

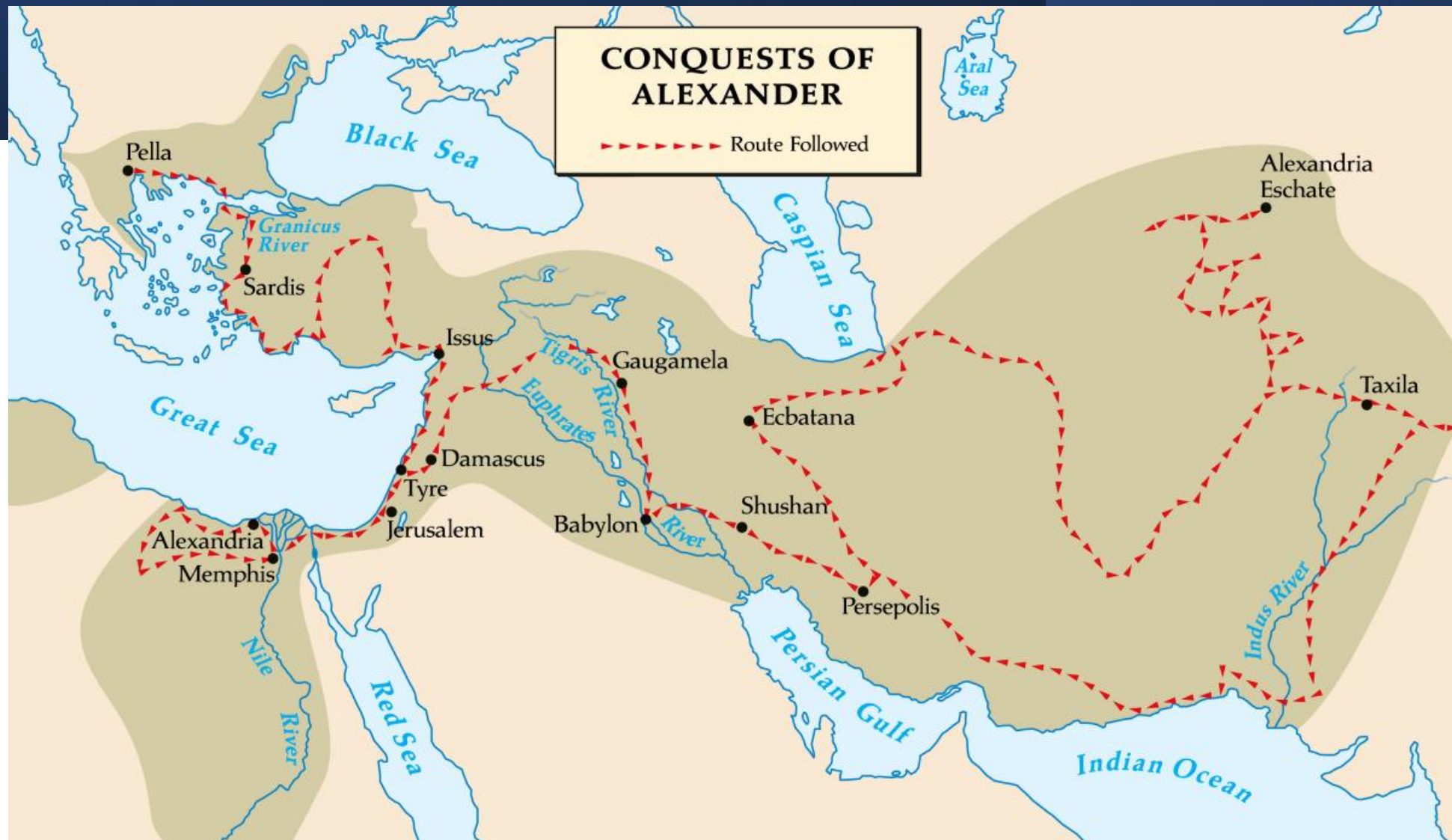
PRECISION



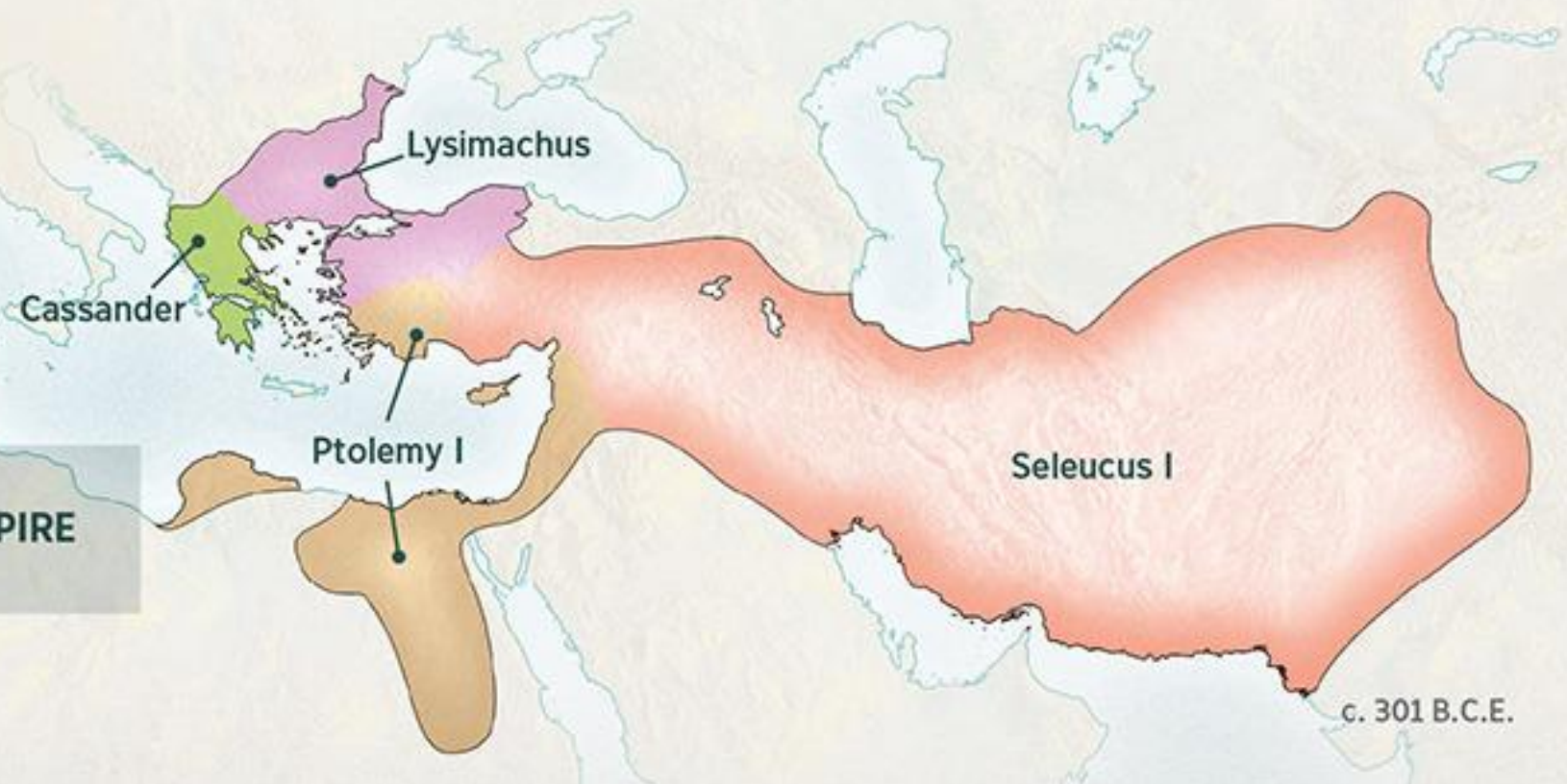
Succession Planning

CONQUESTS OF ALEXANDER

----- Route Followed



BREAKUP OF ALEXANDER'S EMPIRE



Why Plan

- Promotion
- Relocation
- Retirement

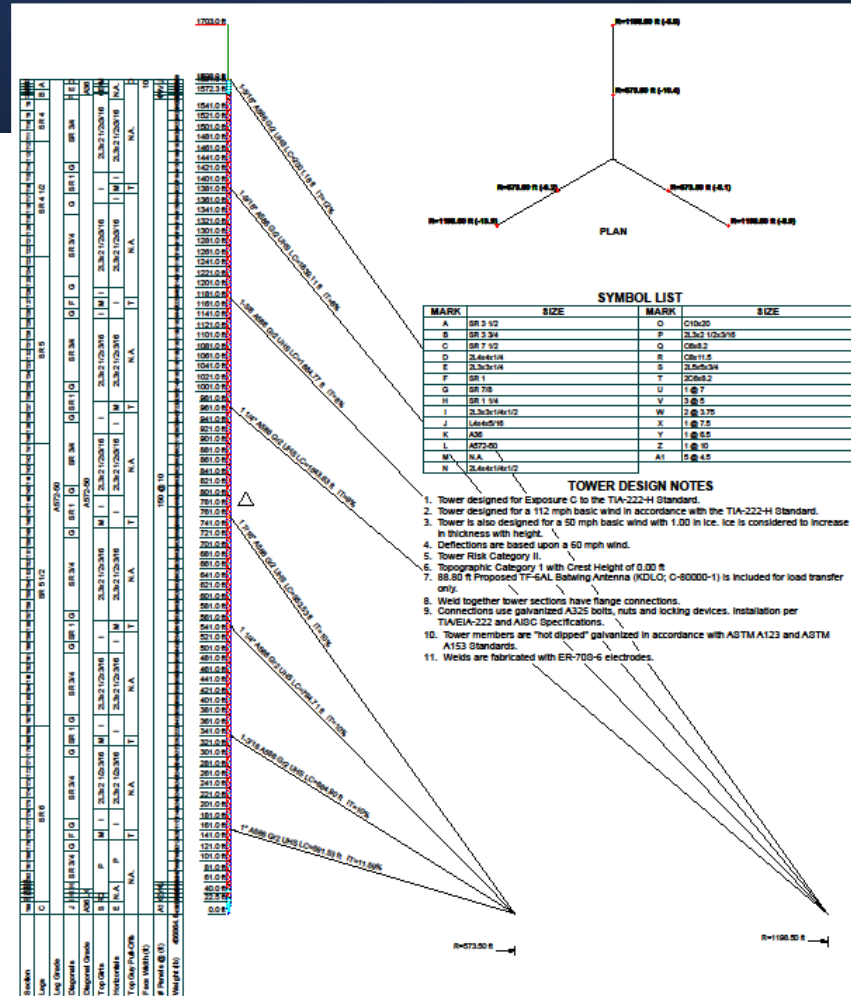
Industry Trends

- Retirees have tower history “in their heads”
- Replacements are coming from I.T. personnel

Critical Data

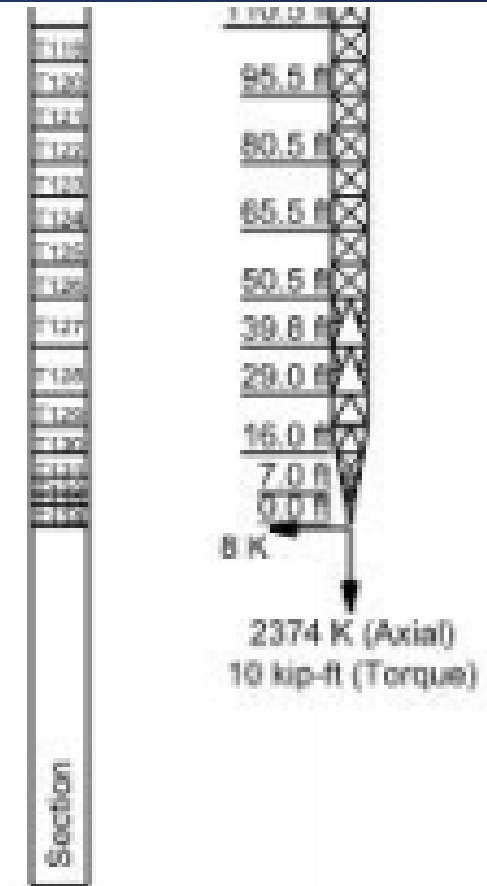
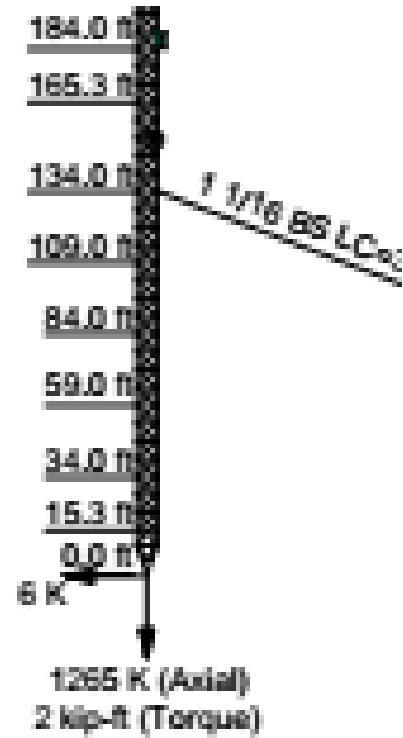
➤ What would you want to know?

Critical Data: Tower Steel Prints

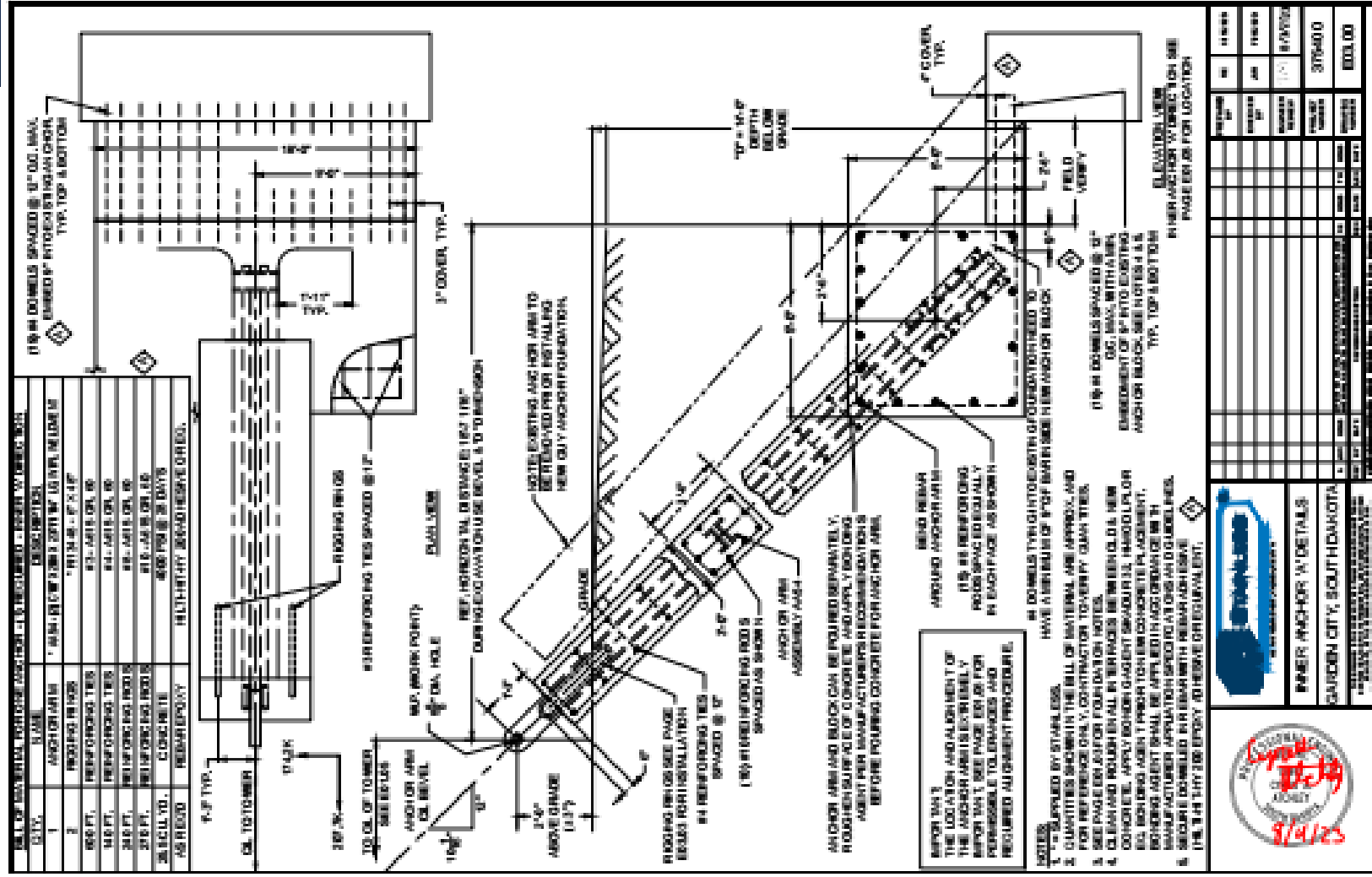


Critical Data: Tower Steel Prints

Section	SR 104	SR 105	SR 106	SR 107	SR 108	SR 109	SR 110
Legs	SR 5 1/4						
Leg Grade							
Diagonals	SR 7/8	SR 1	SR 1	SR 1	SR 1	SR 1	SR 1
Diagonal Grade							
Top Girts	P 2x0.12	N.A.	K	P 2x0.12	N.A.	K	P 2x0.12
Horizontal	N.A.	P 2x0.12	K	P 2x0.12	K	P 2x0.12	P 2x0.12
Sec. Horizontals	N.A.						
Top Guy Pull-Offs	N.A.						
Face Width (ft)							
# Panels @ (ft)	Edn						
Weight (K)	218.5	14.4	14.4	14.4	14.4	14.4	14.4



Critical Data: Foundation Prints



Critical Data: GeoTechnical Soil Analysis

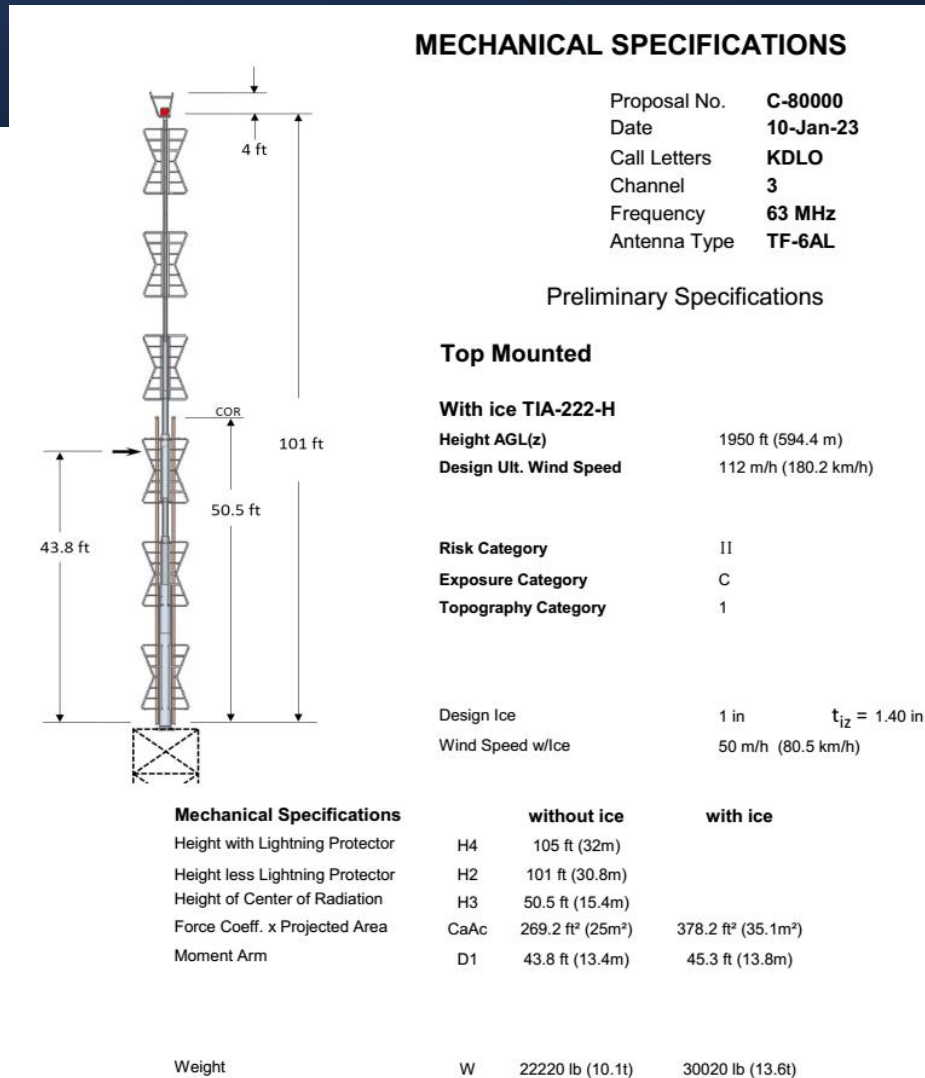
SUMMARY OF LABORATORY TEST DATA								COMPRESSION TEST				OTHER TESTS Percent Passing No. 200 Sieve
BORING NO.	DEPTH IN FEET	TYPE OF MATERIAL	MOISTURE CONTENT %	DRY DENSITY pcf	ATTERBERG LIMITS			COMPRESSION psi	STRAIN %	LATERAL PRESSURE psi	TYPE FAILURE	
					LL	PL	PI					
1	4-6	Firm tan silty clay with ferrous and calcareous nodules	16	111	26	14	12	0.94	9.6	0	Split	
	8-10	Stiff tan silty clay with ferrous and calcareous nodules	17	113				1.65	9.7	9	Split	
2	8-10	Soft tan clay with ferrous and calcareous nodules	20	107				0.36	9.9	9	Bulge	
	13-15	Tan silty sand										10
3	4-6	Firm tan clay with ferrous and calcareous nodules	22	99				0.61	9.7	5	Split	
	8-10	Stiff tan clay with ferrous and calcareous nodules	15	116				1.95	9.7	0	Bulge	
4	2-4	Stiff brown silty clay with shell fragments, ferrous and calcareous nodules	20	103	36	17	19	1.30	9.7	0	Split	
	6-8	Stiff tan clay with ferrous and calcareous nodules	18	111				1.06	9.9	0	Split	
5	6-8	Soft tan clay with ferrous and calcareous nodules	20	105				0.42	7.7	7	Split	
	13-15	Tan silty clay slightly sandy with ferrous & calcareous nodules			20	14	6					

Critical Data: Tower Loading Chart

Table 2 – Antenna Loads

MCL (ft)	ACL (ft)	QTY.	Antenna/Appurtenance Description	Carrier	QTY.	TX-Lines	Notes
EXISTING							
1292.5	1292.5	1	Dielectric 85 ft TFU-27 ETT/ VP-R 4C330 TV Antenna	Unknown	1	6-1/8"	2
1125.0	1125.0	1	ERI 100 ft 12-Bay FM Broadcast Antenna	WUT85	1	3"	
1056.0	1056.0	1	5' Dia x 4' ENG	KGBT	1	1-5/8"	
		1	6 ft Platform Mount		1	3/4"	
980.0	980.0	1	110 ft Jampro 12-Bay FM Broadcast Antenna	Univision	1	3"	
920.0	920.0	1	6 ft Platform Mount	KGBT	1 1	7/8" 3/4"	
901.0	901.0	2	6 ft Pipe Mount	Unknown	-	-	
532.5	532.5	1	70 ft Nicom BKG77 8-Bay FM Broadcast Antenna	Univision	1	3-1/8"	
465.0	465.0	1	Radiowaves 102553-6 Grid Dish	KGBT	1	5/8"	
455.0	455.0	1	Unknown 20 ft Dipole	Univision	1	1-5/8"	
		2	12" Standoff				
328.0	328.0	1	Rohn Mark 8 ft Grid Dish		1	7/8"	
261.0	261.0	1	Scala 6 ft Grid Dish		1	7/8"	

Critical Data: Antenna/Equipment Drawings



Critical Data: Structural Analysis

5.0 SUMMARY OF RESULTS

The following tables summarize the location and utilization percentage of available capacity for each component of the tower. With consideration to the appropriate safety factors, 100% represents the full capacity of the component. Percentages below 100% indicate available capacity and conformance of the component. Percentages above 100% indicate an overstressed situation requiring structural modification to ensure conformance with the applicable codes and standards.

Based on our analysis results, the **tower IS NOT within capacity** to support the loads under the current loading scenario.

Table 3 – Tower Section Capacity

Component Type	% Capacity	Pass / Fail
Legs	179.5	Fail
Bracings	127.7	Fail
Guys	94.3	Pass

Critical Data: Guy Tension vs Temperature

	0 DEG. F		20 DEG. F		40 DEG. F		60 DEG. F		80 DEG. F		100 DEG. F	
	ERECT. TENSION (LBS)	INTER- CEPT (FT)	ERECT. TENSION (LBS)	INTER- CEPT (FT)	ERECT. TENSION (LBS)	INTER- CEPT (FT)	ERECT. TENSION (LBS)	INTER- CEPT (FT)	ERECT. TENSION (LBS)	INTER- CEPT (FT)	ERECT. TENSION (LBS)	INTER- CEPT (FT)
1A	20343	17.7	18935	19.0	17587	20.5	16300	22.1	15102	23.8	13984	25.7
2A	23776	27.0	22382	28.7	21058	30.5	19800	32.4	18642	34.4	17556	36.4
3A	25073	39.8	24014	41.5	22995	43.3	22000	45.2	21081	47.1	20189	49.1
4A	31774	58.1	30835	59.8	29921	61.5	29000	63.4	28166	65.2	27327	67.1
5A	21222	171.8	20734	175.6	20269	179.4	19800	183.4	19402	187.0	18998	190.7
6A	22439	229.3	22056	232.9	21688	236.6	21300	240.6	20990	243.8	20660	247.4
7A	29037	265.5	28594	269.2	28164	273.0	27700	277.2	27347	280.4	26958	284.1
8A	29360	223.0	28847	226.7	28347	230.4	27800	234.6	27388	237.8	26928	241.6

Critical Data: Guy Tension vs Temperature

<u>QUAN</u>	<u>GUY and STATION</u>	<u>LENGTH (ft)</u>	<u>STRAND SIZE (inches)</u>	<u>UTS (lbs)</u>	<u>FABR. TENSION (lbs)</u>	<u>WT. PER SEGMENT (lbs)</u>
1	7A2	1835.67	1 9/16" A586 GR2	346000	30900	9883
1	7B2	1838.26	1 9/16" A586 GR2	346000	30900	9896
1	7C2	1842.06	1 9/16" A586 GR2	346000	31000	9916

Critical Data: Tennent Documentation

- Contract/Agreement
- Equipment Drawings
- Emergency Contact Information/Shut Down

Supporting Data: Physical Inspection Report

WLNS Transmitter Tower

Okemos, MI

Physical Inspection Report

5/7/2014



Photograph 37: Displays an angle that was welded to the tower and cut to allow the line to pass.



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***Photograph 38:** Old paint that was not cleaned off during last tower painting was visible on the inside gusset plate on the west leg in the first white color band from the bottom.

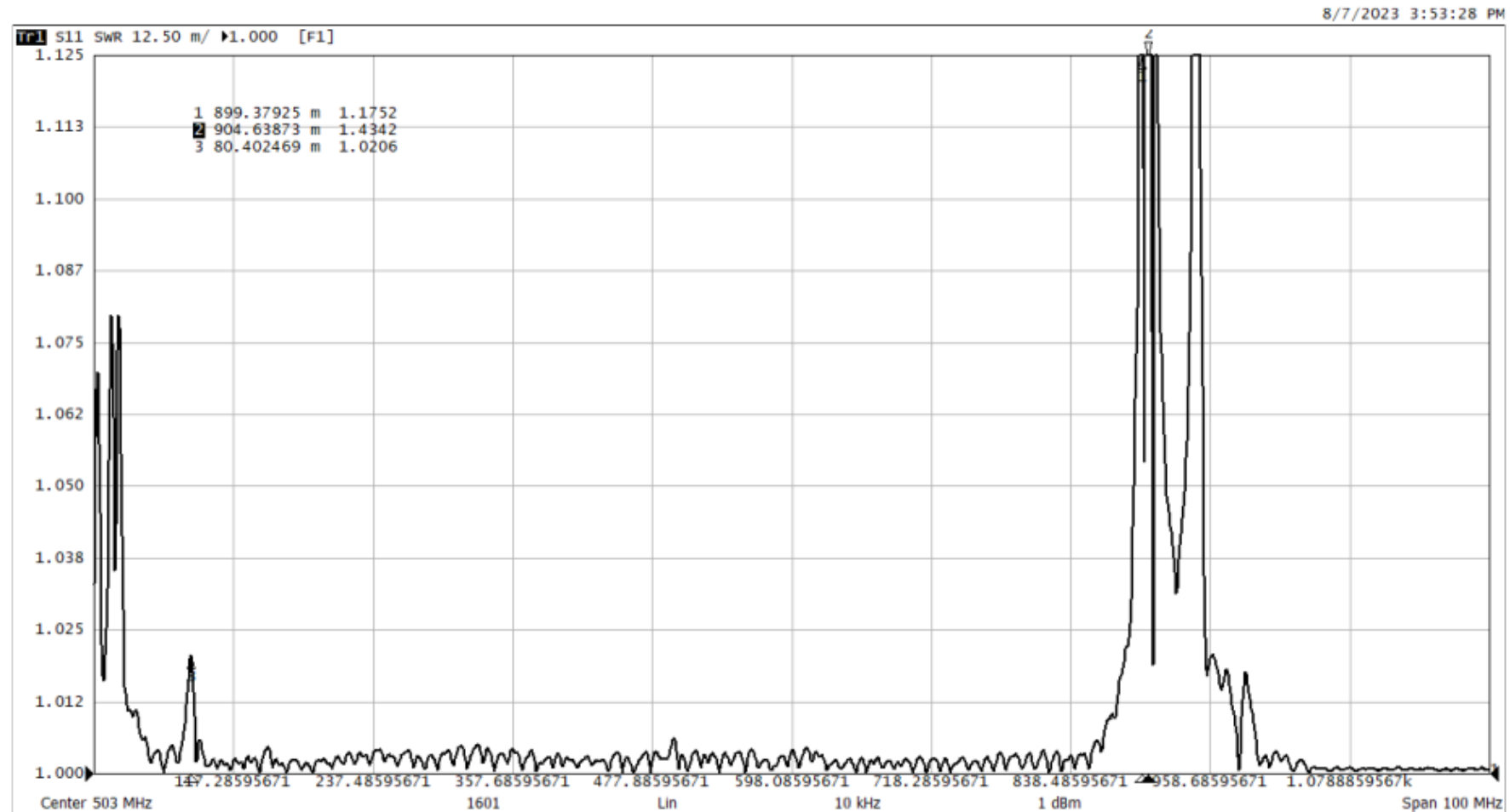


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Recommendations

- The fractured paint on the bolt assembly usually means the bolt is not tightened sufficiently.
➤ **Ref: photo 21**
- Tighten horizontal support bolts in the top section of the tower on the NW face.
➤ **Ref: photo 26**
- The guides that secure and align the fall restraint system (safety climb cable) should be replaced. A loose cable can damage paint and components in high winds
➤ **Ref: Photos 34 through 36**
- Clean of the chipping paint in the 1st white color band on the inside of the west leg gusset plate and apply a new coat of paint.
➤ **Ref: Photo 38**
- Fill the open hole of the left east level six anchor pad with a no shrink concrete patch mix and coat with a sealant.
➤ **Ref: Photo 44**
- Re connect or replace ground wires to the ground rods, stranded wire is a more durable replacement and a better conductor. Guy wire movement and vibrations work solid wire to the breaking point.
➤ **Ref: Photos 45 through 50**
- Replace broken seal tight conduit to the top east leg side marker and add weather resistant fasteners to secure the new conduit in place.
➤ **Ref: Photos 55 through 59**
- An ice shield is recommended for the microwave antenna.
➤ **Ref: Photos 72 and 73**
- WLNS should consider removing the unused reflector from the tower to reduce loading.
➤ **Ref: Photo 75**
- Secure the Helix flexible transmission line with weather resistant fasteners.
➤ **Ref: Photo 38**
- Add ¼ x 20 hardware to two 4/16" hanger gates.
➤ **Ref: Photos 82 and 83**

Supporting Data: Electrical Inspection



Supporting Data: Vendor Contracts

- Proposals
- Purchase Orders
- Job Completions

Supporting Data: Internal Documents

- Equipment Manuals/Part & Serial Numbers
- Lighting Tests/Filings
- Air Pressure
- Nominal VSWR

Supporting Data: Head Knowledge

- IP Addresses/Websites/Passwords
- Service Providers
- Hardcopy Filing

Tools

- Enterprise Resource Planning
- Outsource
- Do SOMETHING

Tools

 Power Apps | InspectionApp 

 Share 

CH

 KLOD56 - photoLoaded Online Version: 1.0.0.66

Dashboard

Office

Compound

Guy Wires >

Refresh Dashboard  Refresh

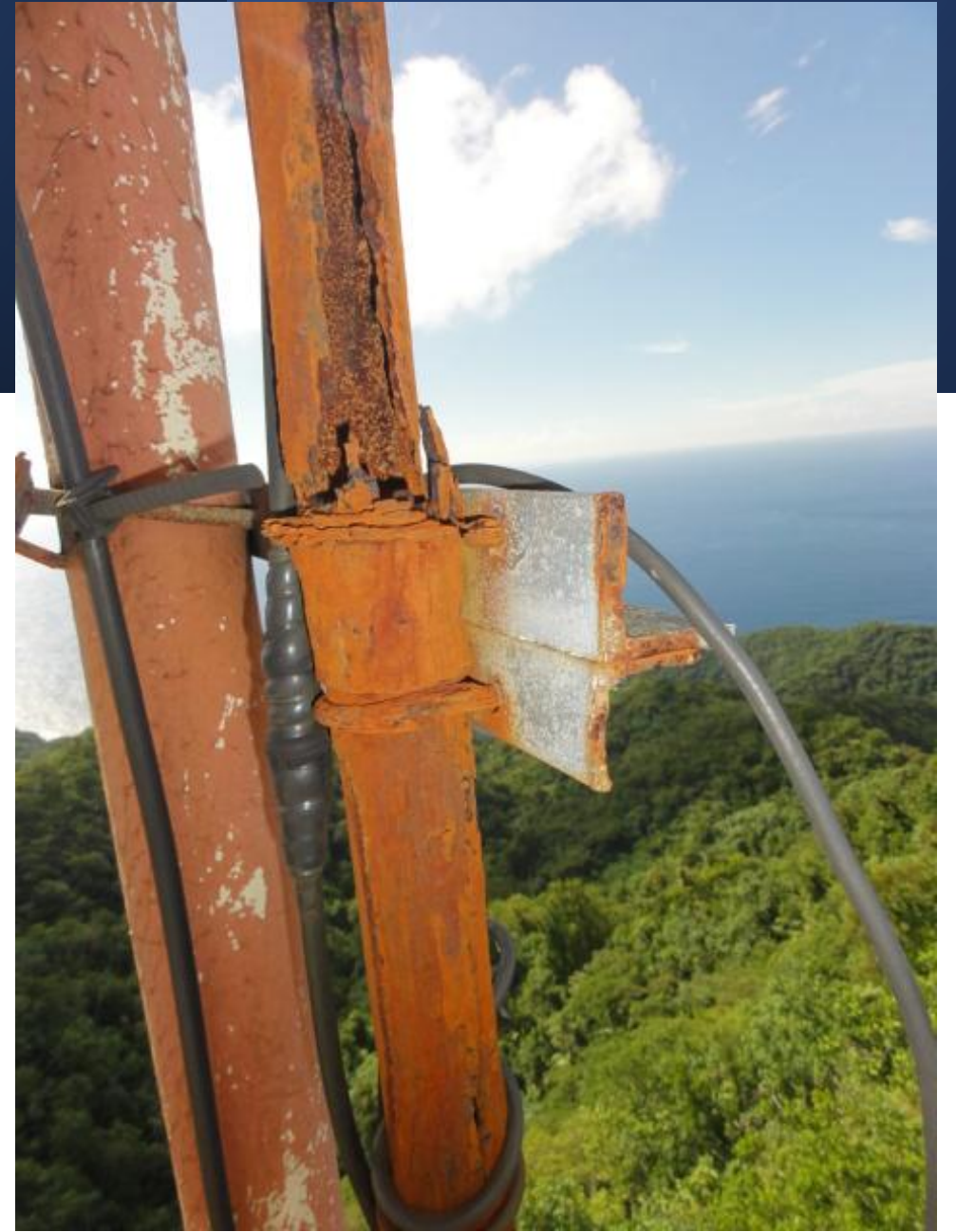
Chapter Name	Required Items	Missing Items	Required Photos	Missing Photos
Compound	15	12	17	17
Guy Wires	45	42	11	0
Alignment & Tensions	3	0	2	2
Structure	56	51	5	5
Elevator	25	15	7	7
A.Broadcast Systems	29	25	13	13
B.Secondary System	29	24	13	13
Lighting	10	8	11	11
Paint	7	5	5	5
Safety Climb Cable	6	5	4	4
Site Signage	9	9	6	6

Tools: Do SOMETHING

📁 Ron's Way Cool Stuff	📁 A Prints	5/30/2024 12:07 PM	File folder
📁 TowerData	📁 B Contracts	5/30/2024 12:06 PM	File folder
📁 A Prints	📁 C Reports	5/30/2024 12:07 PM	File folder
📁 01 Tower Steel Prints	📁 D Contacts	5/30/2024 12:08 PM	File folder
📁 02 Tower Foundation Prints			
📁 03 GeoTech Report			
📁 04 Tower Loading Chart			
📁 05 Structural Analyses			
📁 06 Guy Tensions			
📁 07 Antenna Drawings			
📁 08 Equipment Manuals			
📁 B Contracts			
📁 01 Tennents			
📁 02 Land Leases			
📁 C Reports			
📁 01 Physical Inspections			
📁 02 Electrial Inspections			
📁 D Contacts			
📁 01 Vendor List			
📁 02 IPaddresses			

Questions

- Succession Planning?
- Any other tower questions?



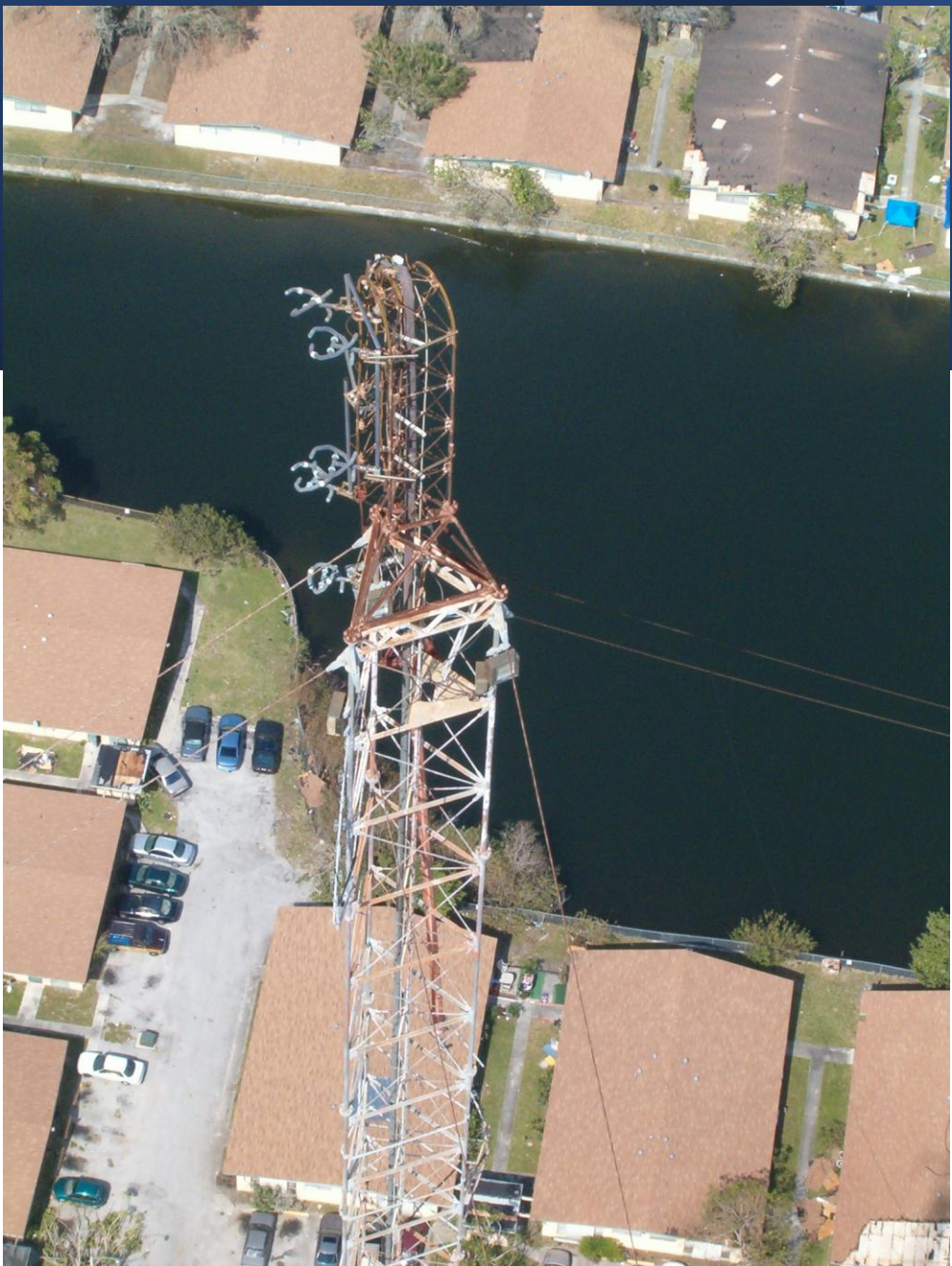






















Thank You

Ron

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