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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS

Customers with a Daily Pickup

Your driver will pickup your shipment(s) as usual.

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Take your package to any location of The UPS Store®, UPS Access Point™ location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.

Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
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SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p>PATRICIA NOWAK 508 265 5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER, MA 02379</p> <p>SHIP TO: MELANIE A. BACHMAN 8608272935 CONNECTICUT SITING COUNCIL EXECUTIVE DIRECTOR TEN FRANKLIN SQUARE NEW BRITAIN CT 06051-2655</p>	<p>CT 067 9-06</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 1773 7495</p> <p>1</p> 	<p>BILLING: P/P</p> <p>Reference # 1: CT2899 - CSC</p> <p>CS 22.0.11. WNTNVS0 B3.CA.12/2019</p> 
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January 23, 2020

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Regarding: Notice of Exempt Modification – AT&T Site CT2899
Address: 668 Jones Hill Road, West Haven, CT 06516

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (“AT&T”) currently maintains a wireless telecommunications facility (“Facility”) at a 149’ Monopole at the above-referenced address (the “Tower”). The Tower is owned by American Tower Corporation.

AT&T desires to modify its Facility by adding one (1) WCS Filter, as more particularly described and detailed in the enclosed Construction Drawings prepared by Hudson Design Group LLC, dated November 12, 2019 and last revised December 6, 2019. Enclosed please also find a Mount Analysis prepared by Centerline Communications, dated November 8, 2019 and revised January 15, 2020. The centerline height of the existing antennas will remain at 125 feet.

The Tower was approved by the Connecticut Siting Council on May 11, 2005 in the attached Decision as Docket No. 293. Enclosed please also find a copy of Petition No. 1108 and a copy of the most recent AT&T approved modification on April 8, 2019 under file no. EM-CING-156-190318.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Nancy R. Rossi, Mayor, City of West Haven; Cathy Conniff, Zoning Enforcement Officer, City of West Haven; Fred A. Messoro, Commissioner of the Department of Planning and Development, City of West Haven; American Tower Corporation, as Tower Owner; and Robert E. Newkirk, as the property owner at the above referenced address. Enclosed please find property cards and a GIS map for the above-referenced address.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:
 • NEW AT&T WCS FILTER: (WCS-IMFQ-AMT) (TOTAL OF 1 FOR GAMMA SECTOR).

ITEMS TO REMAIN:
 • (9) ANTENNAS, (9) RRUS, (2) SURGE ARRESTORS WITH (4) DC POWER & (2) FIBER,
 (1) DC ONLY SURGE ARRESTOR WITH (2) DC POWER LINES

SITE ADDRESS: 668 JONES HILL ROAD
 WEST HAVEN, CT 06516

LATITUDE: 41.256400° N, 41° 15' 23.04" N

LONGITUDE: 72.972358° W, 72° 58' 20.48" W

TYPE OF SITE: MONOPOLE TOWER/INDOOR EQUIPMENT

STRUCTURE HEIGHT: 149'±

RAD CENTER: 125'±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2899

SITE NAME: WEST HAVEN JONES HILL ROAD

FA CODE: 10578274

PACE ID: MRCTB036140

PROJECT: 2019 CELL SITE RF MODIFICATIONS

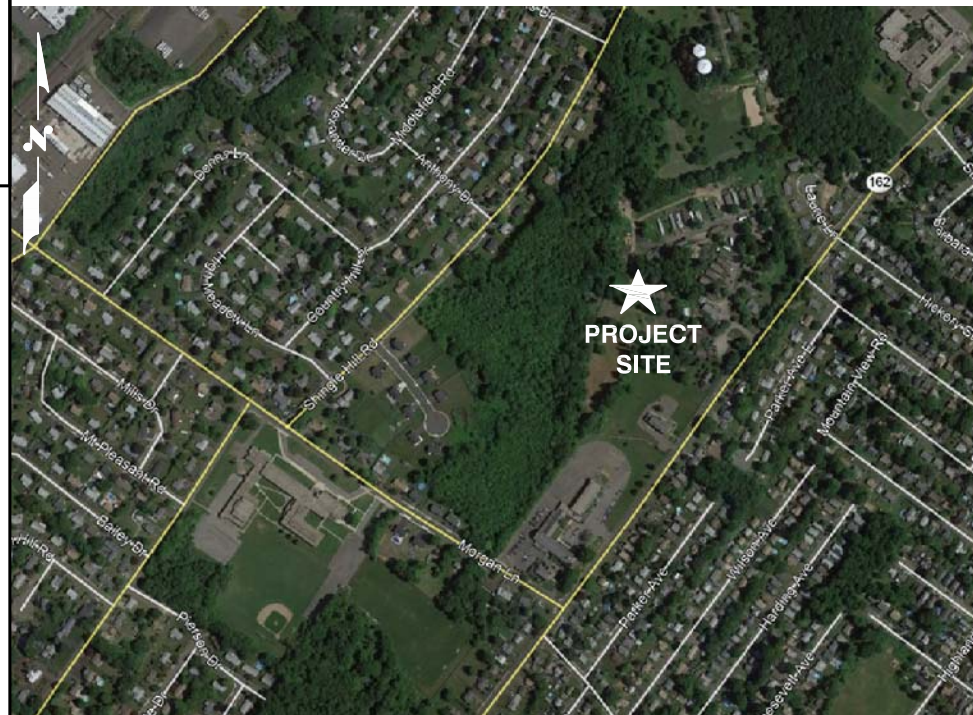
ISSUED FOR ZONING

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	DETAILS	0
G-1	GROUNDING DETAILS	0
RF-1	RF PLUMBING DIAGRAM	0

VICINITY MAP

DIRECTIONS TO SITE:
 TAKE I-90 W/MASSACHUSETTS TURNPIKE/MASS PIKE TOWARD SPRINGFIELD/WORCESTER. MERGE ONTO I-84 W VIA EXIT 9 TOWARD US-20/HARTFORD/NEW YORK CITY. MERGE ONTO CT-15 S VIA EXIT 57 ON THE LEFT TOWARD I-91 S/CHARTER OAK BR/N.Y. CITY. MERGE ONTO I-91 S VIA EXIT 86 TOWARD NEW HAVEN/N.Y. CITY. MERGE ONTO I-95 S/GOVERNOR JOHN DAVIS LODGE TURNPIKE VIA THE EXIT ON THE LEFT TOWARD N.Y. CITY. TAKE THE CT-162/SAW MILL RD EXIT, EXIT 42. TURN RIGHT ONTO SAWMILL RD/CT-162. CONTINUE TO FOLLOW CT-162. TURN RIGHT ONTO MAIN ST/CT-162. CONTINUE TO FOLLOW CT-162. TURN SLIGHT RIGHT ONTO PLATT AVE/CT-162. CONTINUE TO FOLLOW CT-162. 668 JONES HILL RD IS ON THE RIGHT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

ATC SITE NAME: WEST HAVEN & RT 162 CT
ATC SITE #: 243036

72 HOURS

CALL BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455
 OR CALL 811

UNDERGROUND SERVICE ALERT

 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	 750 WEST CENTER STREET, SUITE #301 WEST BRIDGEWATER, MA 02379	SITE NUMBER: CT2899 SITE NAME: WEST HAVEN JONES HILL ROAD ATC SITE NUMBER: 243036 668 JONES HILL ROAD WEST HAVEN, CT 06516 NEW HAVEN COUNTY	 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067	0 12/06/19 ISSUED FOR ZONING VP AT DPH		AT&T TITLE SHEET RF MOD
				A 11/12/19 ISSUED FOR REVIEW VP AT DPH		

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – CENTERLINE
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2899
SITE NAME: WEST HAVEN JONES HILL ROAD
ATC SITE NUMBER: 243036

668 JONES HILL ROAD
WEST HAVEN, CT 06516
NEW HAVEN COUNTY

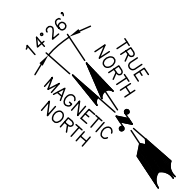
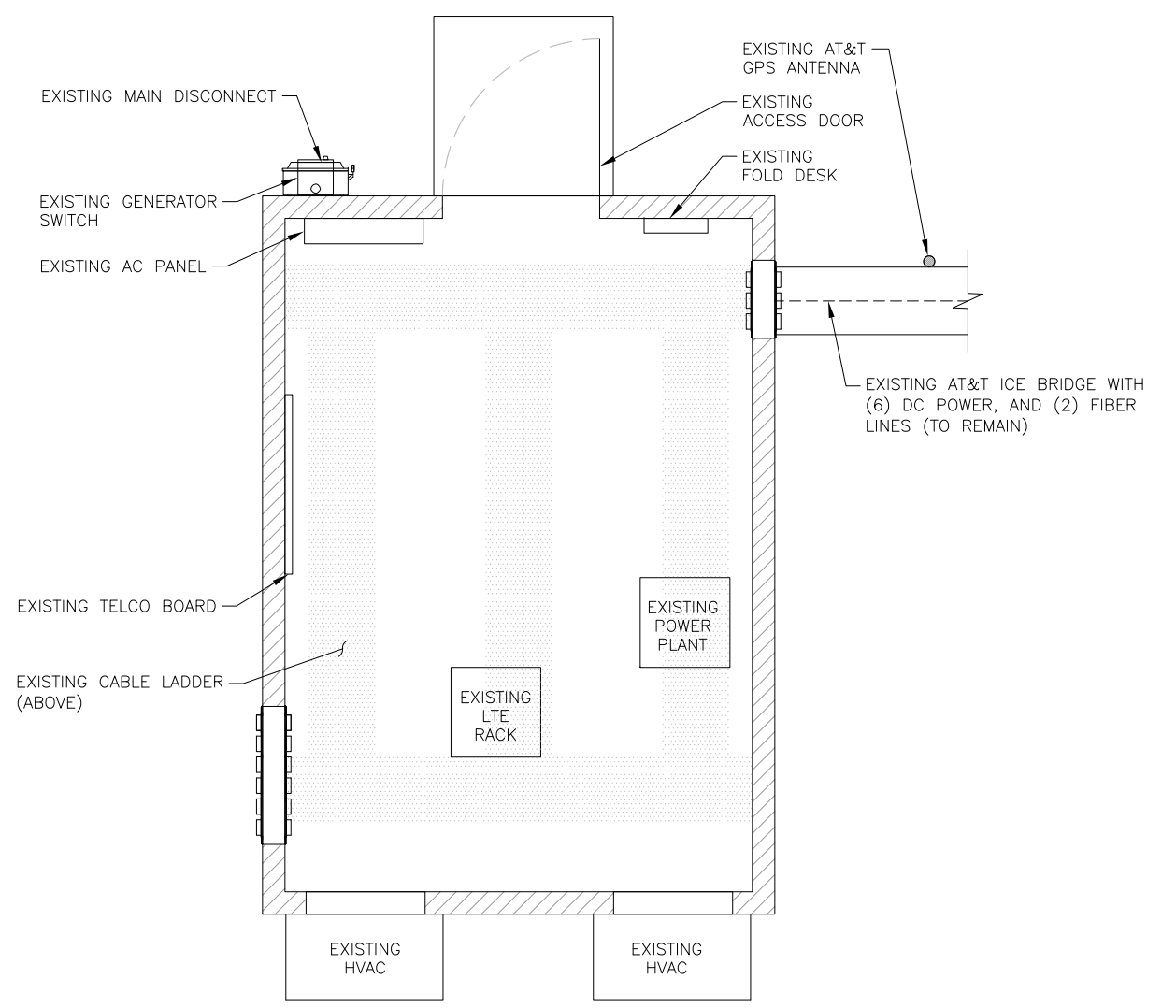
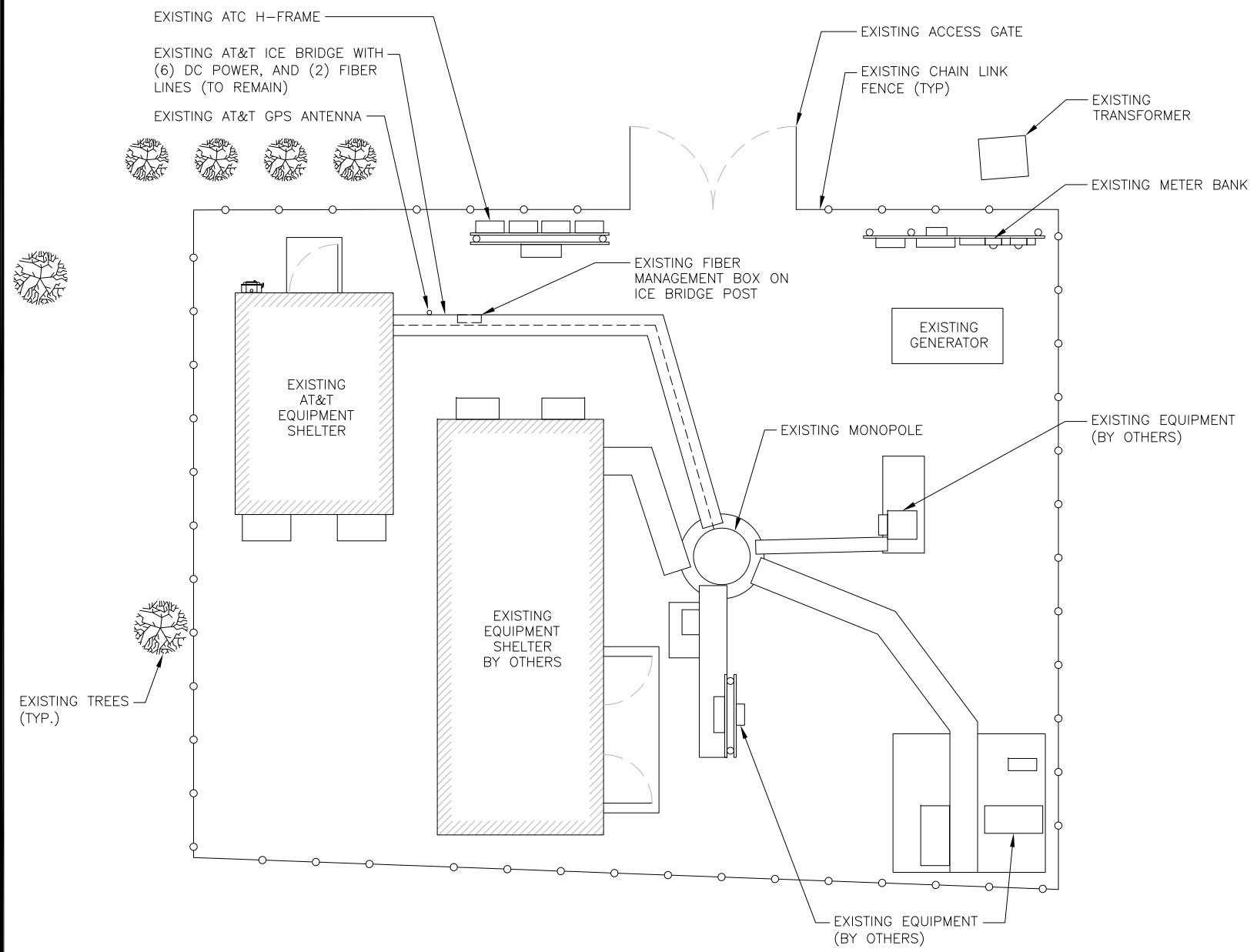
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

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A	11/12/19	ISSUED FOR REVIEW	VP	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: VP		

AT&T		
GENERAL NOTES		
RF MOD		
SITE NUMBER	DRAWING NUMBER	REV
CT2899	GN-1	0

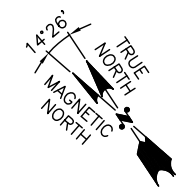
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



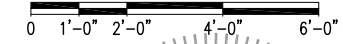
COMPOUND PLAN
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

1
A-1



EQUIPMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

2
A-1



HG HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE
COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2899
SITE NAME: WEST HAVEN JONES HILL ROAD
ATC SITE NUMBER: 243036
668 JONES HILL ROAD
WEST HAVEN, CT 06516
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Daniel P. Hamm
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

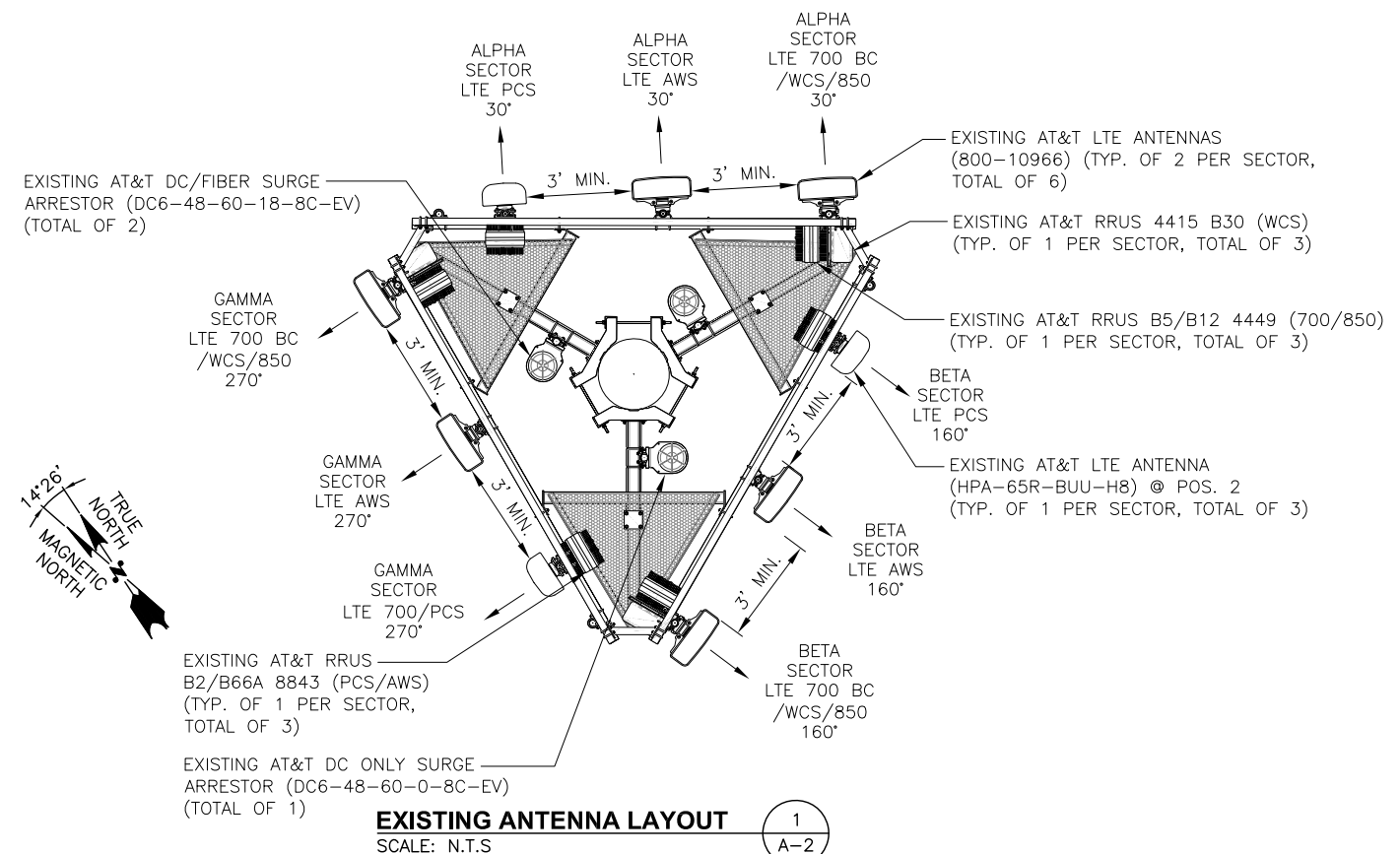
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AT&T
COMPOUND & EQUIPMENT PLANS
RF MOD

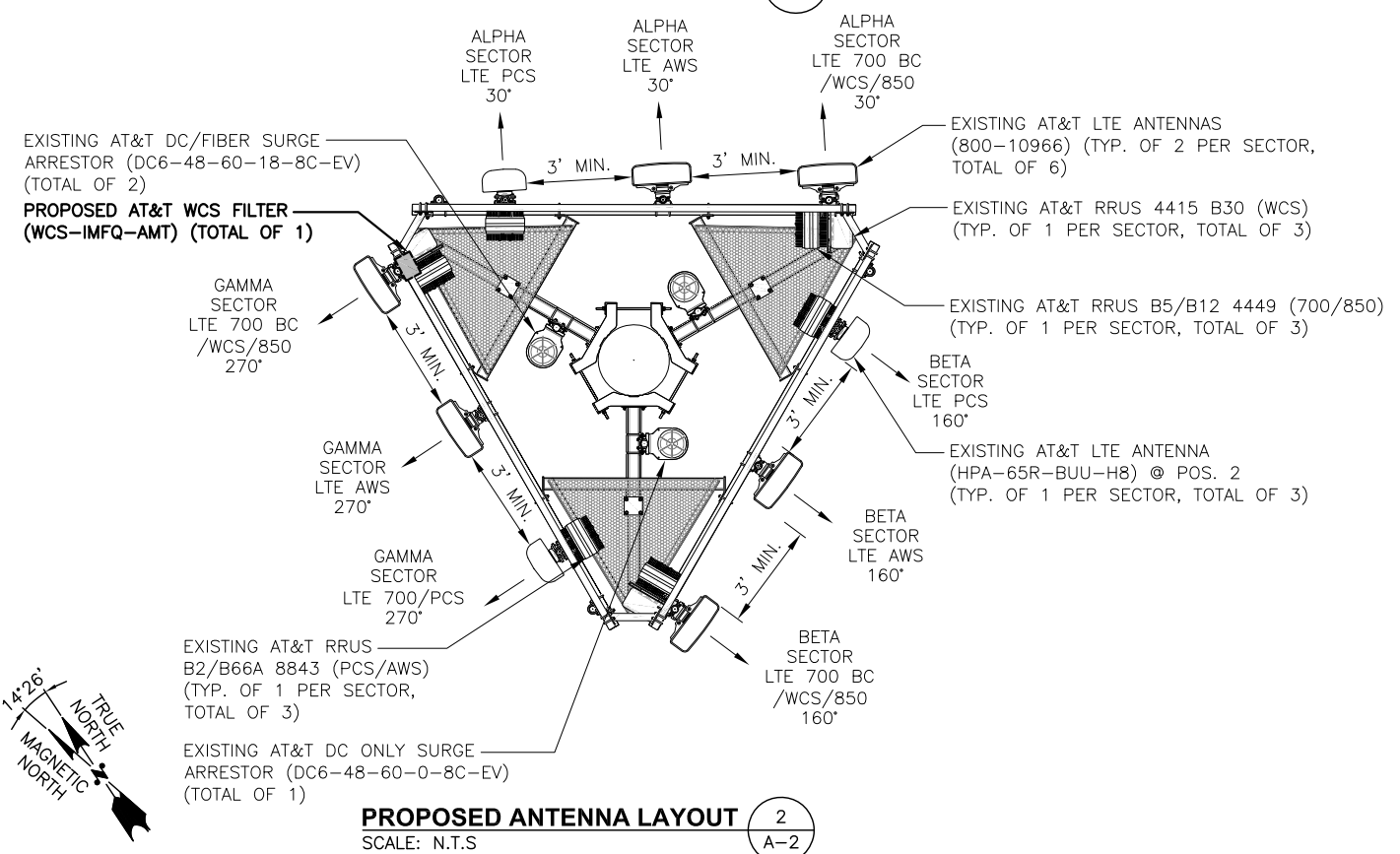
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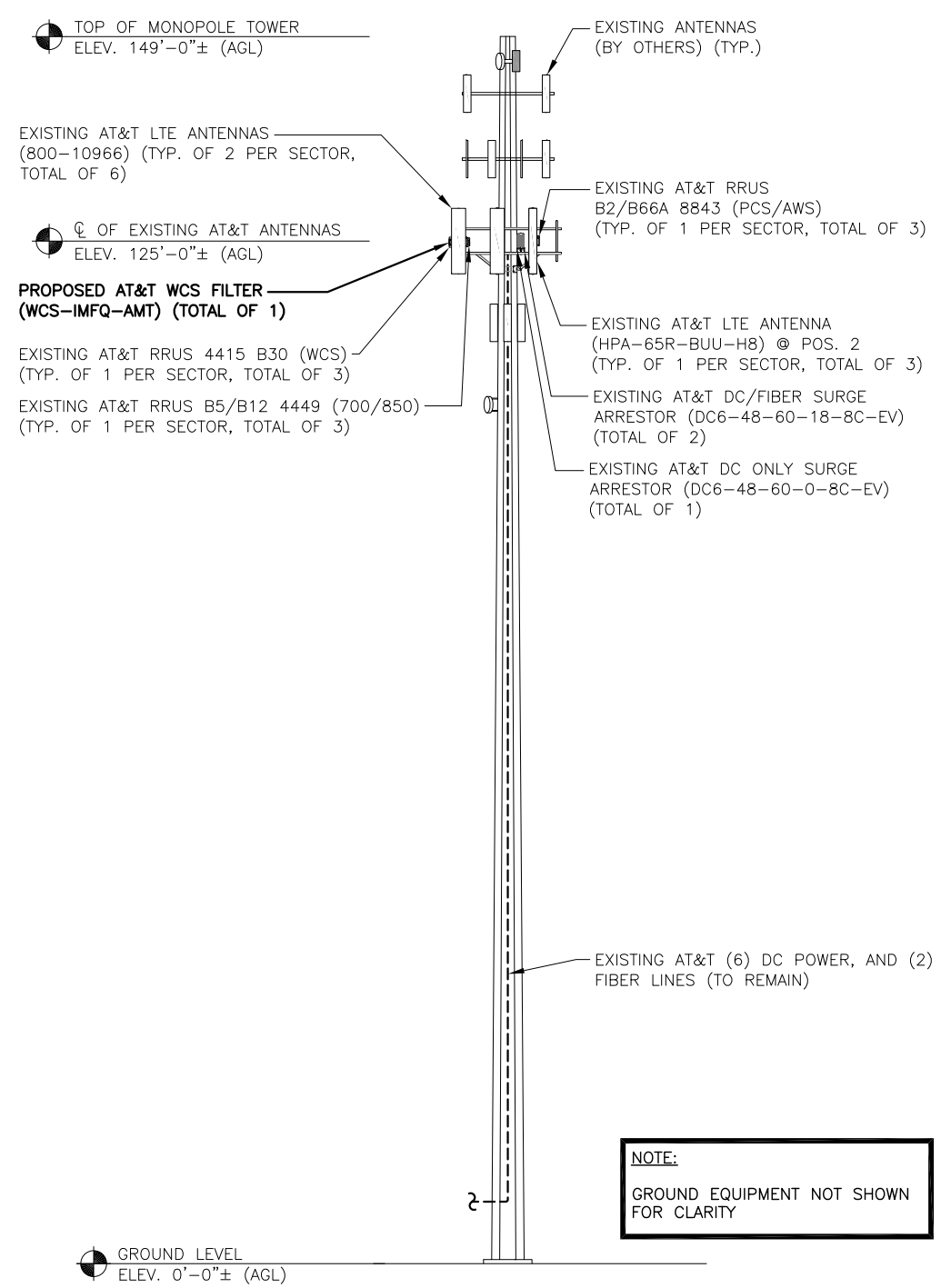
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EXISTING ANTENNA LAYOUT 1
SCALE: N.T.S. A-2



PROPOSED ANTENNA LAYOUT 2
SCALE: N.T.S. A-2



NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION 3
22x34 SCALE: 3/32"=1'-0" A-2
11x17 SCALE: 3/64"=1'-0" A-2

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

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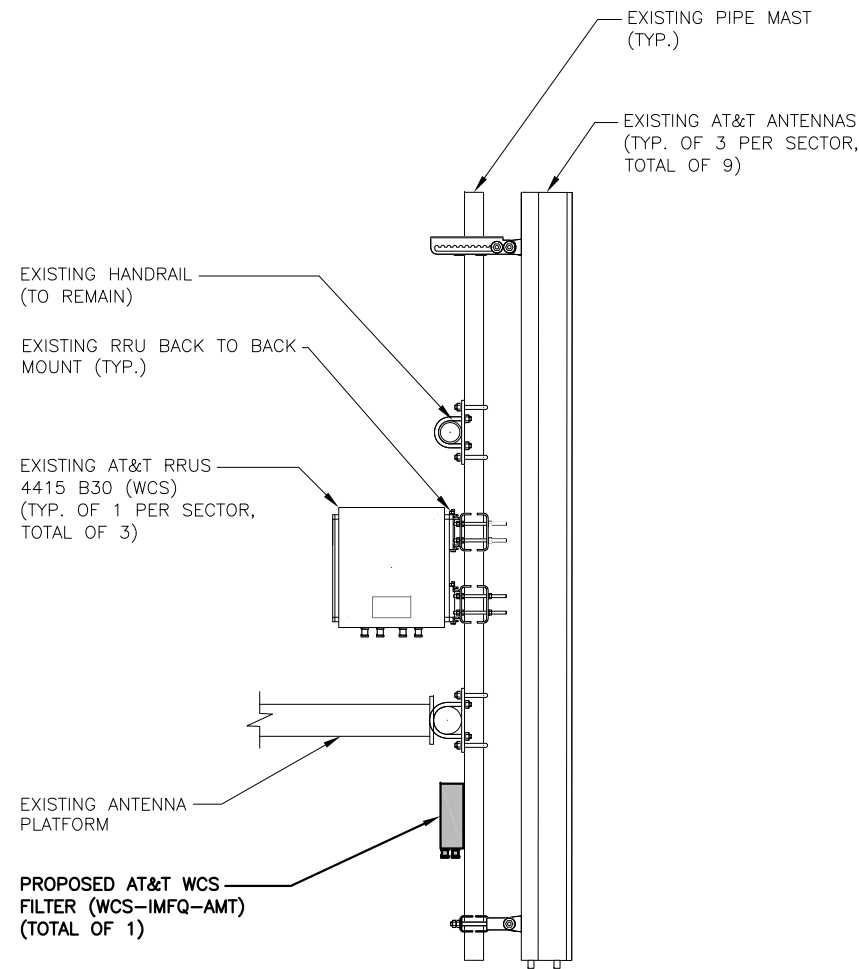
AT&T		
ANTENNA LAYOUTS & ELEVATION		
RF MOD		
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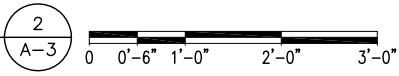
ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA H HEIGHT	AZIMUTH	TMA/ DIPLEXER	FILTER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	-	-	-
A2	EXISTING	LTE PCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±125'	30°	-	-	(E)(1) B2/B66A 8843 (PCS/AWS)	14.9x13.2x10.9	-	(E) (1) RAYCAP DC6-48-60-18-8C
A3	EXISTING	LTE AWS	800-10966	96X20X6.9	±125'	30°	-	-	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8C
A4	EXISTING	LTE 700 BC /WCS/850	800-10966	96X20X6.9	±125'	30°	-	-	(E)(1) B5/B12 4449 (700/850) (E)(1) 4415 B30 (WCS)	14.9x13.2x10.4 14.9x13.2x5.4	-	(E) (1) RAYCAP DC6-48-60-18-8C-EV
B1	-	-	-	-	-	-	-	-	-	-	-	-
B2	EXISTING	LTE PCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±125'	160°	-	-	(E)(1) B2/B66A 8843 (PCS/AWS)	14.9x13.2x10.9	-	(E) (1) RAYCAP DC6-48-60-0-8C-EV
B3	EXISTING	LTE AWS	800-10966	96X20X6.9	±125'	160°	-	-	-	-	-	(E) (1) RAYCAP DC6-48-60-0-8C-EV
B4	EXISTING	LTE 700 BC /WCS/850	800-10966	96X20X6.9	±125'	160°	-	-	(E)(1) B5/B12 4449 (700/850) (E)(1) 4415 B30 (WCS)	14.9x13.2x10.4 14.9x13.2x5.4	-	(E) (1) RAYCAP DC6-48-60-0-8C-EV
C1	-	-	-	-	-	-	-	-	-	-	-	-
C2	EXISTING	LTE PCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±125'	270°	-	-	(E)(1) B2/B66A 8843 (PCS/AWS)	14.9x13.2x10.9	-	(E) (1) RAYCAP DC6-48-60-18-8C-EV (DC ONLY)
C3	EXISTING	LTE AWS	800-10966	96X20X6.9	±125'	270°	-	-	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8C-EV (DC ONLY)
C4	EXISTING	LTE 700 BC /WCS/850	800-10966	96X20X6.9	±125'	270°	-	(P)(1) WCS-IMFQ-AMT	(E)(1) B5/B12 4449 (700/850) (E)(1) 4415 B30 (WCS)	14.9x13.2x10.4 14.9x13.2x5.4	-	(E) (1) RAYCAP DC6-48-60-18-8C-EV (DC ONLY)



LTE ANTENNA & RRH MOUNTING DETAIL

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"



FINAL ANTENNA SCHEDULE

SCALE: N.T.S



WCS FILTER DIMENSIONS	
MODEL #	WCS-IMFQ-ATM-43
MANUF.	COMMSCOPE
HEIGHT	8.1"
WIDTH	5.7"
DEPTH	8.2"
WEIGHT (W/ MOUNTING HARDWARE)	20.5 LBS

PROPOSED WCS FILTER DETAIL

SCALE: N.T.S



45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

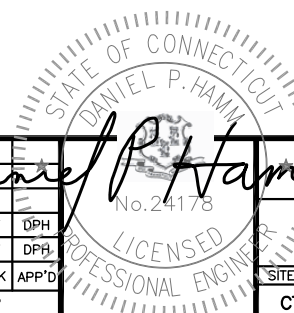
SITE NUMBER: CT2899
SITE NAME: WEST HAVEN JONES HILL ROAD
ATC SITE NUMBER: 243036

668 JONES HILL ROAD
WEST HAVEN, CT 06516
NEW HAVEN COUNTY



500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

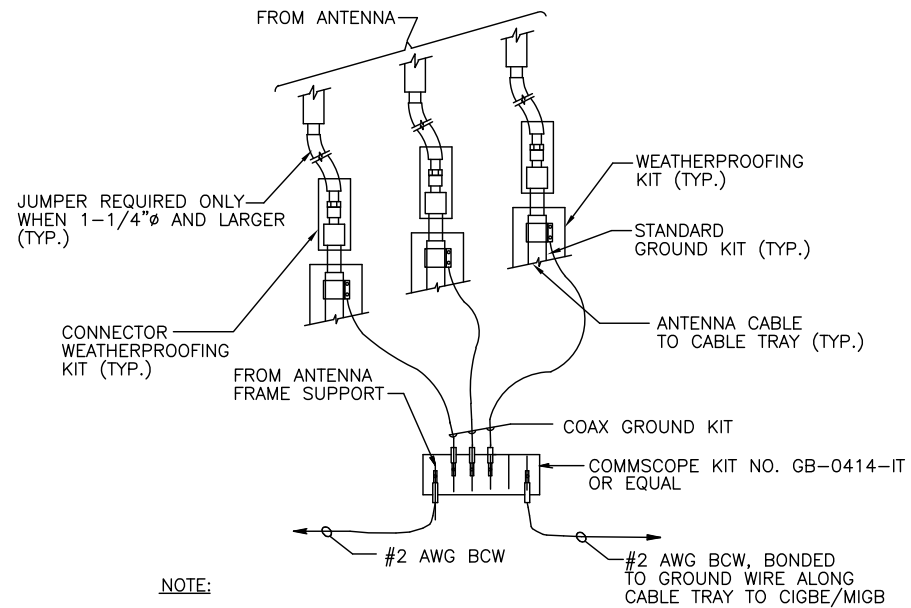
0	12/06/19	ISSUED FOR ZONING	VP	AT	DPH
A	11/12/19	ISSUED FOR REVIEW	VP	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: VP		



AT&T

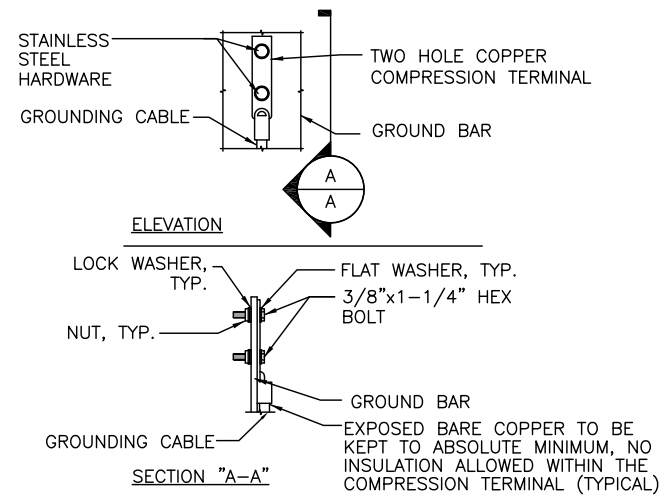
DETAILS
RF MOD

SITE NUMBER	DRAWING NUMBER	REV
CT2899	A-3	0



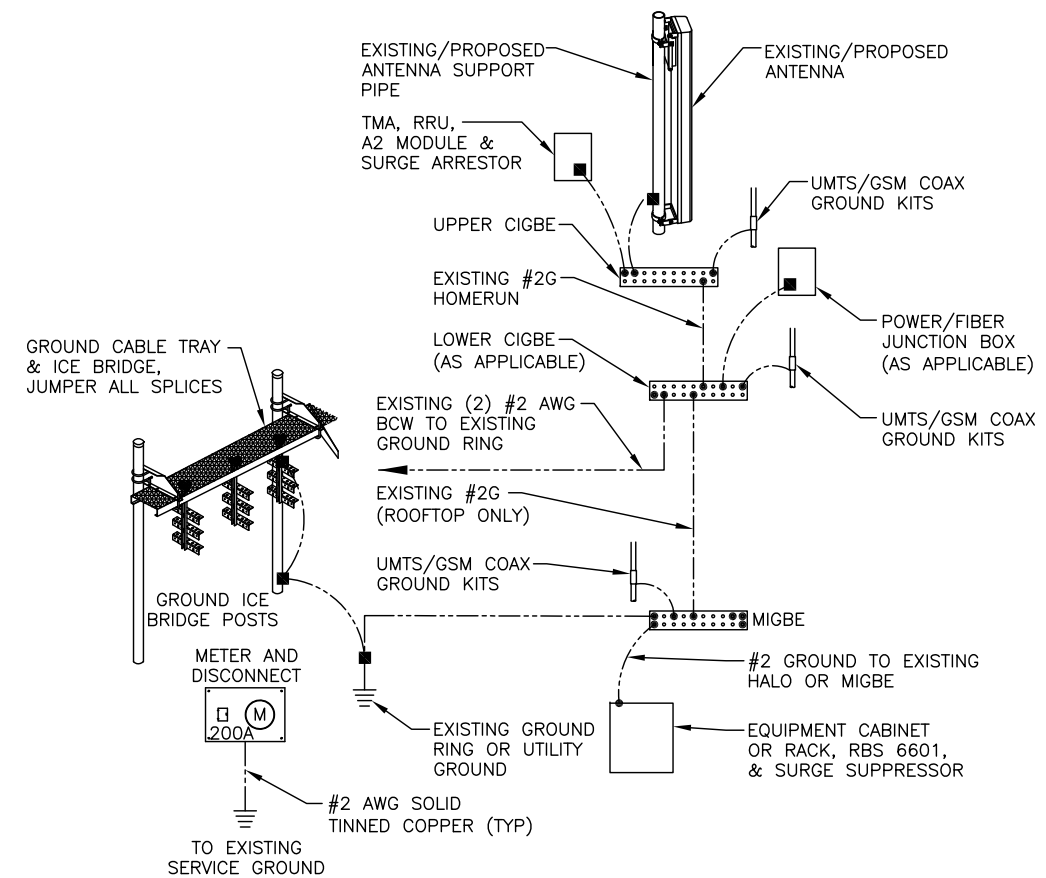
NOTE:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
 SCALE: N.T.S. G-1



NOTE:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL 3
 SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
 SCALE: N.T.S. G-1

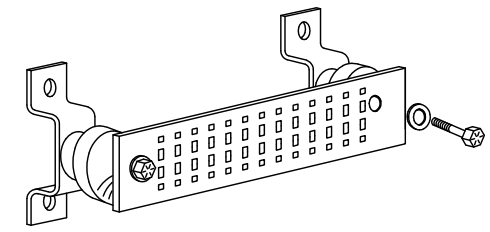
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

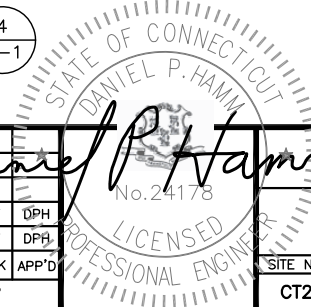
SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

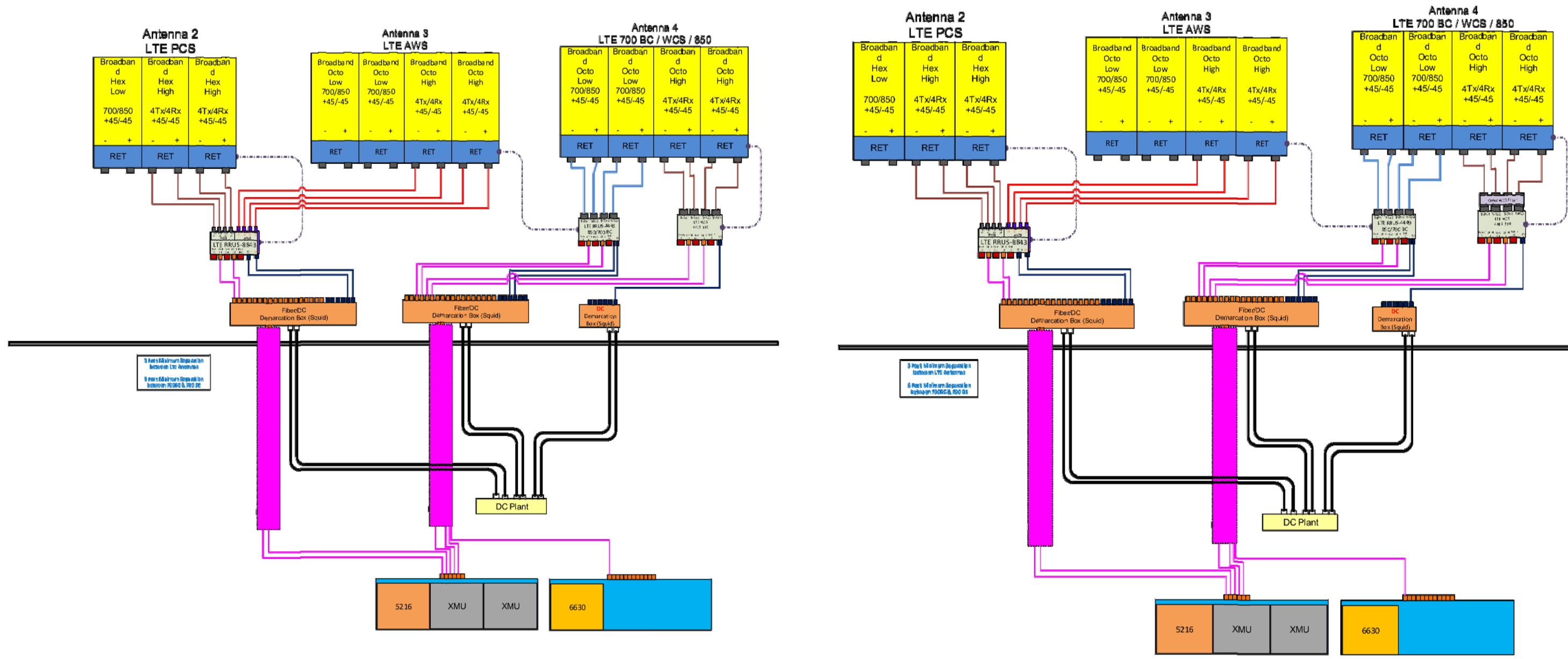


GROUND BAR - DETAIL 4
 SCALE: N.T.S. G-1

0	12/06/19	ISSUED FOR ZONING	VP	AT	DPH
A	11/12/19	ISSUED FOR REVIEW	VP	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: VP		



AT&T		
GROUNDING DETAILS		
RF MOD		
SITE NUMBER	DRAWING NUMBER	REV
CT2899	G-1	0



ALPHA & BETA SECTORS

GAMMA SECTOR

RF PLUMBING DIAGRAM 1
SCALE: N.T.S. RF-1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

0	12/06/19	ISSUED FOR ZONING	VP	AT	DPH
A	11/12/19	ISSUED FOR REVIEW	VP	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: VP		

AT&T		
RF PLUMBING DIAGRAM		
RF MOD		
SITE NUMBER	DRAWING NUMBER	REV
CT2899	RF-1	0

EXHIBIT 2

November 8, 2019
January 15, 2020 (Rev. 1)



Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE: Site Number: CT2899 (RF MODS)
 FA Number: 10578274
 PACE Number: MRCTB036140
 PT Number: 2051A0L81H
 Site Name: WEST HAVEN JONES HILL ROAD
 Site Address: 668 Jones Hill Road
 West Haven, CT 06516

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine its capability of supporting the following additional loading:

- (3) HPA-65R-BUU-H8 Antennas (92.4"x14.8"x7.4" – Wt. = 68 lbs. /each)
- (6) 800-10966 Antennas (96.0"x20.0"x6.9"– Wt. = 115 lbs. /each)
- (3) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- (3) 4415 B30 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)
- (3) 4449 B5/B12 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)
- (3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. 72 lbs. /each)
- **(1) WCS-IMFQ-AMT-43 Filter (8.1"x8.2"x5.7" – Wt. = 19 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on February 27, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.71 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mounts. The connections are considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Remove existing pipe mast and install new 2-1/2" std. (2.88" O.D.) pipe masts behind existing 800-10966 and HPA-65R-BUU-H8 Antennas (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (RF MODS) Mount Rating	47	LC2	106%	FAIL
Modified (RF MODS) Mount Rating	76	LC1	92%	PASS

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC



Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

**Wind & Ice
Calculations**

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		$1.2 - 2.8(r_s) \geq 0.85$	$1.4 - 4.0(r_s) \geq 0.90$	$2.0 - 6.0(r_s) \geq 1.25$
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	$39 \leq C \leq 78$ (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance.)

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.71 in** Angle = **0 (deg)** Equivalent Angle = **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	6.24	1.37	517	106	30
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	691	134	40
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	65	16	4
8843 B2/B66A RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	0	3	0
4415 B30 RRH	16.5	5.9	13.4	0.68	2.80	1.21	33	10	2
4415 B30 (Side)	16.5	13.4	5.9	1.54	0.00	1.20	73	18	4
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.43	1.20	51	13	3
4449 B5/B12 RRH (Side)	14.9	13.2	10.4	1.37	0.00	1.20	65	16	4
WCS-IMFQ-AMT-43 Filter	8.1	8.2	5.7	0.46	0.99	1.20	22	7	1
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	45	11	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	9	5	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	14	6	1
2x2 Angle	2.0	12.0		0.17	0.17	2.00	13	7	1
HSS 3x3	3.0	12.0		0.25	0.25	1.25	12	5	1

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.71 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
HPA-65R-BUU-H8 Anten	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	517	299	462
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	691	299	593
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	65	54	62
8843 B2/B66A RRH (Shie)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	33	54	38
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	33	73	43
4415 B30 (Side)	16.5	3.0	5.9	0.34	0.68	5.59	2.80	1.34	1.21	18	33	22
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	51	65	55
4449 B5/B12 RRH (Side)	14.9	5.2	10.4	0.54	1.08	2.87	1.43	1.22	1.20	26	51	32
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	22	15	20

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Anten	95.8	18.2	10.8	12.13	7.21	5.26	8.85	1.32	1.46	102	67	93
800-10966 Antenna	99.4	23.4	10.3	16.18	7.13	4.24	9.63	1.28	1.49	132	68	116
8843 B2/B66A RRH	18.3	16.6	14.3	2.12	1.82	1.10	1.28	1.20	1.20	16	14	16
8843 B2/B66A RRH (Shie)	18.3	8.3	14.3	1.06	1.82	2.20	1.28	1.20	1.20	8	14	10
4415 B30 RRH	19.9	9.3	16.8	1.29	2.33	2.14	1.18	1.20	1.20	10	18	12
4415 B30 (Side)	19.9	4.7	9.3	0.65	1.29	4.27	2.14	1.28	1.20	5	10	6
4449 B5/B12 RRH	18.3	13.8	16.6	1.76	2.12	1.33	1.10	1.20	1.20	13	16	14
4449 B5/B12 RRH (Side)	18.3	6.9	13.8	0.88	1.76	2.65	1.33	1.21	1.20	7	13	8
WCS-IMFQ-AMT-43 Filte	11.5	11.6	9.1	0.93	0.73	0.99	1.26	1.20	1.20	7	6	7

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Anten	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	17	27
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	40	17	34
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
8843 B2/B66A RRH (Shie)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B30 (Side)	16.5	3.0	5.9	0.34	0.68	5.59	2.80	1.34	1.21	1	2	1
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
4449 B5/B12 RRH (Side)	14.9	5.2	10.4	0.54	1.08	2.87	1.43	1.22	1.20	2	3	2
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	1	1	1

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.71 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
HPA-65R-BUU-H8 Anten	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	517	299	354
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	691	299	397
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	65	54	57
8843 B2/B66A RRH (Shie	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	49	54	53
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	33	73	63
4415 B30 (Side)	16.5	4.4	5.9	0.51	0.68	3.73	2.80	1.25	1.21	25	33	31
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	51	65	62
4449 B5/B12 RRH (Side)	14.9	7.8	10.4	0.81	1.08	1.91	1.43	1.20	1.20	39	51	48
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	22	15	17

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Anten	95.8	18.2	10.8	12.13	7.21	5.26	8.85	1.32	1.46	102	67	76
800-10966 Antenna	99.4	23.4	10.3	16.18	7.13	4.24	9.63	1.28	1.49	132	68	84
8843 B2/B66A RRH	18.3	16.6	14.3	2.12	1.82	1.10	1.28	1.20	1.20	16	14	15
8843 B2/B66A RRH (Shie	18.3	12.5	14.3	1.59	1.82	1.47	1.28	1.20	1.20	12	14	13
4415 B30 RRH	19.9	9.3	16.8	1.29	2.33	2.14	1.18	1.20	1.20	10	18	16
4415 B30 (Side)	19.9	7.0	9.3	0.97	1.29	2.85	2.14	1.22	1.20	7	10	9
4449 B5/B12 RRH	18.3	13.8	16.6	1.76	2.12	1.33	1.10	1.20	1.20	13	16	15
4449 B5/B12 RRH (Side)	18.3	10.4	13.8	1.32	1.76	1.77	1.33	1.20	1.20	10	13	13
WCS-IMFQ-AMT-43 Filte	11.5	11.6	9.1	0.93	0.73	0.99	1.26	1.20	1.20	7	6	6

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Anten	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	90	17	20
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	40	17	23
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
8843 B2/B66A RRH (Shie	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 (Side)	16.5	4.4	5.9	0.51	0.68	3.73	2.80	1.25	1.21	1	2	2
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Side)	14.9	7.8	10.4	0.81	1.08	1.91	1.43	1.20	1.20	2	3	3
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	1	1	1

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.71 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	517	299	299
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	691	299	299
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	65	54	54
8843 B2/B66A RRH (Shie	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	54	54
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	33	73	73
4415 B30 (Side)	16.5	13.4	5.9	1.54	0.68	0.00	2.80	1.20	1.21	73	33	33
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	51	65	65
4449 B5/B12 RRH (Side)	14.9	13.2	10.4	1.37	1.08	0.00	1.43	1.20	1.20	65	51	51
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	22	15	15

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenn	95.8	18.2	10.8	12.13	7.21	5.26	8.85	1.32	1.46	102	67	67
800-10966 Antenna	99.4	23.4	10.3	16.18	7.13	4.24	9.63	1.28	1.49	132	68	68
8843 B2/B66A RRH	18.3	16.6	14.3	2.12	1.82	1.10	1.28	1.20	1.20	16	14	14
8843 B2/B66A RRH (Shie	18.3	3.4	14.3	0.44	1.82	5.35	1.28	1.33	1.20	4	14	14
4415 B30 RRH	19.9	9.3	16.8	1.29	2.33	2.14	1.18	1.20	1.20	10	18	18
4415 B30 (Side)	19.9	16.8	9.3	2.33	1.29	1.18	2.14	1.20	1.20	18	10	10
4449 B5/B12 RRH	18.3	13.8	16.6	1.76	2.12	1.33	1.10	1.20	1.20	13	16	16
4449 B5/B12 RRH (Side)	18.3	16.6	13.8	2.12	1.76	1.10	1.33	1.20	1.20	16	13	13
WCS-IMFQ-AMT-43 Filte	11.5	11.6	9.1	0.93	0.73	0.99	1.26	1.20	1.20	7	6	6

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	17	17
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	40	17	17
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
8843 B2/B66A RRH (Shie	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	3	3
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 (Side)	16.5	13.4	5.9	1.54	0.68	0.00	2.80	1.20	1.21	4	2	2
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Side)	14.9	13.2	10.4	1.37	1.08	0.00	1.43	1.20	1.20	4	3	3
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	1	1	1

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.71 in. Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	517	299	354
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	691	299	397
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	65	54	57
8843 B2/B66A RRH (Shie	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	49	54	53
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	33	73	63
4415 B30 (Side)	16.5	4.4	5.9	0.51	0.68	3.73	2.80	1.25	1.21	25	33	31
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	51	65	62
4449 B5/B12 RRH (Side)	14.9	7.8	10.4	0.81	1.08	1.91	1.43	1.20	1.20	39	51	48
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	22	15	17

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenn	95.8	18.2	10.8	12.13	7.21	5.26	8.85	1.32	1.46	102	67	76
800-10966 Antenna	99.4	23.4	10.3	16.18	7.13	4.24	9.63	1.28	1.49	132	68	84
8843 B2/B66A RRH	18.3	16.6	14.3	2.12	1.82	1.10	1.28	1.20	1.20	16	14	15
8843 B2/B66A RRH (Shie	18.3	12.5	14.3	1.59	1.82	1.47	1.28	1.20	1.20	12	14	13
4415 B30 RRH	19.9	9.3	16.8	1.29	2.33	2.14	1.18	1.20	1.20	10	18	16
4415 B30 (Side)	19.9	7.0	9.3	0.97	1.29	2.85	2.14	1.22	1.20	7	10	9
4449 B5/B12 RRH	18.3	13.8	16.6	1.76	2.12	1.33	1.10	1.20	1.20	13	16	15
4449 B5/B12 RRH (Side)	18.3	10.4	13.8	1.32	1.76	1.77	1.33	1.20	1.20	10	13	13
WCS-IMFQ-AMT-43 Filte	11.5	11.6	9.1	0.93	0.73	0.99	1.26	1.20	1.20	7	6	6

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	17	20
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	40	17	23
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
8843 B2/B66A RRH (Shie	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 (Side)	16.5	4.4	5.9	0.51	0.68	3.73	2.80	1.25	1.21	1	2	2
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Side)	14.9	7.8	10.4	0.81	1.08	1.91	1.43	1.20	1.20	2	3	3
WCS-IMFQ-AMT-43 Filte	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	1	1	1

Date: 1/15/2020
 Project Name: WEST HAVEN JONES HILL ROAD
 Project No.: CT2899
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 150 (deg) Ice Thickness = 1.71 in. Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	517	299	462
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	691	299	593
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	65	54	62
8843 B2/B66A RRH (Shiel	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	33	54	38
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	33	73	43
4415 B30 (Side)	16.5	3.0	5.9	0.34	0.68	5.59	2.80	1.34	1.21	18	33	22
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	51	65	55
4449 B5/B12 RRH (Side)	14.9	5.2	10.4	0.54	1.08	2.87	1.43	1.22	1.20	26	51	32
WCS-IMFQ-AMT-43 Filter	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	22	15	20

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenn	95.8	18.2	10.8	12.13	7.21	5.26	8.85	1.32	1.46	102	67	93
800-10966 Antenna	99.4	23.4	10.3	16.18	7.13	4.24	9.63	1.28	1.49	132	68	116
8843 B2/B66A RRH	18.3	16.6	14.3	2.12	1.82	1.10	1.28	1.20	1.20	16	14	16
8843 B2/B66A RRH (Shiel	18.3	8.3	14.3	1.06	1.82	2.20	1.28	1.20	1.20	8	14	10
4415 B30 RRH	19.9	9.3	16.8	1.29	2.33	2.14	1.18	1.20	1.20	10	18	12
4415 B30 (Side)	19.9	4.7	9.3	0.65	1.29	4.27	2.14	1.28	1.20	5	10	6
4449 B5/B12 RRH	18.3	13.8	16.6	1.76	2.12	1.33	1.10	1.20	1.20	13	16	14
4449 B5/B12 RRH (Side)	18.3	6.9	13.8	0.88	1.76	2.65	1.33	1.21	1.20	7	13	8
WCS-IMFQ-AMT-43 Filter	11.5	11.6	9.1	0.93	0.73	0.99	1.26	1.20	1.20	7	6	7

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenn	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	17	27
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	40	17	34
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
8843 B2/B66A RRH (Shiel	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B30 (Side)	16.5	3.0	5.9	0.34	0.68	5.59	2.80	1.34	1.21	1	2	1
4449 B5/B12 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
4449 B5/B12 RRH (Side)	14.9	5.2	10.4	0.54	1.08	2.87	1.43	1.22	1.20	2	3	2
WCS-IMFQ-AMT-43 Filter	8.1	8.2	5.7	0.46	0.32	0.99	1.42	1.20	1.20	1	1	1

Date: 1/15/2020

Project Name: WEST HAVEN JONES HILL ROAD

Project No.: CT2899

Designed By: LBW Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1.71 in.
Density of ice: 56 pcf

HPA-65R-BUU-H8 Antenna

Weight of ice based on total radial SF area:

Height (in): 92.4
Width (in): 14.8
Depth (in): 7.4
Total weight of ice on object: 294 lbs

Weight of object: 68.0 lbs

Combined weight of ice and object: 362 lbs

800-10966 Antenna

Weight of ice based on total radial SF area:

Height (in): 96.0
Width (in): 20.0
Depth (in): 6.9
Total weight of ice on object: 382 lbs

Weight of object: 115.0 lbs

Combined weight of ice and object: 497 lbs

8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in): 14.9
Width (in): 13.2
Depth (in): 10.9
Total weight of ice on object: 49 lbs

Weight of object: 72.0 lbs

Combined weight of ice and object: 121 lbs

4415 B30 RRH

Weight of ice based on total radial SF area:

Height (in): 16.5
Width (in): 13.4
Depth (in): 5.9
Total weight of ice on object: 47 lbs

Weight of object: 46.0 lbs

Combined weight of ice and object: 93 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in): 14.9
Width (in): 13.2
Depth (in): 10.4
Total weight of ice on object: 48 lbs

Weight of object: 73.0 lbs

Combined weight of ice and object: 121 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in): 24.0
Diameter (in): 9.7
Total weight of ice on object: 48 lbs

Weight of object: 33 lbs

Combined weight of ice and object: 81 lbs

WCS-IMFQ-AMT-43 Filter

Weight of ice based on total radial SF area:

Height (in): 8.1
Width (in): 8.2
Depth (in): 5.7
Total weight of ice on object: 16 lbs

Weight of object: 19.0 lbs

Combined weight of ice and object: 35 lbs

2-1/2" pipe

Per foot weight of ice:

diameter (in): 2.88

Per foot weight of ice on object: 10 plf

L 2x2 Angles

Weight of ice based on total radial SF area:

Height (in): 2
Width (in): 2

Per foot weight of ice on object: 9 plf

2" pipe

Per foot weight of ice:

diameter (in): 2.38

Per foot weight of ice on object: 9 plf

C 3-1/2x2

Weight of ice based on total radial SF area:

Height (in): 3.5
Width (in): 2

Per foot weight of ice on object: 12 plf

3" Pipe

Per foot weight of ice:

diameter (in): 3.5

Per foot weight of ice on object: 11 plf

PL 6x3/8

Weight of ice based on total radial SF area:

Height (in): 6
Width (in): 0.375

Per foot weight of ice on object: 16 plf

L 2-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:

Height (in): 2.5
Width (in): 2.5

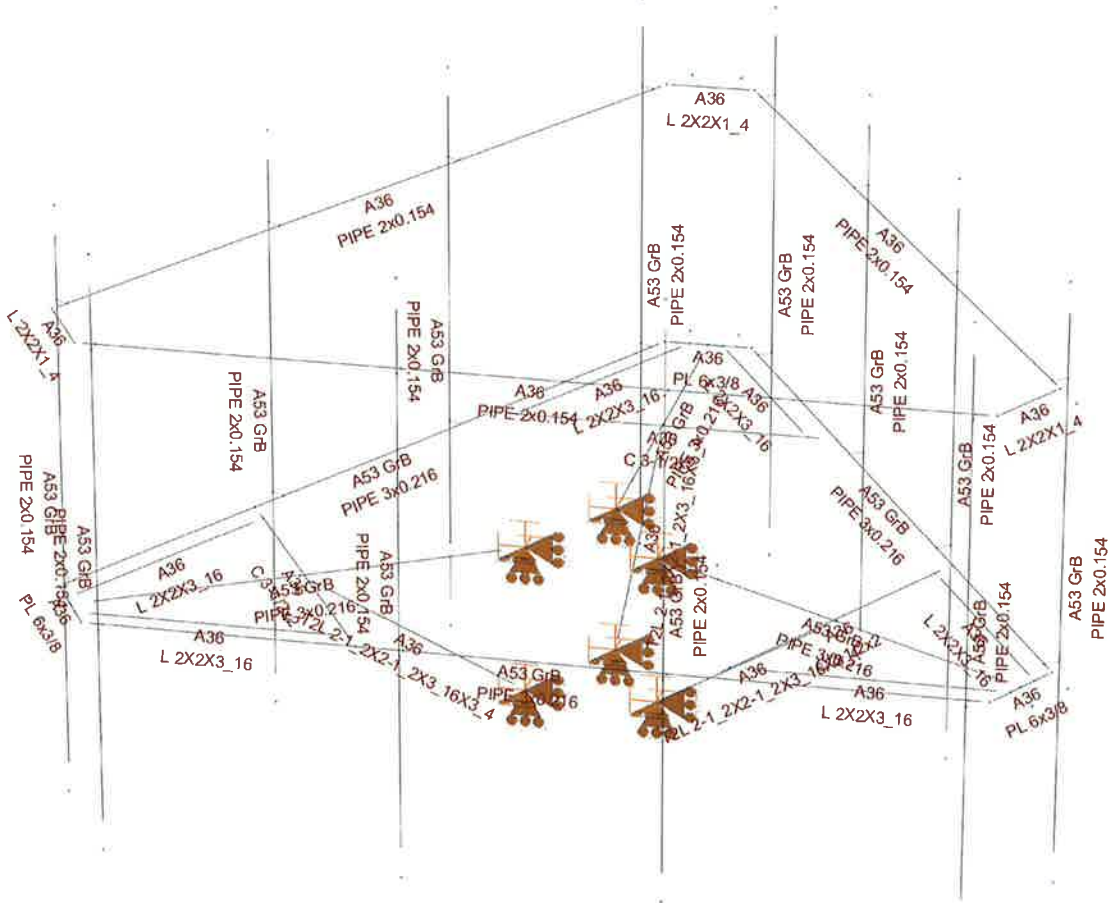
Per foot weight of ice on object: 11 plf



HUDSON
Design Group LLC

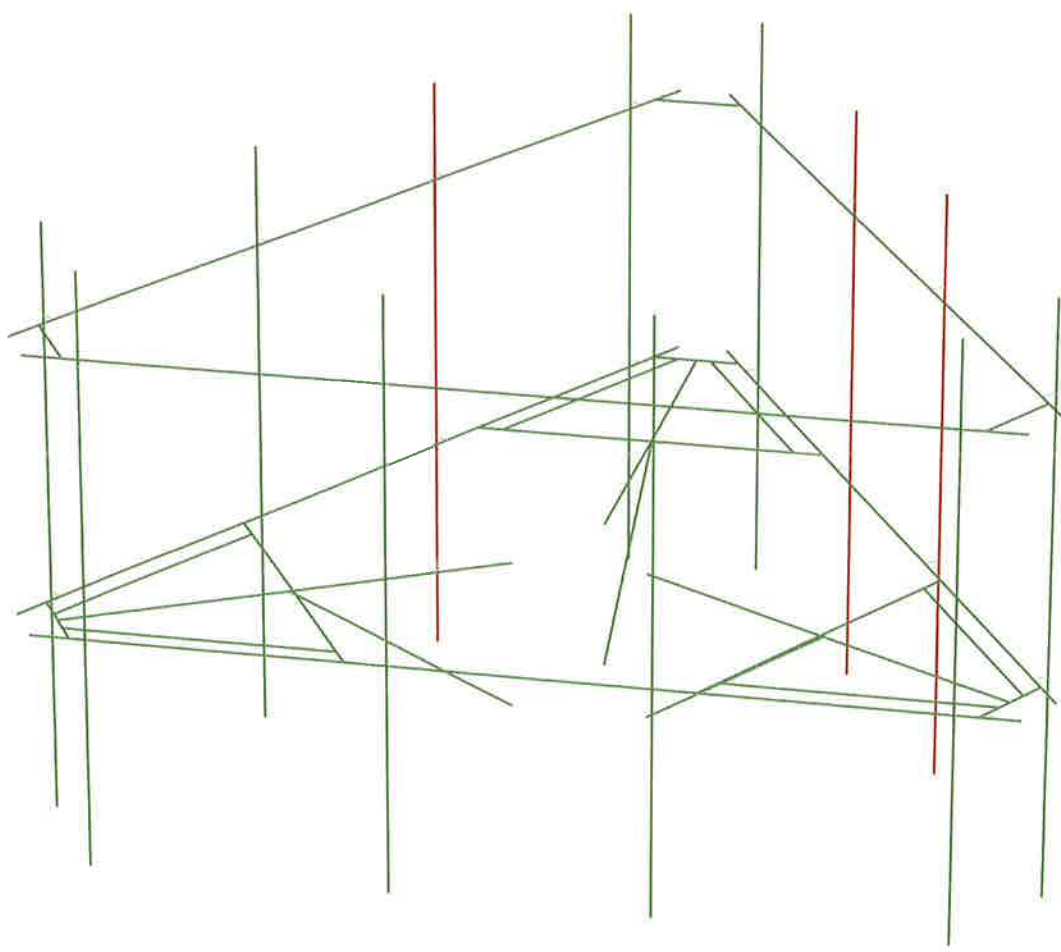
**Mount Calculations
(Existing Conditions)**

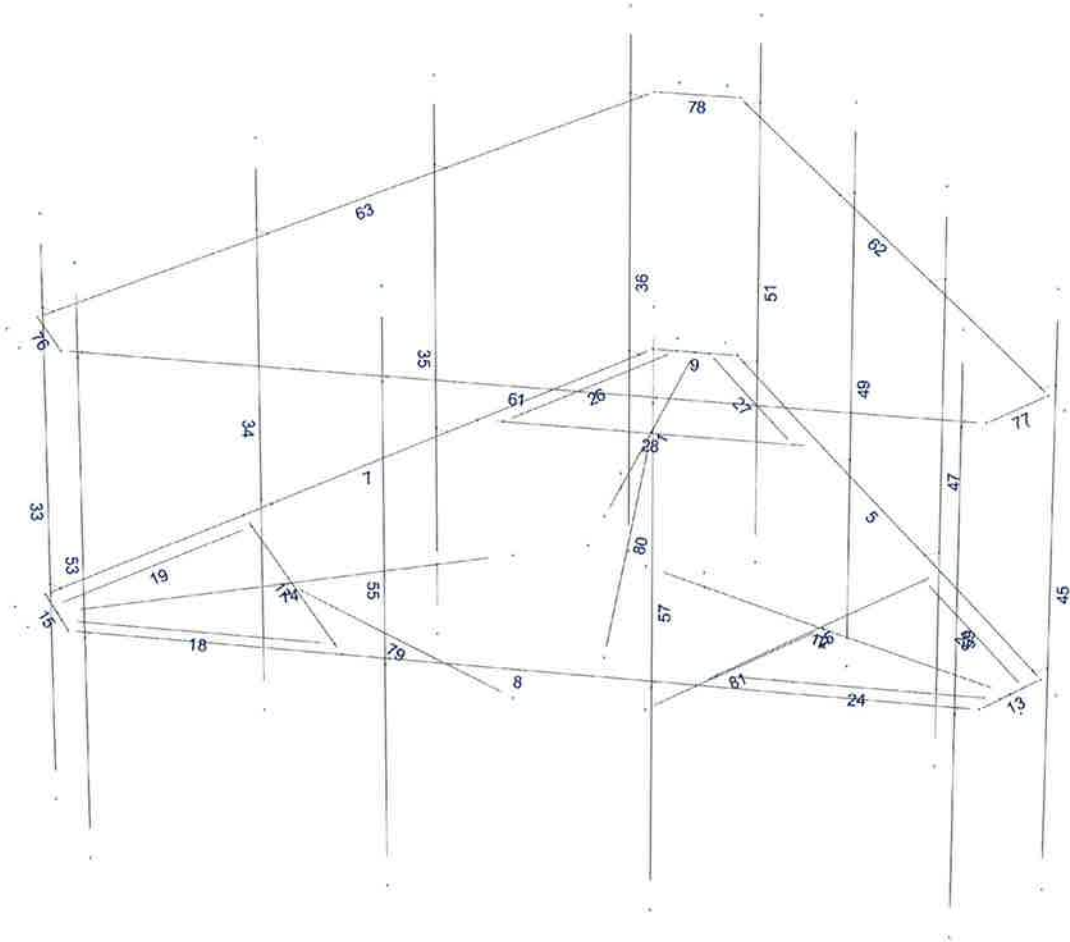




Design status

- Not designed
- Error on design
- Design O.K.
- With warnings





Load data

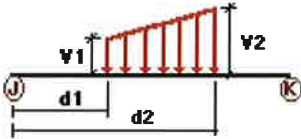
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

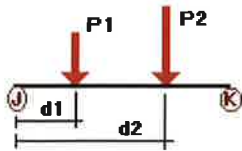
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	5	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	7	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	8	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	33	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	77	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
W30	78	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	5	x	-0.014	-0.014	0.00	Yes	100.00	Yes
	7	x	-0.014	-0.014	0.00	Yes	100.00	Yes
	33	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	34	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	35	X	-0.009	-0.009	0.00	Yes	100.00	Yes

	36	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	45	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	47	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	49	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	53	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	55	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	57	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	62	x	-0.009	-0.009	0.00	Yes	100.00	Yes
	63	x	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	x	-0.013	-0.013	0.00	Yes	100.00	Yes
	77	x	-0.013	-0.013	0.00	Yes	100.00	Yes
Di	1	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	5	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	7	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	8	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	9	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	12	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	13	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	14	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	15	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	17	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	18	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	19	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	23	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	24	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	25	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	26	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	27	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	28	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	33	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	34	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	35	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	36	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	45	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	47	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	49	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	53	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	55	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	57	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	61	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	62	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	63	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	77	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	78	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	79	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	80	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	81	Y	-0.011	-0.011	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
DL	34	y	-0.034	0.50	No	
		y	-0.034	7.50	No	
		y	-0.072	4.00	No	
	35	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.058	0.50	No	
	36	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.119	4.00	No	
	45	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.119	4.00	No	
	47	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.034	0.50	No	
	49	y	-0.034	7.50	No	
		y	-0.072	4.00	No	
		y	-0.058	0.50	No	
	53	y	-0.058	7.50	No	
		y	-0.058	7.50	No	
		y	-0.119	4.00	No	
	55	y	-0.019	2.00	No	
		y	-0.058	0.50	No	
		y	-0.058	7.50	No	
	57	y	-0.034	0.50	No	
		y	-0.034	7.50	No	
		y	-0.072	4.00	No	
	82	y	-0.033	50.00	Yes	
		y	-0.033	50.00	Yes	
		y	-0.033	50.00	Yes	
	W0	34	z	-0.177	0.50	No
			z	-0.177	7.50	No
			z	-0.053	4.00	No
		35	z	-0.199	0.50	No
			z	-0.199	7.50	No
			z	-0.199	0.50	No
36		z	-0.199	7.50	No	
		z	-0.048	4.00	No	
		z	-0.199	0.50	No	
45		z	-0.199	7.50	No	
		z	-0.199	7.50	No	
		z	-0.048	4.00	No	
47		z	-0.199	0.50	No	
		z	-0.199	7.50	No	
		z	-0.177	0.50	No	
49		z	-0.177	7.50	No	
		z	-0.177	7.50	No	
		z	-0.053	4.00	No	
53		z	-0.346	0.50	No	
		z	-0.346	7.50	No	
		z	-0.139	4.00	No	
55		z	-0.022	2.00	No	
		z	-0.346	0.50	No	
		z	-0.346	7.50	No	
57		z	-0.259	0.50	No	
		z	-0.259	7.50	No	
		z	-0.045	50.00	Yes	
82		z	-0.045	50.00	Yes	
		z	-0.045	50.00	Yes	

W30	84	z	-0.045	50.00	Yes
	34	x	-0.232	0.50	No
		x	-0.232	7.50	No
		x	-0.038	4.00	No
	35	x	-0.297	0.50	No
		x	-0.297	7.50	No
	36	x	-0.297	0.50	No
		x	-0.297	7.50	No
		x	-0.032	4.00	No
	45	x	-0.297	0.50	No
		x	-0.297	7.50	No
		x	-0.032	4.00	No
	47	x	-0.297	0.50	No
		x	-0.297	7.50	No
	49	x	-0.232	0.50	No
		x	-0.232	7.50	No
		x	-0.038	4.00	No
	53	x	-0.15	0.50	No
		x	-0.15	7.50	No
		x	-0.051	4.00	No
	x	-0.015	2.00	No	
55	x	-0.15	0.50	No	
	x	-0.15	7.50	No	
57	x	-0.15	0.50	No	
	x	-0.15	7.50	No	
	x	-0.054	4.00	No	
82	x	-0.045	50.00	Yes	
85	x	-0.045	50.00	Yes	
84	x	-0.045	50.00	Yes	
Di	34	y	-0.147	0.50	No
		y	-0.147	7.50	No
		y	-0.049	4.00	No
	35	y	-0.191	0.50	No
		y	-0.191	7.50	No
	36	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
	45	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
	47	y	-0.191	0.50	No
		y	-0.191	7.50	No
	49	y	-0.147	0.50	No
		y	-0.147	7.50	No
		y	-0.049	4.00	No
	53	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
		y	-0.016	2.00	No
55	y	-0.191	0.50	No	
	y	-0.191	7.50	No	
57	y	-0.147	0.50	No	
	y	-0.147	7.50	No	
	y	-0.049	4.00	No	
82	y	-0.048	50.00	Yes	
85	y	-0.048	50.00	Yes	
84	y	-0.048	50.00	Yes	
Wi0	34	z	-0.038	0.50	No
		z	-0.038	7.50	No
		z	-0.013	4.00	No

	35	z	-0.042	0.50	No
		z	-0.042	7.50	No
	36	z	-0.042	0.50	No
		z	-0.042	7.50	No
		z	-0.013	4.00	No
	45	z	-0.042	0.50	No
		z	-0.042	7.50	No
		z	-0.013	4.00	No
	47	z	-0.042	0.50	No
		z	-0.042	7.50	No
	49	z	-0.038	0.50	No
		z	-0.038	7.50	No
		z	-0.013	4.00	No
	53	z	-0.068	0.50	No
		z	-0.068	7.50	No
		z	-0.034	4.00	No
		z	-0.007	2.00	No
	55	z	-0.068	0.50	No
		z	-0.068	7.50	No
	57	z	-0.053	0.50	No
		z	-0.053	7.50	No
		z	-0.003	4.00	No
	82	z	-0.011	50.00	Yes
	85	z	-0.011	50.00	Yes
	84	z	-0.011	50.00	Yes
WI30	34	x	-0.047	0.50	No
		x	-0.047	7.50	No
		x	-0.01	4.00	No
	35	x	-0.058	0.50	No
		x	-0.058	7.50	No
	36	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.008	4.00	No
	45	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.008	4.00	No
	47	x	-0.058	0.50	No
		x	-0.058	7.50	No
	49	x	-0.047	0.50	No
		x	-0.047	7.50	No
		x	-0.01	4.00	No
	53	x	-0.034	0.50	No
		x	-0.034	7.50	No
		x	-0.013	4.00	No
		x	-0.006	2.00	No
	55	x	-0.034	0.50	No
		x	-0.034	7.50	No
	57	x	-0.034	0.50	No
		x	-0.034	7.50	No
		x	-0.014	4.00	No
	82	x	-0.011	50.00	Yes
	85	x	-0.011	50.00	Yes
	84	x	-0.011	50.00	Yes
WLO	34	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	4.00	No
	35	z	-0.012	0.50	No
		z	-0.012	7.50	No
	36	z	-0.012	0.50	No
		z	-0.012	7.50	No

		z	-0.003	4.00	No
	45	z	-0.012	0.50	No
		z	-0.012	7.50	No
		z	-0.003	4.00	No
	47	z	-0.012	0.50	No
		z	-0.012	7.50	No
	49	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	4.00	No
	53	z	-0.02	0.50	No
		z	-0.02	7.50	No
		z	-0.008	4.00	No
		z	-0.001	2.00	No
	55	z	-0.02	0.50	No
		z	-0.02	7.50	No
	57	z	-0.015	0.50	No
		z	-0.015	7.50	No
	82	z	-0.003	50.00	Yes
	85	z	-0.003	50.00	Yes
	84	z	-0.003	50.00	Yes
WL30	34	x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.002	4.00	No
	35	x	-0.018	0.50	No
		x	-0.018	7.50	No
	36	x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.002	4.00	No
	45	x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.002	4.00	No
	47	x	-0.018	0.50	No
		x	-0.018	7.50	No
	49	x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.002	4.00	No
	53	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
		x	-0.001	2.00	No
	55	x	-0.009	0.50	No
		x	-0.009	7.50	No
	57	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
	82	x	-0.003	50.00	Yes
	85	x	-0.003	50.00	Yes
	84	x	-0.003	50.00	Yes
LL1	8	y	-0.25	50.00	Yes
LL2	8	y	-0.25	100.00	Yes
LLa1	59	y	-0.25	50.00	Yes
LLa2	57	y	-0.25	50.00	Yes
LLa3	55	y	-0.25	50.00	Yes
LLa4	53	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00



Current Date: 1/15/2020 2:06 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2899\RF MODS\Rev. 1\CT2899 (RF MODS)(Rev. 1).retx

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+W0
- LC10=1.2DL+Di+W30
- LC11=1.2DL+Di-W0
- LC12=1.2DL+Di-W30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3-1/2x2	17	LC11 at 50.00%	0.64	OK	Eq. H1-1b
		25	LC12 at 50.00%	0.62	OK	Eq. H1-1b
		28	LC10 at 50.00%	0.63	OK	Eq. H1-1b
	L 2X2X1_4	76	LC1 at 100.00%	0.92	OK	Eq. H2-1
		77	LC2 at 100.00%	0.73	OK	Eq. H2-1
		78	LC4 at 100.00%	0.90	OK	Eq. H2-1
	L 2X2X3_16	18	LC7 at 0.00%	0.44	OK	Eq. H2-1
		19	LC6 at 0.00%	0.45	OK	Eq. H2-1
		23	LC8 at 0.00%	0.57	OK	Eq. H2-1
		24	LC7 at 0.00%	0.31	OK	Eq. H2-1
		26	LC5 at 0.00%	0.47	OK	Eq. H2-1
		27	LC5 at 0.00%	0.38	OK	Eq. H2-1
	PIPE 2x0.154	33	LC1 at 60.42%	0.40	OK	Eq. H1-1b
		34	LC4 at 60.42%	0.90	OK	Eq. H1-1b

	35	LC4 at 60.42%	1.02	N.G.	Eq. H1-1b
	36	LC2 at 62.50%	0.86	OK	Eq. H1-1b
	45	LC2 at 62.50%	0.86	OK	Eq. H1-1b
	47	LC2 at 60.42%	1.06	N.G.	Eq. H1-1b
	49	LC2 at 60.42%	1.03	N.G.	Eq. H1-1b
	51	LC4 at 60.42%	0.44	OK	Eq. H1-1b
	53	LC1 at 62.50%	0.70	OK	Eq. H1-1b
	55	LC1 at 60.42%	0.78	OK	Eq. H1-1b
	57	LC1 at 60.42%	0.65	OK	Eq. H1-1b
	59	LC2 at 60.42%	0.35	OK	Eq. H1-1b
	61	LC4 at 7.14%	0.44	OK	Eq. H1-1b
	62	LC2 at 7.14%	0.42	OK	Eq. H1-1b
	63	LC4 at 6.25%	0.43	OK	Eq. H3-6
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PIPE 3x0.216	1	LC2 at 0.00%	0.58	OK	Eq. H1-1b
	5	LC1 at 68.06%	0.27	OK	Eq. H1-1b
	7	LC11 at 68.06%	0.25	OK	Eq. H1-1b
	8	LC2 at 31.94%	0.32	OK	Eq. H1-1b
	12	LC11 at 50.00%	0.43	OK	Eq. H1-1b
	14	LC3 at 0.00%	0.47	OK	Eq. H1-1b
<hr/>					
PL 6x3/8	9	LC3 at 50.00%	0.65	OK	Eq. H1-1b
	13	LC2 at 50.00%	0.74	OK	Eq. H1-1b
	15	LC1 at 50.00%	0.57	OK	Eq. H1-1b
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T2L 2-1_2X2-1_2X3_16X3_4	79	LC10 at 100.00%	0.70	OK	Eq. H2-1
	80	LC9 at 100.00%	0.69	OK	Eq. H2-1
	81	LC12 at 100.00%	0.68	OK	Eq. H2-1

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	0.00	0.00	-1.00	0
13	0.3391	0.00	-7.4127	0
14	6.5891	0.00	3.4127	0
17	-0.3391	0.00	-7.4127	0
18	-6.5891	0.00	3.4127	0
19	-6.25	0.00	4.00	0
20	6.25	0.00	4.00	0
27	-0.5995	0.00	-6.9616	0
34	0.5995	0.00	-6.9616	0
35	0.00	0.00	-6.9616	0
40	0.866	0.00	0.50	0
41	6.0289	0.00	3.4808	0
42	5.7292	0.00	4.00	0
44	-0.866	0.00	0.50	0
45	-6.0289	0.00	3.4808	0
46	-6.3287	0.00	2.9616	0
47	-5.7292	0.00	4.00	0
65	-2.228	0.00	4.00	0
67	-4.5781	0.00	-0.0705	0
68	-5.8992	0.00	3.7056	0

69	-2.398	0.00	3.7056	0
70	-6.1287	0.00	3.308	0
71	-4.3781	0.00	0.2759	0
78	6.1587	0.00	3.2561	0
79	4.4081	0.00	0.224	0
80	5.9292	0.00	3.6536	0
81	2.428	0.00	3.6536	0
82	4.5781	0.00	-0.0705	0
83	2.228	0.00	4.00	0
84	-0.2595	0.00	-6.9616	0
85	-2.0101	0.00	-3.9295	0
86	0.1995	0.00	-6.9616	0
87	1.9501	0.00	-3.9295	0
88	-2.3501	0.00	-3.9295	0
89	2.3501	0.00	-3.9295	0
98	-6.3663	5.00	2.6268	0
99	-4.4913	5.00	-0.6208	0
100	-2.8248	5.00	-3.5073	0
101	-0.9082	5.00	-6.827	0
102	-6.3663	-3.00	2.6268	0
103	-4.4913	-3.00	-0.6208	0
104	-2.8248	-3.00	-3.5073	0
105	-0.9082	-3.00	-6.827	0
130	6.3665	5.00	2.627	0
131	6.3665	-3.00	2.627	0
132	4.4498	5.00	-0.6927	0
133	4.4498	-3.00	-0.6927	0
134	2.7833	5.00	-3.5792	0
135	2.7833	-3.00	-3.5792	0
136	0.9083	5.00	-6.8268	0
137	0.9083	-3.00	-6.8268	0
146	-5.4583	5.00	4.20	0
147	-5.4583	-3.00	4.20	0
148	-1.625	5.00	4.20	0
149	-1.625	-3.00	4.20	0
150	1.708	5.00	4.20	0
151	1.708	-3.00	4.20	0
152	5.458	5.00	4.20	0
153	5.458	-3.00	4.20	0
162	6.1933	3.75	2.727	0
170	-0.735	3.75	-6.727	0
178	-6.25	3.75	4.00	0
179	6.25	3.75	4.00	0
180	6.5891	3.75	3.4127	0
181	0.3391	3.75	-7.4127	0
182	-0.3391	3.75	-7.4127	0
183	-6.5891	3.75	3.4127	0
184	-6.3287	3.75	2.9616	0
185	-5.7292	3.75	4.00	0
186	5.7292	3.75	4.00	0
187	6.3287	3.75	2.9616	0
189	-0.5995	3.75	-6.9616	0
190	0.00	-2.00	-1.00	0
191	0.866	-2.00	0.50	0
192	-0.866	-2.00	0.50	0
193	0.00	0.00	-3.9808	0
194	3.4475	0.00	1.9904	0
195	-3.4475	0.00	1.9904	0
202	0.00	0.00	-2.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
40	1	1	1	1	1	1
44	1	1	1	1	1	1
190	1	1	1	1	1	1
191	1	1	1	1	1	1
192	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	2	35		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
5	14	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
7	17	18		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
8	19	20		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
9	34	27		PL 6x3/8	A36	0.00	0.00	0.00
12	40	41		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
13	42	43		PL 6x3/8	A36	0.00	0.00	0.00
14	44	45		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
15	46	47		PL 6x3/8	A36	0.00	0.00	0.00
17	65	67		C 3-1/2x2	A36	0.00	0.00	0.00
18	68	69		L 2X2X3_16	A36	0.00	0.00	0.00
19	70	71		L 2X2X3_16	A36	0.00	0.00	0.00
23	78	79		L 2X2X3_16	A36	0.00	0.00	0.00
24	80	81		L 2X2X3_16	A36	0.00	0.00	0.00
25	82	83		C 3-1/2x2	A36	0.00	0.00	0.00
26	84	85		L 2X2X3_16	A36	0.00	0.00	0.00
27	86	87		L 2X2X3_16	A36	0.00	0.00	0.00
28	88	89		C 3-1/2x2	A36	0.00	0.00	0.00
33	98	102		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
34	99	103		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
35	100	104		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
36	101	105		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	130	131		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
47	132	133		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
49	134	135		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
51	136	137		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	146	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
55	148	149		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
57	150	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
59	152	153		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	178	179		PIPE 2x0.154	A36	0.00	0.00	0.00
62	180	181		PIPE 2x0.154	A36	0.00	0.00	0.00
63	182	183		PIPE 2x0.154	A36	0.00	0.00	0.00
76	184	185		L 2X2X1_4	A36	0.00	0.00	0.00
77	186	187		L 2X2X1_4	A36	0.00	0.00	0.00
78	188	189		L 2X2X1_4	A36	0.00	0.00	0.00
79	192	195		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00
80	190	193		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00
81	191	194		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
17	180.00	0	0.00	0.00	0.00
18	270.00	0	0.00	0.00	0.00
23	270.00	0	0.00	0.00	0.00
25	180.00	0	0.00	0.00	0.00
26	270.00	0	0.00	0.00	0.00
28	180.00	0	0.00	0.00	0.00
33	0.00	2	-0.50	0.00	0.866
34	0.00	2	-0.50	0.00	0.866
35	0.00	2	-0.50	0.00	0.866
36	0.00	2	-0.50	0.00	0.866
45	0.00	2	-0.50	0.00	-0.866
47	0.00	2	-0.50	0.00	-0.866
49	0.00	2	-0.50	0.00	-0.866
51	0.00	2	-0.50	0.00	-0.866
76	180.00	0	0.00	0.00	0.00
77	180.00	0	0.00	0.00	0.00
78	180.00	0	0.00	0.00	0.00

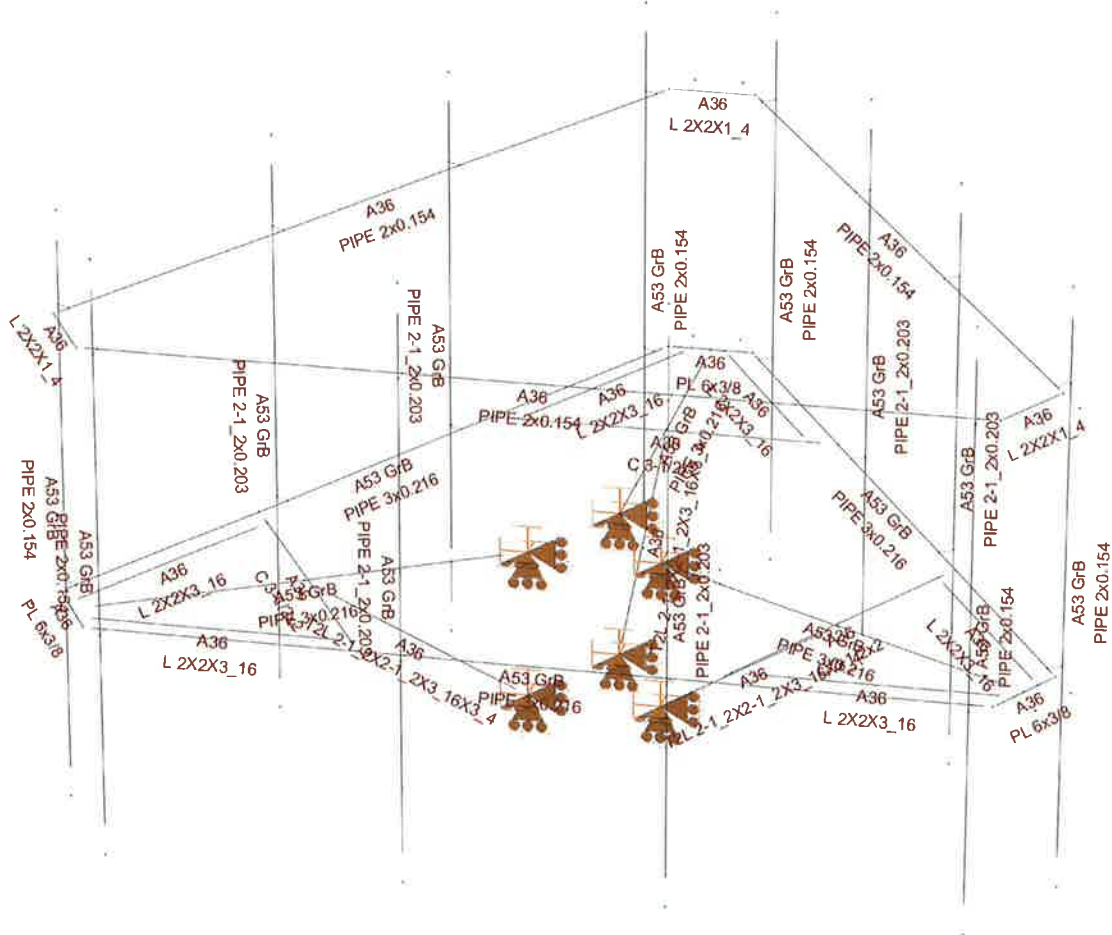


HUDSON
Design Group LLC





**Mount Calculations
(Modified Conditions)**

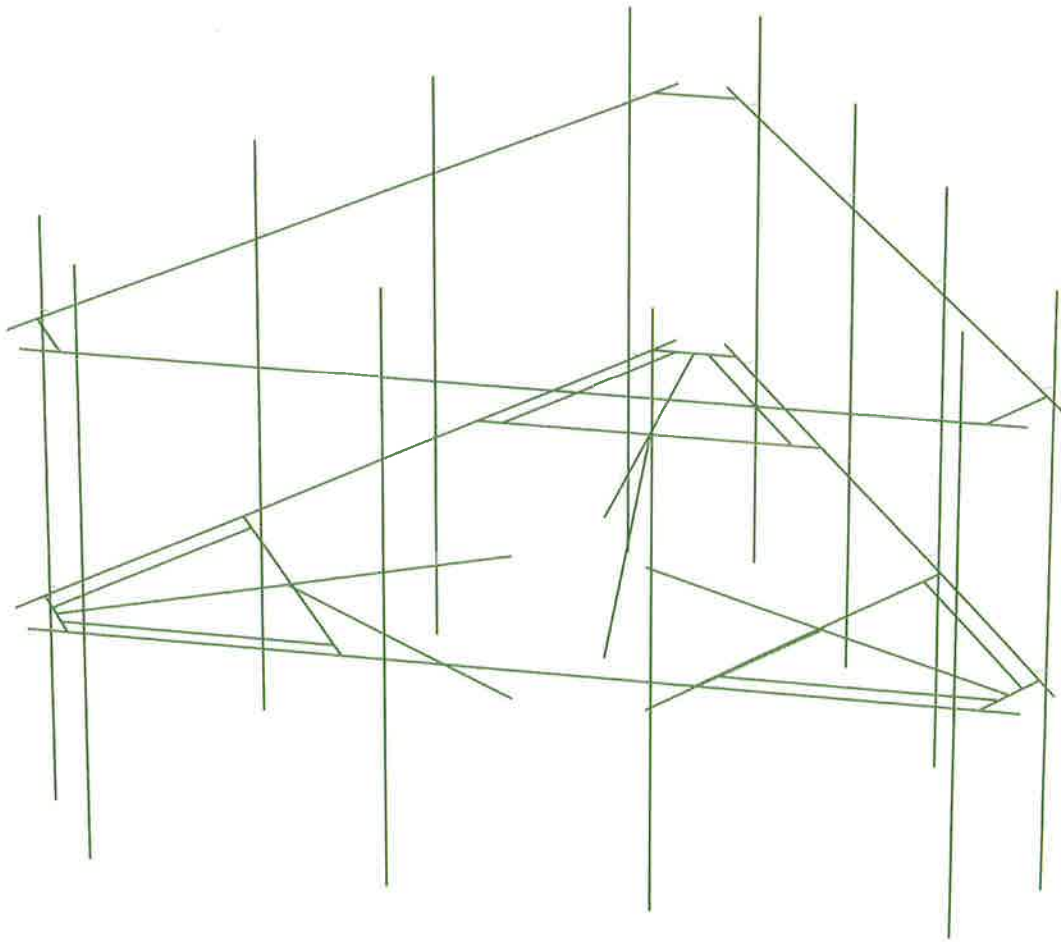


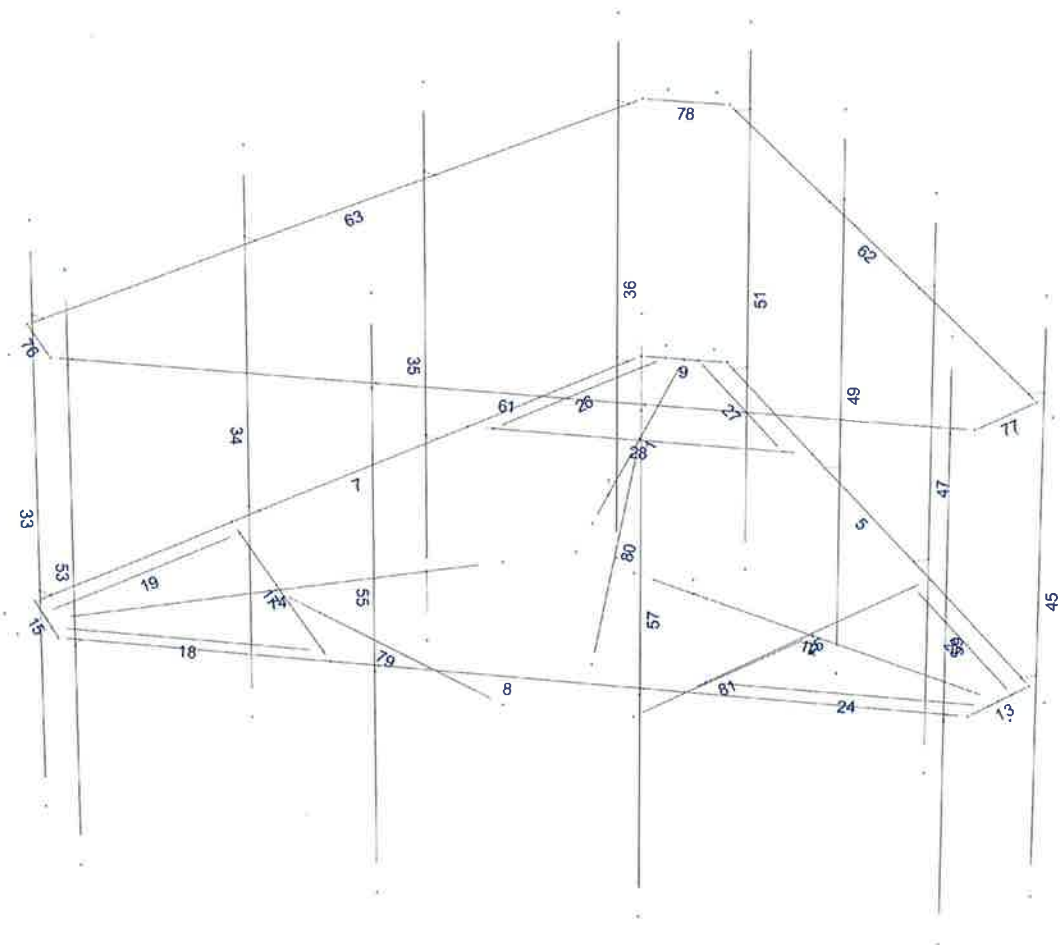
Remove existing pipe masts and install new 2-1/2" std. (2.88" O.D.) pipe masts behind existing 800-10966 and HPA-65R-BUU-H8 Antennas (typ. of 2 per sector, total of 6).



Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings





Current Date: 1/15/2020 2:07 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2899\RF MODS\Rev. 1\CT2899 (RF MODS)(Rev. 1)(MODS).retx

Load data

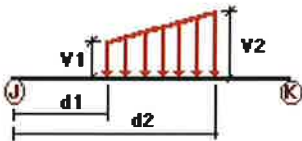
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

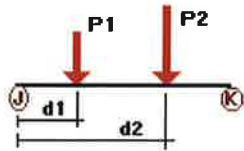
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	5	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	7	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	8	Z	-0.014	-0.014	0.00	Yes	100.00	Yes
	33	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	77	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
W30	78	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	5	x	-0.014	-0.014	0.00	Yes	100.00	Yes
	7	x	-0.014	-0.014	0.00	Yes	100.00	Yes
	33	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	34	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	35	X	-0.009	-0.009	0.00	Yes	100.00	Yes

	36	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	45	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	47	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	49	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	53	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	55	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	57	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	62	x	-0.009	-0.009	0.00	Yes	100.00	Yes
	63	x	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	x	-0.013	-0.013	0.00	Yes	100.00	Yes
	77	x	-0.013	-0.013	0.00	Yes	100.00	Yes
Di	1	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	5	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	7	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	8	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	9	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	12	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	13	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	14	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	15	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
	17	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	18	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	19	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	23	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	24	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	25	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	26	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	27	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	28	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	33	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	34	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	35	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	36	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	45	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	47	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	49	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	51	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	53	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	55	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	57	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	59	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	61	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	62	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	63	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	76	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	77	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	78	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	79	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	80	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	81	Y	-0.011	-0.011	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
DL	34	y	-0.034	0.50	No	
		y	-0.034	7.50	No	
		y	-0.072	4.00	No	
	35	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
	36	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.119	4.00	No	
	45	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
	47	y	-0.119	4.00	No	
		y	-0.058	0.50	No	
	49	y	-0.058	7.50	No	
		y	-0.034	0.50	No	
	53	y	-0.034	7.50	No	
			-0.072	4.00	No	
			-0.058	0.50	No	
	55	y	-0.058	7.50	No	
			-0.119	4.00	No	
			-0.019	2.00	No	
	57	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
	82	y	-0.034	0.50	No	
			-0.034	7.50	No	
			-0.072	4.00	No	
	85	y	-0.033	50.00	Yes	
			-0.033	50.00	Yes	
	WO	34	z	-0.033	50.00	Yes
			z	-0.177	0.50	No
			z	-0.177	7.50	No
35		z	-0.053	4.00	No	
		z	-0.199	0.50	No	
36		z	-0.199	7.50	No	
		z	-0.199	0.50	No	
45		z	-0.199	7.50	No	
			-0.048	4.00	No	
			-0.199	0.50	No	
47		z	-0.199	7.50	No	
		z	-0.048	4.00	No	
49		z	-0.199	0.50	No	
		z	-0.199	7.50	No	
53		z	-0.177	0.50	No	
			-0.177	7.50	No	
			-0.053	4.00	No	
55		z	-0.346	0.50	No	
			-0.346	7.50	No	
			-0.139	4.00	No	
57		z	-0.022	2.00	No	
		z	-0.346	0.50	No	
82		z	-0.346	7.50	No	
			-0.259	0.50	No	
85		z	-0.259	7.50	No	
			-0.045	50.00	Yes	
				-0.045	50.00	Yes

W30	84	z	-0.045	50.00	Yes
	34	x	-0.232	0.50	No
		x	-0.232	7.50	No
		x	-0.038	4.00	No
	35	x	-0.297	0.50	No
		x	-0.297	7.50	No
	36	x	-0.297	0.50	No
		x	-0.297	7.50	No
		x	-0.032	4.00	No
	45	x	-0.297	0.50	No
		x	-0.297	7.50	No
		x	-0.032	4.00	No
	47	x	-0.297	0.50	No
		x	-0.297	7.50	No
	49	x	-0.232	0.50	No
		x	-0.232	7.50	No
		x	-0.038	4.00	No
	53	x	-0.15	0.50	No
		x	-0.15	7.50	No
		x	-0.051	4.00	No
	x	-0.015	2.00	No	
55	x	-0.15	0.50	No	
	x	-0.15	7.50	No	
57	x	-0.15	0.50	No	
	x	-0.15	7.50	No	
	x	-0.054	4.00	No	
82	x	-0.045	50.00	Yes	
85	x	-0.045	50.00	Yes	
84	x	-0.045	50.00	Yes	
Di	34	y	-0.147	0.50	No
		y	-0.147	7.50	No
		y	-0.049	4.00	No
	35	y	-0.191	0.50	No
		y	-0.191	7.50	No
	36	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
	45	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
	47	y	-0.191	0.50	No
		y	-0.191	7.50	No
	49	y	-0.147	0.50	No
		y	-0.147	7.50	No
		y	-0.049	4.00	No
	53	y	-0.191	0.50	No
		y	-0.191	7.50	No
		y	-0.095	4.00	No
		y	-0.016	2.00	No
55	y	-0.191	0.50	No	
	y	-0.191	7.50	No	
57	y	-0.147	0.50	No	
	y	-0.147	7.50	No	
	y	-0.049	4.00	No	
82	y	-0.048	50.00	Yes	
85	y	-0.048	50.00	Yes	
84	y	-0.048	50.00	Yes	
W10	34	z	-0.038	0.50	No
		z	-0.038	7.50	No
		z	-0.013	4.00	No

	35	z	-0.042	0.50	No
		z	-0.042	7.50	No
	36	z	-0.042	0.50	No
		z	-0.042	7.50	No
		z	-0.013	4.00	No
	45	z	-0.042	0.50	No
		z	-0.042	7.50	No
		z	-0.013	4.00	No
	47	z	-0.042	0.50	No
		z	-0.042	7.50	No
	49	z	-0.038	0.50	No
		z	-0.038	7.50	No
		z	-0.013	4.00	No
	53	z	-0.068	0.50	No
		z	-0.068	7.50	No
		z	-0.034	4.00	No
		z	-0.007	2.00	No
	55	z	-0.068	0.50	No
		z	-0.068	7.50	No
	57	z	-0.053	0.50	No
		z	-0.053	7.50	No
		z	-0.003	4.00	No
	82	z	-0.011	50.00	Yes
	85	z	-0.011	50.00	Yes
	84	z	-0.011	50.00	Yes
Wi30	34	x	-0.047	0.50	No
		x	-0.047	7.50	No
		x	-0.01	4.00	No
	35	x	-0.058	0.50	No
		x	-0.058	7.50	No
	36	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.008	4.00	No
	45	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.008	4.00	No
	47	x	-0.058	0.50	No
		x	-0.058	7.50	No
	49	x	-0.047	0.50	No
		x	-0.047	7.50	No
		x	-0.01	4.00	No
	53	x	-0.034	0.50	No
		x	-0.034	7.50	No
		x	-0.013	4.00	No
		x	-0.006	2.00	No
	55	x	-0.034	0.50	No
		x	-0.034	7.50	No
	57	x	-0.034	0.50	No
		x	-0.034	7.50	No
		x	-0.014	4.00	No
	82	x	-0.011	50.00	Yes
	85	x	-0.011	50.00	Yes
	84	x	-0.011	50.00	Yes
WLO	34	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	4.00	No
	35	z	-0.012	0.50	No
		z	-0.012	7.50	No
	36	z	-0.012	0.50	No
		z	-0.012	7.50	No

		z	-0.003	4.00	No
45		z	-0.012	0.50	No
		z	-0.012	7.50	No
		z	-0.003	4.00	No
47		z	-0.012	0.50	No
		z	-0.012	7.50	No
49		z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	4.00	No
53		z	-0.02	0.50	No
		z	-0.02	7.50	No
		z	-0.008	4.00	No
		z	-0.001	2.00	No
55		z	-0.02	0.50	No
		z	-0.02	7.50	No
57		z	-0.015	0.50	No
		z	-0.015	7.50	No
82		z	-0.003	50.00	Yes
85		z	-0.003	50.00	Yes
84		z	-0.003	50.00	Yes
WL30	34	x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.002	4.00	No
35		x	-0.018	0.50	No
		x	-0.018	7.50	No
36		x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.002	4.00	No
45		x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.002	4.00	No
47		x	-0.018	0.50	No
		x	-0.018	7.50	No
49		x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.002	4.00	No
53		x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
		x	-0.001	2.00	No
55		x	-0.009	0.50	No
		x	-0.009	7.50	No
57		x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
82		x	-0.003	50.00	Yes
85		x	-0.003	50.00	Yes
84		x	-0.003	50.00	Yes
LL1	8	y	-0.25	50.00	Yes
LL2	8	y	-0.25	100.00	Yes
LLa1	59	y	-0.25	50.00	Yes
LLa2	57	y	-0.25	50.00	Yes
LLa3	55	y	-0.25	50.00	Yes
LLa4	53	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Current Date: 1/15/2020 2:07 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2899\RF MODS\Rev. 1\CT2899 (RF MODS)(Rev. 1)(MODS).retx

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3-1/2x2	17	LC11 at 50.00%	0.64	OK	Eq. H1-1b
		25	LC12 at 50.00%	0.62	OK	Eq. H1-1b
		28	LC10 at 50.00%	0.63	OK	Eq. H1-1b
	L 2X2X1_4	76	LC1 at 100.00%	0.92	OK	Eq. H2-1
		77	LC2 at 100.00%	0.73	OK	Eq. H2-1
		78	LC4 at 100.00%	0.90	OK	Eq. H2-1
	L 2X2X3_16	18	LC7 at 0.00%	0.44	OK	Eq. H2-1
		19	LC6 at 0.00%	0.45	OK	Eq. H2-1
		23	LC8 at 0.00%	0.57	OK	Eq. H2-1
		24	LC7 at 0.00%	0.31	OK	Eq. H2-1
		26	LC5 at 0.00%	0.47	OK	Eq. H2-1
		27	LC5 at 0.00%	0.38	OK	Eq. H2-1
	PIPE 2-1_2x0.203	34	LC4 at 60.42%	0.47	OK	Eq. H1-1b
		35	LC4 at 60.42%	0.53	OK	Eq. H1-1b

	47	LC2 at 60.42%	0.55	OK	Eq. H1-1b
	49	LC2 at 60.42%	0.53	OK	Eq. H1-1b
	55	LC1 at 60.42%	0.41	OK	Eq. H1-1b
	57	LC1 at 60.42%	0.34	OK	Eq. H1-1b
<hr/>					
PIPE 2x0.154	33	LC1 at 60.42%	0.40	OK	Eq. H1-1b
	36	LC2 at 62.50%	0.86	OK	Eq. H1-1b
	45	LC2 at 62.50%	0.86	OK	Eq. H1-1b
	51	LC4 at 60.42%	0.44	OK	Eq. H1-1b
	53	LC1 at 62.50%	0.70	OK	Eq. H1-1b
	59	LC2 at 60.42%	0.35	OK	Eq. H1-1b
	61	LC4 at 7.14%	0.44	OK	Eq. H1-1b
	62	LC2 at 7.14%	0.42	OK	Eq. H1-1b
	63	LC4 at 6.25%	0.43	OK	Eq. H3-6
<hr/>					
PIPE 3x0.216	1	LC2 at 0.00%	0.58	OK	Eq. H1-1b
	5	LC1 at 68.06%	0.27	OK	Eq. H1-1b
	7	LC11 at 68.06%	0.25	OK	Eq. H1-1b
	8	LC2 at 31.94%	0.32	OK	Eq. H1-1b
	12	LC11 at 50.00%	0.43	OK	Eq. H1-1b
	14	LC3 at 0.00%	0.47	OK	Eq. H1-1b
<hr/>					
PL 6x3/8	9	LC3 at 50.00%	0.65	OK	Eq. H1-1b
	13	LC2 at 50.00%	0.74	OK	Eq. H1-1b
	15	LC1 at 50.00%	0.57	OK	Eq. H1-1b
<hr/>					
T2L 2-1_2X2-1_2X3_16X3_4	79	LC10 at 100.00%	0.70	OK	Eq. H2-1
	80	LC9 at 100.00%	0.69	OK	Eq. H2-1
	81	LC12 at 100.00%	0.68	OK	Eq. H2-1

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	0.00	0.00	-1.00	0
13	0.3391	0.00	-7.4127	0
14	6.5891	0.00	3.4127	0
17	-0.3391	0.00	-7.4127	0
18	-6.5891	0.00	3.4127	0
19	-6.25	0.00	4.00	0
20	6.25	0.00	4.00	0
27	-0.5995	0.00	-6.9616	0
34	0.5995	0.00	-6.9616	0
35	0.00	0.00	-6.9616	0
40	0.866	0.00	0.50	0
41	6.0289	0.00	3.4808	0
42	5.7292	0.00	4.00	0
44	-0.866	0.00	0.50	0
45	-6.0289	0.00	3.4808	0
46	-6.3287	0.00	2.9616	0
47	-5.7292	0.00	4.00	0
65	-2.228	0.00	4.00	0
67	-4.5781	0.00	-0.0705	0
68	-5.8992	0.00	3.7056	0

69	-2.398	0.00	3.7056	0
70	-6.1287	0.00	3.308	0
71	-4.3781	0.00	0.2759	0
78	6.1587	0.00	3.2561	0
79	4.4081	0.00	0.224	0
80	5.9292	0.00	3.6536	0
81	2.428	0.00	3.6536	0
82	4.5781	0.00	-0.0705	0
83	2.228	0.00	4.00	0
84	-0.2595	0.00	-6.9616	0
85	-2.0101	0.00	-3.9295	0
86	0.1995	0.00	-6.9616	0
87	1.9501	0.00	-3.9295	0
88	-2.3501	0.00	-3.9295	0
89	2.3501	0.00	-3.9295	0
98	-6.3663	5.00	2.6268	0
99	-4.4913	5.00	-0.6208	0
100	-2.8248	5.00	-3.5073	0
101	-0.9082	5.00	-6.827	0
102	-6.3663	-3.00	2.6268	0
103	-4.4913	-3.00	-0.6208	0
104	-2.8248	-3.00	-3.5073	0
105	-0.9082	-3.00	-6.827	0
130	6.3665	5.00	2.627	0
131	6.3665	-3.00	2.627	0
132	4.4498	5.00	-0.6927	0
133	4.4498	-3.00	-0.6927	0
134	2.7833	5.00	-3.5792	0
135	2.7833	-3.00	-3.5792	0
136	0.9083	5.00	-6.8268	0
137	0.9083	-3.00	-6.8268	0
146	-5.4583	5.00	4.20	0
147	-5.4583	-3.00	4.20	0
148	-1.625	5.00	4.20	0
149	-1.625	-3.00	4.20	0
150	1.708	5.00	4.20	0
151	1.708	-3.00	4.20	0
152	5.458	5.00	4.20	0
153	5.458	-3.00	4.20	0
162	6.1933	3.75	2.727	0
170	-0.735	3.75	-6.727	0
178	-6.25	3.75	4.00	0
179	6.25	3.75	4.00	0
180	6.5891	3.75	3.4127	0
181	0.3391	3.75	-7.4127	0
182	-0.3391	3.75	-7.4127	0
183	-6.5891	3.75	3.4127	0
184	-6.3287	3.75	2.9616	0
185	-5.7292	3.75	4.00	0
186	5.7292	3.75	4.00	0
187	6.3287	3.75	2.9616	0
189	-0.5995	3.75	-6.9616	0
190	0.00	-2.00	-1.00	0
191	0.866	-2.00	0.50	0
192	-0.866	-2.00	0.50	0
193	0.00	0.00	-3.9808	0
194	3.4475	0.00	1.9904	0
195	-3.4475	0.00	1.9904	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
40	1	1	1	1	1	1
44	1	1	1	1	1	1
190	1	1	1	1	1	1
191	1	1	1	1	1	1
192	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	2	35		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
5	14	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
7	17	18		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
8	19	20		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
9	34	27		PL 6x3/8	A36	0.00	0.00	0.00
12	40	41		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
13	42	43		PL 6x3/8	A36	0.00	0.00	0.00
14	44	45		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
15	46	47		PL 6x3/8	A36	0.00	0.00	0.00
17	65	67		C 3-1/2x2	A36	0.00	0.00	0.00
18	68	69		L 2X2X3_16	A36	0.00	0.00	0.00
19	70	71		L 2X2X3_16	A36	0.00	0.00	0.00
23	78	79		L 2X2X3_16	A36	0.00	0.00	0.00
24	80	81		L 2X2X3_16	A36	0.00	0.00	0.00
25	82	83		C 3-1/2x2	A36	0.00	0.00	0.00
26	84	85		L 2X2X3_16	A36	0.00	0.00	0.00
27	86	87		L 2X2X3_16	A36	0.00	0.00	0.00
28	88	89		C 3-1/2x2	A36	0.00	0.00	0.00
33	98	102		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
34	99	103		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
35	100	104		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
36	101	105		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	130	131		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
47	132	133		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
49	134	135		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
51	136	137		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	146	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
55	148	149		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
57	150	151		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
59	152	153		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	178	179		PIPE 2x0.154	A36	0.00	0.00	0.00
62	180	181		PIPE 2x0.154	A36	0.00	0.00	0.00
63	182	183		PIPE 2x0.154	A36	0.00	0.00	0.00
76	184	185		L 2X2X1_4	A36	0.00	0.00	0.00
77	186	187		L 2X2X1_4	A36	0.00	0.00	0.00
78	188	189		L 2X2X1_4	A36	0.00	0.00	0.00
79	192	195		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00
80	190	193		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00
81	191	194		T2L 2-1_2X2-1_2X3_16...	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
17	180.00	0	0.00	0.00	0.00
18	270.00	0	0.00	0.00	0.00
23	270.00	0	0.00	0.00	0.00
25	180.00	0	0.00	0.00	0.00
26	270.00	0	0.00	0.00	0.00
28	180.00	0	0.00	0.00	0.00
33	0.00	2	-0.50	0.00	0.866
34	0.00	2	-0.50	0.00	0.866
35	0.00	2	-0.50	0.00	0.866
36	0.00	2	-0.50	0.00	0.866
45	0.00	2	-0.50	0.00	-0.866
47	0.00	2	-0.50	0.00	-0.866
49	0.00	2	-0.50	0.00	-0.866
51	0.00	2	-0.50	0.00	-0.866
76	180.00	0	0.00	0.00	0.00
77	180.00	0	0.00	0.00	0.00
78	180.00	0	0.00	0.00	0.00

EXHIBIT 3

Connecticut Siting Council

Decisions

DOCKET NO. 293 – Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at one of two locations off of Route 162, West Haven, Connecticut. }	Connecticut
}	Siting
}	Council
	May 11, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Omnipoint Communications, Inc. (T-Mobile), hereinafter referred to as the Certificate Holder, for a telecommunications facility at the Alternate Site, located at 668 Jones Hill Road, West Haven, Connecticut. The Council denies certification of the Prime Site, located at 600 Jones Hill Road, West Haven, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of T-Mobile and other entities, both public and private, but such tower including antennas shall not exceed a height of 153 feet above ground level. The monopole shall be designed with an engineered yield point of sufficient height to prevent the tower from encroaching upon adjacent property in the event of a tower failure.
2. The tower and compound location shall be relocated 100 feet to the southwest.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of West Haven for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, access road, utility line, and landscaping; and
 - b. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of West Haven public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved. Any request for extension of this period shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors as listed in the service list and the City of West Haven. Any proposed modifications to this Decision and Order shall likewise be so served.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The New Haven Register and the West Haven News.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

<u>Applicant</u>	<u>Its Representative</u>
Omnipoint Communications, Inc	Stephen J. Humes, Esq. McCarter & English, LLP CityPlace I, 185 Asylum Street Hartford, CT 06103



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

August 22, 2014

Jennifer Young Gaudet, Esq.
HPC Wireless Services
22 Shelter Rock Lane
Building C
Danbury, CT 06810

RE: **PETITION NO. 1108** – American Tower Corporation and New Cingular Wireless PCS, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the expansion of an existing telecommunications facility located at 668 Jones Hill Road, West Haven, Connecticut.

Dear Attorney Gaudet:

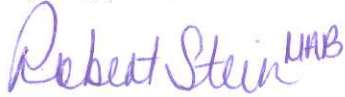
At a public meeting held on August 21, 2014, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with the following conditions:

- that AT&T/ATC retain as much of the existing vegetation as possible, including the large diameter ash tree;
- install new evergreens along the northwest corner of the new fence line adjacent to the dirt road;
- the tower and foundation shall be reinforced in accordance with the structural analysis report prepared by ATC dated May 9, 2014 and stamped by William Garrett;
- within 45 days following completion of the equipment installation, ATC shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the structural analysis;
- within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed; and
- any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated June 30, 2014.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,



Robert Stein
Chairman

RS/RDM/lm

Enclosure: Staff Report dated August 21, 2014

c: The Honorable Edward M. O'Brien, Mayor, City of West Haven
Joseph A. Riccio, Jr., Commissioner, Planning & Development, City of West Haven



STATE OF CONNECTICUT

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Petition No. 1108

New Cingular Wireless PCS, LLC/ATC

668 Jones Hill Road, West Haven, Connecticut

Staff Report

August 21, 2014

On July 1, 2014, the Connecticut Siting Council (Council) received a petition from New Cingular Wireless PCS, LLC (AT&T)/American Tower Corporation (ATC) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the expansion of an existing compound at an existing telecommunications facility located at 668 Jones Hill Road in West Haven, Connecticut. Council member Dr. Barbara Bell and staff member Robert Mercier visited the site on July 28, 2014 to review the proposal. Jennifer Young Gaudet represented the petitioner at the field review.

Pursuant to § 16-50j-40 of the Regulations of Connecticut State Agencies, on June 30, 2014, AT&T/ATC notified the City of Milford and abutting property owners of the proposed project. No abutters or City officials attended the field review.

The existing facility was approved on May 11, 2005 under Council Docket 293 and consists of a 150-foot monopole and a 50-foot by 50-foot compound/lease area. The 668 Jones Hill Road property consists of a small farm with related outbuildings. The facility is located in a wooded/shrubby area approximately 100 feet west of a barn and immediately south of a field. ATC, the current Certificate Holder, has negotiated a new 70-foot by 70-foot lease area with the underlying property owner.

AT&T proposes to install 12 antennas at the 125-foot level of the tower and install a 12-foot by 16-foot equipment shelter and an emergency diesel generator at the site. The existing compound does not have enough space to accommodate AT&T's ground equipment. The site currently supports T-Mobile, Clearwire, Verizon, MetroPCS, and a local user. The existing tower and foundation would need reinforcement to support AT&T's equipment.

AT&T/ATC propose to expand the compound fence line to the northwest by 16 feet to create 784 square feet of new compound space to accommodate the proposed ground equipment. The expansion area contains small diameter trees/shrubs and pine trees that were planted along the northwest side of the existing compound fence. One large diameter ash tree is near the proposed expanded fence edge and may be removed as part of the project. AT&T/ATC propose new evergreen plantings along the expanded fence line.

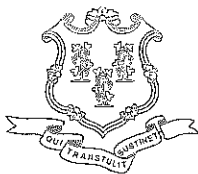
During the field review it was noted that the existing shrub vegetation along the proposed west fence perimeter would serve to screen the facility from adjacent areas. Given this shrub buffer, it was determined that there was no need to remove the existing shrubs and install evergreens, except where there was more exposure along the northwest corner of the compound where it is adjacent to a dirt road. AT&T/ATC would also examine the possibility of shifting the fence line slightly to prevent the loss of the large ash tree, one of a few in the area that serve to screen the tower from surrounding areas.

Staff recommends approval with the following conditions:

- that AT&T/ATC retain as much of the existing vegetation as possible, including the large diameter ash tree;
- install new evergreens along the northwest corner of the new fence line adjacent to the dirt road;
- the tower and foundation shall be reinforced in accordance with the structural analysis report prepared by ATC dated May 9, 2014 and stamped by William Garrett; and,
- within 45 days following completion of the equipment installation, ATC shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the structural analysis.



Google Earth Image of site location at 668 Jones Hill Road, West Haven.
Yellow box is approximate expansion area.
Red outline is existing compound.



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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

October 3, 2014

Jennifer Young Gaudet, Esq.
HPC Wireless Services
22 Shelter Rock Lane
Building C
Danbury, CT 06810

RE: **PETITION NO. 1108** – American Tower Corporation and New Cingular Wireless PCS, LLC
petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need
is required for the expansion of an existing telecommunications facility located at 668 Jones Hill
Road, West Haven, Connecticut.

Dear Attorney Gaudet:

At a public meeting held on October 2, 2014, the Connecticut Siting Council (Council) considered and approved the revisions to this petition to install a shared generator submitted on June 30, 2014 and additional information received on September 25, 2014.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated June 30, 2014, and in the revision submission dated September 25, 2014.

Very truly yours,

Robert Stein
Chairman

RS/RM/lm

c: The Honorable Edward M. O'Brien, Mayor, City of West Haven
Joseph A. Riccio, Jr., Commissioner, Planning & Development, City of West Haven



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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April 8, 2019

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street #301
West Bridgewater, MA 02379

RE: **EM-CING-156-190318** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 668 Jones Hill Road, West Haven, Connecticut.

Dear Ms. Iliades:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;
5. The validity of this action shall expire one year from the date of this letter; and
6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated March 14, 2019. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require



explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman
Executive Director

MAB/IN/emr

- c: The Honorable Nancy R. Rossi, Mayor, City of West Haven
- Fred A. Messore, Commissioner of Planning and Development, City of West Haven
- American Tower Corporation, Tower Operator

EXHIBIT 4



Property Information

Property Location	668 JONES HILL RD
Owner	AMERICAN TOWERS INC.
Co-Owner	ATTN TAX DEPT
Mailing Address	PO BOX 723597 ATLANTA GA 31139
Land Use	431V TEL REL TW MDL-00
Land Class	I
Zoning Code	
Census Tract	

Street Index	
Acreage	0
Utilities	
Lot Setting/Desc	
Additional Info	

Photo



Sketch



Primary Construction Details

Year Built	0
Stories	
Building Style	UNKNOWN
Building Use	Vacant
Building Condition	
Occupancy	
Extra Fixtures	0
Bath Style	NA
Kitchen Style	NA
AC Type	
Heating Type	
Heating Fuel	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Total Rooms	0
Roof Style	
Roof Cover	
Interior Floors 1	
Interior Floors 2	
Exterior Walls	
Exterior Walls 2	NA
Interior Walls	
Interior Walls 2	NA

(*Industrial / Commercial Details)

Building Desc.	TEL REL TW
Building Grade	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA



Property Information

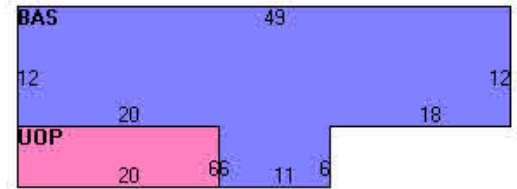
Property Location	668 JONES HILL RD
Owner	NEWKIRK ROBERT E
Co-Owner	
Mailing Address	668 JONES HILL RD WEST HAVEN CT 06516
Land Use	3220 STORE MDL-94
Land Class	C
Zoning Code	R1
Census Tract	

Street Index	
Acres	13.09
Utilities	Public Water,Public Sewer
Lot Setting/Desc	Above Street
Additional Info	

Photo



Sketch



Primary Construction Details

Year Built	1998
Stories	1
Building Style	Store
Building Use	Comm/Ind
Building Condition	F
Occupancy	1.00
Extra Fixtures	0
Bath Style	NA
Kitchen Style	NA
AC Type	01
Heating Type	None
Heating Fuel	Coal or Wood

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Total Rooms	0
Roof Style	Gable
Roof Cover	Asph/F Gls/Cmp
Interior Floors 1	Hardwood
Interior Floors 2	
Exterior Walls	Wood on Sheath
Exterior Walls 2	NA
Interior Walls	Wall Brd/Wood
Interior Walls 2	NA

(*Industrial / Commercial Details)

Building Desc.	STORE MDL-94
Building Grade	Low Cost
Heat / AC	NONE
Frame Type	WOOD FRAME
Baths / Plumbing	LIGHT
Ceiling / Wall	NONE
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA



City of West Haven, CT

Property Listing Report

Map Block Lot

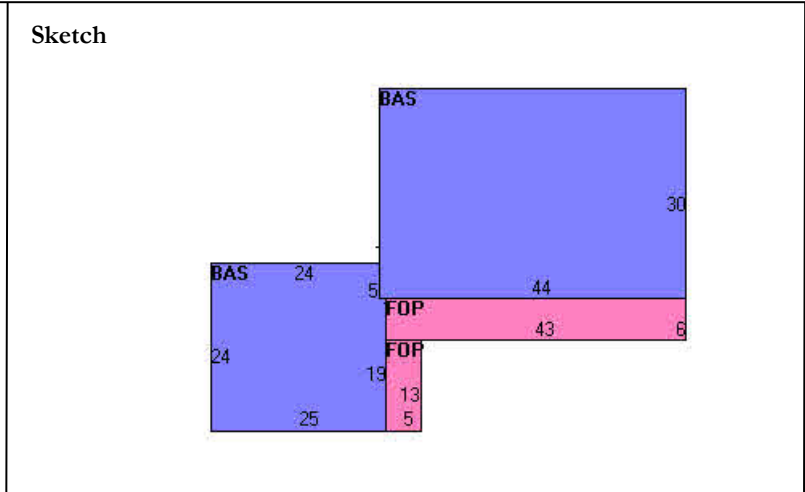
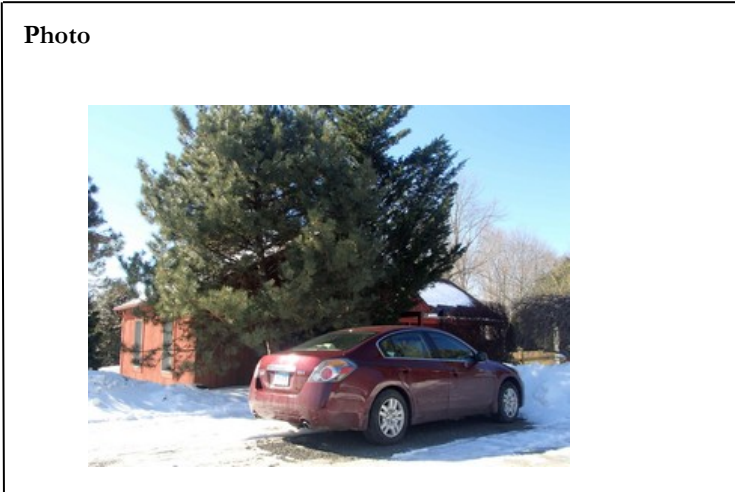
019-0001-0-000A

Building # 2

Section # 1

Account

00022558



Primary Construction Details

Year Built	1998
Stories	1
Building Style	Ranch
Building Use	Residential
Building Condition	A
Occupancy	1.00
Extra Fixtures	0
Bath Style	Average
Kitchen Style	Average
AC Type	03
Heating Type	Forced Air-Duc
Heating Fuel	Oil

Bedrooms	2 Bedrooms
Full Bathrooms	1
Half Bathrooms	1
Total Rooms	5
Roof Style	Gable
Roof Cover	Asph/F Gls/Cmp
Interior Floors 1	Hardwood
Interior Floors2	Carpet
Exterior Walls	Wood on Sheath
Exterior Walls 2	NA
Interior Walls	Drywall/Sheet
Interior Walls 2	NA

(*Industrial / Commercial Details)

Building Desc.	Single Fam MDL-01
Building Grade	Average
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA

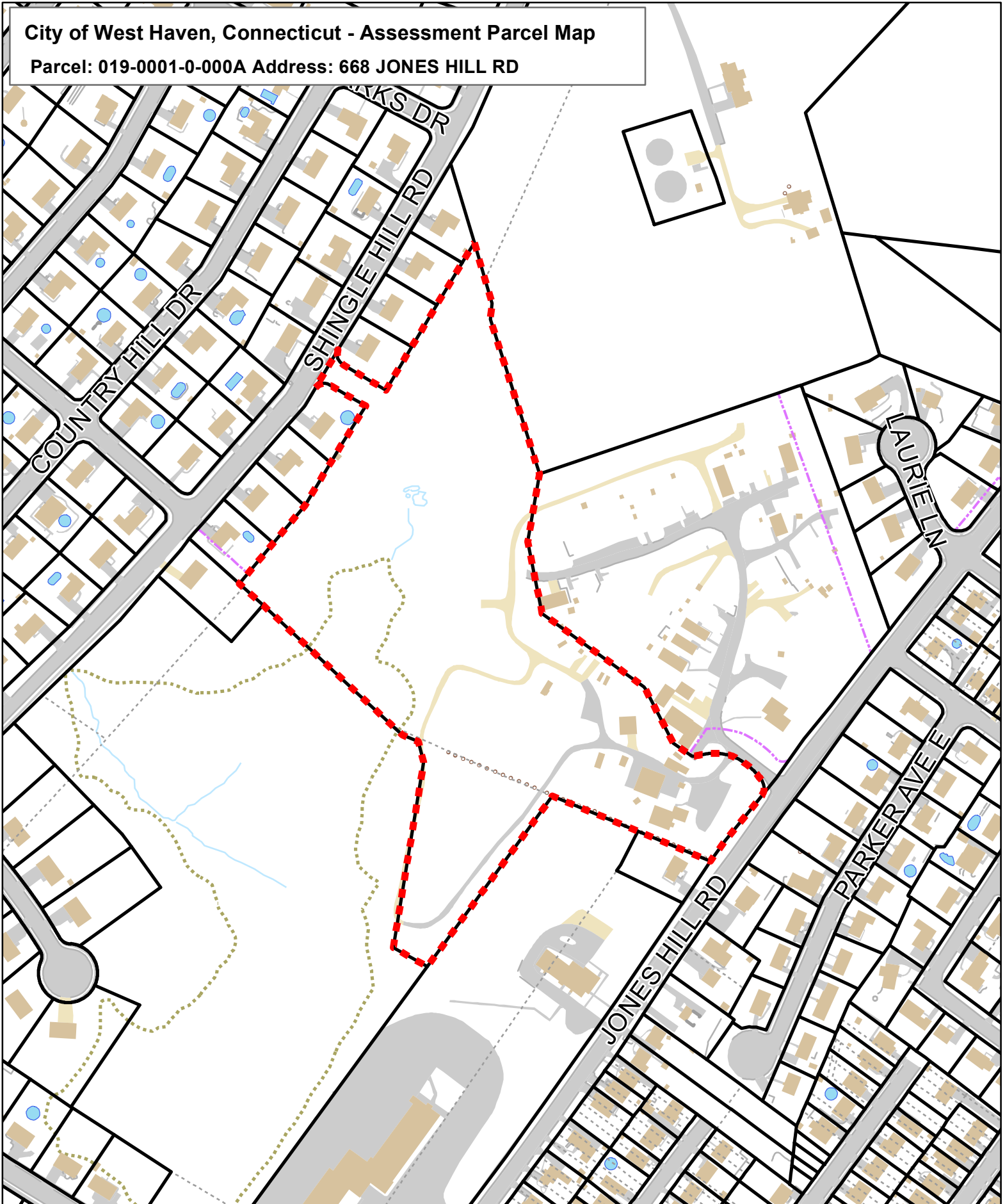
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1915	1915
Porch, Open, Finished	323	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	2238	1915

City of West Haven, Connecticut - Assessment Parcel Map

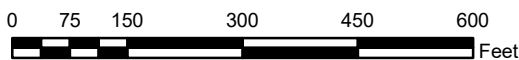
Parcel: 019-0001-0-000A Address: 668 JONES HILL RD



N



Approximate Scale: 1 inch = 250 feet



Map Produced: August 2019

Disclaimer: This map is for informational purposes only.
All information is subject to verification by any user.
The City of West Haven and its mapping contractors
assume no legal responsibility for the information
contained herein.

EXHIBIT 5



Radio Frequency Emissions Analysis Report

AT&T

Site Name: **West Haven Jones Hill Road**

668 Jones Hill Road
West Haven, CT 06516

November 20, 2019

Centerline Communications Project Number: 950012-324

Site Compliance Summary	
Compliance Status:	Compliant
Site total MPE% of FCC general population allowable limit:	18.26%



November 20, 2019

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **West Haven Jones Hill Road**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility to be located on a **tower** at **668 Jones Hill Road, New Haven CT 06516** for the purpose of determining whether the emissions from the proposed facility are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 1900 MHz (PCS) and 5 GHz (B46) bands is $1000 \mu\text{W}/\text{cm}^2$.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed facility using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing focused omnidirectional antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. This is a very conservative estimate since the gain reduction in actual applications is typically greater than 10 dB in the direction of ground immediately surrounding the facility. Real world emissions values from this facility are expected to be lower than values listed in this report at ground level. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1: Channel Data Table*

Antenna #	Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
1	LTE	1900 MHz (PCS Band)	2	40
1	LTE	1900 MHz (PCS Band)	2	40
2	LTE	2100 MHz (AWS Band)	4	40
3	LTE	700 MHz	2	40
3	LTE	850 MHz	2	40
3	LTE	2300 MHz (WCS Band)	4	25
3	LTE	850 MHz	2	40
4	LTE	1900 MHz (PCS Band)	2	40
4	LTE	1900 MHz (PCS Band)	2	40
5	LTE	2100 MHz (AWS Band)	4	40
6	LTE	700 MHz	2	40
6	LTE	850 MHz	2	40
6	LTE	2300 MHz (WCS Band)	4	25
6	LTE	850 MHz	2	40
7	LTE	1900 MHz (PCS Band)	2	40
7	LTE	1900 MHz (PCS Band)	2	40
8	LTE	2100 MHz (AWS Band)	4	40
9	LTE	700 MHz	2	40
9	LTE	850 MHz	2	40
9	LTE	2300 MHz (WCS Band)	4	25
9	LTE	850 MHz	2	40



The following antennas listed in *Table 2* were used in the modeling for transmission in the 1900 MHz (PCS), 2100 MHz (AWS) and 5 GHz (Band 46) frequency bands. This is based on information from the carrier with regard to anticipated antenna selection. Maximum gain values for all antennas are listed in the AT&T Antenna Inventory & Power Levels table (Table 3) below in the Results section. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	CCI HPA-65R-BUU-H8	125.0
A	1	CCI HPA-65R-BUU-H8	125.0
A	2	Kathrein 800-10966	125.0
A	3	Kathrein 800-10966	125.0
A	3	Kathrein 800-10966	125.0
A	3	Kathrein 800-10966	125.0
A	3	Kathrein 800-10966	125.0
B	4	CCI HPA-65R-BUU-H8	125.0
B	4	CCI HPA-65R-BUU-H8	125.0
B	5	Kathrein 800-10966	125.0
B	6	Kathrein 800-10966	125.0
B	6	Kathrein 800-10966	125.0
B	6	Kathrein 800-10966	125.0
B	6	Kathrein 800-10966	125.0
C	7	CCI HPA-65R-BUU-H8	125.0
C	7	CCI HPA-65R-BUU-H8	125.0
C	8	Kathrein 800-10966	125.0
C	9	Kathrein 800-10966	125.0
C	9	Kathrein 800-10966	125.0
C	9	Kathrein 800-10966	125.0
C	9	Kathrein 800-10966	125.0

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Antenna Height (ft)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
ATT A1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT A1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT A2	Kathrein 800-10966	2100 MHz (AWS Band)	16.05	125	4	40	6443.47	1.4826%
ATT A3	Kathrein 800-10966	700 MHz	13.55	125	2	40	1811.72	0.8926%
ATT A3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
ATT A3	Kathrein 800-10966	2300 MHz (WCS Band)	16.15	125	4	25	4120.98	0.9482%
ATT A3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
ATT B1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT B1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT B2	Kathrein 800-10966	2100 MHz (AWS Band)	16.05	125	4	40	6443.47	1.4826%
ATT B3	Kathrein 800-10966	700 MHz	13.55	125	2	40	1811.72	0.8926%
ATT B3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
ATT B3	Kathrein 800-10966	2300 MHz (WCS Band)	16.15	125	4	25	4120.98	0.9482%
ATT B3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
ATT C1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT C1	CCI HPA-65R-BUU-H8	1900 MHz (PCS Band)	14.95	125	2	40	2500.86	0.5754%
ATT C2	Kathrein 800-10966	2100 MHz (AWS Band)	16.05	125	4	40	6443.47	1.4826%
ATT C3	Kathrein 800-10966	700 MHz	13.55	125	2	40	1811.72	0.8926%
ATT C3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
ATT C3	Kathrein 800-10966	2300 MHz (WCS Band)	16.15	125	4	25	4120.98	0.9482%
ATT C3	Kathrein 800-10966	850 MHz	13.95	125	2	40	1986.51	0.8061%
Sector A Composite MPE%								18.2595%

Table 3: AT&T Antenna Inventory & Power Levels



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). Since this proposed facility is utilizing an omnidirectional antenna there is only one sector for this site (Sector A).

AT&T_Frequency Band / Technology Max Power Levels	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (µW/cm ²)	Frequency (MHz)	Allowable MPE (µW/cm ²)	Calculated % MPE
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 2100 MHz LTE	4	6443.47	125	14.8257	2100 MHz LTE	1000	1.4826%
AT&T 700 MHz LTE	2	1811.72	125	4.1686	700 MHz LTE	1000	0.8926%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
AT&T 2300 MHz LTE	4	4120.98	125	9.4819	2300 MHz LTE	1000	0.9482%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 2100 MHz LTE	4	6443.47	125	14.8257	2100 MHz LTE	1000	1.4826%
AT&T 700 MHz LTE	2	1811.72	125	4.1686	700 MHz LTE	1000	0.8926%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
AT&T 2300 MHz LTE	4	4120.98	125	9.4819	2300 MHz LTE	1000	0.9482%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 1900 MHz LTE	2	2500.86	125	5.7542	1900 MHz LTE	1000	0.5754%
AT&T 2100 MHz LTE	4	6443.47	125	14.8257	2100 MHz LTE	1000	1.4826%
AT&T 700 MHz LTE	2	1811.72	125	4.1686	700 MHz LTE	1000	0.8926%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
AT&T 2300 MHz LTE	4	4120.98	125	9.4819	2300 MHz LTE	1000	0.9482%
AT&T 850 MHz LTE	2	1986.51	125	4.5707	850 MHz LTE	1000	0.8061%
Sector A Total:							18.2595%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	6.087%
Sector B:	6.087%
Sector C:	6.087%
AT&T Maximum Site Total:	18.26%
Site Total:	18.26%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **18.26%** of the allowable FCC established general population limit sampled at the ground level.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

A handwritten signature in black ink that reads 'Michelle L. Stone'.

Michelle L. Stone
RF Compliance Consultant
Centerline Communications, LLC

95 Ryan Drive, Suite 1
Raynham, MA 02767

EXHIBIT 6



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 149 ft Monopole
ATC Site Name : WEST HAVEN & RT 162 CT, CT
ATC Asset Number : 243036
Engineering Number : OAA754030_C3_01
Proposed Carrier : AT&T MOBILITY
Carrier Site Name : West Haven Jones Hill Road
Carrier Site Number : CT2899
Site Location : 668 Jones Hill Road
West Haven, CT 06516-6311
41.256400, -72.972400
County : New Haven
Date : November 12, 2019
Max Usage : 100%
Result : Pass

Prepared By:
Kyle MacPetrie
Structural Engineer

Reviewed By:

COA: PEC.0001553



Table of Contents

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	Sabre Job #06-08204, dated August 19, 2005
Foundation Drawing	Sabre Job #06-10095, dated October 12, 2005
Geotechnical Report	EBI Project #61051509, dated July 12, 2005

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.19$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
151.0	3	DragonWave Horizon Compact	SitePro1 RMQP-3XX Low Profile Platform	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid (4) 1/2" Coax (1) 2" conduit	CLEARWIRE CORPORATION
	1	DragonWave A-ANT-23G-1-C			
	6	Alcatel-Lucent RRH2x50-08			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	2	DragonWave A-ANT-11G-2-C			
	3	RFS APXVFRR12X-C-I20			
143.0	3	Ericsson KRY 112 144/2	Platform with SitePro1 HRK12-3HD Handrail Kit	(2) 1 1/4" Hybriflex Cable (15) 1 5/8" Coax (3) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson Air 3246 B66			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson KRY 112 489/1			
	3	Ericsson Radio 4449 B12,B71			
134.0	1	RFS DB-T1-6Z-8AB-OZ	Low Profile Platform	(1) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	6	JMA Wireless MX06FRO660-02			
	3	Andrew DB854DG65ESX			
	3	Samsung B2/B66A RRH-BR049			
125.0	3	Ericsson Radio 4415 B30	Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (2) 0.39" (9.8mm) Cable (4) 0.78" (19.7mm) 8 AWG 6 (1) 3" conduit	AT&T MOBILITY
	3	Ericsson 8843 Rev 2			
	3	Ericsson RRUS 4449 B5, B12			
	3	CCI CCI-HPA-65R-BUU-H8			
	1	Raycap DC6-48-60-0-8F			
	6	Kathrein Scala 80010966			
	2	Raycap DC6-48-60-0-8F (24" Height)			
115.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	METRO PCS INC
106.0	1	Generic 3' Dish w/ Radome	Side Arm	(1) 0.28" (7mm) RG-6	OTHER
	1	Proxim 5054-R-LR			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
125.0	1	Commscope WCS-IMFQ-AMT	Platform with Handrails	-	AT&T MOBILITY

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	59%	Pass
Shaft	100%	Pass
Base Plate	48%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,840.0	3,834.0	2,946.8	77%
Shear (Kips)	26.3	35.5	25.1	71%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
149.0	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	2.122	1.649
	DragonWave A-ANT-11G-2-C			
125.0	Commscope WCS-IMFQ-AMT	AT&T MOBILITY	1.450	1.504
106.0	Generic 3' Dish w/ Radome	Other	0.999	1.191

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

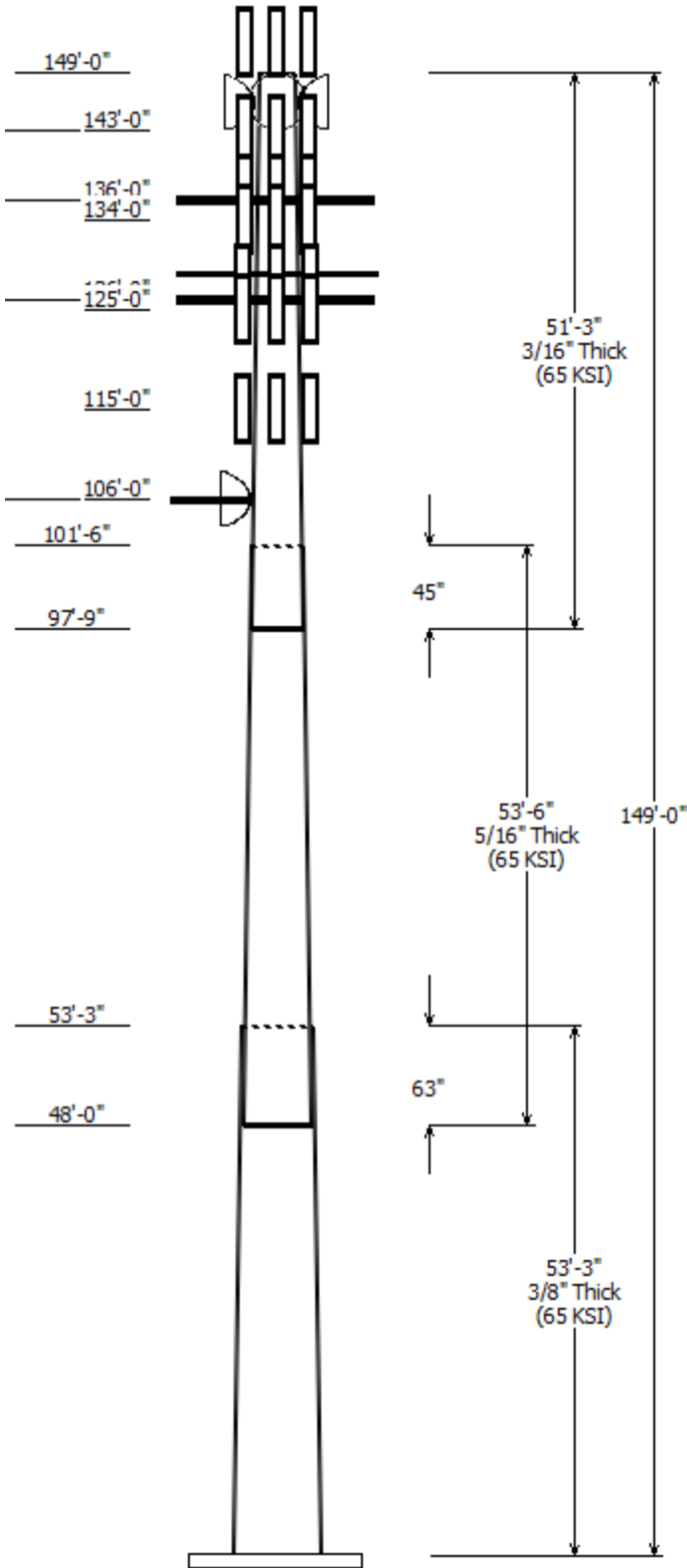
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

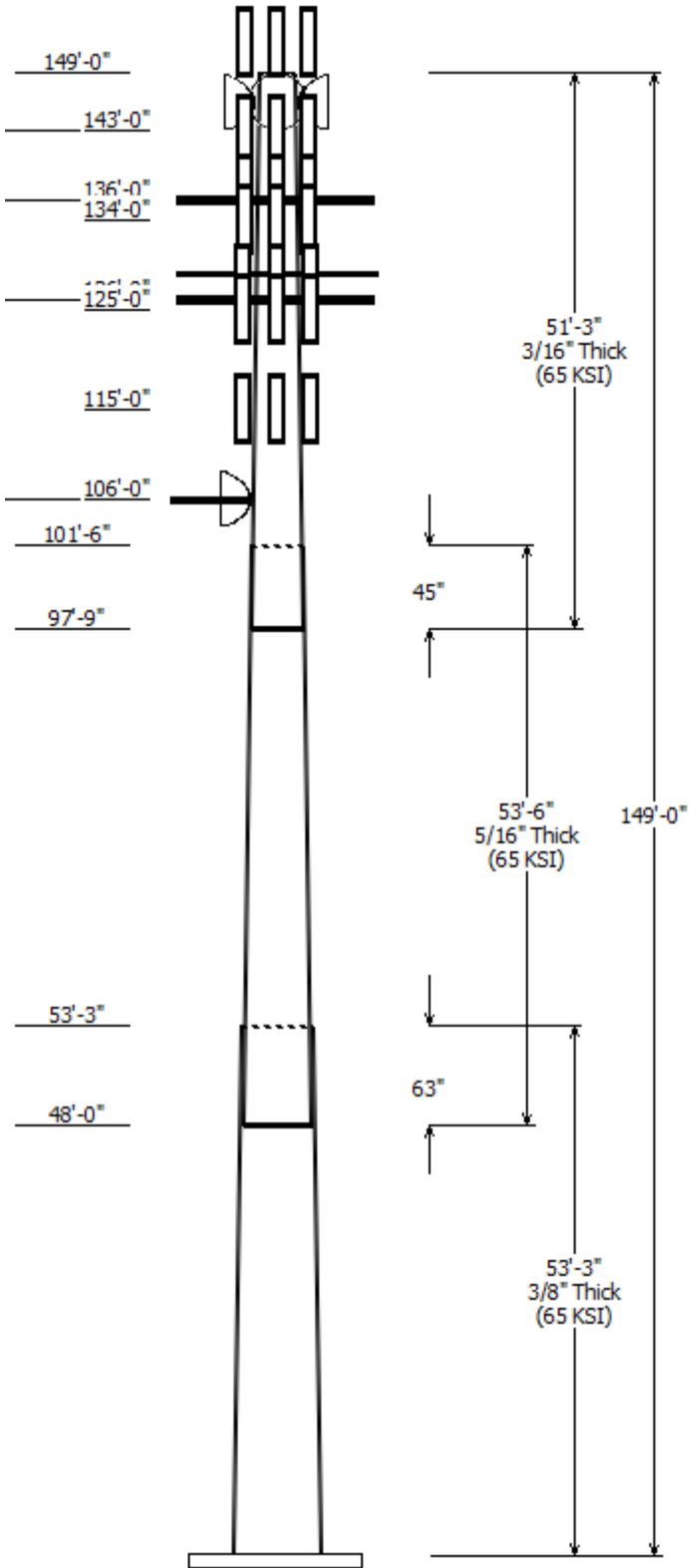


Job Information	
Client : AT&T MOBILITY	Code: ANSI/TIA-222-G
Pole : 243036	
Location : WEST HAVEN & RT 162 CT, CT	
Description : Tower Model Verified: 12/13/2012	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 149.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.234964(in/ft)	

Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade
		Top	Bottom			
1	53.250	39.49	52.01	0.375	0.000	18 Sides 65
2	53.500	28.78	41.35	0.313 Slip Joint	63.000	18 Sides 65
3	51.250	18.00	30.04	0.188 Slip Joint	45.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	151.000	3	RFS APXVFRR12X-C-I20
149.000	148.000	2	DragonWave A-ANT-11G-2-C
149.000	151.000	3	Nokia 2.5G MAA -
149.000	151.000	3	Alcatel-Lucent 1900 MHz 4X45
149.000	151.000	6	Alcatel-Lucent RRH2x50-08
149.000	148.000	1	DragonWave A-ANT-23G-1-C
149.000	148.000	3	DragonWave Horizon Compact
149.000	149.000	1	SitePro1 RMQP-3XX Low
143.000	143.000	1	Platform with SitePro1 HRK12-
143.000	143.000	3	RFS APXVAARR24_43-U-NA20
143.000	143.000	3	Ericsson Air 3246 B66
143.000	143.000	3	Ericsson AIR32 B66Aa/B2a
143.000	143.000	3	Ericsson Radio 4449 B12,B71
143.000	144.000	3	Ericsson KRY 112 489/1
143.000	143.000	3	Ericsson KRY 112 144/2
136.000	136.000	1	Round Low Profile Platform
134.000	134.000	6	JMA Wireless MX06FRO660-02
134.000	137.000	3	Andrew DB854DG65ESX
134.000	136.000	1	RFS DB-T1-6Z-8AB-0Z
134.000	134.000	3	Samsung B5/B13 RRH-BR04C
134.000	134.000	3	Samsung B2/B66A RRH-BR049
126.000	126.000	1	Round Platform w/ Handrails
125.000	125.000	6	Kathrein Scala 80010966
125.000	126.000	3	CCI CCI-HPA-65R-BUU-H8
125.000	125.000	3	Ericsson RRUS 4449 B5, B12
125.000	125.000	3	Ericsson 8843 Rev 2
125.000	125.000	3	Ericsson Radio 4415 B30
125.000	126.000	2	Raycap DC6-48-60-0-8F (24" Hei
125.000	125.000	1	Raycap DC6-48-60-0-8F
125.000	125.000	1	Commscope WCS-IMFQ-AMT
115.000	115.000	3	RFS APXV18-206517S-C
106.000	106.000	1	Flat Side Arm
106.000	106.000	1	Generic 3' Dish w/ Radome
106.000	106.000	1	Proxim 5054-R-LR

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
4.000	106.0	0.28" (7mm) RG-6	No
4.000	115.0	1 5/8" Coax	No
4.000	125.0	0.39" (10mm)	No
4.000	125.0	0.39" (9.8mm)	No



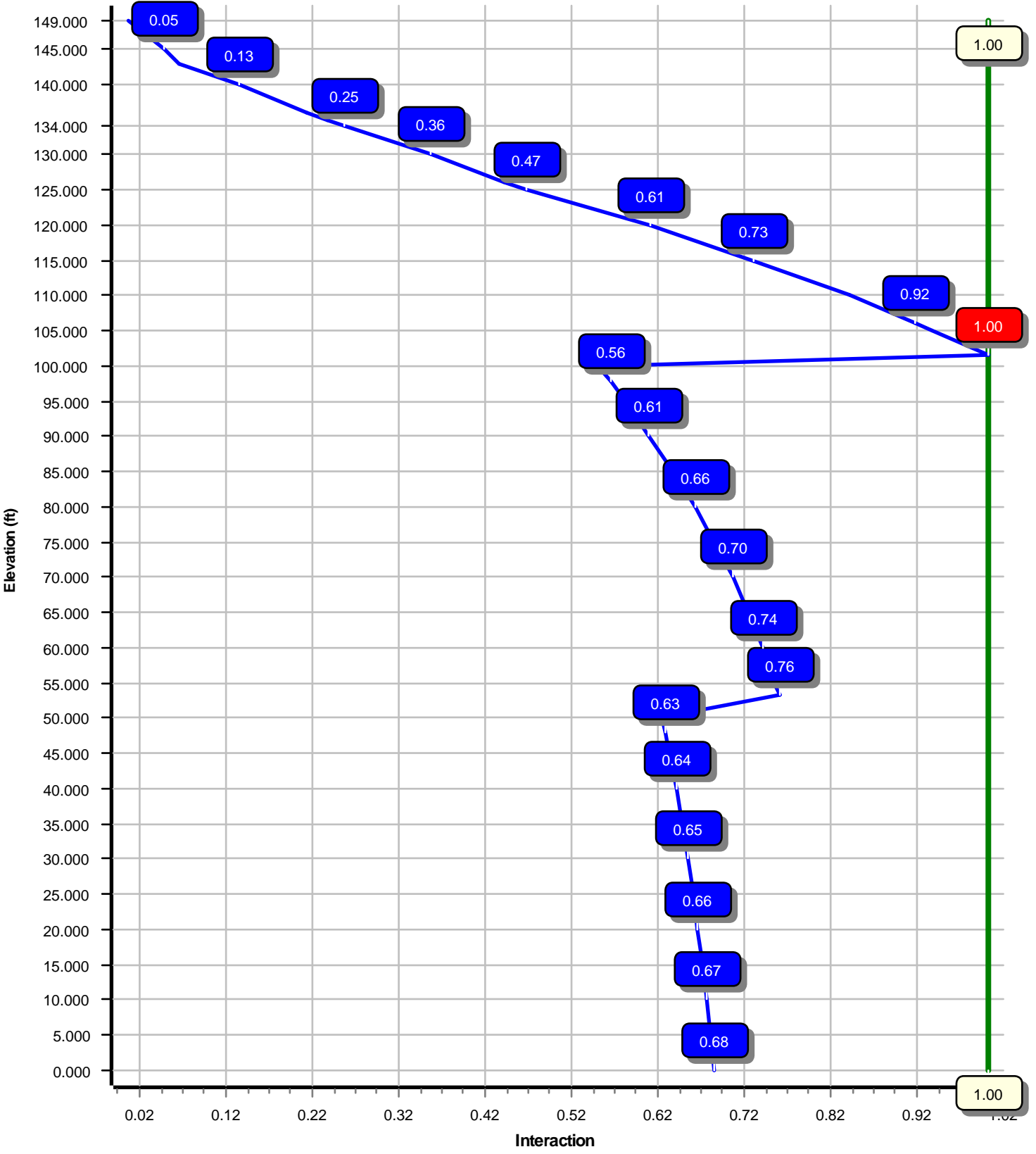
4.000	125.0	0.78" (19.7mm) 8	No
4.000	125.0	3" conduit	No
4.000	134.0	1 5/8" (1.63"-	No
4.000	134.0	1 5/8" Coax	No
4.000	143.0	1 5/8" Coax	No
4.000	144.0	1 5/8" Coax	No
4.000	148.0	1/2" Coax	No
4.000	151.0	1.7" (43.2mm)	No
4.000	151.0	1/2" Coax	No
0.000	151.0	1 1/4" Hybriflex	No
0.000	148.0	2" conduit	No
0.000	144.0	1 1/4" Hybriflex	Yes
0.000	143.0	1 5/8" (1.63"-	No

Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2946.78	25.10	46.50
0.9D + 1.6W	2893.91	25.08	34.86
1.2D + 1.0Di + 1.0Wi	1183.06	11.22	76.34
(1.2 + 0.2Sds) * DL + E ELFM	155.32	1.17	46.68
(1.2 + 0.2Sds) * DL + E EMAM	322.81	2.47	46.68
(0.9 - 0.2Sds) * DL + E ELFM	151.78	1.17	32.37
(0.9 - 0.2Sds) * DL + E EMAM	314.94	2.47	32.37
1.0D + 1.0W	624.29	5.37	38.78

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	106.00	11.987	1.191
1.0D + 1.0W	149.00	25.463	1.649
1.0D + 1.0W	149.00	25.463	1.649

Load Case : 1.2D + 1.6W
Max Ratio 100.01% at 101.5 ft



Site Number: 243036

Code: ANSI/TIA-222-G

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Site Name: WEST HAVEN & RT 162 CT, CT

Engineering Number: OAA754030_C3_01

11/12/2019 8:40:03 AM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	New Haven County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.01
Shape :	18 Sides	Top Diameter (in) :	18.00
Pole Type :	Taper	Taper (in/ft) :	0.235
Pole Manufacturer :	Sabre	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 2.96

T_L (sec):	6	p :	1	C_s :	0.030
S_s :	0.188	S_1 :	0.062	C_s Max:	0.030
F_a :	1.600	F_v :	2.400	C_s Min:	0.030
S_{ds} :	0.201	S_{d1} :	0.099		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 243036

Code: ANSI/TIA-222-G

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Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number: OAA754030_C3_01

11/12/2019 8:40:03 AM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.250	0.3750	65		0.00	9,787	52.01	0.00	61.46	20701.4	22.69	138.69	39.49	53.25	46.56	9004.7	16.81	105.33	0.234964
2-18	53.500	0.3125	65	Slip	63.00	6,276	41.35	48.00	40.71	8664.4	21.57	132.34	28.78	101.50	28.24	2892.7	14.48	92.11	0.234964
3-18	51.250	0.1875	65	Slip	45.00	2,473	30.04	97.75	17.77	2000.7	26.49	160.22	18.00	149.00	10.60	424.9	15.16	96.00	0.234964
Shaft Weight						18,536													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
149.00	DragonWave Horizon Compact	3	0.80	-1.000	10.60	0.720	0.50	33.09	1.288	0.50
149.00	DragonWave A-ANT-23G-1-C	1	1.00	-1.000	15.00	1.610	1.00	50.33	2.367	1.00
149.00	Alcatel-Lucent RRH2x50-08	6	0.80	2.000	52.90	1.700	0.50	112.16	2.562	0.50
149.00	Alcatel-Lucent 1900 MHz 4X45	3	0.80	2.000	60.00	2.320	0.50	140.59	3.400	0.50
149.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.80	2.000	103.60	4.200	0.64	216.34	5.540	0.64
149.00	DragonWave A-ANT-11G-2-C	2	1.00	-1.000	27.00	4.690	1.00	124.46	5.964	1.00
149.00	RFS APXVFR12X-C-I20	3	0.80	2.000	46.00	4.990	0.71	171.02	6.857	0.71
149.00	SitePro1 RMQP-3XX Low Profile	1	1.00	0.000	1,680.00	21.700	1.00	3,084.50	40.144	1.00
143.00	Ericsson KRY 112 144/2	3	0.75	0.000	9.70	0.480	0.50	23.84	0.952	0.50
143.00	Ericsson KRY 112 489/1	3	0.75	1.000	15.40	0.560	0.50	32.92	1.084	0.50
143.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.640	0.50	129.77	2.481	0.50
143.00	Ericsson AIR32 B66Aa/B2a	3	0.75	0.000	132.20	6.510	0.71	291.20	8.692	0.71
143.00	Ericsson Air 3246 B66	3	0.75	0.000	180.00	7.940	0.69	2,873.87	10.199	0.69
143.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.240	0.63	519.00	23.934	0.63
143.00	Platform with SitePro1 HRK12-	1	1.00	0.000	2,350.00	42.400	1.00	3,980.96	71.827	1.00
136.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,142.65	40.744	1.00
134.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.880	0.50	147.51	2.775	0.50
134.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.880	0.50	126.89	2.775	0.50
134.00	RFS DB-T1-6Z-8AB-0Z	1	0.80	2.000	44.00	4.800	1.00	168.52	6.206	1.00
134.00	Andrew DB854DG65ESX	3	0.80	3.000	18.50	5.250	0.65	149.40	6.230	0.65
134.00	JMA Wireless MX06FRO660-02	6	0.80	0.000	46.00	9.870	0.71	283.21	12.584	0.71
126.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,275.49	51.262	1.00
125.00	Commscope WCS-IMFQ-AMT	1	0.75	0.000	29.50	0.990	0.50	62.58	1.640	0.50
125.00	Raycap DC6-48-60-0-8F	1	0.75	0.000	32.80	1.360	1.00	89.88	2.011	1.00
125.00	Raycap DC6-48-60-0-8F (24"	2	0.75	1.000	32.80	1.470	1.00	137.97	2.156	1.00
125.00	Ericsson Radio 4415 B30	3	0.75	0.000	43.00	1.650	0.50	84.39	2.484	0.50
125.00	Ericsson 8843 Rev 2	3	0.75	0.000	75.00	1.650	0.50	135.95	2.484	0.50
125.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.970	0.50	134.29	2.886	0.50
125.00	CCI CCI-HPA-65R-BUU-H8	3	0.75	1.000	68.00	12.980	0.67	320.31	16.496	0.67
125.00	Kathrein Scala 80010966	6	0.75	0.000	114.60	17.360	0.63	429.91	20.982	0.63
115.00	RFS APXV18-206517S-C	3	1.00	0.000	26.40	5.160	0.68	116.61	7.463	0.68
106.00	Proxim 5054-R-LR	1	1.00	0.000	6.00	1.320	1.00	36.21	2.054	1.00
106.00	Generic 3' Dish w/ Radome	1	1.00	0.000	100.00	6.100	1.00	276.10	7.259	1.00
106.00	Flat Side Arm	1	1.00	0.000	150.00	6.300	1.00	220.76	8.678	1.00
Totals	Num Loadings:34									
		87			12,955.90			35,805.56		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 174

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Flat	Dist Between Rows	Dist Between Cols	Dist Azimuth (deg)	Dist From Face (in)	Dist Exposed To Wind Carrier
0.00	151.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	N CLEARWIRE
4.00	151.00	1	1.7" (43.2mm) Hybrid	1.70	1.78	N	0	0.00	0.00	0	N CLEARWIRE
4.00	151.00	3	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	N CLEARWIRE
0.00	148.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	N CLEARWIRE

Site Number: 243036

Code: ANSI/TIA-222-G

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Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number: OAA754030_C3_01

11/12/2019 8:40:03 AM

Customer: AT&T MOBILITY

4.00	148.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	144.00	2	1 1/4" Hybriflex Cable	1.54	1.00	N	2	0.00	0.00	96	0.00	Y	T-MOBILE
4.00	144.00	3	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	143.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE
4.00	143.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
4.00	134.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
4.00	134.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
4.00	125.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
4.00	125.00	2	0.39" (9.8mm) Cable	0.39	0.07	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
4.00	125.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
4.00	125.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
4.00	115.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	METRO PCS INC
4.00	106.00	1	0.28" (7mm) RG-6	0.28	0.03	N	0	0.00	0.00	0	0.00	N	Other

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	52.010	61.456	20,701.4	22.69	138.69	74.7	784.0	0.0	0.0
5.00		0.3750	50.835	60.058	19,320.3	22.14	135.56	75.4	748.6	0.0	1,033.7
10.00		0.3750	49.660	58.659	18,002.0	21.59	132.43	76.0	714.0	0.0	1,009.9
15.00		0.3750	48.485	57.261	16,745.1	21.03	129.29	76.7	680.2	0.0	986.1
20.00		0.3750	47.310	55.863	15,548.1	20.48	126.16	77.3	647.3	0.0	962.3
25.00		0.3750	46.136	54.465	14,409.6	19.93	123.03	78.0	615.2	0.0	938.5
30.00		0.3750	44.961	53.066	13,328.0	19.38	119.90	78.6	583.9	0.0	914.8
35.00		0.3750	43.786	51.668	12,301.9	18.83	116.76	79.3	553.4	0.0	891.0
40.00		0.3750	42.611	50.270	11,329.9	18.27	113.63	79.9	523.7	0.0	867.2
45.00		0.3750	41.436	48.871	10,410.6	17.72	110.50	80.6	494.9	0.0	843.4
48.00	Bot - Section 2	0.3750	40.731	48.032	9,883.6	17.39	108.62	80.9	477.9	0.0	494.6
50.00		0.3750	40.261	47.473	9,542.3	17.17	107.36	81.2	466.8	0.0	600.4
53.25	Top - Section 1	0.3125	40.123	39.485	7,906.5	20.88	128.39	76.8	388.1	0.0	960.8
55.00		0.3125	39.712	39.078	7,664.0	20.64	127.08	77.1	380.1	0.0	233.9
60.00		0.3125	38.537	37.912	6,998.6	19.98	123.32	77.9	357.7	0.0	654.9
65.00		0.3125	37.362	36.747	6,373.0	19.32	119.56	78.7	336.0	0.0	635.1
70.00		0.3125	36.187	35.582	5,785.7	18.66	115.80	79.5	314.9	0.0	615.3
75.00		0.3125	35.012	34.417	5,235.7	17.99	112.04	80.2	294.5	0.0	595.5
80.00		0.3125	33.838	33.251	4,721.7	17.33	108.28	81.0	274.8	0.0	575.6
85.00		0.3125	32.663	32.086	4,242.5	16.67	104.52	81.8	255.8	0.0	555.8
90.00		0.3125	31.488	30.921	3,796.9	16.00	100.76	82.6	237.5	0.0	536.0
95.00		0.3125	30.313	29.756	3,383.6	15.34	97.00	82.6	219.9	0.0	516.2
97.75	Bot - Section 3	0.3125	29.667	29.115	3,169.7	14.98	94.93	82.6	210.4	0.0	275.4
100.0		0.3125	29.138	28.591	3,001.5	14.68	93.24	82.6	202.9	0.0	355.7
101.5	Top - Section 2	0.1875	29.161	17.242	1,828.7	25.66	155.52	71.2	123.5	0.0	233.6
105.0		0.1875	28.338	16.753	1,677.4	24.89	151.14	72.1	116.6	0.0	202.4
106.0		0.1875	28.103	16.613	1,635.7	24.67	149.89	72.4	114.6	0.0	56.8
110.0		0.1875	27.164	16.054	1,476.0	23.78	144.87	73.4	107.0	0.0	222.3
115.0		0.1875	25.989	15.354	1,291.4	22.68	138.61	74.7	97.9	0.0	267.2
120.0		0.1875	24.814	14.655	1,122.9	21.57	132.34	76.0	89.1	0.0	255.3
125.0		0.1875	23.639	13.956	969.8	20.47	126.08	77.3	80.8	0.0	243.4
126.0		0.1875	23.404	13.816	940.9	20.25	124.82	77.6	79.2	0.0	47.3
130.0		0.1875	22.464	13.257	831.2	19.36	119.81	78.6	72.9	0.0	184.2
134.0		0.1875	21.524	12.698	730.4	18.48	114.80	79.7	66.8	0.0	176.6
135.0		0.1875	21.290	12.558	706.5	18.26	113.54	79.9	65.4	0.0	43.0
136.0		0.1875	21.055	12.418	683.2	18.04	112.29	80.2	63.9	0.0	42.5
140.0		0.1875	20.115	11.859	595.0	17.15	107.28	81.2	58.3	0.0	165.2
143.0		0.1875	19.410	11.439	534.0	16.49	103.52	82.0	54.2	0.0	118.9
145.0		0.1875	18.940	11.160	495.8	16.05	101.01	82.5	51.6	0.0	76.9
149.0		0.1875	18.000	10.600	424.9	15.16	96.00	82.6	46.5	0.0	148.1
18,536.1											

Load Case: 1.2D + 1.6W

97 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		199.3	0.0					0.0	0.0	199.3	0.0	0.0	0.0
5.00		394.1	1,240.5					0.0	130.4	394.1	1,370.9	0.0	0.0
10.00		385.0	1,211.9					0.0	328.6	385.0	1,540.5	0.0	0.0
15.00		375.9	1,183.4					0.0	328.6	375.9	1,511.9	0.0	0.0
20.00		366.8	1,154.8					0.0	328.6	366.8	1,483.4	0.0	0.0
25.00		357.7	1,126.3					0.0	328.6	357.7	1,454.8	0.0	0.0
30.00		352.7	1,097.7					0.0	328.6	352.7	1,426.3	0.0	0.0
35.00		354.8	1,069.2					0.0	328.6	354.8	1,397.7	0.0	0.0
40.00		358.7	1,040.6					0.0	328.6	358.7	1,369.2	0.0	0.0
45.00		288.5	1,012.1					0.0	328.6	288.5	1,340.6	0.0	0.0
48.00	Bot - Section 2	181.8	593.5					0.0	197.1	181.8	790.7	0.0	0.0
50.00		192.7	720.5					0.0	131.4	192.7	852.0	0.0	0.0
53.25	Top - Section 1	183.4	1,153.0					0.0	213.6	183.4	1,366.6	0.0	0.0
55.00		247.0	280.7					0.0	115.0	247.0	395.7	0.0	0.0
60.00		364.4	785.9					0.0	328.6	364.4	1,114.5	0.0	0.0
65.00		361.5	762.1					0.0	328.6	361.5	1,090.7	0.0	0.0
70.00		357.6	738.4					0.0	328.6	357.6	1,066.9	0.0	0.0
75.00		352.9	714.6					0.0	328.6	352.9	1,043.1	0.0	0.0
80.00		347.4	690.8					0.0	328.6	347.4	1,019.3	0.0	0.0
85.00		341.2	667.0					0.0	328.6	341.2	995.5	0.0	0.0
90.00		334.3	643.2					0.0	328.6	334.3	971.8	0.0	0.0
95.00		254.7	619.4					0.0	328.6	254.7	948.0	0.0	0.0
97.75	Bot - Section 3	162.4	330.5					0.0	180.7	162.4	511.2	0.0	0.0
100.00		121.4	426.9					0.0	147.9	121.4	574.7	0.0	0.0
101.50	Top - Section 2	159.4	280.3					0.0	98.6	159.4	378.9	0.0	0.0
105.00		142.5	242.9					0.0	230.0	142.5	472.9	0.0	0.0
106.00	Appurtenance(s)	155.0	68.1	555.2	0.0	0.0	307.2	0.0	65.7	710.3	441.0	0.0	0.0
110.00		274.1	266.8					0.0	262.7	274.1	529.5	0.0	0.0
115.00	Appurtenance(s)	296.0	320.6	436.0	0.0	0.0	95.0	0.0	328.4	732.0	744.0	0.0	0.0
120.00		286.1	306.3					0.0	298.9	286.1	605.2	0.0	0.0
125.00	Appurtenance(s)	168.0	292.1	3,323.9	0.0	925.7	1,903.8	0.0	298.9	3,491.9	2,494.7	0.0	0.0
126.00	Appurtenance(s)	135.2	56.7	1,156.4	0.0	0.0	2,400.0	0.0	47.5	1,291.7	2,504.2	0.0	0.0
130.00		212.0	221.1					0.0	190.1	212.0	411.2	0.0	0.0
134.00	Appurtenance(s)	129.7	212.0	2,174.2	0.0	1,403.6	1,007.5	0.0	190.1	2,304.0	1,409.6	0.0	0.0
135.00		50.8	51.6					0.0	33.8	50.8	85.4	0.0	0.0
136.00	Appurtenance(s)	124.1	51.0	943.0	0.0	0.0	1,800.0	0.0	33.8	1,067.0	1,884.8	0.0	0.0
140.00		170.5	198.3					0.0	135.2	170.5	333.4	0.0	0.0
143.00	Appurtenance(s)	118.2	142.7	4,268.6	0.0	27.8	4,761.1	0.0	101.4	4,386.8	5,005.2	0.0	0.0
145.00		136.9	92.3					0.0	27.0	136.9	119.3	0.0	0.0
149.00	Appurtenance(s)	90.3	177.7	2,472.4	0.0	1,426.0	3,272.4	0.0	38.8	2,562.7	3,488.9	0.0	0.0
Totals:										25,214.7	46,544.2	0.00	0.00

Load Case: 1.2D + 1.6W

97 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.50	-25.10	0.00	-2,946.78	0.00	2,946.78	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.682
5.00	-45.04	-24.86	0.00	-2,821.30	0.00	2,821.30	4,073.39	2,036.69	8,449.37	4,230.97	0.11	-0.20	0.678
10.00	-43.42	-24.62	0.00	-2,697.01	0.00	2,697.01	4,012.85	2,006.43	8,128.58	4,070.33	0.42	-0.40	0.674
15.00	-41.82	-24.39	0.00	-2,573.90	0.00	2,573.90	3,950.68	1,975.34	7,810.43	3,911.02	0.95	-0.61	0.669
20.00	-40.25	-24.15	0.00	-2,451.97	0.00	2,451.97	3,886.87	1,943.43	7,495.19	3,753.17	1.71	-0.82	0.664
25.00	-38.71	-23.92	0.00	-2,331.21	0.00	2,331.21	3,821.43	1,910.71	7,183.08	3,596.88	2.69	-1.04	0.658
30.00	-37.20	-23.69	0.00	-2,211.61	0.00	2,211.61	3,754.35	1,877.17	6,874.35	3,442.28	3.90	-1.27	0.653
35.00	-35.71	-23.44	0.00	-2,093.17	0.00	2,093.17	3,685.64	1,842.82	6,569.23	3,289.50	5.35	-1.50	0.646
40.00	-34.26	-23.19	0.00	-1,975.95	0.00	1,975.95	3,615.29	1,807.64	6,267.96	3,138.64	7.04	-1.73	0.639
45.00	-32.85	-22.97	0.00	-1,860.01	0.00	1,860.01	3,543.30	1,771.65	5,970.78	2,989.83	8.98	-1.97	0.632
48.00	-32.02	-22.83	0.00	-1,791.10	0.00	1,791.10	3,499.33	1,749.66	5,794.53	2,901.57	10.27	-2.12	0.627
50.00	-31.12	-22.68	0.00	-1,745.44	0.00	1,745.44	3,469.68	1,734.84	5,677.92	2,843.18	11.18	-2.22	0.623
53.25	-29.71	-22.51	0.00	-1,671.74	0.00	1,671.74	2,730.90	1,365.45	4,467.29	2,236.97	12.75	-2.39	0.758
55.00	-29.25	-22.34	0.00	-1,632.35	0.00	1,632.35	2,712.29	1,356.15	4,390.67	2,198.60	13.64	-2.48	0.754
60.00	-28.04	-22.07	0.00	-1,520.65	0.00	1,520.65	2,658.02	1,329.01	4,173.50	2,089.85	16.40	-2.77	0.738
65.00	-26.85	-21.80	0.00	-1,410.29	0.00	1,410.29	2,602.11	1,301.05	3,959.12	1,982.50	19.46	-3.07	0.722
70.00	-25.70	-21.52	0.00	-1,301.32	0.00	1,301.32	2,544.56	1,272.28	3,747.77	1,876.67	22.84	-3.37	0.704
75.00	-24.56	-21.23	0.00	-1,193.74	0.00	1,193.74	2,485.39	1,242.69	3,539.70	1,772.48	26.53	-3.68	0.684
80.00	-23.45	-20.94	0.00	-1,087.58	0.00	1,087.58	2,424.57	1,212.29	3,335.13	1,670.04	30.55	-3.99	0.661
85.00	-22.37	-20.65	0.00	-982.86	0.00	982.86	2,362.12	1,181.06	3,134.31	1,569.49	34.89	-4.30	0.636
90.00	-21.32	-20.36	0.00	-879.59	0.00	879.59	2,297.27	1,148.64	2,936.51	1,470.44	39.56	-4.61	0.608
95.00	-20.31	-20.11	0.00	-777.78	0.00	777.78	2,210.70	1,105.35	2,718.30	1,361.17	44.56	-4.92	0.581
97.75	-19.76	-19.96	0.00	-722.47	0.00	722.47	2,163.09	1,081.54	2,601.88	1,302.87	47.44	-5.10	0.564
100.00	-19.16	-19.83	0.00	-677.56	0.00	677.56	2,124.13	1,062.07	2,508.52	1,256.12	49.87	-5.24	0.549
101.50	-18.75	-19.69	0.00	-647.81	0.00	647.81	1,105.19	552.59	1,317.56	659.76	51.53	-5.33	1.000
105.00	-18.24	-19.55	0.00	-578.91	0.00	578.91	1,087.53	543.77	1,259.48	630.68	55.52	-5.54	0.936
106.00	-17.79	-18.87	0.00	-559.37	0.00	559.37	1,082.34	541.17	1,242.93	622.39	56.69	-5.64	0.916
110.00	-17.16	-18.66	0.00	-483.89	0.00	483.89	1,060.92	530.46	1,177.04	589.40	61.57	-6.00	0.838
115.00	-16.38	-17.97	0.00	-390.57	0.00	390.57	1,032.68	516.34	1,095.47	548.55	68.07	-6.43	0.729
120.00	-15.70	-17.71	0.00	-300.72	0.00	300.72	1,002.79	501.40	1,014.98	508.24	75.00	-6.81	0.609
125.00	-13.60	-13.99	0.00	-211.23	0.00	211.23	971.28	485.64	935.83	468.61	82.29	-7.13	0.466
126.00	-11.25	-12.42	0.00	-197.24	0.00	197.24	964.78	482.39	920.18	460.77	83.79	-7.19	0.440
130.00	-10.83	-12.19	0.00	-147.56	0.00	147.56	938.12	469.06	858.24	429.76	89.89	-7.40	0.356
134.00	-9.72	-9.74	0.00	-97.38	0.00	97.38	910.42	455.21	797.47	399.33	96.15	-7.57	0.255
135.00	-9.63	-9.69	0.00	-87.63	0.00	87.63	903.33	451.67	782.47	391.82	97.74	-7.60	0.235
136.00	-7.89	-8.39	0.00	-77.95	0.00	77.95	896.18	448.09	767.56	384.35	99.33	-7.64	0.212
140.00	-7.58	-8.19	0.00	-44.39	0.00	44.39	866.91	433.46	708.75	354.90	105.76	-7.74	0.134
143.00	-3.21	-3.16	0.00	-19.81	0.00	19.81	844.27	422.14	665.60	333.29	110.62	-7.79	0.063
145.00	-3.11	-3.01	0.00	-13.48	0.00	13.48	828.85	414.43	637.31	319.13	113.88	-7.80	0.046
149.00	0.00	-2.56	0.00	-1.43	0.00	1.43	787.55	393.77	574.90	287.88	120.41	-7.82	0.005

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		199.3	0.0					0.0	0.0	199.3	0.0	0.0	0.0
5.00		394.1	930.3					0.0	97.8	394.1	1,028.2	0.0	0.0
10.00		385.0	908.9					0.0	246.4	385.0	1,155.3	0.0	0.0
15.00		375.9	887.5					0.0	246.4	375.9	1,133.9	0.0	0.0
20.00		366.8	866.1					0.0	246.4	366.8	1,112.5	0.0	0.0
25.00		357.7	844.7					0.0	246.4	357.7	1,091.1	0.0	0.0
30.00		352.7	823.3					0.0	246.4	352.7	1,069.7	0.0	0.0
35.00		354.8	801.9					0.0	246.4	354.8	1,048.3	0.0	0.0
40.00		358.7	780.5					0.0	246.4	358.7	1,026.9	0.0	0.0
45.00		288.5	759.0					0.0	246.4	288.5	1,005.5	0.0	0.0
48.00	Bot - Section 2	181.8	445.2					0.0	147.9	181.8	593.0	0.0	0.0
50.00		192.7	540.4					0.0	98.6	192.7	639.0	0.0	0.0
53.25	Top - Section 1	183.4	864.8					0.0	160.2	183.4	1,024.9	0.0	0.0
55.00		247.0	210.5					0.0	86.2	247.0	296.8	0.0	0.0
60.00		364.4	589.5					0.0	246.4	364.4	835.9	0.0	0.0
65.00		361.5	571.6					0.0	246.4	361.5	818.0	0.0	0.0
70.00		357.6	553.8					0.0	246.4	357.6	800.2	0.0	0.0
75.00		352.9	535.9					0.0	246.4	352.9	782.3	0.0	0.0
80.00		347.4	518.1					0.0	246.4	347.4	764.5	0.0	0.0
85.00		341.2	500.2					0.0	246.4	341.2	746.7	0.0	0.0
90.00		334.3	482.4					0.0	246.4	334.3	728.8	0.0	0.0
95.00		254.7	464.6					0.0	246.4	254.7	711.0	0.0	0.0
97.75	Bot - Section 3	162.4	247.9					0.0	135.5	162.4	383.4	0.0	0.0
100.00		121.4	320.2					0.0	110.9	121.4	431.0	0.0	0.0
101.50	Top - Section 2	159.4	210.2					0.0	73.9	159.4	284.1	0.0	0.0
105.00		142.5	182.2					0.0	172.5	142.5	354.7	0.0	0.0
106.00	Appurtenance(s)	155.0	51.1	555.2	0.0	0.0	230.4	0.0	49.3	710.3	330.8	0.0	0.0
110.00		274.1	200.1					0.0	197.0	274.1	397.1	0.0	0.0
115.00	Appurtenance(s)	296.0	240.5	436.0	0.0	0.0	71.3	0.0	246.3	732.0	558.0	0.0	0.0
120.00		286.1	229.8					0.0	224.1	286.1	453.9	0.0	0.0
125.00	Appurtenance(s)	168.0	219.1	3,323.9	0.0	925.7	1,427.8	0.0	224.1	3,491.9	1,871.1	0.0	0.0
126.00	Appurtenance(s)	135.2	42.5	1,156.4	0.0	0.0	1,800.0	0.0	35.6	1,291.7	1,878.2	0.0	0.0
130.00		212.0	165.8					0.0	142.6	212.0	308.4	0.0	0.0
134.00	Appurtenance(s)	129.7	159.0	2,174.2	0.0	1,403.6	755.6	0.0	142.6	2,304.0	1,057.2	0.0	0.0
135.00		50.8	38.7					0.0	25.3	50.8	64.0	0.0	0.0
136.00	Appurtenance(s)	124.1	38.2	943.0	0.0	0.0	1,350.0	0.0	25.3	1,067.0	1,413.6	0.0	0.0
140.00		170.5	148.7					0.0	101.4	170.5	250.1	0.0	0.0
143.00	Appurtenance(s)	118.2	107.0	4,268.6	0.0	27.8	3,570.8	0.0	76.0	4,386.8	3,753.9	0.0	0.0
145.00		136.9	69.2					0.0	20.3	136.9	89.5	0.0	0.0
149.00	Appurtenance(s)	90.3	133.3	2,472.4	0.0	1,426.0	2,454.3	0.0	29.1	2,562.7	2,616.7	0.0	0.0
Totals:										25,214.7	34,908.2	0.00	0.00

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.86	-25.08	0.00	-2,893.91	0.00	2,893.91	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.667
5.00	-33.75	-24.80	0.00	-2,768.53	0.00	2,768.53	4,073.39	2,036.69	8,449.37	4,230.97	0.10	-0.19	0.663
10.00	-32.51	-24.52	0.00	-2,644.55	0.00	2,644.55	4,012.85	2,006.43	8,128.58	4,070.33	0.41	-0.39	0.658
15.00	-31.29	-24.25	0.00	-2,521.96	0.00	2,521.96	3,950.68	1,975.34	7,810.43	3,911.02	0.94	-0.60	0.653
20.00	-30.10	-23.98	0.00	-2,400.73	0.00	2,400.73	3,886.87	1,943.43	7,495.19	3,753.17	1.68	-0.81	0.648
25.00	-28.92	-23.71	0.00	-2,280.84	0.00	2,280.84	3,821.43	1,910.71	7,183.08	3,596.88	2.63	-1.02	0.642
30.00	-27.77	-23.45	0.00	-2,162.28	0.00	2,162.28	3,754.35	1,877.17	6,874.35	3,442.28	3.82	-1.24	0.636
35.00	-26.64	-23.17	0.00	-2,045.05	0.00	2,045.05	3,685.64	1,842.82	6,569.23	3,289.50	5.24	-1.47	0.629
40.00	-25.53	-22.89	0.00	-1,929.19	0.00	1,929.19	3,615.29	1,807.64	6,267.96	3,138.64	6.90	-1.69	0.622
45.00	-24.46	-22.65	0.00	-1,814.75	0.00	1,814.75	3,543.30	1,771.65	5,970.78	2,989.83	8.80	-1.93	0.614
48.00	-23.82	-22.50	0.00	-1,746.80	0.00	1,746.80	3,499.33	1,749.66	5,794.53	2,901.57	10.06	-2.08	0.609
50.00	-23.14	-22.34	0.00	-1,701.80	0.00	1,701.80	3,469.68	1,734.84	5,677.92	2,843.18	10.95	-2.18	0.605
53.25	-22.08	-22.16	0.00	-1,629.21	0.00	1,629.21	2,730.90	1,365.45	4,467.29	2,236.97	12.49	-2.34	0.737
55.00	-21.72	-21.97	0.00	-1,590.43	0.00	1,590.43	2,712.29	1,356.15	4,390.67	2,198.60	13.36	-2.43	0.732
60.00	-20.79	-21.68	0.00	-1,480.57	0.00	1,480.57	2,658.02	1,329.01	4,173.50	2,089.85	16.05	-2.71	0.717
65.00	-19.88	-21.38	0.00	-1,372.20	0.00	1,372.20	2,602.11	1,301.05	3,959.12	1,982.50	19.05	-3.00	0.700
70.00	-19.00	-21.07	0.00	-1,265.32	0.00	1,265.32	2,544.56	1,272.28	3,747.77	1,876.67	22.34	-3.29	0.682
75.00	-18.13	-20.77	0.00	-1,159.96	0.00	1,159.96	2,485.39	1,242.69	3,539.70	1,772.48	25.95	-3.59	0.662
80.00	-17.28	-20.46	0.00	-1,056.11	0.00	1,056.11	2,424.57	1,212.29	3,335.13	1,670.04	29.88	-3.89	0.640
85.00	-16.45	-20.16	0.00	-953.80	0.00	953.80	2,362.12	1,181.06	3,134.31	1,569.49	34.11	-4.20	0.615
90.00	-15.65	-19.85	0.00	-853.01	0.00	853.01	2,297.27	1,148.64	2,936.51	1,470.44	38.67	-4.50	0.587
95.00	-14.88	-19.60	0.00	-753.75	0.00	753.75	2,210.70	1,105.35	2,718.30	1,361.17	43.54	-4.80	0.561
97.75	-14.46	-19.45	0.00	-699.85	0.00	699.85	2,163.09	1,081.54	2,601.88	1,302.87	46.35	-4.97	0.544
100.00	-14.00	-19.31	0.00	-656.10	0.00	656.10	2,124.13	1,062.07	2,508.52	1,256.12	48.72	-5.11	0.529
101.50	-13.68	-19.17	0.00	-627.13	0.00	627.13	1,105.19	552.59	1,317.56	659.76	50.34	-5.20	0.964
105.00	-13.29	-19.03	0.00	-560.05	0.00	560.05	1,087.53	543.77	1,259.48	630.68	54.22	-5.40	0.901
106.00	-12.96	-18.34	0.00	-541.02	0.00	541.02	1,082.34	541.17	1,242.93	622.39	55.36	-5.49	0.882
110.00	-12.47	-18.11	0.00	-467.67	0.00	467.67	1,060.92	530.46	1,177.04	589.40	60.11	-5.85	0.806
115.00	-11.88	-17.40	0.00	-377.12	0.00	377.12	1,032.68	516.34	1,095.47	548.55	66.45	-6.25	0.700
120.00	-11.36	-17.14	0.00	-290.11	0.00	290.11	1,002.79	501.40	1,014.98	508.24	73.18	-6.62	0.583
125.00	-9.87	-13.48	0.00	-203.50	0.00	203.50	971.28	485.64	935.83	468.61	80.28	-6.93	0.445
126.00	-8.13	-11.99	0.00	-190.02	0.00	190.02	964.78	482.39	920.18	460.77	81.73	-6.99	0.421
130.00	-7.82	-11.76	0.00	-142.07	0.00	142.07	938.12	469.06	858.24	429.76	87.67	-7.19	0.340
134.00	-7.05	-9.36	0.00	-93.61	0.00	93.61	910.42	455.21	797.47	399.33	93.75	-7.35	0.243
135.00	-6.98	-9.30	0.00	-84.26	0.00	84.26	903.33	451.67	782.47	391.82	95.29	-7.39	0.223
136.00	-5.71	-8.07	0.00	-74.95	0.00	74.95	896.18	448.09	767.56	384.35	96.84	-7.42	0.202
140.00	-5.47	-7.87	0.00	-42.68	0.00	42.68	866.91	433.46	708.75	354.90	103.08	-7.52	0.127
143.00	-2.33	-3.03	0.00	-19.03	0.00	19.03	844.27	422.14	665.60	333.29	107.81	-7.56	0.060
145.00	-2.26	-2.89	0.00	-12.97	0.00	12.97	828.85	414.43	637.31	319.13	110.97	-7.58	0.043
149.00	0.00	-2.56	0.00	-1.43	0.00	1.43	787.55	393.77	574.90	287.88	117.32	-7.60	0.005

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	26 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		63.8	0.0					0.0	0.0	63.8	0.0	0.0	0.0
5.00		126.6	1,617.9					164.1	151.5	290.6	1,769.4	0.0	0.0
10.00		124.3	1,624.7					161.4	352.5	285.6	1,977.3	0.0	0.0
15.00		121.7	1,608.4					158.3	354.0	280.0	1,962.4	0.0	0.0
20.00		119.1	1,584.4					155.1	355.1	274.2	1,939.5	0.0	0.0
25.00		116.5	1,556.5					151.8	355.9	268.3	1,912.4	0.0	0.0
30.00		115.2	1,526.1					148.5	356.6	263.6	1,882.7	0.0	0.0
35.00		116.2	1,494.0					148.6	357.2	264.7	1,851.2	0.0	0.0
40.00		117.8	1,460.6					151.2	357.7	269.0	1,818.3	0.0	0.0
45.00		94.9	1,426.2					153.0	358.2	247.9	1,784.3	0.0	0.0
48.00	Bot - Section 2	59.9	840.2					92.3	215.1	152.2	1,055.3	0.0	0.0
50.00		63.6	886.5					61.7	143.5	125.2	1,030.0	0.0	0.0
53.25	Top - Section 1	60.6	1,419.2					100.4	233.3	161.0	1,652.5	0.0	0.0
55.00		81.7	423.3					54.9	125.7	136.6	549.0	0.0	0.0
60.00		120.8	1,184.4					156.7	359.3	277.5	1,543.7	0.0	0.0
65.00		120.2	1,152.3					156.3	359.6	276.5	1,511.9	0.0	0.0
70.00		119.3	1,119.8					155.5	359.9	274.7	1,479.7	0.0	0.0
75.00		118.1	1,086.9					154.2	360.2	272.3	1,447.1	0.0	0.0
80.00		116.7	1,053.7					152.7	360.5	269.4	1,414.2	0.0	0.0
85.00		115.0	1,020.2					150.9	360.7	265.9	1,380.9	0.0	0.0
90.00		113.1	986.4					148.8	361.0	261.9	1,347.4	0.0	0.0
95.00		86.5	952.4					146.4	361.2	232.9	1,313.6	0.0	0.0
97.75	Bot - Section 3	55.3	510.7					79.4	198.8	134.7	709.5	0.0	0.0
100.00		41.4	574.0					64.4	162.7	105.7	736.6	0.0	0.0
101.50	Top - Section 2	54.5	377.4					42.6	108.5	97.1	485.9	0.0	0.0
105.00		48.7	464.1					99.5	253.2	148.2	717.3	0.0	0.0
106.00	Appurtenance(s)	53.2	131.0	120.9	0.0	0.0	493.0	28.2	72.4	202.3	696.4	0.0	0.0
110.00		94.4	510.8					111.4	289.3	205.8	800.2	0.0	0.0
115.00	Appurtenance(s)	102.4	614.5	104.7	0.0	0.0	285.5	136.4	361.9	343.5	1,261.9	0.0	0.0
120.00		99.6	589.1					133.0	332.5	232.6	921.6	0.0	0.0
125.00	Appurtenance(s)	58.7	563.5	694.6	0.0	198.4	4,354.2	129.4	332.7	882.7	5,250.4	0.0	0.0
126.00	Appurtenance(s)	47.5	110.6	361.9	0.0	0.0	3,275.5	25.4	54.3	434.9	3,440.4	0.0	0.0
130.00		74.8	429.1					100.2	217.4	175.0	646.5	0.0	0.0
134.00	Appurtenance(s)	46.0	412.6	462.1	0.0	282.5	2,753.6	97.7	217.5	605.8	3,383.6	0.0	0.0
135.00		18.1	101.3					24.0	40.6	42.1	141.9	0.0	0.0
136.00	Appurtenance(s)	44.3	100.3	294.0	0.0	0.0	2,142.7	23.9	40.6	362.2	2,283.6	0.0	0.0
140.00		61.1	387.6					93.9	162.7	154.9	550.2	0.0	0.0
143.00	Appurtenance(s)	42.6	280.5	1,028.9	0.0	8.9	15,201.1	68.6	122.1	1,140.2	15,603.6	0.0	0.0
145.00		49.6	182.3					22.5	33.9	72.1	216.2	0.0	0.0
149.00	Appurtenance(s)	32.8	349.9	640.7	0.0	335.3	5,487.8	0.0	38.8	673.5	5,876.5	0.0	0.0
Totals:										11,227.3	76,345.1	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

26 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-76.34	-11.22	0.00	-1,183.06	0.00	1,183.06	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.288
5.00	-74.55	-11.03	0.00	-1,126.98	0.00	1,126.98	4,073.39	2,036.69	8,449.37	4,230.97	0.04	-0.08	0.285
10.00	-72.56	-10.84	0.00	-1,071.83	0.00	1,071.83	4,012.85	2,006.43	8,128.58	4,070.33	0.17	-0.16	0.281
15.00	-70.58	-10.66	0.00	-1,017.62	0.00	1,017.62	3,950.68	1,975.34	7,810.43	3,911.02	0.38	-0.24	0.278
20.00	-68.63	-10.48	0.00	-964.32	0.00	964.32	3,886.87	1,943.43	7,495.19	3,753.17	0.68	-0.33	0.275
25.00	-66.70	-10.30	0.00	-911.94	0.00	911.94	3,821.43	1,910.71	7,183.08	3,596.88	1.07	-0.41	0.271
30.00	-64.81	-10.12	0.00	-860.45	0.00	860.45	3,754.35	1,877.17	6,874.35	3,442.28	1.55	-0.50	0.267
35.00	-62.94	-9.94	0.00	-809.86	0.00	809.86	3,685.64	1,842.82	6,569.23	3,289.50	2.12	-0.59	0.263
40.00	-61.11	-9.74	0.00	-760.18	0.00	760.18	3,615.29	1,807.64	6,267.96	3,138.64	2.79	-0.68	0.259
45.00	-59.32	-9.55	0.00	-711.47	0.00	711.47	3,543.30	1,771.65	5,970.78	2,989.83	3.55	-0.77	0.255
48.00	-58.26	-9.43	0.00	-682.82	0.00	682.82	3,499.33	1,749.66	5,794.53	2,901.57	4.05	-0.83	0.252
50.00	-57.22	-9.34	0.00	-663.95	0.00	663.95	3,469.68	1,734.84	5,677.92	2,843.18	4.41	-0.87	0.250
53.25	-55.56	-9.20	0.00	-633.59	0.00	633.59	2,730.90	1,365.45	4,467.29	2,236.97	5.02	-0.93	0.304
55.00	-55.01	-9.13	0.00	-617.49	0.00	617.49	2,712.29	1,356.15	4,390.67	2,198.60	5.37	-0.97	0.301
60.00	-53.45	-8.93	0.00	-571.85	0.00	571.85	2,658.02	1,329.01	4,173.50	2,089.85	6.44	-1.08	0.294
65.00	-51.93	-8.72	0.00	-527.22	0.00	527.22	2,602.11	1,301.05	3,959.12	1,982.50	7.63	-1.19	0.286
70.00	-50.44	-8.51	0.00	-483.62	0.00	483.62	2,544.56	1,272.28	3,747.77	1,876.67	8.93	-1.30	0.278
75.00	-48.98	-8.31	0.00	-441.05	0.00	441.05	2,485.39	1,242.69	3,539.70	1,772.48	10.36	-1.41	0.269
80.00	-47.56	-8.09	0.00	-399.52	0.00	399.52	2,424.57	1,212.29	3,335.13	1,670.04	11.90	-1.53	0.259
85.00	-46.17	-7.88	0.00	-359.05	0.00	359.05	2,362.12	1,181.06	3,134.31	1,569.49	13.56	-1.64	0.248
90.00	-44.82	-7.67	0.00	-319.64	0.00	319.64	2,297.27	1,148.64	2,936.51	1,470.44	15.34	-1.76	0.237
95.00	-43.50	-7.46	0.00	-281.30	0.00	281.30	2,210.70	1,105.35	2,718.30	1,361.17	17.25	-1.87	0.226
97.75	-42.79	-7.35	0.00	-260.78	0.00	260.78	2,163.09	1,081.54	2,601.88	1,302.87	18.34	-1.93	0.220
100.00	-42.05	-7.25	0.00	-244.25	0.00	244.25	2,124.13	1,062.07	2,508.52	1,256.12	19.26	-1.98	0.214
101.50	-41.56	-7.17	0.00	-233.39	0.00	233.39	1,105.19	552.59	1,317.56	659.76	19.89	-2.02	0.392
105.00	-40.84	-7.04	0.00	-208.29	0.00	208.29	1,087.53	543.77	1,259.48	630.68	21.40	-2.09	0.368
106.00	-40.14	-6.87	0.00	-201.25	0.00	201.25	1,082.34	541.17	1,242.93	622.39	21.84	-2.13	0.361
110.00	-39.33	-6.73	0.00	-173.78	0.00	173.78	1,060.92	530.46	1,177.04	589.40	23.68	-2.26	0.332
115.00	-38.07	-6.43	0.00	-140.13	0.00	140.13	1,032.68	516.34	1,095.47	548.55	26.13	-2.41	0.292
120.00	-37.15	-6.24	0.00	-107.98	0.00	107.98	1,002.79	501.40	1,014.98	508.24	28.73	-2.55	0.250
125.00	-31.94	-5.16	0.00	-76.58	0.00	76.58	971.28	485.64	935.83	468.61	31.46	-2.66	0.196
126.00	-28.52	-4.59	0.00	-71.43	0.00	71.43	964.78	482.39	920.18	460.77	32.02	-2.68	0.185
130.00	-27.87	-4.41	0.00	-53.08	0.00	53.08	938.12	469.06	858.24	429.76	34.30	-2.76	0.153
134.00	-24.52	-3.66	0.00	-35.14	0.00	35.14	910.42	455.21	797.47	399.33	36.64	-2.82	0.115
135.00	-24.38	-3.62	0.00	-31.48	0.00	31.48	903.33	451.67	782.47	391.82	37.23	-2.83	0.107
136.00	-22.12	-3.15	0.00	-27.87	0.00	27.87	896.18	448.09	767.56	384.35	37.83	-2.85	0.097
140.00	-21.57	-2.98	0.00	-15.26	0.00	15.26	866.91	433.46	708.75	354.90	40.23	-2.88	0.068
143.00	-6.05	-1.05	0.00	-6.32	0.00	6.32	844.27	422.14	665.60	333.29	42.04	-2.90	0.026
145.00	-5.83	-0.97	0.00	-4.22	0.00	4.22	828.85	414.43	637.31	319.13	43.26	-2.90	0.020
149.00	0.00	-0.67	0.00	-0.34	0.00	0.34	787.55	393.77	574.90	287.88	45.69	-2.91	0.001

Load Case: 1.0D + 1.0W	Serviceability 60 mph	25 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		42.7	0.0					0.0	0.0	42.7	0.0	0.0	0.0
5.00		84.3	1,033.7					0.0	108.7	84.3	1,142.4	0.0	0.0
10.00		82.4	1,009.9					0.0	273.8	82.4	1,283.7	0.0	0.0
15.00		80.4	986.1					0.0	273.8	80.4	1,259.9	0.0	0.0
20.00		78.5	962.3					0.0	273.8	78.5	1,236.1	0.0	0.0
25.00		76.5	938.5					0.0	273.8	76.5	1,212.3	0.0	0.0
30.00		75.5	914.8					0.0	273.8	75.5	1,188.6	0.0	0.0
35.00		75.9	891.0					0.0	273.8	75.9	1,164.8	0.0	0.0
40.00		76.8	867.2					0.0	273.8	76.8	1,141.0	0.0	0.0
45.00		61.7	843.4					0.0	273.8	61.7	1,117.2	0.0	0.0
48.00	Bot - Section 2	38.9	494.6					0.0	164.3	38.9	658.9	0.0	0.0
50.00		41.2	600.4					0.0	109.5	41.2	710.0	0.0	0.0
53.25	Top - Section 1	39.2	960.8					0.0	178.0	39.2	1,138.8	0.0	0.0
55.00		52.8	233.9					0.0	95.8	52.8	329.7	0.0	0.0
60.00		78.0	654.9					0.0	273.8	78.0	928.7	0.0	0.0
65.00		77.3	635.1					0.0	273.8	77.3	908.9	0.0	0.0
70.00		76.5	615.3					0.0	273.8	76.5	889.1	0.0	0.0
75.00		75.5	595.5					0.0	273.8	75.5	869.3	0.0	0.0
80.00		74.3	575.6					0.0	273.8	74.3	849.4	0.0	0.0
85.00		73.0	555.8					0.0	273.8	73.0	829.6	0.0	0.0
90.00		71.5	536.0					0.0	273.8	71.5	809.8	0.0	0.0
95.00		54.5	516.2					0.0	273.8	54.5	790.0	0.0	0.0
97.75	Bot - Section 3	34.8	275.4					0.0	150.6	34.8	426.0	0.0	0.0
100.00		26.0	355.7					0.0	123.2	26.0	478.9	0.0	0.0
101.50	Top - Section 2	34.1	233.6					0.0	82.1	34.1	315.7	0.0	0.0
105.00		30.5	202.4					0.0	191.7	30.5	394.1	0.0	0.0
106.00	Appurtenance(s)	33.2	56.8	118.8	0.0	0.0	256.0	0.0	54.8	152.0	367.5	0.0	0.0
110.00		58.6	222.3					0.0	218.9	58.6	441.2	0.0	0.0
115.00	Appurtenance(s)	63.3	267.2	93.3	0.0	0.0	79.2	0.0	273.7	156.6	620.0	0.0	0.0
120.00		61.2	255.3					0.0	249.1	61.2	504.3	0.0	0.0
125.00	Appurtenance(s)	35.9	243.4	711.2	0.0	198.1	1,586.5	0.0	249.1	747.1	2,078.9	0.0	0.0
126.00	Appurtenance(s)	28.9	47.3	247.4	0.0	0.0	2,000.0	0.0	39.6	276.4	2,086.9	0.0	0.0
130.00		45.4	184.2					0.0	158.4	45.4	342.7	0.0	0.0
134.00	Appurtenance(s)	27.8	176.6	465.2	0.0	300.3	839.6	0.0	158.4	493.0	1,174.7	0.0	0.0
135.00		10.9	43.0					0.0	28.2	10.9	71.1	0.0	0.0
136.00	Appurtenance(s)	26.5	42.5	201.8	0.0	0.0	1,500.0	0.0	28.2	228.3	1,570.7	0.0	0.0
140.00		36.5	165.2					0.0	112.6	36.5	277.9	0.0	0.0
143.00	Appurtenance(s)	25.3	118.9	913.3	0.0	6.0	3,967.6	0.0	84.5	938.6	4,171.0	0.0	0.0
145.00		29.3	76.9					0.0	22.5	29.3	99.4	0.0	0.0
149.00	Appurtenance(s)	19.3	148.1	529.0	0.0	305.1	2,727.0	0.0	32.3	548.3	2,907.4	0.0	0.0
Totals:									5,394.98	38,786.8	0.00	0.00	

Load Case: 1.0D + 1.0W

Serviceability 60 mph

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.78	-5.37	0.00	-624.29	0.00	624.29	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.152
5.00	-37.64	-5.31	0.00	-597.46	0.00	597.46	4,073.39	2,036.69	8,449.37	4,230.97	0.02	-0.04	0.150
10.00	-36.35	-5.25	0.00	-570.91	0.00	570.91	4,012.85	2,006.43	8,128.58	4,070.33	0.09	-0.08	0.149
15.00	-35.09	-5.20	0.00	-544.64	0.00	544.64	3,950.68	1,975.34	7,810.43	3,911.02	0.20	-0.13	0.148
20.00	-33.85	-5.14	0.00	-518.65	0.00	518.65	3,886.87	1,943.43	7,495.19	3,753.17	0.36	-0.17	0.147
25.00	-32.63	-5.09	0.00	-492.94	0.00	492.94	3,821.43	1,910.71	7,183.08	3,596.88	0.57	-0.22	0.146
30.00	-31.44	-5.04	0.00	-467.49	0.00	467.49	3,754.35	1,877.17	6,874.35	3,442.28	0.83	-0.27	0.144
35.00	-30.27	-4.98	0.00	-442.32	0.00	442.32	3,685.64	1,842.82	6,569.23	3,289.50	1.13	-0.32	0.143
40.00	-29.13	-4.92	0.00	-417.42	0.00	417.42	3,615.29	1,807.64	6,267.96	3,138.64	1.49	-0.37	0.141
45.00	-28.00	-4.87	0.00	-392.82	0.00	392.82	3,543.30	1,771.65	5,970.78	2,989.83	1.90	-0.42	0.139
48.00	-27.34	-4.84	0.00	-378.20	0.00	378.20	3,499.33	1,749.66	5,794.53	2,901.57	2.17	-0.45	0.138
50.00	-26.63	-4.81	0.00	-368.52	0.00	368.52	3,469.68	1,734.84	5,677.92	2,843.18	2.37	-0.47	0.137
53.25	-25.49	-4.77	0.00	-352.90	0.00	352.90	2,730.90	1,365.45	4,467.29	2,236.97	2.70	-0.51	0.167
55.00	-25.16	-4.73	0.00	-344.55	0.00	344.55	2,712.29	1,356.15	4,390.67	2,198.60	2.89	-0.52	0.166
60.00	-24.23	-4.67	0.00	-320.89	0.00	320.89	2,658.02	1,329.01	4,173.50	2,089.85	3.47	-0.59	0.163
65.00	-23.31	-4.61	0.00	-297.53	0.00	297.53	2,602.11	1,301.05	3,959.12	1,982.50	4.12	-0.65	0.159
70.00	-22.42	-4.55	0.00	-274.48	0.00	274.48	2,544.56	1,272.28	3,747.77	1,876.67	4.83	-0.71	0.155
75.00	-21.55	-4.49	0.00	-251.74	0.00	251.74	2,485.39	1,242.69	3,539.70	1,772.48	5.61	-0.78	0.151
80.00	-20.69	-4.42	0.00	-229.31	0.00	229.31	2,424.57	1,212.29	3,335.13	1,670.04	6.46	-0.84	0.146
85.00	-19.86	-4.36	0.00	-207.20	0.00	207.20	2,362.12	1,181.06	3,134.31	1,569.49	7.38	-0.91	0.140
90.00	-19.05	-4.30	0.00	-185.40	0.00	185.40	2,297.27	1,148.64	2,936.51	1,470.44	8.37	-0.97	0.134
95.00	-18.25	-4.25	0.00	-163.91	0.00	163.91	2,210.70	1,105.35	2,718.30	1,361.17	9.42	-1.04	0.129
97.75	-17.83	-4.21	0.00	-152.24	0.00	152.24	2,163.09	1,081.54	2,601.88	1,302.87	10.03	-1.08	0.125
100.00	-17.35	-4.19	0.00	-142.76	0.00	142.76	2,124.13	1,062.07	2,508.52	1,256.12	10.55	-1.11	0.122
101.50	-17.03	-4.15	0.00	-136.48	0.00	136.48	1,105.19	552.59	1,317.56	659.76	10.90	-1.13	0.222
105.00	-16.63	-4.13	0.00	-121.94	0.00	121.94	1,087.53	543.77	1,259.48	630.68	11.74	-1.17	0.209
106.00	-16.26	-3.98	0.00	-117.81	0.00	117.81	1,082.34	541.17	1,242.93	622.39	11.99	-1.19	0.204
110.00	-15.82	-3.94	0.00	-101.89	0.00	101.89	1,060.92	530.46	1,177.04	589.40	13.02	-1.27	0.188
115.00	-15.20	-3.79	0.00	-82.22	0.00	82.22	1,032.68	516.34	1,095.47	548.55	14.39	-1.36	0.165
120.00	-14.69	-3.73	0.00	-63.28	0.00	63.28	1,002.79	501.40	1,014.98	508.24	15.86	-1.44	0.139
125.00	-12.63	-2.94	0.00	-44.43	0.00	44.43	971.28	485.64	935.83	468.61	17.40	-1.50	0.108
126.00	-10.55	-2.61	0.00	-41.48	0.00	41.48	964.78	482.39	920.18	460.77	17.72	-1.52	0.101
130.00	-10.21	-2.57	0.00	-31.03	0.00	31.03	938.12	469.06	858.24	429.76	19.01	-1.56	0.083
134.00	-9.04	-2.05	0.00	-20.46	0.00	20.46	910.42	455.21	797.47	399.33	20.33	-1.60	0.061
135.00	-8.97	-2.03	0.00	-18.41	0.00	18.41	903.33	451.67	782.47	391.82	20.67	-1.60	0.057
136.00	-7.41	-1.76	0.00	-16.38	0.00	16.38	896.18	448.09	767.56	384.35	21.00	-1.61	0.051
140.00	-7.13	-1.72	0.00	-9.33	0.00	9.33	866.91	433.46	708.75	354.90	22.36	-1.63	0.035
143.00	-2.99	-0.66	0.00	-4.16	0.00	4.16	844.27	422.14	665.60	333.29	23.39	-1.64	0.016
145.00	-2.89	-0.63	0.00	-2.83	0.00	2.83	828.85	414.43	637.31	319.13	24.08	-1.65	0.012
149.00	0.00	-0.55	0.00	-0.31	0.00	0.31	787.55	393.77	574.90	287.88	25.46	-1.65	0.001

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.96
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	38.79 k
Seismic Base Shear (E):	1.16 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	180	3,898	0.010	12	224
38	144.00	99	2,062	0.006	6	123
37	141.50	203	4,072	0.011	13	252
36	138.00	278	5,292	0.014	17	345
35	135.50	71	1,297	0.003	4	88
34	134.50	71	1,287	0.003	4	88
33	132.00	335	5,838	0.016	18	416
32	128.00	343	5,615	0.015	18	425
31	125.50	87	1,368	0.004	4	108
30	122.50	492	7,390	0.020	23	611
29	117.50	504	6,963	0.019	22	625
28	112.50	541	6,845	0.018	21	671
27	108.00	441	5,147	0.014	16	547
26	105.50	112	1,241	0.003	4	138
25	103.25	394	4,201	0.011	13	489
24	100.75	316	3,205	0.009	10	392
23	98.88	479	4,682	0.013	15	594
22	96.38	426	3,957	0.011	12	528
21	92.50	790	6,759	0.018	21	980
20	87.50	810	6,200	0.017	19	1,004
19	82.50	830	5,647	0.015	18	1,029
18	77.50	849	5,102	0.014	16	1,053
17	72.50	869	4,569	0.012	14	1,078

16	67.50	889	4,051	0.011	13	1,103
15	62.50	909	3,550	0.010	11	1,127
14	57.50	929	3,071	0.008	10	1,152
13	54.13	330	966	0.003	3	409
12	51.63	1,139	3,035	0.008	9	1,412
11	49.00	710	1,705	0.005	5	880
10	46.50	659	1,425	0.004	4	817
9	42.50	1,117	2,018	0.005	6	1,385
8	37.50	1,141	1,605	0.004	5	1,415
7	32.50	1,165	1,230	0.003	4	1,444
6	27.50	1,189	899	0.002	3	1,474
5	22.50	1,212	614	0.002	2	1,503
4	17.50	1,236	379	0.001	1	1,533
3	12.50	1,260	197	0.001	1	1,562
2	7.50	1,284	72	0.000	0	1,592
1	2.50	1,142	7	0.000	0	1,417
DragonWave Horizon C	149.00	32	706	0.002	2	39
DragonWave A-ANT-23G	149.00	15	333	0.001	1	19
Alcatel-Lucent RRH2x	149.00	317	7,047	0.019	22	394
Alcatel-Lucent 1900	149.00	180	3,996	0.011	12	223
Nokia 2.5G MAA - AAH	149.00	311	6,900	0.019	22	385
DragonWave A-ANT-11G	149.00	54	1,199	0.003	4	67
RFS APXVFRR12X-C-I20	149.00	138	3,064	0.008	10	171
SitePro1 RMQP-3XX Lo	149.00	1,680	37,298	0.100	117	2,083
Ericsson KRY 112 144	143.00	29	595	0.002	2	36
Ericsson KRY 112 489	143.00	46	945	0.003	3	57
Ericsson Radio 4449	143.00	222	4,540	0.012	14	275
Ericsson AIR32 B66Aa	143.00	397	8,110	0.022	25	492
Ericsson Air 3246 B6	143.00	540	11,042	0.030	35	670
RFS APXVAARR24_43-U-	143.00	384	7,846	0.021	25	476
Platform with SitePr	143.00	2,350	48,055	0.129	150	2,914
Round Low Profile PI	136.00	1,500	27,744	0.074	87	1,860
Samsung B2/B66A RRH-	134.00	253	4,546	0.012	14	314
Samsung B5/B13 RRH-B	134.00	211	3,787	0.010	12	262
RFS DB-T1-6Z-8AB-0Z	134.00	44	790	0.002	2	55
Andrew DB854DG65ESX	134.00	56	997	0.003	3	69
JMA Wireless MX06FRO	134.00	276	4,956	0.013	15	342
Round Platform w/ Ha	126.00	2,000	31,752	0.085	99	2,480
Commscope WCS-IMFQ-A	125.00	30	461	0.001	1	37
Raycap DC6-48-60-0-8	125.00	33	513	0.001	2	41
Raycap DC6-48-60-0-8	125.00	66	1,025	0.003	3	81
Ericsson Radio 4415	125.00	129	2,016	0.005	6	160
Ericsson 8843 Rev 2	125.00	225	3,516	0.009	11	279
Ericsson RRUS 4449 B	125.00	213	3,328	0.009	10	264
CCI CCI-HPA-65R-BUU-	125.00	204	3,188	0.009	10	253
Kathrein Scala 80010	125.00	688	10,744	0.029	34	853
RFS APXV18-206517S-C	115.00	79	1,047	0.003	3	98
Proxim 5054-R-LR	106.00	6	67	0.000	0	7
Generic 3' Dish w/ R	106.00	100	1,124	0.003	4	124
Flat Side Arm	106.00	150	1,685	0.005	5	186
		38,787	372,420	1.000	1,164	48,100

Load Case (0.9 - 0.2Sds) * DL + E ELFM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	180	3,898	0.010	12	155
38	144.00	99	2,062	0.006	6	85
37	141.50	203	4,072	0.011	13	175
36	138.00	278	5,292	0.014	17	239

35	135.50	71	1,297	0.003	4	61
34	134.50	71	1,287	0.003	4	61
33	132.00	335	5,838	0.016	18	288
32	128.00	343	5,615	0.015	18	295
31	125.50	87	1,368	0.004	4	75
30	122.50	492	7,390	0.020	23	423
29	117.50	504	6,963	0.019	22	434
28	112.50	541	6,845	0.018	21	465
27	108.00	441	5,147	0.014	16	379
26	105.50	112	1,241	0.003	4	96
25	103.25	394	4,201	0.011	13	339
24	100.75	316	3,205	0.009	10	271
23	98.88	479	4,682	0.013	15	412
22	96.38	426	3,957	0.011	12	366
21	92.50	790	6,759	0.018	21	679
20	87.50	810	6,200	0.017	19	696
19	82.50	830	5,647	0.015	18	713
18	77.50	849	5,102	0.014	16	730
17	72.50	869	4,569	0.012	14	747
16	67.50	889	4,051	0.011	13	765
15	62.50	909	3,550	0.010	11	782
14	57.50	929	3,071	0.008	10	799
13	54.13	330	966	0.003	3	284
12	51.63	1,139	3,035	0.008	9	979
11	49.00	710	1,705	0.005	5	610
10	46.50	659	1,425	0.004	4	567
9	42.50	1,117	2,018	0.005	6	961
8	37.50	1,141	1,605	0.004	5	981
7	32.50	1,165	1,230	0.003	4	1,002
6	27.50	1,189	899	0.002	3	1,022
5	22.50	1,212	614	0.002	2	1,042
4	17.50	1,236	379	0.001	1	1,063
3	12.50	1,260	197	0.001	1	1,083
2	7.50	1,284	72	0.000	0	1,104
1	2.50	1,142	7	0.000	0	982
DragonWave Horizon C	149.00	32	706	0.002	2	27
DragonWave A-ANT-23G	149.00	15	333	0.001	1	13
Alcatel-Lucent RRH2x	149.00	317	7,047	0.019	22	273
Alcatel-Lucent 1900	149.00	180	3,996	0.011	12	155
Nokia 2.5G MAA - AAH	149.00	311	6,900	0.019	22	267
DragonWave A-ANT-11G	149.00	54	1,199	0.003	4	46
RFS APXVFRR12X-C-I20	149.00	138	3,064	0.008	10	119
SitePro1 RMQP-3XX Lo	149.00	1,680	37,298	0.100	117	1,445
Ericsson KRY 112 144	143.00	29	595	0.002	2	25
Ericsson KRY 112 489	143.00	46	945	0.003	3	40
Ericsson Radio 4449	143.00	222	4,540	0.012	14	191
Ericsson AIR32 B66Aa	143.00	397	8,110	0.022	25	341
Ericsson Air 3246 B6	143.00	540	11,042	0.030	35	464
RFS APXVAARR24_43-U-	143.00	384	7,846	0.021	25	330
Platform with SitePr	143.00	2,350	48,055	0.129	150	2,021
Round Low Profile PI	136.00	1,500	27,744	0.074	87	1,290
Samsung B2/B66A RRH-	134.00	253	4,546	0.012	14	218
Samsung B5/B13 RRH-B	134.00	211	3,787	0.010	12	181
RFS DB-T1-6Z-8AB-0Z	134.00	44	790	0.002	2	38
Andrew DB854DG65ESX	134.00	56	997	0.003	3	48
JMA Wireless MX06FRO	134.00	276	4,956	0.013	15	237
Round Platform w/ Ha	126.00	2,000	31,752	0.085	99	1,720
Commscope WCS-IMFQ-A	125.00	30	461	0.001	1	25
Raycap DC6-48-60-0-8	125.00	33	513	0.001	2	28
Raycap DC6-48-60-0-8	125.00	66	1,025	0.003	3	56
Ericsson Radio 4415	125.00	129	2,016	0.005	6	111
Ericsson 8843 Rev 2	125.00	225	3,516	0.009	11	193
Ericsson RRUS 4449 B	125.00	213	3,328	0.009	10	183
CCI CCI-HPA-65R-BUU-	125.00	204	3,188	0.009	10	175

Site Number: 243036

Code: ANSI/TIA-222-G

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Site Name: WEST HAVEN & RT 162 CT, CT

Engineering Number: OAA754030_C3_01

11/12/2019 8:40:22 AM

Customer: AT&T MOBILITY

Kathrein Scala 80010	125.00	688	10,744	0.029	34	591
RFS APXV18-206517S-C	115.00	79	1,047	0.003	3	68
Proxim 5054-R-LR	106.00	6	67	0.000	0	5
Generic 3' Dish w/ R	106.00	100	1,124	0.003	4	86
Flat Side Arm	106.00	150	1,685	0.005	5	129
		38,787	372,420	1.000	1,164	33,353

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.68	-1.17	0.00	-155.32	0.00	155.32	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.047
5.00	-45.09	-1.17	0.00	-149.49	0.00	149.49	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.01	0.046
10.00	-43.53	-1.18	0.00	-143.61	0.00	143.61	4,012.85	2,006.43	8,128.58	4,070.33	0.02	-0.02	0.046
15.00	-42.00	-1.19	0.00	-137.70	0.00	137.70	3,950.68	1,975.34	7,810.43	3,911.02	0.05	-0.03	0.046
20.00	-40.49	-1.19	0.00	-131.76	0.00	131.76	3,886.87	1,943.43	7,495.19	3,753.17	0.09	-0.04	0.046
25.00	-39.02	-1.20	0.00	-125.79	0.00	125.79	3,821.43	1,910.71	7,183.08	3,596.88	0.14	-0.06	0.045
30.00	-37.57	-1.20	0.00	-119.80	0.00	119.80	3,754.35	1,877.17	6,874.35	3,442.28	0.21	-0.07	0.045
35.00	-36.16	-1.20	0.00	-113.80	0.00	113.80	3,685.64	1,842.82	6,569.23	3,289.50	0.29	-0.08	0.044
40.00	-34.77	-1.20	0.00	-107.79	0.00	107.79	3,615.29	1,807.64	6,267.96	3,138.64	0.38	-0.09	0.044
45.00	-33.95	-1.20	0.00	-101.78	0.00	101.78	3,543.30	1,771.65	5,970.78	2,989.83	0.48	-0.11	0.044
48.00	-33.07	-1.20	0.00	-98.18	0.00	98.18	3,499.33	1,749.66	5,794.53	2,901.57	0.55	-0.11	0.043
50.00	-31.66	-1.19	0.00	-95.78	0.00	95.78	3,469.68	1,734.84	5,677.92	2,843.18	0.60	-0.12	0.043
53.25	-31.25	-1.19	0.00	-91.91	0.00	91.91	2,730.90	1,365.45	4,467.29	2,236.97	0.68	-0.13	0.053
55.00	-30.10	-1.18	0.00	-89.83	0.00	89.83	2,712.29	1,356.15	4,390.67	2,198.60	0.73	-0.13	0.052
60.00	-28.97	-1.18	0.00	-83.91	0.00	83.91	2,658.02	1,329.01	4,173.50	2,089.85	0.88	-0.15	0.051
65.00	-27.87	-1.17	0.00	-78.02	0.00	78.02	2,602.11	1,301.05	3,959.12	1,982.50	1.05	-0.17	0.050
70.00	-26.79	-1.16	0.00	-72.17	0.00	72.17	2,544.56	1,272.28	3,747.77	1,876.67	1.23	-0.18	0.049
75.00	-25.74	-1.15	0.00	-66.37	0.00	66.37	2,485.39	1,242.69	3,539.70	1,772.48	1.43	-0.20	0.048
80.00	-24.71	-1.14	0.00	-60.62	0.00	60.62	2,424.57	1,212.29	3,335.13	1,670.04	1.65	-0.22	0.046
85.00	-23.70	-1.12	0.00	-54.95	0.00	54.95	2,362.12	1,181.06	3,134.31	1,569.49	1.89	-0.24	0.045
90.00	-22.72	-1.10	0.00	-49.35	0.00	49.35	2,297.27	1,148.64	2,936.51	1,470.44	2.14	-0.25	0.043
95.00	-22.20	-1.09	0.00	-43.85	0.00	43.85	2,210.70	1,105.35	2,718.30	1,361.17	2.42	-0.27	0.042
97.75	-21.60	-1.08	0.00	-40.85	0.00	40.85	2,163.09	1,081.54	2,601.88	1,302.87	2.58	-0.28	0.041
100.00	-21.21	-1.07	0.00	-38.43	0.00	38.43	2,124.13	1,062.07	2,508.52	1,256.12	2.71	-0.29	0.041
101.50	-20.72	-1.06	0.00	-36.83	0.00	36.83	1,105.19	552.59	1,317.56	659.76	2.80	-0.29	0.075
105.00	-20.58	-1.05	0.00	-33.13	0.00	33.13	1,087.53	543.77	1,259.48	630.68	3.02	-0.31	0.071
106.00	-19.72	-1.03	0.00	-32.08	0.00	32.08	1,082.34	541.17	1,242.93	622.39	3.09	-0.31	0.070
110.00	-19.05	-1.01	0.00	-27.97	0.00	27.97	1,060.92	530.46	1,177.04	589.40	3.36	-0.33	0.065
115.00	-18.32	-0.99	0.00	-22.91	0.00	22.91	1,032.68	516.34	1,095.47	548.55	3.72	-0.36	0.060
120.00	-17.71	-0.97	0.00	-17.96	0.00	17.96	1,002.79	501.40	1,014.98	508.24	4.10	-0.38	0.053
125.00	-15.64	-0.88	0.00	-13.12	0.00	13.12	971.28	485.64	935.83	468.61	4.51	-0.40	0.044
126.00	-12.73	-0.74	0.00	-12.24	0.00	12.24	964.78	482.39	920.18	460.77	4.59	-0.40	0.040
130.00	-12.32	-0.72	0.00	-9.28	0.00	9.28	938.12	469.06	858.24	429.76	4.94	-0.42	0.035
134.00	-11.19	-0.66	0.00	-6.39	0.00	6.39	910.42	455.21	797.47	399.33	5.29	-0.43	0.028
135.00	-11.10	-0.66	0.00	-5.73	0.00	5.73	903.33	451.67	782.47	391.82	5.38	-0.43	0.027
136.00	-8.90	-0.54	0.00	-5.07	0.00	5.07	896.18	448.09	767.56	384.35	5.47	-0.43	0.023
140.00	-8.65	-0.53	0.00	-2.90	0.00	2.90	866.91	433.46	708.75	354.90	5.83	-0.44	0.018
143.00	-3.60	-0.23	0.00	-1.32	0.00	1.32	844.27	422.14	665.60	333.29	6.11	-0.44	0.008
145.00	-3.38	-0.22	0.00	-0.86	0.00	0.86	828.85	414.43	637.31	319.13	6.29	-0.44	0.007
149.00	0.00	-0.19	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	6.66	-0.44	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.37	-1.17	0.00	-151.78	0.00	151.78	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.042
5.00	-31.27	-1.17	0.00	-145.95	0.00	145.95	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.01	0.042
10.00	-30.18	-1.18	0.00	-140.09	0.00	140.09	4,012.85	2,006.43	8,128.58	4,070.33	0.02	-0.02	0.042
15.00	-29.12	-1.18	0.00	-134.22	0.00	134.22	3,950.68	1,975.34	7,810.43	3,911.02	0.05	-0.03	0.042
20.00	-28.08	-1.18	0.00	-128.32	0.00	128.32	3,886.87	1,943.43	7,495.19	3,753.17	0.09	-0.04	0.041
25.00	-27.05	-1.18	0.00	-122.41	0.00	122.41	3,821.43	1,910.71	7,183.08	3,596.88	0.14	-0.05	0.041
30.00	-26.05	-1.18	0.00	-116.48	0.00	116.48	3,754.35	1,877.17	6,874.35	3,442.28	0.20	-0.07	0.041
35.00	-25.07	-1.18	0.00	-110.56	0.00	110.56	3,685.64	1,842.82	6,569.23	3,289.50	0.28	-0.08	0.040
40.00	-24.11	-1.18	0.00	-104.64	0.00	104.64	3,615.29	1,807.64	6,267.96	3,138.64	0.37	-0.09	0.040
45.00	-23.54	-1.18	0.00	-98.73	0.00	98.73	3,543.30	1,771.65	5,970.78	2,989.83	0.47	-0.10	0.040
48.00	-22.93	-1.18	0.00	-95.19	0.00	95.19	3,499.33	1,749.66	5,794.53	2,901.57	0.54	-0.11	0.039
50.00	-21.95	-1.17	0.00	-92.84	0.00	92.84	3,469.68	1,734.84	5,677.92	2,843.18	0.58	-0.12	0.039
53.25	-21.67	-1.17	0.00	-89.04	0.00	89.04	2,730.90	1,365.45	4,467.29	2,236.97	0.67	-0.13	0.048
55.00	-20.87	-1.16	0.00	-87.00	0.00	87.00	2,712.29	1,356.15	4,390.67	2,198.60	0.71	-0.13	0.047
60.00	-20.09	-1.15	0.00	-81.20	0.00	81.20	2,658.02	1,329.01	4,173.50	2,089.85	0.86	-0.15	0.046
65.00	-19.32	-1.14	0.00	-75.44	0.00	75.44	2,602.11	1,301.05	3,959.12	1,982.50	1.02	-0.16	0.045
70.00	-18.58	-1.13	0.00	-69.73	0.00	69.73	2,544.56	1,272.28	3,747.77	1,876.67	1.20	-0.18	0.044
75.00	-17.85	-1.12	0.00	-64.07	0.00	64.07	2,485.39	1,242.69	3,539.70	1,772.48	1.39	-0.19	0.043
80.00	-17.13	-1.10	0.00	-58.48	0.00	58.48	2,424.57	1,212.29	3,335.13	1,670.04	1.61	-0.21	0.042
85.00	-16.44	-1.09	0.00	-52.96	0.00	52.96	2,362.12	1,181.06	3,134.31	1,569.49	1.84	-0.23	0.041
90.00	-15.76	-1.07	0.00	-47.53	0.00	47.53	2,297.27	1,148.64	2,936.51	1,470.44	2.08	-0.24	0.039
95.00	-15.39	-1.06	0.00	-42.20	0.00	42.20	2,210.70	1,105.35	2,718.30	1,361.17	2.35	-0.26	0.038
97.75	-14.98	-1.04	0.00	-39.30	0.00	39.30	2,163.09	1,081.54	2,601.88	1,302.87	2.50	-0.27	0.037
100.00	-14.71	-1.03	0.00	-36.95	0.00	36.95	2,124.13	1,062.07	2,508.52	1,256.12	2.63	-0.28	0.036
101.50	-14.37	-1.02	0.00	-35.40	0.00	35.40	1,105.19	552.59	1,317.56	659.76	2.72	-0.28	0.067
105.00	-14.27	-1.02	0.00	-31.84	0.00	31.84	1,087.53	543.77	1,259.48	630.68	2.93	-0.30	0.064
106.00	-13.67	-0.99	0.00	-30.82	0.00	30.82	1,082.34	541.17	1,242.93	622.39	3.00	-0.30	0.062
110.00	-13.21	-0.97	0.00	-26.85	0.00	26.85	1,060.92	530.46	1,177.04	589.40	3.26	-0.32	0.058
115.00	-12.70	-0.95	0.00	-21.98	0.00	21.98	1,032.68	516.34	1,095.47	548.55	3.61	-0.34	0.052
120.00	-12.28	-0.93	0.00	-17.23	0.00	17.23	1,002.79	501.40	1,014.98	508.24	3.98	-0.37	0.046
125.00	-10.84	-0.84	0.00	-12.58	0.00	12.58	971.28	485.64	935.83	468.61	4.37	-0.38	0.038
126.00	-8.83	-0.71	0.00	-11.74	0.00	11.74	964.78	482.39	920.18	460.77	4.45	-0.39	0.035
130.00	-8.54	-0.69	0.00	-8.90	0.00	8.90	938.12	469.06	858.24	429.76	4.78	-0.40	0.030
134.00	-7.76	-0.64	0.00	-6.13	0.00	6.13	910.42	455.21	797.47	399.33	5.12	-0.41	0.024
135.00	-7.70	-0.63	0.00	-5.49	0.00	5.49	903.33	451.67	782.47	391.82	5.21	-0.41	0.023
136.00	-6.17	-0.52	0.00	-4.86	0.00	4.86	896.18	448.09	767.56	384.35	5.30	-0.42	0.020
140.00	-5.99	-0.51	0.00	-2.78	0.00	2.78	866.91	433.46	708.75	354.90	5.65	-0.42	0.015
143.00	-2.50	-0.22	0.00	-1.27	0.00	1.27	844.27	422.14	665.60	333.29	5.92	-0.42	0.007
145.00	-2.34	-0.21	0.00	-0.83	0.00	0.83	828.85	414.43	637.31	319.13	6.09	-0.43	0.005
149.00	0.00	-0.19	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	6.45	-0.43	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.96
Redundancy Factor (p):	1.00

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	180	1.840	1.725	1.047	0.344	41	224
38	144.00	99	1.765	1.385	0.919	0.296	20	123
37	141.50	203	1.705	1.139	0.822	0.258	35	252
36	138.00	278	1.621	0.846	0.699	0.210	39	345
35	135.50	71	1.563	0.669	0.621	0.177	8	88
34	134.50	71	1.540	0.605	0.592	0.165	8	88
33	132.00	335	1.483	0.461	0.523	0.136	30	416
32	128.00	343	1.395	0.274	0.426	0.093	21	425
31	125.50	87	1.341	0.181	0.373	0.069	4	108
30	122.50	492	1.278	0.091	0.317	0.043	14	611
29	117.50	504	1.175	-0.017	0.237	0.006	2	625
28	112.50	541	1.077	-0.082	0.173	-0.023	-8	671
27	108.00	441	0.993	-0.112	0.128	-0.043	-13	547
26	105.50	112	0.948	-0.119	0.107	-0.051	-4	138
25	103.25	394	0.908	-0.122	0.090	-0.056	-15	489
24	100.75	316	0.864	-0.120	0.074	-0.060	-13	392
23	98.88	479	0.832	-0.117	0.064	-0.062	-20	594
22	96.38	426	0.791	-0.110	0.051	-0.063	-18	528
21	92.50	790	0.728	-0.095	0.036	-0.059	-31	980
20	87.50	810	0.652	-0.071	0.021	-0.048	-26	1,004
19	82.50	830	0.579	-0.045	0.012	-0.029	-16	1,029
18	77.50	849	0.511	-0.020	0.008	-0.006	-4	1,053
17	72.50	869	0.447	0.002	0.006	0.016	9	1,078
16	67.50	889	0.388	0.022	0.007	0.035	21	1,103
15	62.50	909	0.333	0.037	0.010	0.048	29	1,127
14	57.50	929	0.281	0.049	0.014	0.056	35	1,152
13	54.13	330	0.249	0.055	0.017	0.059	13	409
12	51.63	1,139	0.227	0.059	0.020	0.060	46	1,412
11	49.00	710	0.204	0.062	0.023	0.061	29	880
10	46.50	659	0.184	0.065	0.025	0.061	27	817
9	42.50	1,117	0.154	0.068	0.030	0.060	45	1,385
8	37.50	1,141	0.120	0.070	0.034	0.059	45	1,415
7	32.50	1,165	0.090	0.071	0.038	0.057	45	1,444
6	27.50	1,189	0.064	0.072	0.041	0.056	44	1,474

5	22.50	1,212	0.043	0.071	0.042	0.054	44	1,503
4	17.50	1,236	0.026	0.067	0.040	0.052	43	1,533
3	12.50	1,260	0.013	0.059	0.034	0.048	40	1,562
2	7.50	1,284	0.005	0.044	0.025	0.038	33	1,592
1	2.50	1,142	0.001	0.018	0.010	0.019	14	1,417
DragonWave Horizon C	149.00	32	1.890	1.980	1.140	0.377	8	39
DragonWave A-ANT-23G	149.00	15	1.890	1.980	1.140	0.377	4	19
Alcatel-Lucent RRH2x	149.00	317	1.890	1.980	1.140	0.377	80	394
Alcatel-Lucent 1900	149.00	180	1.890	1.980	1.140	0.377	45	223
Nokia 2.5G MAA - AAH	149.00	311	1.890	1.980	1.140	0.377	78	385
DragonWave A-ANT-11G	149.00	54	1.890	1.980	1.140	0.377	14	67
RFS APXVFR12X-C-I20	149.00	138	1.890	1.980	1.140	0.377	35	171
SitePro1 RMQP-3XX Lo	149.00	1,680	1.890	1.980	1.140	0.377	422	2,083
Ericsson KRY 112 144	143.00	29	1.741	1.283	0.879	0.280	5	36
Ericsson KRY 112 489	143.00	46	1.741	1.283	0.879	0.280	9	57
Ericsson Radio 4449	143.00	222	1.741	1.283	0.879	0.280	42	275
Ericsson AIR32 B66Aa	143.00	397	1.741	1.283	0.879	0.280	74	492
Ericsson Air 3246 B6	143.00	540	1.741	1.283	0.879	0.280	101	670
RFS APXVAARR24_43-U-	143.00	384	1.741	1.283	0.879	0.280	72	476
Platform with SitePr	143.00	2,350	1.741	1.283	0.879	0.280	439	2,914
Round Low Profile PI	136.00	1,500	1.575	0.702	0.636	0.184	184	1,860
Samsung B2/B66A RRH-	134.00	253	1.529	0.574	0.577	0.159	27	314
Samsung B5/B13 RRH-B	134.00	211	1.529	0.574	0.577	0.159	22	262
RFS DB-T1-6Z-8AB-0Z	134.00	44	1.529	0.574	0.577	0.159	5	55
Andrew DB854DG65ESX	134.00	56	1.529	0.574	0.577	0.159	6	69
JMA Wireless MX06FRO	134.00	276	1.529	0.574	0.577	0.159	29	342
Round Platform w/ Ha	126.00	2,000	1.352	0.198	0.384	0.074	98	2,480
Commscope WCS-	125.00	30	1.330	0.164	0.363	0.065	1	37
Raycap DC6-48-60-0-8	125.00	33	1.330	0.164	0.363	0.065	1	41
Raycap DC6-48-60-0-8	125.00	66	1.330	0.164	0.363	0.065	3	81
Ericsson Radio 4415	125.00	129	1.330	0.164	0.363	0.065	6	160
Ericsson 8843 Rev 2	125.00	225	1.330	0.164	0.363	0.065	10	279
Ericsson RRUS 4449 B	125.00	213	1.330	0.164	0.363	0.065	9	264
CCI CCI-HPA-65R-BUU-	125.00	204	1.330	0.164	0.363	0.065	9	253
Kathrein Scala 80010	125.00	688	1.330	0.164	0.363	0.065	30	853
RFS APXV18-206517S-C	115.00	79	1.126	-0.054	0.203	-0.009	-1	98
Proxim 5054-R-LR	106.00	6	0.957	-0.118	0.111	-0.049	0	7
Generic 3' Dish w/ R	106.00	100	0.957	-0.118	0.111	-0.049	-3	124
Flat Side Arm	106.00	150	0.957	-0.118	0.111	-0.049	-5	186
		38,787	80.931	36.735	30.377	8.529	2,475	48,100

Load Case (0.9 - 0.2Sds) * DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	180	1.840	1.725	1.047	0.344	41	155
38	144.00	99	1.765	1.385	0.919	0.296	20	85
37	141.50	203	1.705	1.139	0.822	0.258	35	175
36	138.00	278	1.621	0.846	0.699	0.210	39	239
35	135.50	71	1.563	0.669	0.621	0.177	8	61
34	134.50	71	1.540	0.605	0.592	0.165	8	61
33	132.00	335	1.483	0.461	0.523	0.136	30	288
32	128.00	343	1.395	0.274	0.426	0.093	21	295
31	125.50	87	1.341	0.181	0.373	0.069	4	75
30	122.50	492	1.278	0.091	0.317	0.043	14	423
29	117.50	504	1.175	-0.017	0.237	0.006	2	434
28	112.50	541	1.077	-0.082	0.173	-0.023	-8	465
27	108.00	441	0.993	-0.112	0.128	-0.043	-13	379
26	105.50	112	0.948	-0.119	0.107	-0.051	-4	96

25	103.25	394	0.908	-0.122	0.090	-0.056	-15	339
24	100.75	316	0.864	-0.120	0.074	-0.060	-13	271
23	98.88	479	0.832	-0.117	0.064	-0.062	-20	412
22	96.38	426	0.791	-0.110	0.051	-0.063	-18	366
21	92.50	790	0.728	-0.095	0.036	-0.059	-31	679
20	87.50	810	0.652	-0.071	0.021	-0.048	-26	696
19	82.50	830	0.579	-0.045	0.012	-0.029	-16	713
18	77.50	849	0.511	-0.020	0.008	-0.006	-4	730
17	72.50	869	0.447	0.002	0.006	0.016	9	747
16	67.50	889	0.388	0.022	0.007	0.035	21	765
15	62.50	909	0.333	0.037	0.010	0.048	29	782
14	57.50	929	0.281	0.049	0.014	0.056	35	799
13	54.13	330	0.249	0.055	0.017	0.059	13	284
12	51.63	1,139	0.227	0.059	0.020	0.060	46	979
11	49.00	710	0.204	0.062	0.023	0.061	29	610
10	46.50	659	0.184	0.065	0.025	0.061	27	567
9	42.50	1,117	0.154	0.068	0.030	0.060	45	961
8	37.50	1,141	0.120	0.070	0.034	0.059	45	981
7	32.50	1,165	0.090	0.071	0.038	0.057	45	1,002
6	27.50	1,189	0.064	0.072	0.041	0.056	44	1,022
5	22.50	1,212	0.043	0.071	0.042	0.054	44	1,042
4	17.50	1,236	0.026	0.067	0.040	0.052	43	1,063
3	12.50	1,260	0.013	0.059	0.034	0.048	40	1,083
2	7.50	1,284	0.005	0.044	0.025	0.038	33	1,104
1	2.50	1,142	0.001	0.018	0.010	0.019	14	982
DragonWave Horizon C	149.00	32	1.890	1.980	1.140	0.377	8	27
DragonWave A-ANT-23G	149.00	15	1.890	1.980	1.140	0.377	4	13
Alcatel-Lucent RRH2x	149.00	317	1.890	1.980	1.140	0.377	80	273
Alcatel-Lucent 1900	149.00	180	1.890	1.980	1.140	0.377	45	155
Nokia 2.5G MAA - AAH	149.00	311	1.890	1.980	1.140	0.377	78	267
DragonWave A-ANT-11G	149.00	54	1.890	1.980	1.140	0.377	14	46
RFS APXVFRR12X-C-I20	149.00	138	1.890	1.980	1.140	0.377	35	119
SitePro1 RMQP-3XX Lo	149.00	1,680	1.890	1.980	1.140	0.377	422	1,445
Ericsson KRY 112 144	143.00	29	1.741	1.283	0.879	0.280	5	25
Ericsson KRY 112 489	143.00	46	1.741	1.283	0.879	0.280	9	40
Ericsson Radio 4449	143.00	222	1.741	1.283	0.879	0.280	42	191
Ericsson AIR32 B66Aa	143.00	397	1.741	1.283	0.879	0.280	74	341
Ericsson Air 3246 B6	143.00	540	1.741	1.283	0.879	0.280	101	464
RFS APXVAARR24_43-U-	143.00	384	1.741	1.283	0.879	0.280	72	330
Platform with SitePr	143.00	2,350	1.741	1.283	0.879	0.280	439	2,021
Round Low Profile PI	136.00	1,500	1.575	0.702	0.636	0.184	184	1,290
Samsung B2/B66A RRH-	134.00	253	1.529	0.574	0.577	0.159	27	218
Samsung B5/B13 RRH-B	134.00	211	1.529	0.574	0.577	0.159	22	181
RFS DB-T1-6Z-8AB-OZ	134.00	44	1.529	0.574	0.577	0.159	5	38
Andrew DB854DG65ESX	134.00	56	1.529	0.574	0.577	0.159	6	48
JMA Wireless MX06FRO	134.00	276	1.529	0.574	0.577	0.159	29	237
Round Platform w/ Ha	126.00	2,000	1.352	0.198	0.384	0.074	98	1,720
Commscope WCS-	125.00	30	1.330	0.164	0.363	0.065	1	25
Raycap DC6-48-60-0-8	125.00	33	1.330	0.164	0.363	0.065	1	28
Raycap DC6-48-60-0-8	125.00	66	1.330	0.164	0.363	0.065	3	56
Ericsson Radio 4415	125.00	129	1.330	0.164	0.363	0.065	6	111
Ericsson 8843 Rev 2	125.00	225	1.330	0.164	0.363	0.065	10	193
Ericsson RRUS 4449 B	125.00	213	1.330	0.164	0.363	0.065	9	183
CCI CCI-HPA-65R-BUU-	125.00	204	1.330	0.164	0.363	0.065	9	175
Kathrein Scala 80010	125.00	688	1.330	0.164	0.363	0.065	30	591
RFS APXV18-206517S-C	115.00	79	1.126	-0.054	0.203	-0.009	-1	68
Proxim 5054-R-LR	106.00	6	0.957	-0.118	0.111	-0.049	0	5
Generic 3' Dish w/ R	106.00	100	0.957	-0.118	0.111	-0.049	-3	86
Flat Side Arm	106.00	150	0.957	-0.118	0.111	-0.049	-5	129
		38,787	80.931	36.735	30.377	8.529	2,475	33,353

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.68	-2.47	0.00	-322.81	0.00	322.81	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.085
5.00	-45.09	-2.45	0.00	-310.47	0.00	310.47	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.02	0.084
10.00	-43.53	-2.43	0.00	-298.20	0.00	298.20	4,012.85	2,006.43	8,128.58	4,070.33	0.05	-0.04	0.084
15.00	-41.99	-2.40	0.00	-286.05	0.00	286.05	3,950.68	1,975.34	7,810.43	3,911.02	0.10	-0.07	0.084
20.00	-40.49	-2.37	0.00	-274.04	0.00	274.04	3,886.87	1,943.43	7,495.19	3,753.17	0.19	-0.09	0.083
25.00	-39.01	-2.34	0.00	-262.18	0.00	262.18	3,821.43	1,910.71	7,183.08	3,596.88	0.30	-0.12	0.083
30.00	-37.57	-2.31	0.00	-250.46	0.00	250.46	3,754.35	1,877.17	6,874.35	3,442.28	0.43	-0.14	0.083
35.00	-36.15	-2.28	0.00	-238.90	0.00	238.90	3,685.64	1,842.82	6,569.23	3,289.50	0.59	-0.17	0.082
40.00	-34.77	-2.25	0.00	-227.50	0.00	227.50	3,615.29	1,807.64	6,267.96	3,138.64	0.78	-0.19	0.082
45.00	-33.95	-2.23	0.00	-216.26	0.00	216.26	3,543.30	1,771.65	5,970.78	2,989.83	1.00	-0.22	0.082
48.00	-33.07	-2.21	0.00	-209.57	0.00	209.57	3,499.33	1,749.66	5,794.53	2,901.57	1.14	-0.24	0.082
50.00	-31.65	-2.16	0.00	-205.15	0.00	205.15	3,469.68	1,734.84	5,677.92	2,843.18	1.25	-0.25	0.081
53.25	-31.24	-2.16	0.00	-198.12	0.00	198.12	2,730.90	1,365.45	4,467.29	2,236.97	1.43	-0.27	0.100
55.00	-30.09	-2.13	0.00	-194.34	0.00	194.34	2,712.29	1,356.15	4,390.67	2,198.60	1.53	-0.28	0.099
60.00	-28.96	-2.11	0.00	-183.69	0.00	183.69	2,658.02	1,329.01	4,173.50	2,089.85	1.84	-0.32	0.099
65.00	-27.86	-2.10	0.00	-173.12	0.00	173.12	2,602.11	1,301.05	3,959.12	1,982.50	2.19	-0.35	0.098
70.00	-26.78	-2.11	0.00	-162.60	0.00	162.60	2,544.56	1,272.28	3,747.77	1,876.67	2.58	-0.39	0.097
75.00	-25.73	-2.12	0.00	-152.08	0.00	152.08	2,485.39	1,242.69	3,539.70	1,772.48	3.01	-0.43	0.096
80.00	-24.70	-2.14	0.00	-141.48	0.00	141.48	2,424.57	1,212.29	3,335.13	1,670.04	3.48	-0.47	0.095
85.00	-23.69	-2.18	0.00	-130.76	0.00	130.76	2,362.12	1,181.06	3,134.31	1,569.49	3.99	-0.51	0.093
90.00	-22.71	-2.22	0.00	-119.86	0.00	119.86	2,297.27	1,148.64	2,936.51	1,470.44	4.55	-0.55	0.091
95.00	-22.18	-2.24	0.00	-108.77	0.00	108.77	2,210.70	1,105.35	2,718.30	1,361.17	5.15	-0.59	0.090
97.75	-21.58	-2.27	0.00	-102.60	0.00	102.60	2,163.09	1,081.54	2,601.88	1,302.87	5.50	-0.62	0.089
100.00	-21.19	-2.28	0.00	-97.51	0.00	97.51	2,124.13	1,062.07	2,508.52	1,256.12	5.80	-0.64	0.088
101.50	-20.70	-2.30	0.00	-94.09	0.00	94.09	1,105.19	552.59	1,317.56	659.76	6.00	-0.65	0.161
105.00	-20.56	-2.31	0.00	-86.05	0.00	86.05	1,087.53	543.77	1,259.48	630.68	6.49	-0.68	0.155
106.00	-19.70	-2.33	0.00	-83.74	0.00	83.74	1,082.34	541.17	1,242.93	622.39	6.64	-0.70	0.153
110.00	-19.02	-2.35	0.00	-74.42	0.00	74.42	1,060.92	530.46	1,177.04	589.40	7.25	-0.75	0.144
115.00	-18.30	-2.36	0.00	-62.66	0.00	62.66	1,032.68	516.34	1,095.47	548.55	8.07	-0.82	0.132
120.00	-17.68	-2.36	0.00	-50.86	0.00	50.86	1,002.79	501.40	1,014.98	508.24	8.96	-0.88	0.118
125.00	-15.61	-2.26	0.00	-39.09	0.00	39.09	971.28	485.64	935.83	468.61	9.92	-0.94	0.100
126.00	-12.70	-2.10	0.00	-36.83	0.00	36.83	964.78	482.39	920.18	460.77	10.12	-0.95	0.093
130.00	-12.29	-2.07	0.00	-28.45	0.00	28.45	938.12	469.06	858.24	429.76	10.93	-0.99	0.079
134.00	-11.16	-1.95	0.00	-20.18	0.00	20.18	910.42	455.21	797.47	399.33	11.78	-1.02	0.063
135.00	-11.07	-1.95	0.00	-18.22	0.00	18.22	903.33	451.67	782.47	391.82	11.99	-1.03	0.059
136.00	-8.87	-1.69	0.00	-16.28	0.00	16.28	896.18	448.09	767.56	384.35	12.21	-1.04	0.052
140.00	-8.62	-1.65	0.00	-9.53	0.00	9.53	866.91	433.46	708.75	354.90	13.09	-1.06	0.037
143.00	-3.59	-0.79	0.00	-4.58	0.00	4.58	844.27	422.14	665.60	333.29	13.76	-1.07	0.018
145.00	-3.37	-0.75	0.00	-3.00	0.00	3.00	828.85	414.43	637.31	319.13	14.20	-1.07	0.013
149.00	0.00	-0.69	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	15.11	-1.08	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.37	-2.47	0.00	-314.94	0.00	314.94	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.080
5.00	-31.26	-2.44	0.00	-302.61	0.00	302.61	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.02	0.079
10.00	-30.18	-2.42	0.00	-290.38	0.00	290.38	4,012.85	2,006.43	8,128.58	4,070.33	0.05	-0.04	0.079
15.00	-29.12	-2.38	0.00	-278.30	0.00	278.30	3,950.68	1,975.34	7,810.43	3,911.02	0.10	-0.07	0.079
20.00	-28.07	-2.35	0.00	-266.39	0.00	266.39	3,886.87	1,943.43	7,495.19	3,753.17	0.18	-0.09	0.078
25.00	-27.05	-2.31	0.00	-254.64	0.00	254.64	3,821.43	1,910.71	7,183.08	3,596.88	0.29	-0.11	0.078
30.00	-26.05	-2.28	0.00	-243.06	0.00	243.06	3,754.35	1,877.17	6,874.35	3,442.28	0.42	-0.14	0.078
35.00	-25.07	-2.24	0.00	-231.67	0.00	231.67	3,685.64	1,842.82	6,569.23	3,289.50	0.58	-0.16	0.077
40.00	-24.10	-2.21	0.00	-220.45	0.00	220.45	3,615.29	1,807.64	6,267.96	3,138.64	0.76	-0.19	0.077
45.00	-23.54	-2.19	0.00	-209.42	0.00	209.42	3,543.30	1,771.65	5,970.78	2,989.83	0.97	-0.22	0.077
48.00	-22.93	-2.16	0.00	-202.86	0.00	202.86	3,499.33	1,749.66	5,794.53	2,901.57	1.11	-0.23	0.076
50.00	-21.95	-2.12	0.00	-198.53	0.00	198.53	3,469.68	1,734.84	5,677.92	2,843.18	1.21	-0.24	0.076
53.25	-21.66	-2.11	0.00	-191.65	0.00	191.65	2,730.90	1,365.45	4,467.29	2,236.97	1.39	-0.26	0.094
55.00	-20.86	-2.08	0.00	-187.96	0.00	187.96	2,712.29	1,356.15	4,390.67	2,198.60	1.48	-0.27	0.093
60.00	-20.08	-2.06	0.00	-177.56	0.00	177.56	2,658.02	1,329.01	4,173.50	2,089.85	1.79	-0.31	0.093
65.00	-19.32	-2.04	0.00	-167.28	0.00	167.28	2,602.11	1,301.05	3,959.12	1,982.50	2.13	-0.34	0.092
70.00	-18.57	-2.04	0.00	-157.05	0.00	157.05	2,544.56	1,272.28	3,747.77	1,876.67	2.51	-0.38	0.091
75.00	-17.83	-2.05	0.00	-146.84	0.00	146.84	2,485.39	1,242.69	3,539.70	1,772.48	2.92	-0.42	0.090
80.00	-17.12	-2.08	0.00	-136.57	0.00	136.57	2,424.57	1,212.29	3,335.13	1,670.04	3.38	-0.45	0.089
85.00	-16.42	-2.11	0.00	-126.20	0.00	126.20	2,362.12	1,181.06	3,134.31	1,569.49	3.88	-0.49	0.087
90.00	-15.74	-2.14	0.00	-115.66	0.00	115.66	2,297.27	1,148.64	2,936.51	1,470.44	4.42	-0.53	0.086
95.00	-15.37	-2.17	0.00	-104.95	0.00	104.95	2,210.70	1,105.35	2,718.30	1,361.17	5.00	-0.58	0.084
97.75	-14.96	-2.19	0.00	-98.99	0.00	98.99	2,163.09	1,081.54	2,601.88	1,302.87	5.34	-0.60	0.083
100.00	-14.69	-2.20	0.00	-94.07	0.00	94.07	2,124.13	1,062.07	2,508.52	1,256.12	5.62	-0.62	0.082
101.50	-14.35	-2.22	0.00	-90.77	0.00	90.77	1,105.19	552.59	1,317.56	659.76	5.82	-0.63	0.151
105.00	-14.25	-2.23	0.00	-83.00	0.00	83.00	1,087.53	543.77	1,259.48	630.68	6.30	-0.66	0.145
106.00	-13.65	-2.25	0.00	-80.78	0.00	80.78	1,082.34	541.17	1,242.93	622.39	6.44	-0.68	0.142
110.00	-13.18	-2.26	0.00	-71.78	0.00	71.78	1,060.92	530.46	1,177.04	589.40	7.02	-0.73	0.134
115.00	-12.68	-2.27	0.00	-60.46	0.00	60.46	1,032.68	516.34	1,095.47	548.55	7.82	-0.79	0.123
120.00	-12.25	-2.26	0.00	-49.11	0.00	49.11	1,002.79	501.40	1,014.98	508.24	8.69	-0.85	0.109
125.00	-10.81	-2.17	0.00	-37.80	0.00	37.80	971.28	485.64	935.83	468.61	9.61	-0.91	0.092
126.00	-8.80	-2.03	0.00	-35.63	0.00	35.63	964.78	482.39	920.18	460.77	9.80	-0.92	0.086
130.00	-8.51	-2.00	0.00	-27.53	0.00	27.53	938.12	469.06	858.24	429.76	10.59	-0.96	0.073
134.00	-7.73	-1.89	0.00	-19.54	0.00	19.54	910.42	455.21	797.47	399.33	11.40	-0.99	0.057
135.00	-7.67	-1.88	0.00	-17.65	0.00	17.65	903.33	451.67	782.47	391.82	11.61	-1.00	0.054
136.00	-6.14	-1.63	0.00	-15.77	0.00	15.77	896.18	448.09	767.56	384.35	11.82	-1.00	0.048
140.00	-5.97	-1.60	0.00	-9.24	0.00	9.24	866.91	433.46	708.75	354.90	12.67	-1.02	0.033
143.00	-2.49	-0.77	0.00	-4.46	0.00	4.46	844.27	422.14	665.60	333.29	13.32	-1.03	0.016
145.00	-2.33	-0.73	0.00	-2.91	0.00	2.91	828.85	414.43	637.31	319.13	13.75	-1.04	0.012
149.00	0.00	-0.69	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	14.63	-1.04	0.000

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	25.10	0.00	46.50	0.00	0.00	2946.78	101.50	1.00
0.9D + 1.6W	25.08	0.00	34.86	0.00	0.00	2893.91	101.50	0.96
1.2D + 1.0Di + 1.0Wi	11.22	0.00	76.34	0.00	0.00	1183.06	101.50	0.39
(1.2 + 0.2Sds) * DL + E ELFM	1.17	0.00	46.68	0.00	0.00	155.32	101.50	0.07
(1.2 + 0.2Sds) * DL + E EMAM	2.47	0.00	46.68	0.00	0.00	322.81	101.50	0.16
(0.9 - 0.2Sds) * DL + E ELFM	1.17	0.00	32.37	0.00	0.00	151.78	101.50	0.07
(0.9 - 0.2Sds) * DL + E EMAM	2.47	0.00	32.37	0.00	0.00	314.94	101.50	0.15
1.0D + 1.0W	5.37	0.00	38.78	0.00	0.00	624.29	101.50	0.22

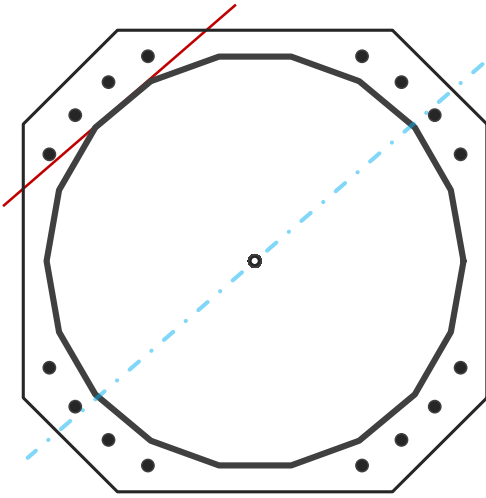
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	52.01	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2946.8	k-ft
Axial, Pu	46.5	k
Shear, Vu	25.1	k
Neutral Axis	41	°

Report Capacities		
Component	Capacity	Result
Base Plate	48%	Pass
Anchor Rods	59%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	59	in
Thickness	2 3/4	in
Grade	Other	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	12	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	1521.6	k
Bending Stress, ϕMn	3183.1	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, ϕ	2 1/4	in
Bolt Circle	59	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	152.6	k
Anchor Rods, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	25.1	2946.8	1.00
Anchor Rod Forces	25.1	2946.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	60.5227	3.3624	0.1582		20173.34
Bolt	3.9761	3.2477	0.8393	4.5	22623.84
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	59	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	27.856	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	59	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	152.6	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕP_n	259.8	k
Tensile Capacity, ϕR_n	0.587	OK
Interaction Capacity	0.588	OK

External Base Plate		
Chord Length AA	31.179	in
Additional AA	0.000	in
Section Modulus, Z	58.947	in ³
Applied Moment, Mu	1521.6	k-ft
Bending Capacity, ϕM_n	3183.1	k-ft
Capacity, Mu/ ϕM_n	0.478	OK
Chord Length AB	30.372	in
Additional AB	0.000	in
Section Modulus, Z	57.423	in ³
Applied Moment, Mu	1282.2	k-ft
Bending Capacity, ϕM_n	3100.8	k-ft
Capacity, Mu/ ϕM_n	0.414	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in ³
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

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Your driver will pickup your shipment(s) as usual.

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Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages. Hand the package to any UPS driver in your area.

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UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
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450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p>PATRICIA NOWAK 508-265-5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 02379</p> <p>SHIP TO: NANCY R. ROSSI CITY OF WEST HAVEN MAYOR'S OFFICE 3RD FLOOR 355 MAIN STREET WEST HAVEN CT 06516-4310</p>	<p>CT 064 7-02</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 0523 8501</p> <p>1</p>		<p>BILLING: P/P</p> <p>Reference # 1: CT2899 - Mayor</p> <p>CS 22.0.11 WNTNVS0 83 CA 12/2019</p> 
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Your driver will pickup your shipment(s) as usual.

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Take your package to any location of The UPS Store®, UPS Access Point™ location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.


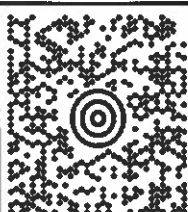
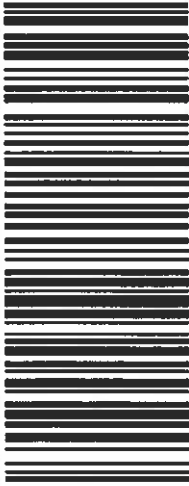

Hand the package to any UPS driver in your area.

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<p>PATRICIA NOWAK 508 265-5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 02379</p> <p>SHIP TO: CATHY CONNIFF CITY OF WEST HAVEN ZONING ENFORCEMENT OFFICER 1ST FLOOR 355 MAIN STREET WEST HAVEN CT 06516-4310</p>	<p>CT 064 7-02</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 0124 6527</p> <p>1</p>		<p>BILLING: P/P</p> <p>Reference # 1: CT72899 - Zoning</p> <p>CS 22.0.11. WNTNVS0 83-CA 12/2019</p> 
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UPS CampusShip: View/Print Label

1. Ensure there are no other shipping or tracking labels attached to your package. Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS

Customers with a Daily Pickup

Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.

Hand the package to any UPS driver in your area.

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p>PATRICIA NOWAK 506-265-5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 02379</p> <p>SHIP TO: FRED A. MESSORE CITY OF WEST HAVEN COMMISSIONER PLANNING & DEVELOPMENT 1ST FLOOR 355 MAIN STREET WEST HAVEN CT 06516-4310</p>	<p>CT 064 7-02</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 1294 1513</p> <p>1</p>		<p>BILLING: P/P</p> <p>Reference # 1: CT2899 - Comm</p> <p>CS 22.0.11. WNTNVS0 83 CA 12/2019</p> 
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UPS CampusShip: View/Print Label

1. Ensure there are no other shipping or tracking labels attached to your package. Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

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<p>PATRICIA NOWAK 508-265-5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER, MA 02379</p> <p>SHIP TO: LAND MANAGEMENT 7814287250 AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053</p>	<p>0.0 LBS LTR</p> <p>1 OF 1</p> <p>MA 018 9-04</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 1055 3535</p> <p>1</p>		<p>BILLING: P/P</p> <p>Reference # 1: CT2899 - ATC</p>  <p>CS 22 011 WNTN050 83 CA 12/2019</p>
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UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
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<p>PATRICIA NOWAK 508-265-5599 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 02379</p> <p>SHIP TO: ROBERT E. NEWKIRK 668 JONES HILL ROAD WEST HAVEN CT 06516-6343</p>	<p>CT 064 7-02</p>  	<p>UPS NEXT DAY AIR</p> <p>TRACKING #: 1Z 9Y4 503 01 0126 2545</p> <p>1</p>		<p>BILLING: P/P</p> <p>Reference # 1: CT2899 Owner</p> <p>CS 22.0.11. WNTNVS0 83.CA 12/2019</p> 
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