

TIA Inspection Report

Site Name Ellsworth ME

Prepared For



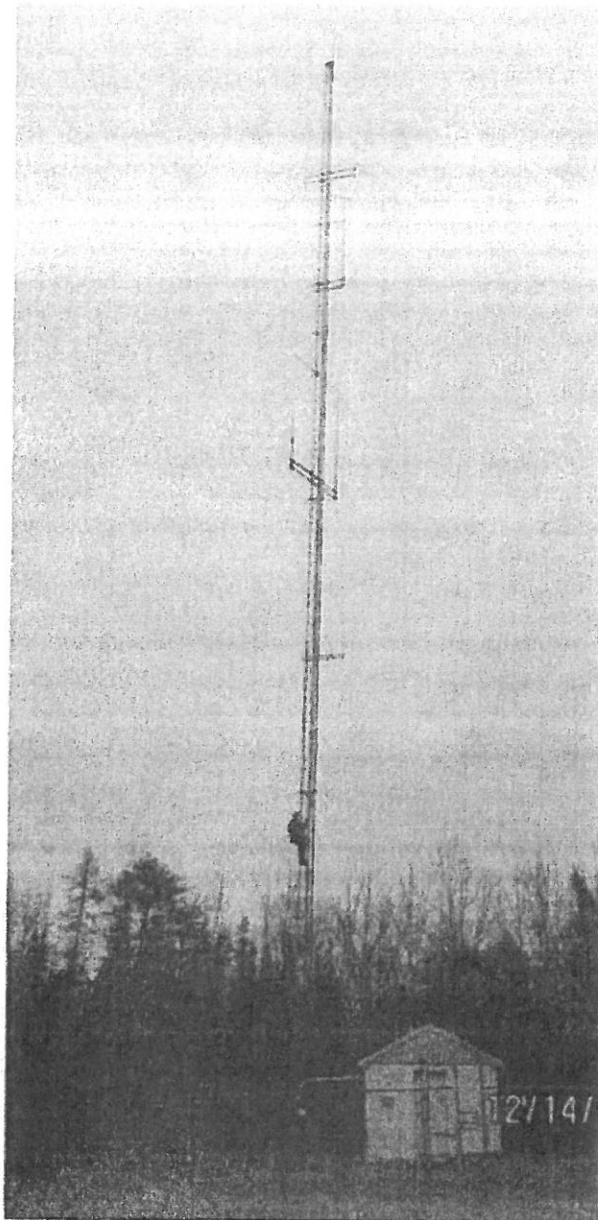
TILSON

SC # 200435

Date of Inspection 12/14/20

Report Completed By Stephen Kasanovich

Weather During Inspection 30 degrees F, Cloudy,
Calm



Site Information

City	Ellsworth
State	ME
Site Address	893 Bangor Rd
Latitude	44.594683
Longitude	-68.510656
Tower Type	Guyed
Tower Make/Model	Rohn
Measured Tower Height (T)	180'
Measured Foundation Height (F)	0.5'
Measured Highest Appurtenance Height (A)	18' (omni antenna)
Measured Overall Height (AGL) = F+T+A	198.5'
Tower Safe to Climb	Yes
Total Height Climbed	180'
Power Down Requirements	No
Power Down Contact Info	N/A
AM Detuning	No
Any Site Safety Issues	None
Comments - Site Info	

Street Map



Satellite Map



Site Details

Access Gate (at Access Road)	No	Shelters, Equipment Pads, & Platforms	Shelter 1: 12' x 12'
Gate Combo (Access Gate and/or Compound Gate)	Unknown	Overhead Power Lines to Site	Yes
Access Road Type	Gravel	Generator	Yes
Access Road Width (feet)	20'	Compound (LxW)	45' x 45'
Approximate Road Length (feet)	100'	Compound Fence Height (feet)	6'
2WD Accessable	Yes	Anti-Climb Wire	Barbed
Compound Gate Photo		Compound Aerial Photo	
Signage		Compound Sketch	

Access Road Type



Compound Gate Photo



Signage



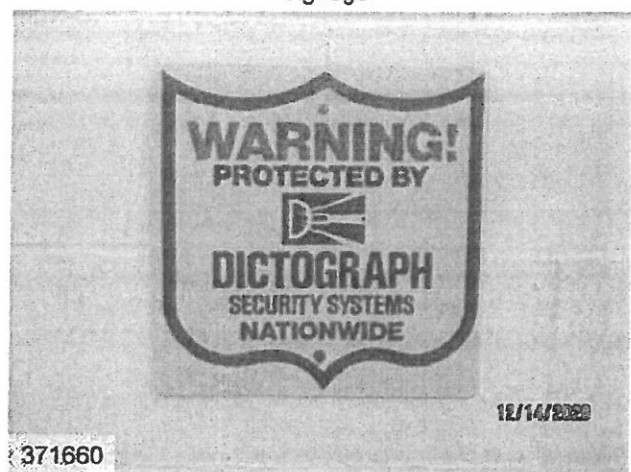
Signage



Signage



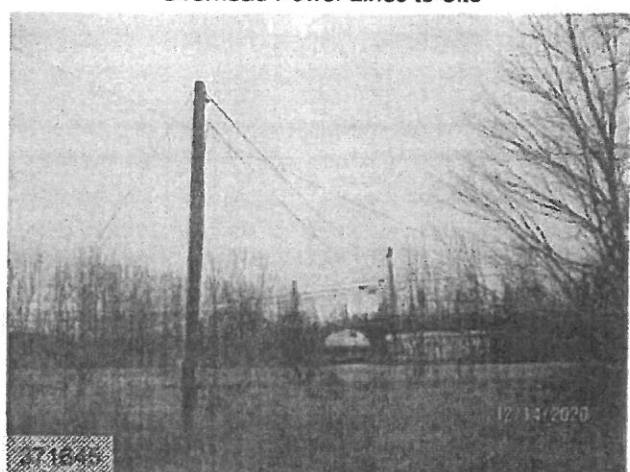
Signage



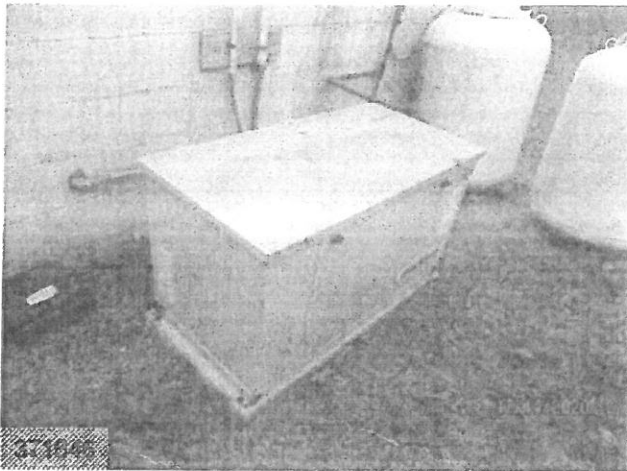
Shelters, Equipment Pads, & Platforms



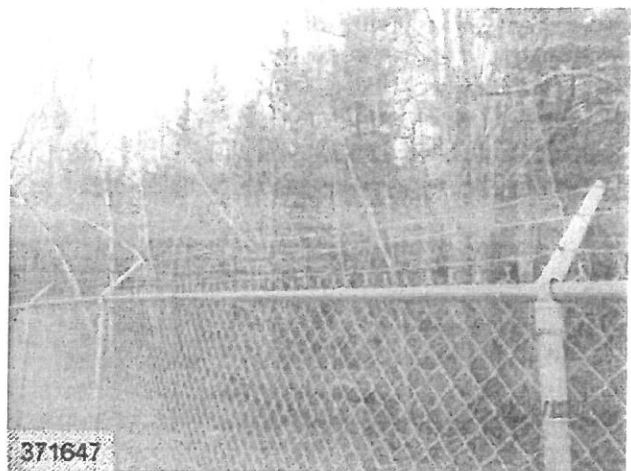
Overhead Power Lines to Site



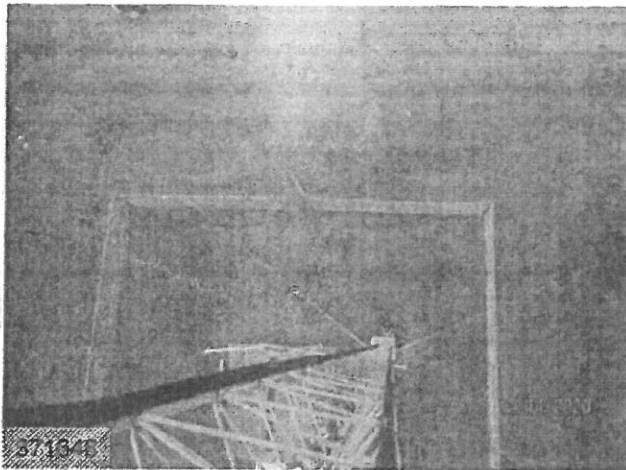
Generator



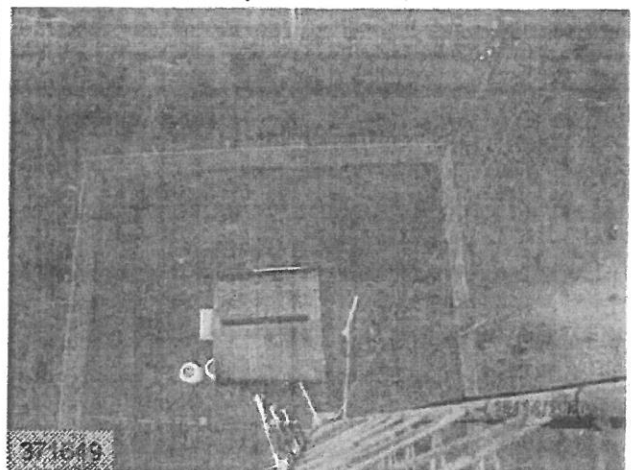
Anti-Climb Wire



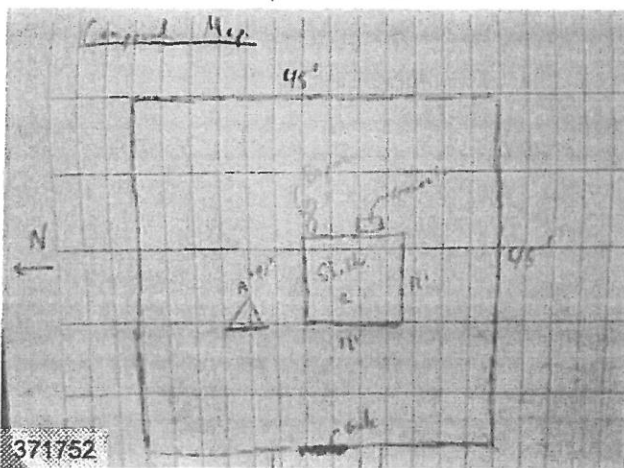
Compound Aerial Photo



Compound Aerial Photo



Compound Sketch



Site Deficiencies

Critical - Items may lead to collapse or failure of the structural system or antenna or pose a threat to the safety of personnel that might be on site

Moderate - Items or faults which do not have an immediate effect on the tower but if not corrected, will in time shorten the service life of the tower or its elements

Non-Critical - Items or faults relating to the general maintenance of the access road, gate, debris on-site, grounding

Site Deficiency	Condition	Description	Repair Description
Access Gate to Site	N/A		
Roadway to Site	Satisfactory		
Compound Fence	Satisfactory		
Compound	Satisfactory		
Environmental Issues	Satisfactory		
Shelters	Satisfactory		
Soil Erosion	Satisfactory		
Anchor Compounds	Non-Critical Repair	No anchor fences installed, no established anchor compounds Vegetation encroaching on anchors	Clear vegetation around anchor heads.

Comments - Site Deficiencies

Anchor Compounds - Description



Anchor Compounds - Description



Tower Deficiencies

Critical - Items may lead to collapse or failure of the structural system or antenna or pose a threat to the safety of personnel that might be on site

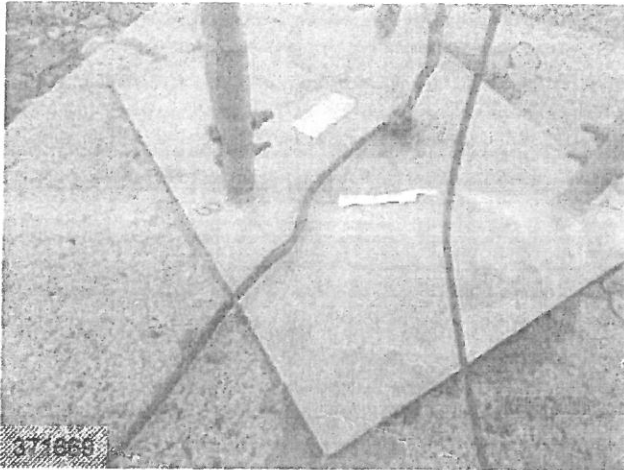
Moderate - Items or faults which do not have an immediate effect on the tower but if not corrected, will in time shorten the service life of the tower or its elements

Non-Critical - Items or faults relating to the general maintenance of the access road, gate, debris on-site, grounding

Item	Condition	Description	Repair Description
Foundation / Concrete	Satisfactory		
Grout Under Base	N/A		
Tower Base Grounding	Non-Critical Repair	Single ground lead attached to center pin at tower base.	Install (2) additional ground connections at tower base.
Weep Holes at Base	Moderate Repair	No weep holes at tower base.	Install weep holes at base of tower on all tower legs.
Guy Anchors & Hardware	Moderate Repair	*Soil & leaf litter build-up - all anchor heads *Vegetation/branches encroaching on anchors/hardware & guy wires *No ice clips - all guy wires *Wire A4 preform damaged	*Clear vegetation & regrade around anchor heads *Install ice clips on all preforms. *Remove and replace wire A4 preform.
Grounding at Anchors	Satisfactory		
Guy Wires & Obstructions	Moderate Repair	*Vegetation in contact with guy wires near anchors *Deteriorated galv with 100% Surface rust on G4 and G5 wires at tower side. *Irregularly twisted (criss-crossed) guy strands on A1 and A2.	*Clear vegetation from all guy paths near anchors *Recommend replacing G4 & G5 wires soon due to small wire strand size *Recommend replacing A1 & A2 wires due to twisted strands
Guy Attachments at Tower	Moderate Repair	*Heavily rusted cotter pins at all guy elevations. *No seizing on guy tails	Install seizing wire at all guy attachments. Replace rusted cotter pins.
Connection Bolts	Satisfactory		
Tower Members	Non-Critical Repair	Small areas of chipped galv with surface rust	Clean areas of corrosion and apply (2) coats of ZRC cold galvanization compound.
Safety Climb & Ladder/Pegs	N/A	No Safety Climb System present on tower.	Install new Safety Climb System on tower.
Paint	N/A		
Tower Reinforcement	N/A		
Transmission Lines	Non-Critical Repair	Several dead coax present on tower.	Remove unused/dead coax from tower to reduce loading.
Appurtenances	Non-Critical Repair	Initial corrosion on appurtenance mounting hardware throughout tower. Some hardware with initial pitting	Remove areas of corrosion and apply (2) coats of ZRC cold galvanization compound. Some of the worst hardware may need to be replaced
Aviation Lighting	N/A		
Lightning Rod	Non-Critical Repair	No lightning rod present on tower.	Recommend installing lightning rod to a height that exceeds all other appurtenances on tower.
Other			

Comments - Tower Deficiencies

Weep Holes at Base - Description



Guy Anchors & Hardware - Description



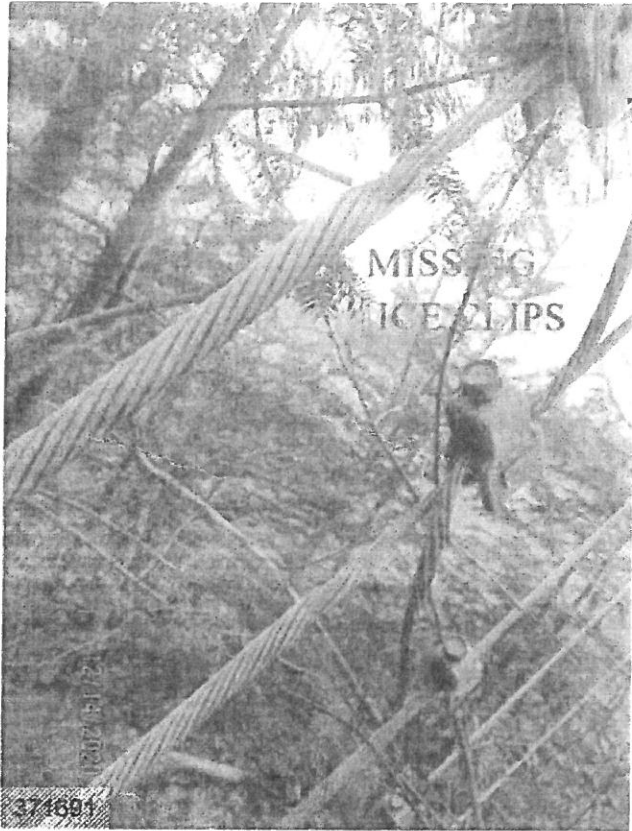
Guy Anchors & Hardware - Description



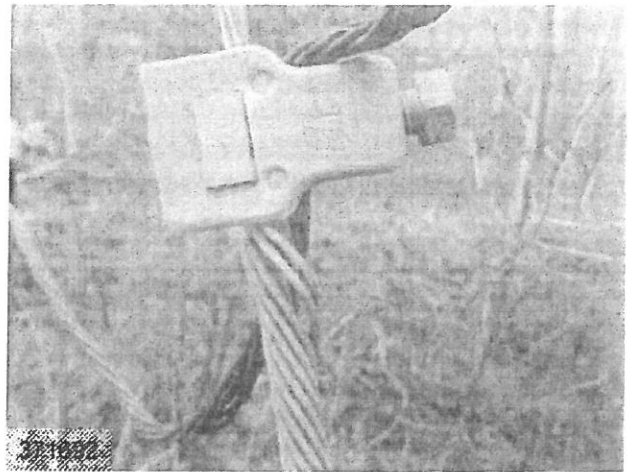
Guy Anchors & Hardware - Description



Guy Anchors & Hardware - Description



Guy Anchors & Hardware - Description



Guy Wires & Obstructions



Guy Wires & Obstructions



Guy Wires & Obstructions



Guy Wires & Obstructions - Description

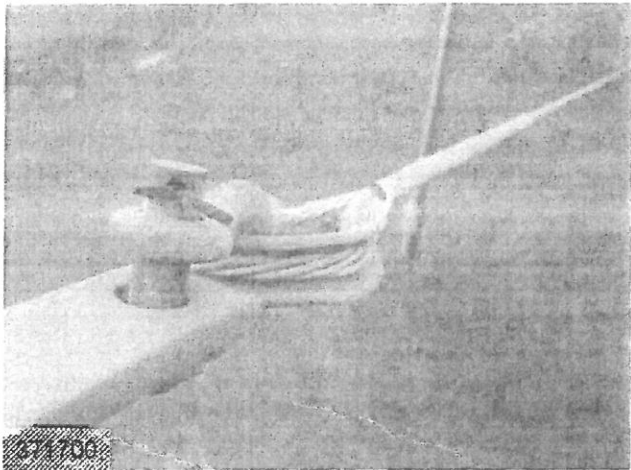
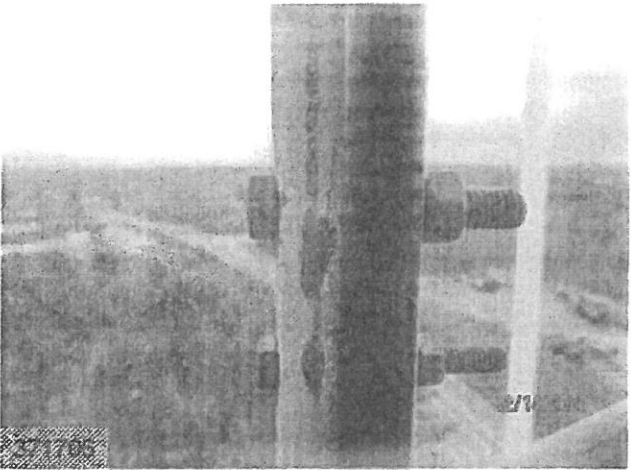
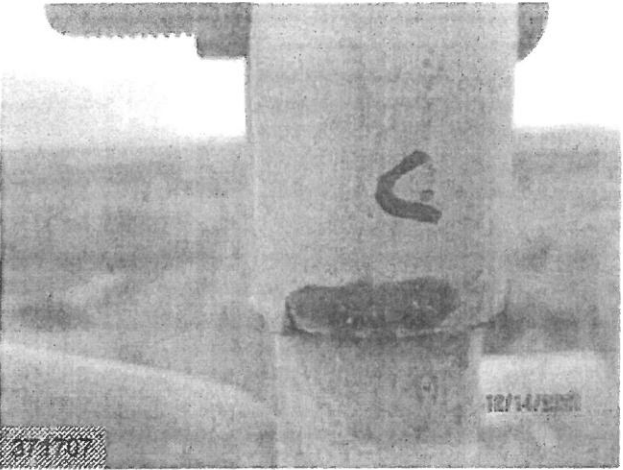


Guy Wires & Obstructions - Description

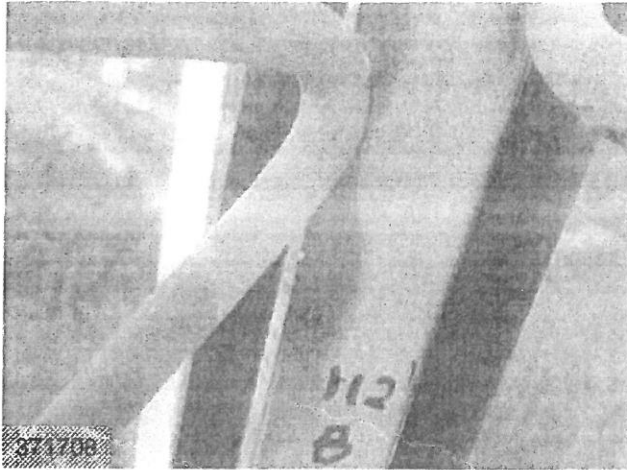


Guy Wires & Obstructions - Description

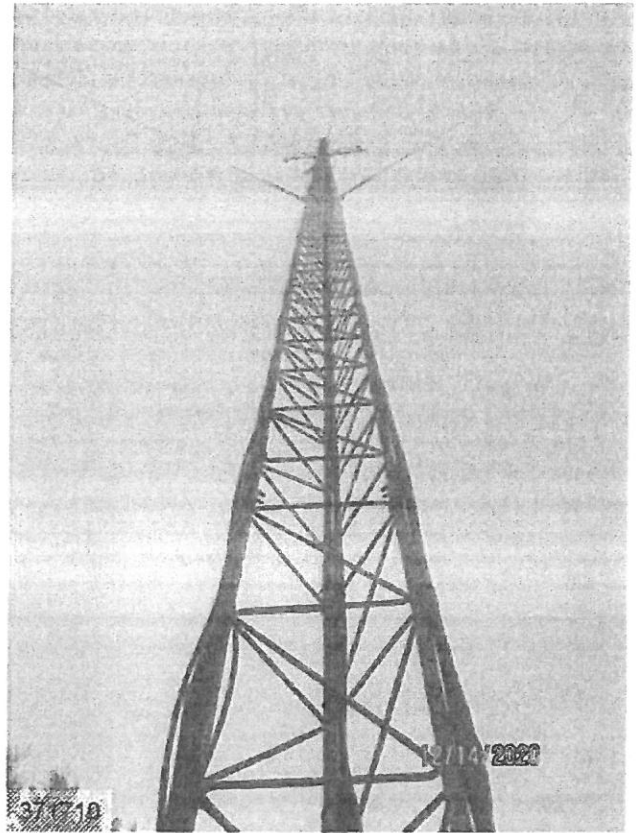


Guy Attachments at Tower - Description  371706	Guy Attachments at Tower - Description  371735
Tower Members - Description  371705	Tower Members - Description  371707

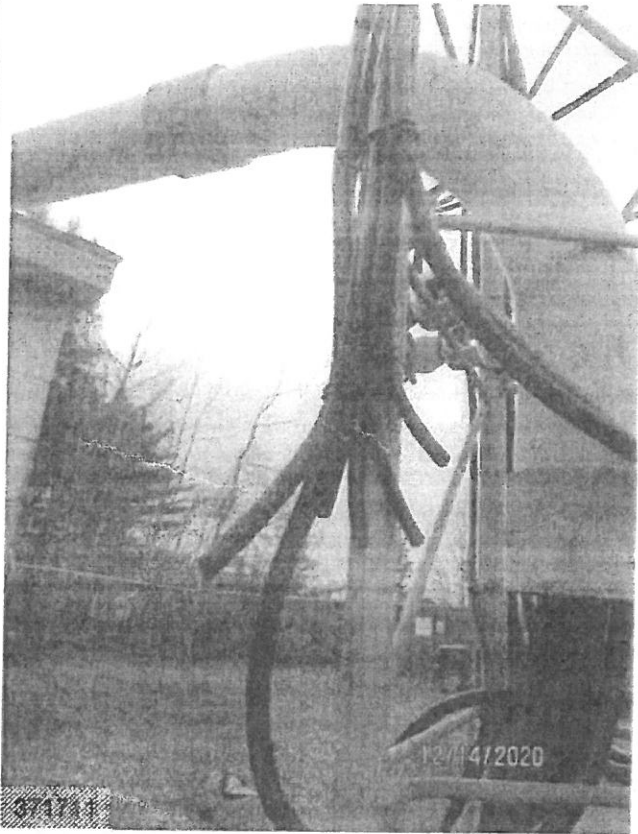
Tower Members - Description



Safety Climb & Ladder/Pegs - Description



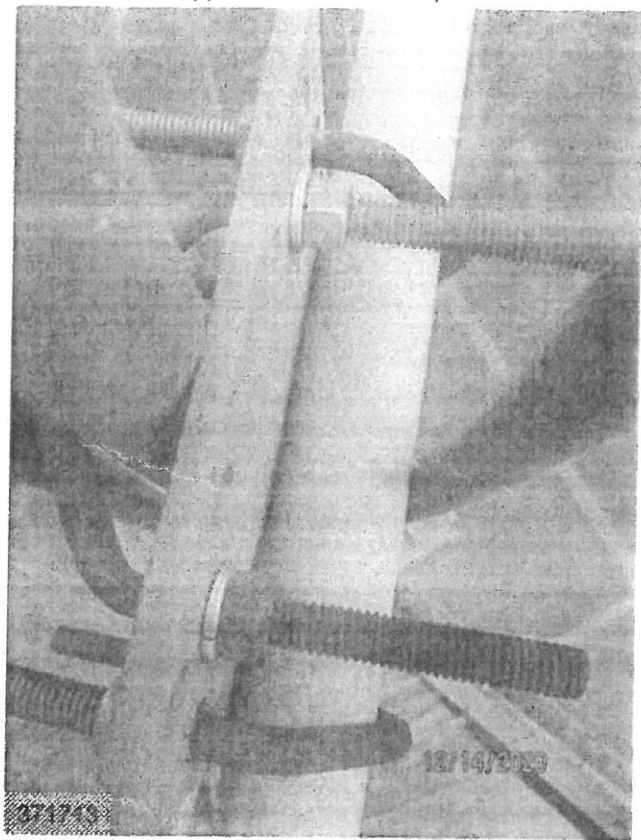
Transmission Lines - Description



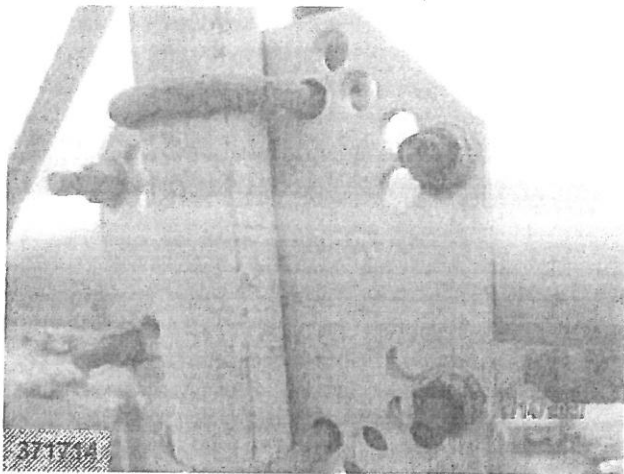
Transmission Lines - Description



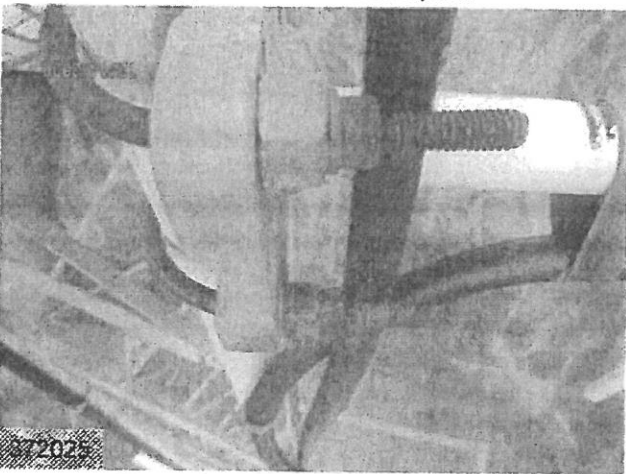
Appurtenances - Description



Appurtenances - Description



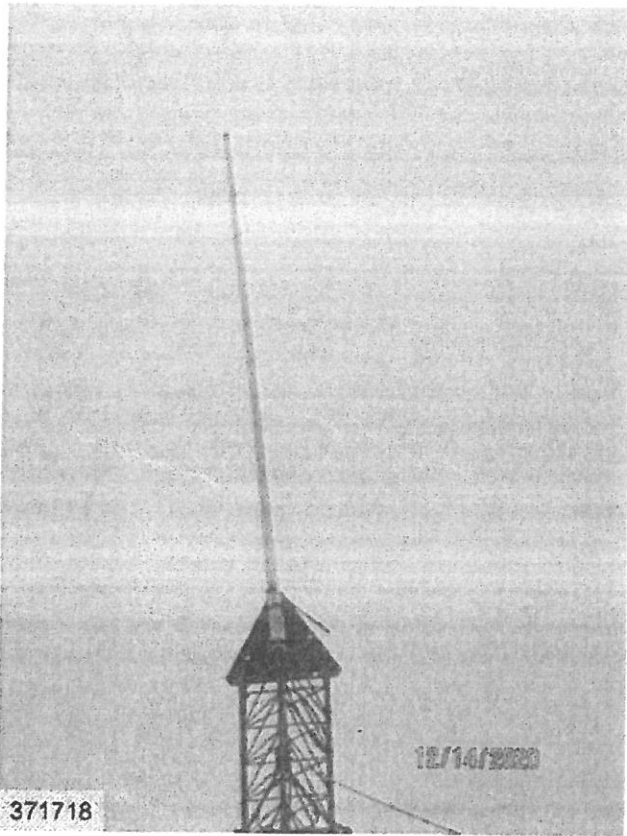
Appurtenances - Description



Lightning Rod - Description



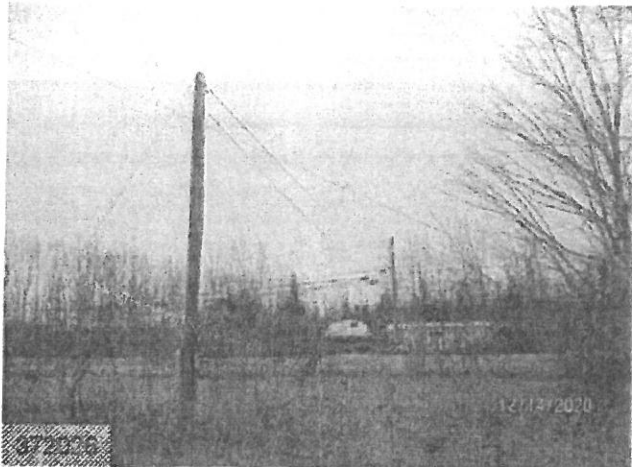
Lightning Rod - Description



Power & Telco Information

AC Power Routing	Overhead To Site	Telco Provider	Unknown
Power Company	Bangor Hydro Electric Co.	Telco provided via	Unknown
Overhead Pole #	104589 (Overhead Power routed to pole outside compound. Underground from pole to Shelter 1).		
Phase	Single Phase		
Max # of Meter Cans	1		
Meter Owner / Number	007197338		
Amperage (Amps)	200		

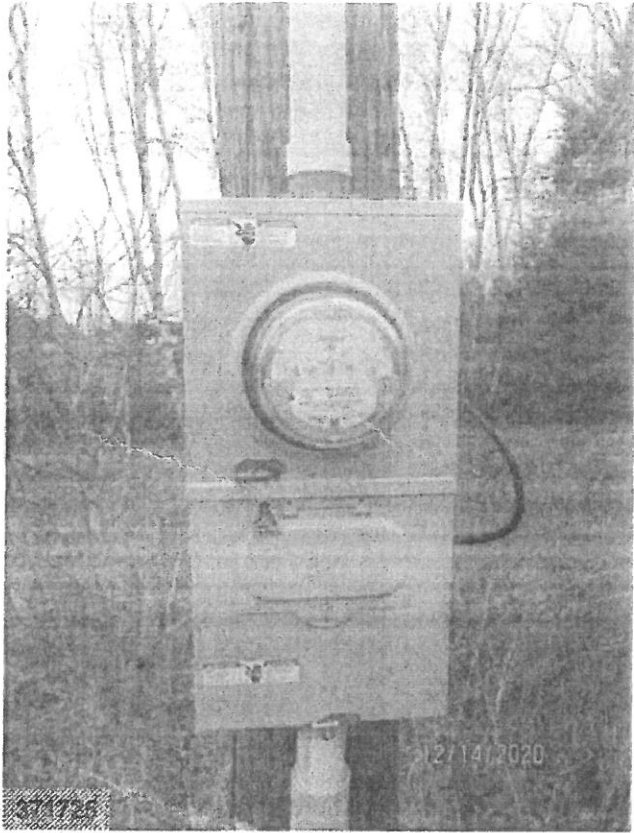
AC Power Routing



Overhead Pole #



Meter Owner / Number



P&T; Calculations & Guy Details

ONLY complete re-tensioning of guy wires if they are outside 7% - 15% of their Initial Tensions. If a re-tension is required, bring guy wires within 8% - 12% of their Initial Tensions.

Attach PDF or JPG of P&T Calculations.

P&T; Calcs & Guy Details	P&T; Calcs in Appendix
Quantity of Guy Wires Requiring Re-Gripping to Complete P&T;	0
Minimum 2" Adjustment Range for all Turnbuckles?	Yes
Total # of Anchors at Site	3
Qty of Anchors Encased in Concrete	0
Qty of Anchors Hand Dug	3
Was Water Encountered During Digging	Yes, 1 Guy Line
Coating on Anchors	Galvanized
External Galvanic Corrosion on Anchor Shaft	No
Did Condition of Anchors Vary	No Difference
General Condition of Anchors Between 0 - 12" B.G.	No Corrosion
General Condition of Anchors Between 12 - 24" B.G.	No corrosion
Did Soil Properties Vary Between Guy Lines	No Change in Soil
General Soil Type 12" B.G.	Organic

Field Notes

Crop and Attach all Field Notes

Field Notes Upload

Field Notes Upload

T. Linn - 11/11/20

TIA Inspection Station / 10.1.20
12/11/20 30°E, 11.1.20

Club Facilities: Rd

Look for: 11.1.20

Log 1. P. 11

FW = 11.625' c/c. Log 1 = 1.25"

Tower height: 180'
Foundation height: 0.5'
Total height: 180.5'

100' x 20' Area Road, Dirt, 2WD

893 Banger Rd, Ellsworth, ME

371745

Field Notes Upload

Line (ft)	Size	Temp	81'	Temp	Temp
1	1/4"	9"	36.5'	720	30°F
2	1/4"	6"	76"	780	
3	1/4"	7.5"	107"	760	
4	1/4"	5.5"	115"	740	
5	1/4"	7"	175"	740	
6.1	"	11"	"	780	
2		9"		840	
3		10"		700	
4		5.5"		760	
5		10.5"		700	
6.1		10"		800	
2		5"		720	
3		5.5"		740	
4		6"		800	
5		7.5"		660	

Field Notes Upload

TIA Trunk

- No flying birds
- No ground tower growth
- No ground tower cover
- Vegetation all dead
- Trees in center with bare leaves
- Buried under A
- No falling devices on glass helter
- No S. 1000 (C)
- No T.B. lamp case
- No force ever all day
- No ice chips all winter
- No A.1. splayed head and eye
- No A.1.2 damaged

just on legs

170. B kg (SP/ke)

162 c 103

150' B log (spruce)

Mo. B. S. (Price)

112: B 100

$$110^\circ \text{ } \angle \text{PO} (54^\circ) < \angle \text{O} (61^\circ)$$

100' C 105 (52100)

A (5210)

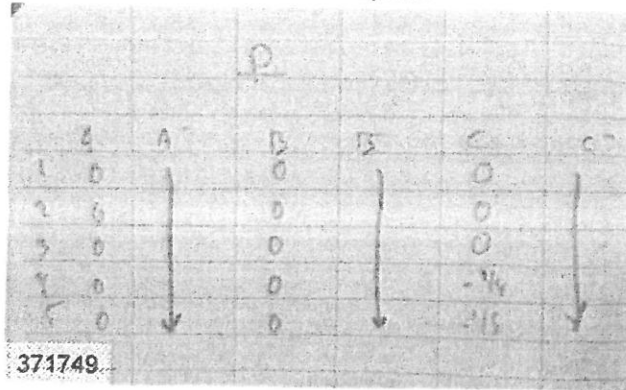
Field Notes Upload

721-601

- No social media or govt. website
- Inst. rather than govt. officials
- Focus on app hardware features than
- Tech. vs. govt. officials

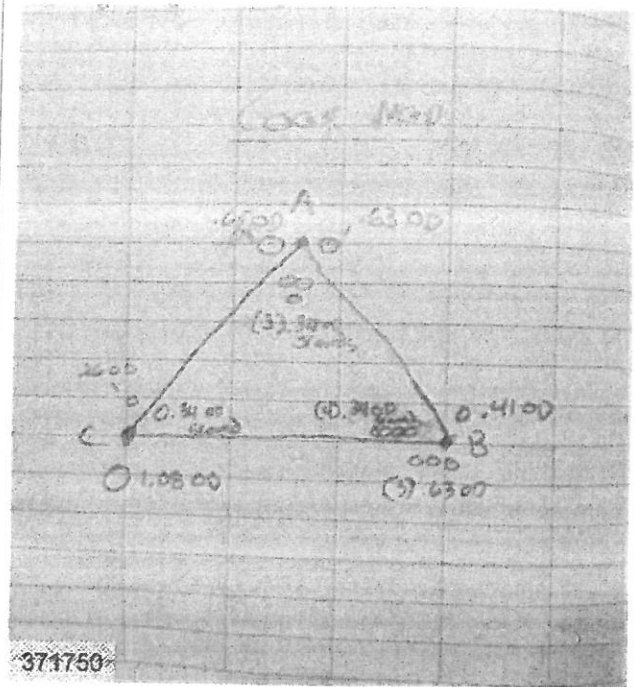
371748

Field Notes Upload



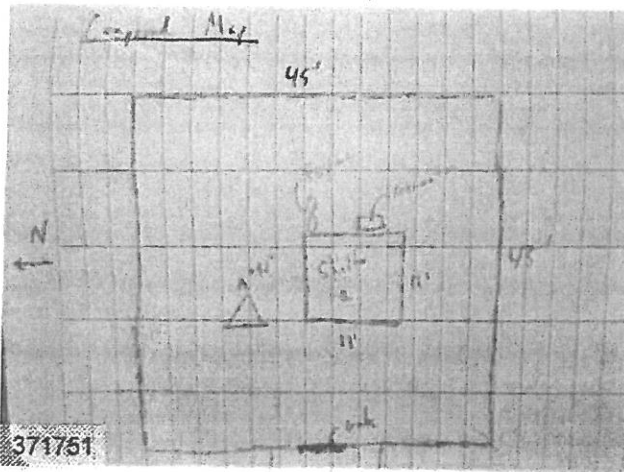
371749

Field Notes Upload



371750

Field Notes Upload



371751

Addendums

#	Attribute Key	File Name
Addendum 0	P&T; Calcs & Guy Details	Ellsworth ME_P&T; Calcs.pdf

Addendum 0

Attribute Key: P&T; Calcs & Guy Details

Value: P&T; Calcs in Appendix

Filename: Ellsworth ME_P&T; Calcs.pdf

2 Pages

1st Tower Twist & Alignment Summary

Site Name: Ellsworth ME
 Site ID: 180'
 Tower Height: Tiltson
 Client: Stephen Kasanovich
 SC Lead:

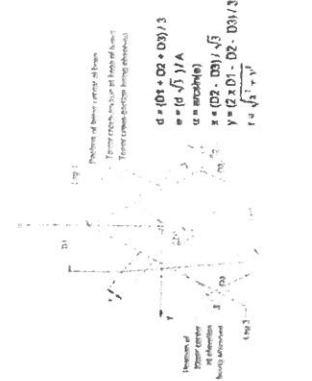
Date at Site: December 14, 2020

Field Comments:

OBSERVED LEG DISPLACEMENTS										4-SIDED TOWERS				CALCULATED TWIST			CALCULATED OUT-OF-PLUMB		
Tower Shape (0 = Tri) (1 = Sq)	Mast Elev. (Finish with 0 at bottom) (ft)	Torsion (ft) (L = left) (R = right)	Face Width (ft)	Leg Width (ft)	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15
0	175.00	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	145.00	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	107.00	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	76.00	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	36.50	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	N	16.63	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: For "Mast Elevation", add Elevation twice for Torque Arms to get other cells to copy property AND adjust Distance BW Elevations. Add a ZERO after lowest elevation.

CALCULATED TWIST (DEGREES)										CALCULATED OUT-OF-PLUMB (INCHES)									
Data Point	Mast Elev. (ft)	Torsion (ft) (L = left) (R = right)	Distance BW Elevations	Allowable Twist BW Elev	Calculated Twist BW Elev	Allowable Twist from Ground to Elev	Calculated Twist from Ground to Elev	PASS / FAIL	Allowable Out- of-Plumb BW Elev	Calculated Out- of-Plumb BW Elev	Allowable Out- of-Plumb from Ground to Elev	Calculated Out- of-Plumb from Ground to Elev	PASS / FAIL						
0	175.00	N	30.00	1.50	0.00	5.00	0.32	PASS	0.80	0.00	5.25	0.11	PASS						
0	145.00	N	36.00	1.90	0.32	5.00	0.32	PASS	1.14	0.11	4.35	0.11	PASS						
0	107.00	N	31.00	1.55	0.00	5.00	0.00	PASS	0.83	0.00	3.21	0.00	PASS						
0	76.00	N	36.50	1.83	0.00	3.80	0.00	PASS	1.19	0.00	2.28	0.00	PASS						
0	36.50	N	36.50	1.83	0.00	1.83	0.00	PASS	1.10	0.00	1.10	0.00	PASS						
0	0.00	N																	



$$d = (D1 + D2 + D3) / 3$$

$$\alpha = (d \cdot \sqrt{3}) / A$$

$$x = (D2 - D3) / \sqrt{3}$$

$$y = (2 \cdot D1 - D2 - D3) / 3$$

$$r = \sqrt{x^2 + y^2}$$

1st

Tension Adjustment Summary

Site Name:

Ellsworth ME

Site ID:

180'

Tower Height:

Tilson

Client:

Stephen Kasanovich

SC Lead:

Date at Site:

December 14, 2020

Field Comments:

		INPUT DATA										REQUIRED TENSION / TEMP							
Guy Line (1,2,3 OR 4)	Torsion Resistor (N = no) (L = left) (R = right)	Meat Elw, Top Down (ft)	Anchor Distance (ft)	Anchor Rise (+ve = drop) (ft)	Torque Arm Spread (ft)	Computed Guy Length (ft)	Measured Tumbuckle Gap (in)	Tumbuckle Length (in)	Guy Wire Size (in)	Guy Wire Type	Initial Tension Setting (% Breaking Strength)	Temp of Wire (deg F)	Measured Tension (lbs)	REQUIRED Temperature Adjusted Tension (lbs)	Initial Tensions (%)	REQUIRED Temperature Adjusted Tension Range (lbs) (+/- 0.1 x Temp Adjusted Tension)	PASS / FAIL		
1	N	175.00	82	0	0	183.26	7.00	12.00	1/4	EHS	10	30.0	740	593	10.68%	624 762	PASS		
1	N	145.00	82	0	0	166.56	5.50	12.00	1/4	EHS	10	30.0	740	703	10.53%	632 773	PASS		
1	N	107.00	82	0	0	134.61	7.50	12.00	1/4	EHS	10	30.0	760	723	10.52%	650 785	PASS		
1	N	76.00	82	0	0	111.60	6.00	12.00	1/4	EHS	10	30.0	780	749	10.42%	674 824	PASS		
1	N	36.50	82	0	0	89.78	9.00	12.00	1/4	EHS	10	30.0	820	785	10.32%	715 874	PASS		
1	N	0.00	82	0	0	82.00								#DIV/0!	#DIV/0!	#DIV/0!	PASS		
2	N	175.00	80	-1	0	193.33	10.50	12.00	1/4	EHS	10	30.0	700	594	10.09%	624 763	PASS		
2	N	145.00	80	-1	0	166.48	8.50	12.00	1/4	EHS	10	30.0	760	703	10.80%	633 774	PASS		
2	N	107.00	80	-1	0	134.40	10.00	12.00	1/4	EHS	10	30.0	700	723	9.68%	651 795	PASS		
2	N	76.00	80	-1	0	111.04	9.00	12.00	1/4	EHS	10	30.0	840	749	11.22%	674 824	FAIL		
2	N	36.50	80	-1	0	88.35	11.00	12.00	1/4	EHS	10	30.0	780	785	9.81%	715 874	PASS		
2	N	0.00	80	-1	0	80.01								#DIV/0!	#DIV/0!	#DIV/0!	PASS		
3	N	175.00	84	-3	0	196.82	7.50	12.00	1/4	EHS	10	30.0	660	700	9.43%	630 770	PASS		
3	N	145.00	84	-3	0	170.18	6.00	12.00	1/4	EHS	10	30.0	600	710	11.27%	639 781	FAIL		
3	N	107.00	84	-3	0	136.41	8.50	12.00	1/4	EHS	10	30.0	740	730	10.13%	657 803	PASS		
3	N	76.00	84	-3	0	115.31	9.00	12.00	1/4	EHS	10	30.0	720	766	9.53%	680 831	PASS		
3	N	36.50	84	-3	0	92.82	10.00	12.00	1/4	EHS	10	30.0	800	789	10.02%	719 878	PASS		
3	N	0.00	84	-3	0	84.06								#DIV/0!	#DIV/0!	#DIV/0!	PASS		