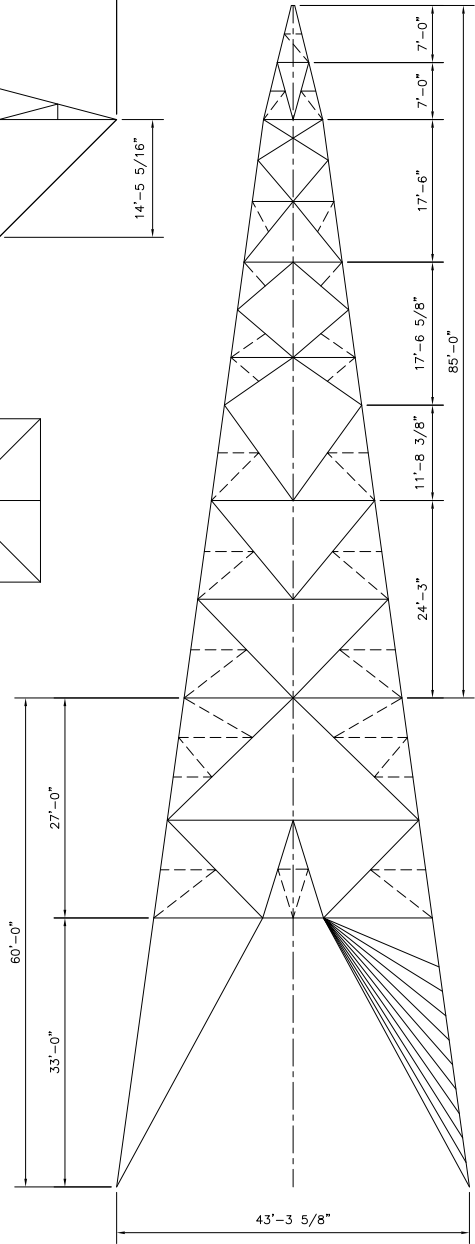
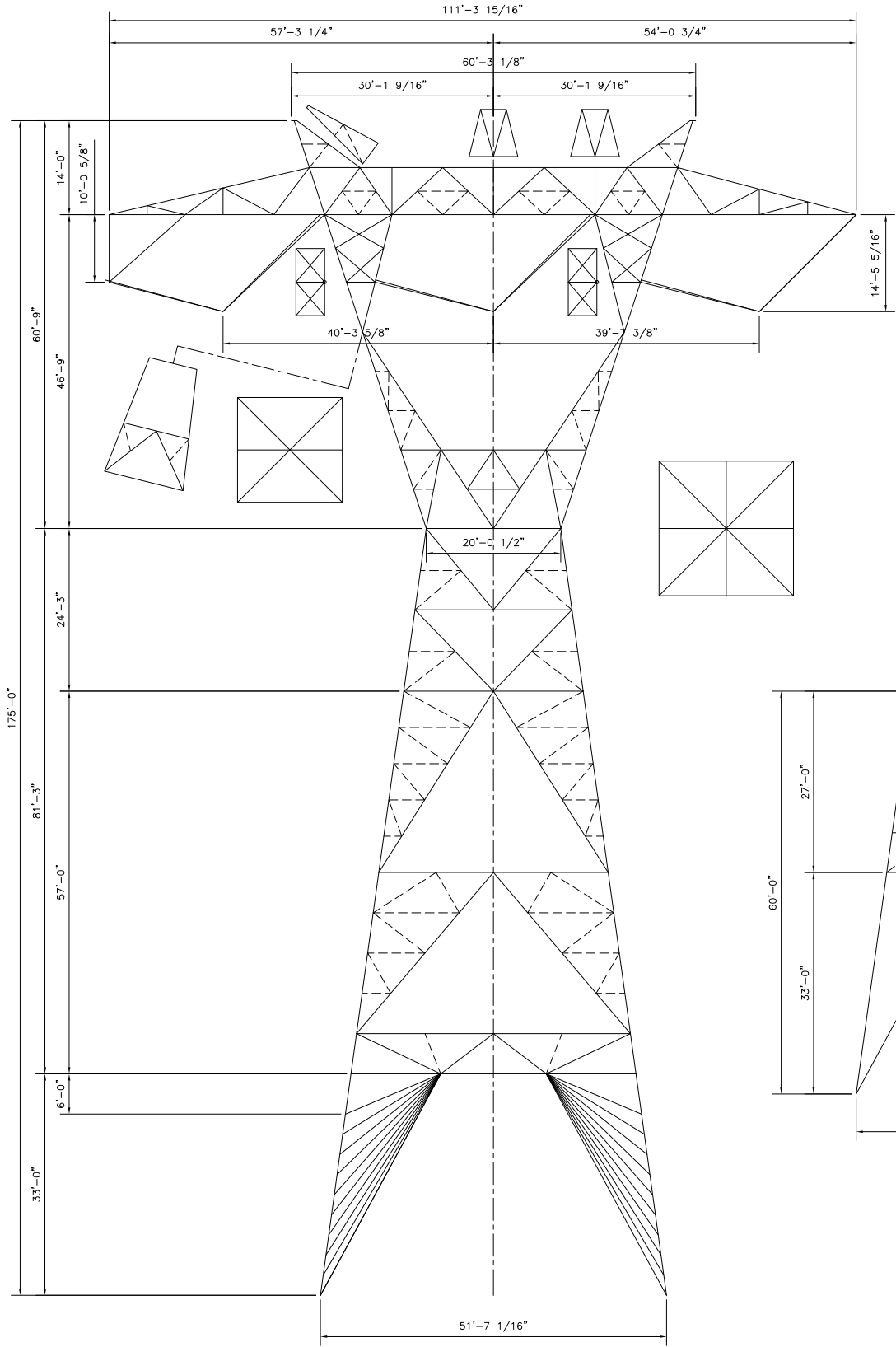
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ENGR BY	M. MENDIETA	☒ FOR INFORMATION ONLY
CHECKED BY	C. SUTOR	☐ FOR APPROVAL
APVD BY	C. SUTOR	☐ FOR MANUFACTURE
		☐ FOR CONSTRUCTION
		☐ FOR RECORD

TITLE NEVADA HYDRO COMPANY LEAPS EHT & EHT-S (SUSPENSION TOWER, 0'-6") TOWER OUTLINE			
SCALE AS SHOWN	DRAWING No. ELA-DSG-001	SHEET 1	CONT'D - REV 0

ELEC. REF. FILE: 1:1
PLOT SCALE: 1:1

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NOTES:

- OUTLINE SIMILAR TO SCE'S EXISTING TOWER TYPE ELA.
- TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
OHGW	6'-22'	3,000 FT.	4,500 FT.
COND	6'-22'	2,000 FT.	3,000 FT.
- THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.

A	03/31/08	FOR INFORMATION ONLY	MM	MM	CS	CS
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NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY
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NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY
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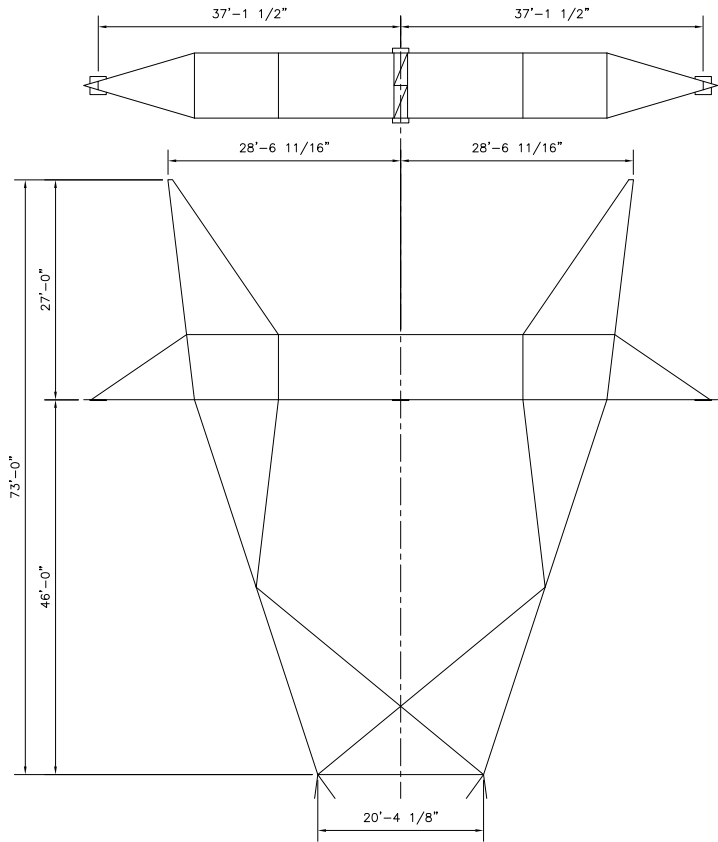
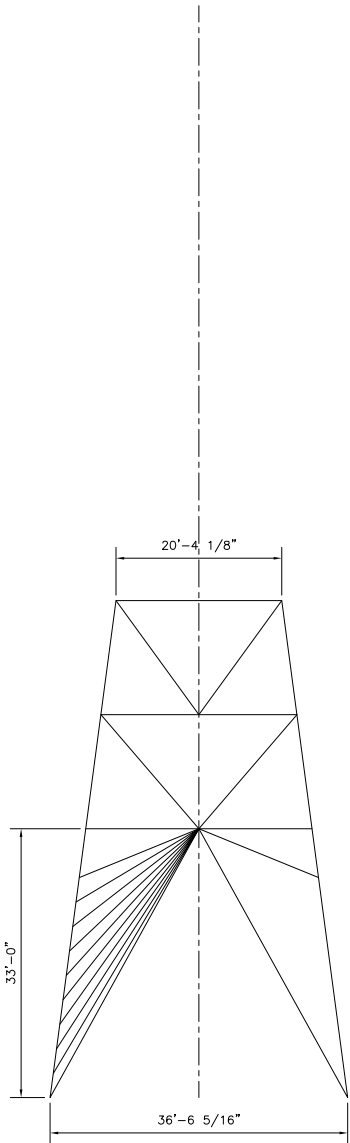
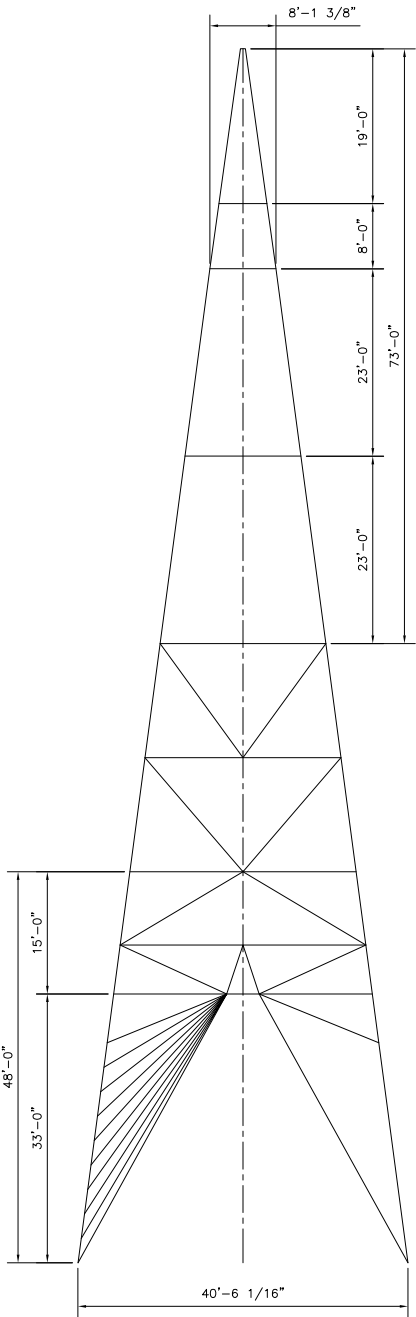
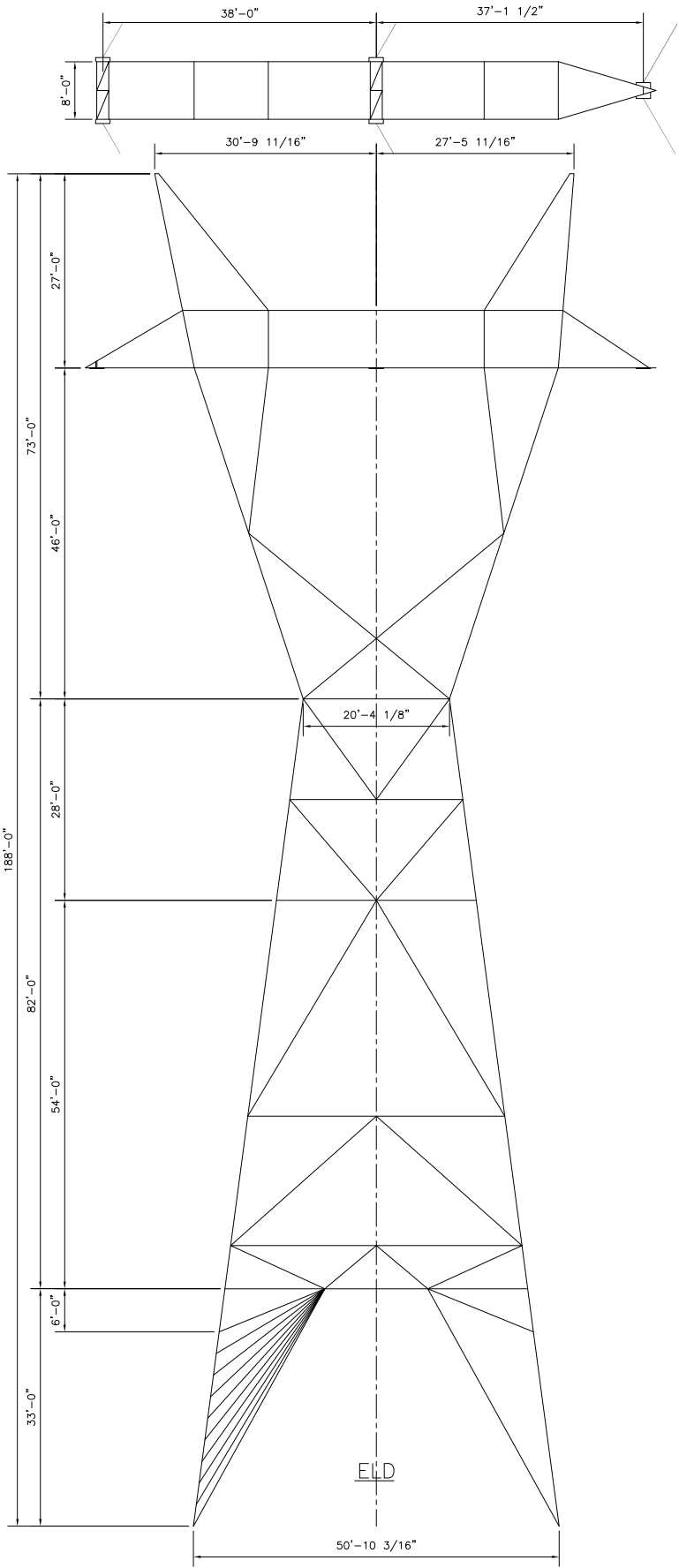


TITLE NEVADA HYDRO COMPANY LEAPS ELA (ANGLE LINE TOWER, 6'-22') TOWER OUTLINE			
SCALE AS SHOWN	DRAWING No. ELA-DSG-001	SHEET 1	CONT'D - REV 0

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ELEC. REF. FILE: 1:1
PLOT SCALE: 1:1



NOTES:

- OUTLINE SIMILAR TO SCE'S EXISTING TOWER TYPE ELD & ELD-T.
- TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
ELD:			
OHGW	0°-60° & D.E.	6,525 FT. L.L.	10,534 FT. L.L.
COND	0°-60° & D.E.	2,000 FT. L.L.	3,000 FT. L.L.
ELD-T:			
OHGW	0° & D.E.	9,795 FT. L.L.	21,900 FT. L.L.
COND	0° & D.E.	3,000 FT. L.L.	6,240 FT. L.L.

- THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.



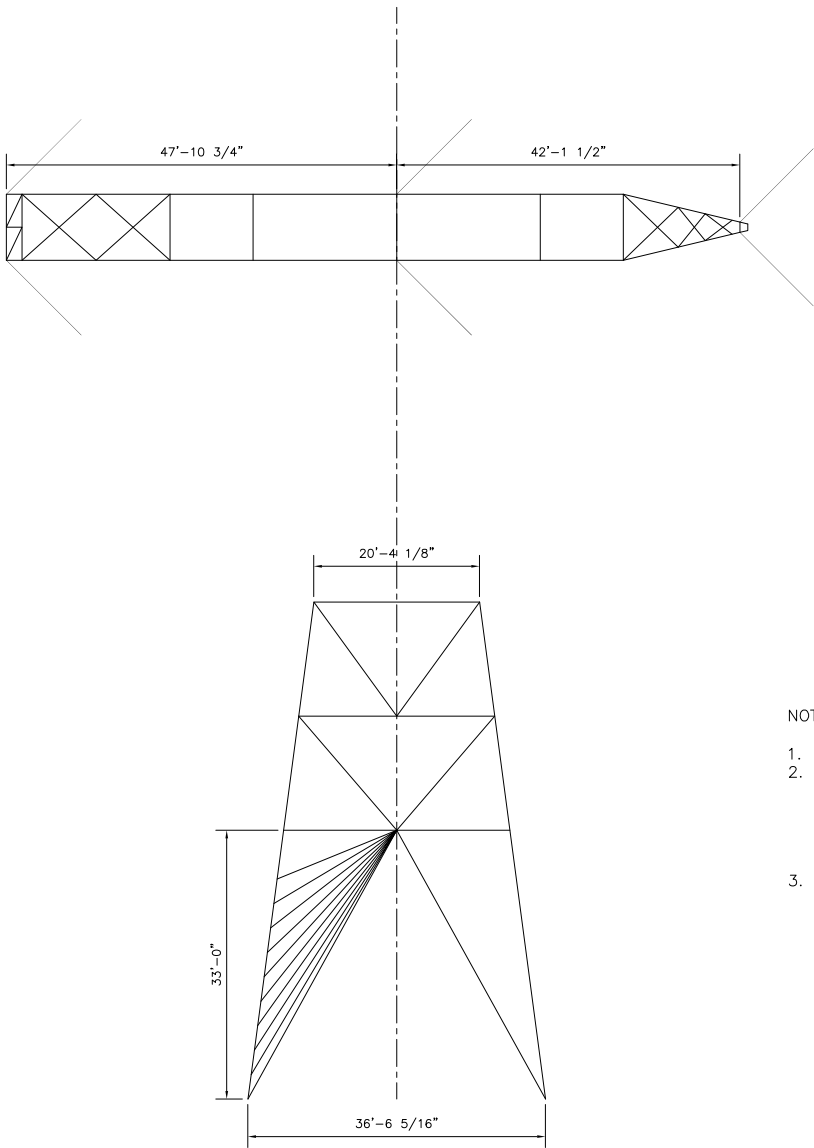
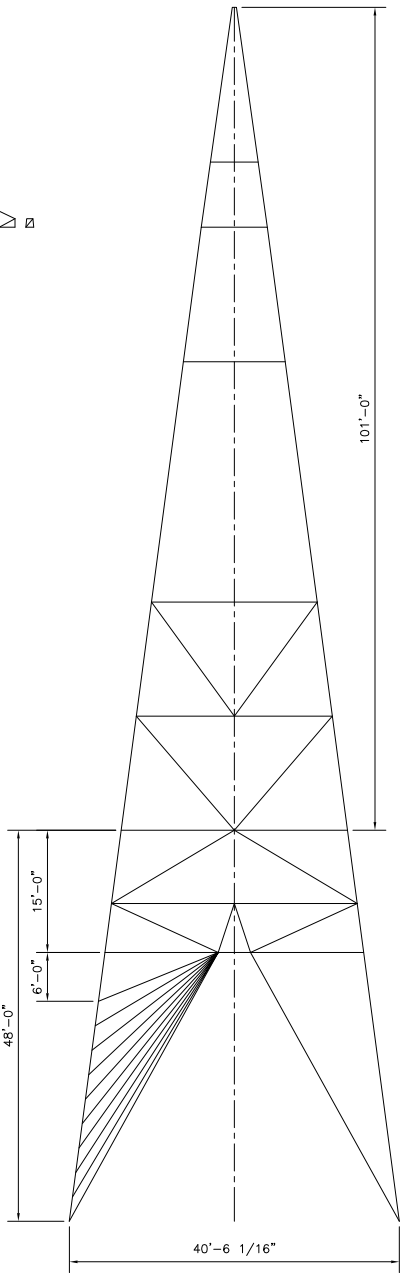
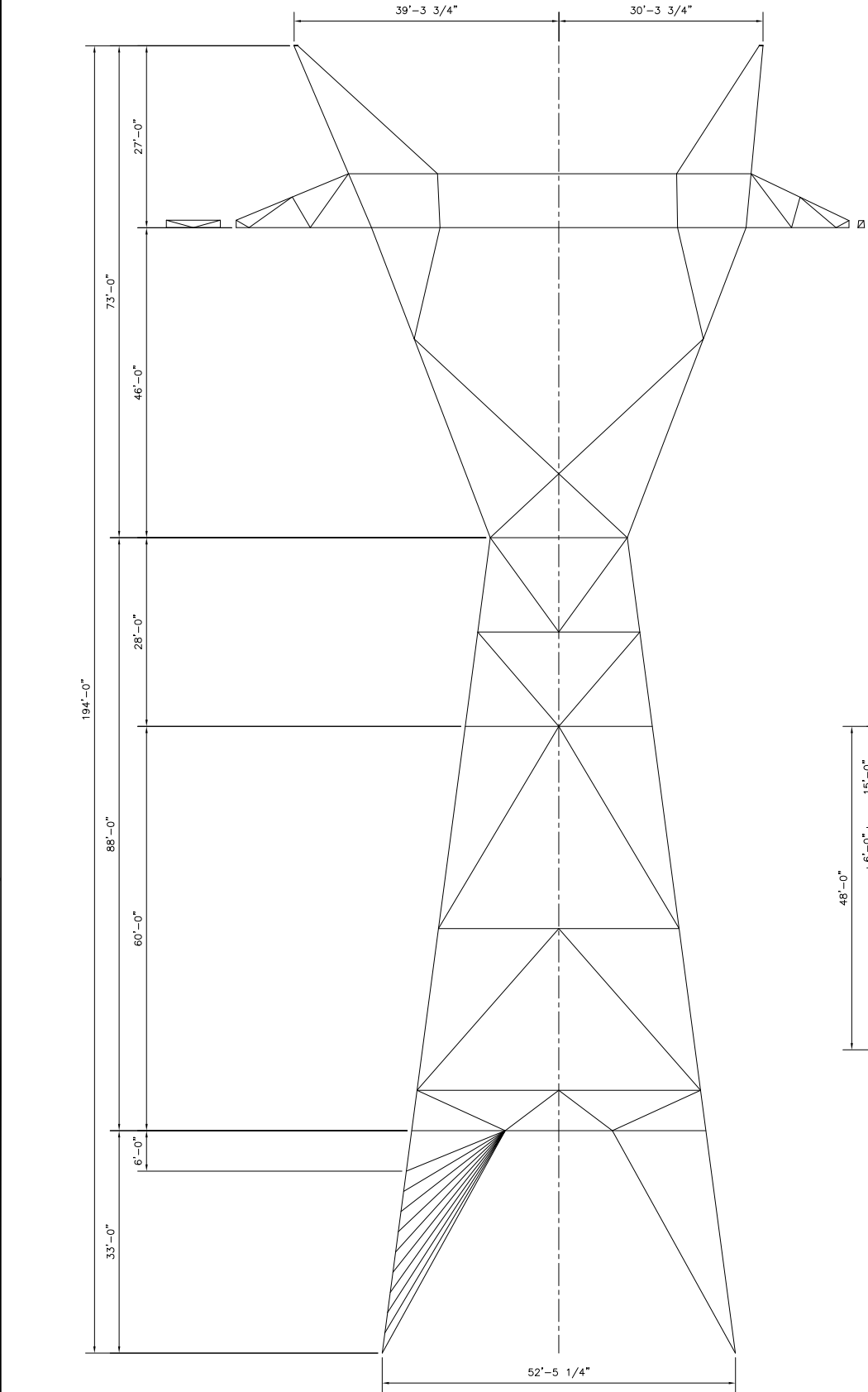
TITLE
NEVADA HYDRO COMPANY
LEAPS
ELD & ELD-T (0°-60° & D.E.)
TOWER OUTLINE

SCALE AS SHOWN
DRAWING No. ELD-DSG-001
SHEET 1
CONT'D -
REV 0

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ELEC. REF. FILE: 1:1
PLOT SCALE: 1:1



NOTES:

- OUTLINE SIMILAR TO SCE'S EXISTING TOWER TYPE EHD.
- TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
OHGW	0°-90° & D.E.	6,525 FT. L.L.	10,534 FT. L.L.
COND	0°-90° & D.E.	2,000 FT. L.L.	3,000 FT. L.L.
- THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.

A	03/31/08	FOR INFORMATION ONLY	MM	MM	CS	CS
NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY

No.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY
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DRAWN BY	M. MENDIETA
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CHECKED BY	C. SUTOR
APVD BY	C. SUTOR

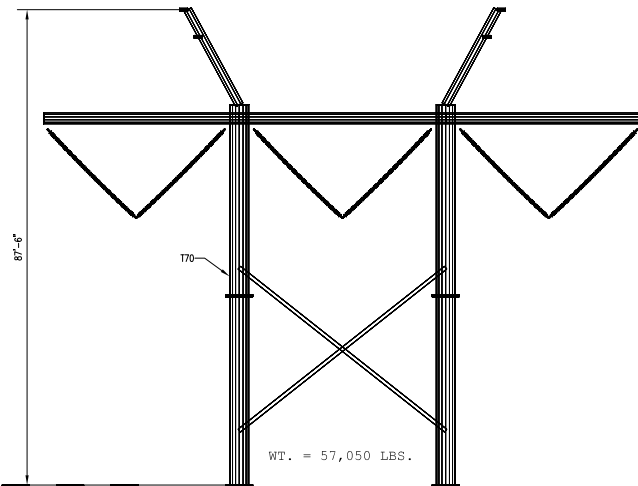
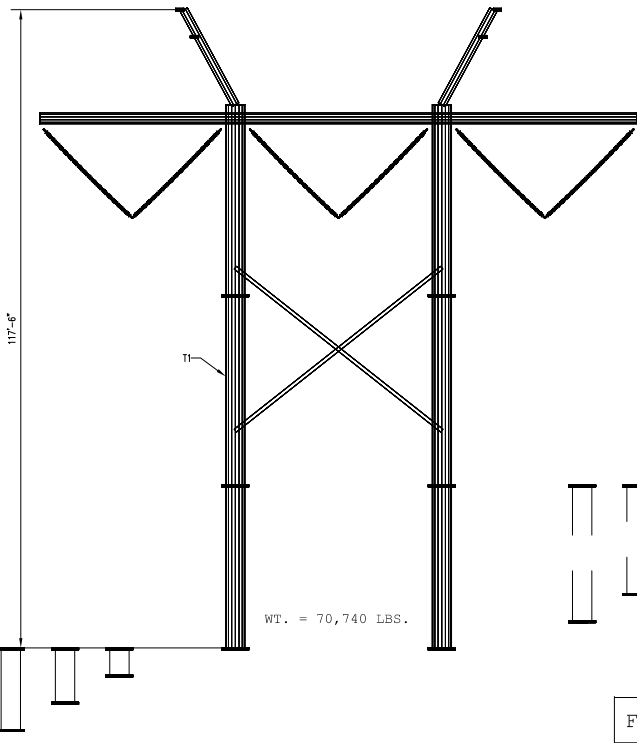
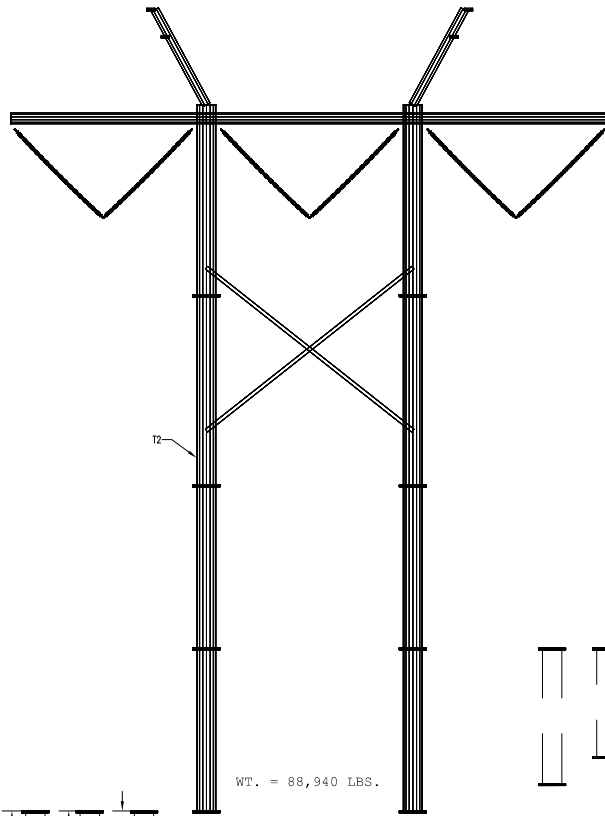
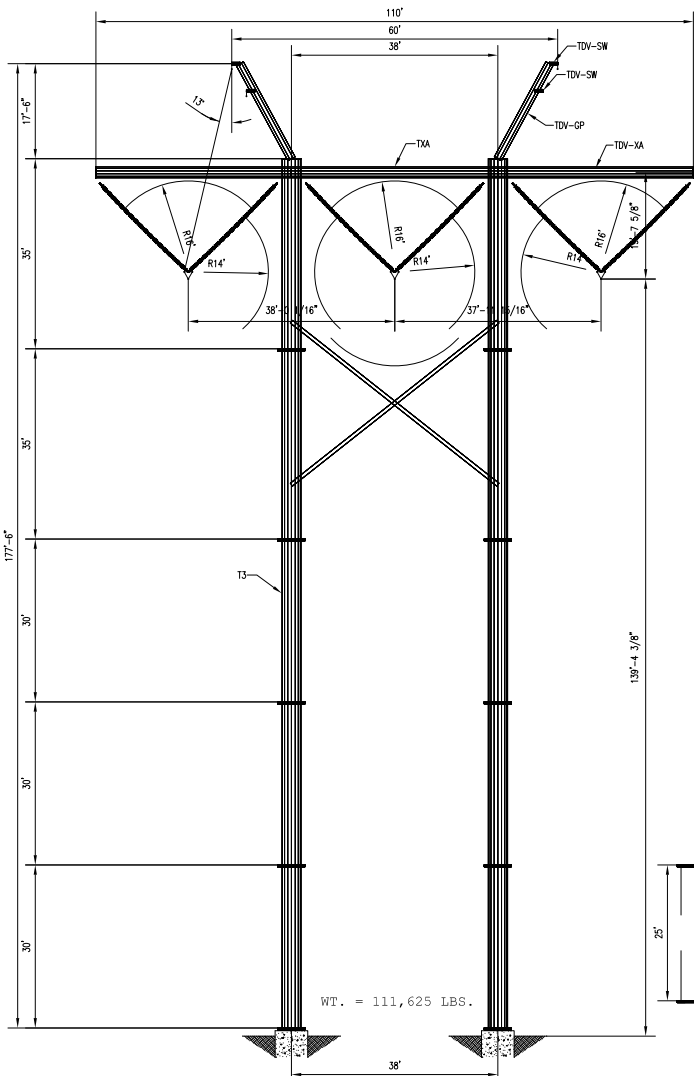
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TITLE				NEVADA HYDRO COMPANY LEAPS EHD (0°-90° & D.E.) TOWER OUTLINE			
SCALE	AS SHOWN	DRAWING No.	ELD-DSG-001	SHEET	1	CONT'D	REV
					-		0

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ELEC. REF. FILE: 1-1
PLOT SCALE: 1-1



FOR INFORMATION ONLY

NOTES:

1. TOWER APPLICATION DATA:

	LINE ANGLE	WIND SP.	WEIGHT SP.
OHGW	0°	1,600 FT.	2,500 FT.
COND	0°	1,600 FT.	2,500 FT.

2. THE ATTACHMENT POINTS FOR OHGW AND CONDUCTORS HAVE BEEN MODELED IN THE PLS-CADD LINE AS SHOWN.

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Trans. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)
NESC Light +	LP:g	-0.09	-46.63	-59.28	46.63	2554.94	-7.67	-0.18	2554.95
NESC Light +	RP:g	-0.05	-45.73	-238.90	45.73	2698.86	-6.37	-0.08	2698.86
NESC Light -	LP:g	-0.05	-45.82	-239.73	45.82	-2703.40	-6.37	-0.08	-2703.40
NESC Light -	RP:g	-0.09	-46.53	-60.10	46.53	-2550.44	-7.67	-0.18	-2550.45
Extreme Wind +	LP:g	-0.09	-59.73	-121.93	59.73	3197.81	-7.45	-0.18	3197.82
Extreme Wind +	RP:g	-0.05	-54.97	-233.65	54.97	3269.58	-5.95	-0.10	3269.58
Extreme Wind -	LP:g	-0.04	-55.08	-254.22	55.08	-3275.35	-5.95	-0.10	-3275.35
Extreme Wind -	RP:g	-0.09	-59.60	-122.51	59.60	-3192.16	-7.45	-0.18	-3192.17
Stringing +	LP:g	-0.07	-2.99	74.91	2.99	136.50	-7.34	-0.06	136.64
Stringing +	RP:g	-0.07	-7.37	111.83	7.37	394.20	-7.18	-0.04	394.27
Stringing -	LP:g	-0.07	7.38	113.23	7.38	-394.51	-7.18	-0.05	394.58
Stringing -	RP:g	-0.07	2.99	73.52	2.99	-136.05	-7.34	-0.06	136.19
Brkn SW L +	LP:g	-1.97	-3.74	47.44	4.23	330.86	-382.48	-60.14	446.75
Brkn SW L +	RP:g	-1.55	-6.74	83.01	6.91	366.95	-315.49	-41.56	483.93
Brkn SW L -	LP:g	-1.67	6.73	82.49	6.93	-369.33	-370.33	-57.56	523.01
Brkn SW L -	RP:g	-1.84	3.72	47.96	4.15	-233.05	-325.82	-39.48	400.59
Brkn SW R +	LP:g	-1.84	-3.73	48.58	4.16	233.54	-325.57	39.40	400.67
Brkn SW R +	RP:g	-1.68	-6.72	81.86	6.92	368.89	-370.39	57.48	522.75
Brkn SW R -	LP:g	-1.54	6.73	83.54	6.91	-366.51	-315.30	-41.42	483.47
Brkn SW R -	RP:g	-1.98	3.71	46.91	4.20	-229.38	-382.45	59.98	445.96
BrknC L +	LP:g	-22.46	-4.70	31.39	22.95	111.34	-3466.09	-657.13	3467.87
BrknC L +	RP:g	-11.07	-4.92	92.24	12.12	179.08	-2345.95	-408.67	2352.77
BrknC L -	LP:g	-20.20	5.14	64.00	20.85	-436.80	-3371.56	-626.16	3399.73
BrknC L -	RP:g	-13.30	4.47	59.62	14.03	-354.27	-2426.50	-390.03	2452.22
BrknC C +	LP:g	-17.87	-3.15	45.87	18.15	136.96	-2956.15	-10.43	2962.71
BrknC C +	RP:g	-15.65	-6.47	77.75	16.93	345.58	-2887.77	-16.04	2885.52
BrknC C -	LP:g	-15.61	6.48	78.36	16.90	-346.24	-2866.78	15.29	2887.61
BrknC C -	RP:g	-17.91	-3.14	45.26	18.18	-136.69	-2957.10	9.66	2963.63
BrknC R +	LP:g	-13.56	-4.48	60.23	13.99	354.56	-2424.50	389.56	2450.29
BrknC R +	RP:g	-20.25	-5.13	63.39	20.89	436.22	-3371.93	625.74	3400.03
BrknC R -	LP:g	-11.04	4.93	92.84	12.09	-179.90	-2344.36	407.62	2351.26
BrknC R -	RP:g	-22.50	4.69	30.79	22.98	-111.14	-3465.96	656.07	3467.74
MaIntenance +	LP:g	-0.07	-6.53	80.18	6.53	438.91	-8.07	-0.10	438.98
MaIntenance +	RP:g	-0.06	-12.29	162.94	12.29	708.37	-7.66	-0.05	708.41
MaIntenance -	LP:g	-0.06	12.32	164.55	12.32	-709.53	-7.65	-0.05	709.57
MaIntenance -	RP:g	-0.07	6.51	78.58	6.51	-437.62	-8.07	-0.10	437.70
QuartExtrWind +	LP:g	-33.54	-51.42	-106.10	61.39	2810.96	-3009.78	-91.23	4118.28
QuartExtrWind +	RP:g	-15.42	-47.74	-239.24	50.17	2887.91	-2371.74	-30.87	3751.01
QuartExtrWind -	LP:g	-15.39	47.86	239.61	50.28	-2893.93	-2392.98	30.02	3755.16
QuartExtrWind -	RP:g	-33.56	51.30	-106.67	61.30	-2805.53	-3009.75	90.09	4114.56
Minimum Strength +	LP:g	-0.07	-27.42	1.23	27.42	1327.83	-6.55	-0.04	1327.85
Minimum Strength +	RP:g	-0.06	-27.47	112.24	27.47	1363.07	-6.21	-0.01	1363.08
Minimum Strength -	LP:g	-0.06	27.47	112.24	27.47	-1363.07	-6.21	-0.01	1363.08
Minimum Strength -	RP:g	-0.07	27.42	1.23	27.42	-1327.83	-6.55	-0.04	1327.84
Minimum Strength Quart +	LP:g	-26.21	-19.58	16.90	32.72	953.63	-2603.14	-27.18	2772.31
Minimum Strength Quart +	RP:g	-22.47	-19.85	97.80	29.98	988.53	-2489.45	16.13	2678.53
Minimum Strength Quart -	LP:g	-22.47	19.85	97.80	29.98	-988.53	-2489.45	-16.13	2678.53
Minimum Strength Quart -	RP:g	-26.21	19.58	16.90	32.72	-953.63	-2603.14	27.18	2772.32
NESC Light SWDE +	LP:g	-11.79	-45.98	-55.65	47.47	2511.30	-1612.32	-78.35	2984.32
NESC Light SWDE +	RP:g	-1.55	-44.96	233.77	44.99	2647.50	-1226.35	-0.22	2917.74
NESC Light SWDE -	LP:g	-11.82	45.99	-56.47	47.39	-2506.91	-1612.69	77.40	2980.83
NESC Light SWDE -	RP:g	-12.71	-58.83	-117.05	60.18	3142.78	-1566.16	-80.06	3511.40
Extreme Wind SWDE +	LP:g	-0.60	-54.11	247.65	54.11	3209.37	-1114.74	-7.53	3397.45
Extreme Wind SWDE +	RP:g	-18.29	54.23	248.23	54.23	-3215.23	-1114.19	7.02	3402.81
Extreme Wind SWDE -	LP:g	-12.73	58.70	-117.62	60.07	-3137.21	-1566.22	79.22	3506.45

Steel Pole Properties:

Steel Pole Property Label	Stock Length (ft)	Default Embedded Length (ft)	Base Plate	Shape	Tip Diameter (in)	Base Diameter (in)	Taper (in/ft)	Default Coef.	Tubes Modulus of Elasticity (ksi)	Weight Density (lbs/ft^3)	Shape At Base	Strength Check Type	Distance From Tip (ft)	Ultimate Load (klps)	Ultimate Load (klps)
T3	160.00	0	Yes	16F	42	42	0	1	5	tubes	0	Calculated	0.000	0.0000	0.0000

Steel Tubes Properties:

Pole Tube Property No.	Length (ft)	Thickness (in)	Lap (in)	Lap Yield Moment (ft-k)	Modulus of Elasticity (ksi)	Tube Calculated Weight (lbs)	Tube Top Diameter (in)	Tube Bottom Diameter (in)	1.5x Diam. Lap Length (ft)
T3 1	35	0.1875	0.000	0.000	65.000	0.000	2972	42.00	5.20
T3 2	35	0.3125	0.000	0.000	65.000	0.000	4938	42.00	5.17
T3 3	30	0.375	0.000	0.000	65.000	0.000	5071	42.00	5.16
T3 4	30	0.5	0.000	0.000	65.000	0.000	6741	42.00	5.13
T3 5	30	0.625	0.000	0.000	65.000	0.000	8401	42.00	0.00

Tubular X-Arm Properties:

Cross Arm Property Number	Stock Shape	Steel Thickness (in)	Diameter (in)	Length (ft)	Modulus of Elasticity (ksi)	Drag Coef.	Geometry	Strength Check Type	Vertical Capacity (lbs)	Trans. Capacity (lbs)	Long. Capacity (lbs)	Steel Yield Stress (ksi)
TXA	12F	0.25	24	38	29000	1	point	Calculated	0	0	0	65

Tubular Davit Properties:

Davit Property Number	Stock Shape	Steel Thickness (in)	Base Diameter (in)	Tip Diameter (in)	Taper (in/ft)	Drag Coef.	Modulus of Elasticity (ksi)	Geometry	Strength Check Type	Vertical Capacity (lbs)	Tension Capacity (lbs)	Compress. Capacity (lbs)	Long. Capacity (lbs)	Yield Stress (ksi)	Steel At End
TDV-SW	8F	0.1875	6	6	0	1.4	29000	1 point	Calculated	0	0	0	0	65	
TDV-GP	8F	0.25	18	18	0	1.4	29000	2 points	Calculated	0	0	0	0	65	
TDV-XA	12F	0.5	24	24	0	1.4	29000	4 points	Calculated	0	0	0	0	65	

Brace Properties:

Brace Property Label	Stock Section Area (in ²)	Cross Length (ft)	Depth (in)	Width (in)	Weight (lbs)	Unit Wt. (If Length Unknown) (lbs/ft)	Modulus of Elasticity (ksi)	Drag Coef.	Strength Check Type	Use S.F.	Tension Capacity (lbs)	Compress. Capacity (lbs)	Net Design Stress (ksi)	X-Moment Inertia (in ⁴)	Z-Moment Inertia (in ⁴)	Unbraced Length Ratio-X	Unbraced Length Ratio-Z	
DL8x8x5/8	19.38	0	8	16	0	66	29000	1.8	Calculated	No	0	0	19.38	50	213.9	119.2	1	0.5

Base Plate Properties:

Pole Property Number	Plate Shape	Plate Thick. (in)	Plate Weight (lbs)	Bend Line Length (in)	Hole Dia. (in)	Hole Shape	Steel Density (lbs/ft^3)	Steel Yield Stress (ksi)	Bolt Diam. (in)	Bolt Pattern	Num. Of Bolts	Bolt Cage X (in)	Bolt Cage Y (in)	Plate Inertia (in^4)
T3	60.000	0	4.000	2377	0.000	30.000	0	490.00	65.000	1.250	51.000	28	7979.77	7979.77

Base Plate Bolt Coordinates for Property "T3":

Bolt Coord.	Bolt X Coord.	Bolt Y Coord.	Bolt Angle (deg)
0	0	25	
0	0	35	
0	0	45	
0	0	55	
0	0	65	

SAE TOWERS

TITLE
NEVADA HYDRO COMPANY
LAKE ELSINORE ADVANCED PUMPED STORAGE PROJECT
H-FRAME TYPE SS (0°-1°)
H-FRAME OUTLINE AND DESIGN

SCALE AS SHOWN
DRAWING No. HFR-DSG-001
SHEET 1
CONT'D -
REV A

DRAWN BY M. MENDIETA
ENGR BY M. MENDIETA
CHECKED BY C. SUTOR
APVD BY C. SUTOR

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☐ FOR MANUFACTURE
☐ FOR CONSTRUCTION
☐ FOR RECORD

Row #	Structure File Name	Count	Est. Wt. (lbs)	Total Est. Wt. (lbs)	Est. Wt. (Tons)	Total Est. Wt. (Tons)
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2	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 00.119	1	97,128.9	97,128.9	44.1	44.1
3	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 15.134	1	112,639.9	112,639.9	51.1	51.1
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5	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehd 60.188	1	153,300.6	153,300.6	69.6	69.6
6	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 00.105	2	31,979.3	63,958.6	14.5	29.0
7	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 00.120	1	34,194.2	34,194.2	15.5	15.5
8	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 24.141	1	41,954.1	41,954.1	19.0	19.0
9	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 48.165	1	51,222.6	51,222.6	23.2	23.2
10	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ehs-s 48.174	2	52,680.4	105,360.7	23.9	47.8
11	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 00.097	1	44,540.4	44,540.4	20.2	20.2
12	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 00.112	2	48,017.1	96,034.2	21.8	43.6
13	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 15.118	1	54,826.0	54,826.0	24.9	24.9
14	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 27.130	3	57,565.4	172,696.3	26.1	78.4
15	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.160	3	74,102.2	222,306.6	33.6	100.9
16	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 57.163	1	75,232.0	75,232.0	34.1	34.1
17	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.178	7	92,024.5	644,171.5	41.8	292.3
18	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eht 75.181	1	93,154.3	93,154.3	42.3	42.3
19	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 00.091	2	50,407.5	100,815.0	22.9	45.7
20	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 15.112	1	62,985.0	62,985.0	28.6	28.6
21	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 27.127	1	66,361.2	66,361.2	30.1	30.1
22	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 57.160	1	88,950.8	88,950.8	40.4	40.4
23	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ela 57.172	1	92,384.2	92,384.2	41.9	41.9
24	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.107	2	83,694.1	167,388.3	38.0	75.9
25	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.110	2	85,359.3	170,718.7	38.7	77.5
26	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.113	1	87,264.6	87,264.6	39.6	39.6
27	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.119	5	89,460.7	447,303.4	40.6	203.0
28	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.122	1	91,072.1	91,072.1	41.3	41.3
29	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.125	1	93,111.2	93,111.2	42.2	42.2
30	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.128	2	94,440.2	188,880.4	42.8	85.7
31	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 00.134	2	97,862.1	195,724.3	44.4	88.8
32	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 15.134	4	104,545.9	418,183.7	47.4	189.7
33	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.164	2	135,596.8	271,193.7	61.5	123.0
34	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.173	3	139,698.2	419,094.6	63.4	190.2
35	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.179	1	143,348.8	143,348.8	65.0	65.0
36	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld 54.182	1	144,677.7	144,677.7	65.6	65.6
37	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.113	1	87,264.6	87,264.6	39.6	39.6
38	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 00.119	3	89,460.7	268,382.1	40.6	121.8
39	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-a 15.143	1	109,525.4	109,525.4	49.7	49.7
40	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.107	5	85,758.7	428,793.6	38.9	194.6
41	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\eld-t 00.119	2	91,525.3	183,050.6	41.5	83.1
42	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.104	7	26,752.0	187,263.9	12.1	85.0
43	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.107	2	27,034.5	54,069.0	12.3	24.5
44	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.110	1	27,604.7	27,604.7	12.5	12.5
45	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.113	3	27,947.2	83,841.6	12.7	38.0
46	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.116	1	28,599.3	28,599.3	13.0	13.0
47	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.119	1	28,760.9	28,760.9	13.0	13.0
48	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.122	2	29,113.1	58,226.2	13.2	26.4
49	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.125	4	29,503.6	118,014.3	13.4	53.5
50	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.128	6	29,897.5	179,384.8	13.6	81.4
51	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 00.131	4	30,153.8	120,615.1	13.7	54.7
52	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.134	1	34,702.0	34,702.0	15.7	15.7
53	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.137	2	35,044.4	70,088.9	15.9	31.8
54	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.140	8	35,696.5	285,571.9	16.2	129.6
55	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.143	3	35,858.1	107,574.2	16.3	48.8
56	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.146	2	36,210.3	72,420.6	16.4	32.9
57	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.152	1	36,994.7	36,994.7	16.8	16.8
58	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 24.155	1	37,251.0	37,251.0	16.9	16.9
59	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.164	4	43,953.0	175,812.1	19.9	79.8
60	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\ems 48.167	1	44,114.6	44,114.6	20.0	20.0
61	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.117	2	81,351.0	162,702.0	36.9	73.8
62	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.147	4	102,281.0	409,124.0	46.4	185.6
63	c:\data\y2008\nevada hydro\leaps\engineering\tline\rev c\structures\sticks\h-frame ss.177	2	128,368.8	256,737.5	58.2	116.5
64	Total number of structures =	138		9,210,752.5		4,179.1